

Final

# COMMUNITY RELATIONS PLAN

## MILITARY MUNITIONS RESPONSE PROGRAM REMEDIAL INVESTIGATION U.S. ARMY GARRISON – WEST POINT WEST POINT, NY

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*Prepared For:*



**U.S. ARMY CORPS OF ENGINEERS  
BALTIMORE DISTRICT**  
Baltimore, MD 21203

**West Point**  
The United States Military Academy

**US ARMY GARRISON-  
WEST POINT**  
West Point, NY 10996

*Prepared By:*





**Weston Solutions, Inc.**  
1400 Weston Way  
West Chester, PA 19380  
610-701-3000 • Fax 610-701-3186  
[www.westonsolutions.com](http://www.westonsolutions.com)

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27 January 2011

Mr. Tom Meyer  
Project Manager  
U.S. Army Corps of Engineers  
Baltimore District  
10 South Howard Street  
Baltimore, MD 21201

Work Order No.: 03886.551.001

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Military Munitions Response Program (MMRP) Remedial Investigations, Munitions Response Services, U.S. Army Garrison – West Point, West Point, NY  
Final Community Relations Plan

Dear: Mr. Meyer

Enclosed is one (1) hard copy and electronic copy (pdf) of the Weston Solutions, Inc. (WESTON) Final Community Relations Plan for the environmental remediation services for eleven of the Military Munitions Response Program (MMRP) sites at U.S. Army Garrison – West Point, located in West Point, NY. Additionally, hard copies and electronic copies are being directly forwarded to each of the following individuals: Mr. Paul Patel (New York State Department of Environmental Conservation [NYSDEC]), Mr. Bill Roach (U.S. Environmental Protection Agency Region II), Mr. Jeff Sanborn (U.S. Army Garrison – West Point), Mr. Douglas Scarborough (USAEC), West Point Public Affairs Office (PAO) and the Administrative Record.

If you have any question or comments, please do not hesitate to contact me at 610.701.3793.

Very truly yours,

Weston Solutions, Inc.

John P. Gerhard  
Senior Project Manager

cc: B. Conway (CENAB)  
P. Patel (NYSDEC): 1 hard copy and 1 CD  
B. Roach (USEPA): 1 hard copy and 1 CD  
J. Sanborn (U.S. Army Garrison - West Point): 1 hard copy and 1 CD  
D. Scarborough (USAEC): 1 hard copy and 1 CD  
West Point PAO: 1 hard copy and 1 CD  
G. Barber (TLI)  
M. Franquemont (TLI)  
File



## TABLE OF CONTENTS

<b>ACRONYMS AND ABBREVIATIONS.....</b>	<b>IV</b>
<b>1. OVERVIEW OF THE COMMUNITY RELATIONS PLAN .....</b>	<b>1-1</b>
1.1 PURPOSE AND OBJECTIVES OF THIS COMMUNITY RELATIONS PLAN .....	1-1
1.2 ORGANIZATION OF THE COMMUNITY RELATIONS PLAN .....	1-2
1.3 OVERVIEW OF THE ARMY MILITARY MUNITIONS RESPONSE PROGRAM REMEDIAL INVESTIGATION/FEASIBILITY STUDY PUBLIC INVOLVEMENT GUIDANCE .....	1-3
1.4 OVERVIEW OF RESTORATION ADVISORY BOARDS, TECHNICAL REVIEW COMMITTEES, AND TECHNICAL ASSISTANCE FOR PUBLIC PARTICIPATION .....	1-5
1.4.1 Restoration Advisory Board .....	1-5
1.4.2 Technical Review Committee.....	1-7
1.4.3 Technical Assistance for Public Participation .....	1-7
1.5 OVERVIEW OF CERCLA PROGRAM.....	1-8
1.5.1 Remedial Investigation and Feasibility Study .....	1-9
1.5.2 Community Involvement Requirements .....	1-10
<b>2. SITE BACKGROUND .....</b>	<b>2-1</b>
2.1 SITE LOCATION.....	2-1
2.2 SITE HISTORY .....	2-4
2.2.1 United States Military Academy, West Point.....	2-4
2.2.2 Artillery Firing Range Munitions Response Site.....	2-7
2.2.3 Battery Knox-TD Land Munitions Response Site .....	2-8
2.2.4 Fort Clinton West Munitions Response Site.....	2-8
2.2.5 Grey Ghost Housing Area Munitions Response Site.....	2-9
2.2.6 North Athletic Field Munitions Response Site .....	2-10
2.2.7 Seacoast Battery Munitions Response Site.....	2-10
2.2.8 Siege Battery Munitions Response Site.....	2-11
2.2.9 Target Hill Munitions Response Site.....	2-12
2.2.10 Lusk Reservoir Munitions Response Site .....	2-12
2.2.11 Redoubt No. 2 Munitions Response Site .....	2-13
2.2.12 Michie Stadium Munitions Response Site.....	2-13
2.3 PREVIOUS STUDIES AND INSPECTIONS OF THE SITE.....	2-14
2.3.1 Artillery Firing Range, Fort Clinton, and the Siege Battery Munitions Response Sites .....	2-14
2.3.2 Grey Ghost Housing Area Munitions Response Site.....	2-15
2.3.3 Lusk Reservoir Munitions Response Site .....	2-16
2.3.4 Battery Knox-TD Land, North Athletic Field, Seacoast Battery, Target Hill, Redoubt No. 2, and Michie Stadium Munitions Response Sites .....	2-16
2.3.5 Final Closed, Transferring and Transferred Range/Site Inventory.....	2-17
2.3.6 MMRP Site Inspection.....	2-17



**3. COMMUNITY BACKGROUND..... 3-1**

3.1 COMMUNITY PROFILE ..... 3-1

3.1.1 Orange County ..... 3-1

3.1.2 Putnam County..... 3-2

3.1.3 Village of Cold Spring..... 3-3

3.1.4 Garrison..... 3-3

3.1.5 Village of Highland Falls..... 3-3

3.1.6 West Point..... 3-3

3.1.7 Community Census Data ..... 3-4

3.2 CHRONOLOGY OF COMMUNITY INVOLVEMENT ..... 3-6

3.3 KEY COMMUNITY CONCERNS ..... 3-7

3.4 RESPONSE TO COMMUNITY CONCERNS ..... 3-7

3.5 SUMMARY OF COMMUNICATION NEEDS ..... 3-7

**4. COMMUNITY RELATIONS PROGRAM ..... 4-1**

4.1 KEEP THE PUBLIC INFORMED AND UP TO DATE..... 4-1

4.1.1 Designate a Spokesperson for the Project..... 4-1

4.1.2 Maintain Contact with Key Local Officials and Residents ..... 4-2

4.1.3 Establish and Maintain Information Repository and  
 Administrative Record ..... 4-3

4.1.4 Prepare and Publish Public Notice of Availability of  
 Administrative Record..... 4-5

4.1.5 Prepare and Issue News Releases ..... 4-5

4.1.6 Prepare and Distribute Fact Sheets ..... 4-5

4.1.7 Update Public Affairs Office Mailing List ..... 4-6

4.2 PROVIDE OPPORTUNITIES FOR PUBLIC INVOLVEMENT ..... 4-7

4.2.1 Consider Forming a Restoration Advisory Board or Technical  
 Review Committee..... 4-7

4.2.2 Hold Public Meeting/Open House ..... 4-8

**TABLES**

Table 1-1: Required Community Involvement Activities at CERCLA Remedial  
 Responses ..... 1-10

Table 2-1: Line Miles Covered for Visual Surveys..... 2-19

Table 2-2: Line Miles Covered for Geophysical Transects ..... 2-20

Table 2-3: Soil Samples Collected at West Point ..... 2-20

Table 2-4: Site Inspection Recommendations ..... 2-23

Table 2-5: Prioritization Protocol Priorities for each MRS ..... 2-28

Table 3-1: Demographics Comparison of Site Area Residents – Population, Race, Age,  
 2000 U.S. Census ..... 3-4

Table 3-2: Demographics Comparison of Site Area Residents – Employment, 2000 U.S.  
 Census..... 3-4

Table 3-3: Demographics Comparison of Site Area Residents – Occupation, 2000 U.S.  
 Census..... 3-5



Table 3-4: Demographics Comparison of Site Area Residents – Educational Attainment,  
2000 U.S. Census ..... 3-5

Table 3-5: Demographics Comparison of Site Area Residents – Income and House  
Value, 2000 U.S. Census ..... 3-6

**FIGURES**

Figure 2-1: West Point Munitions Response Sites ..... 2-3

**APPENDICES**

- Appendix A – Glossary
- Appendix B – Key Contacts
- Appendix C – Suggested Locations for Information Repository/Administrative Record
- Appendix D – Suggested Community Interview Questions
- Appendix E – Suggested Locations for Public Meetings

## ACRONYMS AND ABBREVIATIONS

AP-T	Armor Piercing-Tracer
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CHE	Chemical Warfare Materiel Hazard Analysis
CWM	Chemical Warfare Materiel
DMM	Discarded Military Munitions
DoD	Department of Defense
EE/CA	Engineering Evaluation/Cost Analysis
EHE	Explosive Hazard Evaluation
EOD	Explosive Ordnance Disposal
EPA	United States Environmental Protection Agency
FUDS	Formerly Used Defense Site
HE	High Explosive
HHE	Health Hazard Evaluation
IMCOM	Installation Management Command
LTC	Lieutenant Colonel
MC	Munitions Constituents
MD	Munitions Debris
MEC	Munitions and Explosives of Concern
MMRP	Military Munitions Response Program
MRA	Munitions Response Area
MRS	Munitions Response Site
MRSPP	Munitions Response Site Prioritization Protocol
PA	Preliminary Assessment
ppm	Parts per Million
RAB	Restoration Advisory Board
RI	Remedial Investigation
SARA	Superfund Amendments and Reauthorization Act
SI	Site Inspection
TAPP	Technical Assistance for Public Participation



## **ACRONYMS AND ABBREVIATIONS (CONCLUDED)**

TD	Transferred
TLI	TLI Solutions, Inc.
TPP	Technical Project Planning
TRC	Technical Review Committee
U.S.	United States
USACE	United States Army Corps of Engineers
UXO	Unexploded Ordnance
West Point	U.S. Army Garrison – West Point
WESTON	Weston Solutions, Inc.
WWII	World War II

## 1. OVERVIEW OF THE COMMUNITY RELATIONS PLAN

The U.S. Army Garrison - West Point (West Point) located in West Point, NY and the United States Army Corps of Engineers (USACE), Baltimore District developed this Community Relations Plan in preparation for community relations activities to be conducted during the remedial investigation activities at 11 Munitions Response Sites (MRS) associated with West Point. USACE contracted Weston Solutions, Inc. (WESTON®) to conduct the remedial investigation work and assist with community relations activities. WESTON is an environmental engineering firm headquartered in West Chester, PA. TLI Solutions, Inc. (TLI), a multi-discipline environmental consulting firm, of Golden, CO is working in conjunction with WESTON to provide services related to the remedial investigation at West Point, including providing support for community relations activities.

This Community Relations Plan was prepared utilizing the United States Environmental Protection Agency's (EPA) *Superfund Community Involvement Handbook* (EPA 540-K-01-003, April 2002); EPA's *Superfund Community Involvement Toolkit* (EPA 540-K-01-004, September 2002); and the U.S. Army Military Munitions Response Program's (MMRP) *Munitions Response Remedial Investigation/Feasibility Study Guidance* (Final November 2009). The Department of Defense (DoD) established the MMRP to attain a better understanding of munitions response requirements and potential costs. The two EPA documents can be accessed via the Internet at the following websites:

- [http://www.epa.gov/superfund/tools/cag/ci\\_handbook.pdf](http://www.epa.gov/superfund/tools/cag/ci_handbook.pdf) – *Superfund Community Involvement Handbook*
- <http://www.epa.gov/superfund/tools/pdfs/contents.pdf> – *Superfund Community Involvement Toolkit*

A copy of the U.S. Army MMRP's Final *Munitions Response Remedial Investigation/Feasibility Study Guidance* is available at the project information repository (see Appendix C, Information Repository Locations).

### 1.1 PURPOSE AND OBJECTIVES OF THIS COMMUNITY RELATIONS PLAN

The purpose of this document is to provide information about community concerns and present a community relations program that will enhance communication between local residents,

installation residents, USACE, and West Point as the remedial investigation at the installation progresses. All community relations activities will be conducted jointly with the West Point Public Affairs Office.

The objective of community relations is to involve the public in activities and decisions related to the remedial investigation. The community relations program promotes two-way communication between members of the public and the Army, including USACE and West Point. Based on the West Point sites included in the remedial investigation, three community groups have been identified: West Point Installation community (individuals who live or work within the West Point installation); Battery Knox–TD Land munitions response (MR) site property owners (individuals/organizations that own property within the boundary of the Battery Knox–TD Land MR site; and community at-large (individuals/organizations that live or work within the communities surrounding West Point). Each of these groups will have specific community involvement needs and requirements, which will be addressed throughout this plan.

## **1.2 ORGANIZATION OF THE COMMUNITY RELATIONS PLAN**

This community relations plan consists of the following sections:

- Section 1 – A summary of the objectives and contents of the community relations plan and an overview of EPA’s Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) program.
- Section 2 – A description and history of the 11 MRSs to be addressed during the remedial investigation.
- Section 3 – A profile of the community around the sites, and a discussion of issues and concerns of the community.
- Section 4 – A discussion of the community relations program.

This Community Relations Plan contains the following appendices:

- Appendix A – Glossary
- Appendix B – Key Contacts
- Appendix C – Suggested Locations for Information Repository/Administrative Record

- Appendix D – Suggested Community Interview Questions
- Appendix E – Suggested Locations for Public Meetings

### 1.3 OVERVIEW OF THE ARMY MILITARY MUNITIONS RESPONSE PROGRAM REMEDIAL INVESTIGATION/FEASIBILITY STUDY PUBLIC INVOLVEMENT GUIDANCE

The U.S. Army MMRP follows the process outlined in CERCLA and the National Contingency Plan. As appropriate, a site investigation is conducted to analyze and determine suitable response alternatives. The Army's program complements and expands existing CERCLA remedial investigation and feasibility study guidance, providing focus on the unique situation of sites containing unexploded ordnance, discarded military munitions, and munitions constituents. Appendix D of the U.S. Army MMRP's *Munitions Response Remedial Investigation/Feasibility Study Guidance* (Final November 2009) provides the "Army Military Munitions Response Program Remedial Investigation/Feasibility Study Public Involvement Guidance." This guidance recommends a proactive posture to developing public involvement. It advises personnel to research and develop an understanding of local community concerns regarding munitions response areas and munitions response sites and to "take appropriate action by amending communications plans, installation restoration community relations plans, and environmental messages based on input from local stakeholders." The guidance also states "as appropriate, communicate with the community through the Restoration Advisory Board (RAB) or Technical Review Committee (TRC)." An overview of a RAB is provided in Section 1.4.1 of this Community Relations Plan.

The MMRP's Remedial Investigation/Feasibility Study Public Involvement Guidance presents key message points to effectively communicate the Army's reassurances and concerns regarding the remedial investigation and feasibility studies at munitions response areas and munitions response sites. The key message points are:

- **Stewardship** – The Army is a good steward of the environment.
- **Readiness** – The Army must train as it fights and will fight as it is trained.
- **Sustainability** – The Army's long-term viability depends on balancing mission requirements worldwide with explosives safety and human health protections, as well as safeguards for the environment.

- **Expertise** – The Army will make use of the nation’s best available and appropriate technology to accurately assess munitions response areas and munitions response sites and successfully complete required munitions response actions.
- **Partnership** – The Army will work with regulators, local community leaders, and members of the public to address concerns and ensure the safe performance of munitions response actions.
- **Local Perspective** – The Army will acknowledge and will address significant local community concerns (i.e., health safety, environmental justice, economic issues, equity issues, and other policy issues).

The MMRP’s Public Involvement Guidance suggests a number of communication tools and techniques to use as appropriate:

- **Public meetings** – Present information on the MMRP and the remedial investigation/feasibility study at a meeting scheduled and held at the discretion of the Army in the local community.
- **Public availability sessions (i.e., poster stations)** – Provide a forum where Army officials and the public can interact in a less formal manner.
- **Community interviews** – Talk and listen to neighbors and community leaders to develop an understanding of community concerns about munitions response sites, current community perceptions, and sources of information useful to communicate to interested stakeholders.
- **Focus groups** – Conduct community research through group interviews of 8 to 12 people for 1 to 2 hours.
- **Information products** – Provide information in printed and video formats in language easy for the public to understand. Printed materials include fact sheets, newsletters, brochures, briefing charts, and annual reports.
- **News releases** – Disseminate project-related articles and announcements to local/area news media. News releases are disseminated by the Garrison Commander and are also filed in the administrative record or information repository.
- **Website** – Update the public with up-to-date installation messages and project information through the internet.
- **Group presentations** – Present briefings and speeches upon request to a RAB, TRC, homeowner associations, civic groups, and others at their regularly scheduled meetings. Feedback from these presentations can be used to evaluate the project’s community relations program.

- **On-site tours** – Offer the opportunity for first-hand views of sites, actions, and technologies. Visitor safety is paramount.
- **Information repositories** – Place all MMRP documents in the project information repository.
- **Media opportunities** – Allow journalists to learn more about the site and obtain an in-depth understanding of the MMRP and the remedial investigation/feasibility study process without the pressure of a deadline. These opportunities let the journalists take stock photos and video footage to use in future news stories.

## **1.4 OVERVIEW OF RESTORATION ADVISORY BOARDS, TECHNICAL REVIEW COMMITTEES, AND TECHNICAL ASSISTANCE FOR PUBLIC PARTICIPATION**

### **1.4.1 Restoration Advisory Board**

It is not anticipated that a Restoration Advisory Boards (RAB) will be required at West Point during the Remedial Investigation. However, the following information is provided in the event the community requests the establishment of a RAB. The necessity to form a RAB will be based upon input received from the West Point installation community, Battery Knox – TD Land MR site property owners, and the community at-large.

RABs are collaborative community forums that address environmental cleanup issues at Army installations under the Defense Environmental Restoration Program. RABs discuss, evaluate, and exchange information through direct lines of communications between their members and installation decision makers. Representatives may include the installation commander, co-chairs, and community members; the EPA; and state, local, and tribal government officials. Advice received from RAB participants helps formulate and execute cleanup strategies, while gaining trust within the community. A RAB provides communities or individuals affected by an installation's environmental restoration activities with a framework for participating in the environmental process.

In March 2007, DoD issued a document entitled *Restoration Advisory Board Rule Handbook* to supplement the RAB Rule, which was issued on May 12, 2006 (71 Federal Register 27610) with technical corrections at 71 Federal Register 42756 (July 28, 2006). In accordance with statutory requirements (10 U.S.C. 2705(d)(2)(A)), the RAB Rule addresses the establishment, characteristics, composition, and funding of RABs. The handbook can be accessed on-line at

[https://www.denix.osd.mil/portal/page/portal/content/environment/cleanup/WN/RAB-Rule-Handbook\\_Final.pdf](https://www.denix.osd.mil/portal/page/portal/content/environment/cleanup/WN/RAB-Rule-Handbook_Final.pdf). (Note: this website is only accessible to registered DENIX users.)

According to the handbook: “RABs fulfill a statutory requirement for DoD to establish, whenever possible and practical, a committee to review and comment on DoD actions and proposed actions regarding environmental restoration. DoD strongly encourages RABs at installations where environmental restoration activities occur and where there is community interest in establishing a RAB. Technical Review Committees (TRCs) (discussed in Section 1.4.2, below) satisfy the same statutory requirements as a RAB, but RABs are the preferred forum. If the community is not interested in establishing a RAB at the installation, then a RAB is not required; however, DoD must make the opportunity to establish a RAB available if the community becomes interested and must assess community interest every 24 months while environmental restoration activities are still ongoing.”

According to the *Management Guidance for the Defense Environmental Restoration Program* (September 2001), only one RAB or TRC will be recognized per installation.

RABs may discuss only environmental restoration activities. Examples of RAB activities may include the following.

- Review and comment on environmental restoration documents and activities.
- Provide information to the community.
- Receive input from the community.
- Obtain information regarding schedule, technical methods or approach, and status of environmental restoration activities.

RAB members provide valuable input to the installation and environmental agencies on environmental restoration decisions; however, RABs are not decision-making bodies. The installation decision-makers will listen to and consider the input from RAB member; however, the installation is not required to follow RAB recommendations.

RABs provide a formal forum for interested parties to meet and discuss environmental restoration activities. RABs prepare a mission statement that details goals and describes its purpose. RABs develop and follow operating procedures that include guidelines for issues to

address, membership, participation, training, roles and responsibilities, and reporting requirements. Co-chairs, a representative each from the community and the installation, lead the RAB meetings. All RAB meetings are open to the public. Meeting minutes must be made available to the public.

#### **1.4.2 Technical Review Committee**

The purpose of TRCs is to review and comment on technical aspects of environmental restoration activities and proposed remedial actions at DoD installations. TRC membership consists of at least one representative from the installation, EPA, state and local government, and the community.

TRCs are similar to RABs, but not as formal. Operating procedures are not required for TRCs. TRCs are chaired only by installation personnel. All TRC members are appointed by the installation. Meeting minutes are not required but usually kept on file.

#### **1.4.3 Technical Assistance for Public Participation**

The Technical Assistance for Public Participation (TAPP) program provides community members of RABs with access to independent technical support through the use of government purchase orders. It is intended to supplement existing sources of support and foster a relationship of trust and understanding between the community and DoD. For example, TAPP funds can be used to hire a separate environmental consultant to review and explain a feasibility study or other technical documents to RAB community members.

TAPP is limited to the community membership of RABs. This restriction was part of the legislation that created the TAPP program. The community members of a RAB suggest topics for a TAPP project and are responsible for determining what projects to pursue and for exploring other sources of support prior to turning to TAPP.

TAPP purchase orders are limited to \$25,000 or 1% of restoration cost to complete (the total cost of installation cleanup) annually, with a \$100,000 cap on the amount available to any one RAB per installation.

Procurement of the TAPP purchase order for technical assistance is subject to the availability of funds. After the technical assistance contractor has completed the task for the RAB community members, the RAB is responsible for reporting to DoD whether the TAPP was worthwhile or met the expectations of the RAB community members.

More information about the TAPP program is available in DoD's guidance entitled *Handbook: Technical Assistance for Public Participation* (February 2000). This document can be accessed online at <http://handle.dtic.mil/100.2/ADA376044>.

## 1.5 OVERVIEW OF CERCLA PROGRAM

In 1980, the United States Congress enacted CERCLA, also known as Superfund. CERCLA authorizes EPA to investigate and respond to hazardous substance releases that may endanger public health and the environment. The 1980 law also established a \$1.6 billion fund to pay for the investigation and cleanup of sites where parties responsible for the releases are unable or unwilling to address contamination problems. Congress amended and reauthorized CERCLA in October 1986 as the Superfund Amendments and Reauthorization Act (SARA), increasing the size of the fund to about \$8.5 billion. A Superfund site is an uncontrolled or abandoned place where hazardous waste is located, possibly affecting local ecosystems or people. Sites are listed on the National Priorities List upon completion of Hazard Ranking System screening, public solicitation of comments about the proposed site, and after all comments have been addressed.

It is important to note that the 11 Munitions Response Sites at West Point are not listed on the National Priorities List and thus are not Superfund sites. However, the environmental studies and community relations program are being performed in accordance with the CERCLA program under the MMRP. Typically, at a Superfund site, EPA conducts a series of processes leading up to the remedial investigation stage. The following briefly describes the stages as they apply to a Superfund site:

1. **Discovery** – Sites may be discovered in a number of ways: hazardous substance release; citizens petition EPA to investigate a site; or state and local governments may request EPA to investigate a site.
2. **Preliminary Assessment/Site Inspection** – During the Preliminary Assessment, EPA searches permits, titles, and other records to gather information about past activities,

exposure pathways, and human and other biological targets at the site. The Site Inspection involves an investigation of site conditions.

3. **National Priorities List** – The site is considered to be listed on the National Priorities List, a list of the most serious sites identified for possible long-term cleanup.
4. **Remedial Investigation/Feasibility Study** – Determines the nature and extent of contamination. Assesses the treatability of site contamination and evaluates the potential performance and cost of treatment technologies.

For more information about the remedial investigation/feasibility study, see Section 1.5.1 of this Community Relations Plan.

5. **Record of Decision** – The decision document that explains which cleanup alternatives will be used at a site.
6. **Remedial Design/Remedial Action** – Preparation and implementation of plans and specifications for cleaning up the site.
7. **Construction Completion** –Indicates completion of the physical cleanup construction; however, this does not mean the final cleanup goals have been achieved.
8. **Post-Construction Completion** – Ensures cleanup actions provide for the long-term protection of human health and the environment through long-term response actions, operation and maintenance, institutional controls, five-year reviews, and remedy optimization.
9. **National Priorities List Delete** – Removes a site from the list once all cleanup actions are complete and cleanup goals are achieved.
10. **Reuse** – Information on how the Superfund program works with communities and other partners to return hazardous waste sites to safe and productive use without interfering with the cleanup remedy.

More details about the Superfund process are available on-line at the following EPA website:

<http://www.epa.gov/superfund/cleanup/index.htm>.

### 1.5.1 Remedial Investigation and Feasibility Study

A remedial investigation involves the following steps:

- Identify the types of contaminants present at and near a site.
- Assess the degree of contamination.
- Characterize potential risks to the community and the environment.

A feasibility study evaluates cleanup alternative remedies for environmental problems at a site. The development of cleanup alternatives requires the following steps:

- Identify remedial action objectives.
- Identify potential treatment, resource recovery, and containment technologies that will satisfy the objectives.
- Screen the technologies based on their effectiveness, implementability, and cost.
- Assemble technologies and their associated containment or disposal requirements into alternatives for the contamination at the site.

The time to conduct the remedial investigation and feasibility study varies from site to site. Some sites can easily take 18 to 24 months or more to complete a remedial investigation and feasibility study; however, actual on-site work may last no longer than a few weeks to several months. The remainder of the time is spent on laboratory work and report preparation and review.

It is important to note that the MMRP's remedial investigation field work at the 11 Munitions Response Sites at West Point is scheduled to be completed between March 2011 and August 2011. Preparing, reviewing, and finalizing the remedial investigation reports may require over a year for each report. The next step (i.e., feasibility study and proposed plan) after the remedial investigation phase may not be necessary if the risk assessment and remedial investigation do not identify any munitions concerns at the sites.

### 1.5.2 Community Involvement Requirements

There are specific community relations activities that must be performed in accordance with CERCLA (see Table 1-1). Additional community relations activities tailored to the distinctive needs of each site and the specific community interests may be implemented.

**Table 1-1: Required Community Involvement Activities at CERCLA Remedial Responses**

Technical Milestones	Required Public Involvement Activities
Remedial Investigation	<ul style="list-style-type: none"><li>• Conduct community interviews</li><li>• Establish information repository</li><li>• Prepare community involvement plan</li><li>• Hold a public meeting</li><li>• Establish administrative record</li><li>• Publish public notice (announce remedial investigation, public meeting, information repository, and administrative record locations)</li></ul>

**Table 1-1: Required Community Involvement Activities at CERCLA Remedial Responses (concluded)**

Feasibility Study/Proposed Plan	<ul style="list-style-type: none"><li>• Update information repository and administrative record</li><li>• Prepare proposed plan (feasibility study summary fact sheet)</li><li>• Hold a public meeting</li><li>• Prepare transcripts of public meeting</li><li>• Set 30-day public comment period</li><li>• Publish public notice (announce recommended cleanup alternative, public meeting, public comment period, information repository, and administrative record)</li><li>• Prepare responsiveness summary to accompany record of decision</li></ul>
Record of Decision	<ul style="list-style-type: none"><li>• Update information repository and administrative record</li><li>• Publish public notice (decision document officially signed)</li><li>• Revise community involvement plan, if needed</li></ul>
Remedial Design	<ul style="list-style-type: none"><li>• Prepare final design fact sheet</li><li>• Provide a public briefing on remedial design</li></ul>

## 2. SITE BACKGROUND

### 2.1 SITE LOCATION

West Point is located in Orange County, New York, on the west bank of the Hudson River. The installation is located approximately 47 miles north of New York City and approximately 9 miles south of Newburgh (Figure 2-1). A small portion of the installation is located on Constitution Island, which is located in the Hudson River, and within Putnam County. West Point is comprised of two areas: the Main Post or campus and the Military Reservation, and consists of approximately 15,974 acres, of which approximately 2,530 acres is the Main Post portion of the installation. The Main Post contains the majority of the academic, residential, and support facilities. The remainder of the land is largely undeveloped and contains operational training facilities such as firing ranges and bivouac areas used during the summer to house and train cadets.

The United States Congress established the Military Munitions Response Program (MMRP) under the Defense Environmental Restoration Program to address unexploded ordnance (UXO), discarded military munitions (DMM) and munitions constituents (MC) located on current and former defense sites. MMRP eligible sites include other than operational ranges where UXO, DMM, or MC are known or suspected to have been released. Properties classified as operational military ranges, permitted munitions disposal facilities, or operating munitions storage facilities are not eligible for the MMRP. The U.S. Army's inventory of closed, transferred, and transferring military ranges and defense sites (also known as the Phase 3 Range/Site Inventory) has identified sites with munitions and explosives of concern (MEC), which includes UXO and DMM and/or MC that are eligible for action under the MMRP. Following the completion Phase 3 Range/Site Inventory, a site inspection (SI) of sites associated with West Point was completed by TLI Solutions in January 2007. As a result of the recommendation from the SI, eleven MRSs are being evaluated as part of the remedial investigation (RI) at West Point. These sites are discussed below and depicted on Figure 2-1.

The **Artillery Firing Range** MRS (WSPT-001-R-01) is approximately 172 acres and is comprised of three separate parcels of land associated with range fans from three overlapping historic artillery ranges: the Sacred Heart Cemetery Range, the Silver Depository Range, and the

Adolphs Pond Range. The Artillery Firing Range is located approximately one mile west of Lusk Reservoir and extends almost due north towards Crows Nest. It is on land to the south and west of the main campus.

The **Battery Knox-Transferred (TD) Land** MRS (WSPT-004-R-02) is comprised of the land section of the transferred portion of the range fan for Battery Knox that extends beyond the installation boundary. It is comprised of approximately 141 acres and is located on the eastern shore of the Hudson River. The water portion of the Battery Knox-TD site is not being addressed by this Remedial Investigation.

**Fort Clinton West** MRS (WSPT-008-R-01) is comprised of 27 acres and extends westward from the main campus area to Route 218 to the northwest.

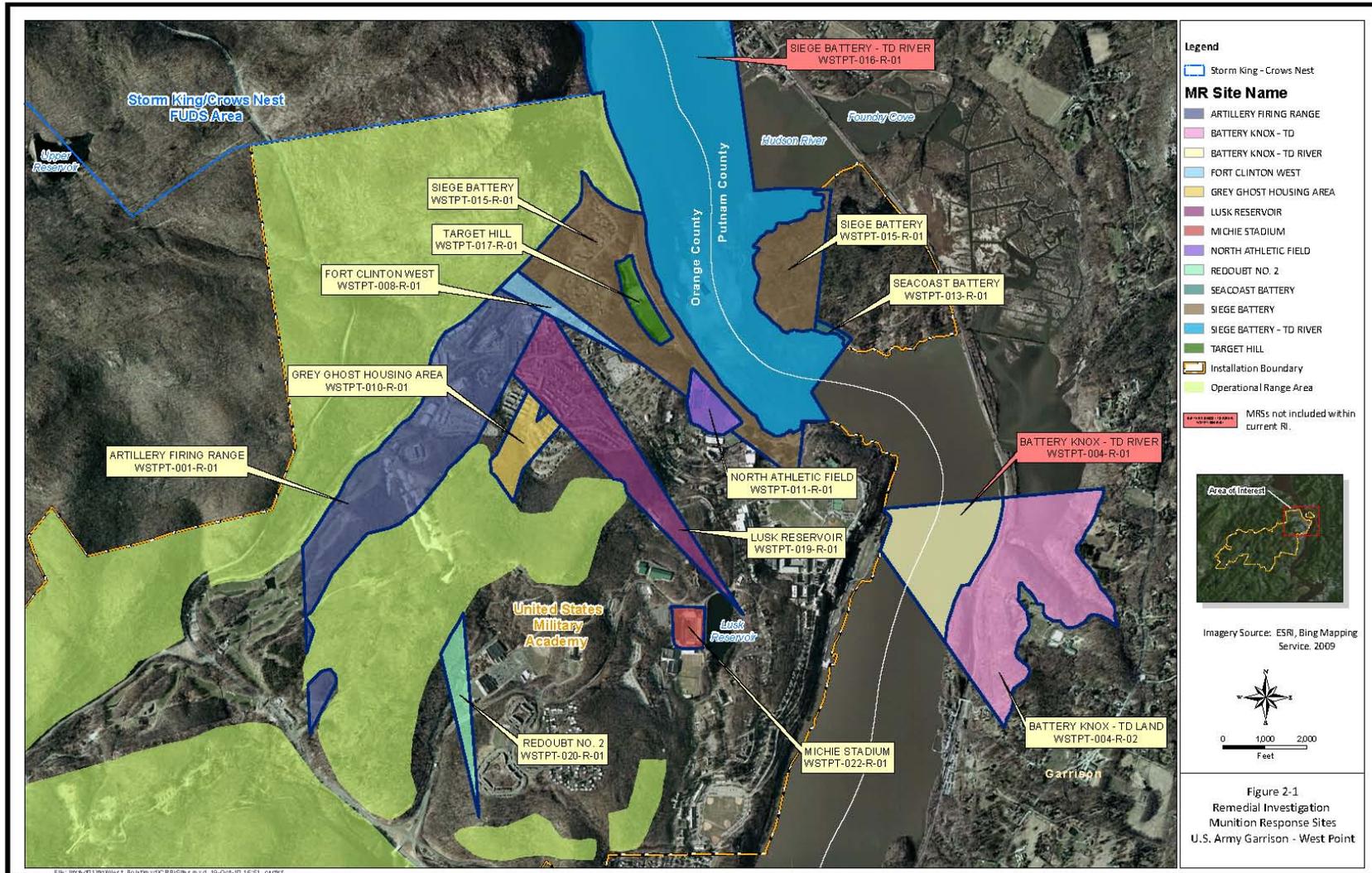
The **Grey Ghost Housing Area** MRS (WSPT-010-R-01) is comprised of approximately 24 acres and is located in the central campus area west of the batteries and the North Athletic Field. The MRS is adjacent to and partially overlapped by the Grey Ghost Housing Area.

The **North Athletic Field** MRS (WSPT-011-R-01) is comprised of 14 acres and is located along the western shore of the Hudson River within the central campus area of West Point. The site currently encompasses several athletic fields including the softball field complex, track, and a football field. The northeastern edge of the site is bounded by railroad tracks, a road, and the Hudson River.

The **Seacoast Battery** MRS (WSPT-013-R-01) is comprised of approximately two acres and is the land portion of the Seacoast Battery historic range fan on Constitution Island. Firing into the island occurred from the Seacoast Battery, which was located within the central campus area at the bend of the Hudson River on the north waterfront, immediately north of the North Dock Landing.

The **Siege Battery** MRS (WSPT-015-R-01) is the portion of the historic range fan for the old Siege Battery that is located with the West Point Installation boundary. The MRS encompasses 179 acres and consists of two non-contiguous parcels located within the central campus area and on Constitution Island. The Siege Battery was located on the slope of the hill below the Battle

Figure 2-1: West Point Munitions Response Sites



Monument at what is now called Trophy Point. A portion of the Siege Battery firing fan overlaps the firing fans of the Seacoast Battery and Fort Clinton MRSs. The remainder of the Siege Battery's historic range fan is located over the waterway of the Hudson River and contained within the Siege Battery-TD MRS, which is not being addressed by this Remedial Investigation

**Target Hill** MRS (WSPT-017-R-01) is comprised of approximately 14 acres within the West Point campus area and is located north of the North Athletic Field within the main campus area, along the western shore of the Hudson River. The site is surrounded by the Siege Battery MRS. Construction of a new Rugby Center was recently completed on the northern portion of the Target Hill MRS. The southern portion of the site has been developed with soccer fields. The eastern edge of the site is bordered by a road, railroad tracks, and the Hudson River.

The **Lusk Reservoir** MRS (WSPT-019-R-01) is comprised of approximately 83 acres and is located in the central portion of the West Point campus. The site extends from Lusk Reservoir east of Michie Stadium westward toward the Artillery Firing Range MRS.

**Redoubt No. 2** MRS (WSPT-020-R-01) is comprised of approximately 20 acres and is located in proximity to the Stony Lonesome Housing area to the east of the intersection of Highways 218 and 9W and west of Dassori Pond.

The **Michie Stadium** MRS (WSPT-022-R-01) is comprised of approximately 9.4 acres and is located near the center of the Main Post in and around Michie Stadium, west of Lusk Reservoir. The area surrounding Michie Stadium includes several athletic complexes including the Holleder Center, Howzie Field, the Kimsey Athletic Center, and Randall Hall.

## 2.2 SITE HISTORY

### 2.2.1 United States Military Academy, West Point

The history of West Point dates back to the Revolutionary War when the strategic importance of the commanding plateau on the west bank of the Hudson River was realized. General George Washington considered West Point to be the most strategic position in America. West Point had many advantages for being selected as a site to build fortifications on the Hudson River. Vessels

passing by West Point had to make a sharp, ninety-degree turn to the west, sail a quarter of a mile, then make another right-angle turn to the north as they continued upriver. These bends were sharper than any point along the Hudson, creating hazards for ships passing through. In addition to the turns in the river, the river was also very narrow, the tidal effects were the greatest, and the current was the swiftest at this location. The treacherous winds also created difficulties for ships trying to navigate through this section of the Hudson.

Construction of forts and batteries in the area of West Point began in the summer of 1775. However, the original location was not the site of the future military academy, but across the Hudson River on Constitution Island (then called Martelaer's Rock). Problems immediately became apparent in the use of Constitution Island by the Continental Army. The area was vulnerable to attack by land and was dominated by higher ground on all sides, especially from West Point across the river. Other fortifications were built along the Hudson River including twin forts to the south of West Point at the confluence of Popolopen Creek and the Hudson River. Fort Montgomery was constructed on the north shore of Popolopen Creek and Fort Clinton was located on the south shore. Many of these fortifications were destroyed by the British in October 1777. Until January 1778, West Point was not occupied by the military. On January 27<sup>th</sup>, Brigadier General Samuel Holden Parsons and his brigade crossed the ice on the Hudson River and climbed to the plain on West Point. From that day to the present, West Point has been occupied by the U.S. Army.

The fortifications at West Point were designed by Colonel Thaddeus Kosciusko in 1778. By the summer of 1779, the fortifications at West Point were expanded to their fullest. From that time until the end of the Revolutionary War, engineering work focused on improvements and reconstruction of West Point. General Washington transferred his headquarters to West Point in 1779. Continental soldiers built forts, batteries, and redoubts (small fortifications in which soldiers could hide while fighting) and extended a chain across the Hudson River to prevent the passing of British ships. The chain, known as the Great Chain, was placed in the river on April 30, 1778, measured approximately 1,600 feet, and weighed between 180 and 186 tons.

At the end of the Revolutionary War in 1783, the materials used to construct West Point were sold in an attempt to recoup some funds. Although West Point continued to be occupied, its

importance as a strategic point along the Hudson River would not be a focus until 1794 when tensions between France and England began to rise in Europe.

West Point became an institution devoted to teaching the arts and sciences of warfare in 1802 when President Thomas Jefferson signed legislation establishing the United States Military Academy. West Point's first cadets were assigned to the Corps of Artillerists and Engineers (which later became the Corps of Engineers) at West Point in 1802. The cadets were instructed in practical experience in the use of artillery. West Point remained under the control of the Corps of Engineers until June 1866 when it was returned to the supervision of the Secretary of War.

Colonel Sylvanus Thayer, the "father of the Military Academy," was the superintendent at the academy from 1817 to 1833. Colonel Thayer made civil engineering the foundation of the curriculum. According to a document titled *The United States Military Academy, 1833-1866: Years of Progress and Turmoil*, dated 1970, the academic environment at West Point from 1833-1854 required that the cadets be trained in practical military engineering and other professional subjects, such as infantry, artillery, and cavalry tactics, equitation and the "sword exercise," or fencing.

West Point graduates were largely responsible for the construction of the bulk of the nation's initial railway lines, bridges, harbors, and roads. Academy graduates, headed by Generals Ulysses S. Grant, Robert E. Lee, William Tecumseh Sherman, and Thomas "Stonewall" Jackson, set high standards of military leadership during the Civil War.

By 1839, the lands comprising West Point had been obtained from the original patents of John Moore, Charles Congreve, and Gabriel and William Ludlow. A document dated 1889 states West Point consisted of 2,330 acres of land and, at times, challenges had been made to the jurisdiction of these lands by the military, but courts always withheld the validity of the military's control.

West Point was the principal testing ground for ordnance in the 19th century. As a result, an extremely wide array of material was fired toward Target Hill and Crows Nest. Cadet training included artillery firing towards Target Hill and began around the War of 1812. In addition to

cadet training, artillery also was fired into Crows Nest from the West Point Foundry at Cold Spring, New York (commonly referred to as West Point Foundry or Cold Spring Foundry) located on the eastern shore of the Hudson River in the Village of Cold Spring, Putnam County, New York. The West Point Foundry was not associated with West Point. The foundry was operated by a private company for the development and production of weapons. The firing from the foundry was for the testing of the artillery produced there and was not directly associated with West Point. Firings from West Point Foundry to the west toward Crows Nest occurred from the 1820s through the 1870s.

West Point underwent expansion and renovations of its facilities during the early years of the 20<sup>th</sup> century. In addition, its curriculum was modified extensively to prepare its cadets for participation in two world wars and the rapid advancement of military technologies. Dwight D. Eisenhower, Douglas MacArthur, Omar Bradley, Mark Clark, and George Patton were among an impressive array of West Point graduates who met the challenge of leadership in the Second World War, as well as continued service during the Korean War and Vietnam War. The postwar period again saw sweeping revisions to the West Point curriculum resulting from the dramatic developments in science and technology, the increasing need to understand other cultures and the rising level of general education in the Army.

Currently, West Point graduates approximately 900 new officers each year from a student body that numbers 4,000.

### **2.2.2 Artillery Firing Range Munitions Response Site**

This site is comprised of the range fans associated with three former artillery ranges: Sacred Heart Cemetery Range, Silver Depository Range, and Adolphs Pond Range. The ranges were used for practice firing of 75mm rounds from 1909 until the late 1930s. They were also used for 2.95-inch Vickers-Maxim Mountain Howitzers. Although no specific target locations were identified, general references were made to firing into the Crows Nest area (currently defined as the Crows Nest Formerly Used Defense Site [FUDS]).

The northern portion of the Artillery Firing Range MRS has been developed and includes industrial and residential activities. The West Point Golf Course, Victor Constant Ski Slope, and Sacred Heart Cemetery are encompassed within the southern portion of the site.

### **2.2.3 Battery Knox-TD Land Munitions Response Site**

Battery Knox was used for defense of the Hudson River and for training of cadets. Battery Knox was constructed high on the bluff above the Hudson River at a site approximately 145 feet above the water. The battery contained six gun positions and ammunition magazines and was established sometime between 1836 and 1850. Although the original armament of Battery Knox is not known, four 10-inch Rodman rifles on coastal carriages were installed at the Battery during the era of the Civil War.

The firing point of the battery was located on the bluff of the western bank of the Hudson River to the south of Gees Point. Firing from the battery was conducted to the east towards targets that were placed in the Hudson River; however, projectiles that overshot the targets may have impacted the eastern bank of the Hudson River, which encompasses the land portion of the Battery Knox-TD Land MRS.

Battery Knox was redesigned in 1874, with modifications made to the armament and the orientation of the guns to improve both their defensibility and their ability to cover the river with firepower. By 1892, Battery Knox was armed with one 100-pounder Parrott 6.4-inch caliber rifle, one 300-pounder Parrott 10-inch caliber rifle, one 8-inch converted rifle, and four 10-inch Rodman rifles. At that time, the 10-inch muzzle-loaded Rodman guns were considered obsolete, and the 8-inch muzzle-loaded converted rifle was retained in service only for secondary purposes. When the Rodman guns became outdated, they were retained at the battery and Battery Knox became a “ceremonial” or “salute” battery. The 100-pounder Parrott rifle, the 300-pounder Parrott rifle, and the 8-inch converted rifle were removed from Battery Knox between 1906 and 1918.

### **2.2.4 Fort Clinton West Munitions Response Site**

Fort Clinton was known as Fort Arnold prior to Benedict Arnold’s treason in September 1780. In some instances, it was referred to as Camp Clinton. Construction of Fort Arnold and its water

batteries began on March 12, 1778 on the eastern portion of West Point. The fort was designed to provide fortification for the chain that was placed across the Hudson River.

Practice firings were routinely conducted from the fort, which was equipped with brass 4-pounder, brass mortars, iron 12-pounder, iron 18-pounder, and 75mm guns. The fort was used for artillery training, with firing conducted to the northwest across the Hudson River through the 1830s. The fort was later used for the practice firing of 75mm guns towards Crows Nest from the mid-1800s until 1927. As of 1927, the site became a monument and a national historic site. The battery no longer exists, except for a short segment of the eastern parapet wall.

The eastern portion of the Fort Clinton range fan has been developed and includes tennis courts, roadways, and various buildings. In addition, part of the site includes a steep, heavily-wooded cliff along the Hudson River. The western portion of the range fan includes a part of the Lee Housing Area as well as undeveloped, heavily-wooded terrain. The remainder of the historic range fan is included with Siege Battery, Target Hill and the North Athletic Field.

### **2.2.5 Grey Ghost Housing Area Munitions Response Site**

The Grey Ghost Housing Area MRS is comprised of a range complex that included a 1,000-inch machine gun range and a rifle/pistol range. The firing points for the ranges were located at the northern end of the MRS and the direction of fire was towards the southwest. The targets for the ranges were located within the MRS near the base of a steep, heavily-wooded hill. During the 1920s to 1940s, the area was used by cadets for small arms training using a variety of weapon types, including .22 and .30 caliber machine guns. In November 1928, the 1,000-inch machine gun range was renovated and a pistol range was added to the same location. The pistol range was designed to permit firing at 75, 50, 25, and 15 yards with 12 targets. In addition, a rifle range was located in the area as early as 1939. The range was used for training with small arms ammunition no larger than .30 caliber.

Improvements in January 1939 included the overhead protection at both of the firing points, the target area, and the brick storage facility for the storage of targets, ammunition, and paste for posting targets. Improvements also included the addition of an earth embankment approximately 20-feet high, using approximately 3,200 cubic yards of soil, at the target area for ricochet

prevention and a new earth mound at the firing points. After 1950, the area was developed as a housing complex.

The Grey Ghost Housing Area MRS has been developed with single and multi-family housing. In addition, the community includes a playground and limited greenbelts. The southern extent of the MRS has not been developed and includes steep, heavily-wooded terrain.

### **2.2.6 North Athletic Field Munitions Response Site**

In 1937, the Army Athletic Association started a project which involved the construction and expansion of the athletic fields. The North Athletic Field was constructed by using fill from Target Hill. The removal of fill from Target Hill began in 1944 and was completed in 1945. Approximately 60,000 square yards of level ground were added to the North Athletic Field. Prior to 1944, this area was used for recreational purposes. Artillery firing was never conducted at this site; however, because the North Athletic Field was constructed with fill dirt from Target Hill, the area may contain ordnance that was fired into the hill from the early 1800s until the late 1930s. Target Hill served as the impact area for artillery test-fired from the Cold Spring Foundry and heavy guns on the north side of West Point. Target Hill continued to be used until the late 1930s, mostly by West Point cadets for short-range artillery training. Munitions associated with training at Target Hill include large caliber HE and practice rounds. In addition, ammunition from the former rifle range at the North Athletic Field may exist in the area.

### **2.2.7 Seacoast Battery Munitions Response Site**

Seacoast Battery contained several gun positions and ammunition magazines and was established sometime between 1836 and 1850. Live firing was conducted from Seacoast Battery toward the bluffs on Constitution Island. Ammunition was stored also stored at the battery. Munitions used at Seacoast Battery included large caliber high explosive (HE) and practice rounds and mortars. Armament of the Seacoast Battery, from 1866 to when it was demolished during the World War II (WWII) era, included various sized rifles, Rodman guns, Parrott guns, and mortars. Munitions used at Seacoast Battery included large caliber HE and practice rounds and mortar rounds. The Seacoast Battery was considered well equipped for cadet training. The battery also included two brick buildings that contained instruments for measuring velocity of projectiles and recoil of guns. The shots were fired from the battery through parallel line wires at the west end of the

battery. West of the battery, a small stone structure set into the hillside was used as a bursting chamber in which explosives were tested. Several modifications in artillery and training occurred until sometime during WWII when the Seacoast Battery was demolished and the guns were turned into a scrap drive.

### **2.2.8 Siege Battery Munitions Response Site**

The Siege Battery was constructed in approximately 1845 on the site of Battery Sherburne at what is now called Trophy Point. Construction of the Siege Battery is believed to have destroyed all traces of Battery Sherburne. Activities that took place on the installation that are associated with Siege Battery include live firing conducted as well as the storage of ammunition. The Siege Battery firing point was located on top of the bluff, south of the North Dock area. The direction of fire was to the north toward targets anchored in the Hudson River and to the northwest toward the Crows Nest area, approximately 2,000 yards distant. In addition, target butts for a 1,000-yard Rifle Range were also located within the Siege Battery MRS.

Various munitions were used at Siege Battery including a 4½-inch rifled gun, 30-pounder Parrott guns, 10-inch smooth bore siege mortars, 8-inch smooth bore siege mortars, 5-inch steel breech-loading guns, 7-inch steel breech-loading howitzers, 7-inch steel breech-loading mortars, and 3.2-inch guns. The heavy ordnance at the battery could not be fired with full service charges because of the close range of the targets

There are no known impact areas within the Siege Battery MRS; however, projectiles that overshot the targets located in the Hudson River may have impacted into the Constitution Island portion of the MRS. Use of the Siege Battery ended between 1906 and 1910 when Battery Schofield came into service and was used for training with Parrott rifles.

The western portion of the Siege Battery MRS has been largely developed and includes roads, parking lots, various buildings, and the Lee Housing Area. Undeveloped areas within the site are steep, heavily-wooded terrain. The eastern portion of the MRS is located on Constitution Island and is undeveloped.

### **2.2.9 Target Hill Munitions Response Site**

Artillery firing toward Target Hill may have begun as early as the War of 1812 with rounds being fired into the hill from the Cold Spring Foundry located across the Hudson River. By 1890, the hill was used as target practice for batteries located along the north side of the installation. Target Hill continued to be used as an impact area until the late 1930s by West Point cadets for short-range artillery training. In 1903, 1,000 yard target butts were located on Target Hill. The firing point associated with these butts was located on Target Flats in the area of the North Athletic Field. Munitions associated with training at Target Hill include large caliber HE and practice rounds.

In 1940, a proposal was made to remove Target Hill and use it as fill dirt for the construction of a new athletic field on the West Point campus. The excavation and construction began in 1944 and was completed the following year. Approximately 60,000 square yards of level ground were added to the North Athletic Field. This resulted in the removal of the impact area known as Target Hill. There is a possibility that munitions-related materials in the area surrounding Target Hill were not excavated when the North Athletic Field construction occurred; however, no records of findings have been located.

### **2.2.10 Lusk Reservoir Munitions Response Site**

Guns were fired from the east side of Lusk Reservoir at targets located on Crows Nest in 1908, 1909, 1914, 1915, and 1916. The direction of fire was to the northwest from the firing point, which was located to the east of Lusk Reservoir and is the eastern terminus of the MRS. There are no known impact areas within the Lusk Reservoir MRS. The firing in 1915 and 1916 was described as sub-caliber and service target practice. Weapons used at Lusk Reservoir would be similar to those identified for use at the Artillery Firing Range and might include 2.95-inch Mountain Howitzers, 75mm gun M1897, 75mm gun M1907, 6-inch high capacity gun, 15-inch mortar, and 16-inch mortar.

The majority of the land within the Lusk Reservoir MRS is undeveloped and includes steep, heavily-wooded terrain. The western end of the site has been developed and includes a portion of the Grey Ghost Housing Area and West Point Elementary School.

### **2.2.11 Redoubt No. 2 Munitions Response Site**

For a two week period in 1915 and 1916, field artillery target practice with service ammunition was to be fired at targets on Crows Nest from a position near Redoubt No. 2. The direction of fire was to the north. It is assumed that weapons used at Redoubt No. 2 would be similar to those identified for use at the Artillery Firing Range and might include 2.95-inch Mountain Howitzers, 75mm gun M1897, 75mm gun M1907, 6-inch high capacity gun, 15-inch mortar, and 16-inch mortar. There are no known impact areas within the Redoubt No. 2 MRS.

The Redoubt No. 2 MRS is primarily undeveloped and encompasses steep, heavily-wooded terrain. Several roads cross the site and a few buildings are spaced intermittently throughout the site. The firing point of the range is located south of the Stony Lonesome Housing Area and adjacent to the historic Redoubt No. 2, which is a cultural site.

### **2.2.12 Michie Stadium Munitions Response Site**

The land on which Michie Stadium is located was acquired by West Point in the mid-1800s. The area was low-lying and undeveloped as of the late 1800s. When the site was selected for construction of the stadium, it was described as a wet, marshy area. Earth moving activities for the new stadium began in August 1923 with massive amounts of bedrock being removed from the southern edge of the Fort Putnam ridge because extensive filling was necessary to stabilize what had once been a low-lying, seasonally inundated area. The initial stadium, constructed in 1924, consisted of the football field and a broad u-shaped set of concrete stands on the western side.

The area surrounding Michie Stadium includes several athletic complexes including the Holleder Center, Howze Field, the Kimsey Athletic Center, and Randall Hall. During two separate construction projects completed around the stadium in 2001 and 2003, fourteen Stokes mortar rounds were identified and disposed by an Explosive Ordnance Disposal (EOD) unit or the Range Control Office at West Point.

Although several stokes mortars have been identified in the area around Michie Stadium, when or how the items were brought to the site is not known. Stokes mortars were used by the Army during World War I until just before the beginning of WWII. It is possible that the items were

discarded following training activities that may have occurred in the area or the items may have been brought to the site in the fill dirt that has been used during the construction of the stadium and surrounding structures.

## **2.3 PREVIOUS STUDIES AND INSPECTIONS OF THE SITE**

Investigations that occurred prior to the Remedial Investigation are presented below. Sections 2.3.1 through 2.3.4 discuss investigations that were completed prior to the initiation of the Military Munitions Response Program's Phase 3 Range/Site Inventory at West Point. The Phase 3 Range/Site Inventory for West Point was completed in August 2004 and is discussed in Section 2.3.5. The MMRP Site Inspection, completed in two phases, is described in Section 2.3.6. The Historical Records Review, completed in March 2006, is presented in Section 2.3.6.1 while the Site Inspection, completed in January 2007, is discussed in Section 2.3.6.2.

### **2.3.1 Artillery Firing Range, Fort Clinton, and the Siege Battery Munitions Response Sites**

Several investigations into UXO and MEC have been conducted in relation to the Crows Nest FUDS area, also referred to as Storm King State Park and Palisades Interstate Park. The UXO and MEC identified in the Crows Nest FUDS area could have been fired from several locations within West Point including the Artillery Firing Range, Fort Clinton West, and Siege Battery MRSs; therefore, it is anticipated that these MRSs could contain MEC and MC similar to those identified in the studies for the FUDS area.

In a 1994 survey of Crows Nest and the surrounding area, several types of UXO, including fuzed and fired ordnance, were identified. These UXO included a 2.25-inch projectile, a 15-inch mortar shell from the Civil War Era, and 75mm projectiles.

Following a fire in Palisades Park in August 1999, the area was closed to the public because of concerns over the presence of UXO. A Time Critical Removal Action was conducted from June through October 2000 at Palisades Park to clear trails, trailheads, firebreaks, and highway shoulders resulting in the onsite destruction of 23 UXO items. The items identified included 75mm ejection rounds, 75mm HE rounds, and 1907m Powder Train Time Fuzes. An ejection

round is a round that serves as a delivery mechanism for other munitions. A fuze controls the delivery of the contents which are expelled by an ejection charge.

In April 2001, a geophysical survey was conducted in an area near the Lee Gate entrance at West Point. The survey area extended from the north at the intersection of Highway 218 and Lee Road to the West Point Elementary School and the Keller Army Hospital at the southwest. The area is bounded on the northwest by Highway 218 and on the southeast by the Lee Family Housing Area. The area of this study covered portions of the Artillery Firing Range, Fort Clinton, and the Siege Battery MRSs. The survey identified 1,539 anomalies within the study area. The U.S. Army Engineering and Support Center in Huntsville, Alabama evaluated the data for the geophysical survey and recommended that West Point conduct sampling in the area to determine if the anomalies were ordnance related. No documents were located to indicate that this sampling was conducted.

A July 2002 Engineering Evaluation/Cost Analysis (EE/CA) provides additional information about the types of munitions used at the Artillery Firing Range. The EE/CA was developed for the Storm King site, which encompasses the entire Palisades Park adjacent to West Point and a New York Central Railroad easement. The scope of the EE/CA was to characterize the type, location, and distribution of ordnance and explosives and unexploded ordnance present within Palisades Park to the north and west of the Crows Nest area, within the boundary of West Point. The EE/CA summarizes the findings from other studies related to UXO and MEC that have been conducted in the Storm King and surrounding areas. During the EE/CA, a geophysical survey identified 7,165 anomalies that were investigated at the Storm King site. Of these anomalies, nine were 75mm projectiles (HE and shrapnel), one was a 6-inch MK 34 projectile, and 476 were ordnance-related scrap. The nature of the remaining anomalies was not identified in the supporting documentation.

### **2.3.2 Grey Ghost Housing Area Munitions Response Site**

A March 4, 1997 memorandum from the Chief of the Environmental Division at West Point indicated that four soil samples were collected from the Grey Ghost Housing Area. The analytical results for lead [ranging from 41 to 138 parts per million (ppm)] were below the allowable limit (400 ppm). However, there is no indication given as to the exact location of the

samples. The memorandum further states that “the construction of the Grey Ghost Housing Area, the site disturbance resulting from utility repairs since construction, the file search, and recent test results precludes a high probability of unexploded ordnance within this area.”

### **2.3.3 Lusk Reservoir Munitions Response Site**

The range fan for the Lusk Reservoir range encompasses the West Point Elementary School. In September 2000, a digital geophysical mapping project was conducted at the construction site for a gymnasium at the school. As a follow up to the geophysical study, an anomaly investigation and UXO removal was conducted in 2001. Three ordnance or ordnance-related items were identified at the site: a 6½-inch projectile, rifled; a portion of an 8-inch Parrott round; and a fragment from an 8-inch Parrott round. According to the report compiled following the study, “scouring and deformation on the rear of the 6½-inch projectile indicate it might have deflected at a shallow angle.” Also, the report stated the two 8-inch Parrott fragments appeared to fit together even though they were recovered over 75 feet apart. This may indicate that the projectile exploded in the area. Although the location from which these items were fired could not be determined, it is possible that the source could have been the firing point to the east of Lusk Reservoir.

### **2.3.4 Battery Knox-TD Land, North Athletic Field, Seacoast Battery, Target Hill, Redoubt No. 2, and Michie Stadium Munitions Response Sites**

No previous investigations have been conducted at the Battery Knox-TD Land MRS, North Athletic Field MRS, Seacoast Battery MRS, Target Hill MRS, Redoubt No. 2 MRS, and Michie Stadium MRS.

However, in June 1999, a UXO item identified as a 76mm M339, Armor Piercing-Tracer was found at the North Athletic Field MRS. This item was found during renovation of the bleachers of Shea Stadium. The item was buried; however, no other information regarding the location or condition of the item is available.

Additionally, during the construction of the Rugby Center at the Target Hill MRS, UXO technicians provided construction support. No evidence of UXO has been reported.

Furthermore, in April 1996, eight 105mm artillery casings and other small arms casings were found near Building 1245 located within Redoubt No. 2. The items were found by a work crew excavating fill dirt from around the building and were buried at a depth of several inches. An EOD unit picked up the items for disposal and determined that no other threat existed in the remainder of the fill. The items were heavily corroded and, according to EOD, did not present a hazard. No one involved with the incident had any knowledge that artillery casings had been disposed in the area.

During construction projects completed around Michie Stadium, fourteen stokes mortars have been identified and disposed by an EOD unit or the Range Control Office at West Point. During a seismic upgrade at Michie Stadium, five stokes mortars were found in the area. During the construction of Randall Hall, nine additional stokes mortars were found. According to the West Point construction project manager, the mortars found during the construction of Randall Hall were located at varying depths, with some being visible from the surface.

### **2.3.5 Final Closed, Transferring and Transferred Range/Site Inventory**

The MMRP's Phase 3 Range/Site Inventory was completed in August 2004. Persons preparing the inventory reviewed installation records, interviewed site personnel, and compiled risk assessment code scores for explosives safety risks for each range and unexploded ordnance or discarded military munitions sites. Twelve MRSs were identified at West Point during the Range/Site Inventory. Ten of these sites are closed MRSs located within the West Point installation boundary that include artillery batteries, small arms ranges, and artillery practice ranges. The two remaining MRSs are transferred sites that consist of the range fans and impact areas for artillery batteries that extend beyond the boundaries of the installation.

The Phase 3 Range/Site Inventory Report for West Point marks the completion of the Preliminary Assessment (PA) phase of work under CERCLA.

### **2.3.6 MMRP Site Inspection**

The SI was completed in two phases. The Historical Records Review was the initial step in the MMRP SI process and is discussed in Section 2.3.6.1, below. The primary goal of the review was to perform a records search to document historical and other known information for the

MRSs at West Point in order to supplement the information developed during the Range Inventory and to support the Technical Project Planning process. The information presented in the Historical Records Review helped to facilitate decision-making processes to determine the next steps to be taken in the SI process for the MRSs at West Point.

The second phase of the SI was the completion of field activities from April 24 through May 11, 2006, with a supplemental investigation in early September 2006. Field activities included visual surveys, geophysical surveys, and surface soil and sediment sampling. The SI is discussed in Section 2.3.6.2, below.

### **2.3.6.1 Final Historical Records Review**

In March 2006, TLI submitted the Final Historical Records Review to West Point and all stakeholders. The purpose of the review was to perform a records search to document historical and other known information for the MMRP sites at the installation. Based on the findings, five additional sites, including Lusk Reservoir, Redoubt No. 2, and Michie Stadium, were determined to be eligible munitions response sites under the Military Munitions Response Program. Three additional ranges were identified, but determined not to be MMRP-eligible.

The Battery Knox-TD site was identified in the Range Inventory as an 81 acres closed range extending east of the Battery Knox site across the Hudson River and on to the eastern shore. Based on additional research regarding the size of the range fan associated with Battery Knox, the fan that extends on to the eastern shore of the Hudson River was modified during the Historical Records Review process. Although limited information is available regarding the use of the battery, the size of the site was modified based on the topography of the eastern shore and the anticipated direction of fire from the battery.

The Grey Ghost Housing Area was identified in the Range Inventory as an 18 acre closed range located in the central campus area. The historical research indicated the machine gun, pistol and rifle ranges associated with this site were located to the north of the previously identified area. Firing from these ranges occurred to the south southwest and exceeded the extent of the area identified in the Range Inventory report; therefore, the Grey Ghost Housing Area was modified.

The North Athletic Field was identified in the Range Inventory as a MMRP-eligible site because fill dirt from the Target Hill area had been used to construct the complex. Therefore, the potential existed for artillery firing related MEC and MC to be located at the site. In addition, historical records reviewed for the Historical Records Review indicated that a rifle range was also located at this site from the early 1900s until the athletic field complex was built in the late 1930s.

### **2.3.6.2 Final Site Inspection**

A Site Inspection was conducted by TLI Solutions in 2006 with the final SI report being submitted in January 2007. The primary goal of the SI was to collect the necessary information to support one of the following munitions response site recommendations: (1) perform a remedial investigation/feasibility study; (2) perform an immediate response; or (3) no further action. Site Inspection field investigations included visual surveys; geophysical surveys at the Artillery Firing Range, Redoubt No. 2, Siege Battery, Target Hill, and North Athletic Field MRSs; and surface soil and sediment sampling. Supplemental field activities took place as a result of the identification of two data gaps from the initial field work. Two key properties comprising a portion of the Battery Knox-TD site had not been evaluated due to a lack of access being granted by the property owners and one of the samples collected at the Artillery Firing Range was located outside of the site boundary, in the operational range area. Table 2-1 presents the line miles completed at each site during the visual surveys. Table 2-2 portrays the line miles for the geophysical transects.

**Table 2-1: Line Miles Covered for Visual Surveys**

<b>MRS Name</b>	<b>Date</b>	<b>Total Line Miles</b>
Artillery Firing Range	April 25 & 26, and September 7, 2006	27.4
Battery Knox-TD	May 5 and September 7, 2006	25.4
Fort Clinton	April 25, 2006	10
Grey Ghost Housing Area	April 26, 2006	8.8
North Athletic Field	May 3, 2006	5.1
Seacoast Battery	May 1, 2006	4.4
Siege Battery	April 28 & 29 and May 1, 2006	39.8
Target Hill	April 27 & 28, 2006	4.4
Lusk Reservoir	April 27, 2006	14.5
Redoubt No. 2	May 3, 2006	9.5
Michie Stadium	April 26, 2006	2.2

**Table 2-2: Line Miles Covered for Geophysical Transects**

MRS Name	Date	Line Miles (miles / acre)
Artillery Firing Range	May 10, 2006	3.7 / 1.5
North Athletic Field	May 9, 2006	1.0 / .04
Siege Battery	May 11, 2006	2.7 / 1.1
Target Hill	May 9 & 11, 2006	1.2 / 0.5
Redoubt No. 2	May 8 & 10, 2006	2.0 / 0.8

Surface soil and sediment samples were collected from each site and analyzed for explosives, antimony, copper, iron, lead, mercury, potassium, and zinc. Samples were collected from the locations where MEC was identified, several locations where MD was identified during the visual survey, and known areas of interest such as firing points, and target areas. If no evidence of MEC or MD was present at a MRS, a minimum of one sample was collected. Table 2-3 provides information on the number and type of sample collected at each site.

**Table 2-3: Soil Samples Collected at West Point**

Site	Sample Collection Date	Number of Samples		QA/QC Sample	
		Surface Soil	Sediment	QC	QA
Artillery Firing Range	May 5 & 6 and September 7, 2006	6	3		
Battery Knox-TD	May 8 and September 7, 2006	4	5	1	1
Fort Clinton	May 4 & 5, 2006	2	1	1	1
Grey Ghost Housing Area	May 5, 2006	1	2		
North Athletic Field	May 4, 2006	1			
Seacoast Battery	May 1, 2006	1			
Siege Battery	May 1 & 4, 2006	7	1		
Target Hill	May 4, 2006	1			
Lusk Reservoir	May 4, 2006	1	1		
Redoubt No. 2	May 3, 2006	2		1	1
Michie Stadium	May 4, 2006	1			

Site Inspection findings indicated that:

- Munitions debris (MD) and geophysical anomalies were identified in the Artillery Firing Range MRS.
- There was no evidence of military munitions observed at the Battery Knox TD Land MRS.

- Numerous MD items and geophysical anomalies were identified in the Fort Clinton MRS.
- Several MD items were identified within the Grey Ghost Housing Area MRS including a 3-inch Stokes mortar round, fragments from other Stokes mortar rounds, and a fragment from a 37mm round. An EOD unit investigated the Stokes mortar round and determined that it was sand-filled. The EOD unit removed the item from the site and transported it to the operational range area for disposal.
- No evidence of military munitions was observed at the site during the visual survey at the North Athletic Field MRS; however, during a previous construction project at the site in June 1999, a UXO item identified as a 76mm M339, Armor Piercing-Tracer (AP-T) was found buried in the vicinity of Shea Stadium. Additionally, multiple geophysical anomalies have been detected.
- No evidence of military munitions was observed at the Seacoast Battery MRS; however, this site is in close proximity to the location where MD was identified within the Siege Battery MRS on Constitution Island.
- One MEC item, a 3-inch Stokes mortar round, was found within Siege Battery MRS. An EOD unit removed the item from the site and transported it to the operational range area where it was detonated. Numerous MD items were identified within the Constitution Island and the western portions of the site. Additionally, many geophysical anomalies have been detected.
- No evidence of military munitions was observed at the Target Hill MRS during the visual survey. However, the geophysical survey identified numerous.
- No evidence of military munitions was observed at the Lusk Reservoir MRS. However, two metal items were found, one of which was possibly a mold. It is uncertain if the items were related to military munitions. Additionally, three ordnance or ordnance-related items were identified at the site: a 6½-inch projectile, rifled; a portion of an 8-inch Parrott round; and a fragment from an 8-inch Parrott round during a previous investigation.
- No evidence of military munitions was observed at the Redoubt No. 2 MRS during the visual survey. However, eight 105mm artillery casings were previously found. An EOD unit picked up the items for disposal and determined that no other threat existed in the remainder of the fill. The items were heavily corroded and, according to EOD, did not present a hazard. No one involved with the incident had any knowledge that artillery casings had been disposed in the area. Furthermore, a previous geophysical survey identified many anomalies.
- No evidence of military munitions was observed at the Michie Stadium MRS. However, during previous construction projects, 14 Stokes mortar rounds were found during excavation around the stadium.



The Site Inspection report recommended further investigation of each of these sites. Table 2-4 presents the recommendations given in the SI report as well as the basis for the recommendations.



**Table 2-4: Site Inspection Recommendations**

MRS	Recommendation	Basis for Recommendation (MEC)	Basis for Recommendation (MC)
<p><b>Artillery Firing Range</b></p> <p>WSPT-001-R-01</p> <p>172.4 acres</p>	<p>It is <b>recommended that this site be further investigated for MEC.</b></p> <p><b>Further evaluation of MC is not warranted at this time</b> for this MRS; however, if further investigation of MEC identifies areas of concern, additional sampling may be required.</p>	<p>A subsurface anomaly density of 240 anomalies per acre was identified during the geophysical survey. In addition, a previous geophysical investigation identified subsurface anomalies in the northern end of this MRS.</p> <p>Although no MEC was identified during the visual survey, extensive MD was identified and the potential for MEC to be found in the area exists.</p>	<p>All explosives and metals concentrations were below the USEPA Region 9 PRGs, with the exception of iron, which is believed to be naturally occurring in the soils.</p>
<p><b>Battery Knox-TD – Land</b></p> <p>WSPT-004-R-02</p> <p>141 acres</p>	<p>This MRS encompasses the area on the eastern shore of the Hudson River within Putnam County.</p> <p>During the SI, no evidence of military activities, including MEC, was identified in the Battery Knox-TD – Land MRS nor were any MC identified in the samples at levels above the screening criteria. However, trace amount of explosives were identified in the samples. Because no explanation for the presence of these trace explosives can be determined at this time, the Stakeholders have requested that <b>further investigation of this site be performed, including additional soil sampling and possible geophysical investigation.</b></p>	<p>No MEC was identified within this MRS during the visual survey.</p>	<p>All explosives and metals concentrations were below the USEPA Region 9 PRGs, with the exception of iron, which is believed to be naturally occurring in the soils.</p>



MRS	Recommendation	Basis for Recommendation (MEC)	Basis for Recommendation (MC)
<p><b>Fort Clinton – West</b></p> <p>WSPT-008-R-01</p> <p>14.4 acres</p>	<p>This MRS extends from the western side of the West Point cemetery, through the Lee Housing Area to Highway 218 and the operational range area.</p> <p><b>It is recommended that this site be further investigated for MEC.</b></p> <p><b>Further evaluation of MC is not warranted at this time</b> for this MRS; however, if further investigation of MEC identifies areas of concern, additional sampling may be required.</p>	<p>A previous geophysical investigation identified subsurface anomalies in the northwestern end of this MRS.</p> <p>Although no MEC was identified during the visual survey, extensive MD was identified and the potential for MEC to be found in the area exists.</p>	<p>All explosives and metals concentrations were below the USEPA Region 9 PRGs, with the exception of iron, which is believed to be naturally occurring in the soils.</p>
<p><b>Grey Ghost Housing Area</b></p> <p>WSPT-010-R-01</p> <p>24 acres</p>	<p><b>It is recommended that this site be further investigated for MEC.</b></p> <p><b>Further evaluation of MC is not warranted at this time</b> for this MRS; however, if further investigation of MEC identifies areas of concern, additional sampling may be required.</p>	<p>Although no MEC was identified during the visual survey, MD (including a sand-filled, 3-inch Stokes mortar round) was identified and the potential for MEC to be found in the area exists.</p>	<p>All explosives and metals concentrations were below the USEPA Region 9 PRGs.</p>
<p><b>North Athletic Field</b></p> <p>WSPT-011-R-01</p> <p>14 acres</p>	<p>This site is <b>recommended for further investigation for MEC to include confirmation sampling of the anomalies identified during the geophysical survey.</b></p> <p><b>Further evaluation of MC is not warranted at this time</b> for this MRS; however, if further investigation of MEC identifies areas of concern, additional sampling may be required.</p>	<p>A subsurface anomaly density of 262 anomalies per acre was identified during the geophysical survey. Some of the anomalies may be related to fencing and underground utilities at the MRS. However, several anomalies are not associated with these items and it is difficult to determine if the anomalies are related to military munitions or other underground structures.</p> <p>During a previous construction project, one military munitions item was found during excavation at the site.</p>	<p>All explosives and metals concentrations were below the USEPA Region 9 PRGs.</p>



MRS	Recommendation	Basis for Recommendation (MEC)	Basis for Recommendation (MC)
<p><b>Seacoast Battery</b> WSPT-013-R-01  2 acres</p>	<p>It is <b>recommended that this site be further investigated for MEC.</b></p> <p><b>Further evaluation of MC is not warranted</b> at this time for this MRS; however, if further investigation of MEC identifies areas of concern, additional sampling may be required.</p>	<p>Although no evidence of munitions was identified within this MRS during the visual survey, the site is within close proximity to the location of MD identified within the Siege Battery MRS on Constitution Island.</p>	<p>All explosives and metals concentrations were below the USEPA Region 9 PRGs.</p>
<p><b>Siege Battery</b> WSPT-015-R-01  179 acres</p>	<p>It is <b>recommended that this site be further investigated for MEC.</b></p> <p>It is <b>recommended that this site be further investigated for MC.</b></p>	<p>A subsurface anomaly density of 361 anomalies per acre was identified during the geophysical survey. In addition, a previous geophysical investigation identified subsurface anomalies in the northwestern end of this MRS.</p> <p>One MEC item, a 3-inch Stokes mortar round, was identified during the visual survey on Constitution Island. In addition, extensive MD was identified throughout the MRS and the potential for MEC to be found in the area exists.</p>	<p>All explosives and metals concentrations were below the USEPA Region 9 PRGs, with the exception of iron. One exceedance of iron at the site is believed to be related to the presence of munitions fragments.</p>
<p><b>Target Hill</b> WSPT-017-R-01  14 acres</p>	<p>This site is <b>recommended for further investigation for MEC to include confirmation sampling of the anomalies identified during the geophysical survey.</b></p> <p><b>Further evaluation of MC is not warranted</b> at this time for this MRS; however, if further investigation of MEC identifies areas of concern, additional sampling may be required.</p>	<p>A subsurface anomaly density of 238 anomalies per acre was identified during the geophysical survey. Some of the anomalies may be related to fencing and underground utilities at the MRS. However, several anomalies are not associated with these items and it is difficult to determine if the anomalies are related to military munitions or other underground structures.</p>	<p>All explosives and metals concentrations were below the USEPA Region 9 PRGs.</p>



MRS	Recommendation	Basis for Recommendation (MEC)	Basis for Recommendation (MC)
<p><b>Lusk Reservoir</b>            WSPT-019-R-01            83 acres</p>	<p>It is <b>recommended that this site be further investigated for MEC.</b></p> <p><b>Further evaluation of MC is not warranted</b> at this time for this MRS; however, if further investigation of MEC identifies areas of concern, additional sampling may be required.</p>	<p>No MEC was identified within this MRS during the visual survey. However, during a previous anomaly investigation and UXO removal conducted in 2001, three ordnance or ordnance-related items were identified at the site within the northwest corner of this MRS.</p>	<p>All explosives and metals concentrations were below the USEPA Region 9 PRGs.</p>
<p><b>Redoubt No. 2</b>            WSPT-020-R-01            20 acres</p>	<p>It is recommended that this site be <b>further investigated for MEC.</b></p> <p><b>Further evaluation of MC is not warranted</b> at this time for this MRS; however, if further investigation of MEC identifies areas of concern, additional sampling may be required.</p>	<p>A subsurface anomaly density of 322 anomalies per acre was identified during the geophysical survey.</p> <p>Although no MEC or MD was observed during the visual survey, the potential for MEC to be found in the area exists.</p>	<p>All explosives and metals concentrations were below the USEPA Region 9 PRGs.</p>
<p><b>Michie Stadium</b>            WSPT-022-R-01            9.4 acres</p>	<p>It is recommended that this site be <b>further investigated for MEC</b> to determine the need to implement land use controls at the MRS, such as requiring construction support during all future excavation activities.</p> <p><b>Further evaluation of MC is not warranted</b> at this time for this MRS; however, if further investigation of MEC identifies areas of concern, additional sampling may be required.</p>	<p>No MEC or MD was found during the visual survey. However, during previous construction projects, 14 Stokes mortar rounds were found during excavation at the site.</p>	<p>All explosives and metals concentrations were below the USEPA Region 9 PRGs.</p>

The DoD proposed the Munitions Response Site Prioritization Protocol (MRSP) (32 Code of Federal Regulations Part 179) to assign a relative risk priority to each defense site in the MMRP Inventory for response activities. These response activities are based on the overall conditions at each Munitions Response Area (MRA) and MRS and consider various factors related to explosive safety and environmental hazards. The application of the MRSP applies to all locations:

- That are or were owned, leased to, or otherwise possessed or used by the DoD
- That are known to or are suspected of containing MEC or MC
- That are included in the MMRP Inventory

In assigning a relative priority for response activities, the DoD generally considers MRAs and MRSs posing the greatest hazard as being the highest priority. In accordance with the DoD MRSP Primer, each MRS is assigned an MRSP priority ranging from 1 to 8. Priority 1 indicates the highest potential hazard and priority 8 indicates the lowest potential hazard. Only a site with a chemical warfare hazard can receive an MRS priority of 1. The MRSP priority is determined by selecting the highest rating from among the Explosive Hazard Evaluation (EHE), Chemical Warfare Materiel (CWM) Hazard Evaluation (CHE), and Health Hazard Evaluation (HHE) modules. The EHE module assesses the presence of known or suspected explosive hazards. The CHE module provides an evaluation of the chemical hazards associated with the physiological effects of CWM. The HHE module provides a consistent DoD-wide approach for evaluating the relative risk to human health and the environment posed by contaminants (i.e., MC) present at an MRA. For example, if the EHE rating is 2, the CHE rating is 5, and the HHE rating is 4, the MRSP priority assigned would be 2. The MRSP priority will be used to determine the future funding sequence of MRAs and MRSs for further munitions response actions. Table 2-5 presents the MRSPs for each MRS.



**Table 2-5: Prioritization Protocol Priorities for each MRS**

MR Site	EHE Rating	Priority	CHE Rating	Priority	HHE Rating	Priority	MRS or Alternative Priority
Artillery Firing Range	D	5	No known or suspected CWM hazard		D	5	5
Battery Knox-TD – Land	G	8			D	5	5
Fort Clinton – West	C	4			E	6	4
Grey Ghost Housing Area	D	5			D	5	5
North Athletic Field	C	4			E	6	4
Seacoast Battery	C	4			E	6	4
Siege Battery	B	3	No known or suspected CWM hazard		D	5	3
Target Hill	D	5			G	8	5
Lusk Reservoir	D	5			D	5	5
Redoubt No. 2	C	4			E	6	4
Michie Stadium	D	5			G	8	5

### **3. COMMUNITY BACKGROUND**

#### **3.1 COMMUNITY PROFILE**

The 11 MRSs associated with West Point are located in Orange and Putnam Counties and near the Village of Cold Spring, Garrison, the Village of Highland Falls, and installation community at West Point in south-eastern New York. The following sections provide a brief overview of the counties and nearby communities.

##### **3.1.1 Orange County**

Orange County consists of 816.34 square miles and 16 municipalities. The county is located 40 miles north of New York City. Orange County was established in 1683 as one of the original counties of the Province of New York. The county name is derived from King William III of England who was a Prince of the House of Orange.

There are 17 public school districts located in Orange County. Higher education is represented by Orange County Community College, Mount Saint Mary College, State University of New York, and United States Military Academy at West Point.

The Orange County Park system includes the Orange County Arboretum, Thomas Bull Memorial Park, Algonquin Park, Cronomer Hill Park, D & H Canal Park, Heritage Trail, Kowawese Unique Area at Plum Point, Warwick County Park, Winding Hills Park, Brick House Museum, and Hill-Hold Museum. The county park system offers a number of programs: nature, school, and history programs; educator workshops; summer day camps; and festivals and special events.

Tourists and residents have a variety of activities available to them in Orange County: U.S. Military Academy, Carnegie Library, Washington's Headquarters State Historic Site, West Point Museum, Maybrook Railroad Museum, Oakland Valley Race Park, Ritz Theater, Playhouse at Museum Village, Downing Film Center, Lycian Centre, wineries, local farm markets, horse trails, boat cruises, bicycling, cross country skiing, skiing and snowboarding, golf courses, hunting grounds, and fishing.

Major employers in the area include the United States Military Academy at West Point, 105<sup>th</sup> Airlift Wing, St. Luke's Cornwall Hospital, Orange Regional Medical Center, Elant, Inc., State University of New York – Orange Campus, Empire Blue Cross/Blue Shield, and C & S Wholesale Grocers, Inc.

### **3.1.2 Putnam County**

Putnam County is located east of Orange County and consists of 246 square miles. There are six towns and three incorporated villages in Putnam County. The county was created in 1812 from part of Dutchess County. The county was named for General Israel Putnam, who commanded the defenders of the Hudson Highlands during the Revolutionary War. Carmel is the county seat. Putnam County is known for the West Point Foundry which was created to supply the domestic munitions industry since it was ideally located along the river for river transportation, utilized water power, and the iron ore was mined locally.

The county supports six public school districts and eight libraries. No colleges or other forms of higher education are available within Putnam County.

The Putnam County Parks and Recreation manages Veterans Memorial Park, Tilly Foster Farm Conservation Area, Michael Ciaiola Conservation Area, Fred Dill Wildlife Sanctuary, Donald B. Smith Conservation Area, Dixon Lake Conservation Area, and Putnam Bikepath. The county is also home to the Putnam County Bicycle Club, Coleman Memorial Park, Memorial Lake State Park, Middle Creek Wildlife Management Area, and Swatara State Park. The Town of Philipstown maintains Philipstown Park, which is located north of Garrison and on the eastern shore of the Hudson River directly across from West Point. In addition, the National Audubon Society manages the Constitution Marsh Audubon Center and Sanctuary, which is located in the lowlands adjacent to Constitution Island and south of the Village of Cold Spring.

Local sites include Chuang Yen Monastery, a Buddhist monastery; Donald J. Trump State Park; Thunder Ridge Ski Area, and Clarence Fahnestock State Park. Museums in Putnam County include the Putnam County Historical Society and Foundry School Museum, Carmel Historical Center, Putnam Valley Museum, Putnam Children's Discovery Center, and the Farmers Mills Schoolhouse.

Major employers in the area include the Putnam Hospital Center, Mahopac Central School District, County of Putnam, Brewster Central School District, Watson Laboratories, Inc., A&P (The Great Atlantic & Pacific Tea Co.), and PARC (Putnam Associated Resource Center).

### **3.1.3 Village of Cold Spring**

The Village of Cold Spring is located 50 miles north of Manhattan, occupying 0.6 square miles, within the Town of Philipstown in Putnam County. The population density is 133.4 persons per square mile (2000 U.S. Census). The Village of Cold Spring was founded in 1846 and enjoyed a booming economy with the success of the West Point Foundry, which became famous for manufacturing the Parrott Cannon and other munitions. The village includes a Downtown Historic District; the Mountain Avenue Cemetery, dating from the 1750's; the Putnam County Historical Society & Foundry School Museum; and is near Constitution Island, a National Historic Landmark that is part of the U.S. Military Academy and dates back to the Revolutionary War.

### **3.1.4 Garrison**

Garrison is a hamlet in Putnam County and a part of the Town of Philipstown across the Hudson River from the U.S. Military Academy at West Point. Garrison is home to many non-profit and cultural organizations; including the Garrison Institute, the Garrison Art Center, and national corporate headquarters of Outward Bound USA.

### **3.1.5 Village of Highland Falls**

The Village of Highland Falls is located in the Town of Highlands in Orange County, approximately 50 miles north of New York City. The Village of Highland Falls is bounded on the north and west by the U.S. Military Academy and on the east by the Hudson River. The village was founded in 1906 and has a total area of 1.1 square miles.

### **3.1.6 West Point**

Although not a county or township, West Point is a federal military reservation located north of the Village of Highland Falls in Orange County. In addition to the military academy, approximately 1,400 active duty soldiers are stationed at West Point along approximately 2,800

family members. The installation includes 18 family housing neighborhoods, which include schools, recreational facilities, and medical facilities.

### 3.1.7 Community Census Data

According to the 2000 U.S. Census, the following five tables present a demographic comparison of the residents who reside in Orange and Putnam Counties and the Village of Cold Spring, Village of Highland Falls, and West Point. Census data for the Town of Philipstown was used in the following tables in place of the Garrison data, which is unavailable.

**Table 3-1: Demographics Comparison of Site Area Residents – Population, Race, Age, 2000 U.S. Census**

	Village of Cold Spring	Town of Philipstown	Village of Highland Falls	West Point	Orange County	Putnam County
<b>Population</b>	1,983	9,422	3,678	7,138	341,367	95,745
<b>Race (Percent of Population)</b>						
• White	96.6%	95.6%	76.9%	82.3%	83.7%	93.9%
• Black/African American	0.5%	1.1%	12.8%	9.1%	8.1%	1.6%
• American Indian/Alaska Native	0.2%	0.1%	0.4%	0.5%	0.4%	0.1%
• Asian	1.1%	1.1%	2.2%	3.3%	1.5%	1.2%
• Native Hawaiian/Other Pacific Islander	0.0%	0.0%	0.2%	0.2%	0.0%	0.0%
• Some other race	0.5%	0.9%	3.8%	1.6%	4.1%	1.7%
<b>Hispanic/Latino (of any race) (% of Population)</b>	2.9%	3.8%	10.6%	6.6%	11.6%	6.2%
<b>Median Age (years)</b>	41.9	41.3	38.2	21.1	34.7	37.4

**Table 3-2: Demographics Comparison of Site Area Residents – Employment, 2000 U.S. Census**

	Village of Cold Spring	Town of Philipstown	Village of Highland Falls	West Point	Orange County	Putnam County
<b>Employment Status (Population 16 years and over)</b>	1,652	7,372	2,918	5,654	252,668	73,278
• Employed (Civilian labor force)	59.5%	64.6%	62.2%	16.1%	60.1%	66.8%
• Unemployed (Civilian labor force)	0.8%	3.2%	2.9%	0.6%	3.2%	2.4%
• Employed (Armed Forces)	0.0%	0.0%	1.6%	73.7%	1.9%	0.0%
• Not in labor force	39.7%	32.2%	33.2%	9.7%	34.8%	30.8%

**Table 3-3: Demographics Comparison of Site Area Residents – Occupation, 2000 U.S. Census**

	Village of Cold Spring	Town of Philipstown	Village of Highland Falls	West Point	Orange County	Putnam County
<b>Occupation</b> (Employed civilian population 16 years and over)	983	4,762	1,816	909	151,744	48,932
• Management, professional, and related occupations	50.2%	51.3%	35.4%	60.3%	33.2%	41.1%
• Service occupations	10.8%	10.5%	21.1%	12.8%	16.5%	13.9%
• Sales and office occupations	22.0%	22.6%	26.3%	21.2%	27.6%	26.1%
• Farming, fishing, and forestry occupations	0.4%	0.2%	0.3%	0.9%	0.4%	0.2%
• Construction, extraction, and maintenance occupations	10.4%	10.1%	8.7%	1.9%	10.2%	11.9%
• Production, transportation, and material moving occupations	6.3%	5.3%	8.2%	3%	12.1%	6.9%

**Table 3-4: Demographics Comparison of Site Area Residents – Educational Attainment, 2000 U.S. Census**

	Village of Cold Spring	Town of Philipstown	Village of Highland Falls	West Point	Orange County	Putnam County
Population 25 years and over	1,511	6,733	2,654	1,922	212,816	64,624
• Less than 9 <sup>th</sup> grade	2.0%	2.1%	5.0%	0.3%	5.6%	3.2%
• 9 <sup>th</sup> to 12 <sup>th</sup> grade, no diploma	5.5%	4.5%	9.6%	1.4%	12.5%	6.6%
• High school graduate (includes equivalency)	29.7%	23.7%	33.1%	5.7%	31.1%	28.1%
• Some college, no degree	18.0%	18.5%	23.0%	19.7%	20.1%	20.9%
• Associate degree	5.8%	7.7%	8.1%	10.5%	8.2%	7.2%
• Bachelor's degree	23.6%	23.9%	12.5%	20.4%	13.2%	19.8%
• Graduate or professional degree	15.4%	19.7%	8.8%	41.9%	9.4%	14.0%
• High school graduate or higher	92.5%	93.4%	85.4%	98.3%	81.8%	90.2%
• Bachelor's degree or higher	39.0%	43.6%	21.3%	62.3%	22.5%	33.9%

**Table 3-5: Demographics Comparison of Site Area Residents – Income and House Value, 2000 U.S. Census**

	Village of Cold Spring	Town of Philipstown	Village of Highland Falls	West Point	Orange County	Putnam County
<b>Families Income in 1999</b> (Households)	545	2,582	922	936	85,028	25,415
• Less than \$10,000	1.5%	2.0%	3.1%	1.4%	4.3%	1.7%
• \$10,000 to \$14,999	2.9%	1.3%	2.6%	1.4%	3.3%	1.3%
• \$15,000 to \$24,999	3.7%	3.1%	6.6%	5.1%	7.3%	3.7%
• \$25,000 to \$34,999	7.0%	5.9%	9.7%	8.3%	9.4%	6.0%
• \$35,000 to \$49,999	13.9%	9.0%	18.2%	20.3%	14.9%	9.6%
• \$50,000 to \$74,999	20.4%	22.4%	23.0%	32.9%	24.2%	22.5%
• \$75,000 to \$99,999	17.8%	19.4%	25.1%	16.1%	17.0%	18.9%
• \$100,000 to \$149,999	17.2%	21.1%	8.7%	12.8%	14.1%	23.5%
• \$150,000 to \$199,999	9.2%	7.2%	2.0%	1.6%	3.5%	7.7%
• \$200,000 or more	6.4%	8.6%	1.1%	0.0%	2.1%	5.2%
• Median family income	\$76,403	\$84,220	\$57,885	\$56,364	\$60,355	\$82,197
<b>House Value</b> (Specified owner-occupied units)	432	2,372	650	0	65,159	23,981
• Less than \$50,000	0.0%	1.1%	1.2%	0.0%	1.3%	0.2%
• \$50,000 to \$99,999	5.1%	1.6%	12.5%	0.0%	17.6%	2.6%
• \$100,000 to \$149,000	7.4%	9.4%	52.6%	0.0%	35.3%	16.2%
• \$150,000 to \$199,999	35.6%	29.3%	20.9%	0.0%	26.3%	28%
• \$200,000 to \$299,999	33.6%	30.9%	12.8%	0.0%	14.1%	36.8%
• \$300,000 to \$499,999	16.4%	17.5%	0.0%	0.0%	4.4%	13.4%
• \$500,000 to \$999,999	0.9%	7.6%	0.0%	0.0%	0.8%	2.5%
• \$1,000,000 or more	0.9%	2.6%	0.0%	0.0%	0.3%	0.3%
• Median	\$204,900	\$223,600	\$136,800	\$0	\$144,500	\$206,900

### 3.2 CHRONOLOGY OF COMMUNITY INVOLVEMENT

Public meetings were held during the SI under the MMRP in January 2006. These general informational meetings were held at the Julia L. Butterfield Memorial Library in Cold Spring and Highland Falls Public Library in Highland Falls. During the meetings, posters describing the activities conducted during the SI were available for the public to view. In addition, representatives from West Point, the U.S. Army Corps of Engineers, the U.S. Army Environmental Command, and the SI contractor were available to answer questions and discuss topics with the public. Attendance by the public at the meetings was limited to less than ten people.

### **3.3 KEY COMMUNITY CONCERNS**

At this time, there are no known key community concerns because no community interviews or public meetings have been conducted. Community interviews and public meetings will be held prior to the initiation of the RI field work (See Sections 4.2.1 and 4.2.3). This section will be updated with the key community concerns after the community interviews are conducted and initial public meeting is held.

### **3.4 RESPONSE TO COMMUNITY CONCERNS**

No public meetings have occurred at this time. Upon completion of the initial public meeting, the community concerns will be addressed appropriately.

### **3.5 SUMMARY OF COMMUNICATION NEEDS**

Required public communications needs will be established following the initial public meeting.

## 4. COMMUNITY RELATIONS PROGRAM

Public information objectives and activities have been developed to encourage public awareness and understanding of the remedial investigation at the 11 MRSs associated with West Point. Of these sites, 10 are located within the West Point installation boundary and several of these sites encompass military housing areas. The eleventh site is located to the east of the Hudson River, across from West Point and encompasses 11 privately owned parcels of land. The West Point/USACE community relations program is intended to ensure that local officials and interested persons are informed about activities taking place at West Point and have opportunities to provide input and ask questions about the investigation. To be effective, the community relations program must be formulated according to the community's need for information and its interest and willingness to participate in the community relations program during the remedial investigation process. As noted in Section 1.1, three community groups have been identified: West Point Installation community (individuals who live or work within the West Point installation); Battery Knox–TD Land MR site property owners (individuals/organizations that own property within the boundary of the Battery Knox–TD Land MR site; and community at-large (individuals/organizations that live or work within the communities surrounding West Point). Each of these groups will have specific community involvement needs and requirements, which will be addressed throughout this plan.

The overall goal of a community relations program is to promote two-way communication between residents and West Point/USACE, and to provide opportunities for meaningful and active involvement by the community during the environmental investigation of the MRSs at West Point. If a feasibility study, proposed plan, and remedial action are required, the community relations program may be revised to address those technical milestones. The following community relations program presents communication tools and techniques.

### 4.1 KEEP THE PUBLIC INFORMED AND UP TO DATE

#### 4.1.1 Designate a Spokesperson for the Project

**Objective** – Provide primary contact(s) for the public to communicate with West Point and USACE, and to ensure prompt, accurate, and consistent responses and information dissemination about the site.

**Method** – West Point maintains a Public Affairs Office to communicate installation affairs with the public and the news media. Both the U.S. Army Environmental Command and the Installation Management Command also maintain Public Affairs Offices. These offices will be contacted for input regarding community involvement activities; however, because the West Point Public Affairs Office has already established a rapport with the local community, it will be the primary office for public communication. It is paramount that the WESTON® Project Manager keeps the Public Affairs Office informed of the site’s remedial investigation schedule, technical procedures, revisions to the process, and any occurrence out of the ordinary.

Lieutenant Colonel (LTC) Brian Tribus is the Director of Public Affairs and Communication at the installation and the primary contact for the public and the news media regarding activities at the reservation. LTC Tribus and his staff will be prepared to respond to public and news media inquiries. If needed, technical personnel will be available to assist him in explaining the remedial investigation process and possible future environmental studies and actions for the 11 MRSs at West Point. The West Point Public Affairs Office will be integral in defining the community involvement requirements for each of the three West Point-related communities.

If the news media or members of the public have a question about WESTON as a company, those inquiries will be forwarded to Sean McGraw, WESTON’s Director of Government Affairs. Contact information for LTC Tribus and Mr. McGraw is provided in Appendix B.

**Timing** – WESTON will establish communication with the West Point Public Affairs Office prior to the initiation of any remedial investigation activities at West Point.

#### **4.1.2 Maintain Contact with Key Local Officials and Residents**

**Objective** – Identify and assess public perception of the remedial investigation activities at the site and the work being done by West Point/USACE and its contractor, WESTON.

**Method** – Prior to the remedial investigation, West Point/USACE will inform key local officials and residents of the upcoming environmental activities, solicit their perceptions, and introduce them to WESTON personnel. It is essential that key persons be regularly and fully informed of the site activities, findings, and developments. WESTON will work with the West Point Public

Affairs Office to maintain a Public Affairs mailing list of parties interested in receiving information regarding the remedial investigation (See Section 4.1.7, below).

Initial contact with the public will be done through various means as identified below:

**West Point Installation Community:** Announcements regarding the remedial investigation project will be posted in the West Point newspaper, *Pointer View*. In addition, information will be provided to residents through the Residential Communities Initiative weekly newsletter, which will outline the type of work to be completed within residential neighborhoods and the type of work to be completed.

**Battery Knox-TD Land Property Owners:** Letters will be sent directly to the Battery Know-TD Land property owners. At a minimum, the letters will provide the property owners with an overview of the remedial investigation to be conducted on the property, the schedule for completing work, and the process for the government to request right of entry to their property. In addition, the letters will invite the property owners to a meeting at which time additional topics will be discussed.

**Community At-large:** It is not anticipated that the community at-large will be impacted by the remedial investigation work at West Point or that the community will have interest in monitoring the progress of the remedial investigation. However, notices will be placed in the local newspapers to assess the community's level of interest.

**Timing** – West Point/USACE and WESTON will organize an introductory meeting with key local officials and residents prior to a public open house meeting. The introductory meeting(s) will occur before the remedial investigation field work begins. Additional information regarding the introductory meeting(s) is included in Section 4.2.2, below.

### **4.1.3 Establish and Maintain Information Repository and Administrative Record**

**Objective** – Provide a convenient location that residents can visit to read and photocopy official technical documents and other pertinent information about the remedial investigation.

**Method** – The information repository is a reference collection of remedial investigation information. Types of information to be included in the information include, but are not limited to the following:

- Work Plan
- Site Safety and Health Plan
- Quality Assurance Project Plan
- Community Relations Plan
- MMRP's Final Draft Munitions Response *Remedial Investigation/Feasibility Study Guidance*
- RAB and TAPP information
- Other project-specific information.

The Administrative Record contains the documents used to make the decision about the selection of a remedial action. Documents in the Administrative Record include, but are not limited to, the remedial investigation report, feasibility study, and proposed plan. The information repository and Administrative Record will be accessible to the physically challenged, will have photocopier facilities, and will be available to the public during normal business hours and at least some evening and/or weekend hours. It is anticipated that two Information Repositories will be established; one for the community of Garrison, NY and one for the on-post West Point community. It is not anticipated that the at-large community will require access the Administrative Record or Information Repository; however, if the public expresses an interest in reviewing the documents, additional repositories may be required.

**Timing** – The information repository and Administrative Record will be established prior to field work beginning for the remedial investigation. An information repository and Administrative Record will be established on the east and west sides of the Hudson River in proximity to West Point to facilitate access by the community. Suggested locations for the information repository and Administrative Record are provided in Appendix C.

#### **4.1.4 Prepare and Publish Public Notice of Availability of Administrative Record**

**Objective** – Announce to the public the availability of the Administrative Record in a major local newspaper of general circulation (National Contingency Plan 40 Code of Federal Regulations 300.81.815(a)).

**Method** – The newspaper advertisement or legal notice will be published in a local newspaper of general circulation such as the Highland Falls *The News of the Highlands*, *The Putnam County News and Recorder* and/or the West Point *Pointer View*.

**Timing** – The newspaper advertisement or legal notice will be published before field work for the remedial investigation begins.

#### **4.1.5 Prepare and Issue News Releases**

**Objective** – Inform the public at-large of technical accomplishments at the site.

**Method** – Prepared statements will be released to local newspapers, and radio and television stations to announce remedial investigation activities. The news releases will be mailed to the media list provided in Appendix B and placed in the site file at the information repository. News releases may also be posted on the reservation's website at <http://www.westpoint.edu/Dcomm/press.asp>. In addition, news releases will be included in the Residential Communities Initiative weekly newsletter sent to residents of West Point.

**Timing** – A news release will be prepared and issued at the completion of the remedial investigation field work. If there is a need for a feasibility study and proposed plan, a second news release will be issued upon the completion of the remedial investigation report and will describe the conclusions and recommendations presented in the report.

#### **4.1.6 Prepare and Distribute Fact Sheets**

**Objective** – Provide local officials, community leaders, residents, and other interested parties with current, accurate, easy-to-read, and easy-to-understand information about the remedial investigation.

**Method** – Fact sheets will be developed prior to the initiation of the remedial investigation and as key project milestones are completed. Fact sheets will be used during public meetings and will be included in mailings. The fact sheets will provide an overview of the progress of the remedial investigation. At the completion of the remedial investigation and if there is a need for a feasibility study and proposed plan, a fact sheet will be prepared. The fact sheet will summarize the remedial investigation report, describe its conclusions and recommendations, and present an overview of the upcoming process (feasibility study, proposed plan, and remedial action). Fact sheets will be mailed to all parties on the Public Affairs Office mailing list. Fact sheets will be mailed to residences located within the Munitions Response Sites and may be included in the Residential Communities Initiative weekly newsletter sent to residents of West Point. In addition, copies of the fact sheet(s) will be placed in the information repository and posted on the reservation’s website.

**Timing** – A fact sheet will be prepared and distributed prior to initiation of the remedial investigation and upon completion of key project milestones. In addition, upon completion of the remedial investigation report and if the report’s conclusions and recommendations warrant a feasibility study and proposed plan an additional fact sheet will be developed.

#### **4.1.7 Update Public Affairs Office Mailing List**

**Objective** – Facilitate the distribution of site-specific information to persons who need or want to be kept informed about the remedial investigation.

**Method** – The West Point’s Public Affairs Office maintains a mailing list of interested persons. WESTON will provide the Public Affairs Office with the list from the sign-in sheets of attendees at group meetings and public meetings so that the mailing list can be updated. In addition, individuals who contact WESTON in response to newspaper announcements will be added to the mailing list.

**Timing** – The Public Affairs Office will review and revise the mailing list prior to distribution of the fact sheet(s), if needed.

## **4.2 PROVIDE OPPORTUNITIES FOR PUBLIC INVOLVEMENT**

### **4.2.1 Conduct Community Interviews**

**Objective** – To conduct interviews with local officials, community leaders, landowners, and interested residents to determine public concerns and to learn how and when community members want to be involved in the remedial investigation process.

**Method** – Information will be solicited from the West Point Public Affairs Office regarding potential community members to be interviewed including, local officials, community leaders, and interested residents. In addition, residents within the Battery Knox-TD Land MRS will be contacted regarding their interest to participate in community interviews. Potential interview questions are included as Appendix D.

**Timing** – Community interviews will be conducted during the development of the technical approach for the remedial investigation field work to ensure that all community concerns are addressed.

### **4.2.2 Consider Forming a Restoration Advisory Board or Technical Review Committee**

**Objective** – To provide local residents with a meaningful way to become involved, and to provide West Point, USACE, and WESTON personnel with a viable means of learning citizens' concerns, perceptions, ideas, and information on the area.

**Method** – Assessment of the public's level of interest to form a RAB or TRC at the installation will be featured during the community interviews and at a public open house. In addition, if individuals call in response to public notices, they will be provided information regarding the process for forming a RAB. The public will be informed about the requirements and commitment associated with RABs and TRCs. West Point, USACE, and WESTON are also open to a third alternative, a site-specific community interest group, which will also be presented as an option during community interviews and the public open house. The flexibility of a relatively short-term, site-specific community interest group may be the opportunity the public prefers. The site-specific community interest group would meet informally with West Point, USACE, and WESTON for the duration of the remedial investigation. The group meetings

could continue if the results of the investigation warrant a feasibility study, proposed plan, and remedial action. If the level of community interest increases, a RAB or TRC may be formed.

**Timing** – Prior to field work for the remedial investigation beginning, West Point, USACE, and WESTON will solicit input from residents and local officials to ascertain the need for a community group.

#### **4.2.3 Hold Public Meeting/Open House**

**Objective** – Provide information to the community regarding remedial investigation activities and address community questions, concerns, ideas, and comments.

**Method** – Because of the various communities associated with West Point, public meetings may be required at several locations, including the installation for the West Point installation community and Garrison (east side of Hudson River) for the Battery Knox-TD Land property owners. In addition, if the community at-large expresses interest in the remedial investigation process, additional meetings may be required. Possible meeting locations are presented in Appendix E. West Point, USACE, and WESTON will schedule, prepare for, and participate in all announced public meetings. The format of public meetings may be in the traditional theatre-style, as an open house, or as a workshop. Organizers of the public meetings will provide at least two weeks notice to the public before each meeting.

**Timing** – A public meeting will occur before the field work for the remedial investigation begins. Additional public meetings will be scheduled as required.

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**Appendix A**

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## APPENDIX A – GLOSSARY

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<b>Administrative Record (AR)</b>	The body of documents that forms the basis for the selection of a particular response at a site. Documents that are included are relevant documents that were relied upon in selecting the response action as well as relevant documents that were considered but were ultimately rejected.
<b>Community Relations Plan</b>	The Community Relations Plan serves as the framework to establish a successful information exchange with the public during the environmental restoration process. The Community Relations Plan follows guidelines set forth under Comprehensive Environmental Response, Compensation, and Liability Act and Superfund Amendments and Reauthorization Act. Each plan must be tailored to fit the individual site and situation. The Community Relations Plan is not a static document and should be revised to reflect the development and progress of actions at the project.
<b>Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)</b>	Congress enacted CERCLA, commonly known as Superfund, on December 11, 1980. This law created a tax on the chemical and petroleum industries and provided broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment.
<b>Discarded Military Munitions (DMM)</b>	Military munitions that have been abandoned without proper disposal or removed from storage in a military magazine or other storage area for the purpose of disposal. The term does not include unexploded ordnance, military munitions that are being held for future use or planned disposal, or military munitions that have been properly disposed of, consistent with applicable environmental laws and regulations.
<b>Feasibility Study (FS)</b>	The feasibility study follows the remedial investigation. During the feasibility study, the remedial investigation data are analyzed and remedial alternatives are identified. The feasibility study serves as the mechanism for the development, screening, and detailed evaluation of alternative remedial actions.
<b>Incremental Sampling (IS)</b>	A sample collection and processing methodology having specific elements designed to control data variability due to heterogeneity in contaminant distribution.
<b>Inert</b>	An inert substance is one that is not generally reactive. This is a synonym for "inactive." Inert also means being unable to move or resist movement.

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<b>Information Repository</b>	A repository, generally located at libraries or other publicly accessible locations in or near the community affected by an environmental project, which contains accurate and up-to-date documents reflecting the ongoing environmental restoration activities.
<b>Lead</b>	One of the elements, a heavy, pliable, inelastic metal, having a bright, bluish color, but easily tarnished. It is used for tubes, sheets, bullets, etc. It is easily fusible and forms alloys with other metals, and is an ingredient of solder and type metal.
<b>Magnetometer</b>	A magnetometer is an instrument that can detect ferrous metal objects buried underground.
<b>Military Munitions Response Program (MMRP)</b>	The United States Congress established the Military Munitions Response Program under the Defense Environmental Restoration Program (DERP) to address unexploded ordnance, discarded military munitions, and munitions constituents located on current and former defense sites. MMRP eligible sites include other than operational ranges where unexploded ordnance, discarded military munitions, or munitions constituents are known or suspected. Properties classified as operational military ranges, permitted munitions disposal facilities, or operating munitions storage facilities are not eligible for the MMRP.
<b>Mortar</b>	A muzzle-loading, indirect fire weapon with either a rifled or smooth bore. It usually has a shorter range than a howitzer and employs a higher angle of fire. This gun has a tube with a length of 10 to 20 calibers.
<b>Munitions and Explosives of Concern (MEC)</b>	This term, which distinguishes specific categories of military munitions that may pose unique explosives safety risks, means unexploded ordnance, discarded military munitions, or munitions constituents (e.g., explosives) that are present in high enough concentrations to pose an explosive hazard.
<b>Munitions Constituents (MC)</b>	Any material originated from unexploded ordnance, discarded military munitions, or other military munitions, including explosive and nonexplosive materials, and emission, degradation, or breakdown elements of ordnance or munitions.
<b>Munitions Response Action</b>	Response actions, including investigation, removal actions, and remedial actions to address the explosives, human health, or environmental risks presented by unexploded ordnance, discarded military munitions, or munitions constituents or to support a determination that no removal or remedial action is required.

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<b>Munitions Response Area (MRA)</b>	Any area on a current or former defense site that is known or suspected to contain unexploded ordnance, discarded military munitions, or munitions constituents. Examples include former ranges and munitions burial areas. A munitions response area is composed of one or more munitions response sites.
<b>Munitions Response Site (MRS)</b>	A discrete location within a munitions response area that is known to require a munitions response.
<b>Mercury</b>	A metallic element that is a heavy, opaque, glistening liquid (commonly called quicksilver). It is used in barometers and thermometers, and certain types of ammunition.
<b>Ordnance</b>	Explosives, chemicals, pyrotechnics, and similar stores. Examples of ordnance are bombs, guns and ammunition, flares, smoke, or napalm.
<b>Projectile</b>	An object, such as a bullet or shell that is propelled from a weapon by an explosive propelling charge.
<b>Proposed Plan</b>	The proposed plan is a supplement of the remedial investigation/feasibility study and provides the public with the cleanup alternatives considered, the preferred alternative that meets the requirements of CERCLA, and an opportunity for the public to comment on the alternatives and participate in the selection of the remedial action.
<b>Range Fan</b>	A designated area of land in the shape of a fan that is or was formerly set aside, managed, and used for firing activities of the Department of Defense.
<b>Record of Decision (ROD)</b>	The record of decision is a public document that explains which alternatives will be used to clean up a Superfund site. The record of decision is created from information generated during the remedial investigation/feasibility study.
<b>Remedial Action</b>	An action consistent with the permanent remedy taken in the event of a release or a threatened release of a hazardous substance into the environment, to prevent or minimize the release of hazardous substances so that they do not migrate to cause substantial danger to present or future public health, welfare or the environment.
<b>Remedial Design</b>	A phase of remedial action that follows the remedial investigation/feasibility study and includes development of engineering drawings and specification for a site cleanup.

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<b>Remedial Investigation</b>	An in-depth study, designed to gather the data necessary to determine the nature and extent of known contamination at a site, assess risk to human health and the environment, and establish criteria for cleaning up the site
<b>Responsiveness Summary</b>	A formal written summary and response by the lead agency to public questions and comments. A responsiveness summary is prepared following a public meeting and public comment period about a proposed plan. The responsiveness summary may list and respond to each question, or summarize and respond to questions in categories.
<b>Superfund</b>	The commonly used term that describes the federal legislation authorizing the U.S. Environmental Protection Agency to investigate and respond to the release or threatened release of hazardous substances to the environment. The Superfund program outlines specific steps and actions for conducting a response to a release. The official term for Superfund is the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). In 1986, Superfund was reauthorized as the Superfund Amendments and Reauthorization Act.
<b>Superfund Site</b>	A Superfund site is an uncontrolled or abandoned place where hazardous waste is located, possibly affecting local ecosystems or people. Sites are listed on the National Priorities List (NPL) upon completion of Hazard Ranking System (HRS) screening, public solicitation of comments about the proposed site, and after all comments have been addressed.
<b>Transects</b>	Lines for ecological measurements; a strip of ground along which ecological measurements are made at regular intervals.
<b>Unexploded Ordnance (UXO)</b>	Military munitions that have been primed, fuzed, armed, or otherwise prepared for action; have been fired, dropped, launched, projected, or placed in manner that constitutes a hazard to operations, installation, personnel, or material; and remain unexploded either by malfunction, design, or any other cause.

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## **Appendix B**

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## APPENDIX B – KEY CONTACTS

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### B.1 FEDERAL AGENCY PROJECT REPRESENTATIVES

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Tom Meyer Project Manager U. S. Army Corps of Engineers, Baltimore District 10 South Howard Street Baltimore, MD 21201-1715	(410) 962-0032 E-mail: tom.meyer@usace.army.mil
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Brooke Conway USACE Design Team Leader U. S. Army Corps of Engineers, Baltimore District 10 South Howard Street Baltimore, MD 21201-1715	(410) 962-6805 E-mail: brooke.e.conway@usace.army.mil
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Douglas Scarborough Environmental Restoration Manager U.S. Army Environmental Command 5179 Hoadley Road Aberdeen Proving Ground, MD 21010-5401	(410) 436-1516 E-mail: douglas.scarborough@us.army.mil
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Bill Roach Remedial Project Manager U.S. EPA, Region 2 290 Broadway New York, NY 10017	(212) 637-4335 E-mail: Roach.bill@epa.gov
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### B.2 U.S. ARMY GARRISON - WEST POINT

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Colonel Michael J. Tarsa Garrison Commander Bldg. 681 U.S. Military Academy West Point, NY 10996	(845) 938-2022 E-mail: michael.tarsa@us.army.mil
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Jeff Sanborn Environmental Engineer United States Military Academy Environmental Engineering Branch ATTN: IMNE-MIL-PWE-M 667A Ruger Road West Point, NY 10996-1952	(845) 938-5041 E-mail: jeff.sanborn@usma.edu
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## B.2 WEST POINT (concluded)

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LTC Brian Tribus (845) 938-3808  
Director of Public Affairs and E-mail: brian.tribus@us.army.mil  
Communication  
United States Military Academy  
646 Swift Road  
West Point, NY 10996

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To be determined To be determined  
Chief of Community Relations E-mail: To be determined  
Public Affairs Office  
United States Military Academy  
646 Swift Road  
West Point, NY 10996

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## B.3 STATE AGENCY PROJECT REPRESENTATIVES

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Paul Patel (518) 402-8602  
Environmental Engineer E-mail: appatel@gw.dec.state.ny.us  
New York State Department of Conservation  
Division of Solid and Hazardous Materials  
625 Broadway  
Albany, NY 12233-7258

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## B.4 WESTON SOLUTIONS, INC. PROJECT REPRESENTATIVES

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Greg Daloisio, PMP (610) 701-3786  
Program Manager Fax: (610) 701-3187  
Weston Solutions, Inc. E-mail: G.Daloisio@westonsolutions.com  
1400 Weston Way, Building 4-2  
P.O. Box 2653  
West Chester, PA 19380

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John Gerhard (610) 701-3793  
Project Manager Fax: (610) 701-3187  
Weston Solutions, Inc. E-mail: John.Gerhard@westonsolutions.com  
1400 Weston Way, Building 4-2  
P.O. Box 2653  
West Chester, PA 19380

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*For news media inquiries about WESTON:* (202) 741-4813  
Sean McGraw Fax: (202) 741-4801  
Director of Government and International Relations E-mail: Sean.McGraw@westonsolutions.com  
Weston Solutions, Inc.  
1101 14<sup>th</sup> Street, NW, Suite 700  
Washington, DC 20005-5640



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## B.5 FEDERAL ELECTED OFFICIALS

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Kirsten Gillibrand (202) 224-4451  
U.S. Senator Fax: (202) 228-0282  
478 Russell Website: <http://gillibrand.senate.gov/>  
Washington, DC 20510

**District Office:** (518) 431-0120  
Kirsten Gillibrand Fax: (518) 431-0128  
U.S. Senator  
Leo W. O'Brien Federal Office Building  
1 Clinton Square, Room 821  
Albany, NY 12207

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Charles E. Schumer (202) 224-6542  
U.S. Senator Fax: (202) 228-3027  
313 Hart Senate Office Building Website: <http://schumer.senate.gov/>  
Washington, DC 20510

**District Office:** (518) 431-4070  
Charles E. Schumer Fax: (518) 431-4076  
U.S. Senator  
Leo W. O'Brien Federal Office Building  
1 Clinton Square, Room 420  
Albany, NY 12207

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Nan Hayworth (202) 225-5441  
U.S. Representative Fax: (202) 225-3289  
1440 Longworth HOB Website: <http://hayworth.house.gov/>  
Washington, DC 20515

**District Office:** (845) 291-4100  
Nan Hayworth Fax: (845) 291-4164  
U.S. Representative  
255 Main St., Suite 3232G  
Goshen, NY 10924

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## B.6 STATE ELECTED OFFICIALS

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Andrew Cuomo (518) 474-8390  
Governor, New York State Website: <http://www.state.ny.us/governor/>  
State Capital  
Albany, NY 12224

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## B.6 STATE ELECTED OFFICIALS (concluded)

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William J. Larkin, Jr. (518) 455-2770  
New York State Senator, District 39 E-mail: larkin@senate.state.ny.us  
Legislative Office Building Website: <http://www.nysenate.gov/senator/william-j-larkin-jr>  
Room 406  
Albany, NY 12247

**District Office:** (845) 567-1270  
William J. Larkin, Jr.  
New York State Senator, District 39  
1093 Little Britain Rd  
New Windsor, NY 12553

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Greg Ball (518) 455-3111  
New York State Senator, District 40 E-mail: gball@nysenate.gov  
817 Legislative Office Building Website: <http://www.nysenate.gov/senator/greg-ball>  
Albany, NY 12247

**District Office:** (845) 279-3773  
Greg Ball  
New York State Senator, District 40  
1441 Route 22, Suite 205  
Brewster, NY 10509

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Sandra R. Galef (518) 455-5348  
New York State Assembly, 90<sup>th</sup> District E-mail: GalefS@assembly.state.ny.us  
LOB 641 Website: <http://assembly.state.ny.us/mem/?ad=090>  
Albany, NY 12248

**District Office:** (914) 941-1111  
Sandra R. Galef  
New York State Assembly, 90<sup>th</sup> District  
2 Church Street  
Ossining, NY 10562

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Nancy Calhoun (518) 455-5441  
New York State Assembly, 96<sup>th</sup> District E-mail: CalhounN@assembly.state.ny.us  
LOB 525 Website: <http://assembly.state.ny.us/mem/?ad=096>  
Albany, NY 12248

**District Office:** (845) 567-3141  
Nancy Calhoun  
New York State Assembly, 96<sup>th</sup> District  
1012 Little Britain Rd., Suite 900  
New Windsor, NY 12553



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## B.7 ORANGE COUNTY OFFICIALS

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Hon. Edward A. Diana	(845) 291-2700
Orange County Executive	Fax: (845) 291-2724
255 Main Street	Email: ceoffice@co.orange.ny.us
Goshen, NY 10924	

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Roxanne Donnery	(845) 446-2368
Legislator	Email: Roxdon@aol.com
14 <sup>th</sup> Legislative District	
26 Kings Road	
Highland Falls, NY 10928	

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## B.8 PUTNAM COUNTY OFFICIALS

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Paul J. Eldridge	(845) 808-1001
Putnam County Executive	Fax: (845) 808-1901
Putnam County Office Building	
40 Gleneida Avenue, 3 <sup>rd</sup> Floor	
Carmel, NY 10512	

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Vincent Tamagna	(845) 225-8690
Legislature	E-mail: putcoleg@putnamcountyny.com
Legislative District 1	
40 Gleneida Avenue	
Carmel, NY 10512	

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## B.9 VILLAGE OF COLD SPRING OFFICIALS

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Seth J. Gallagher	(845) 265-3611
Mayor	Email: mayor@coldspringny.gov
Village of Cold Spring	
85 Main Street	
Cold Spring, NY 10516	

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Bruce D. Campbell	(845) 265-3611
Trustee	Email: trustee.campbell@coldspringny.gov
Village of Cold Spring	
85 Main Street	
Cold Spring, NY 10516	

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Airinhos Serradas	(845) 265-3611
Trustee	Email: trustee.serradas@coldspringny.gov
Village of Cold Spring	
85 Main Street	
Cold Spring, NY 10516	

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## B.9 VILLAGE OF COLD SPRING OFFICIALS (concluded)

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J. Ralph Falloon (845) 265-3611  
Trustee Email: trustee.falloon@coldspringny.gov  
Village of Cold Spring  
85 Main Street  
Cold Spring, NY 10516

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Charles E. Hustis III (845) 265-3611  
Trustee Email: trustee.hustis@coldspringny.gov  
Village of Cold Spring  
85 Main Street  
Cold Spring, NY 10516

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## B.10 GARRISON OFFICIALS

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No listing

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## B.11 VILLAGE OF HIGHLAND FALLS OFFICIALS

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Joseph E. D'Onofrio (845) 446-3400  
Mayor Email: mayorjoe@bestweb.net  
Village of Highland Falls  
303 Main Street  
Highland Falls, NY 10928

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## B.12 NEWS MEDIA

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*Times Herald-Record* (845) 341-1100  
40 Mulberry Street Email: estutz@th-record.com  
Middletown, NY 10940

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*The News of the Highlands* (845) 446-4519  
Main Street E-mail: reporter.news@verizon.com  
Highland Falls, NY 10928

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*The Putnam County News and Recorder* (845) 265-2468  
86 Main Street, P.O. Box 185 Email: editor@pcnr.com  
Cold Spring, NY 10516 Website: <http://www.pcnr.com/>

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WKDT 89.3FM Public Affairs Office (845) 938-3808-2006  
Directorate of Communications Email: 8pao@usma.edu  
Bldg. 671A, Benet Hall Website: <http://www.usma.army.mil/publicaffairs/wkdt.htm>  
West Point, NY 10516



## B.13 LOCAL ORGANIZATIONS

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Tim Sullivan	(845) 786-2701 ext. 246
Chief Park Ranger	Fax: (845) 786-2776
Palisades Interstate Park Commission	E-mail: <a href="mailto:mail@njpalisades.org">mail@njpalisades.org</a>
Administration Building	Website: <a href="http://www.njpalisades.org/pipc.htm">http://www.njpalisades.org/pipc.htm</a>
Bear Mountain, New York 10911-0427	

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**Appendix C**

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## APPENDIX C – SUGGESTED LOCATIONS FOR INFORMATION REPOSITORY/ADMINISTRATIVE RECORD

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U.S. Army Garrison - West Point  
Directorate of Public Works  
Environmental Division Website

<http://www.westpoint.edu/dhpw>  
(exact link to documents will be determined in  
conjunction with the installation POC)

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U.S. Military Academy Library  
Jefferson Hall  
758 Cullum Road  
West Point, NY 10996

(845) 938-8325  
Kent Laudeman, Vice Dean of Administration  
E-mail: [Kent.Laudeman@usma.edu](mailto:Kent.Laudeman@usma.edu)  
Website: <http://www.library.usma.edu>

Hours:  
Mon – Thu: 7 a.m. – 11:15 p.m.  
Fri – Sat: 7 a.m. – 9 p.m.  
Sunday: 1 p.m. – 11:15 p.m.

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Alice Curtis Desmond & Hamilton Fish  
Library  
472 Route 403  
PO Box 265  
Garrison, NY 10524

(845) 424-3020  
E-mail: [dflstaff@highlands.com](mailto:dflstaff@highlands.com)  
Website: <http://dfl.highlands.com>

Hours:  
Mon, Wed, Fri: 10 a.m. – 5 p.m.  
Tue, Thur: 2 p.m. – 9 p.m.  
Sat: 10 a.m. – 4 p.m.  
Sunday: Closed

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Julia L. Butterfield Memorial Library  
10 Morris Avenue  
Cold Spring, NY 10516

(845) 265-3040  
Gillian Thorpe, Library Director  
E-mail: [butterfd@gmail.com](mailto:butterfd@gmail.com)  
Website: <http://butterfieldlibrary.org>

Hours:  
Mon – Wed: 10 a.m. – 8 p.m.  
Thur – Sat: 10 a.m. – 5 p.m.  
Sunday: 12 p.m. – 3 p.m.

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Highland Falls Public Library  
289 Main Street  
Highland Falls, NY 10928

(845) 446-3113  
E-mail: [hfl@rcls.org](mailto:hfl@rcls.org)  
Website: <http://www.rcls.org/hfl/index.html>

Hours:

Mon, Wed – Fri: 10 a.m. – 5 p.m.

Tues: 10 a.m. – 7 p.m.

Sat: 10 a.m. – 2 p.m.

Sunday: Closed

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## **Appendix D**

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## **APPENDIX D – SUGGESTED WEST POINT COMMUNITY INTERVIEW QUESTIONS**

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The following questions for community interviews are based on information contained in the United States Environmental Protection Agency's (EPA) *Superfund Community Involvement Handbook* (EPA 540-K-01-003, April 2002) and EPA's *Superfund Community Involvement Toolkit* (EPA 540-K-01-004, September 2002).

1. How long have you lived in the area?
2. What is your relationship with the U.S. Army Garrison – West Point (West Point) (local official, interested citizen, resident, employee, etc.)?
3. This project is being conducted by the U.S. Army Corps of Engineers (USACE) – Baltimore District. Do you have any knowledge of or experience in dealing with USACE-Baltimore?
4. What do you know about the Munitions Response Sites (MRSs) associated with West Point?
5. What is the source of your knowledge regarding the MRSs at West Point?

Following these questions, it may be necessary to provide an overview of the Military Munitions Response Program, the West Point MRSs, and the remedial investigation of the MRSs to the interviewee.

6. What is your opinion about the MRSs at West Point (concerns regarding safety, environmental issues, limitations on access, etc.)?
7. Do you want additional information regarding the MRSs?
8. How would you like to receive this information?
9. As the organization managing this project, do you view USACE-Baltimore as a credible, trustworthy source of information?
10. What additional information would you like to know?

11. What concerns/fears do you have regarding the MRSs at West Point?
12. What concerns/fears do you think the general community may have regarding the MRSs at West Point?
13. Do you access any of the areas identified as MRSs? If yes, how do you use the sites (recreation, work, etc.)
14. Are you interested in being more involved in the remedial investigation process in any way beyond passively receiving information? For example, participating in a Restoration Advisory Board (RAB) or Technical Review Committee (TRC).
15. Do you think other members of the community would be interested in being more involved in the remedial investigation process?
16. How do you think community members would like to be involved (public meetings, RAB, TRC, other)?
17. Is there a local activist or special interest group that would be interested in these sites? Is this person/group viewed as more credible than West Point?
18. How much interaction would you like with West Point and the contractors conducting the remedial investigation?
19. Can you suggest anyone else in the community with whom we should speak?
20. How do you usually get information regarding public issues (newspapers, media, etc.)
21. What are the most popular newspaper, radio stations, and TV stations in the area?
22. Are there civic organizations/clubs that could be useful to disseminate information (through oral presentations, handouts, etc.)?
23. Are there any opportunities to teach children through school or youth group programs?

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## Appendix E

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## APPENDIX E – SUGGESTED LOCATIONS FOR PUBLIC MEETINGS

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### **West Point Community (Main Campus Sites)**

West Point Middle School  
705 Barry Road  
West Point, NY 10996  
(845) 938-2923

Public meetings will be scheduled/reserved by:  
Lieutenant Colonel Brian Tribus  
Director of Public Affairs and Communication  
U.S. Military Academy  
(845) 938-3808  
E-mail: To be determined

### **Garrison Community (Battery Knox-TD site)**

Alice Curtis Desmond & Hamilton Fish  
Library  
472 Route 403  
PO Box 265  
Garrison, NY 10524  
(845) 424-3020

### **Cold Spring Community (Constitution Island sites)**

Julia L. Butterfield Memory Library  
10 Morris Avenue  
Cold Spring, NY 10516  
(845) 265-3040

### **Highland Falls Community (Main Campus Sites)**

Highland Falls Public Library  
289 Main Street  
Highland Falls, NY 10928  
(845) 446-3113