



**PROPOSED PLAN**  
**Former Raritan Arsenal**  
**Commercial/Industrial Area – Munitions and Explosives of Concern**  
**FUDS Project No C02NJ0084-03**  
**Edison and Woodbridge, New Jersey**

**Text in bold and underlined indicates that a word or phrase is included in the glossary at the end of the Proposed Plan**

**The Proposed Plan**

This **Proposed Plan** includes the two sub-**Munitions Response Sites (MRS)** for **Munitions and Explosives of Concern (MEC)** at the 1,233-acre Commercial/Industrial (C/I) Area at the Former Raritan Arsenal. The preferred remedial alternative for the 85.5-acre sub-MRS C/I-1 is an Educational Awareness Land Use Control (LUC) and there is a no further action decision for the 1,146.0-acre sub-MRS C/I-2.

In-Place status of this 1.5-acre portion, it is excluded from the C/I Area Proposed Plan

**Total 1,233.0**

Investigative and environmental restoration of the Former Raritan Arsenal has been conducted under the **Defense Environmental Restoration Program (DERP) –FUDS**.

This **Proposed Plan** highlights key information from the **Remedial Investigation (RI)** and the alternatives evaluated in the **Feasibility Study (FS)** (USACE, 2024). It also provides the basis for supporting the Preferred Alternative for MEC in the C/I Area. USACE will identify a final remedy for the site after reviewing and considering all information submitted during the **public comment period**. USACE may modify the preferred alternative or identify another response action based on new information or public comments. Therefore, the public is encouraged to review alternatives presented in this **Proposed Plan**.

**INTRODUCTION**

The **U.S. Army Corps of Engineers (USACE)** is presenting this **Proposed Plan** to allow the public the opportunity to review and comment on the preferred remedial alternative for **MEC** that may remain buried in soil at the Commercial/Industrial (C/I) Area at the Former Raritan Arsenal **Formerly Used Defense Site (FUDS)** located primarily in Edison Township, New Jersey with a small portion located in Woodbridge Township on the eastern side of the property (Figures 1 and 2).

The USACE – New York District is the lead agency responsible for managing the project and provides required direction and guidance for its execution. The U.S. Army Engineering and Support Center, Huntsville and USACE – New England District provide technical support. The lead regulatory agency is the New Jersey department of Environmental Protection (NJDEP). The overall goal for the **DERP-FUDS** is to address unacceptable human health and environmental risks associated with past Department of Defense (DoD) activities. USACE is required by **DERP-FUDS** to execute the

| Sub-MRS  | Acreage |
|--|---------|
| C/I-1(Areas 2 ,3 and 4 excluding Area 4 Cap*)  | 85.5    |
| C/I-2 (Areas 7, 8, 15, 20 and Owens Illinois, Building 151, Inland Container and Exclusion Area) | 1,146.0 |
| *Excludes 1.5-acre portion of Area 4 with paved cap and fencing in place. Due to Remedy-         | 1.5     |



**Proposed Plan**  
**Former Raritan Arsenal, Commercial/Industrial Area- Munitions and Explosives of Concern**  
**FUDS Project No C02NJ0084-03**  
*Edison and Woodbridge Townships, New Jersey*  
*December 2025*

environmental restoration program in accordance with Section 117(a) of the **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)** of 1980, a Federal environmental statute and Section 300.430(f)(2) of the **National Oil and Hazardous Substances Pollution Contingency Plan (NCP)**. USACE evaluated potential impacts from past DoD activities at the Former Raritan Arsenal and identified appropriate remedial responses. The NJDEP has been involved in the process. In accordance with Federal law and regulations, state involvement is sought in the form of reviews. USACE has also been conferring with local stakeholders about community concerns regarding the Former Raritan Arsenal since 1990.

As the lead agency in implementing the environmental response program for the Former Raritan Arsenal, USACE has prepared this **Proposed Plan** in accordance with these

programs to continue its community awareness efforts and encourage public participation. After the public has had the opportunity to review and comment on this **Proposed Plan**, USACE will respond to the comments received. The comments will be included in the **Responsiveness Summary** of the **Record of Decision (ROD)**. Information about the **public comment period** and the public meeting is shown below.

Remedial responses for other media are addressed in other documents. Specifically, site-wide Former Raritan Arsenal groundwater and vapor intrusion were evaluated in a separate **Decision Document** (USACE, 2019). A soils Hazardous, Toxic, and Radioactive Waste (HTRW) project (CONJ0084-14) at the C/I Area resulted in no further action (USACE, 2021). Information regarding the site-wide groundwater and vapor intrusion project and the C/I Area HTRW project can be found on the USACE – New York District website for the Former Raritan Arsenal, the **Information Repository** and the **Administrative Record**.

This **Proposed Plan** for the C/I Area evaluates the presence and the risk posed by potential MEC associated with historical DoD activities.

The Former Raritan Arsenal has been divided into several areas of investigation, referred to as Remedial Investigation Areas, based on a combination of property ownership, land use, and historical Investigation Area boundaries. The C/I Area is one of these Remedial Investigation Areas. Figure 2 presents a Site Layout of the Former Raritan Arsenal. The C/I Area is in the northeast and central portion of the Former Raritan Arsenal and is shaded in red.

The **Proposed Plan** highlights key information from previous reports prepared for MEC that may remain buried in soil at the C/I Area, including site characterization details provided in the RI/FS

**Public Comments Are Requested**

**PUBLIC COMMENT PERIOD**

14 April 2026 – 18 May 2026

Written comments on this Proposed Plan can be submitted to USACE during the comment period. Comment letters must be postmarked no later than 18 April 2026 and can be sent to Mr. Aaron A Jones, USACE New England District, Project Manager and Engineering Technical Lead,

U.S. Army Corps of Engineers  
New England District  
Attn: Aaron A Jones  
696 Virginia Road  
Concord, MA 01742-2751

[Aaron.A.Jones@usace.army.mil](mailto:Aaron.A.Jones@usace.army.mil)

**PUBLIC MEETING**

Edison Senior Center,  
2963 Woodbridge Avenue,  
Edison, NJ 0883716  
April 2026 at 7 PM



(USACE, 2024). The C/I Area was divided into two areas during the RI. The 1,146.0-acre C/I-2 sub-MRS (Areas 7, 8, 15, 20 and Owens Illinois, Building 151, Inland Container and Exclusion Area) was deemed less likely to contain MEC based on historical use, historical MEC findings and previous MEC removals. The RI concluded that the 85.5-acre C/I-1 (Areas 2, 3 and 4) sub-MRS was more likely to contain MEC. The RI risk evaluation found acceptable risk for C/I-2 and unacceptable risk for C/I-1. No further action is necessary for MEC in sub-MRS C/I-2. The FS examined remedial actions, including Land Use Controls for sub-MRS C/I-1. On April 4, 2024, NJDEP concurred with the findings and conclusions of the RI/FS. The preferred remedial alternative for sub-MRS C/I-1 is Land Use Controls consisting of annual notification letters and educational materials to educate property owners, tenants, and the public of the potential presence of munitions and the associated risks. The project file and other documents supporting this **Proposed Plan** are available for review at the **Information Repository**, **Administrative Record**, or through the USACE – New York District website for the Former Raritan Arsenal:

<http://www.nan.usace.army.mil/Raritan>

#### **Information Repository**

USACE, New York District  
2890 Woodbridge Avenue  
Edison, NJ 08837

#### **Administrative Record Location**

USACE, New York District Office  
26 Federal Plaza  
New York, NY 10278

### **SITE HISTORY AND BACKGROUND**

#### *Where is the Former Raritan Arsenal?*

The Former Raritan Arsenal is located on 3,200 acres along the northern bank of the Raritan River, mostly in Edison Township with a portion

of the site located in Woodbridge Township, approximately 20 miles southwest of lower Manhattan (Figure 1). It is bordered to the north and northwest by Woodbridge Avenue (Route 514), to the southwest by Mill Road and the Industrial Land Reclamation Landfill, and to the east by vacant and industrial properties.

The C/I Area occupies 1,233 acres in the far north of the Former Raritan Arsenal (Figure 2). The C/I Area has been developed into the Raritan Center Industrial Park. The Raritan Center Industrial Park is one of New Jersey’s largest office/light industrial centers. It contains over 90 buildings (comprised of office buildings, storage warehouses, and light manufacturing facilities).

The Former Raritan Arsenal currently constitutes two MRSs - MRS 03, which is 3,283.50 acres and MRS 04, which is 1.40 acres. This proposed plan addresses 1,233 acres of MRS 03. The Commercial Industrial Area also has a HTRW Project 14 that has a completed Record of Decision supporting No Further Action signed June 2021.

#### *What was the Former Raritan Arsenal used for?*

The Former Raritan Arsenal was used by the U.S. Army from 1917 to 1963. Operations at the arsenal included the receipt, storage, shipment, and decommissioning of ordnance, arms, and machinery. Some waste material, including ordnance and chemical agents, were reportedly buried on site. It has also been reported that explosive materials were routinely destroyed by surface burning or burning in chambers or pits. Accidental explosions in magazine buildings and outdoor storage areas reportedly scattered **munitions debris** over large areas and drove ordnance fragments into the ground. Site operations were phased out between 1961 and 1963.

Today much of the northern portion of the Former Raritan Arsenal is developed by private



landowners who have built Raritan Center, a major industrial park complex which includes the C/I Area. Other development in the northern portion of the Former Raritan Arsenal includes the Middlesex Community College Area, the United States Environmental Protection Agency/Government Services Administration Area, and Thomas Edison County Park. The southern portion of Former Raritan Arsenal has remained primarily tidal marsh with limited development since the closing of the Former Raritan Arsenal in 1963.

The C/I Area has been developed into the Raritan Center Industrial Park. The Raritan Center Industrial Park is one of New Jersey's largest office/light industrial centers. It contains over 90 buildings (comprised of office buildings, storage warehouses, and light manufacturing facilities).

#### *What is the history of the C/I Area?*

The C/I Area was used for various munitions activities between 1917 and 1963, including demolition, burning, washout, demilitarization, and storage. Based on the known historic uses of the C/I Area the following areas of concern for MEC have been identified (Figure 3).

#### **Sub-MRS C/I-1:**

- **Area 2** – Munitions demolition area used between 1917 and the early 1930s. The Columbia Salvage Company, also located in this area, conducted ordnance salvage operations directly on or near the former Arsenal grounds.
- **Area 3** – Burning ground and demolition area used until 1948. This area was used to destroy adapter boosters, point and base detonating fuses, and projectiles of various explosive fillers for 37-millimeter (mm) to 6-inch guns.
- **Area 4** – Trinitrotoluene (TNT) washout and munitions demilitarization area used in the 1920s.

#### **Sub-MRS C/I-2:**

- **Area 7** – Former Ammunition Popping Plant Area was used as a TNT melt-out unit and small arms popping plant from 1929 until 1963. Reportedly only small arms were processed in this plant.
- **Area 8** – Outside bulk propellant storage area for various caliber of deteriorated smokeless powder, as well as black powder operations in loading saluting charges for blanks. During the early 1930s a fire and explosion scattered unburned 16-inch (gun) powder grains over a large area. During World War II, this area was used for storage of ammunition returned from overseas and components of various types, including small arms, fired small arms and artillery cases, bomb fins, and crates.
- **Area 15** – Ammunition storage and pond disposal area used from the late 1930s to the 1940s.
- **Area 20** – Magazine and explosives renovation area used from 1926 to store 20-mm to 105-mm ammunition shells and renovate 75-mm shells.
- **Owens-Illinois Area, Building 151 Area, Inland Container Corporation Area, and the Exclusion Area** – No history of munitions use or storage was identified at these areas.

#### *What are MEC?*

MEC consists of specific categories of military munitions that have explosive properties that may pose unique safety risks. MEC categories include:

- **Unexploded Ordnance (UXO)** – an explosive weapon that did not explode upon detonation and may still pose a hazard or risk of detonation.



- **Discarded military munitions** – abandoned military munition not properly disposed of.
- **Munitions constituents** – materials (e.g., metals, such as lead or chemicals such as TNT, originating from **UXO**, **discarded military munitions** or other military munitions, including explosive and non-explosive materials, and emission, degradation or breakdown elements of such ordnance or munitions.

Non-explosive remnants of munitions (e.g., fragments, penetrators, shell casings, links, fins) remaining after munitions use, demilitarization, or disposal are called **munitions debris** and were also identified and addressed as part of past MEC investigations in the C/I area.

Multiple MEC items have been identified during previous investigations and commercial development in **Areas 2, 3, and 4**, excluding Area 4 Cap (Sub-MRS C/I-1) as described below and shown on **Figure 4**. Although MEC have previously been encountered at Sub-MRS C/I-2, these have typically been anomalous or small arms ammunition. Except for one **anomaly** removed in 2011 at 30 Clearview Drive, the most recent identification of MEC occurred in 1998 in Area 8-1.

## **SITE CHARACTERIZATION**

### *What has USACE done to investigate the C/I Area for MEC?*

Various studies have been conducted by the Army and USACE, including multiple RIs to investigate environmental issues at the C/I Area since the closing of the Former Raritan Arsenal. Figure 3 provides a map view of the munitions investigations and findings. The RI/FS Report (USACE, 2024) summarizes the previous MEC studies and interim removal/**remedial actions** performed at the C/I Area. The report provides a weight-of-evidence approach to determine the

potential presence of MEC in the C/I Area based on the previous investigations and **removals**.

The RI/FS Report (USACE, 2024) used a variety of characterization tools that are identified in the Remedial Investigation Characterization Tools highlight box. The RI/FS evaluated efforts to find and remove known and suspected MEC at the C/I Area.

### **RI Characterization Tools**

- Historical land use
- Site visit and interviews
- Archival searches
- Comprehensive review and reassessment of previous field investigations and **removal** actions
- **Geophysical surveys**
- Application of **Munitions Response Site Prioritization Protocol**

The first investigation performed was documented in a report prepared in 1963 by the Letterkenny Army Depot (LEAD) that discussed the results of a decontamination of 17 ammunition areas (explosive residue only) performed by the U.S. Army during the closure of the Former Raritan Arsenal. Six of the seventeen ammunition areas are within the C/I Area.

- **Area 2** - A surface search of the 3.4-acre area was conducted. Area 2 was released for surface use only.
- **Area 3** - A 1.9-acre portion of the former burning and demolition area was enclosed with a wire fence. The portion outside the fence underwent a surface search and was subsequently released for surface use only.
- **Area 4** - LEAD recommended enclosing a 7.09-acre area contaminated with TNT and smokeless powder with a barbed wire fence,



posting “Restricted Area” signs, and prohibiting surface cleaning or digging.

- **Area 7** - Decontamination consisted of opening a 4-foot-deep trench to remove and burn the two pipes that extended from the washout sump to the sewer sump. Residue and broken tile were placed in the trench after checks were made for explosive contamination. The remaining trench was filled, and area graded. Building S-811 was dismantled and decontaminated by burning the metal walls, roof, and concrete platform. Residue from the building and the concrete platform were checked and no explosive was found. Scrap metal was staged in Area 3. The sump was described as heavily contaminated; therefore, a 30-foot-long by 13-foot-wide area was fenced at Building S-810 and restricted from further use. Approximately 7,000 cubic yards of soil mixed with small arms cartridge cases and projectiles were excavated from area adjacent to Building S-810 and removed. Additional clearing of ammunition from this area was conducted by hand raking. With the exception of the fenced area, the remainder of Area 7 was released for unrestricted use.
- **Area 8** - Decontamination was conducted by surface search and hand rake removal of munitions, destruction of propellant powder by burning, discing to a depth of 6 inches, and additional search and removal of uncovered ammunition and components. Following decontamination, the entire area was released for unrestricted use.
- **Area 15** - Decontaminated by responsible supervisory personnel to the Raritan Post Engineer, prior to the assessment of LEAD personnel. No further action was required, and the area was released for further use without restrictions.

The following subsequent investigations and munitions removals have been conducted in the C/I Area.

- 1989: “Contamination Evaluation” of 15 Areas identified in the Letterkenny Army Depot report. The report prioritized six C/I Areas: Areas 2, 3, 4, 7, 8, and 15. An ordnance search and geophysical survey were conducted at each area. At Area 3, twenty ordnance-related objects were identified. One item was identified as hazardous and removed. At Area 4, within the fenced portion, ordnance fragments and a 9-inch diameter projectile were identified and removed. No ordnance was identified outside of the Area 4 fenced area. No ordnance was identified in any of the other areas.
- 1991 and 1993: Archival searches to identify areas of potential MEC at the Former Raritan Arsenal based on historical land uses and operations (disposal areas, burning pits, etc.) and ordnance cleanup activities.
- 1991: Removal actions. Area 2, a fuze was identified and removed during the initial site walk. At Area 4, six pits were excavated and various MEC were identified and removed. A 1.5-acre portion of the Area 4 2-acre removal area was subsequently capped.
- 1993: Phase I RI of C/I Areas 2, 3, 4, 7, 8, and 15, as well as other areas of the Former Raritan Arsenal. No ordnance was encountered in Areas 4, 7, 8, and 15. Various MEC were identified and removed from Area 2 and Area 3.
- 1993: **Geophysical surveys** of the C/I Area conducted to identify and record subsurface anomalies. Two expended grenades were recovered from Area 3, 11 boosters, a fuze, a bomb, and a nose were recovered from Area 4, and a 20-mm practice round was recovered



- from Area 8. Recovered items were subsequently disposed of appropriately.
- 1993: Ordnance investigation/and removal action completed in a 3.7-acre portion of- Area 2/3. A total of 98 ordnance items were removed.
  - 1993: Ordnance investigation/ removal action for three distinct sub sections in Area 3: Area 3 Valley (1.3 acres located 400 feet east of the Raritan Center Parkway-Clover Place intersection), Area 3 Woods (5.1 acres located northwest of the Raritan Center Parkway-Clover Place intersection), and Area 3 Annex (3.4 acres located northeast of the Raritan Center Parkway-Clover Place intersection). A magnetometer survey was conducted at all three sub sections. In Area 3 Valley, a pit was initially excavated to a depth of 14 feet. Subsequently, the fill from 14 to 17 feet was excavated and sifted to remove MEC. A total of 511 MEC items were identified and removed from the Area 3 Valley area. No large concentrations of MEC were found during the survey at Area 3 Woods, however a total of 158 MEC items were identified and removed. No MEC were identified during the survey of the Area 3 Annex area.
  - 1994: Removal activities. Final Removal Report for Spoils Areas described Area 3A as a ½-acre area containing soil moved presumably from Area 3 building construction that was contaminated throughout the area to a depth of 4 feet. Sifting was performed on Area 3A soil and the identified MEC were recovered and destroyed. A visual and geophysical survey was conducted in Area 4 and subsequent removal and destruction of identified MEC was performed.
  - 1999; **Geophysical surveys** of area identified as Area 3N. Four MEC items were identified and subsequently detonated.
  - 2000: **Engineering Evaluation/Cost Analysis (EE/CA)** for ordnance removal actions at the Former Raritan Arsenal. The **EE/CA** evaluated MEC removal actions, compiled, and summarized the data for MEC investigations and removal actions accomplished to date, and developed, evaluated, compared, and selected final corrective action alternatives. With one exception, risk of MEC exposures for the current use of Areas 2A, 2B, 3, 3 Valley, 3 Woods, 3 Annex, 3A, 3M, and 4 was rated as low. MEC exposure risk for future use of these areas, likely associated with intrusive activities, was considered high. The exception was Area 3 Annex for which MEC exposure risk was considered low for both the current and future use scenarios. For Areas 7, 8, 15, and 20, MEC exposure risk for both current and future use was considered low. No Further DoD Action was considered for Areas 3 Annex, 7, 8, 15 and 20.
  - 2004: An After-Action Report documented **UXO** encountered during excavation activities at 304 Raritan Center Parkway Area 2. The items were disposed of on an emergency basis by Explosive Ordnance Disposal (EOD) staff.
  - 2011: An EOD Incident Report. A 10-inch projectile was unearthed by a road construction crew approximately ¼ mile north of Area 15. EOD staff completed disposal.
  - 2019: During construction activities at 225 Raritan Center Parkway (Area 2A), inert munition debris were unearthed, removed and disposed.
  - 2020: During construction activities at 255 Clover Place (Area 3/4), two 24-inch shells were uncovered during pre-construction excavation and removed.
  - Various dates: Interviews with USACE, landowner and township personnel familiar



with past investigations and removal actions were conducted.

## **SCOPE AND ROLE OF THE ACTION**

The Former Raritan Arsenal is a FUDS encompassing multiple project areas, of which the C/I Area is a subset. The overarching strategy for the FUDS Property involves investigating and, where appropriate, remediating areas potentially impacted by historical military use. These efforts are conducted in phases and prioritize areas based on risk, accessibility, and stakeholder input.

A Remedial Investigation has been completed, targeting both MEC and munitions constituents (MC). Previous actions have included surface clearance, geophysical surveys, and focused removals where MEC was confirmed. Chemical constituents, including MC in soil and groundwater, were addressed under separate Hazardous, Toxic, and Radioactive Waste (HTRW) RIs (USACE, 2018 for soil, sediment and surface water and USACE, 2018 for groundwater). These numerous investigations confirmed there is unacceptable risk associated with MC, and, therefore, MC are not addressed further in this PP.

The remedial action described in this Proposed Plan addresses the Commercial Industrial Area and specifically 85.5 acres associated with Areas 2, 3, and 4 referred to as sub-MRS C/I-1. These 85.5 acres are within the total Former Raritan Arsenal **Munitions Response Site (MRS)**, which includes 3,283.5 acres.

Sub-MRS C/I-1 is potentially impacted by historical munitions storage, handling and disposal activities. This action fits into the broader remediation strategy by addressing an area where site-specific conditions warranted separate evaluation. The remedy will reduce potential exposure risks while supporting protectiveness across the full site portfolio.

Coordination with ongoing and future efforts at other portions of the FUDS Property will continue to ensure consistent land use controls and communication strategies are maintained.

As described above, the C/I Area has undergone many investigations and removal actions to find and remove known and suspected MEC for half a century (from 1963 to 2020).

## **SUMMARY OF SITE RISKS**

A risk assessment was performed to evaluate whether MEC posed unacceptable risks to human health or the environment for the areas included in this Proposed Plan. A munitions hazard assessment was used to aid in the development, evaluation, and selection of appropriate response alternatives.

### **Human Health Risks**

MEC Risk Summary: Based on the results of the **MEC Risk Management Methodology (RMM)**, under current and reasonably anticipated future conditions, MEC poses unacceptable risks to human health at the 85.5 acres associated with sub-MRS C/I-1 Area (Areas 2, 3 and 4).

A **Conceptual Site Model (CSM)** for MEC exposure in the C/I Area was developed to illustrate the complete and current and future exposure pathways based on the information provided in the RI.

Based on the application of the **MEC RMM** and **CSM**, USACE concluded that the human health risk due to the possible presence of MEC was determined to be “Unacceptable” for Sub-MRS C/I-1 at depths of greater than 4 feet and “Acceptable” for Sub-MRS C/I-2.



### **Basis for Action**

The RI findings based on this MEC risk assessment concluded:

- Sub-MRS C/I-1 (Areas 2, 3, and 4 excluding Area 4 Cap) should proceed to FS to address potential future unacceptable MEC risks at depths greater than 4 feet; and
- No further action is warranted for Sub-MRS C/I-2 (Areas 7, 8, 15, 20 and Owens-Illinois, Building 151, Inland Container and the Exclusion Area), as USACE concluded that there is no unacceptable risk of exposure to MEC for current and future receptors in this sub-MRS.

It is USACE's current judgment that the Preferred Alternative identified in this **Proposed Plan**, or one of the other active measures considered in the **Proposed Plan**, is necessary to protect public health or welfare or the environment from actual or threatened releases of pollutants or contaminants from Sub-MRS C/I-1, which may present an imminent and substantial endangerment to public health or welfare.

### **Feasibility Study for Sub-MRS C/I-1**

The FS served as the mechanism for development, screening and detailed evaluation of alternative remedial actions for Sub-MRS C/I-1 that met the Remedial Action Objectives (RAO) and allowed USACE to propose a preferred remedy.

The FS process included:

- Development of RAOs and General Response Actions based on the **CSM** and Applicable or Relevant and Appropriate Requirements.
- Screen technologies and process options applicable to general response actions and eliminate those that are not effective or implementable at the MRS.

- Assemble selected representative technologies into alternatives; and
- Screen and evaluate the alternatives using criteria specified in the **NCP**.

### **REMEDIAL ACTION OBJECTIVES**

The Remedial Action Objective applies only to MEC, not to MC or other contaminants of potential concern, because only MEC was determined to be associated with unacceptable human health or environmental risks in the RI.

Based on former Raritan site history and previous removal actions, the RAO for protection of human health is to reduce risk due to presence of explosives hazards associated with MEC that may remain within the subsurface of the 85.5-acre C/I-1 area.

The RAO only applies to MEC exposure in subsurface soils greater than 4 feet below ground surface (bgs). There is no unacceptable risk for surface soils to a depth of 4 feet bgs based on prior removal actions, dense industrial development of the C/I Area and the low likelihood for subsurface MEC to migrate to the surface. This is due to reduced erosion across the large areas of paved surfaces and minimal frost heave expected to 3 feet bgs in this region. The majority of previous removals and investigations have detected MEC at depths of 4 feet bgs.

Multiple MEC items such as grenades, projectiles ranging from 20mm to 9.2 inch, miscellaneous fuzes, 3.5 inch rocket warhead, stoke mortars, booster blasting caps, a WWI bomb, and various small ammunitions have been identified and removed during investigations within Areas 2, 3 and 4 that comprise C/I-1.

Subsurface (4 to 14 feet bgs): applies to construction, industrial, commercial workers, who may be exposed to MEC when performing construction or utility work and maintenance



workers, who may be exposed to MEC when performing routine facility maintenance, such as groundskeeping.

This modeled depth of concern supports the development of the RAO and the protective measures recommended. Accordingly, the following RAO was developed during the Feasibility Study (USACE, 2024) based on reasonably anticipated future use and conservative exposure assumptions: Prevent interaction with MEC items —such as grenades, projectiles, fuzes, stoke mortars, booster blasting caps, various small ammunitions and other MEC items found within the subsurface (4 -14 feet bgs) of the C/I-1 area for construction, industrial, commercial, and maintenance workers.

## **SUMMARY OF REMEDIAL ALTERNATIVES**

### *What alternatives were considered in the FS?*

The first alternative (No Further Action) is required by the **NCP** for baseline comparison purposes. The other two alternatives propose **Land Use Controls (LUC)**.

During the FS, the USACE considered, but did not analyze in detail, an alternative that would remediate the site to a condition that allows Unlimited Use/Unrestricted Use (UU/UE). An alternative achieving UU/UE would require physical MEC removal from the subsurface to a depth of 14 feet bgs, which is technically infeasible and cost prohibitive. This alternative is not feasible because existing infrastructure, including numerous occupied tenant buildings, would require demolition, and this alternative would require the removal of a significant volume of fill material (where prior MEC removals to a typical depth of 4 feet bgs have already been completed over the approximate 85-acre area) to access the zone where additional MEC detection and removal to 14 feet bgs could be initiated. In addition, removal is

administratively impracticable because landowners and tenants are not willing to participate in a remedy that would demolish buildings and significantly impact ongoing business operations.

### *Alternative 1 – No Further Action*

No Further Action means that no action, including implementation of a public education program, will be undertaken to reduce, control, or mitigate exposure. This alternative is used in the evaluation of other alternatives to provide a baseline for comparison.

The No Further Action alternative assumes continued use of Sub-MRS C/I-1 in its present state.

### *Alternative 2 – Land Use Controls (Educational Materials – Preferred Alternative)*

A **LUC** is any physical (fences), legal (deed restrictions), or administrative (notices and educational materials) mechanism that restricts the use of or limits access to real property to prevent or reduce risks to human health and the environment.

This alternative uses educational controls to inform and educate the public (i.e., site visitors and landowners) of the danger posed by potential munitions and how to respond if a munitions or explosive hazard is found. Public awareness and outreach will be implemented under the 3Rs Explosives Safety Education Program (Recognize, Retreat, Report). The 3Rs Program outlines the three key steps individuals should follow if they encounter a potential munition:

Recognize: when you may have encountered a munition and that munitions are dangerous.,

Retreat: do not approach, touch, move or disturb it, but carefully leave the area, and

Report: call 911 and advise the police of what you saw and where you saw it.



Under Alternative 2, USACE would develop and maintain a Land Use Control Implementation Plan (LUCIP) that describes the implementation and maintenance of the following two specific Land Use Controls:

*1. Annual Notification Letters:* Annual notification letters discussing the history of the property and the potential presence of munitions and the associated risks will be developed and mailed to the property owners for the subject areas and to appropriate offices in the local community (emergency services, Edison Township Engineering Department and Code & Construction Division, other relevant town offices in Edison Township,) once per year. These letters will also include information on the Edison Township Dig Permit Process, which is an existing dig permit program implemented, enforced, and maintained by Edison Township.

*2. Implement a 3Rs (Recognize, Retreat, Report) Explosives Safety Education Program:* The education program will include a fact sheet on the history of the property that will be provided to the property owners and appropriate offices in the local community. Materials may also be provided via online content at the Former Raritan Arsenal website. Property owners and community stakeholders will be provided 3Rs Explosive Safety Education materials that include information that helps protect property owners, public, and/or site users from the potential dangers associated with the presence of munitions. Specifically, the 3Rs Explosives Safety Guide for the Construction Industry will be provide to property owners and appropriate offices in Edison Township for inclusion in their dig permit materials.

The town of Edison Township currently implements, enforces, and maintains a dig permit program for areas of the Former Raritan Arsenal located in Edison Township. This is a pre-existing land use control established by Edison

Township that supports USACE's RAO of eliminating unacceptable risk, identification of a preferred alternative, and eventual implementation of a selected remedy. USACE is not responsible for this LUC.

Capital costs for this alternative are \$33,597, with annual operations and maintenance costs totaling \$14,363. The total net present value cost for this alternative is \$100,545.

*Alternative 3 – Land Use Controls (Educational Materials and Signage)*

This alternative includes the LUCs (Educational materials) listed in Alternative 2 and adds the additional LUC of Signage.

*Signage:* Signs (approximately ten) with site history, appropriate warnings, and 3Rs information will be placed in areas of high visibility within the developed areas to inform landowners, tenants, and the public of the risks posed by the potential presence of munitions. All signage will include 3Rs (Recognize, Retreat, Report) messaging and warnings in accordance with Department of Defense guidance to effectively reach the public and deter disturbance of potential munitions.

Capital costs for this alternative are \$45,113, with operations and maintenance costs totaling \$20,688. The total net present value cost for this alternative is \$141,542.

*Five-Year Reviews*

CERCLA requires review of the selected remedial action no less than every five years if unacceptable conditions remain at the site due to MEC such that the risks do not allow for unlimited use and unrestricted exposure. Therefore, CERCLA Five-Year Reviews would be required for Alternatives 2 and 3.



## EVALUATION OF ALTERNATIVES

The **NCP** requires consideration of nine evaluation criteria to evaluate the proposed remedial alternatives (Table 1). The nine criteria are divided into three groups: threshold, primary, and balancing. There are three proposed remedial alternatives, including:

1. Alternative 1: No Further Action
2. Alternative 2: Preferred Alternative LUCs - Educational Materials
3. Alternative 3: LUCs - Educational Materials and Signage

### *Threshold Criteria (Must Be Met)*

#### Overall Protection of Human Health and the Environment

Alternative 1 (No Further Action) does not meet the threshold criteria of protecting human health and the environment because it does not address the unacceptable risk for interaction with MEC.

Both Alternative 2 (Preferred Alternative) and Alternative 3 protects human health and the environment by modifying human behavior and preventing interaction with munitions in the subsurface (4 - 14 ft bgs) through LUCs. Alternative 2 (Preferred Alternative) involves distribution of annual notification letters to property owners and the local community and implementation of a 3Rs Explosives Safety educational program. Alternative 3 includes the same educational LUCs with the addition of signs throughout the C/I Area.

#### Compliance with Applicable or Relevant and Appropriate Requirements

There are no Applicable or Relevant and Appropriate Requirements for any Alternative.

### *Primary Balancing Criteria (Must Be Met)*

#### Long-Term Effectiveness and Permanence

Alternative 1 (No Further Action) does not provide long-term effectiveness or permanence.

Both Alternative 2 (Preferred Alternative) and Alternative 3 are effective in the long-term. Educational materials (annual notice and 3Rs Explosives Safety educational program) and signs inform landowners and the local community on the risks associated with potential MEC in the subsurface at Sub-MRS C/I-1.

#### Reduction of Toxicity, Mobility, and Volume Through Treatment

Alternatives 1, 2 and 3 do not reduce the toxicity, mobility, and volume of any MEC present in C/I-1.

#### Short-Term Effectiveness

With Alternative 1 (No Further Action), no action would be taken and there would be no risk to workers, residents, or the environment from implementation.

Alternative 2 (Preferred Alternative) does not involve any construction activities, and there are no short-term impacts to the community, workers, or environment. Alternative 3 involves the installation of signs. However, there is no unacceptable risk for MEC in surface soils to 4 ft bgs, and signs will be placed in developed areas. Therefore, this Alternative has no short-term impacts to the community, workers, or environment. Alternatives 2 and 3 are effective as soon as the LUCs are implemented (less than one year).

#### Implementability

No action is proposed with Alternative 1. Therefore, Alternative 1 is readily implementable since it requires no actions. Alternative 2 (Preferred Alternative) is technically and



administratively feasible and easily implementable. The services and materials required to implement annual notices and the 3Rs Explosives Safety education program are readily available. Alternative 3 is less implementable than Alternative 2. While technically feasible and the services and materials required to manufacture and install signs are readily available, Alternative 3 faces administrative challenges (landowner approval). Property owner input related to the installation of signs was obtained during the FS and documented in an Institutional Analysis Questionnaire. Property owners indicated that they did not want signs installed on their property, which makes Alternative 3 less implementable.

#### Costs

Alternative 1 proposed no action and therefore has no costs (\$0). Both Alternatives 2 and 3 are relatively cost-effective. Alternative 3 is most costly due to costs associated with manufacturing, installing, and maintaining signs. Operating and maintenance costs assume 30 years duration for cost comparison purposes (USEPA/USACE, 2000). The actual length of the remedy cannot be determined. As a result, 30 years is allowed by EPA as a conservative and proactive benchmark that allows consistent evaluation, budgeting and comparison across projects. It covers a long period but is short enough to make realistic plans with the aim of ensuring remedies remain protective over a reasonable planning horizon.

The estimated costs for the remedial alternatives are as follows:

| <b>Alternative</b> | <b>Capital Cost</b> | <b>(Operating &amp; Maintenance/ Periodic) Cost</b> | <b>Estimated Total Present Day Value</b> |
|--------------------|---------------------|---|--|
| 1                  | \$0                 | \$0   | \$0                                      |
| 2                  | \$33,597            | \$14,363  | \$100,545                                |
| 3                  | \$45,113            | \$20,688  | \$141,542                                |

#### State and Community Acceptance

These modifying criteria will be addressed in the Record of Decision after consideration of comments received during review of the Proposed Plan and Proposed Plan public comment period.



**Table 1**  
**Explanation of the Nine Evaluation Criteria**

CERCLA and NCP [40 CFR 300.430(e)(9)(iii)(A)-(I)] require the evaluation of each alternative to address the following nine criteria:

| Criteria  | Threshold  |
|---|--|
|   | <ol style="list-style-type: none"><li>1. <b>Overall Protection of Human Health and the Environment</b> – Evaluates whether a cleanup alternative provides protection and evaluates how risks are eliminated, reduced, or controlled through treatment, engineering controls, or local government controls.</li><li>2. <b>Compliance with Applicable or Relevant and Appropriate Requirements</b> – Evaluates whether a remedial alternative meets substantive cleanup standards, standards of control, or other requirements promulgated in other federal or state environmental laws or regulations that have been determined to be applicable or relevant and appropriate to the alternative or justifies any waivers.</li></ol> |
| Primary Balancing   |  |
| <ol style="list-style-type: none"><li>3. <b>Long-Term Effectiveness and Permanence</b> – Considers any remaining risks after cleanup is complete and the ability of a cleanup option to maintain reliable protection of human health and the environment over time once cleanup goals are met.</li><li>4. <b>Reduction of Toxicity, Mobility, or Volume through Treatment</b> – Evaluates a cleanup option’s use of treatment to reduce the harmful effects of the contaminants, their ability to move in the environment, and the amount of contamination present.</li><li>5. <b>Short-Term Effectiveness</b> – Considers the time needed to clean up a site and the risks and adverse effects a cleanup option may pose to workers, the community, and the environment until the cleanup goals are met.</li></ol> |  |
| Modifying   |  |
| <ol style="list-style-type: none"><li>6. <b>Implementability</b> – The technical and administrative feasibility of implementing a cleanup option, including factors such as the relative availability of goods and resources.</li><li>7. <b>Cost</b> – Includes estimated capital and annual operations and maintenance costs.</li><li>8. <b>State Acceptance</b> – Considers whether the state (New Jersey) agrees with USACE’s analyses and recommendations as described in the proposed plan.</li><li>9. <b>Community Acceptance</b> – Considers whether the local community agrees with USACE’s analyses and proposed cleanup plan. The comments USACE receives on its preferred alternative are important indicators of community acceptance.</li></ol>  |  |



## **PREFERRED ALTERNATIVE**

### *What is the preferred alternative for the Site?*

A No Further Action Decision is proposed for C/I-2 (1146 acres) based on no unacceptable risk. Area C/I-2 was not carried through to the FS or alternatives analysis.

The preferred alternative for Area C/I-1 is Alternative 2 (LUCs- Educational Materials). The LUCs will include the distribution of Annual Notification Letters to property owners and the local community and implementation of the 3Rs (Recognize, Retreat, Report) Explosives Safety Education Program.

This remedy will be effective at behavior modification by raising public awareness of the history of the site and the potential for munitions to remain in the subsurface and informing the public of an appropriate response should MEC be encountered. The Remedial Action Objective defines unacceptable risk as any interaction with munitions between 4 feet and 14 feet bgs, and the Land Use Controls are designed to reach users engaged in subsurface activities. This includes mechanisms to influence behavior during construction or utility work, which could disturb munitions at depth. USACE studies and investigations determined that no unacceptable risk exists for MEC in surface soils to 4 feet bgs due to extensive construction and development of the C/I Area and numerous previous removal actions (Remedial Investigation/Feasibility Study, USACE April 2024). However, in addition to the Remedial Action Objective, the LUCs in the Preferred Alternative also provide protection for all receptors from the surface soil to 4 feet bgs.

Based on information currently available, the USACE believes the Preferred Alternative meets the threshold criteria and provides the best balance of tradeoffs among the other alternatives with respect to the balancing and modifying criteria. USACE expects the Preferred Alternative

to satisfy the following statutory requirements of CERCLA §121(b): (1) be protective of human health and the environment; (2) comply with ARARs; and (3) be cost-effective. Implementation of treatment technologies or permanent solutions (such as excavation and disposal) was determined not to be practicable, technically infeasible and cost prohibitive because existing infrastructure, including numerous occupied tenant buildings, would require demolition. Therefore, the Preferred Alternative does not meet the statutory preference for treatment, and this preference is waived on the basis that long-term protectiveness can be achieved through land use controls that prevent exposure.

Compared to Alternative 1 (no further action) and Alternative 3 (LUCs – Educational Materials and Signage), Alternative 2 offers the best overall balance across the nine CERCLA evaluation criteria. The Preferred Alternative is more cost-effective and implementable than Alternative 3.

NJDEP concurred with USACE's Remedial Investigation and Feasibility Study, which determined no further action was necessary for C/I-2 and recommended remedial action for C/I-1. The Preferred Alternative presented in this **Proposed Plan** may be modified based on public comments and new information.

## **NEXT STEPS**

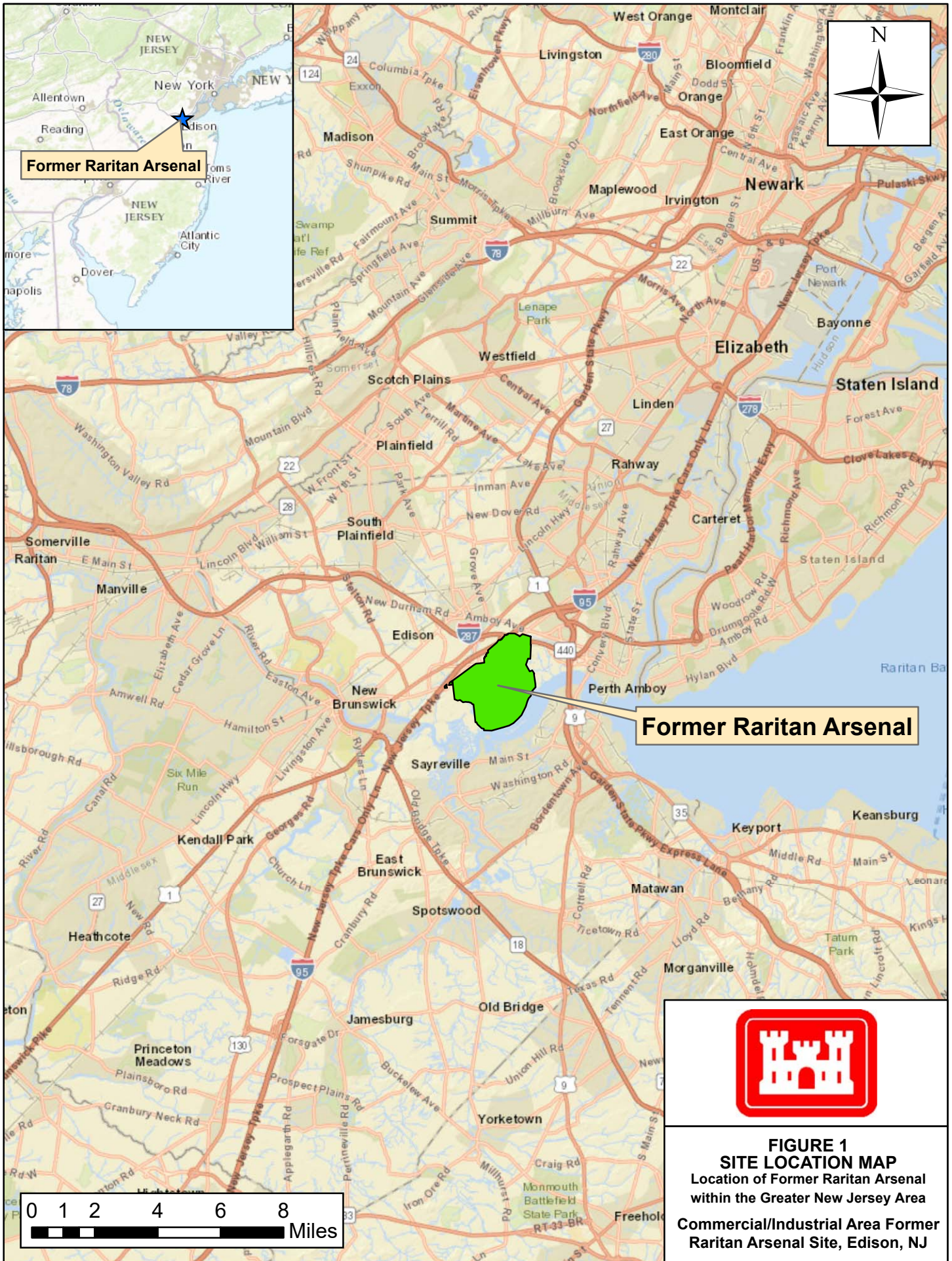
### *What happens next?*

USACE will conduct a public meeting on 16 April 2027, at the Edison Senior Center, 2963 Woodbridge Ave, Edison, NJ 08837. Once the community has reviewed this **Proposed Plan**, USACE will review all comments received from the public and solicit input from the state regulator, NJDEP, to determine if the recommended alternative remains the most appropriate decision for the C/I Area. USACE will prepare a written summary of and response to all comments and new or relevant information submitted during the **public**



**comment period** in the **ROD's Responsiveness Summary**.

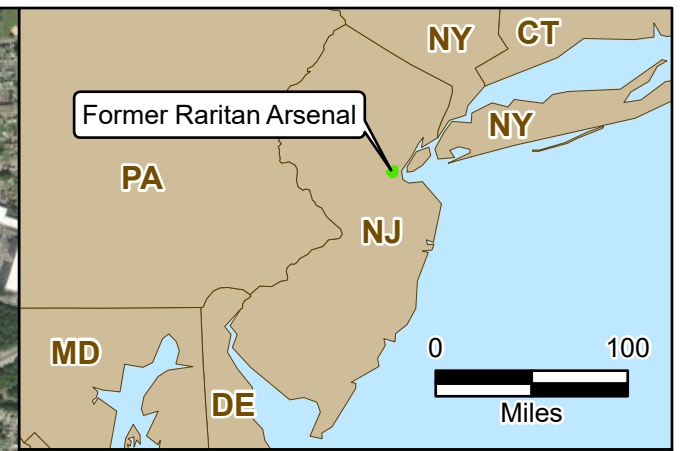
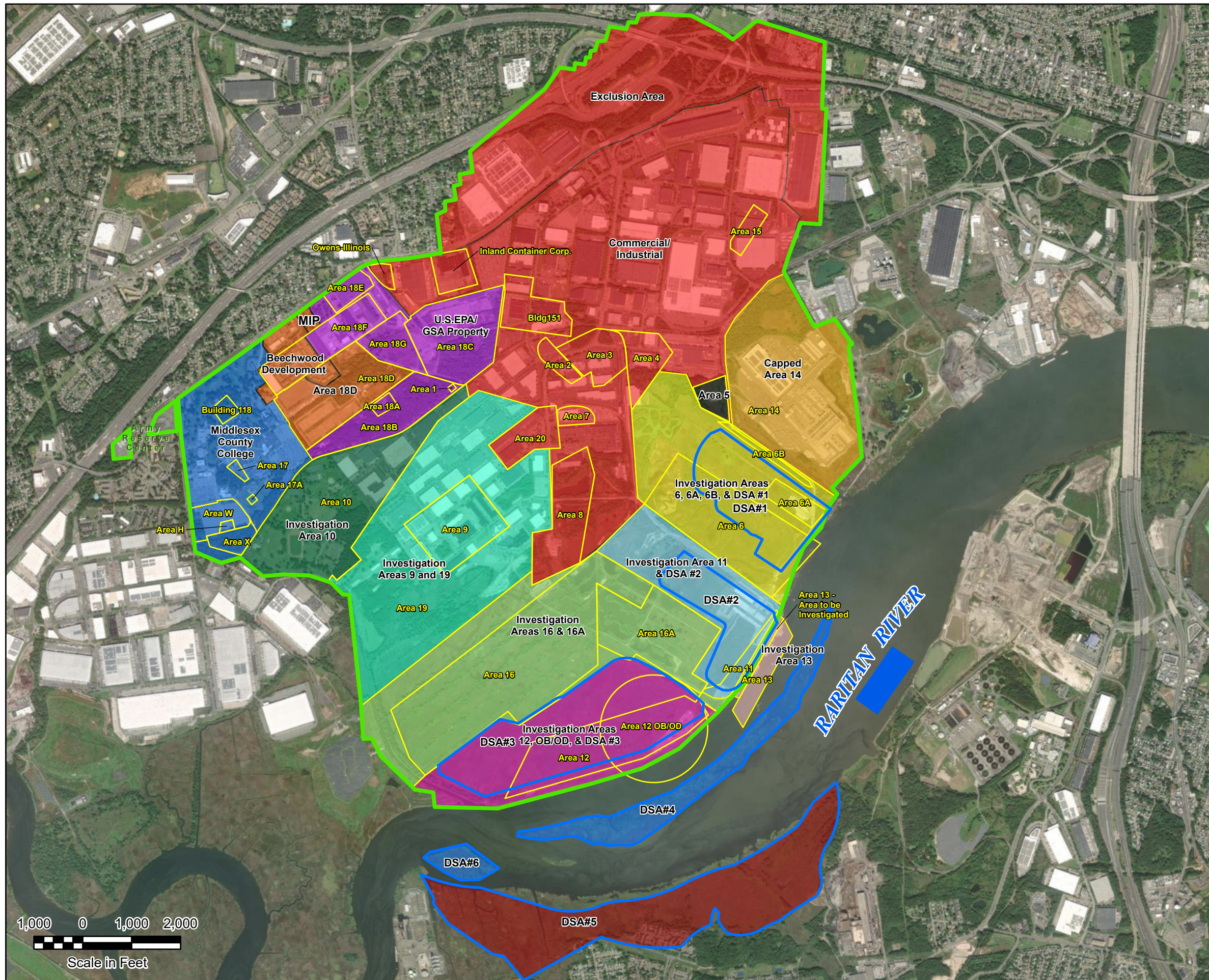
The *public comment period* for this **Proposed Plan** is 35 days from 14 April 2026 to 17 May 2026. Contact information is provided in the Contact section of this plan.



**Former Raritan Arsenal**

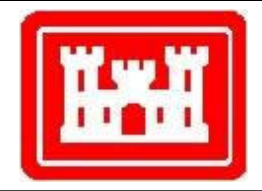


**FIGURE 1**  
**SITE LOCATION MAP**  
 Location of Former Raritan Arsenal  
 within the Greater New Jersey Area  
 Commercial/Industrial Area Former  
 Raritan Arsenal Site, Edison, NJ

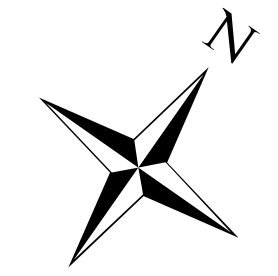
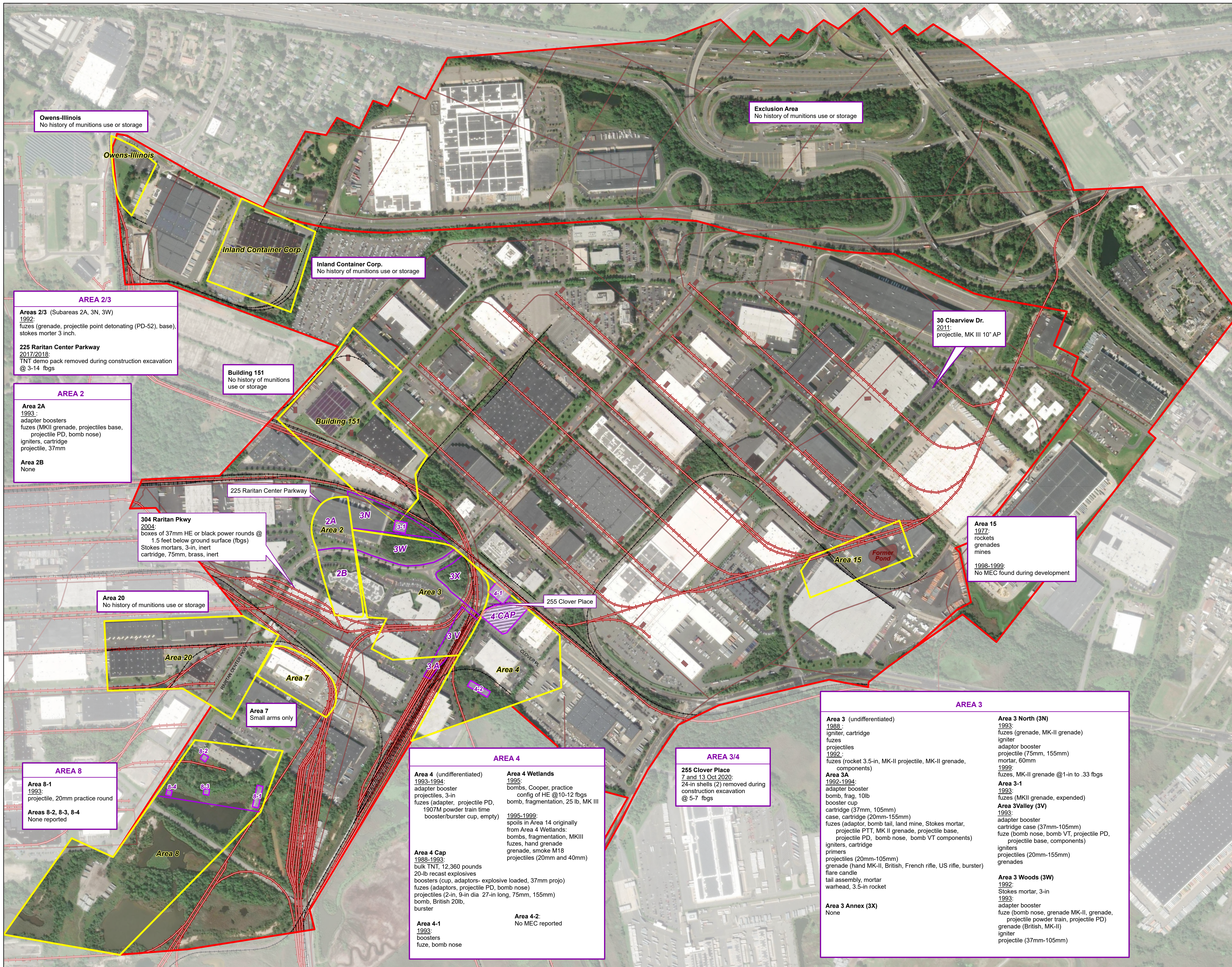


- Boundary from FUDSMIS GIS (3,316 acres)
- Investigation Areas
- Dredge Spoils Area Boundary
- Remedial Investigation Areas**
- Area 18D, Middlesex Interfaith Partners, & Beechwood Development (104 acres)
- Commercial / Industrial, & Exclusion Area (1,233 acres)
- U.S.EPA/GSA Property (178 acres)
- Middlesex County College (169 acres)
- Area 5 (9.75 acres)
- Areas 6, 6A, 6B & DSA #1 (236 acres)
- Areas 9 and 19 (350 acres)
- Area 10 (143 acres)
- Area 11 & DSA #2 (130 acres)
- Area 12, OB/OD & DSA #3 (235 acres)
- Area 13 (23 acres)
- Areas 16, & 16A (352 acres)
- DSA #4 & #6 (94 acres)
- DSA #5 (228 acres)
- Other Areas**
- Army Reserve Center - Ineligible (9 acres)
- Capped Area 14 - Ineligible (189 acres)

Imagery Source: Esri World Imagery.



**Figure 2**  
**Former Raritan Arsenal Remedial Investigation Areas**  
 Commercial/Industrial Area shown in red.  
**Former Raritan Arsenal Edison, New Jersey**

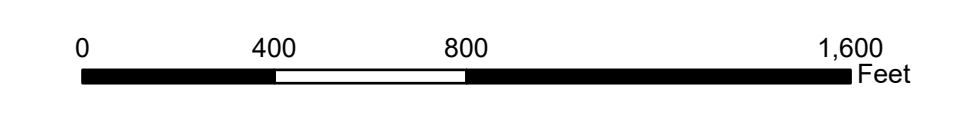


**Legend**

- Commercial Industrial Area
- Exclusion Area
- Letterkenny (1963) and/or RI Area
- Area 4 (Cap - evaluated separately)
- MEC Survey/Grid Area
- MEC Grid
- Existing Railroad
- Historical Railroad
- Historical building, magazine, igloo
- Historical Road

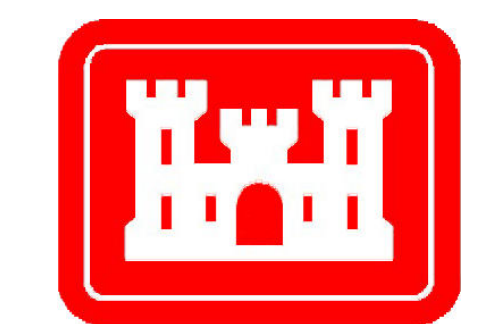
**INVESTIGATION AREA DESCRIPTIONS**

- Area 2 - Former Demolition Area**  
Subareas:  
2A and 2B
- Area 3 - Former Burning and Demolition Areas**  
Subareas:  
3X - Annex  
3V - Valley  
3N - North  
3W - Woods  
3A  
3-1
- Area 4 - Former TNT Washout and Munitions Demilitarization Area**  
Subareas:  
4 Cap  
4-1  
4-2  
Wetlands
- Area 7 - Former Ammunition Popping Plant Area**
- Area 8 - Former Bulk Propellant Storage Area**
- Area 15 - Former Drainage Pit Area**
- Area 20 - Former Magazine and Explosives Renovation Area**
- Owens-Illinois - Former Fuel Storage Area**
- Building 151 - Former Igloo Groundwater Contamination Area**
- Inland Container Corporation - Former Chemical Storage Area**

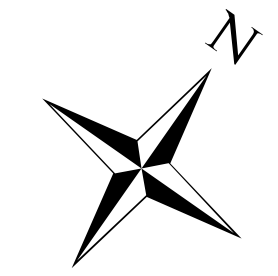


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Imagery Source: ESRI World Imagery.



**Figure 3**  
**Summary of Munitions Investigations and Removals**  
With descriptions of items removed.  
**Commercial/Industrial Area**  
**Former Raritan Arsenal Site, Edison, New Jersey**

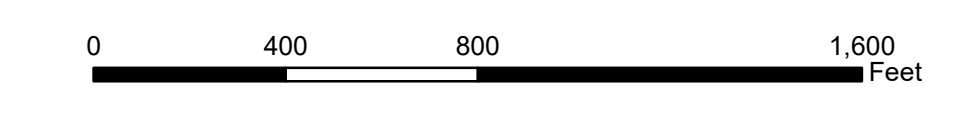


**Legend**

- C/I-1 Sub-MRS (85.5 acres)
- C/I-2 Sub-MRS (1146 acres)
- Commercial Industrial Area
- Exclusion Area
- Letterkenny (1963) and/or RI Area
- Area 4 (Cap - 1.5 acres)
- Existing Railroad
- Historical Railroad

**INVESTIGATION AREA DESCRIPTIONS**

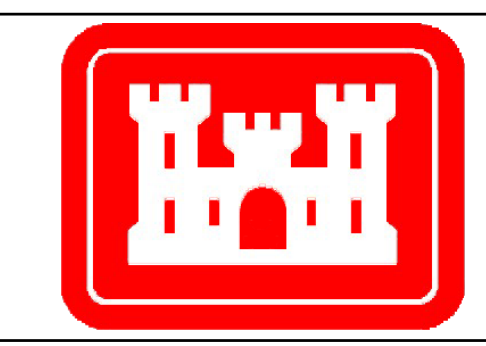
- Area 2** - Former Demolition Area
- Area 3** - Former Burning and Demolition Areas
- Area 4** - Former TNT Washout and Munitions Demilitarization Area
- Area 7** - Former Ammunition Popping Plant Area
- Area 8** - Former Bulk Propellant Storage Area
- Area 15** - Former Drainage Pit Area
- Area 20** - Former Magazine and Explosives Renovation Area
- Owens-Illinois** - Former Fuel Storage Area
- Building 151** - Former Igloo Groundwater Contamination Area
- Inland Container Corporation** - Former Chemical Storage Area



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Imagery Source: ESRI ArcGIS Online and data partner USDA FSA, NAIP, 7/2013.

FILE: G:\Projects\USACE\Raritan\_Arsenal\Figure\_3\_CI\_Proposed\_Sub\_MRS1  
 DATE: 11/18/2015 rev 10/5/2016  
 GIS: KHL  
 CHK: SS  
 PM: SG



**Figure 4**  
**C/I Area Sub-MRSs**

Areas 2,3,4 shown in orange to depict area requiring land use controls.

**Commercial/Industrial Area**  
**Former Raritan Arsenal Site, Edison, New Jersey**



## REFERENCES

- U.S. Environmental Protection Agency/ U.S. Army Corps of Engineers (USEPA/USACE). 2000. *A Guide to Developing and Documenting Cost Estimates During the Feasibility Study*. July.
- USACE, 1996. Final Site-Wide Hydrology Report, Former Raritan Arsenal Phase II Remedial Investigation. Prepared by Weston Solutions Inc. June.
- USACE. 2016. Final Groundwater and Vapor Intrusion Feasibility Study, Former Raritan Arsenal Site. November.
- USACE. 2017. Proposed Plan, Former Raritan Arsenal Site, Groundwater and Vapor Intrusion Operable Unit. April.
- USACE, 2019. Final Decision Document for Former Raritan Arsenal Groundwater and Vapor Intrusion Operable Unit FUDS Project Number C02NJ0084-02. May.
- USACE, 2021. Final Decision Document for Former Raritan Arsenal Commercial/Industrial Area, FUDS Project Number C02NJ0084-14. August.
- USACE, 2024. Final Remedial Investigation/Feasibility Study for Munitions and Explosives of Concern for the Commercial/Industrial Area (Area 2, Area 3, Area 4, Area 7, Area 8, Area 15, Area 20, Owens-Illinois, Building 151, and Inland Container Corporation) Former Raritan Arsenal, FUDS Project Number C02NJ008403. April.



## ABBREVIATIONS AND ACRONYMS

|        |   |
|--------|---|
| 3Rs    | Recognize, Retreat and Report (Explosives Safety Education)                   |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act of 1980 |
| C/I    | Commercial/Industrial Area  |
| CSM    | Conceptual Site Model   |
| DERP   | Defense Environmental Restoration Program                                     |
| DoD    | Department of Defense   |
| EE/CA  | Engineering Evaluation/Cost Analysis  |
| EOD    | Explosive Ordnance Disposal   |
| FS     | Feasibility Study   |
| FUDS   | Formerly Used Defense Sites   |
| LEAD   | Letterkenny Army Depot  |
| LUC    | Land Use Control  |
| LUICP  | Land Use Control Implementation Plan  |
| MEC    | Munitions and Explosives of Concern   |
| mm     | millimeter  |
| MRS    | Munitions Response Site   |
| NCP    | National Oil and Hazardous Substances Pollution Contingency Plan              |
| NJDEP  | New Jersey Department of Environmental Protection                             |
| OE     | Ordnance and Explosives   |
| RAO    | Remedial Action Objective   |
| RI     | Remedial Investigation  |
| RMM    | Risk Management Methodology   |
| ROD    | Record of Decision  |
| TNT    | Trinitrotoluene   |
| USACE  | U.S. Army Corps of Engineers  |
| USEPA  | U.S. Environmental Protection Agency  |
| UXO    | Unexploded Ordnance   |
| UU/UE  | Unlimited Use/Unrestricted Use  |



## **GLOSSARY OF TERMS**

**Administrative Record:** – The body of documents that informs the public of the site investigation and “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.

**Anomaly:** Any item that is seen as a subsurface irregularity after geophysical investigation. This irregularity will deviate from the expected subsurface ferrous and non-ferrous material at a site (e.g., pipes, power lines). IGD 14-01, EM 200-1-15

**Baseline Risk Assessment for MEC:** The baseline risk assessment for Munitions and Explosives of Concern (MEC) is a determination of the potential presence of MEC, the activities site users might perform (current or future) that would impart energy to a potential MEC item, and the likelihood for, and the severity of adverse health effects caused such interactions, in the absence of any actions to control or mitigate them. The baseline risk assessment contributes to the site characterization and subsequent development, evaluation, and selection of appropriate response alternatives for a Munitions Response Site (MRS). The baseline risk assessment is the consideration of all site-specific data resulting in a determination of acceptable or unacceptable risk.

**Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA):** Federal law enacted to address cleanup of hazardous substance releases and contaminated sites. CERCLA, also known as Superfund, provides the legal framework for the identification, investigation, and remediation for sites contaminated with hazardous substances.

**Conceptual Site Model (CSM):** A description of a FUDS and its environment that is based on existing knowledge. It describes sources of military munitions or HTRW at a property; actual, potentially complete, or incomplete exposure pathways; current or reasonably anticipated future land use; and potential receptors. The source-receptor interaction is a description output of a CSM. The CSM serves as a planning instrument, a modeling and data interpretation aid, and a communication device for use by the PDT.

**Decision Document:** A generic term used to describe the documentation for the selection of a removal action, remedial action, or other type of environmental restoration action. Examples of Decision Documents include an action memorandum (i.e., document describing a removal action selected in accordance with section 300.415 of the NCP) and a Record of Decision (ROD) (i.e., document describing the selection of a remedial action in accordance with section 300.430(f)(5)).

**Defense Environmental Restoration Program (DERP):** The DoD environmental restoration program authorized as a section of SARA in 1986. DERP authorizes and governs the evaluation and cleanup of contamination and other environmental conditions at DoD installations and FUDS. 10 USC § 2700 et. seq.

**Discarded Military Munitions (DMM):** 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 UXO, 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. 10 U.S.C. 2710(e)(2)



**Engineering Evaluation/Cost Analysis (EE/CA):** An EE/CA is prepared for all non-time-critical removal actions as required by Section 300.415(b)(4)(i) of the NCP. The goals of the EE/CA are to identify the extent of a hazard, to identify the objectives of the removal action, and to analyze the various alternatives that may be used to satisfy these objectives for cost, effectiveness, and implementability. EP 75-1-3

**Feasibility Study (FS):** A study undertaken by the lead agency to develop and evaluate options for remedial action. The RI data are used to define the objectives of the response action, to develop remedial action alternatives, and to undertake an initial screening and detailed analysis of the alternatives. The term also refers to a report that describes the results of the study. 40 CFR 300

**Formerly Used Defense Sites (FUDS) Property:** A FUDS is defined as real property that was owned by, leased to, or otherwise possessed by the United States and under the jurisdiction of the Secretary that was transferred from DoD control prior to 17 October 1986 (SARA Section 211 as codified in 10 USC § 2701(c)(1)(B)). The term “Secretary” means the Secretary of Defense and the Secretaries of each of the Military Departments, as well as the Secretaries of any predecessor departments or agencies of DoD. FUDS Properties can be located within the 50 States, District of Columbia, Territories, Commonwealths, and possessions under the jurisdiction of the United States.

**Geophysical Surveys:** Methods used to detect and map subsurface anomalies, which may include MEC or other metallic debris. These surveys use various technologies, such as magnetometers and ground-penetrating radar, to identify and characterize subsurface objects without disturbing the ground.

**Information Repository:** A repository, generally located in libraries or other publicly accessible locations in or near communities affected by the DERP-FUDS project, which contains accurate and up-to-date documents reflecting ongoing environmental restoration activities. This may include historical documents, EE/CAs, meeting minutes, RI/FSs, Proposed Plans, public notices, public comments and responses to those comments, ROD, etc. EP 200-3-1

**Land Use Controls (LUCs):** Any type of physical, legal, or administrative mechanism that restricts the use of or limits access to real property to prevent or reduce risks to human health and the environment. Physical mechanisms encompass a variety of engineered remedies to contain or reduce contamination and physical barriers to limit access to property, such as fences or signs. The legal mechanisms used for LUCs are generally the same as those used for institutional controls as discussed in the NCP. Legal mechanisms include restrictive covenants, negative easements, equitable servitudes, and deed notices. Administrative mechanisms include notices, adopted local land use plans and ordinances, construction permitting, or other land use management systems to ensure compliance with use restrictions. (DERP Manual). NOTE: because FUDS are not currently under DOD jurisdiction for purposes of control of the property usage, USACE does not have authority to implement, maintain, or enforce LUCs related to real property ownership or to the imposition of governmental controls.

**MEC Risk Management Methodology (RMM):** A qualitative tool used to evaluate and manage risks at MRSs. It provides a structured framework to guide discussions and build consensus on risk management decisions.

**Munitions Constituents (MC):** Any materials originating from unexploded ordnance (UXO), discarded military munitions (DMM), or other military munitions, including explosive and non-explosive materials, and emission, degradation, or breakdown elements of such ordnance or munitions. 10 USC. § 2710(e)(3)



**Munitions Debris:** Remnants of munitions (e.g., fragments, penetrators, projectiles, shell casings, links, fins) remaining after munitions use, demilitarization, or disposal. Department of the Army Office of the Assistant Secretary Installations and Environment, Memorandum for the Assistant Chief of Staff For Installation Management, Subject: Munitions Response Terminology, 21 April 2005.

**Munitions and Explosives of Concern (MEC):** This term, which distinguishes specific categories of military munitions that may pose unique explosives safety risks, means: (a) UXO, as defined in 10 USC § 101(e)(5); (b) discarded military munitions, as defined in 10 USC § 2710 (e)(2); or (c) munitions constituents (e.g., TNT or Research Department explosive), as defined in 10 USC § 2710(e)(3), present in high enough concentrations to pose an explosive hazard. 32 CFR § 179.3

**Munitions Response Site (MRS):** A discrete location within a MRA that is known to require a munitions response. 32 CFR 179.3

**Munitions Response Site Prioritization Protocol:** A process established in a DoD regulation that provides a tool to assign a relative priority for munitions responses to each location in the Department's inventory of defense sites known or suspected of containing UXO, discarded military munitions, or munitions constituents. 32 CFR Part 179

**National Oil and Hazardous Substances Pollution Contingency Plan (NCP):** Revised in 1990, the NCP is a regulation promulgated by USEPA that provides the regulatory framework for response actions under CERCLA, as well as National and Regional Response Teams that respond to releases of national or regional significance. (40 CFR Part 300) The NCP designates the DoD as the removal response authority for DoD installations, and incidents involving DoD military weapons and munitions or weapons and munitions under the jurisdiction, custody, or control of DoD. 40 CFR § 300.120(c) and (d)

**Proposed Plan:** In the first step in the remedy selection process, the lead agency identifies the remedial action alternative that best meets the requirements in the NCP § 300.430(f)(1) and (f)(2) and presents that preferred alternative to the public in a proposed plan. The purpose of the proposed plan is to supplement the RI/FS and provide the public with a reasonable opportunity to comment on the preferred alternative for remedial action, as well as alternative plans under consideration, and to offer comments on the proposed remedial action at a site. ER 200-3-1

**Public Comment Period:** A prescribed period during which the public may comment on various documents and actions taken by the government and regulatory agencies.

**Record of Decision (ROD):** A public document that reflects the decision of an authorized agency official selecting a remedial action to respond to a CERCLA release that requires a remedy at a CERCLA site. DoD uses the term ROD for remedy selection decisions at all DERP sites. The ROD was previously referred to as a Decision Document.

**Remedial Investigation/Feasibility Study (RI/FS):** An in-depth study designed to gather the data necessary to determine the nature and extent of a release or threat of a release of contamination at a site, assess risk to human health and the environment related to the release, and establish criteria for cleaning up the site. During the FS, the RI data are analyzed and remedial alternatives are identified and evaluated for their ability to satisfy the remedy selection criteria required by CERCLA and the NCP. The FS serves as



the mechanism for the development, screening, and detailed evaluation of alternative remedial actions. 40 CFR 300.430

**Remedy [or remedial action]:** Under CERCLA, those actions consistent with permanent remedy taken instead of or in addition to removal actions in the event of a release or 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 or welfare or the environment. The term includes, but is not limited to, such actions at the location of the release as storage, confinement, perimeter protection using dikes, trenches, or ditches, clay cover, neutralization, cleanup of released hazardous substances and associated contaminated materials, recycling or reuse, diversion, destruction, segregation of reactive wastes, dredging or excavations, repair or replacement of leaking containers, collection of leachate and runoff, onsite treatment or incineration, provision of alternative water supplies, and any monitoring reasonably required to assure that such actions protect the public health and welfare and the environment. 42 USC 9601

**Responsiveness Summary:** Section of the Record of Decision that provides a summary of comments and questions received from the public during the public comment period along with USACE responses to those comments. The summary is an essential part of the public involvement process, ensuring transparency and addressing community concerns.

**Unexploded Ordnance (UXO):** Military munitions that:

- (a) have been primed, fused, armed, or otherwise prepared for action;
- (b) have been fired, dropped, launched, projected or placed in such a manner as to constitute a hazard to operations, installations, personnel, or material; and
- (c) remain unexploded either by malfunction, design, or any other cause. 10 USC § 101(e)(5)

**U.S. Army Corps of Engineers (USACE):** The organization responsible for executing the FUDS Program on behalf of the DoD. USACE is tasked with planning, programming, budgeting, executing, managing, and reporting activities associated with FUDS properties and projects.



## **CONTACT INFORMATION**

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## **INFORMATION REPOSITORIES**

Information Repository  
U.S. Army Corps of Engineers, New York  
District  
2890 Woodbridge Avenue  
Edison, NJ 08837

Central Information Repository  
USACE New York District Office  
26 Federal Plaza  
New York, NY 10278-0090

Information can also be found through the  
USACE New York District website for the  
Former Raritan Arsenal:

<http://www.nan.usace.army.mil/Raritan>