# FINAL COMMUNITY RELATIONS PLAN

MILITARY MUNITIONS RESPONSE PROGRAM AND INSTALLATION RESTORATION PROGRAM REMEDIAL INVESTIGATION THROUGH DECISION DOCUMENT AT THE IONA ISLAND NAVAL AMMUNITION DEPOT FORMERLY USED DEFENSE SITE, ROCKLAND COUNTY, NEW YORK

# PREPARED FOR:

UNITED STATES ARMY CORPS OF ENGINEERS BALTIMORE DISTRICT
2 Hopkins Plaza, Baltimore, Maryland 21201
CONTRACT NO. W912DR-15-D-0014
TASK ORDER NO. W912DR18F0587

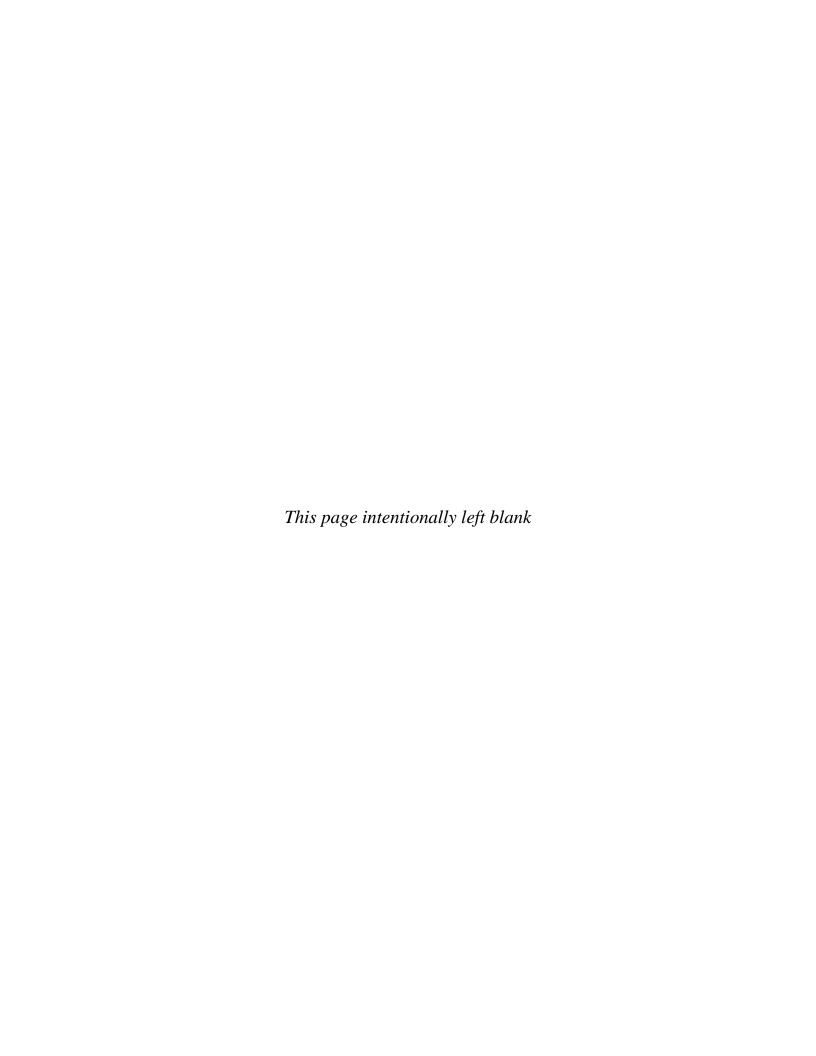


# PREPARED BY:

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC., PBC

225 Schilling Circle, Suite 400 Hunt Valley, Maryland 21031





#### **FINAL**

### COMMUNITY RELATIONS PLAN

MILITARY MUNITIONS RESPONSE PROGRAM AND INSTALLATION RESTORATION PROGRAM REMEDIAL INVESTIGATION THROUGH DECISION DOCUMENT AT THE IONA ISLAND NAVAL AMMUNITION DEPOT FORMERLY USED DEFENSE SITE, ROCKLAND COUNTY, NEW YORK

CONTRACT NO. W912DR-15-D-0014 TASK ORDER NO. W912DR18F0587

Prepared for

United States Army Corps of Engineers **Baltimore District** 2 Hopkins Plaza Baltimore, Maryland 21201

*Prepared by* 

EA Engineering, Science, and Technology, Inc., PBC 225 Schilling Circle, Suite 400 Hunt Valley, Maryland 21031 (410) 584-7000

3/25/2019 Date

Timothy Reese, P.E. Project Manager

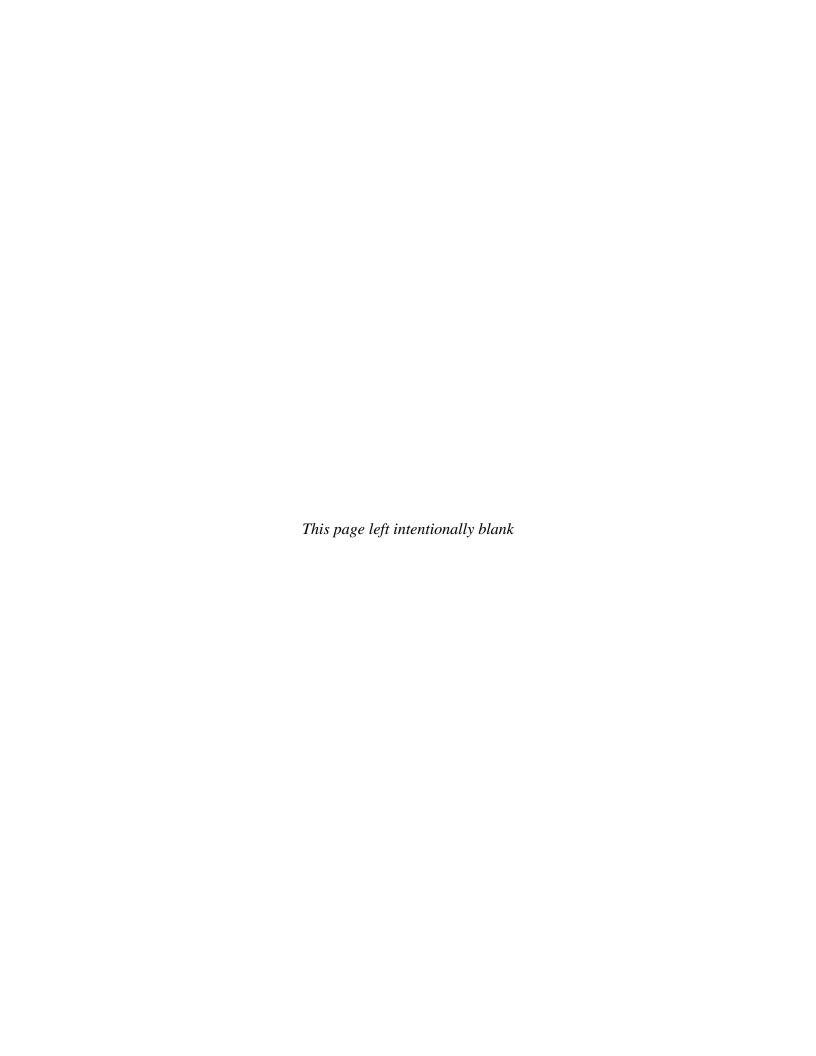
Brada Herman 3/25/2019

Brenda Herman, P.G., Senior Vice President

Date

Program Manager

EA Engineering, Science, and Technology, Inc., PBC prepared this report at the direction of the United States Army Corps of Engineers (USACE). This document should be used only with the approval of the USACE or another authorized Department of the Army official organization. This report is based, in part, on information provided in other documents and is subject to the limitations and qualifications presented in the referenced documents.



# TABLE OF CONTENTS

			<u>Page</u>
LIST	OF FIG	URES	iii
		BLES	
		RONYMS AND ABBREVIATIONS	
1.	INTR	ODUCTION	1-1
	1.1	OVERVIEW OF THE COMMUNITY RELATIONS PLAN	1-1
	1.2	DOCUMENT ORGANIZATION	1-3
2.	PROJ	ECT APPROACH	2-5
	2.1	SITE HISTORY	2-5
	2.2	SITE LOCATION AND PHYSICAL DESCRIPTION	
	2.3	CURRENT AND FUTURE LAND USE	
	2.3	HAZARDOUS WASTE SITE CLEANUP LAWS, REGULATIONS, AND	
	2.4	PROCESS	
		2.4.1 Identification of Relevant Hazardous Waste Site Cleanup Laws and	
		Regulations	2.7
		2.4.2 CERCLA Process.	
	2.5		2.10
	2.5	PREVIOUS INVESTIGATIONS	
	2.6	HUMAN AND ECOLOGICAL CONCERNS	2-11
		2.6.1 MEC Hazards	2-11
		2.6.2 HTRW Hazards	2-11
		2.6.3 Human Concerns	2-12
		2.6.4 Ecological Concerns	2-12
3.	COMI	MUNITY BACKGROUND	3-1
	3.1	COMMUNITY PROFILE	3-1
	3.2	COMMUNITY RELATIONS ACTIVITIES TO DATE	3-2
	3.3	COMMUNICATION NEEDS	
4.	COMI	MUNITY INVOLVEMENT PROGRAM	4-1
	4.1	COMMUNICATION METHODS AND TECHNIQUES	4-1
		4.1.1 Create, Maintain, and Update Mailing List	4-1
		4.1.2 Establish an Information Contact	
		4.1.3 Prepare Fact Sheets/News Releases	

Version: FINAL

Page ii
EA Engineering, Science, and Technology, Inc., PBC

March 2019

		4.1.4	Public Notices	4-2
			Information Repository/Administration Record	
		4.1.6	Stakeholder Meetings	4-2
		4.1.7	Public Comment Periods	4-2
		4.1.8	Public Meetings	4-3
		4.1.9	Restoration Advisory Board Assessments	4-3
			Discovery of Munitions or Suspected Munitions	
			Websites	
	4.2	COMN	MUNITY INVOLVEMENT PLAN SCHEDULE	4-4
5.	REFEI	RENCE	S	5-1
APF	PENDIX A	Λ:	STAKEHOLDER LIST	
APF	PENDIX B	3:	INFORMATION REPOSITORY IDENTIFICATION AND I	LOCATION
APF	PENDIX C	<b>:</b>	PROPOSED MEETING LOCATION	
APF	PENDIX D	<b>)</b> :	MEDIA RESOURCES	
APF	PENDIX E	Ξ:	FACT SHEET	

# LIST OF FIGURES

<u>Number</u>	<u>Title</u>
1-1	General Location of the Iona Island Naval Ammunition Depot Formerly Used Defense Site
2-1	Military Munitions Response Program - Remedial Investigation - Munitions Investigation Areas
2-2	Installation Restoration Program - Remedial Investigation - Areas of Concern
2-3	Iona Island and Round Island Wetland Resources

Page iv March 2019

# LIST OF TABLES

Number_	<u>Title</u>		
2-1	Summary of Previous Investigations at Iona Island Naval Ammunition Depot FUDS		
3-1	Major Industries in the Town of Stony Point		
4-1	Community Involvement Activities Associated with Remedial Investigation/Feasibility Study		

Page v March 2019

# LIST OF ACRONYMS AND ABBREVIATIONS

Alion Alion Science and Technology Corporation

CAS Communication assessment summary

CERCLA Comprehensive Environmental Response, Compensation, and Liability Act

COPC Contaminant of potential concern **CRP** Community Relations Plan

DD **Decision Document** 

**DERP** Defense Environmental Restoration Program

DoD Department of Defense

EA EA Engineering, Science, and Technology, Inc., PBC

**ERM Environmental Resource Mapper** 

FS Feasibility study

**FUDS** Formerly Used Defense Site

GSA General Services Administration

**HTRW** Hazardous, toxic, and radioactive waste

in. Inch(es)

**INPR Inventory Project Report** Interim risk management **IRM** 

Installation restoration program **IRP** 

MC Munitions constituents

**MEC** Munitions and explosives of concern Military munitions response program **MMRP** 

No date n.d. Number No.

NYSDEC New York State Department of Environmental Conservation

New York State Department of State NYSDOS

O&M Operation and maintenance

P.E. **Professional Engineer** P.G. **Professional Geologist** 

**PIPC** Palisades Interstate Park Commission

PP Proposed plan

Remedial action RA

Version: FINAL Page vi

March 2019

EA Engineering, Science, and Technology, Inc., PBC

# LIST OF ACRONYMS AND ABBREVIATIONS (continued)

RAB Restoration Advisory Board

RD Remedial design

RI Remedial investigation

SARA Superfund Amendments and Reauthorization Act

SI Site investigation

SVOC Semi-volatile organic compounds

TPP Technical project planning

USACE United States Army Corps of Engineers
USAGC United States Army Geospatial Center

USEPA United States Environmental Protection Agency

USFWS United States Fish and Wildlife Service

UST Underground storage tank

#### 1. INTRODUCTION

The U.S. Army Corps of Engineers (USACE) developed this Community Relations Plan (CRP) to encourage two-way communication between USACE and affected stakeholders during the Remedial Investigation (RI)/Feasibility Study (FS) through Decision Document (DD) at the Iona Island Naval Ammunition Depot Formerly Used Defense Site (FUDS), located in Stony Point, New York. USACE will use the community involvement activities outlined in this plan to ensure that those living or working near the site are continuously informed and provided opportunities to participate in the environmental restoration process. A brief history of the Iona Island Naval Ammunition Depot FUDS and the Navy's operations at this facility can be found in **Section 2.1** of this document.

This CRP has been prepared as part of its obligations under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Contingency Plan and in compliance with:

- USACE Engineer Manual 200-1-2, February 2016, Technical Project Planning Process
- USACE Engineer Pamphlet 1110-3-8, April 2004, Public Participation in the Defense Environmental Restoration Program for FUDS
- USACE Engineer Pamphlet 200-3-1, September 2011, Public Participation Requirements for Defense Environmental Restoration Program
- USACE Engineer Regulation 200-3-1, May 2004, Environmental Quality—Formerly Used Defense Sites Program Policy
- U.S. Environmental Protection Agency, January 2016, Superfund Community Involvement Handbook (United States Environmental Protection Agency [USEPA] 540-K-02-015).

### 1.1 OVERVIEW OF THE COMMUNITY RELATIONS PLAN

This CRP was developed for the ongoing RI/FS through DD (steps 2 and 3 of the CERCLA process, outlined in **Section 2.4.2**) and technical project planning process activities at the Iona Island Naval Ammunition Depot FUDS.

The Iona Island Naval Ammunition Depot FUDS consists of approximately 100 acres of land on Iona Island and Round Island in the town of Stony Point, Rockland County, New York (**Figure 1-1**). The RI/FS through DD investigation will primarily focus on the southeastern half of Iona Island and on Round Island, which is to the south of Iona Island, where historical records and previous investigations identified the potential for the presence of munitions and explosives of concern (MEC) and contaminants of potential concern (COPCs). Previous development on the islands was concentrated in the central and southern ends of Iona Island, and across Round Island. Structures built during the site's use as an ammunition depot were mostly located in the central

Page 1-2 March 2019

and southern end of Iona Island and on Round Island. Most of the structures have since been demolished; the remaining few structures are used by the current owner, Palisades Interstate Park Commission (PIPC), for storage (**Figure 2-2**). Iona Island was registered as a registered National Natural Landmark in 1974 and is currently closed to the public. The site is partially fenced, with limited access available through Bear Mountain State Park (Bluestone 2018b).

USACE will execute community involvement activities throughout the RI/FS through DD process to ensure all stakeholders (**Appendix A**) are provided timely and easy-to-understand information. USACE will allow stakeholders the opportunity to provide input during the decision-making process regarding future USACE activities at the Iona Island Naval Ammunition Depot FUDS. The following objectives and goals for community outreach have been identified:

- Ensure that stakeholders understand that personal, environmental, and property safety is of greatest concern when considering future remedial action (RA) alternatives
- Serve the community's information needs by keeping the property owner and other stakeholders informed in a timely manner of project activities and public involvement opportunities
- Provide a centralized point-of-contact for the community and media inquiries to aid in identification and response to community concerns
- Solicit community input throughout various phases of the investigation process to encourage/enable public involvement among stakeholders, including the public, elected and civic leaders, emergency responders, business leaders, and community representatives
- Document and address stakeholder and community concerns and expectations for the RI/FS through DD
- Provide a forum to facilitate community involvement through stakeholder and public meetings, media communication, and a website (if events warrant)
- Foster and maintain a climate of understanding and trust between stakeholders and USACE
  by explaining how stakeholders can participate in the RI/FS through DD process, how
  stakeholder comments are considered, what actions USACE plans to take, and how
  USACE reaches final decisions.

Community involvement efforts and updates to community outreach materials will continue as future developments or investigations take place.

USACE, New England District (USACE-New England District), is responsible for implementing the community involvement program at Iona Island Naval Ammunition Depot FUDS.

Contact information for the USACE-New England District Project Manager and Public Affairs Officer are listed below and in **Appendix A**.

March 2019

Erin Kirby
Project Manager
USACE-New England District
696 Virginia Road
Concord, MA 01742
Telephone: 978-318-8147

Email: Erin.Kirby@usace.army.mil

Timothy Dugan
 Public Affairs Specialist
 USACE-New England District
 696 Virginia Road
 Concord, MA 01742
 Telephone: 978-318-8238

Email: Timothy.J.Dugan@usace.army.mil.

#### 1.2 DOCUMENT ORGANIZATION

This CRP was developed to provide a clear statement of goals and objectives to guide the USACE community involvement activities. Section 1 provides an introduction to this report, an overview of the CRP including goals and objectives, centralized contact information for USACE, and a review of the document organization. Section 2 provides a brief history of the Iona Island Naval Ammunition Depot FUDS, its location, and its geography. Section 2 also describes current and future land use; human and ecological concerns; hazardous waste site laws and the regulatory process; and previous USACE investigations at the site. Section 3 presents an overview of the community, the history of the USACE community involvement, and communication needs. Section 4 discusses communications goals, methods and techniques, and outlines a community involvement schedule. Section 5 presents the references used to create this plan.

# Appendixes provided in this CRP include:

- Appendix A—Stakeholder List
- Appendix B—Information Repository Identification and Location
- Appendix C—Proposed Meeting Locations
- Appendix D—Media Resources
- Appendix E—Fact Sheet.

Version: FINAL Page 1-4

March 2019

EA Engineering, Science, and Technology, Inc., PBC

This page left intentionally blank

#### 2. PROJECT APPROACH

This Section provides a brief history of the Iona Island Naval Ammunition Depot FUDS, discusses its location and geography; examines human and ecological concerns; and describes hazardous waste cleanup laws and USACE's previous investigation activities.

### 2.1 SITE HISTORY

There is no documented evidence available of past use of ordnance-related items on Iona Island prior to 1900. In 1899, Iona Island was purchased by the United States from a brokerage company, and from 1900 to 1947 the Island was used by the United States Naval Department as an ammunition depot. The depot consisted of several buildings, loading docks, aboveground storage tanks, a sewage treatment plant, coal storage, an incinerator, and ammunition bunkers (Note: Figures 2-1 includes existing site features and building and Figure 2-2 includes a 1940 aerial as the base map and associated features). In 1942, the Department of the Navy acquired the adjacent Round Island for additional ammunition storage. A portion of land where Iona Island and Round Island meet was used a dump site. During Navy use, site activities reportedly included preparing, assembling, maintaining, inspecting, testing, and issuing ammunition, but did not include the manufacturing of ammunition. Munitions stored onsite included small arms, large caliber (up to 16" Naval rounds), aerial rocket (3.5-inch [in.] rocket aircraft Mk4, Folding Fin Aerial Rocket), hand grenades, flares, signals, and simulators (Alion Science and Technology Corporation [Alion] 2008). Due to its proximity to New York Harbor, Iona Island was a valuable supply point during World Wars I and II, providing ammunition for thousands of American and allied naval ships (USACE 1998).

In 1903, at least one 13-in. shell exploded in the central part of Iona Island, between Shell House Numbers (Nos.) 3 and 4 (Building Nos. 210 and 209) (**Figure 2-1**). Records indicate that at the time of the explosion Shell House Nos. 3 and 4 stored multiple types of ammunition, including 13-in. shells and 1-pounder, 6-pounder, and 6-in. ammunition. The explosion from the 13-in. shell triggered explosions in Shell House Nos. 3 and 4 (Building Nos. 210 and 209), which may have scattered munitions debris from the munitions stored in the Shell Houses across the blast radius. The blast radius is reported to be up to 1,250 feet from blast origin, extending beyond the property boundary to the east, south, and southwest (USACE 1998).

Documentation and interviews also indicate that ammunition may have been dropped into the Hudson River during loading operations; no documentation is available that indicates if these items were ever recovered (USACE 1998).

Use of Iona Island as an ammunition depot decreased after 1947, due to the development of more modern facilities and lack of room for expansion. In 1957 the Depot was excessed by the Navy, and Iona Island was transferred to the General Services Administration (GSA). The GSA used the site to stockpile materials such as rubber and copper until 1960, and to store records until 1965. In 1965, Iona Island and Round Island were conveyed to PIPC, under the restriction that the property be used for park purposes only (USACE 1998).

#### 2.2 SITE LOCATION AND PHYSICAL DESCRIPTION

The Iona Island Naval Ammunition Depot FUDS is a property of approximately 100 acres of land on Iona Island and Round Island in the town of Stony Point, Rockland County, New York (**Figure 1-1**). Iona Island and Round Island lie on the western bank of the Hudson River. The two islands are connected by a fill area believed to be building demolition debris, and the site is connected to the mainland by a narrow two-lane road that runs through Bear Mountain State Park (Alion 2008). The site is located approximately 45 miles upstream of the mouth of the Hudson River and 7 miles south of West Point Military Academy. Camp Smith and the City of Peekskill, New York, are located approximately 2 miles southwest from the site, on the eastern shore of the Hudson River.

#### 2.3 CURRENT AND FUTURE LAND USE

Iona Island and Round Island are currently under the administration of the PIPC, and the staff of Bear Mountain State Park maintains the former Iona Island Naval Ammunition Depot. PIPC uses the remaining onsite buildings for storage, but the site's primary use is as a wildlife reserve. In 1974, Iona Island was designated as a National Natural Landmark with the National Park Service. The former Iona Island Naval Ammunition Depot is part of the Hudson River National Estuarine Research Reserve and Significant Coastal Fish and Wildlife Area (Alion 2008). The Island is also included as part of the Iona Island/Doodletown Bird Conservation Area (BCA), under the New York Department of Environmental Conservation's (NYSDEC) BCA Program (NYSDEC no date [n.d.] in press a). The site and marshlands are closed to the public; however, NYSDEC has published the locations of several overlooks and hosts limited canoe tours of the marsh for the public to view Iona Island wildlife (NYSDEC n.d.in press b).

Shortly after the Iona Island Naval Ammunition Depot property was transferred from GSA to PIPC, several preliminary plans for development of a recreational area on Iona Island were produced that included plans for parking lots, bathhouses, wading pools, softball fields, a museum, bike/walking trails, and a marina (Arnold H. Vollmer Associates 1959, Clarke and Rapuano, Inc. 1966 and 1969). The 1966 plans also included demolition plans for the Island's existing buildings (Clark and Rapuano, Inc. 1969). In 2018, an historical aerial photograph study was performed by the United States Army Geospatial Center (USAGC) for the USACE, which indicated that the demolition plans were implemented and completed between 1965 and 1974 (USAGC 2018). No additional construction activities have taken place on Iona Island since then, except for the installation of small parking areas outside the FUDS boundary (Alion 2008). As of 2018, there are no plans to alter the site's current use, nor are there any plans for construction or redevelopment of the site for the foreseeable future. However, it is possible that existing structures may be renovated or improved in the future (Bluestone 2018a).

### 2.4 HAZARDOUS WASTE SITE CLEANUP LAWS, REGULATIONS, AND PROCESS

# 2.4.1 Identification of Relevant Hazardous Waste Site Cleanup Laws and Regulations

The environmental hazards identified at Iona Island Naval Ammunition Depot FUDS include both MEC and hazardous, toxic, and radioactive waste (HTRW) hazards. Environmental restoration activities for these two types of hazards will be conducted under the Military Munitions Response Program (MMRP) and the Installation Restoration Program (IRP), respectively. MMRP and IRP (also known as HTRW) restoration processes both follow the CERCLA cleanup process. Descriptions of these and other relevant hazardous waste cleanup laws and regulations are described below.

#### 2.4.1.1 CERCLA

CERCLA was passed into law in 1980 to provide broad federal authority to identify and respond directly to releases or potential releases of hazardous substances that may endanger public or environmental health. This law is commonly referred to as Superfund. CERCLA was later amended in 1986 by the Superfund Amendments and Reauthorization Act (SARA).

The Superfund legislation also established prohibitions and requirements concerning closed and abandoned hazardous waste sites and provided for the liability of persons and businesses responsible for releases of hazardous substances at those sites. When no responsible party can be identified, cleanup is provided by the United States Government. SARA additionally provides procedures for increasing public participation during all phases of response actions and requires the establishment of Information Repositories and Administrative Records (USEPA 2018).

Superfund authorizes the execution of two kinds of environmental response actions: removal actions and remedial actions. Removal actions, which are typically short-term response actions, may be executed to eliminate immediate risks, such as hazardous material releases or the threat of potential releases, which require a prompt response. Remedial actions permanently and significantly reduce the risks associated with releases or threats of releases of hazardous substances. Remedial actions are not necessarily time critical and are typically implemented using the CERCLA process described in Section 2.5.2 (USEPA 2018).

Removal actions may occur any time during the CERCLA process and fall into three categories based on the timeframe in which the removal action must be initiated. The three categories of removal action are: (1) Emergency Removal Action, (2) Time Critical Removal Action, and (3) Non-Time Critical Removal Action. Non-Time Critical Removal Actions follow an abbreviated version of the CERCLA design and implementation process, including a public review and comment period prior to the removal action. Successful completion of a Removal Action does not complete the CERCLA process. Instead, upon completion of a Removal Action, the site will continue through the CERCLA remedial response process until regulatory approval for site closure is achieved.

March 2019

# 2.4.1.2 Defense Environmental Restoration Program and the Formerly Used Defense Site Program

Section 211 of SARA established the Defense Environmental Restoration Program (DERP). This program gives the Department of Defense (DoD) the authority, responsibility, and funding mechanisms for environmental restoration at active military facilities as well as formerly used military installations. Under the DERP, the DoD is responsible for environmental restoration of properties that were formerly owned by, leased to, or otherwise possessed by the United States and under jurisdiction of the Secretary of Defense. Such properties are known as FUDS. The U.S. Army is the executive agent for the FUDS program, and USACE is the organization that manages and directs the program's administration.

The goals of the FUDS program are to reduce the risk to human health and the environment through the implementation of effective, legally compliant, and cost-effective response actions, and to implement final remedies when the situation warrants. Those remedies include the following: detecting, removing, and disposing of chemical warfare materials, ordnance, and explosives; identifying, investigating, and cleaning up HTRW contamination that is a result of the DoD's use of the land; and demolishing and removing unsafe buildings, structures, and debris resulting from past DoD operations.

# 2.4.1.3 Military Munitions Response Program

USACE is also the executing agent for the FUDS MMRP, which the DoD established in 2001 to address FUDS that have military munitions. The MMRP addresses unexploded ordnance, discarded military munitions, and munitions constituents (MC) located on FUDS and current sites.

# 2.4.1.4 Installation Restoration Program

The IRP was established by the DoD in 1975 as component of the DERP to address the potential dangers resulting from the past handling or disposal of hazardous materials at DoD installations. The IRP establishes a structured program to identify, evaluate, and cleanup sites for which the DoD is responsible for the release of hazardous substances to the environment. The IRP cleanup process is consistent with the CERCLA cleanup process established by the USEPA.

#### 2.4.2 CERCLA Process

The DoD conducts the investigation and cleanup of FUDS properties under the MMRP and the IRP in accordance with CERCLA. The CERCLA process includes a five-phase series of activities, several of which are designed to involve the public in the decision-making process. Activities associated with each phase are described below:

1. **Preliminary Assessment/Site Inspection:** The purpose of this phase is to identify the presence of military munitions and/or contaminants at a former DoD site and assess the potential threat to public health or the environment posed by those hazards. A Preliminary Assessment is conducted by collecting available property information and conducting a

Version: FINAL Page 2-9 March 2019

property visit to evaluate the potential issues or concerns at a site; findings are presented in an Inventory Project Report. If necessary, USACE will conduct a Site Inspection (SI) to collect additional site-specific data and perform limited environmental investigations to confirm the presence of military munitions and/or contaminants. Following the SI, a determination may be made regarding the need for a removal response.

- 2. **RI/FS:** USACE conducts an RI to characterize the nature and threat posed by the military munitions and/or COPC identified during the SI. Results from the RI are used to assess the risk posed to human health, safety or the environment. If the investigation finds that the level of contaminants at a site do not pose an unacceptable risk, a No Further Action DD may be developed and the CERCLA process would be completed upon regulatory acceptable of that document. However, if investigation indicates that site hazards do pose an unacceptable risk, USACE will proceed with the CERCLA process and conduct an FS to identify, develop, and evaluate remedial alternatives appropriate to the site and risks it poses.
- 3. **Proposed Plan and DD:** The Proposed Plan (PP) is developed to summarize the cleanup alternatives evaluated in the FS and identify the preferred cleanup method. The PP will be made available to the public for a 30-day formal comment period. Following evaluation of the public comments, a DD will be prepared detailing the selected remedy. This document will also include a responsiveness summary presenting public concerns about the site and preferences regarding the cleanup alternatives, and how those concerns and preferences were addressed in the remedy selection process.
- 4. Remedial Design/Remedial Action: USACE designs and develops engineering, safety, and contract documents for the selected Remedial Action. The Remedial Design (RD) phase may also include treatability studies, which are used to evaluate the application of a treatment technology to the site-specific conditions. RD documents are reviewed at multiple intervals throughout the design process by regulatory agencies for consistency with the selected remedy and for compliance with applicable regulations. If the selected remedy requires long-term operation and maintenance (O&M), an O&M manual is drafted during the RD phase, and is completed at the end of the RA phase. Following regulatory approval of the final RD, a construction contractor is selected using federal construction contracting procedures. The selected contractor is responsible for using the RD to produce planning documents and implement RA construction in close coordination with USACE and regulatory agencies. Construction activities performed and all documentation associated with Remedial Action construction is summarized in a Construction Completion report. Following construction, a final inspection is performed by USACE and regulatory agencies to confirm the remedy is operational and functioning in accordance with the DD.
- 5. **Response Complete/Project Closeout**: Following completion of Remedial Action construction, USACE may provide long-term management and/or O&M of the remedy to ensure a remedy is meeting its cleanup objective and remains protective of human health and the environment. Once cleanup objectives are met, a closeout decision is made in consultation with regulatory agencies and the public.

# 2.5 PREVIOUS INVESTIGATIONS

An overview of previous environmental studies conducted at Iona Island Naval Ammunition Depot FUDS is presented in **Table 2-1**.

Table 2-1 Summary of Previous Investigations at Iona Island Naval Ammunition Depot FUDS

₹7	Navai Ammuniuon Depot FODS			
Year	Investigation	Summary		
1992	Preliminary Assessment	USACE performed an initial site visit and produced a Preliminary Assessment, which identified the potential for groundwater and soil contamination near former buildings, aboveground storage tanks, paint and coal storage, dump area, and incinerator locations based on historical use (Bluestone 2017a).		
1995	Inventory Project Report (INPR)	USACE uses an Inventory Project Report to determine FUDS eligibility. USACE-New York District prepared an INPR in 1995 using information collected in the 1992 Preliminary Assessment. The Site was determined to be eligible for the DERP-FUDS program. Additionally, possible evidence of HTRW and ordnance and explosive waste that may be eligible for cleanup under DERP-FUDS at the site was identified. The site was given a Remedial Assessment Code score of 3 out of 5 (medium priority), and further investigation was recommended for all three types of waste (USACE 1998).		
1995	Revised Site Summary Sheet	A Site Summary Sheet describing potential HTRW project locations was included in the INPR. The majority of locations listed were the locations of former structures and buildings. A Revised Site Summary Sheet was produced in 1995 listing several remaining structures as beneficially used by the present owner (Bluestone 2017a).		
1996	HTRW Data Collection Activities	USACE contractor (Greeley-Polhemus Group, Inc. and Smith Technology Corporation) conducted surface soil sampling at AOCs identified by USACE. Metals, semi-volatile organic compounds (SVOCs), and polychlorinated biphenyls were identified in samples; metals were determined to be the primary contaminant of environmental concern. The report recommended a site risk evaluation and additional sampling to further delineate metals and SVOCs contamination (Greeley-Polhemus Group, Inc. 1997).		
1997	Archive Search Report	An Archives Search Report is a comprehensive records search on the site to obtain a thorough understanding of the activities that took place at the site. USACE completed an Archive Search Report documenting archival information and interviews with site personnel. USACE also performed a site visit; no hazards were discovered during the inspection. Further action with respect to ordnance was recommended due to the Site's storage of large munitions, potential contamination from the 1903, and historical munitions findings (USACE 1998).		
2007	MMRP SI	USACE contractor (Alion Science and Technology Corporation and EA (subcontractor) conducted an MMRP SI, which included sampling for MC and a qualitative site reconnaissance. The site reconnaissance was performed at low tide along the shoreline near former dock areas and the Dumping Area; no munitions debris or MEC were observed. Potential human and ecological risks from MC were identified in sediment samples. The Final SI Report recommended further action (RI/FS) for both MEC and MC (Alion 2008).		
2011	Underground Storage Tank (UST) Removal	USACE contractor (Green Seal Environmental, Inc.) conducted a geophysical survey to identify and remove USTs. Two USTs were identified and removed. Based on the condition of the USTs and the results of the confirmation soil sampling, soil remediation was not required (Green Seal 2012).		

Year	Investigation	Summary
2017	FUDS Interim Risk Management (IRM) Communication Assessment Summary (CAS)	USACE prepared a FUDS Interim Risk Management Communication Assessment Summary to assess whether additional public safety outreach is necessary. USACE concluded that landowner notification letters were sufficient; one landowner notification letter with a project safety guide was mailed, no calls were received by the toll-free information center (USACE 2017)
2018	Historical Photographic Analysis	The U.S. Army Geospatial Center performed a Historical Photographic Analysis of the Former Iona Island Naval Ammunition Depot FUDS on behalf of USACE New England and Baltimore Districts. Historical aerial photography, documents (including text, tables, photographs, and maps), design drawings, and disposal data from 1931 to the present was used to identify years of construction, use, and type of HTRW activities associated with former buildings and areas of concern, identify the location and extent of historical disposal sites, and identify the footprint of the 1903 explosion, if possible. Data generated during the analysis is summarized in a September 2018 report and is compiled in a Geographic Information System package (USAGC 2018).

### 2.6 HUMAN AND ECOLOGICAL CONCERNS

Historical documentation and data from previous investigations indicate that MEC and HTRW may be present at the Iona Island Naval Ammunition Depot FUDS. The Archives Search Report and MMRP Site Investigation suggest that any MEC found on the Site would be the result of historical ammunition handling, storage, and disposal, or a result of the 1903 explosion. HTRW hazards, however, are more likely to be associated with facilities or historical processes during the site's commission as an ammunition depot. These facilities and processes include a paint and oil storage building; incinerator; several former garage buildings; sewage disposal plant; public works office; tin, electrical, and annealing shop; paint and pipe shop; power house; several above ground and underground storage tanks; and a dump area in addition to activities related to storage and assembly of munitions. Metals and SVOCs are the primary COPC associated with such HTRW hazards, along with COPCs that have been identified based on previous analytical results and/or former use of individual structures (i.e., benzene, toluene, ethylbenzene, xylene, polychlorinated biphenyls, and explosives). As a result, this RI/FS through DD will investigate MEC and HTRW hazards separately.

# 2.6.1 MEC Hazards

Locations to be investigated for MEC under the MMRP are shown in **Figure 2-1**. These locations—the 1903 explosion (also referred to as Munitions Response Site-01), former loading docks, suspected munitions dump sites, and the coastline around the dump sites—were selected based on historical documentation, interviews, and reports of previous ordnance item discoveries.

# 2.6.2 HTRW Hazards

Locations of former structures where HTRW contaminants have been identified or are likely to be present are referred to as Areas of Concern. The nineteen Areas of Concern identified at Iona Island Naval Ammunition Depot are shown in **Figure 2-2.** Demolition of historical buildings at

Version: FINAL Page 2-12 March 2019

the site would have had the potential to mobilize COPCs to areas beyond the former building footprints.

# 2.6.3 Human Concerns

Although access to Iona Island is restricted, potential human receptors include park employees, researchers, visitors, trespassers, and potential future construction workers. These human receptors may be exposed to contaminants in surface soil, sediment, and surface water via incidental ingestion, dermal contact, and/or inhalation of soil particulates (Bluestone 2018b). Additionally, military munitions could pose a potential safety hazard to people who touch, pick up, or otherwise disturb them.

# 2.6.4 Ecological Concerns

The Iona Island Naval Ammunition Depot FUDS contains documented fish and wildlife resources and habitat known to be used by designated threatened and endangered species. **Figure 2-3** presents the U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory map for Iona Island and Round Island. Freshwater forested/shrub wetlands are located in the connecting area between Round Island and Iona Island, and at the southern end of Round Island (USFWS 2017). These wetlands are also listed as an NYSDEC Class 1 State Regulated Freshwater Wetlands in the NYSDEC Environmental Resources Mapper (NYSDEC n.d. in press c). Freshwater emergent wetland is located on the western site of the Island, just east of the railroad tracks, and the area between Iona Island and Bear Mountain State Park on the mainland is classified as estuarine and marine wetland (USFWS 2017).

The NYSDEC Environmental Resource Mapper (ERM) lists natural communities located on Iona Island and Round Island, which include a brackish tidal marsh, brackish intertidal mudflats, freshwater tidal marsh, and is adjacent to the tidal wetlands of the Hudson River Estuary. NYSDEC's ERM also indicates that Iona Island is in the vicinity of rare animals and/or rare plants, anadromous fish concentration area, waterfowl winter concentration area, state-listed bats, shortnose sturgeon, and Atlantic sturgeon (NYSDEC n.d. in press c). Additionally, the FUDS is located within NYSDEC Iona Island/Doodletown BCA (NYSDEC n.d. in press a). Iona Island is part of the greater Hudson River National Estuarine Research Reserve and Significant Coastal Fish and Wildlife Habitat Area, is listed with the National Park Service as a National Natural Landmark and is located within New York's Coastal Management Zone (Alion 2008).

Listed species include threatened species such as the bald eagle (Haliaeetus leucocephalus), least bittern (Ixobrychus exilis), northern harrier (Circus hudsonius), pied-billed grebe (Podilymbus podiceps), small whorled pogonia (Isotria medeoloides), northern long-eared bat (Myotis septentrionalis), and bog turtle (Glyptemys muhlenbergii); endangered species such as the Indiana Bat (Myotis sodalis); and NYSDEC species of special concern such as the cerulean warbler (Setophaga cerulea), golden-winged warbler (Vermivora chrysoptera), and osprey (Pandion haliaetus).

Version: FINAL Page 2-13 March 2019

EA Engineering, Science, and Technology, Inc., PBC

Terrestrial invertebrates and wildlife may be exposed to contaminants in surface soil via incidental ingestion and dermal contact, and to surface water via incidental ingestion. Aquatic receptors may be exposed to contaminants in surface water and sediment via incidental ingestion and dermal absorption. Additionally, biomagnification of contaminants in the food chain can pose a threat to wildlife (Bluestone 2018b).

Version: FINAL Page 2-14

March 2019

EA Engineering, Science, and Technology, Inc., PBC

This page left intentionally blank

#### 3. COMMUNITY BACKGROUND

This Section describes the community profile and USACE's history of community involvement.

#### 3.1 **COMMUNITY PROFILE**

Iona Island Naval Ammunition Depot FUDS is located on Iona Island, on the west side of the Hudson River, in the Town of Stony Point, Rockland County, New York. The site is located approximately 45 miles upstream of the mouth of the Hudson River and 7 miles south of West Point Military Academy. Camp Smith and the City of Peekskill, New York, are located approximately 2 miles southwest from the site, on the eastern shore of the Hudson River. The site is connected to the mainland by a narrow two-lane road that runs through Bear Mountain State Park.

In 2010, the U.S. Census Bureau estimated the population of the Town of Stony Point to be 15,059. The Town of Stony Point is approximately 31.6 square miles, with a population density of 511.7 persons per square mile. The predominant racial group in the Town of Stony Point is Caucasian (87.4 percent), followed by African American (3.8 percent), Asian (2.6 percent), people of two or more races (2.2 percent), American Indian/Native American (0.2 percent), and Native Hawaiian and Other Pacific Islander (0.1 percent); the remaining 3.7 percent of respondents identify as "Some Other Race." The majority of the population (79.7 percent) is over 16 years old and the median age is 43.1 years. (U.S. Census Bureau 2010). The median household income for the Town of Stony Point in 2016 was \$96,905 (U.S. Census Bureau 2016).

The 2016 American Community Survey provides estimated data on the major employers in the Town of Stony Point. This information is presented in **Table 3-1** (U.S. Census Bureau 2016).

**Table 3-1 Major Town of Stony Point Employers** 

Industry Description	Percent of Employees
Educational services, and health care and social assistance	29.4
Professional, scientific, and management, and administration and waste management services	11.7
Retail trade	10.0
Finance and insurance, and real estate and rental and leasing	7.1
Arts, entertainment, and recreation, and accommodation and food services	6.9
Construction	6.7
Manufacturing	6.6
Public Administration	5.9
Transportation and warehousing, and utilities	5.4
Other services, except public administration	4.8
Information	2.4
Wholesale trade	2.1
Agriculture, forestry, fishing and hunting, and mining	0.9

Stony Point, located in the northeast corner of Rockland County, is part of the New York City Metropolitan Area. It is the least populated and most rural out of the five towns in Rockland

Version: FINAL Page 3-2 March 2019

EA Engineering, Science, and Technology, Inc., PBC

County. Stony Point is home to tourist attractions such as the Stony Point Battlefield State Historic Site and Bear Mountain State Park.

Rockland County is governed by a County Executive and a County Legislature and operates pursuant to a local county charter. The County Executive, Sheriff, District Attorney, County Clerk, and District Legislatures are all elected positions. This group of officials is responsible for overseeing the government of Rockland County (New York State Department of State [NYSDOS] 2009). Stony Point is represented in the County Legislature by one elected Legislator (Rockland n.d.).

The Town of Stony Point is governed by a Supervisor and a Town Board. The Town Supervisor, Council Persons, Town Clerk, Town Justices, Highway Superintendent, and Receiver of Taxes and Assessments are all elected positions. Together, this group of officials is responsible for overseeing the government of Stony Point (Stony Point n.d.).

The Town Board is Stony Point's Legislative Body. There are five elected members, including the Town Supervisor. In addition to ratifying legislation, the Town Board has oversight for town agencies; monitors the operation and performance of town agencies; makes land-use decisions; and has sole responsibility for approving the town's budget. Since New York State Town Law does not provide for a separate Executive Branch of town government, virtually all the town's discretionary authority rests with the Town Board. The Supervisor's Role is to act as a member of and presiding member of the Town Board, and to act as Treasurer (NYSDOS 2009).

#### 3.2 COMMUNITY RELATIONS ACTIVITIES TO DATE

Community involvement is an integral part of the MMRP and HTRW response process. Landowner notification letters and project safety guides were mailed in November 2016. No responses were obtained within the 90-day reporting period from the initial mailing date of the notification letters. In February 2017, USACE published an Interim Risk Management Communication Assessment Summary for the 1903 Explosion Project Iona Island Naval Ammunition Depot FUDS. The IRM CAS summarizes the USACE response actions, current land ownership, land use, outreach language considerations, media coverage assessment, regulatory and first responders contact information, outreach activities, and FUDS IRM statistics for the FUDS project. The objective of this assessment was to determine if the project would benefit from safety outreach beyond landowner notification letters with a project safety guide. USACE concluded that the 2016 safety outreach activities were sufficient.

In August 2018, USACE conducted a Restoration Advisory Board (RAB) assessment to determine the level of public interest at the Iona Island Naval Ammunition Depot FUDS property. No previous RAB assessments have been documented. The RAB assessment involved a review of correspondence files, review of media coverage, consultation with community members and relevant government officials, a public notice in the local paper, and an evaluation of responses to communication efforts. No responses were obtained within the 30-day response period following publication of RAB assessment public notices. Media coverage of the Iona Island Naval Ammunition Depot FUDS discovered during the IRM CAS and RAB assessment was limited.

Version: FINAL Page 3-3 March 2019

EA Engineering, Science, and Technology, Inc., PBC

Stakeholders including community members, opinion leaders, and government officials have not expressed interest in establishing a RAB.

DoD documentation states that a RAB should be established if there is sufficient and sustained community interest, and one of the following criteria are met: (1) the closure of an installation involves the transfer of property to the community; (2) at least 50 local citizens petition for a RAB; (3) federal, state, tribal, or local government representatives request formation of a RAB; and (4) the installation determines the need for a RAB (U.S. Army Environmental Center 2009). Due to the low level of public interest at the Iona Island Naval Ammunition Depot FUDS identified in the IRM CAS and the RAB assessment, it was determined that there is not sufficient and sustained community interest in the FUDS property. Furthermore, the additional criteria for the establishment of a RAB have not been met. After a review of relevant information, the USACE determined that a RAB is not currently needed. However, a RAB remains an option if sufficient interest develops in the future.

#### 3.3 COMMUNICATION NEEDS

Based on the results of the community involvement efforts described above, the current public interest in the Iona Island Naval Ammunition Depot FUDS is low. Additionally, the community profile outlined in **Section 3.1** and the outreach considerations described in the 2017 CAS IRM (USACE 2017) did not identify any unique community needs (e.g., translation and disability services) or cultural behaviors, customs, and values associated with the Site that needed to be addressed.

However, USACE will continue to utilize the communication methods and techniques outlined in Section 4 to target community members who could be immediately impacted by project activities. USACE will also ensure information is conveyed in clear, concise, and easy-to-understand language. Communication methods and timing will be adjusted based on project activities. The local community may also benefit from a quick, non-technical overview of the CERCLA process and a discussion about the next steps to ensure they understand the status of the site, as well as their ability to participate in the CERCLA process.

Version: FINAL

Page 3-4 March 2019

EA Engineering, Science, and Technology, Inc., PBC

This page left intentionally blank

### 4. COMMUNITY INVOLVEMENT PROGRAM

The goals of the USACE community involvement program are to provide the community with information essential to their understanding of the RI/FS through DD activities planned at the Iona Island Naval Ammunition Depot FUDS, promote two-way communication between USACE and the community, and support opportunities for input during the decision-making process. The methods, techniques, and schedule for the Iona Island Naval Ammunition Depot FUDS community involvement program are described below. In addition to the activities described, the CRP itself acts as a useful communication tool.

# 4.1 COMMUNICATION METHODS AND TECHNIQUES

# 4.1.1 Create, Maintain, and Update Mailing List

A mailing list of interested parties will be created for the site that includes federal, state, and local officials, and the FUDS property owners. To ensure that any previously unidentified interested parties are kept aware of USACE activates at the Iona Island Naval Ammunition Depot FUDS, the mailing list will be updated following any community meetings. Future mailings, such as fact sheets or meeting notices, will be distributed to parties on the mailing list.

#### **4.1.2** Establish an Information Contact

Mr. Timothy Dugan is the point-of-contact for public and media inquiries regarding activities at Iona Island Naval Ammunition Depot FUDS. Mr. Dugan's contact information is included below and will be included on all community involvement materials throughout the duration of the RI/FS through DD.

Timothy Dugan

USACE-New England Distract Public Affairs Specialist

Telephone: 978-318-8238

Email: Timothy.J.Dugan@usace.army.mil.

Address: 696 Virginia Road

Concord, MA 01742

# **4.1.3** Prepare Fact Sheets/News Releases

Fact sheets and news releases can be distributed to stakeholders and interested community members whenever activities warrant. Fact sheets and/or news releases also can be prepared and released upon completion of work milestones, such as the RI/FS. Fact sheets and news releases, in general, may address concerns, as expressed by the local community, and may include the status of studies and removal actions, updates on schedules, safety issues, and other special interest items. Fact sheets will be issued on an as-needed basis to address community concerns and will be written in concise, easy-to-understand language. Copies of fact sheets and news releases will be placed in the Information Repository (See **Appendix B** for additional information). All news releases will

March 2019

be issued by the USACE Public Affairs Office. A fact sheet for the MMRP and HTRW RIs has been included in **Appendix E**.

# 4.1.4 Public Notices

Following the completion of CERCLA documents (i.e., PP), a public Notice of Availability will be published in local newspapers. The notice will provide a brief description of the report or plan; announce its availability for review; identify the dates for the 30-day public comment period; identify a contact person; list the locations where the public may review the report; identify where public comments should be sent; and provide the date, time, and location of a public meeting. Notices may also be provided by sending a copy of the Notice of Availability to those on the interested parties list, by posting the public comment period on the USACE website, and by distributing news releases.

# 4.1.5 Information Repository/Administration Record

Project-specific documents will be maintained for public review and be available for printing or copying in the Information Repository, which will be established at the Bear Mountain State Park Administrative Building. The public will have access to such documents as project work plans, responsiveness summaries, and the RI/FS through DD as they are generated. Contact Information for the information repository is presented in Appendix B.

# 4.1.6 Stakeholder Meetings

Technical project planning (TPP) meetings will be held throughout the project to provide stakeholders, including regulatory agencies, and federal, state, and local officials, an opportunity to be involved in the decision-making process. The TPP meetings will be held at the PIPC's Bear Mountain Park offices and the public will not attend. The objectives of the TPP meetings are to identify the desired project closeout conditions, develop the technical approach to achieve project closeout, and consider stakeholder input throughout the project. TPP meetings may also address stakeholder concerns to the RI/FS through DD project. A sign-in sheet will be kept for all stakeholder meetings. The proposed meeting location is identified in **Appendix C**.

#### **4.1.7 Public Comment Periods**

Public comment periods give community members an opportunity to review and comment on various project documents, including the PP. USACE will announce each comment period separately, if necessary. Announcements and instructions for public comment periods will appear in local newspapers and fact sheets. USACE will seek comments on the RI/FS recommendations along with the potential remedies.

The public comment period will be a minimum of 30 days and is required when a PP is released.

# 4.1.8 Public Meetings

Public meetings are informal meetings with the community that are generally used to present information on upcoming field activities, provide project status updates, address community concerns, and answer questions. At minimum, a public meeting will be held during the PP comment period. The public meeting will include a presentation followed by a question and answer session and an oral comment period. A responsiveness summary will be prepared in response to significant comments made during the meeting and the comment period.

The proposed community involvement activities schedule, including public information sessions, is presented in **Table 3-1**. Currently, there are no information sessions or public meetings scheduled other than the PP meetings described above, however, additional meetings may be prepared should interest be shown in the community. Proposed locations for public information sessions are identified in **Appendix C**. **Appendix D** identifies media resources that USACE can use to announce the public meetings.

# **4.1.9 Restoration Advisory Board Assessments**

USACE will conduct RAB assessments every 2 years to evaluate the level of interest of the surrounding community and affected stakeholders in site activities. USACE conducted its first RAB assessment for the Iona Island Naval Ammunition Depot FUDS in August 2018 and found limited public interest in the site. Following the assessment, USACE determined that a RAB is not needed at this time.

### **4.1.10** Discovery of Munitions or Suspected Munitions

Munitions or munitions related items can come in various shapes and sizes and may be visible on the surface or partially buried. Munitions can also be uncovered during excavation activities or exposed by erosion and fires. Whenever munitions are encountered they should be considered extremely dangerous. USACE strongly encourages the public to learn the 3Rs of explosive safety.

- **Recognize** Recognizing when you may have encountered a munition is key to reducing the risk of injury or death. If you encounter or suspect you may have encountered a munition, consider it extremely dangerous.
- **Retreat** If you encounter or suspected you may have encountered a munition, do not touch, move, or disturb it. Carefully (do not run) leave the area following the same path you entered. If you can, mark the general area, not the munition, in some manner (e.g. with a hat, piece of cloth, or tying a piece of plastic to a tree branch).
- **Report** When you think you may have encountered a munition, notify your local law enforcement call 911.

#### **4.1.11** Websites

Should community interest increase significantly, or situational events require, USACE may develop a website or project home page for the Iona Island Naval Ammunition Depot FUDS. The website could be used to promote community engagement and aid in the distribution of project-related information to the public.

Information from the DoD Environmental Safety, and Occupation Health Network and Information Exchange relating to unexploded ordnance safety and the 3Rs procedure for encountering unexploded ordnance can be found at <a href="https://www.denix.osd.mil/UXOSafety">www.denix.osd.mil/UXOSafety</a>. This website also provides links to other safety and education websites.

# 4.2 COMMUNITY INVOLVEMENT PLAN SCHEDULE

The community involvement activities associated with this RI/FS through DD are outlined in the **Table 4-1.** 

Table 4-1 Community Involvement Activities Associated with Remedial Investigation/Feasibility Study

Activity	Time Frame
Stakeholder Meeting	October 2018, and as determined necessary
Create CRP	April 2019
Establish Information Repository	October 2018
Establish Mailing List	November 2018, and updated as necessary
Conduct RAB Assessment	August 2020
Establish Website	If necessary, based on RAB Assessment
Update Information Repository	Prior to PP Releases
Public Comment Period on PP for MMRP Investigation	February/March 2022
Public Meeting on PP for MMRP Investigation	March 2022
Public Comment Period on PP for IRP Investigation	August/September 2021
Public Meeting on PP for IRP Investigation	August 2021

Page 5-1 March 2019

#### 5. REFERENCES

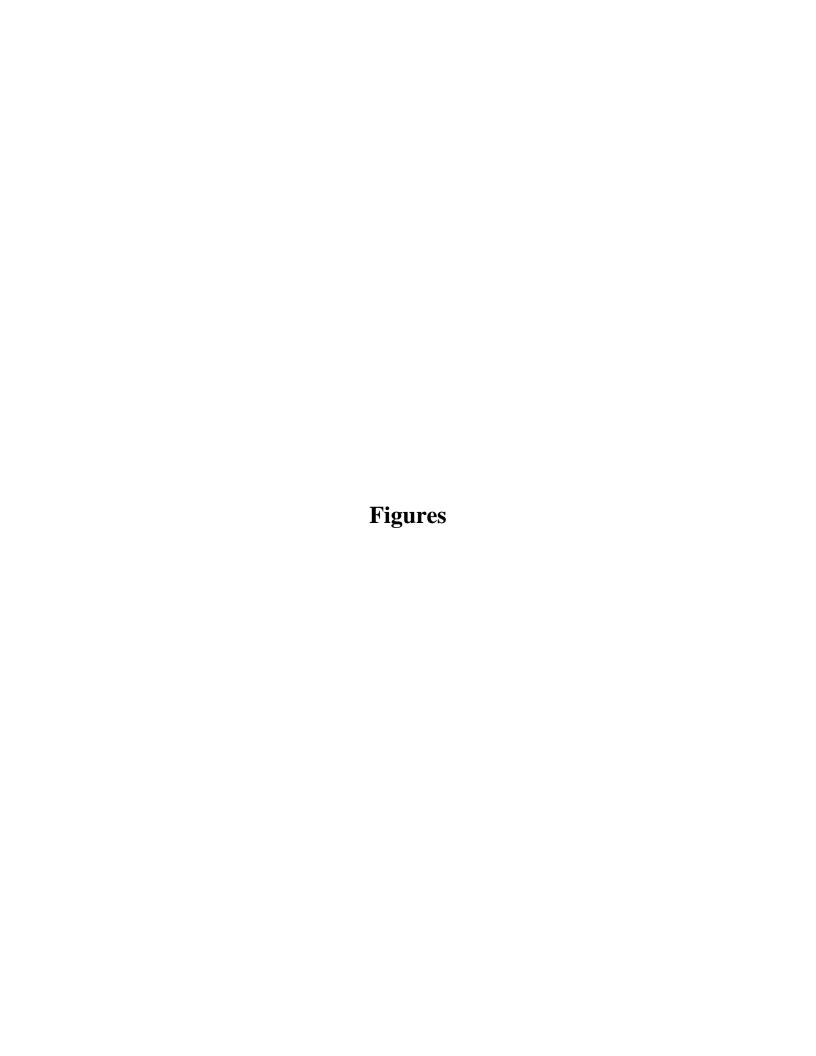
- Alion Science and Technology (Alion). 2008. Final Site Inspection Report for the Iona Island Naval Ammunition Depot. DERP FUDS No. C02NY074403. Prepared for US Army Engineering and Support Center, Huntsville and US Army Corps of Engineers Baltimore District. September.
- Arnold H. Vollmer Associates. 1959. Preliminary Development Plan, Iona Island Recreational Area. Bear Mountain State Park Administrative Office Historical Records. Prepared for Palisades Interstate Park Commission, Bear Mountain, New York. July. Revised August 1959.
- Bluestone Environmental Group, Inc. 2018a. Technical Memorandum. Records Review and Site Visit: Former Iona Island Naval Ammunition Dump. FUDS Project Number C02NY074402. Prepared for U.S. Army Corps of Engineers New England District. February.
- -. 2018b. Final Remedial Investigation Work Plan, Former Iona Island Naval Ammunition Depot, New York. Formerly Used Defense Site (FUDS) Project Number C02NY074402). Prepared for US Army Corps of Engineers New England District. July.
- Clarke and Rapuano, Inc. 1966. Preliminary Study for the Development of Iona Island, Rockland County, New York. Bear Mountain State Park Administrative Office Historical Records. Prepared for Palisades Interstate Park Commission, Bear Mountain, New York. October. Revised February 1966.
- -. 1969. Marina Preliminary Master Plan, Iona Island, Rockland County, New York. Bear Mountain State Park Administrative Office Historical Records. Prepared for Palisades Interstate Park Commission, Bear Mountain, New York. September. Revised February 1971.
- Greeley-Polhemus Group, Inc. (Greeley-Polhemus) 1997. Data Collection Activities at DERP-FUDS SITES: Iona Island Naval Ammunition Depot, Stony Point, New York (DERP-FUD SITE NO. C02NY0744). Draft Report. Prepared for U.S. Army Corps of Engineers New York District. April.
- Green Seal Environmental, Inc. 2012. Final Underground Storage Tank Removal Action Closure Report, Formerly Used Defense Site Project #C02NY074401, Iona Island (Naval Ammunition Depot), Tomkins Cove, New York. Prepared for U.S. Army Corps of Engineers New England District. May.
- New York State Department of Environmental Conservation (NYSDEC). n.d. in press-a. Iona Island/Doodletown Bird Conservation Area. https://www.dec.ny.gov/animals/30779.html. Accessed 10 October 2018.

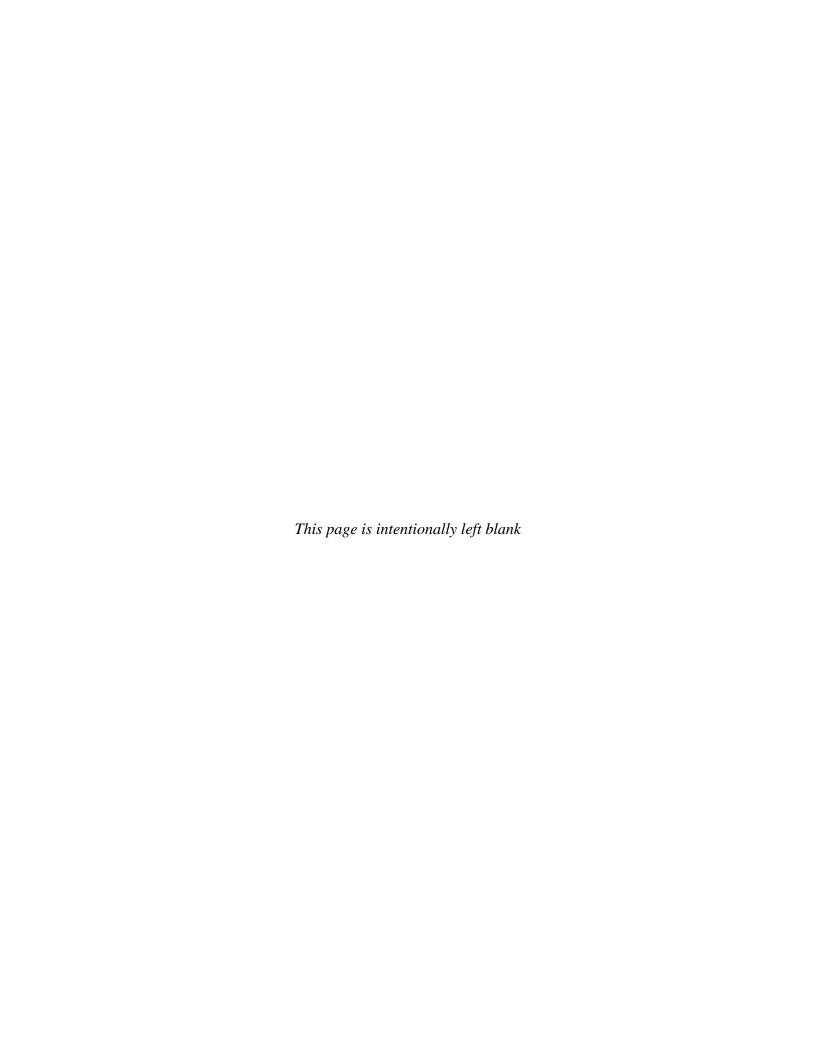


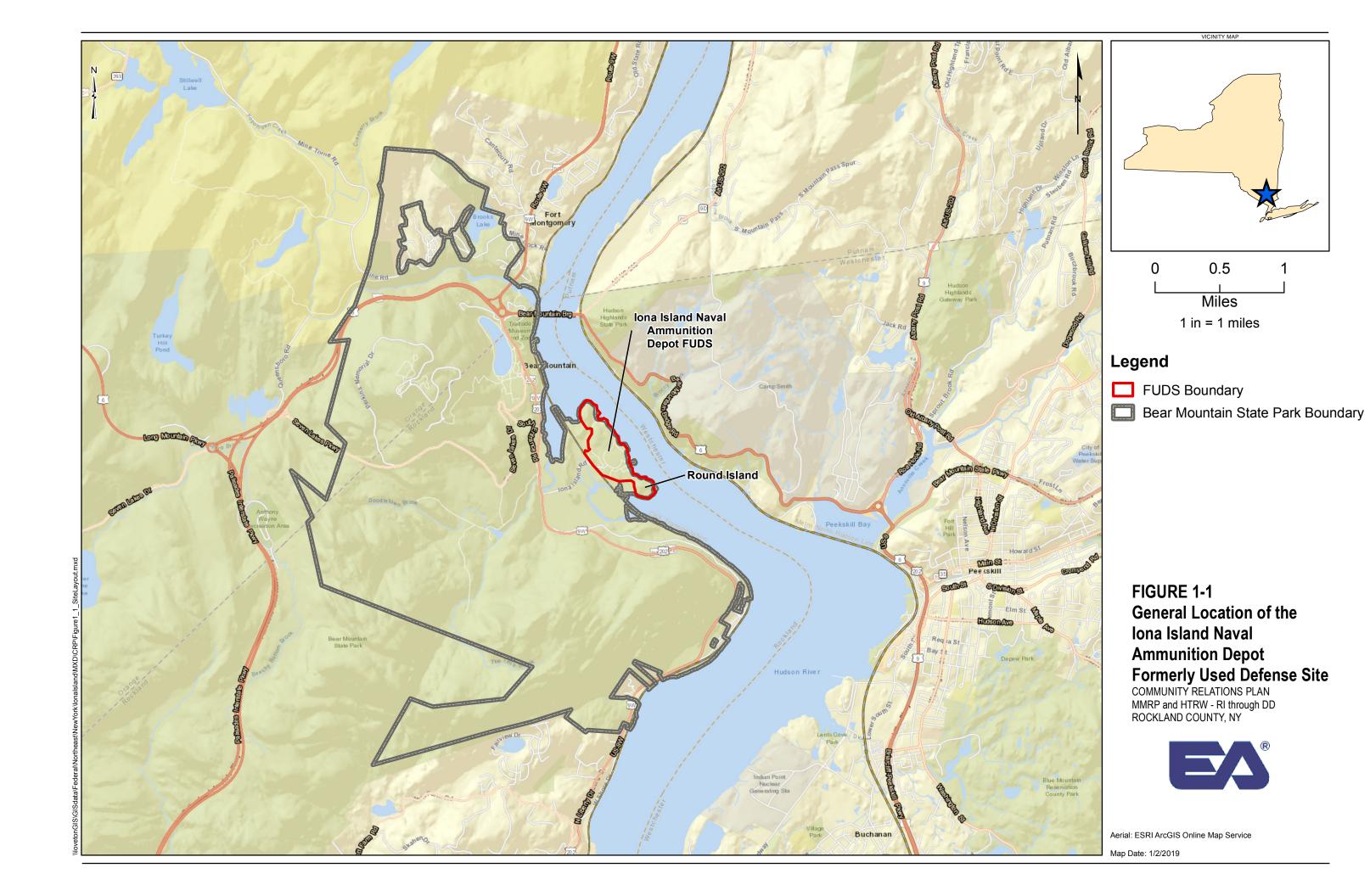
- New York Department of State (NYSDOS). 2009. *Local Government Handbook*. Sixth Edition. Division of Local Government Services. Reprinted in 2011.
- Rockland County (Rockland). n.d. *Elected Officials*. Accessed 11 October 2018. http://rocklandgov.com/elected-officials/.
- Town of Stony Point (Stony Point). n.d. *Elected Officials*. Accessed 11 October 2018. <a href="https://www.townofstonypoint.org/elected-officials">https://www.townofstonypoint.org/elected-officials</a>.
- U.S. Army Corps of Engineers (USACE). 1998. Archives Search Report. Iona Island Naval Ammunition Depot, Rockland County, New York (Project Number C02NY074403). Defense Environmental Restoration Program for Formerly Used Defense Sites, Ordnance and Explosives, Chemical Warfare Materials. USACE St. Louis District. March.
- ———. 2017. Formerly Used Defense Sites Interim Risk Management Communication Assessment Summary. Iona Island Naval Ammunition Depot, 1903 Explosion, FUDS Project No. C02NY074403, Rockland County, New York. USACE, New England District. February.
- U.S. Army Environmental Center. 2009. U.S. Army Restoration Advisory Board and Technical Assistance for Public Participation Guidance. October.
- U.S. Army Geospatial Center (USAGC). 2018. Former Naval Ammunition Depot Iona Island, New York. Historical Photographic Analysis. Prepared for U.S. Army Corps of Engineers New England and Baltimore Districts. September.
- U.S. Census Bureau. 2010. 2010 Census American Fact Finder.

  <a href="https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=CF">https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=CF</a>.

  Accessed on 24 September 2018.
- ——. 2016. *American Community Survey*. <a href="https://www.census.gov/programs-surveys/acs/">https://www.census.gov/programs-surveys/acs/</a>. Accessed on 24 September 2018.
- U.S. Environmental Protection Agency (USEPA). n.d. *Superfund: CERCLA Overview*. Last modified on 4 June 2018. <a href="https://www.epa.gov/superfund/superfund-cercla-overview">https://www.epa.gov/superfund/superfund-cercla-overview</a>
- U. S. Fish and Wildlife Service (USFWS). 2017. National Wetlands Inventory website. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. September. <a href="http://www.fws.gov/wetlands/">http://www.fws.gov/wetlands/</a>

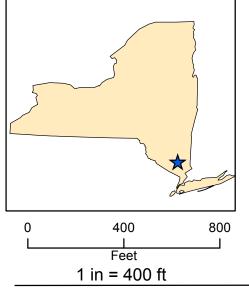












FUDS Boundary

Former Loading Docks

■ Land Investigation Areas☑ Underwater Investigation Areas

Shoreline Investigation Area

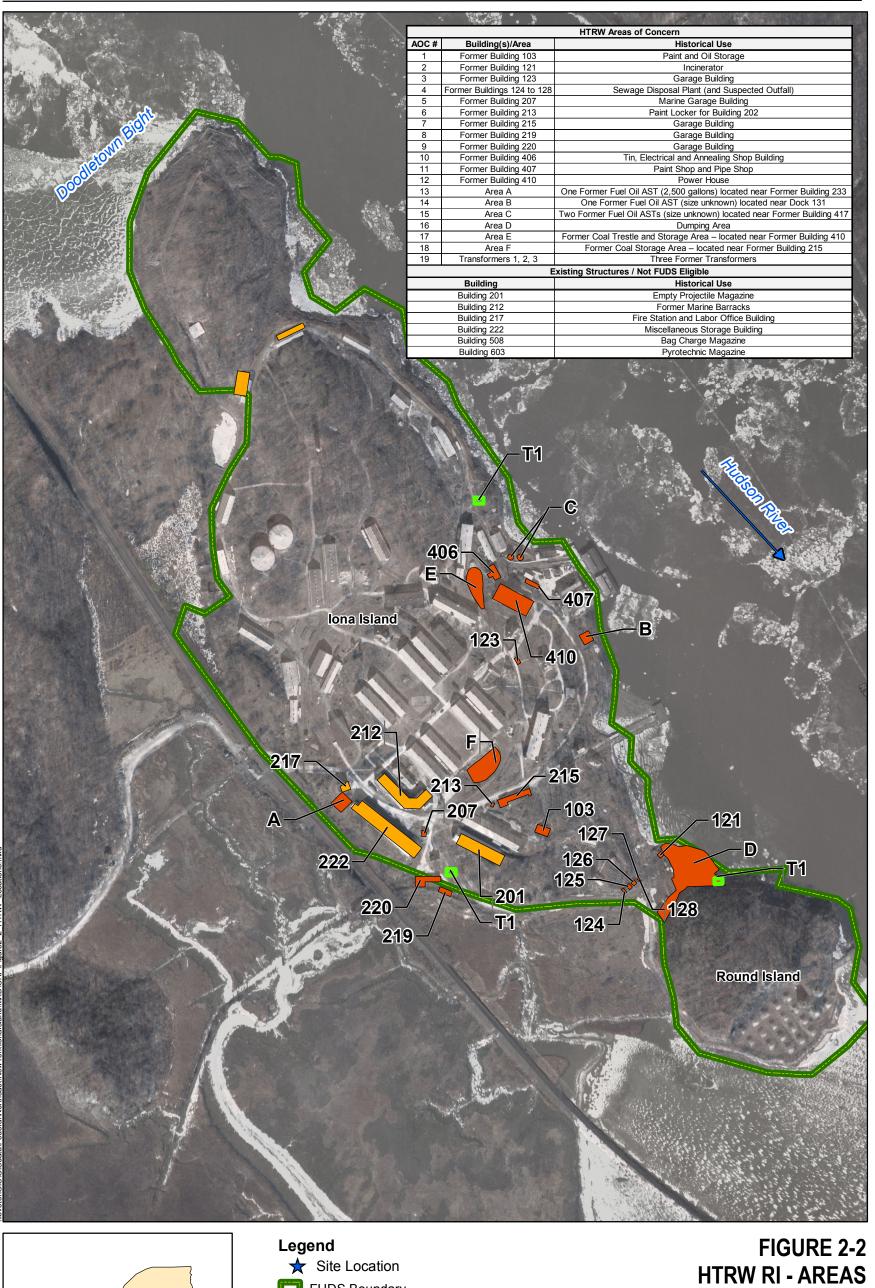
# FIGURE 2-1 Military Munitions Response Program Remedial Investigation Munitions Investigation Areas COMMUNITY RELATIONS PLAN

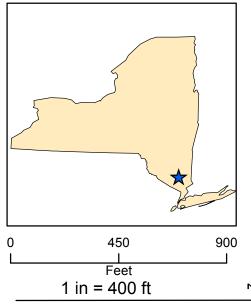
COMMUNITY RELATIONS PLAN
MMRP AND HTRW - RI THROUGH DD
IONA ISLAND NAVAL
AMMUNITION DEPOT FUDS
ROCKLAND COUNTY, NY

Map Date: 09/21/2018 Projection: NAD 1883 State Plane New York East FIPS 3101 (US Feet)









**FUDS Boundary** 

HTRW Project Areas of Concern

Remaining Structure (Not FUDS Eligible)

FormerTransformers

# **OF CONCERN**

**COMMUNITY RELATIONS PLAN** MMRP AND HTRW - RI THROUGH DD IONA ISLAND NAVAL AMMUNITION DEPOT FUDS ROCKLAND COUNTY, NY

> Map Date: 10/03/2018 Projection: NAD 1883 State Plane New York East FIPS 3101 (US Feet)



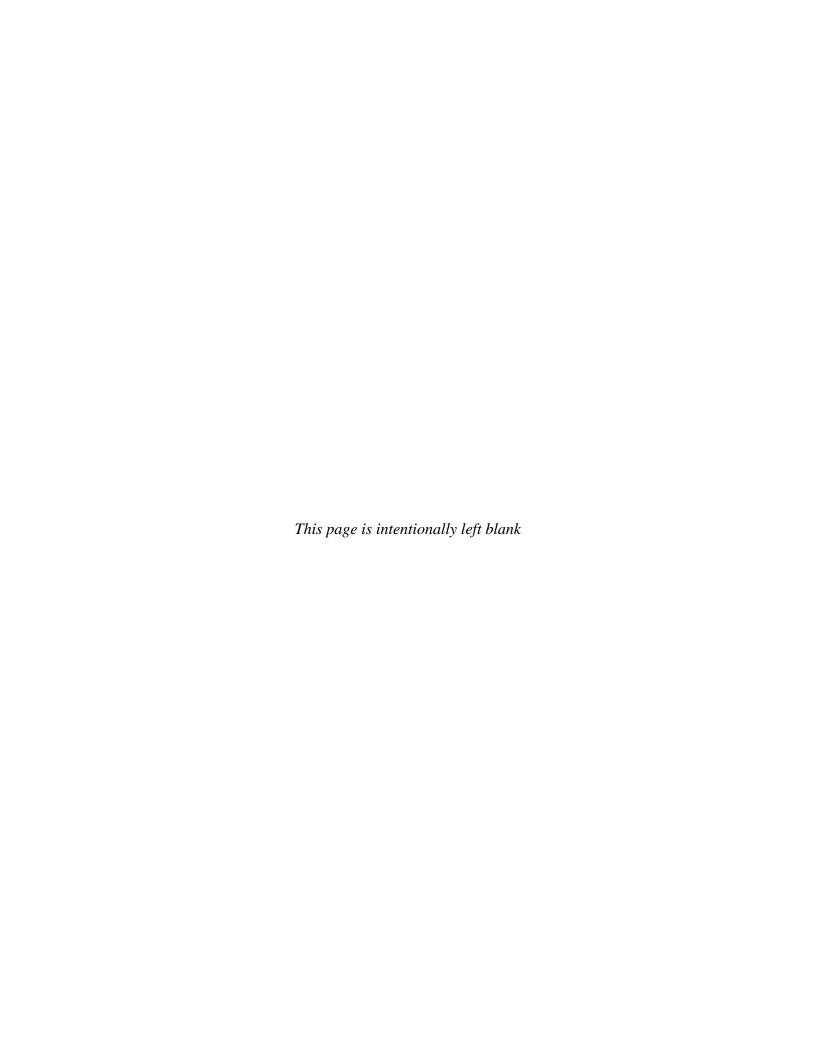






Appendix A

**Stakeholder List** 



# STAKEHOLDER LIST CONTACT LIST – COMMUNITY LEADERS AND INTERESTED PARTIES

# 1. FEDERAL OFFICIALS

# 1.1 ELECTED OFFICIALS – U.S. SENATE

# Senator

Kristen Gillibrand 478 Russell Senate Office Building Washington, D.C. 20510

Telephone: (202) 224-4451

Email: www.gillibrand.senat.gov/contact/email-me

Local Address Leo W. O'Brien Federal Office Building 11A Clinton Avenue Room 821 Albany, NY 12207

Telephone: (518) 431-0120

# **Senator**

Charles Schumer 322 Hart Senate Office Building Washington, D.C. 20510 Telephone: (202) 224-6542

Email: www.schumer.senate.gov/contact/email-chuck

Local Address Leo W. O'Brien Federal Office Building 11A Clinton Avenue Room 420 Albany, NY 12207

# 1.2 ELECTED OFFICIALS – U.S. HOUSE OF REPRENTATIVES

# **Congresswoman Nita Lowey (District 17)**

U.S. House of Representatives 2365 Rayburn House Office Building Washington, D.C. 20515

Telephone: (202) 225-6506

Telephone: (518) 431-4070

Email: https://lowey.house.gov/contact/email

Version: FINAL Appendix A Page 2 of 5 March 2019

Local Address 67 North Main Street, #101 New City, NY 10956 Phone: (845) 639-3485

# 2. STATE OF NEW YORK

# 2.1 ELECTED OFFICIALS

# **New York State Senator (District 39)**

William J. Larkin, Jr. State Capitol Building, Room 502 Albany, NY 12247

Telephone: (518) 455-2770 Email: <u>larkin@nysenate.gov</u>

# **District Office**

1093 Little Britain Road New Windsor, NY 12553 Phone: 845) 567-1270

# **New York State Assembly (District 99)**

Assembly Member James Skoufis 11 Main Street Chester, NY 10918

Telephone: (845) 469-0914 Email: skoufisj@nyassembly.gov

# 3. MUNICIPAL OFFICIALS

# 3.1 ELECTED OFFICIALS AND INTERESTED PARTIES

# 3.1.1 ROCKLAND COUNTY

# **County Executive**

Ed Day Allison-Parris County Office Building 11 New Hempstead Rd

New City, NY 10956 Phone: (845) 638-5122

Email: countyexec@co.rockland.ny.us

Version: FINAL Appendix A Page 3 of 5 March 2019

EA Engineering, Science, and Technology, Inc., PBC

# Sheriff

Louis Falco 55 New Hemstead Road New City, NY 10956 Telephone: (845) 638-5400

Email: RCSheriff@co.rockland.ny.us

# **District Attorney**

Thomas P. Zugibe 1 South Main Street, Suite 500 New City, NY 10956

Telephone: (845) 638-5001

Email: <a href="mailto:info@rocklandcountyda.com">info@rocklandcountyda.com</a>

# **County Clerk**

Paul Piperato Rockland County Courthouse 1 South Main Street, Suite 100 New City, NY 10956

Telephone: (845) 638-5070

Email: <a href="mailto:rockland.ountyclerk@co.rockland.ny.us">rockland.ountyclerk@co.rockland.ny.us</a>

# **Legislator** (District 1)

Douglas J. Jobson Allison-Parris County Office Building 11 New Hempstead Rd New City, NY 10956 Telephone: (845) 638-5753

Email: JobsonD@co.rockland.ny.us

# 3.1.2 TOWN OF STONY POINT

# **Supervisor**

Jim Monaghan
74 East Main Street
Stony Point, New York 10980
Phone (845) 786-2716
Supervisor@TownofStonyPoint.org

Version: FINAL Appendix A Page 4 of 5 March 2019

EA Engineering, Science, and Technology, Inc., PBC

# **Town Clerk**

Joan Skinner 74 East Main Street Stony Point, NY 10980 Phone: (845) 786-2716 x108

Email: jskinner@townofstonypoint.org

# Councilmen

Tom Basile, Karl Javenes, James White, and Mike Puccio Stony Point Town Hall 74 East Main Street Stony Point, New York 10980 (845) 786-2716

# 4. REGULATORY AND ENVIRONMENTAL POINTS OF CONTACT

# **Project Engineer**

Steven M. Scharf, P.E.
Division of Environmental Remediation
New York State Department of Environmental Conservation
Remedial Bureau A
625 Broadway 12<sup>th</sup> Floor
Albany, NY 12233
Telephone: (518) 402-9620

# 5. PROPERTY OWNERS

# **Executive Director**

James F. Hall
Palisades Interstate Park Commission
Bear Mountain State Park Administration Building
3006 Seven Lakes Drive,
Tomkins Cove, NY 10986
Telephone: (845) 786-2701

Email: jhall@njpalisades.org

# 6. DEPARTMENT OF DEFENSE

# **Project Manager**

Erin Kirby
USACE-New England District
696 Virginia Road
Concord, MA 01742

Telephone: (978) 318-8147

Email: Erin.Kirby@usace.army.mil

# **Public Affairs Specialist**

Timothy Dugan USACE-New England District 696 Virginia Road Concord, MA 01742

Telephone: (978) 318-8238

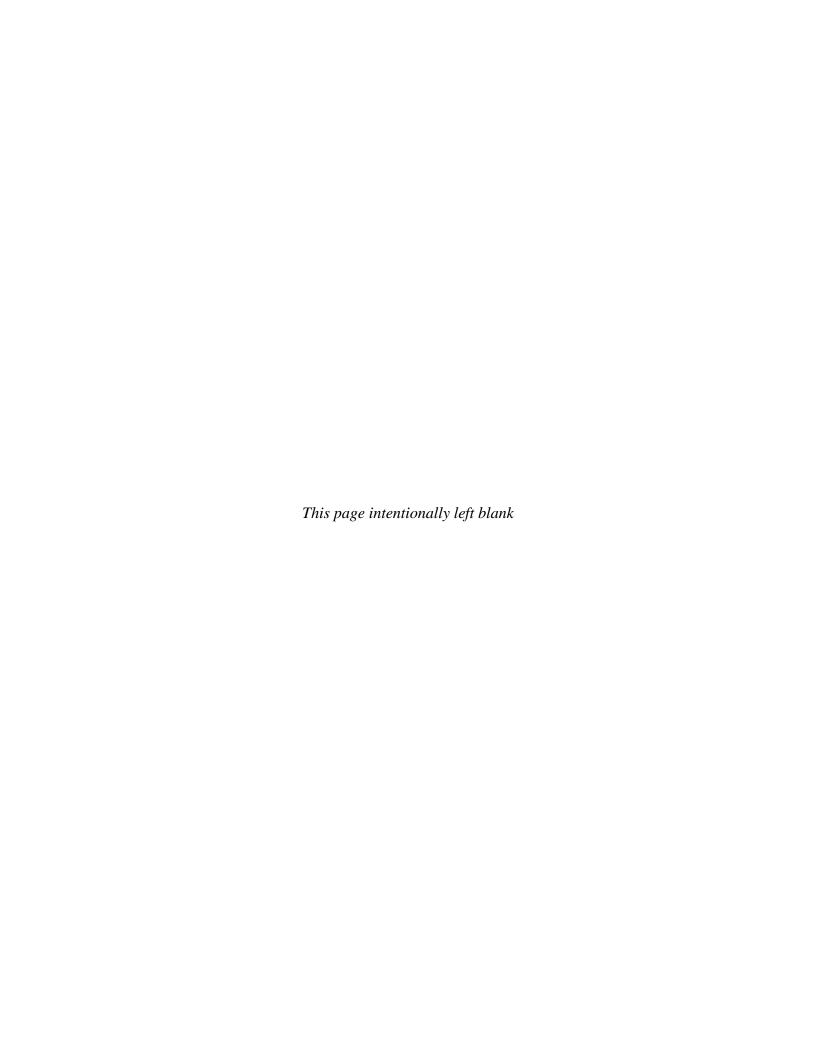
Email: Timothy.J.Dugan@usace.army.mil

# **Technical Manager**

Todd Beckwith USACE-Baltimore District 2 Hopkins Plaza Baltimore, MD 21201

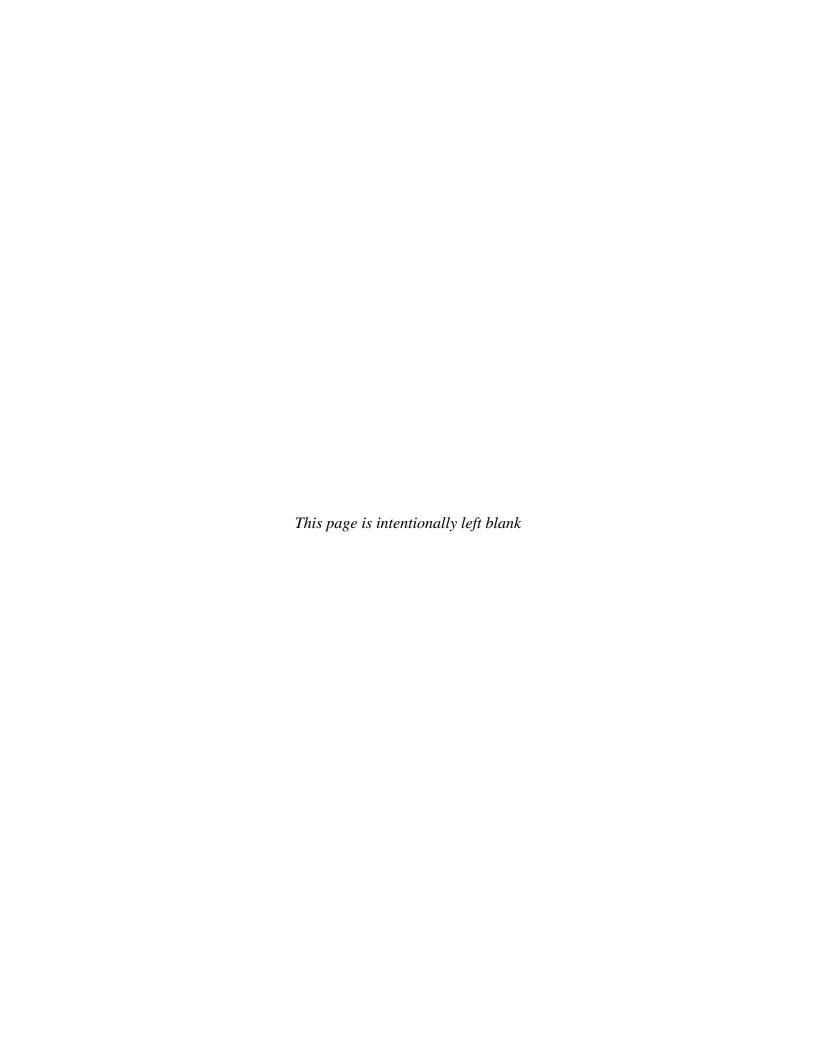
Telephone: (410) 962-6784

Email: Todd.T.Beckwith@usace.army.mil



# Appendix B

**Information Repository Identification** and **Location** 

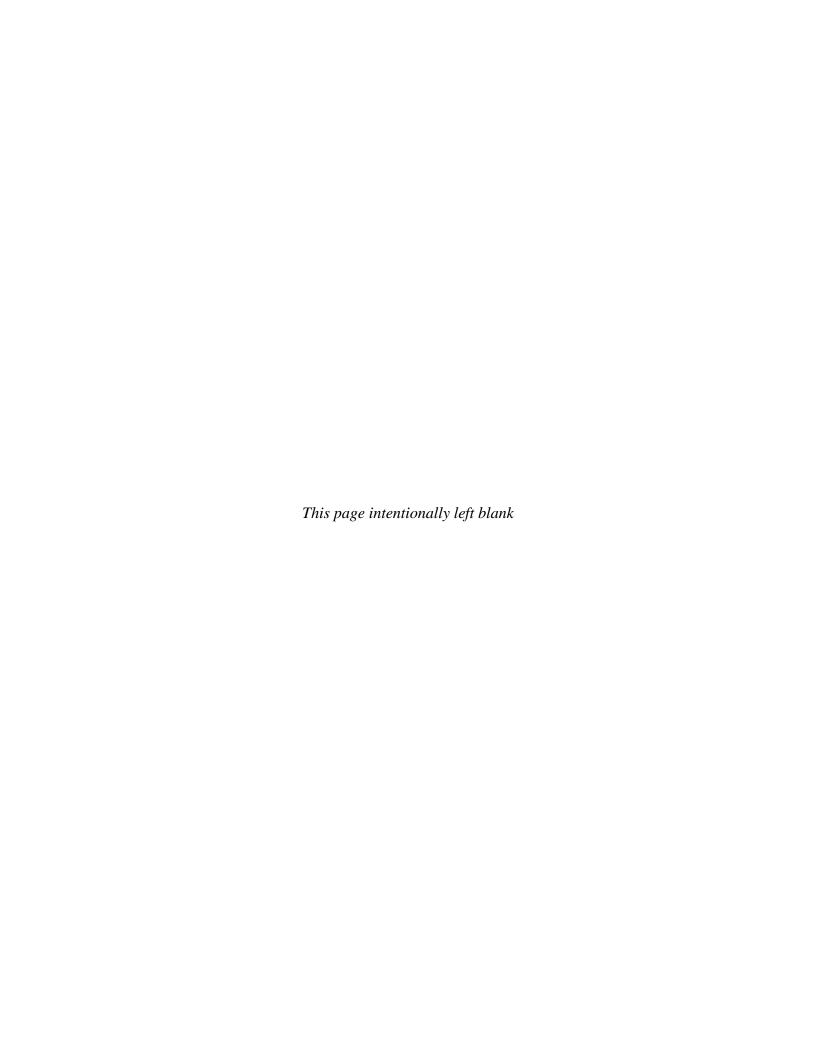


Version: FINAL Appendix B Page 1 of 1 March 2019

EA Engineering, Science, and Technology, Inc., PBC

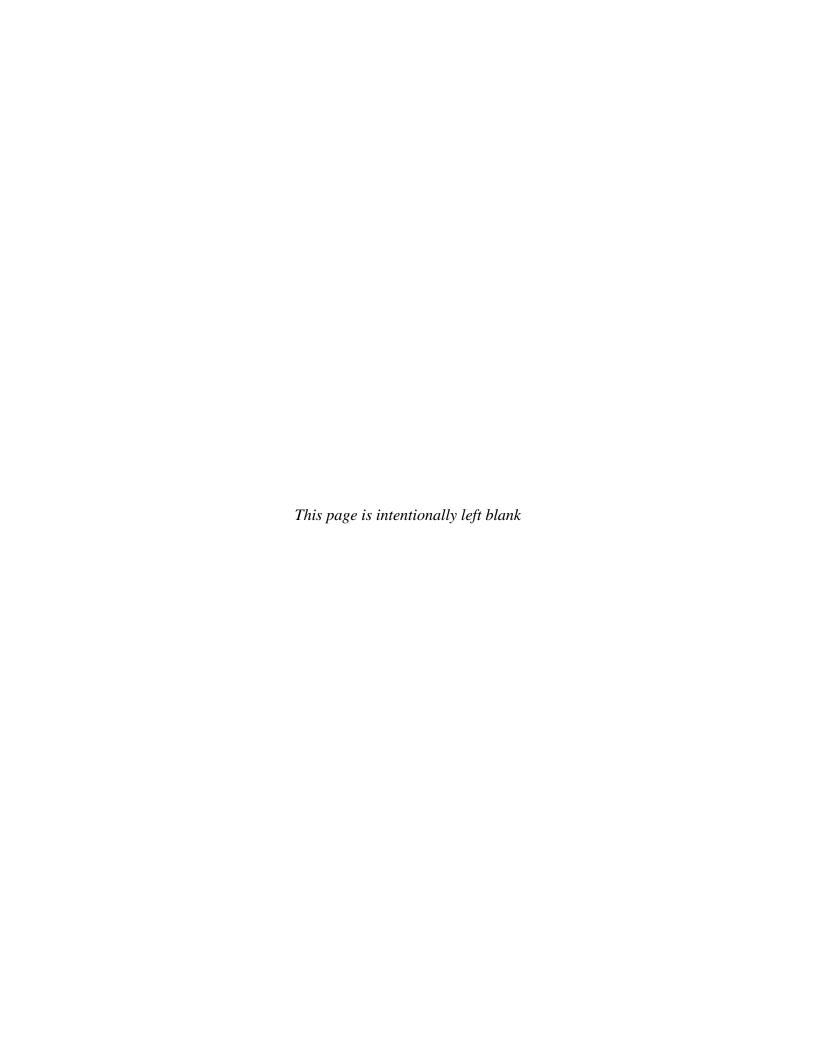
# INFORMATION REPOSITORY IDENTIFICATION AND LOCATION

Documents pertaining to the Iona Island Naval Ammunition Depot FUDS site will be made available for public review at the Bear Mountain State Park Administrative Building, located at 3006 Seven Lakes Drive, Tomkins Cove, NY 10986. Any new information regarding the RI/FS through DD process will be placed in this public repository. To make an appointment to review the Information Repository and Administrative Record, please contact the Bear Mountain State Park Office at (845) 786-2701.



# **Appendix C**

**Proposed Meeting Location** 

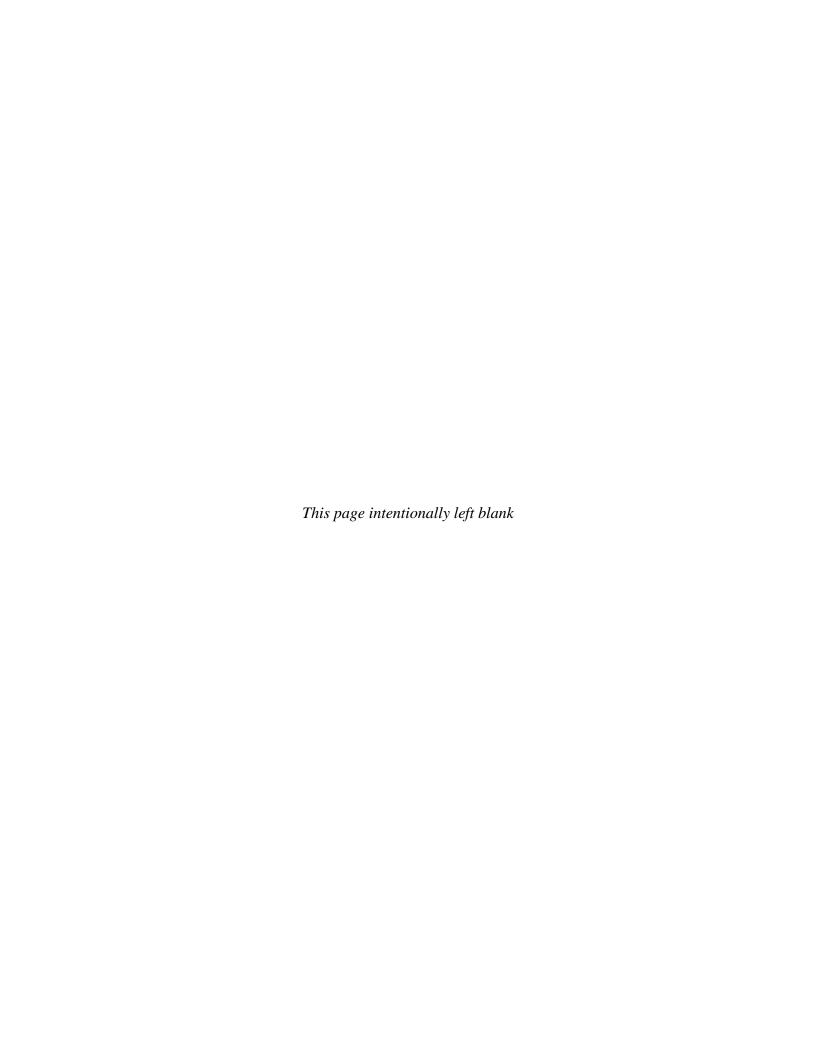


Version: FINAL Appendix C Page 1 of 1 March 2019

EA Engineering, Science, and Technology, Inc., PBC

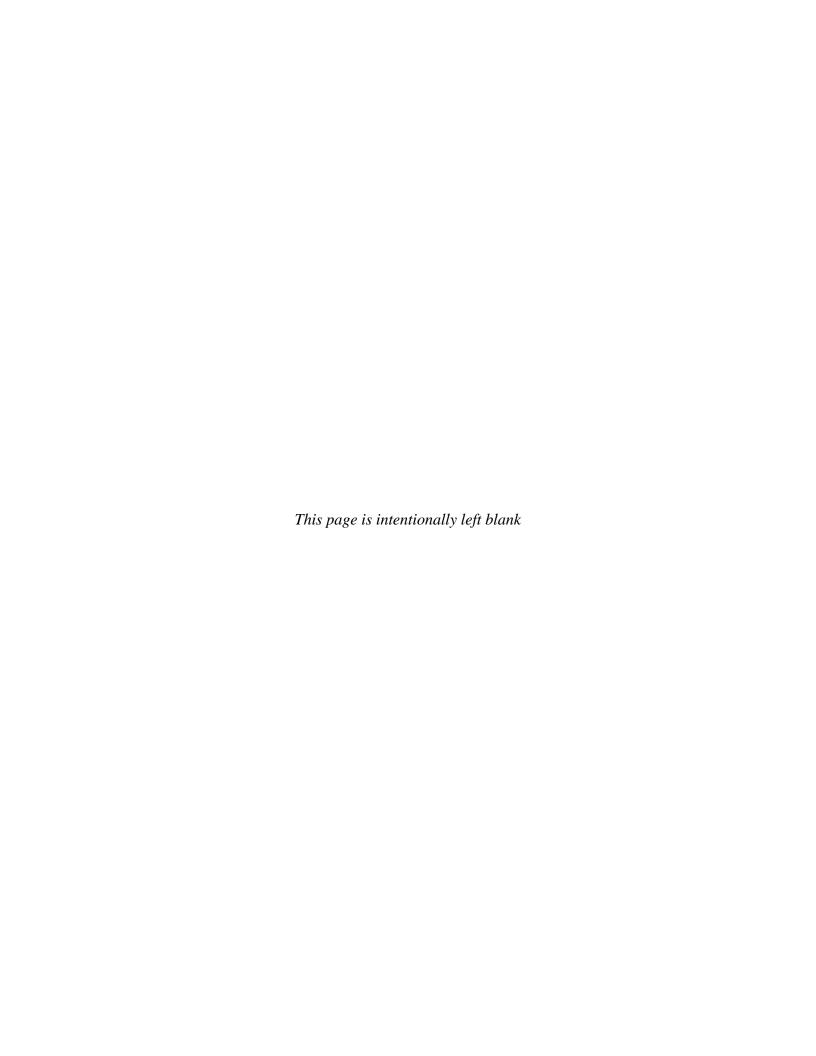
# PROPOSED MEETING LOCATION

The proposed public meeting location is the Bear Mountain Inn, located at 3020 Seven Lakes Drive, Tomkins Cove, New York 10986.



Appendix D

**Media Resources** 



March 2019

# MEDIA RESOURCES - CONTACT INFORMATION

# 1. NEWSPAPERS

# **Rockland County Times**

119 Main Street Nanuet, NY 10954

Telephone: (845) 627-1414

Email: editor@rocklandcountytimes.com

# **Orange County Post/The Sentinel**

36 Merline Avenue

New Windsor, N.Y. 12553 Telephone: (845) 562-1218 Email: ocpnews@frontiernet.net

# **News of the Highlands**

P.O. Box 45

Highlands Falls, N.Y. 10928 Telephone: (845) 721-7780

Email: newsofthehighlands@gmail.com

# El Sol de New York

P.O. Box 409

Haverstraw NY 10927 Telephone: (845) 429-7764 Email: elsolny@aol.com

# 2. RADIO STATIONS

Station	Frequency	Format	Address	Phone Number
WFUV	90.7	Adult Album Alternative	2853 Southern Blvd. Bronx, NY 10458	718 817-4550
WMFU	91.9	Variety	P.O. Box 2011 Jersey City, NJ 07303	201-521-1416
WPLJ	95.5	Hot AC	2 Pennsylvania Plaza, 17th Floor New York, NY 10121	(212) 613-8905
WQHT	97.1	Нір Нор	395 Hudson St. 7th Fl. New York, NY 10014	(212) 229-9797
WHUD	100.7	Adult Contemporary	715 Rt. 52 Beacon, NY 12508	(845)-838-6000
WCBS	101.1	Classic Hits	345 Hudson Street   10th Floor   New York, NY 10014	800-367-1101
WSPK	104.7	Top 40	715 Route 52, Beacon, NY 12508	845-838-6000
WXPK	107.1	Adult Album Alternative	56 Lafayette Ave, Suite 370 White Plains, NY 10603	914-397-0127 x2010

Version: FINAL Appendix D Page 2 of 2 March 2019

EA Engineering, Science, and Technology, Inc., PBC

# 3. TELEVISION STATIONS

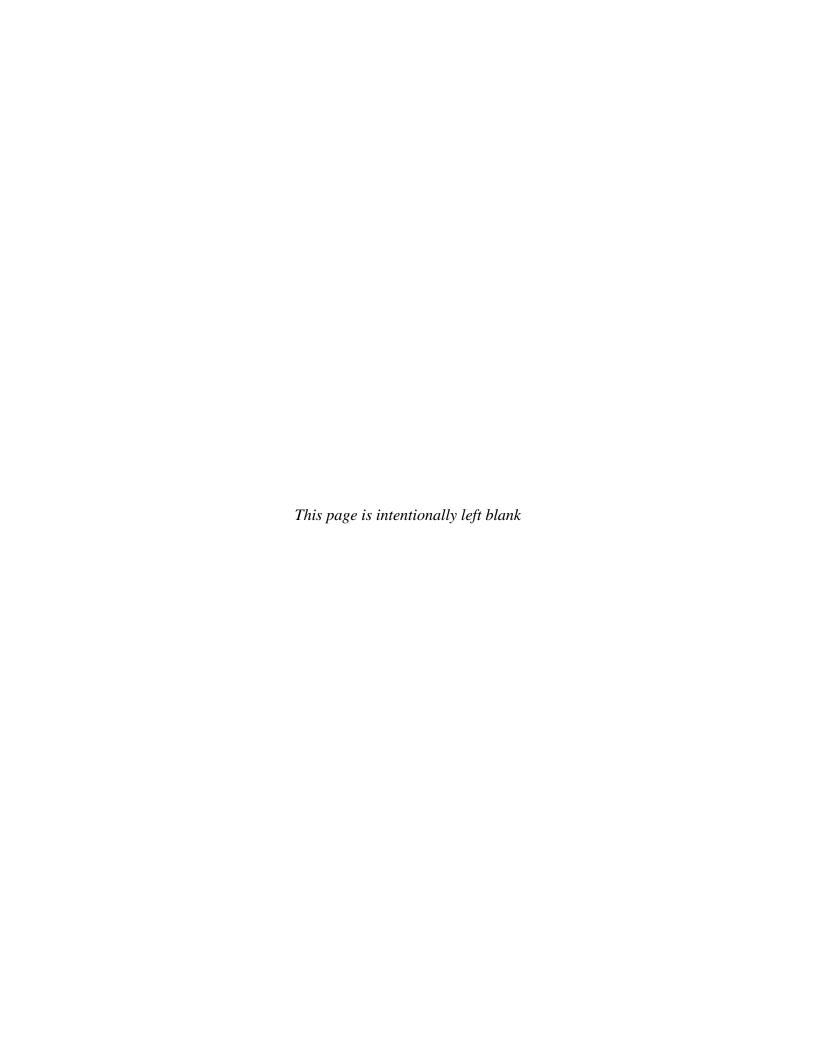
News 12 Hudson Valley 235 W. Nyack Road W. Nyack, NY 10994 Phone: (845) 624-8780

Email: <a href="mailto:news12hv@news12.com">news12hv@news12.com</a>

WABC-TV 7 Lincoln Square New York, NY 10023 Telephone: (917) 260-7700

WLNY 524 W. 57th Street New York, NY 10019 Telephone: (212) 975-5867 Email: desk@cbs2ny.com **Appendix E** 

**Fact Sheet** 



# **Iona Island Naval Ammunition Depot Formerly Used Defense Site**

Remedial Investigations

# **FACT SHEET**

March 2019

# THE ARMY

- Is dedicated to protecting human health and the environment by making MRAs/MRSs safe to reuse.
- Is developing the MMRP by maximizing efficiencies and lessons learned from 20 years of environmental restoration experience.
- Is characterizing the nature and extent of MEC at the Iona Island FUDS MRSs in order to make informed risk management decisions to select the appropriate remedial options.
- Is characterizing the nature and extent of COPCs at the Iona Island FUDS AOCS in order to make informed risk management decisions to select the appropriate remedial options.

# Iona Island Naval Ammunition Depot FUDS Roundisland 1 in = 400 ft

Iona Island Formerly Used Defense Site

# Introduction

The US Army Corps of Engineers (USACE) is conducting work at Iona Island Naval Ammunition Depot Formerly Used Defense Site (FUDS) using the processes under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), which was enacted by Congress in 1980. This law provides broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. The FUDS program cleans up only Department of Defense (DoD)-generated eligible contamination, which occurred before the transfer of the property to private owners or federal, state or local governments. There are two active FUDS projects at Iona Island: C02NY074402, Hazardous Toxic and Radioactive Waste (HTRW) and C02NY074403, Military Munitions Response Program (MMRP). The USACE contracted with EA Engineering, Science, and Technology, Inc., PBC (EA) to complete Remedial Investigations (RIs) for both the MMRP and HTRW projects to determine whether further response action pursuant to CERCLA and the National Contingency Plan (NCP) is warranted.

The lona Island Naval Ammunition Depot FUDS consists of approximately 100 acres located on Iona Island along the west side of the Hudson River, in the Town of Stony Point, Rockland County, New York. Round Island, the southeastern part of Iona Island, was once cut off by marshes and was attached to Iona Island with fill in the early 20th century. The Depot was actively used by the U.S. Naval Department for ammunition storage for approximately 50 years, from 1900 to 1947. During Navy use, site activities reportedly included preparing, assembling, maintaining, inspecting, testing, and issuing ammunition, but did not include manufacturing activities.

The FUDS is currently under the administration of the Palisades Interstate Park Commission (PIPC) and maintained by staff of Bear Mountain State Park. Site access is limited to authorized employees of Bear Mountain State Park who use a few of the remaining buildings for storage, and to researchers who work in the marsh areas. Iona Island is part of the much larger Hudson River National Estuarine Research Reserve and Significant Coastal Fish and Wildlife Habitat Area, managed under New York's Coastal Management Program. In addition, the Iona Island Marsh became a registered National Natural Landmark in 1971. The island is also considered a bald eagle sanctuary. There are no current plans to develop the Iona Island for recreational purposes and no anticipated future use of the island other than its current use as a conservation area.



# **FACT SHEET**

# Iona Island Naval Ammunition Depot Formerly Used Defense Site

# Acronyms:

**BTEX** 

AOC Area of Concern

AGC Advanced Geophysical

Classification

AST Above Ground Storage Tank

Benzene, Ethylbenzene,

Toluene, and Xylenes

**CERCLA** Comprehensive

Environmental Response, Compensation, and Liability Act

COPC Contaminant of

Potential Concern

**DGM** Digital

Geophysical

Mapping

**DMM** Discarded

Military Munitions

**DoD** Department of

Defense

EA EA Engineering, Science, and

Technology, Inc., PBC

ERA Ecological Risk

Assessment

FUDS Formerly Used

Defense Site

**FS** Feasibility Study

HHRA Human Health

Risk

Assessment

HTRW Hazardous Toxic

and Radioactive Waste

MC Munitions

Constituents

MD Munitions Debris

MEC Munitions and

Explosives of Concern

MMRP Military

Munitions

Response Program

# Introduction to the MMRP Remedial Investigation



lona Island FUDS project C02NY074403, MMRP, addresses munitions and explosives of concern (MEC) issues associated with munitions response sites (MRSs).

### **Background**

An explosion in 1903, originating from the approximate center of the Depot, is thought to have thrown stored ammunition shells as far as 1,250 feet from the blast. Historical information and previous investigations indicate that potential MEC present at Iona Island includes 1-pounders, 6-pounders, 6-in. and 13-in. ammunition distributed throughout MRS-01 land, water or wetland areas from the 1903 explosion at former Building Numbers 209 and 210. Anecdotal evidence identifies the potential for discarded military munitions (DMM) around and/or downstream of three former loading docks, where munitions may have been dropped into the Hudson River during the loading and unloading of supply vessels. Additionally, several potential MEC items have been reportedly sighted during low-tide conditions in an area between Iona Island and Round Island.

# **Summary of Recent Related Studies**

Alion Science and Technology and EA conducted a Site Inspection (SI) in 2007, which included sampling for munitions constituents (MC) and magnetometer-assisted site reconnaissance for MEC in MRS-01 and qualitative reconnaissance of the former dock areas using visual observations during low tide. While no MEC was found during the SI field reconnaissance, the SI recommended further action (RI/Feasibility Study [FS]) to focus on MEC and MC given the historical use and munitions debris discoveries and the limited MEC investigation compared to the overall size of the FUDS property.

# **RI Data Collection Activities**

The primary objective of the MMRP RI at the Iona Island FUDS is to determine the nature and extent of MEC and munitions constituents (MC) with respect to MRS 01 and to assess the potential hazards posed to human health and the environment by MEC and/or MC (if present). MMRP RI field activities will be conducted using a phased approach beginning in 2019:

- Phase I: Digital geophysical mapping (DGM) (terrestrial) over accessible portions of MRS-1, Hudson River shoreline
- Phase II: Cued advanced geophysical classification (AGC) survey of selected target anomalies
- Phase III: Intrusive investigation of targets of interest (terrestrial), portions of MRS-1 not suitable for DGM/AGC (terrestrial), and former loading docks (water).

A MMRP RI report will be prepared to determine appropriate MRS boundaries and identify potential no further action MRS footprints (if any); update the Munitions Response Site Prioritization Protocol (MRSPP) (including public notice of publication), and evaluate MEC hazards and MC risks. If the unacceptable risks are identified during the RI, then a FS will be prepared to evaluate remedial alternatives.

# **Iona Island Naval Ammunition Depot Formerly Used Defense Site**

# FACT SHEET

# **Acronyms Continued:**

MRS

Munitions Response Site

**MRSPP** 

Munitions Response Site Prioritization Protocol

NCP

National Contingency

Plan

PAH

Polycyclic Aromatic Hydrocarbon

**PCB** 

Polychlorinated Biphenyl

**PIPC** 

**Palisades** Interstate Park Commission

RΙ

Remedial Investigation

RIA

Remedial Investigation

Area

**SVOC** 

Site Inspection Semivolatile Organic Compound

**USACE** 

U.S. Army Corps of Engineers

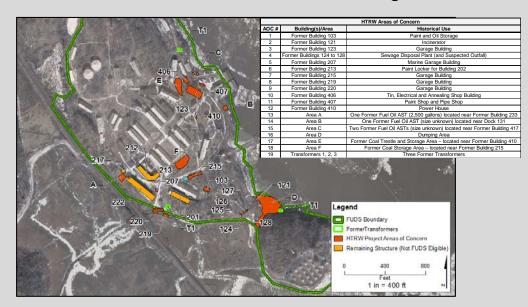
**USEPA** U.S.

Environmental Protection Agency

VOC

Volatile Organic Compound

# Introduction to the HTRW Remedial Investigation



Iona Island FUDS project C02NY074402, HTRW, includes environmental response actions at an area of an eligible FUDS property as the result of DoD activities related to hazardous substances, pollutants, and contaminants as defined in CERCLA; petroleum, oil, or lubricants; DoD-unique materials; hazardous wastes or hazardous waste constituents; low-level radioactive materials or low-level radioactive wastes; and explosive compounds released to soil, surface water, sediments, or groundwater as a result of ammunition or explosives production or manufacturing at ammunition plants.

### **Background**

Historical DoD activities at the former Iona Island Naval Ammunition Depot may have resulted in the release of contaminants to environmental media (surface soil, subsurface soil, sediment, and groundwater) at concentrations that may pose a risk to human health and ecological receptors. 19 AOCs located in the footprints of 26 former structures/site facilities were previously identified as being eligible for further investigation under the HTRW project of the FUDS Program. These AOCs include 17 former buildings (103, 121, 123, 124 to 128, 129, 207, 213, 215, 219, 220, 406, 407, and 410), four former above ground storage tank (AST) areas, a former Dump Area, two Coal Storage Areas, and three former transformers. The former buildings, ASTs, transformers, and structures have been removed, and building foundations were either removed or have been buried/overgrown; therefore, the AOCs have been identified using aerial photographs added to GIS software.

# **Summary of Recent Related Studies**

Greeley-Polhemus Group, Inc. conducted an investigation in 1996 (data collection activities) during which subsurface soil from 8 AOCs was investigated from 0 to 2 ft bgs. Each sample was analyzed for Semivolatile Organic Compounds (SVOCs), and select locations were sampled for Resource Conservation and Recovery Act metals, volatile organic compounds (VOCs), and polychlorinated biphenyls (PCBs). No other media were sampled. Additional sampling was completed as part of the 2007 SI conducted by Alion Science and Technology and EA, with surface soil samples collected at 18 onsite locations across the explosion area for analysis of MCrelated metals and explosives. Sediment sampling was limited to two onsite locations along the Hudson River shoreline. Groundwater samples were not collected during either investigation.

Metals (Antimony, arsenic, barium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, and zinc) and SVOCs (primarily polycyclic aromatic hydrocarbons [PAHs]) were identified as the primary contaminants of potential concern (COPCs) based on previous analytical data at the Iona Island Naval Ammunition Depot. Secondary COPCs were identified based on previous analytical results and/or former use of individual structures, including benzene, toluene, ethylbezene, and xylenes (BTEX) at former ASTs; PCBs at former transformers; and explosives at the dump site.



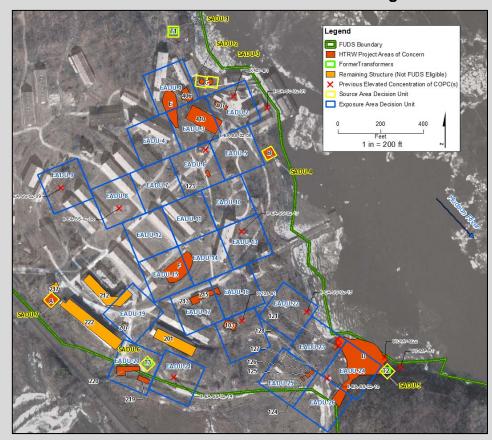
# Questions

For further information regarding the Iona Island FUDS MMRP RI activities, please contact:

Erin Kirby, P.G., LEP USACE-New England District 696 Virginia Road Concord, MA 01742 Phone: 978-318-8147 Erin.Kirby@usace.army.mil

Timothy Dugan
Public Affairs Specialist
USACE-New England District
696 Virginia Road
Concord, MA 01742
Phone: 978-318-8238
Timothy.J.Dugan@usace.army.
mil

# **Introduction to the HTRW Remedial Investigation**



### **RI Field Activities**

The primary objective of the HTRW Project RI is to characterize the nature and extent of hazardous substances in environmental media attributable to past DoD activities, and evaluate risk to human health and ecological receptors. 16 areas of concern (AOCs) were determined to be eligible for investigation under the FUDS HTRW and are the focus of the HTRW Project RI.

HTRW Project RI field activities will be conducted using a phased approach beginning in 2019:

- Phase 1: Delineate COPC concentrations in surface soil and subsurface soil using incremental sampling methodology (ISM); delineate COPC concentrations in shallow groundwater; and conduct background sampling of metals and PAHs in surface and subsurface soil;
- Phase II: Additional sampling of surface soil, subsurface soil, and shallow groundwater as
  necessary to refine impacts to these environmental media; and supplemental sampling of
  environmental media as necessary to define migration and exposure routes to support
  development of the human health and ecological risk assessments (i.e. sediment and/or
  bedrock groundwater):
- Phase III: additional investigation if necessary to further evaluate migration pathways (i.e. porewater sampling) and further support development of the ecological risk assessment (i.e. toxicity and/or ecotoxicity testing).

An HTRW Project RI report will be prepared to present RI data. If contaminants are detected in environmental media at concentrations above screening criteria and background, a human health risk assessment (HHRA) and ecological risk assessment (ERA) will be conducted in accordance with U.S. Environmental Protection Agency (USEPA) and USACE guidance for those contaminants. If the unacceptable risks are identified during the RI, then a FS will be prepared to evaluate remedial alternatives.

