U.S. ARMY CORPS OF ENGINEERS

Environmental Cleanup Project Update

Former Charlestown Naval Auxiliary Landing Field
Charlestown, Rhode Island

Defense Environmental Restoration Program
Formerly Used Defense Site D01RI0008

January 8, 2025

U.S. ARMY

US Army Corps of Engineers®
New England District

INTRODUCTIONS

U.S. Army Corps of Engineers – New England District

- Gary Morin, PE, Chief, Environmental Project Management
- Heather Sullivan, PMP, Program Manager
- Gregory Hencir, PMP, Project Manager
- Tracy Dorgan, PG, Project Geologist
- Nicole Brennan, PG, Assistant Project Geologist
- Michael Narcisi, Ecological Risk Assessor
- Amy Rosenstein, Human Health Risk Assessor
- Constance Lapite, Chemist
- Marcos Paiva, Archeologist
- Beth Gosselin, Chief, Public Affairs
- Sheandra Sterling, Outreach Coordinator
- Todd Beckwith, Project Manager (Baltimore District)
- David King, Project Geophysicist (Baltimore District)
- Marty Holmes, Ordnance and Explosives Safety Specialist (Baltimore District)

U.S. Army Corps of Engineers – Headquarters, Directorate of Military Programs

- Gunarti Coghlan, Chief, DOD Environmental Programs

U.S. Army Corps of Engineers – Environmental and Munitions Center of Excellence

- Carl Harms, PE, Environmental Engineer

U.S. Army Corps of Engineers – Contractors

- WESTON Solutions, Inc.
- GSI North America, Inc.
- Hana Engineers & Consultants, LLC.
- George Joslin Well & Pump Co.

INTRODUCTIONS

Regulatory Agency

Rhode Island Department of Environmental Management

- Nicholas Noons, PE, Environmental Engineer IV
- Patricia Burke, PE, Project Manager

Property Owners

U.S. Fish and Wildlife Service

- Karrie Schwaab – Project Leader
- Nick Ernst – Wildlife Biologist

Town of Charlestown

- Deb Carney, Town Council President
- Richard Serra, Town Council Vice President
- Peter Slom, Town Council
- Stephen Stokes, Town Council
- Susan Cooper, Town Council
- Jeffrey Allen, Town Administrator
- Vicky Hilton, Parks and Recreation Director
- Carl Fehrmann, Parks Maintenance

TOWN OF CHARLESTOWN

MEETING OBJECTIVES

The purpose of this meeting is to:

1. Provide a high-level overview of the U.S. Army Corps of Engineers (USACE) investigation and cleanup efforts at the former Charlestown Naval Auxiliary Landing Field (CNALF).
2. Gather feedback on how USACE can better inform the community about the cleanup project.

Please fill out our questionnaire

http://form.jotform.com/243454596005054

AGENDA

PART 1

- **SITE HISTORY**
- **FEDERAL CLEANUP PROGRAM**
- **PLANNING & COORDINATION**

PART 2

- **ENVIRONMENTAL PROJECT STATUS**
  - PROJECT 8: BOILER HOUSES, ELECTRICAL VAULT
  - PROJECT 9: MILITARY MUNITIONS RESPONSE PROGRAM
  - PROJECT 9: BURN PIT, LANDFILLS, WATER SUPPLY AREA
  - PROJECT 9: REMOVAL ACTIONS

PART 3

- **RESTORATION ADVISORY BOARD**

PART 1
SITE HISTORY

Presenter: Gregory Hencir, USACE Project Manager

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SITE HISTORY

- CNALF was acquired between 1940 and 1942 by the U.S. Navy and encompasses approximately 630 acres in Charlestown, Rhode Island.
- CNALF was used as a pilot and flight crew training facility during World War II and later as a support facility to Quonset Point Naval Air Station.

Photo Source: Larry Webster Collection

CURRENT USES

- CNALF was closed in the early 1970s and transferred to the Town of Charlestown and the U.S. Fish and Wildlife Service for beneficial reuse in 1981.
- The property that comprised CNALF is currently used for conservation and recreation as Ninigret Park and Ninigret National Wildlife Refuge.

PART 1
FEDERAL CLEANUP PROGRAM

Presenter: Gregory Hencir, USACE Project Manager

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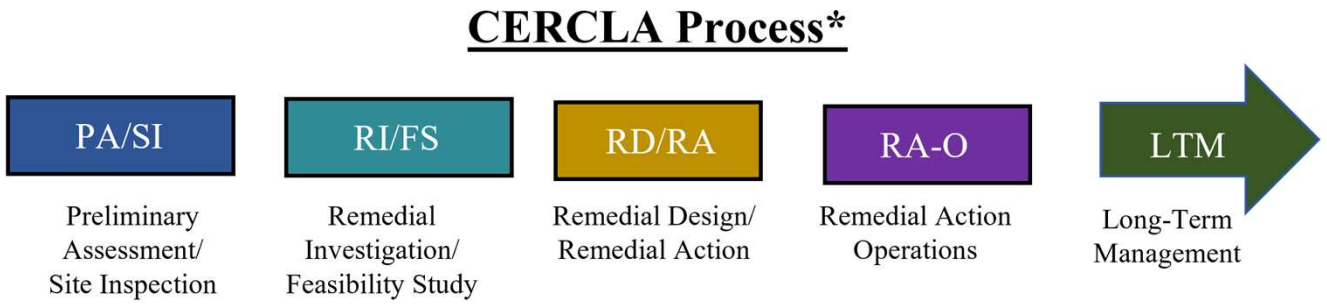
FEDERAL CLEANUP PROGRAM

- **Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)** passed by Congress in 1980 established national framework for the identification, investigation, and cleanup of hazardous substances.



* A removal action may be initiated at any time during the process if imminent threat to human health, safety, or environment exists.

- CNALF is **NOT** listed on EPA's National Priority List (NPL), commonly known as "Superfund Sites".

FEDERAL CLEANUP PROGRAM

- Section 211 of the **Superfund Amendments and Reauthorization Act (SARA)** passed by Congress in 1986 established the Defense Environmental Restoration Program (DERP) as codified in Title 10 of the United States Code (USC) § 2700 et seq.
  - Secretary of Defense shall carry out environmental restoration for facilities under jurisdiction of the Secretary.
  - Established the **Formerly Used Defense Site (FUDS)** program**.**
    - A FUDS property 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 October 17, 1986.
    - A FUDS project must have hazards or contamination that was released by DOD on-site while DOD had jurisdiction over the site.

FEDERAL CLEANUP PROGRAM

KEY POINTS

- Cleanup follows the CERCLA process.
- USACE is tasked with executing the cleanup program at CNALF under FUDS.

PART 1
PLANNING & COORDINATION

Presenter: Gregory Hencir, USACE Project Manager

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PLANNING & COORDINATION

- USACE's cleanup mission requires **close community coordination.**
- USACE is committed to protecting human health and the environment, while also accommodating the many recreational uses and conservation efforts.

Examples:

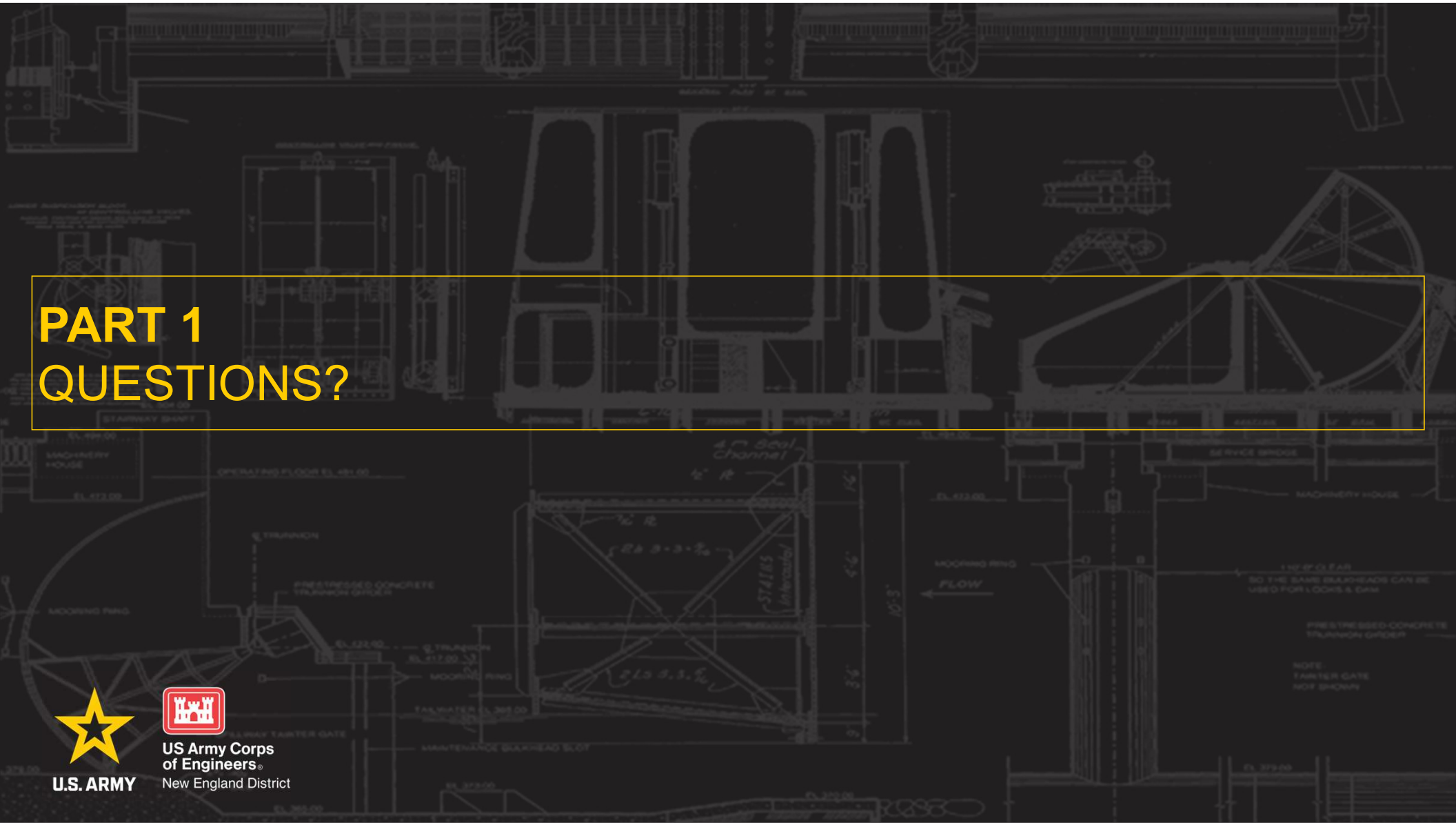
- Ninigret Park Events (e.g., Seafood Festival, Rhythm & Roots, Atlantis Rising)
- Ninigret Park Activities (e.g., Summer Day Camp)
- DarkSky International
- Wetland Protection
- Wildlife Nesting Restrictions
  - Noise Restriction - May 15th to August 30th
  - Brush Clearing Restriction - April 15th to August 15th
- Hunting - September 15th to January 31st
- Archaeological and Cultural Resources

Outdoor education at Ninigret National Wildlife Refuge

PLANNING & COORDINATION

- Coordination with USACE during planning allows USACE to provide information that may **assist the Town of Charlestown and USFWS in making planning decisions**.
- Town of Charlestown, USFWS, their contractor(s), or others they permit to disturb soil should exercise due diligence. Should a project require any soil disturbance below ground surface, USACE recommends the Town of Charlestown and USFWS perform that work with appropriate oversight and soil testing to properly characterize and manage the disturbed soil.
- Should the Town of Charlestown, USFWS, their contractor(s), or others they permit to cause movement of onsite contaminated materials, or the addition of contaminated materials, related or unrelated to former DOD operations, then the Town of Charlestown and USFWS may become a **Potentially Responsibly Party (PRP)** under CERCLA and be liable for a portion of the investigation and/or remedial costs.

Imported clean loam used as backfill.



PART 1
QUESTIONS?

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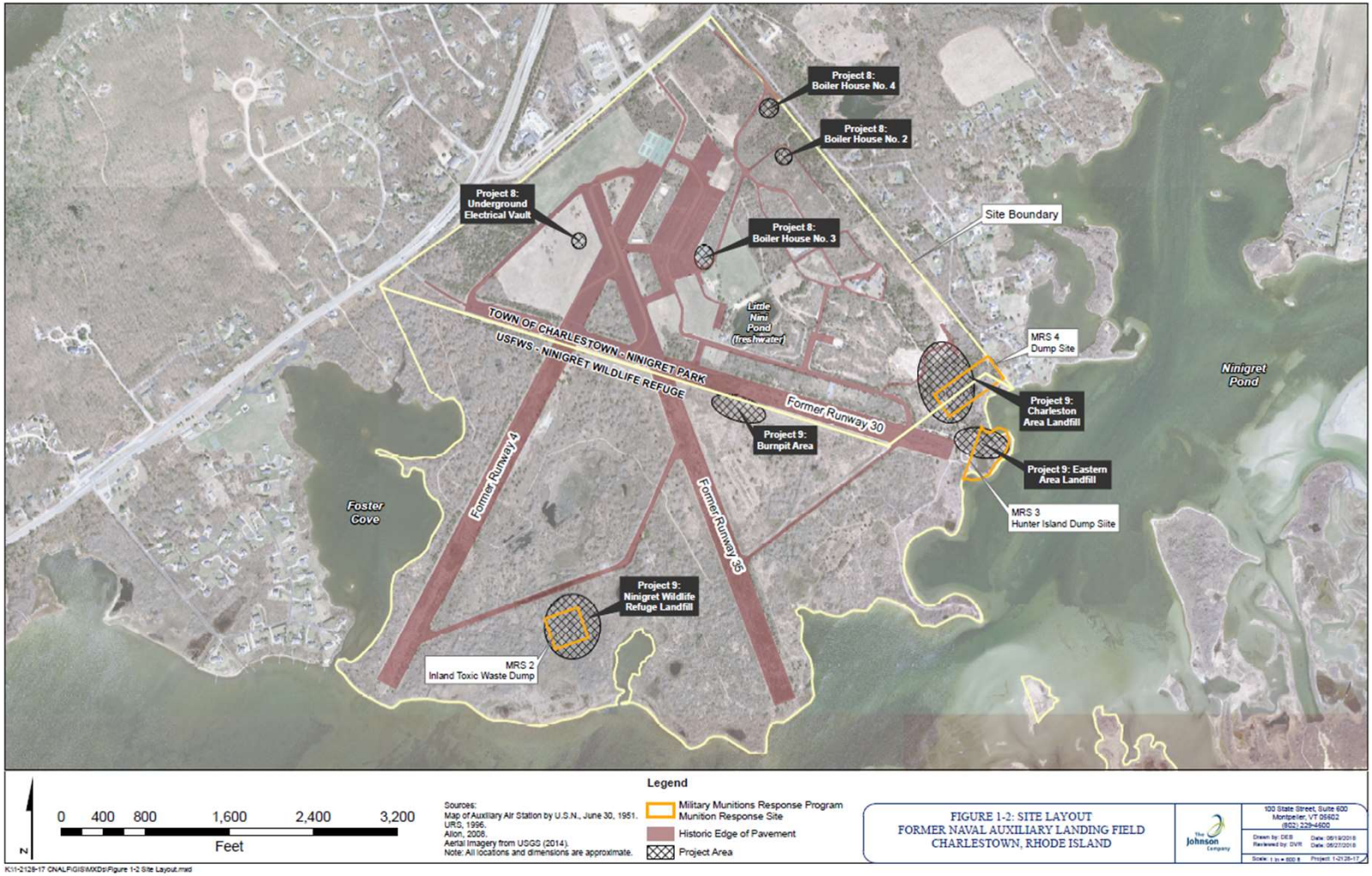
PART 2: ENVIRONMENTAL PROJECT STATUS

- PROJECT 8: BOILER HOUSES, ELECTRICAL VAULT
- PROJECT 9: MILITARY MUNITIONS RESPONSE PROGRAM
- PROJECT 9: BURN PIT, LANDFILLS, WATER SUPPLY AREA
- PROJECT 9: REMOVAL ACTIONS

SITE LAYOUT


Project 8: Boiler House No. 4
Project 8: Boiler House No. 2
Project 8: Underground Electrical Vault
Project 8: Boiler House No. 3
Site Boundary
Little Nini Pond (freshwater)
TOWN OF CHARLESTOWN - NINIGRET PARK
USFWS - NINIGRET WILDLIFE REFUGE
Former Runway 30
Former Runway 4
Former Runway 25
MRS 4 Dump Site
Project 9: Charleston Area Landfill
Project 9: Burnpit Area
Project 9: Eastern Area Landfill
MRS 3 Hunter Island Dump Site
Ninigret Pond
Foster Cove
Project 9: Ninigret Wildlife Refuge Landfill
MRS 2 Inland Toxic Waste Dump
N
0 400 800 1,600 2,400 3,200
Feet
Legend
Military Munitions Response Program Munition Response Site
Historic Edge of Pavement
Project Area
Sources:
Map of Auxiliary Air Station by U.S.N., June 30, 1951. URG, 1996.
Aiton, 2008.
Aerial Imagery from USGS (2014).
Note: All locations and dimensions are approximate.
FIGURE 1-2: SITE LAYOUT
FORMER NAVAL AUXILIARY LANDING FIELD
CHARLESTOWN, RHODE ISLAND
The Johnson Company
100 State Street, Suite 600
Montpelier, VT 05602
(802) 229-4600
K:\1-2128-17 CNALF\GIS\MXDs\Figure 1-2 Site Layout.mxd

PART 2
PROJECT 8
BOILER HOUSES, ELECTRICAL VAULT

Presenter: Gregory Hencir, USACE Project Manager

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BOILER HOUSES

ALL THINGS MUST PASS: One of the last remnants of the Navy Auxiliary Landing Field, in Charlestown, falls to the heavy equipment of a wrecking crew. Below, project manager David Jones of ACT Abatement oversees the demolition of an old warehouse and two boiler houses.

Razing the past at Charlestown air base

CHARLESTOWN

Ninigret Park was once part of the Naval air base used to train pilots during World War II and for three decades afterward.

After the base closed in the 1970s, and Charlestown created the park, it was still nearly impossible to forget its former use: for a time old hangars and garages were left standing, and in the neighboring Ninigret National Wildlife Refuge asphalt runways zig-zagged across the land.

But most of those remnants are gone now.

In recent weeks, the Army Corps of Engineers has been tearing down the last of the Navy buildings left in the park that's now home to a senior citizens center, ball fields and picnic tables.

The Corps has been in the park for the past two weeks demolishing a warehouse and two boiler houses.

It's a long-awaited project. The demolition was promised to the town years ago, said George Bliven, the park's manager. But a lack of financing from the federal government stymied the work.

Story by ALEX KUFFNER ● Photos by JOHN FREIDAH ● Journ

1200C PERM D01R1000802_08.08_0001_a

The Providence Journal, June 19, 2002

SCENE: View of Geoprobe Direct Push Technology activity at a Boiler House No. 3 (BH3) boring location.
DATE: 02 March 2021

SCENE: View of the Geoprobe Direct Push Technology machine set up at a Boiler House No. 4 (BH4) boring location.

DATE: 03 March 2021

ELECTRICAL VAULT

WORK COMPLETED

- Electrical vault formerly used for runway lighting removed from the ground in November 2024.
- Excavation sidewall and bottom soil collected for testing of total petroleum hydrocarbons (TPH) and polychlorinated biphenyls (PCBs).

NEXT STEPS

- Review soil testing results to determine if a spill occurred within the vault, and if so, whether it impacted surrounding soil.

Removing the top of the vault using the mini-excavator.

Placement of muck within base of vault into 55-gallon drum.

Resulting excavation after removal of debris.

Scrap metal hauled to recycler.

BOILER HOUSES, ELECTRICAL VAULT

KEY POINTS

- Boiler houses demolished and cleanup confirmation completed in 2021.
- The electrical vault and its contents were removed in 2024. Review of laboratory results collected from the excavation will determine if remediation is complete.

PART 2
PROJECT 9
MILITARY MUNITIONS RESPONSE PROGRAM

Presenter: Gregory Hencir, USACE Project Manager

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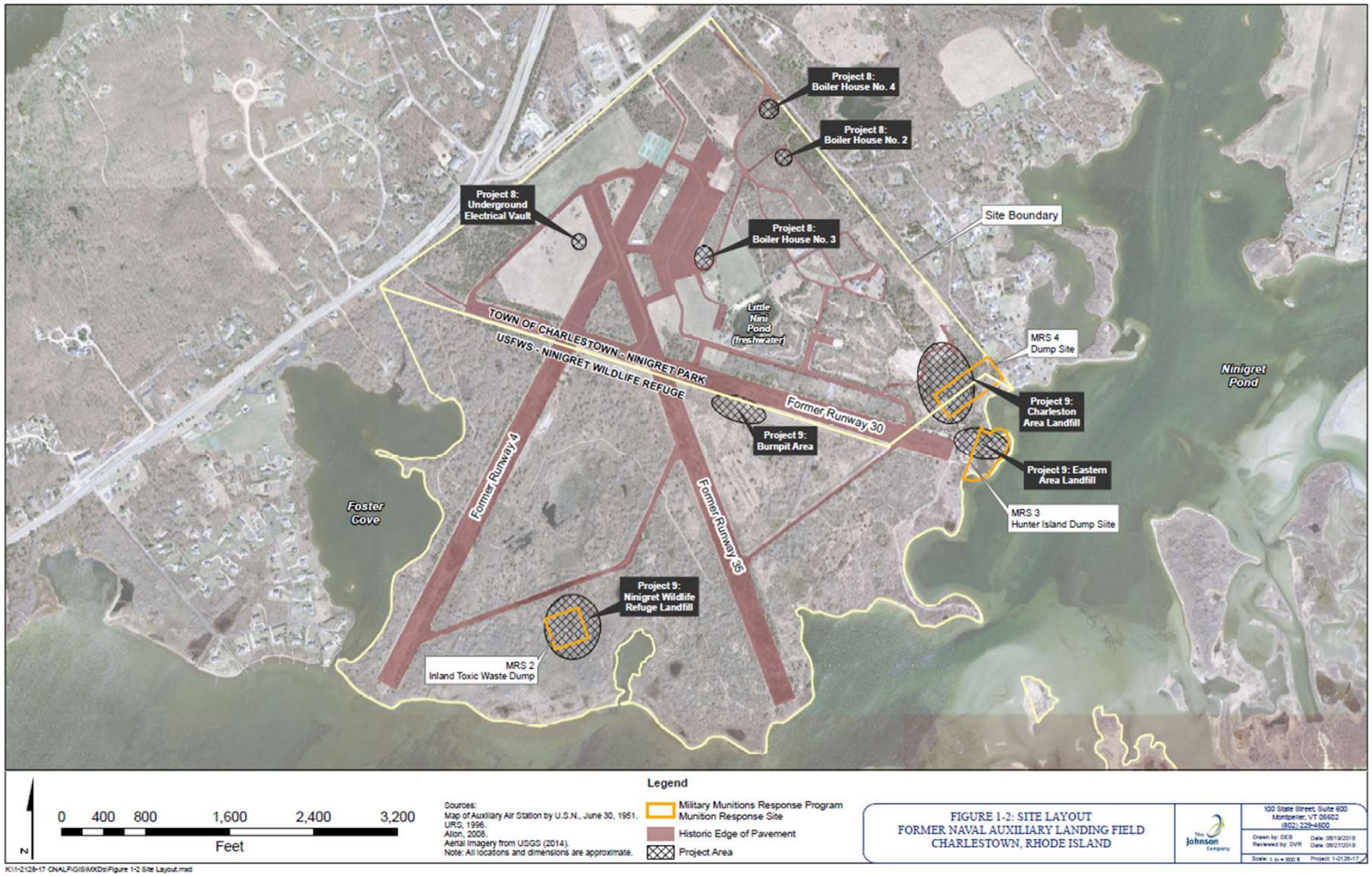
PROJECT 9:
MILITARY MUNITIONS RESPONSE PROGRAM



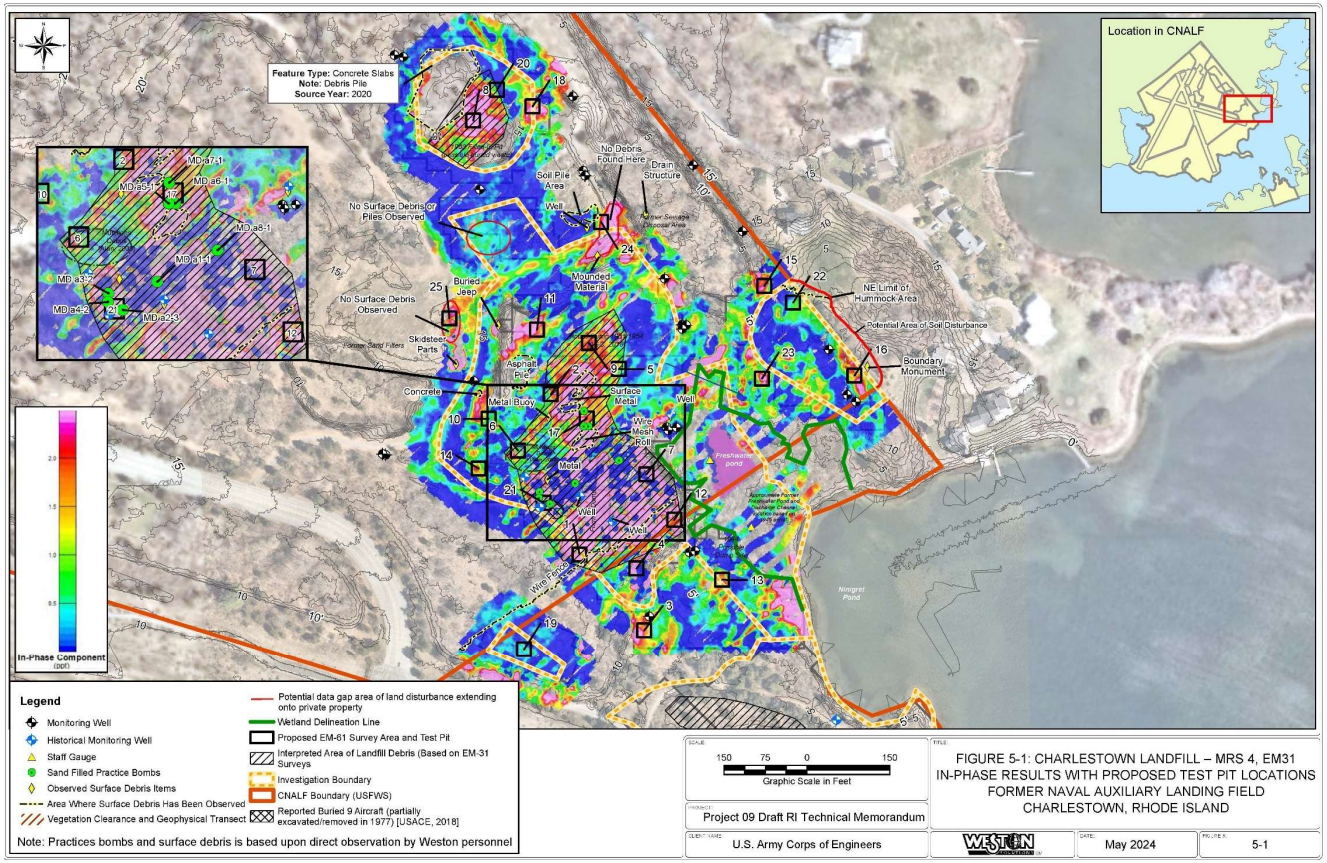
MILITARY MUNITIONS RESPONSE PROGRAM

WORK COMPLETED

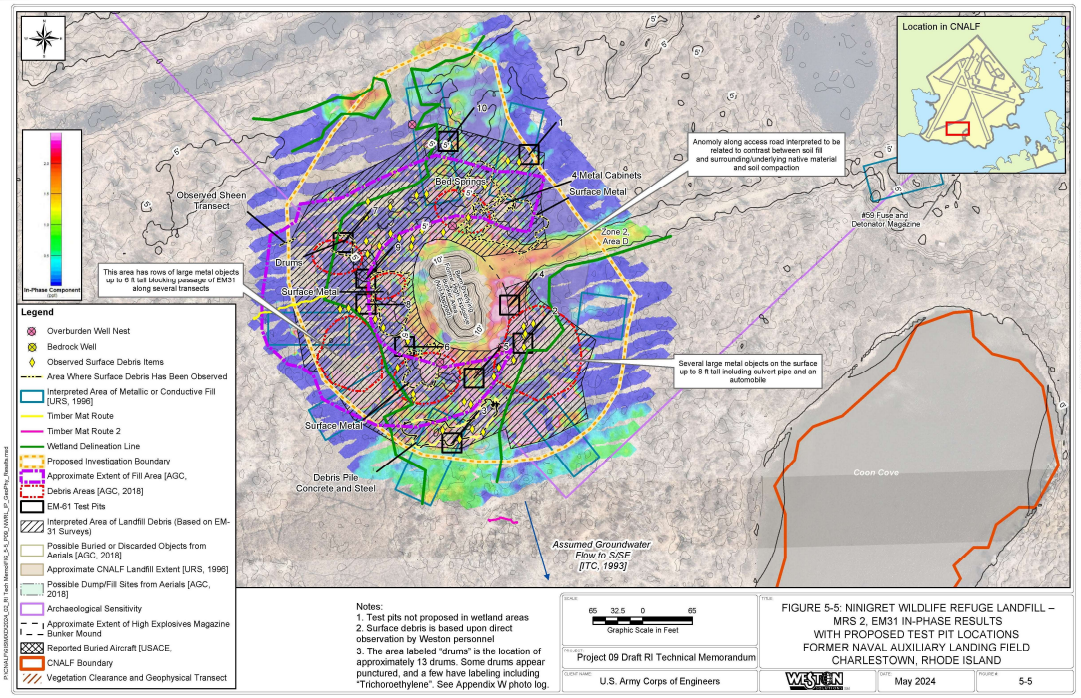
- Geophysical surveying at 3 landfills competed in 2023.

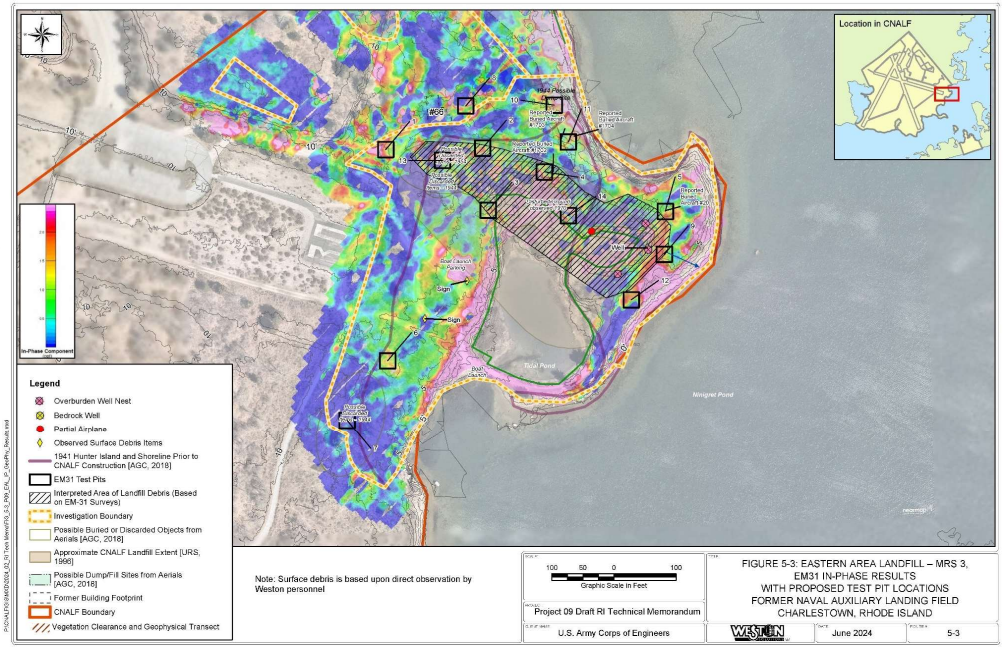
NEXT STEPS

- Perform 49 test pits at the landfills where geophysical anomalies identified.



MILITARY MUNITIONS RESPONSE PROGRAM





MILITARY MUNITIONS RESPONSE PROGRAM

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.

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

Photo E.14 – View of first group of MD, suspected 1,000 lb inert practice bombs observed within the Dump Site.

Photo E.30 – Discovered MD from small arms (certified MD by UXO Technician). Noted to be 0.30 caliber bullets.

MILITARY MUNITIONS RESPONSE PROGRAM

KEY POINTS

- 3Rs: Recognize, Report, Retreat.
- CNALF was a military airfield where munitions and explosives were used & stored.
- Geophysical surveying was completed at the 3 landfills and test pitting will be conducted to investigate the geophysical anomalies identified.

PART 2
PROJECT 9
BURN PIT, LANDFILLS, WATER SUPPLY AREA

Presenter: Gregory Hencir, USACE Project Manager

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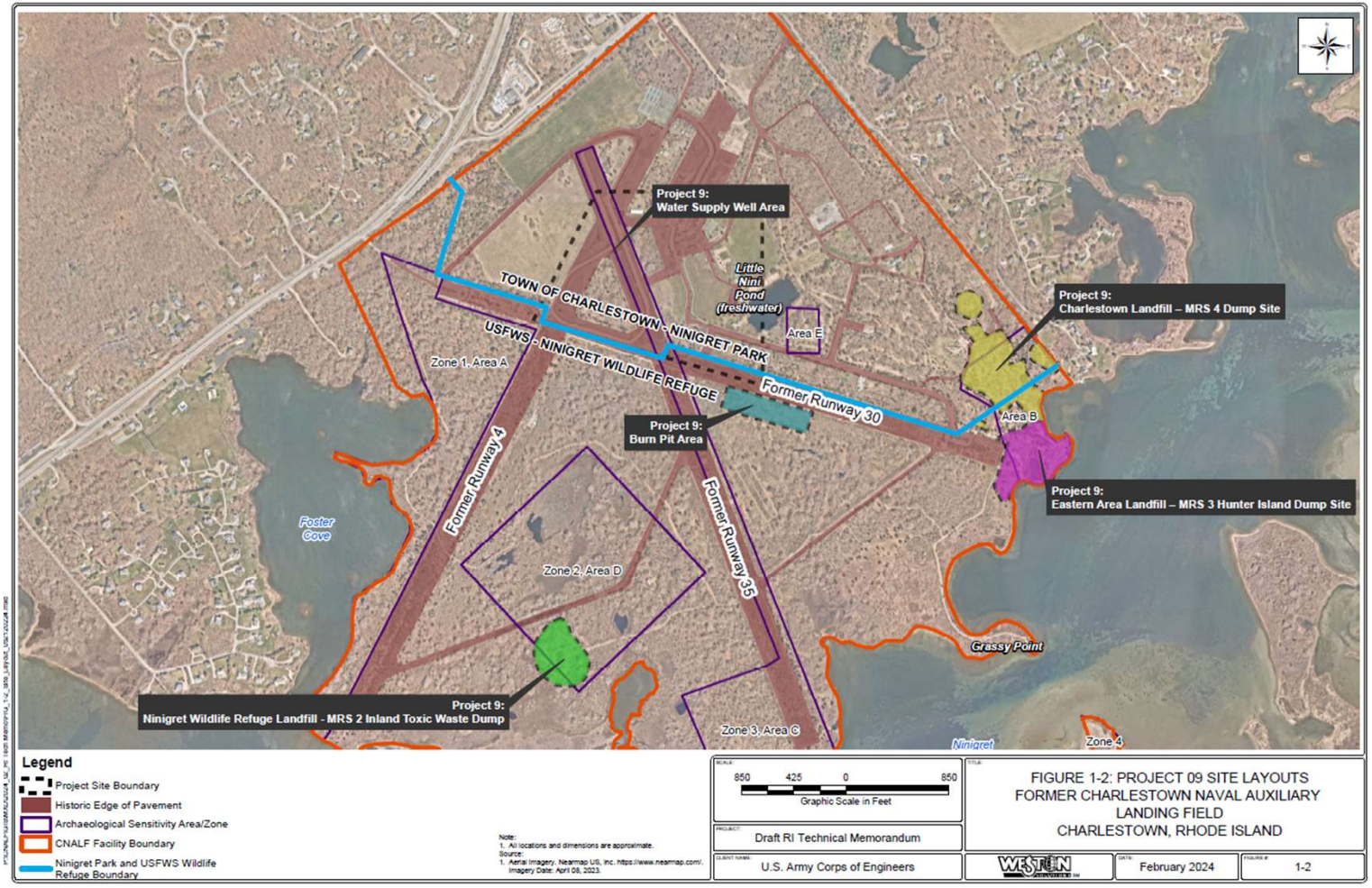
PROJECT 9: BURN PIT, LANDFILLS, WATER SUPPLY AREA



DATA GAPS

- Last section gave an overview of the MMRP investigation. This next section gives an overview of the Hazardous, Toxic, Radioactive Waste (HTRW) investigation.
- **Prior investigations were limited in scope** and the historical data were insufficient to fully characterize the nature and extent of potential contamination.

DATA GAPS

- Assess the nature and extent of contamination attributable to potential sources within the landfills, burn pit area, and the water supply well area related to former DOD operations.
- Evaluate the potential human health and ecological risks related to former DOD operations.
- Comprehensive testing of volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polycyclic aromatic hydrocarbons (PAHs), metals, dioxin/furans, polychlorinated biphenyls (PCBs), explosives chemicals, and per- and polyfluorinated alkyl substances (PFAS).

REMEDIAL INVESTIGATION TASKS

- Wetland Delineation
- Vegetative Cover and Invasive Species Surveys
- Mobilization, Demobilization
- Brush Clearing
- Geophysical Surveying
- Tapwater Sampling
- Test Pit Excavation and Soil Sampling
- Surface and Subsurface Soil Sampling
- Sediment, Surface Water, and Porewater Sampling
- Background Soil, Sediment, and Surface Water Sampling
- Monitoring Well Installation, Well Rehabilitation
- Bedrock Borehole Geophysical Logging
- Monitoring Well Sampling and Water Level Monitoring
- Groundwater Modeling
- Data Validation, Analysis, and Reporting
- Public Communication

PER- AND POLYFLUORINATED ALKY SUBSTANCES (PFAS)

- Discovered in the 1930s, PFAS is a large complex class of many thousands of fluorinated compounds with many industrial uses, such as waterproofing and stain resistance.
- Sources of PFAS environmental contamination are widespread including common products such as clothing, food packaging, upholstery, cookware since the 1950s.
- A common source is **aqueous film-forming foam (AFFF)** used by DOD in firefighting since the 1970s because of its **effective fire-protection capability** to quickly extinguish petroleum-based fires to save lives and protect critical assets and infrastructure.
- AFFF quickly extinguishes petroleum fires by forming an aqueous film on the fuel surface that prevents the escape of flammable vapors and stops the fire from reigniting.

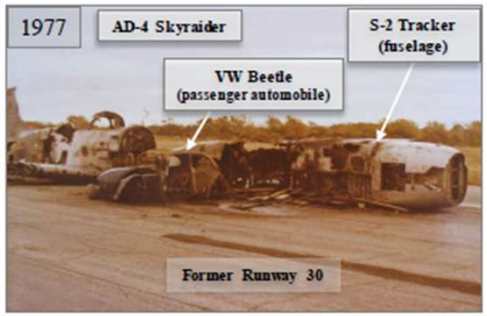
Major Fire Aboard USS Enterprise, 1969

Firefighting Training at Key West Naval Air Station, 1992

PER- AND POLYFLUORINATED ALKY SUBSTANCES (PFAS)

- PFAS are **persistent in the environment**, detected globally in air, rain, soil, surface water, groundwater, wastewater treatment discharge, and septic systems.
- **Determining the source of PFAS contamination requires careful examination** of the specific PFAS compounds present, their relative concentrations, distribution in soil, sediment, and groundwater and considering potential sources.
- Various studies have shown potential **adverse human health effects** from exposure to some PFAS, resulting in very low regulatory criteria values, as low as 4 parts per trillion [i.e., nanograms per liter (ng/L)] in drinking water.

BURN PIT
HISTORICAL PHOTOS

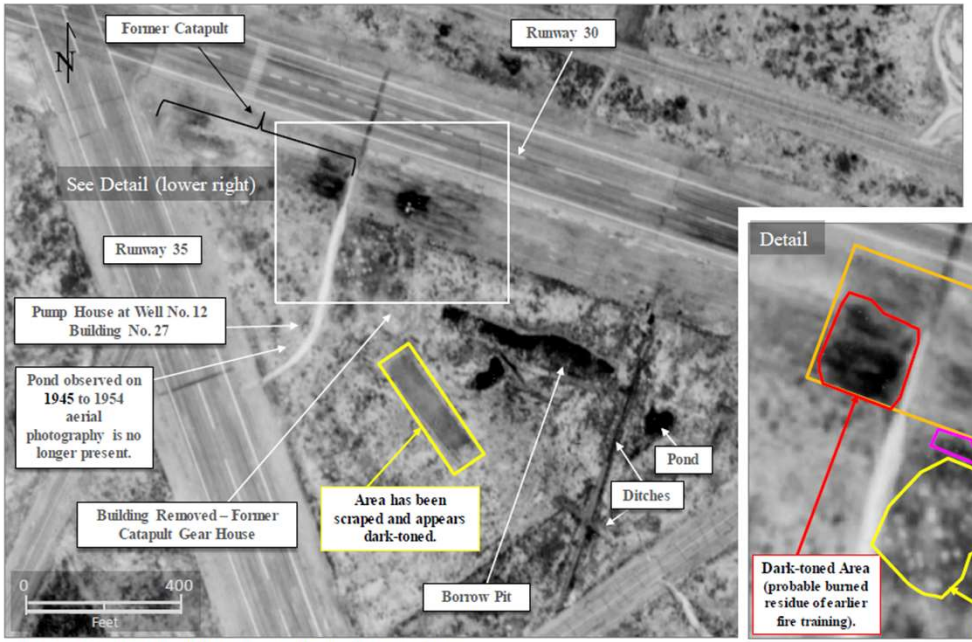


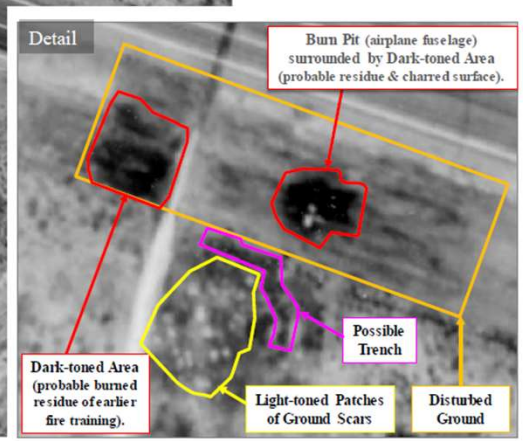
Source: Larry Webster Photo Album Collection (courtesy of NAE). Aircraft identified via Larry Webster Archives.

HTRW SITE NO. 3 – BURN PIT AREA (FIRE-FIGHTING TRAINING AREA)
1962 VERTICAL VIEW

LOCATION DIAGRAM

04 April 1962





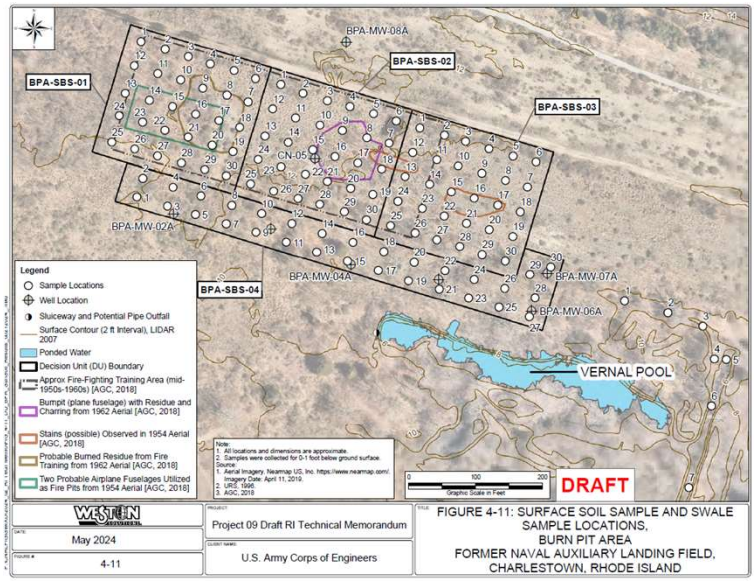
Source: Rhode Island Department Of Administration Planning Information Center

HTRW = Hazardous, Toxic, & Radioactive Waste

BURN PIT

WORK COMPLETED

- Tested 120 surface soil samples and 48 locations/240 subsurface soil samples.
- Tested 15 surface water, pore water, and sediment samples from nearby vernal pool.
- Installed 27 new monitoring wells at 12 locations.
- Tested groundwater from new wells and 1 historical shallow overburden well (2 rounds).

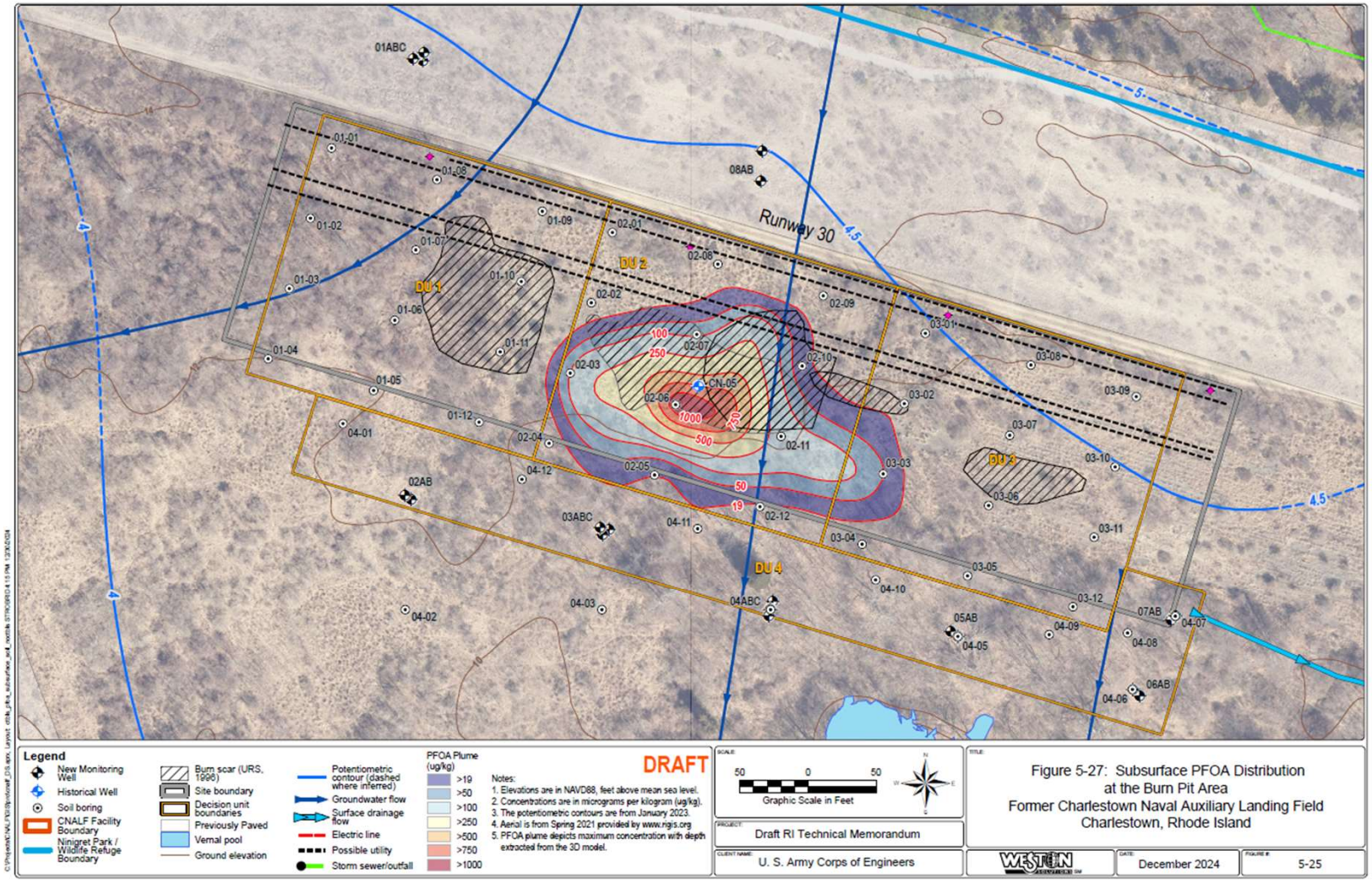


BURN PIT

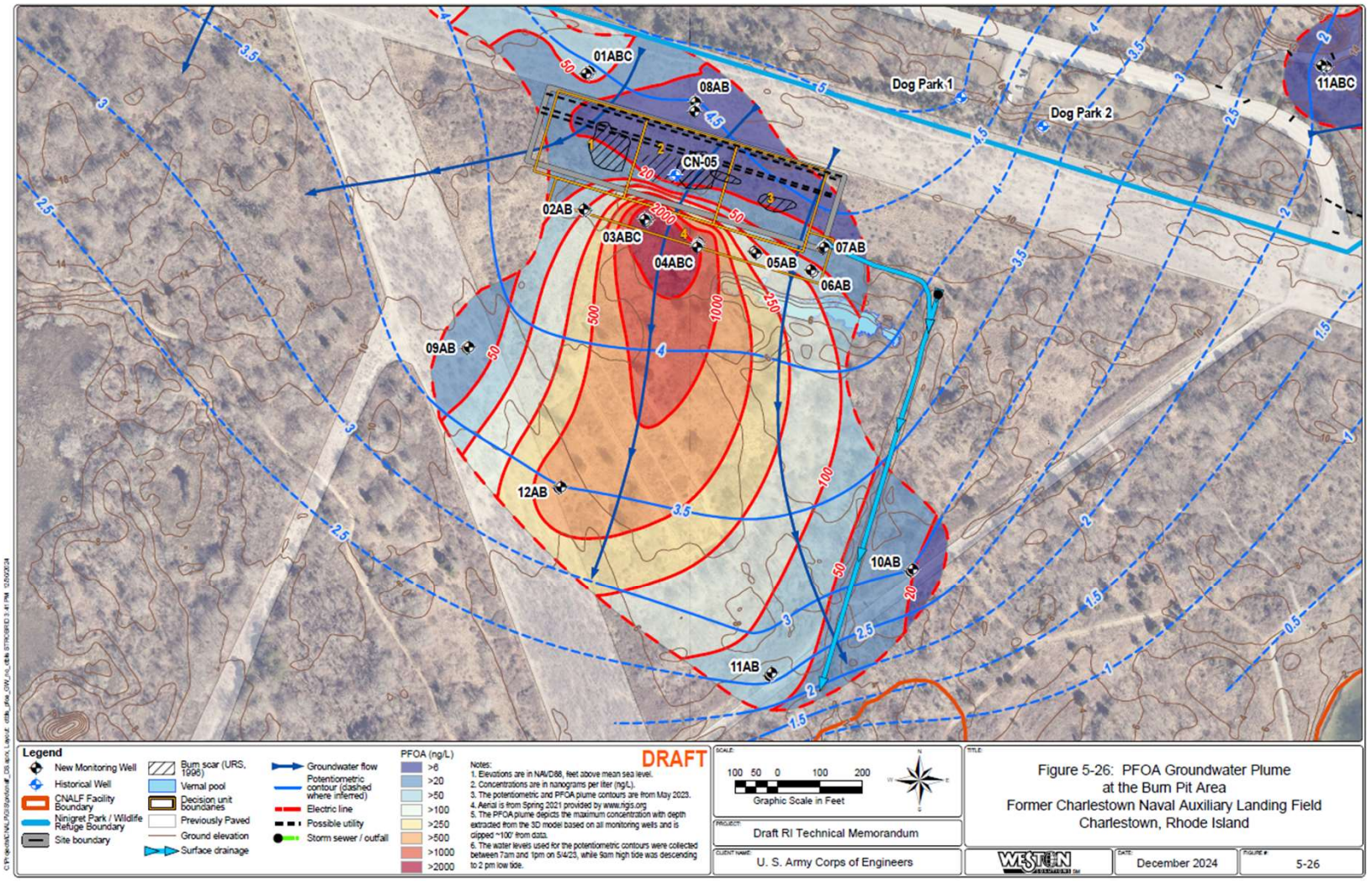
PRELIMINARY FINDINGS

- Perfluorooctanoic acid (PFOA) is the most prevalent PFAS compound detected in soils around a central burn scar.
- PFOA is interpreted to be derived from a particular type of AFFF that was likely used at CNALF for firefighting and training exercises.
- Dioxin/furans detected in soil. Residual petroleum detected at isolated locations.
- PFOA detected in overburden (i.e., above bedrock) groundwater beneath a central burn scar.

BURN PIT


Runway 30
DU 1
DU 2
DU 3
DU 4
CN-05
100
250
500
1000
50
19
Legend
New Monitoring Well
Historical Well
Soil boring
CNALF Facility Boundary
Ninigret Park / Wildlife Refuge Boundary
Burn scar (URS, 1996)
Site boundary
Decision unit boundaries
Previously Paved
Vernal pool
Ground elevation
Potentiometric contour (dashed where inferred)
Groundwater flow
Surface drainage flow
Electric line
Possible utility
Storm sewer/outfall
PFOA Plume (ug/kg)
>19
>50
>100
>250
>500
>750
>1000
DRAFT
Notes:
1. Elevations are in NAVD88, feet above mean sea level.
2. Concentrations are in micrograms per kilogram (ug/kg).
3. The potentiometric contours are from January 2023.
4. Aerial is from Spring 2021 provided by www.nigis.org
5. PFOA plume depicts maximum concentration with depth extracted from the 3D model.
50 0 50
Graphic Scale in Feet
Draft RI Technical Memorandum
U. S. Army Corps of Engineers
Figure 5-27: Subsurface PFOA Distribution at the Burn Pit Area Former Charlestown Naval Auxiliary Landing Field Charlestown, Rhode Island
December 2024
5-25

BURN PIT


01ABC
08AB
Dog Park 1
Dog Park 2
11ABC
CN-05
02AB
03ABC
04ABC
05AB
07AB
06AB
09AB
12AB
10AB
11AB
Legend
New Monitoring Well
Historical Well
CNALF Facility Boundary
Ninigret Park / Wildlife Refuge Boundary
Site boundary
Burn scar (URS, 1996)
Vernal pool
Decision unit boundaries
Previously Paved
Ground elevation
Surface drainage
Groundwater flow
Potentiometric contour (dashed where inferred)
Electric line
Possible utility
Storm sewer / outfall
PFOA (ng/L)
>6
>20
>50
>100
>250
>500
>1000
>2000
DRAFT
Notes:
1. Elevations are in NAVD88, feet above mean sea level.
2. Concentrations are in nanograms per liter (ng/L).
3. The potentiometric and PFOA plume contours are from May 2023.
4. Aerial is from Spring 2021 provided by www.rigis.org
5. The PFOA plume depicts the maximum concentration with depth extracted from the 3D model based on all monitoring wells and is clipped ~100' from data.
6. The water levels used for the potentiometric contours were collected between 7am and 1pm on 5/4/23, while 9am high tide was descending to 2 pm low tide.
100 50 0 100 200
Graphic Scale in Feet
Draft RI Technical Memorandum
U. S. Army Corps of Engineers
Figure 5-26: PFOA Groundwater Plume at the Burn Pit Area Former Charlestown Naval Auxiliary Landing Field Charlestown, Rhode Island
December 2024
5-26

BURN PIT

NEXT STEPS

- Additional data collection and evaluation to confirm depth of impacted soil and lateral limits of PFOA groundwater plume.
- Compare results to background (that are unimpacted areas), regulatory criteria, and screening levels to complete ecological and human health risk assessments.
- Redevelop historical wells and groundwater sampling from historical and new wells.
- Collect sediment, surface water and porewater samples from vernal pool to further assess interactions with groundwater and potential impacts from overland flow.

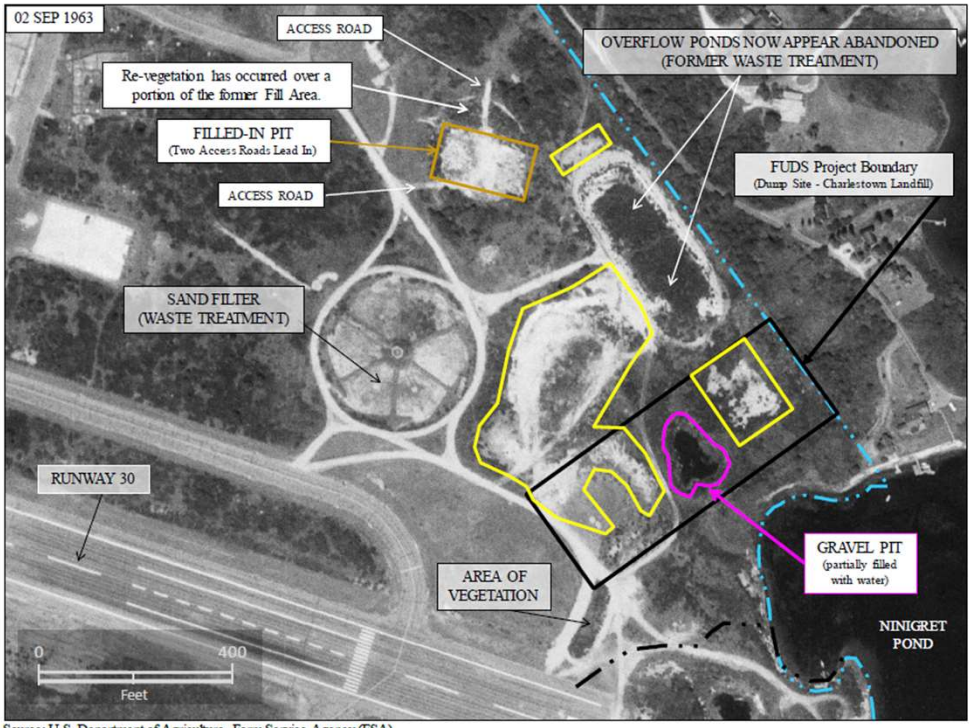
BURN PIT

KEY POINTS

- Preliminary findings detected PFOA in soil and groundwater beneath the burn pit.
- Additional study is needed to determine the depth of impacted soil and lateral limits of the PFOA groundwater plume and to complete the ecological and human health risk assessments.

CHARLESTOWN LANDFILL HISTORICAL PHOTO

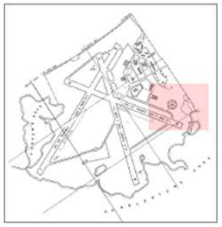
HTRW SITE NO. 1 / MRS 4: CHARLESTOWN LANDFILL
1963 VERTICAL VIEW

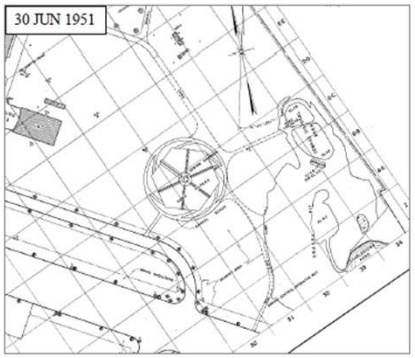


Source: U.S. Department of Agriculture, Farm Service Agency (FSA).

Excavation — Fill Area — Ground Scar(s) — CNALF Boundary (approx. alignment) — Charlestown Landfill – Eastern Landfill demarcation (AGC proposed for this study)

LOCATION DIAGRAM





Map Source: 30 June 1951 map, Sheet 6, CNALF P.W.D. Drawing No. 2318.

CNALF = Charlestown Naval Auxiliary Landing Field
HTRW = Hazardous, Toxic, & Radioactive Waste
MRS = Military Response Site

FINAL REPORT AUGUST 2018

CHARLESTOWN LANDFILL

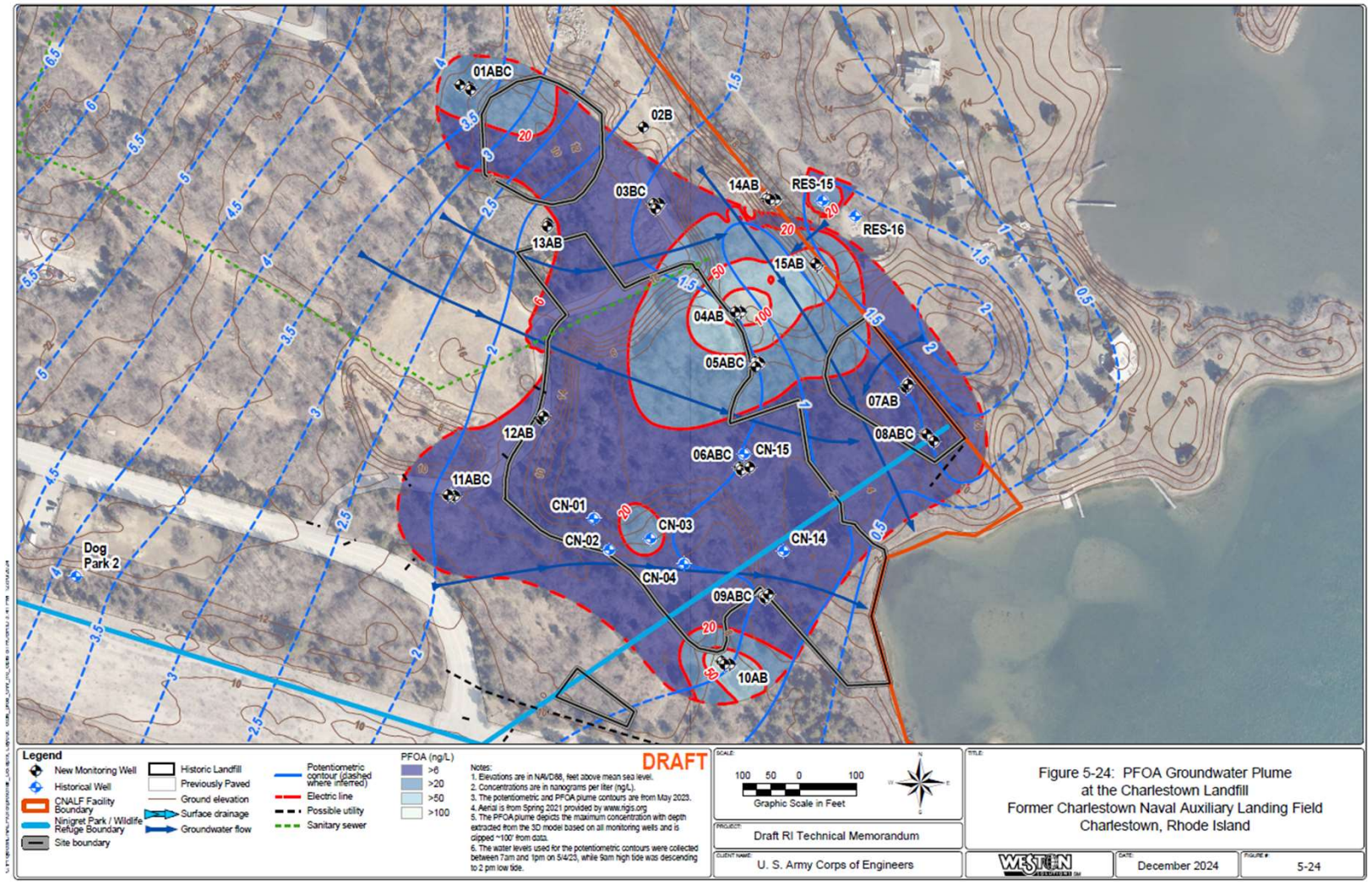
WORK COMPLETED

- Installed 35 new monitoring wells at 15 locations.
- Tested groundwater samples from new wells and 6 historical overburden well in 2 rounds.
- Geophysical surveying (in support of MMRP).
- Wetland delineation mapping and vegetative cover / invasive species surveying.

PRELIMINARY FINDINGS

- PFOA is the most prevalent PFAS compound and detected in overburden (i.e., above bedrock) groundwater in and downgradient of the former overflow ponds.
- Elevated salinity observed in deep overburden and bedrock monitoring wells.

CHARLESTOWN LANDFILL



CHARLESTOWN LANDFILL

NEXT STEPS

- Additional data collection and evaluation is needed to determine potential impacts to soil and lateral limits of the PFOA groundwater plume.
- Install new monitoring wells and groundwater sampling.
- Collect surface and subsurface soil samples.
- Compare results to background (that are unimpacted areas), regulatory criteria, and screening levels to complete the ecological and human health risk assessments.

CHARLESTOWN LANDFILL

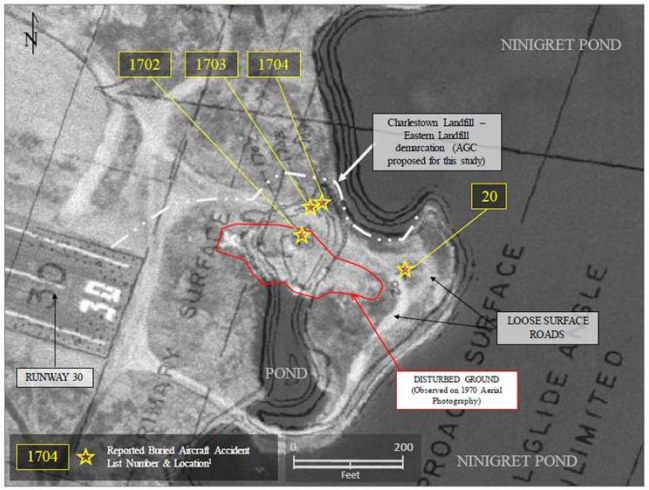
KEY POINTS

- Preliminary findings detected PFOA in and downgradient of landfill.
- Additional study is needed to determine potential impacts to soil and lateral limits of the PFOA groundwater plume and to complete the ecological and human health risk assessments.

EASTERN AREA LANDFILL AND NINIGRET WILDLIFE REFUGE LANDFILL HISTORICAL PHOTOS

HTRW SITE NO. 2 / MRS 3: HUNTER ISLAND DUMP SITE
1969 MAP & 1970 AERIAL DATA

1969 Map Enclosure Draped on March 1970 Aerial Photography

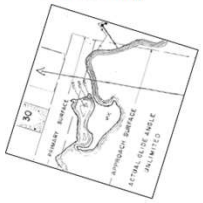


In March of 1970, an area of disturbed ground is identified immediately north of the small pond - likely related to the recovery of aircraft parts of four buried aircraft and the 1969 dumping of building debris.[1,2]

LOCATION DIAGRAM

Note: The numbering system (e.g. 1702) used in the 1969 Map Enclosure (below and left) relates to a unique (internal) identification system of 'airplane wreckage' developed by Larry Webster and does not relate to any other known documentation.

Original 1969 Map Enclosure to Accident Report[1] - rotated (North up)



Map Source: Larry Webster Collection

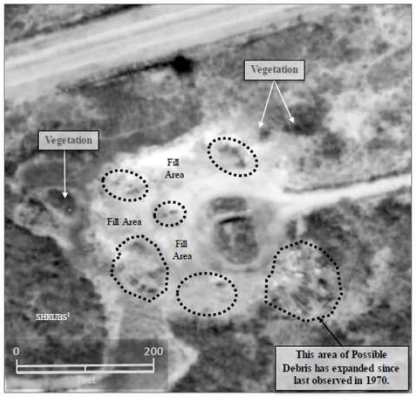
Sources: Larry Webster Collection (1969 map enclosure), and U.S. Geological Survey (10 March 1970 Aerial Photography). HTRW = Hazardous, Toxic, and Radioactive Waste MRS = Munitions Response Site

1. Source: 29 October 1997 telephone conversation with Charlie Hebert, U.S. Fish & Wildlife Service, Ordnance and Explosives Archives Search Report, Former Naval Auxiliary Landing Field - Final, Charlestown, Rhode Island, 27 April 1999.
2. Sources: 1969 Accident Report (textual and map data) – Larry Webster Collection, Charlestown, RI.

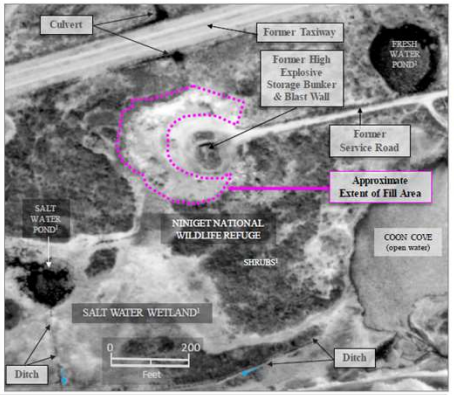
HTRW SITE NO. 4 / MRS 2 – NINIGRET WILDLIFE REFUGE LANDFILL & INLAND TOXIC WASTE DUMP – 1972 VERTICAL VIEW

21 April 1972

CLOSE-UP VIEW



BLACK & WHITE VERTICAL



LOCATION DIAGRAM

In an April 1972 vertical view, possible piles of debris are observed (located within the Fill Area) at the Ninigret Wildlife Refuge Landfill/Dump.

This site is identified as HTRW Site 4 – Ninigret Wildlife Refuge Landfill and MRS 2 – Inland Toxic Waste Dump.

Source: Rhode Island Department Of Administration Planning Information Center ▪▪▪▪▪▪▪▪▪▪▪▪ = Possible Debris

1. Source: Volume 1 Draft Environmental Impact Statement, Naval Auxiliary Landing Field Charlestown Rhode Island, General Services Administration (GSA), Region I, Post Office and Courthouse, MA, Exhibit I-A-29 (Vegetation) & Exhibit I-A-33 (Visual Character), 1977; courtesy Northwestern University Library, Evanston, IL.

HTRW = Hazardous, Toxic, and Radioactive Waste MRS = Munitions Response Site

EASTERN AREA LANDFILL AND NINIGRET WILDLIFE REFUGE LANDFILL

WORK COMPLETED

- Geophysical surveying (in support of MMRP).
- Wetland delineation mapping and vegetative cover / invasive species surveying

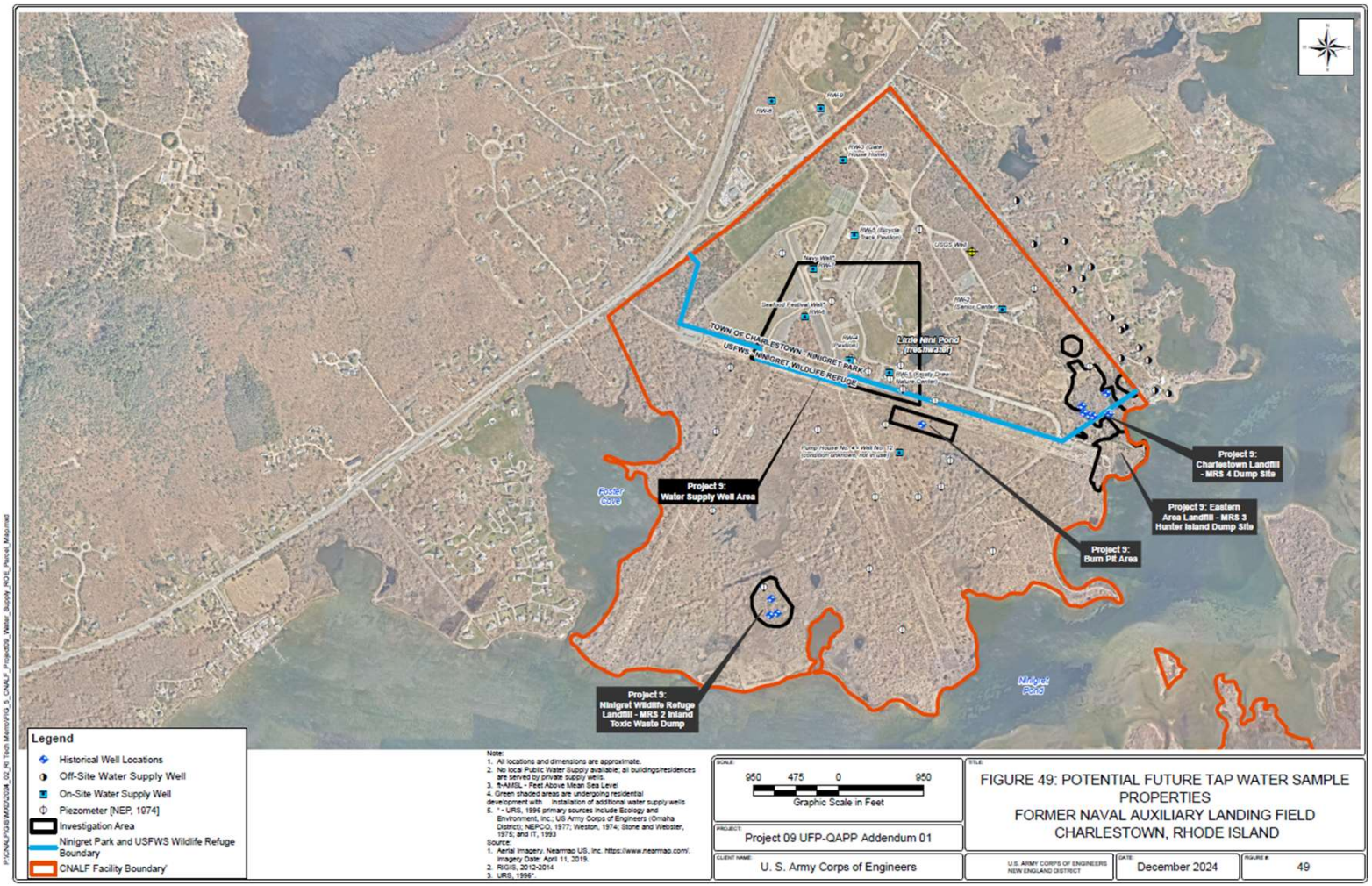
NEXT STEPS

- Install new monitoring wells and groundwater sampling.
- Collect surface and subsurface soil samples.

KEY POINT

- Study of the Eastern Area Landfill and Ninigret Wildlife Refuge is underway to determine potential impacts to soil and groundwater and to complete the ecological and human health risk assessments.

WATER SUPPLY AREA



WATER SUPPLY AREA HISTORICAL PHOTO

- Boundary encompasses former buildings, including a former fire station where AFFF may have been released.
- Boundary encompasses public beach and public supply wells:
  - Little Nini Pond
  - Seafood Festival (Seasonal Well)
  - Beach Pavilion (Seasonal Well)
  - Frosty Drew Observatory and Science Center

WATER SUPPLY AREA

WORK COMPLETED

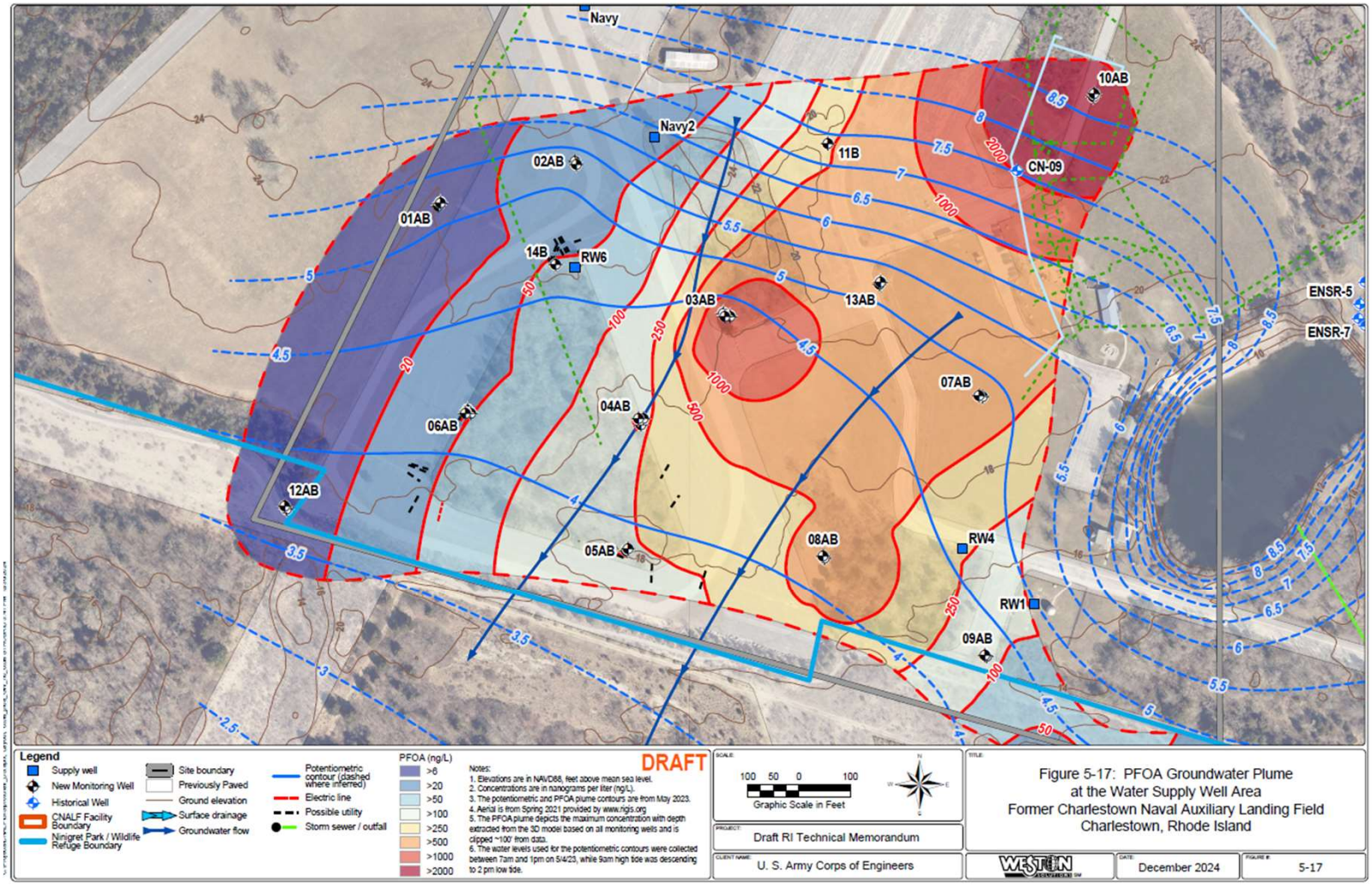
- Tested surface water samples from Little Nini Pond (2 rounds).
- Installed 26 monitoring wells at 14 locations (including shallow/overburden pairs).
- Tested groundwater samples from the new monitoring wells (2 rounds).
- Tested 122 surface soil samples at 90 locations and subsurface soil at 8 locations.
- Tested tapwater from 7 public supply wells and 2 upgradient off-site public supply wells (Police and EMS wells) (6 rounds).
- Tested 15 off-site private residential supply wells (6 rounds).

WATER SUPPLY AREA

PRELIMINARY FINDINGS

- PFOA and perfluorooctanesulfonic acid (PFOS) detected in surface and subsurface soil samples collected in the immediate vicinity of the former fire station building.
- Residual petroleum detected in subsurface soil at isolated locations.
- PFAS detected in groundwater samples collected from 14 monitoring wells.
- PFAS estimated at very low concentrations in surface water samples from Little Nini Pond. The levels do not impact the use of the pond for recreation.

WATER SUPPLY AREA



WATER SUPPLY AREA

NEXT STEPS

- Sample subsurface soil at 36 locations (up to 288 samples).
- Collect groundwater samples from 12 existing monitoring wells (2 rounds).
- Collect tapwater samples from 7 existing public supply wells (2 rounds) and Police and EMS public supply wells (5 rounds).
- Continue off-site residential tapwater testing. Includes current 15 private residential supply wells (2 rounds) and up to 25 additional private residential supply wells.
- Install 56 monitoring wells.
- Sample 12 historical (6 rounds), 26 existing (6 rounds), and 53 newly installed monitoring wells (8 rounds).
- Sample surface water, stormwater, and sediment samples at Little Nini Pond (3 outfalls).
- Sample background (that are unimpacted areas) for sediment, porewater, and surface water in both freshwater and marine environments.

WATER SUPPLY AREA

KEY POINTS

- PFOA and PFOS detected in surface and subsurface soil samples collected in the immediate vicinity of the former fire station building.
- Additional study is needed to determine potential impacts to soil and lateral limits of the PFOA groundwater plume and to complete the ecological and human health risk assessments.

PART 2
REMOVAL ACTIONS

Presenter: Gregory Hencir, USACE Project Manager

U.S. ARMY

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New England District

REMOVAL ACTIONS

- **Removal Actions may be conducted at any time** during the CERCLA remedial process. Removal actions generally have limited objectives and typically are short-term actions to protect human health and the environment. Following a removal action (time-critical or non-time critical), the effort transitions back to the remedial process to determine what additional response action is necessary to achieve overall cleanup.
- Removal actions to address PFAS at CNALF consist of providing **bottled water and installing point-of-entry-treatment systems (POET) systems** at 6 supply wells:
  - 2 seasonal public supply wells (known as the Seafood Festival well and Beach Pavilion well) in the Water Supply Area.
  - 1 public supply well for the Frosty Drew Observatory and Science Center in the Water Supply Area.
  - 3 private residential supply wells.
- Design is necessary because each POET system must handle specific and naturally occurring water chemistry that can vary between wells (e.g., pH, hardness).

REMOVAL ACTIONS

KEY POINTS

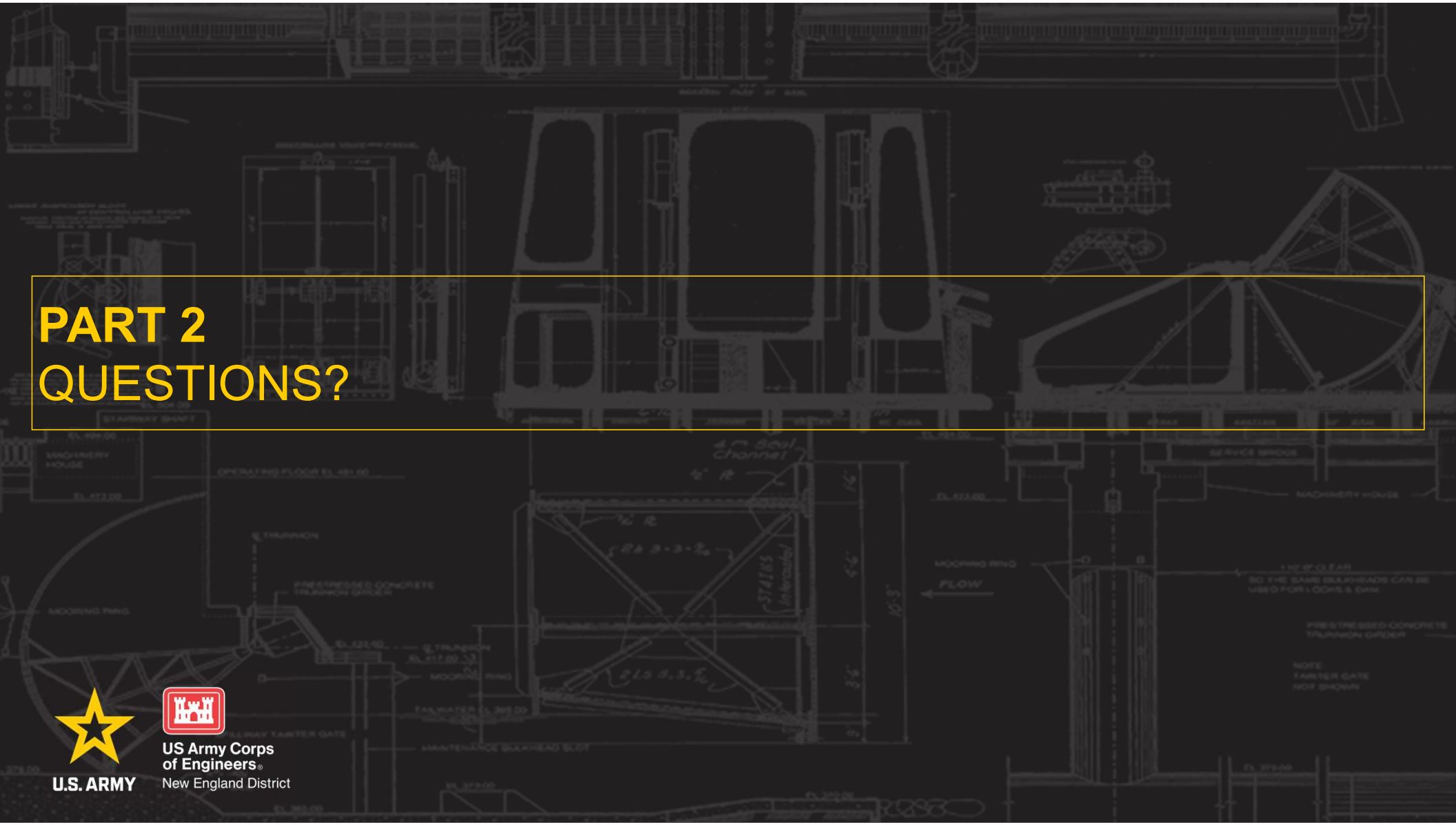
- Removal actions implemented at CNALF to address PFAS in drinking water consist of providing bottled water, design and installing POET systems.
- Evolving EPA rules and DOD policies regarding PFAS could result in additional removal actions.

UPCOMING WORK

Task	Estimated Start
Approve Remedial Investigation Work Plan	Spring 2025
Tapwater Sampling (Off-Site and On-Site)	Spring 2025 to 2027 (multiple rounds)
Mobilization for Remedial Investigation Fieldwork	Spring 2025
Test Pit Excavations	Spring 2025
Drilling and Well Installation	Spring 2025
Surface Soil Sampling at Landfills	Spring 2025
Soil Borings at Water Supply Area	Summer 2025
Bedrock Borehole Geophysics	Summer 2025
Sediment, Porewater, and Surface Water Sampling	Summer 2025
Round 1 Groundwater Monitoring Well Sampling	Summer 2025
Round 2 Groundwater Monitoring Well Sampling	Winter 2025/2026
Follow-on Drilling, Well Installation, and Sampling	Fall 2026 to Winter 2026/2027
Prepare Remedial Investigation Report	2028 to 2029

CHALLENGES IMPACTING SCHEDULE

- Avoiding scheduling conflicts with park events and wildlife restrictions.
- Government contracting.
- CNALF is a large and technically complex site involving the investigation of physical and chemical hazards in both soil and groundwater that potentially derived from several former features (i.e., landfills, burn pit, and fire station). **As more information is gathered, additional data gaps may be identified warranting further investigation** that extends the duration of the investigation.



PART 2
QUESTIONS?

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RESTORATION ADVISORY BOARD (RAB)

Presenter: Tracey Epperley, Hana Engineers & Consultants

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PURPOSE

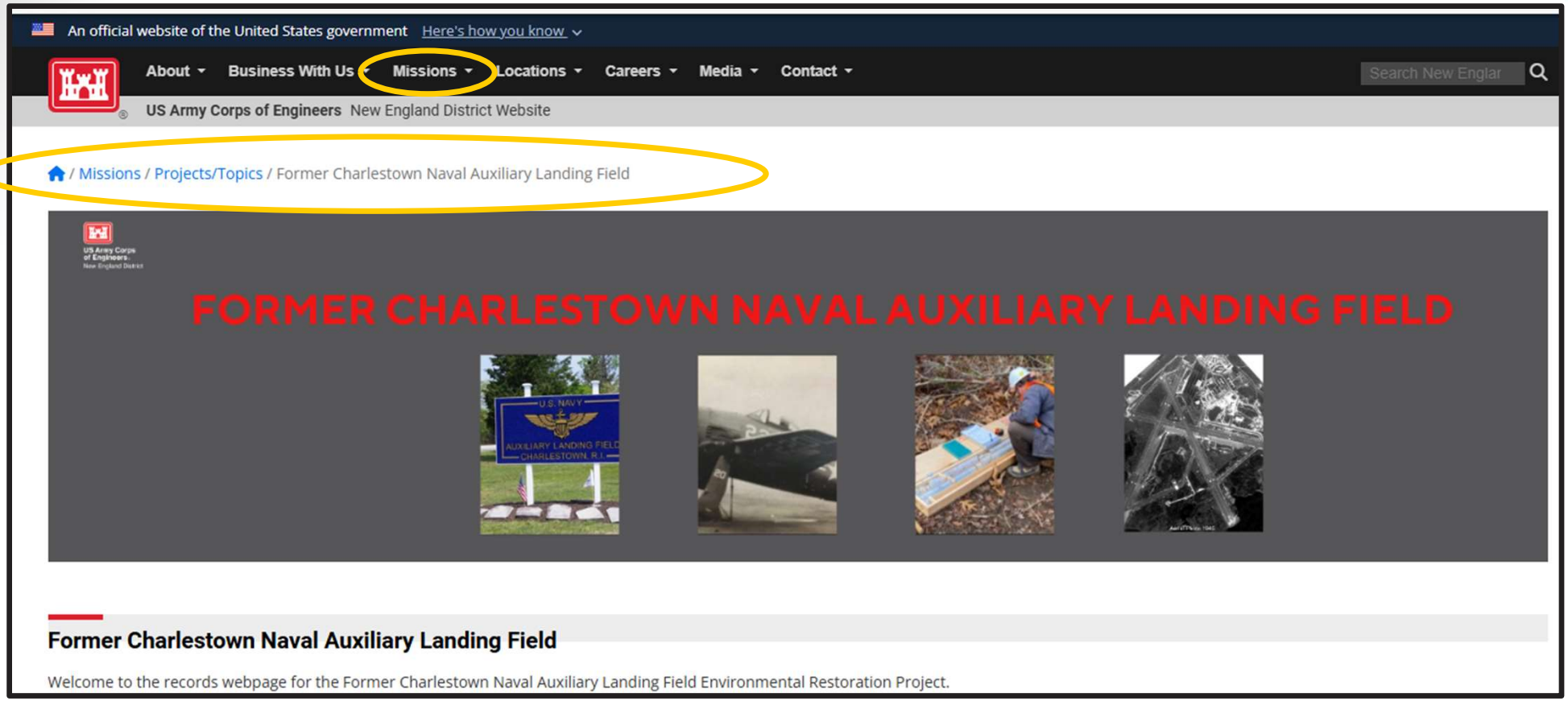
The purpose of this presentation is to:

- Introduce the questionnaire
- Introduce the USACE CNALF web page
- To provide a more in-depth discussion on the RAB process
  - » What is a RAB
  - » How to form a RAB
  - » Why have a RAB

QUESTIONNAIRE

- The questionnaire is available in both electronic and hard copy format
- Intended to gather community feedback on:
  - » Preferred communication methods
  - » How often to communicate
  - » Discussion topics
  - » Community concerns
  - » Interest in forming a RAB and potential volunteer members

CNALF WEB PAGE



https://www.nae.usace.army.mil/Missions/Projects-Topics/Former-Charlestown-Naval-Auxiliary-Landing-Field/

Features

- NEWS AND ANNOUNCEMENTS
- ADMINISTRATIVE RECORD
- EXPLOSIVE SAFETY
- PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) INFORMATION
- QUESTIONNAIRE

Contact

If you have any questions or comments regarding this environmental restoration project, please contact:

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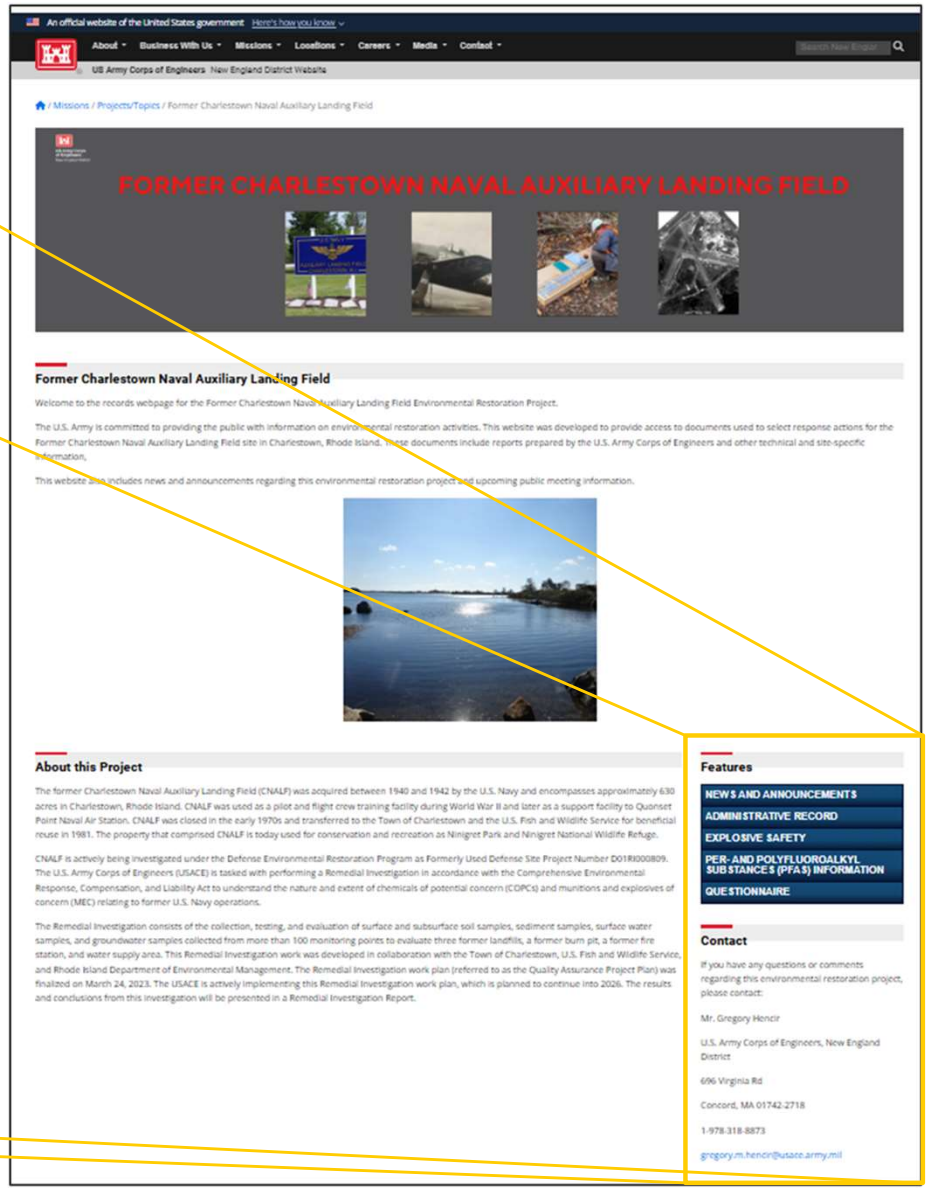
U.S. Army Corps of Engineers, New England District

696 Virginia Rd

Concord, MA 01742-2718

1-978-318-8873

gregory.m.hencir@usace.army.mil



RESTORATION ADVISORY BOARD (RAB)

WHAT IS A RAB?

A RAB is a community-based board that meets regularly with USACE to review progress and provide input about environmental restoration

WHAT IS A RAB?

A RAB is made up of

- **Community Members**
- Federal Government
- State Government
- Local Government
- Local Groups
- Regulatory Agencies

WHAT IS A RAB?

A CNALF RAB would:

- Be made up of community volunteers and government members
- Have equal RAB leaders: Community and USACE Co-Chairs
- Develop a mission statement and operating procedures to focus the RAB members and provide direction
- Meet regularly to discuss environmental restoration at CNALF FUDS

RAB meetings are open to public participation

WHAT IS A RAB?

A CNALF RAB would:

- Review and provide feedback on CNALF FUDS environmental restoration documents and activities
- Provide information to the community
- Receive input and feedback from the community
- Document meetings with meeting minutes
- RAB members serve without compensation

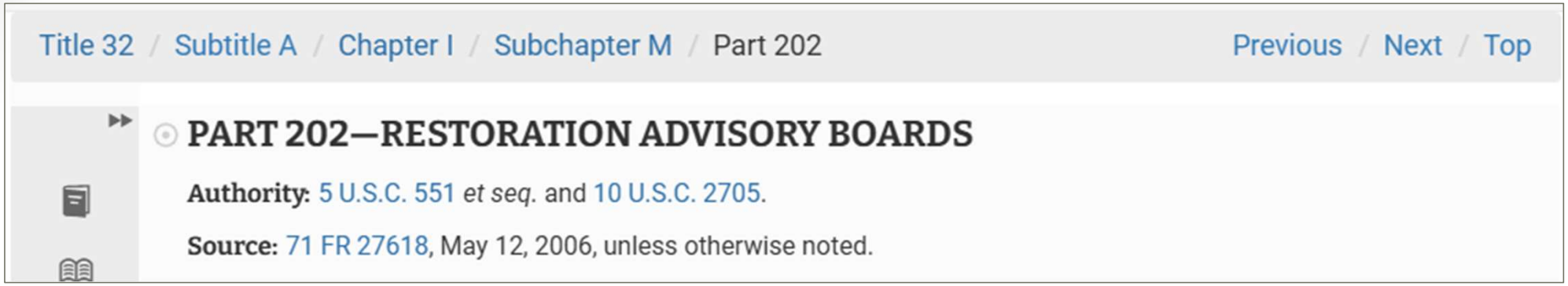
WHAT A RAB IS NOT

- A RAB is **ONLY ONE METHOD** of several methods USACE uses to engage the public
- USACE will **CONTINUE TO INVOLVE THE COMMUNITY** in accordance with FUDS regulations, regardless of whether a RAB is formed
- A RAB is an advisory board. A RAB is **NOT A DECISION-MAKING** body – environmental restoration at CNALF resides with USACE

RESTORATION ADVISORY BOARD (RAB)

HOW TO START A RAB

Code of Federal Regulations



Title 32 / Subtitle A / Chapter I / Subchapter M / Part 202 Previous / Next / Top

PART 202—RESTORATION ADVISORY BOARDS

Authority: 5 U.S.C. 551 *et seq.* and 10 U.S.C. 2705.

Source: 71 FR 27618, May 12, 2006, unless otherwise noted.

Department of Defense
is required under 32 CFR Part 202 to assess
community interest in forming a RAB every two years

USACE solicited interest every two years by public notice

HOW TO START A RAB

Code of Federal Regulations

§ 202.2 Criteria for establishment.

(a) ***Determining if sufficient interest warrants establishing a RAB.*** A RAB should be established when there is sufficient and sustained community interest, and any 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 the installation for creation of a RAB,

(3) Federal, state, tribal, or local government representatives request the formation of a RAB, or

(4) The installation determines the need for a RAB. To determine the need for establishing a RAB, an installation should:

(i) Review correspondence files,

(ii) Review media coverage,

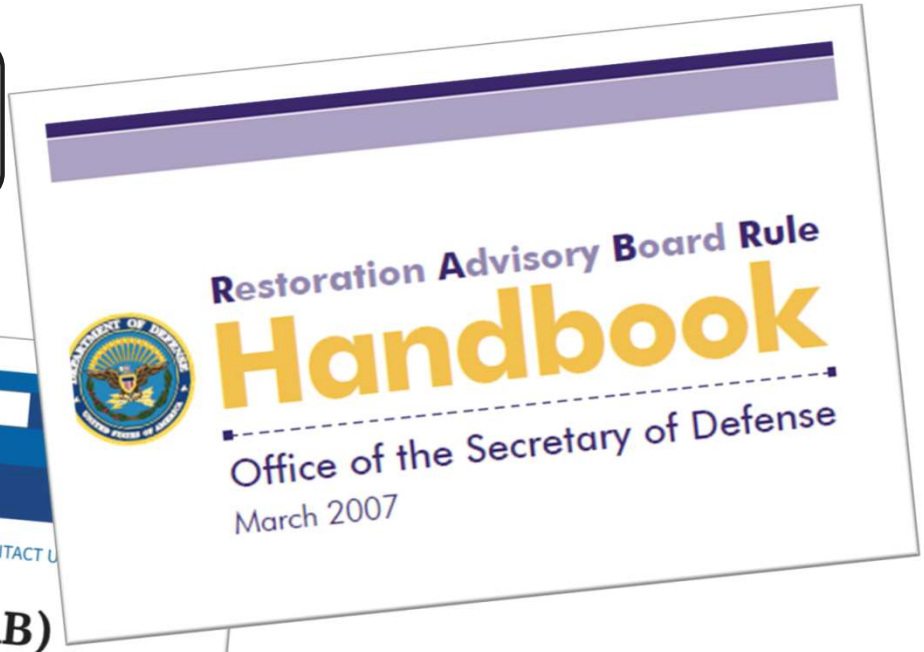
(iii) Consult local community members,

(iv) Consult relevant government officials, and

(v) Evaluate responses to communication efforts, such as notices placed in local newspapers and, if applicable, announced on the installation's Web site.

HOW TO START A RAB

Where there is sufficient and sustained community interest

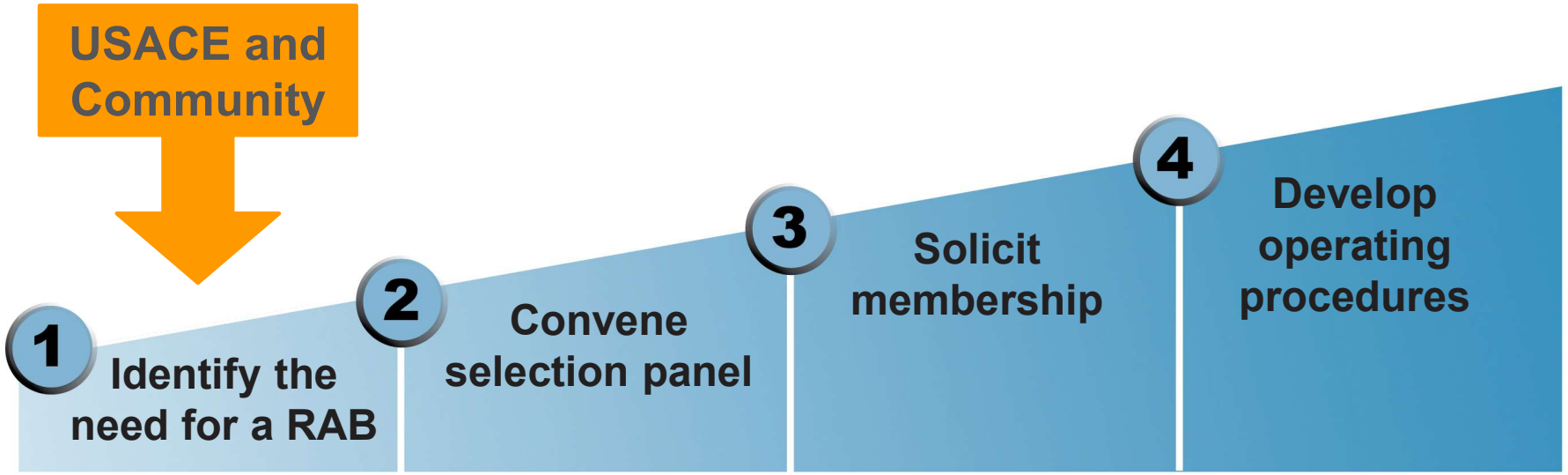


DoD is required to assess community interest in forming a RAB every two years

COMMUNITY OUTREACH AND RESPONSE

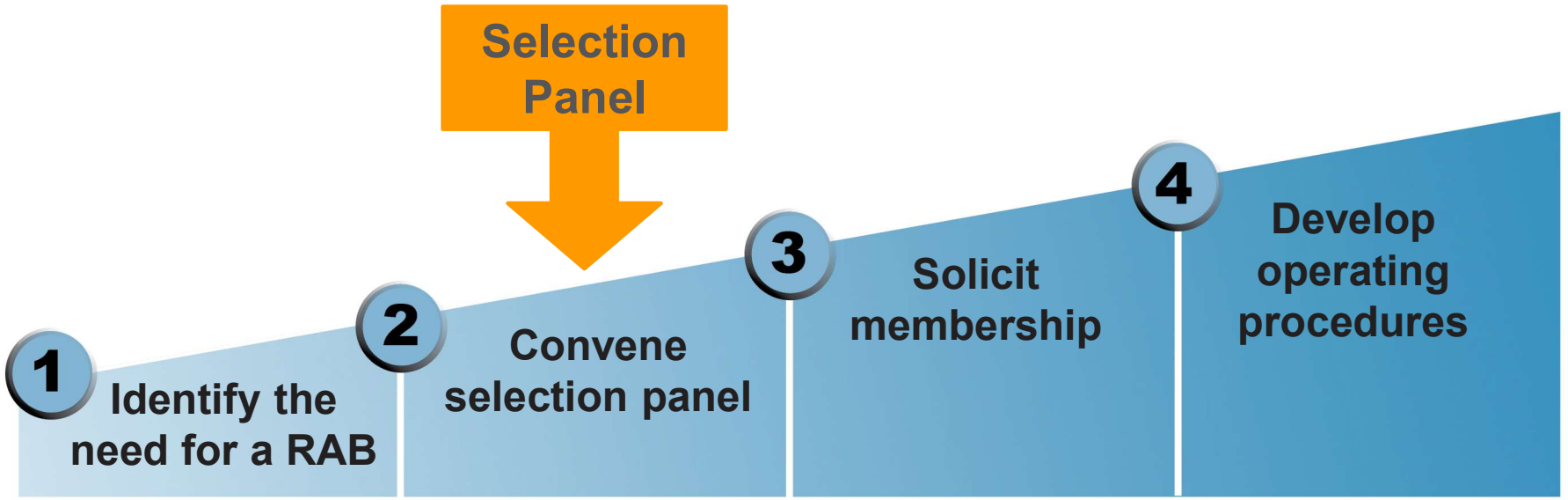
- June 2024, USACE posted a public notice on the Town of Charlestown website and Facebook pages, in The Providence Journal, and in The Westerly Sun
- To assess the public's interest in forming a RAB - with public feedback due by 14 July 2024
- The USACE received several responses expressing interest in forming a RAB
- USACE is holding this public meeting for further community feedback on forming a RAB

START A RAB



Steps to establish a RAB

START A RAB



Steps to establish a RAB

SELECTING COMMUNITY MEMBERS

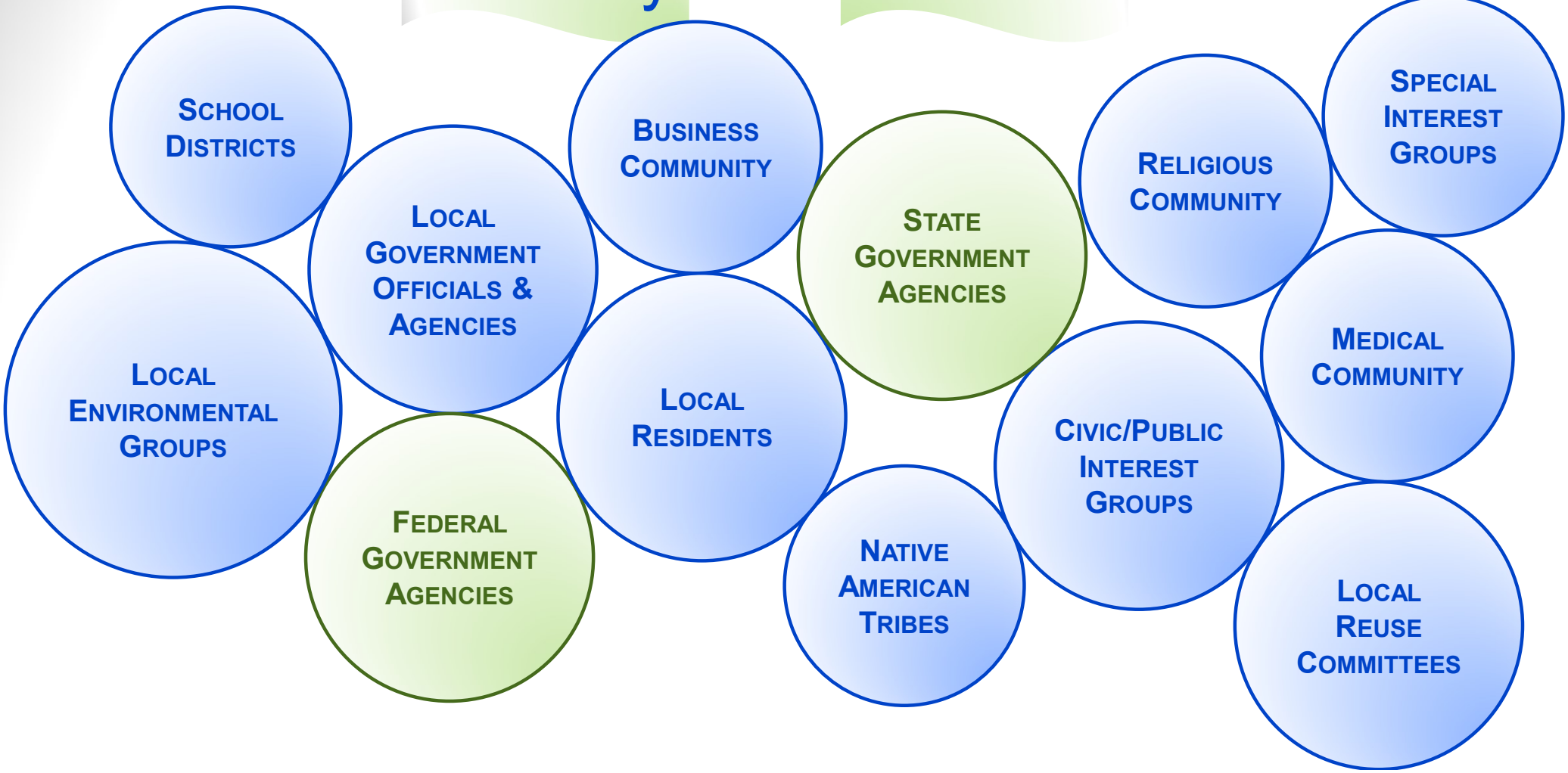
- A **SELECTION PANEL** – made up of individuals who represent the community's diverse interests
- The selection panel would **IDENTIFY COMMUNITY LEADERS AND REPRESENTATIVES** for RAB membership
- Ensuring RAB membership has **DIVERSITY** and **BALANCE**
- The selection panel usually **EXISTS ONCE** – during creation of a new RAB
- Members of the selection panel would **NOT BE SELECTED** as RAB members

SELECTING COMMUNITY MEMBERS

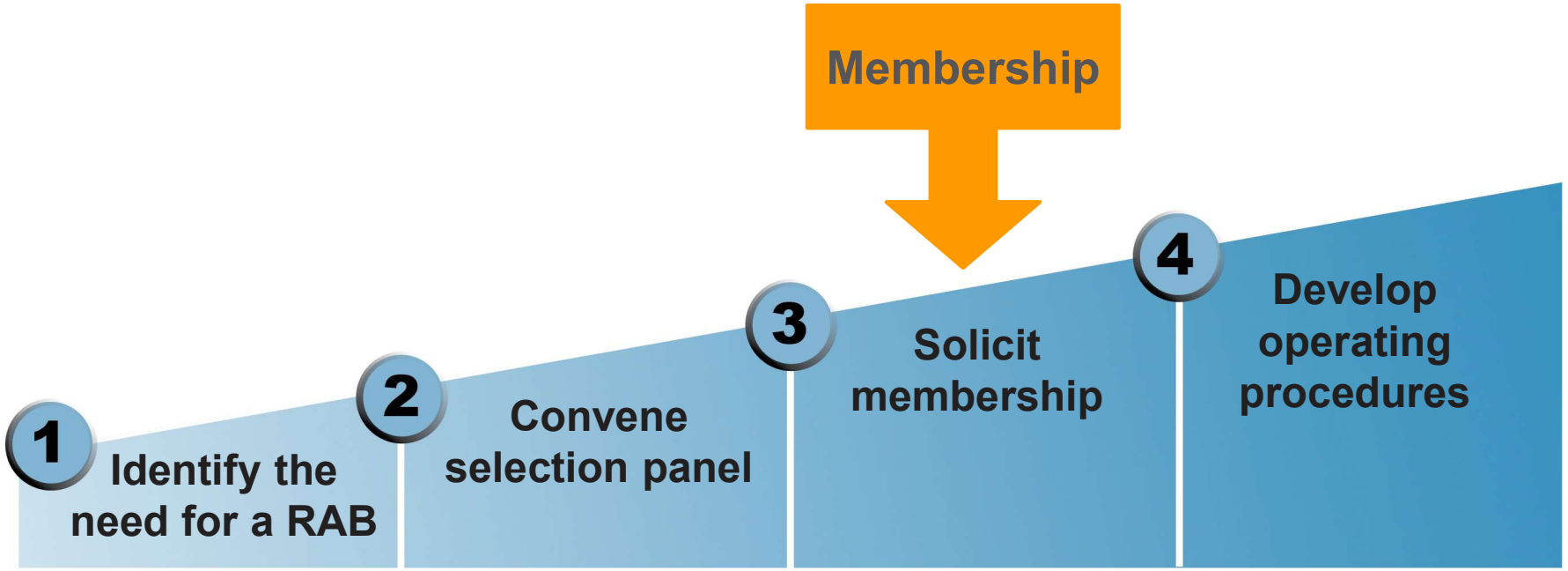
A Selection Panel would establish:

- Procedures for nominating community RAB members
- Process for reviewing community interest forms
- Criteria for selecting community RAB members
- Announce the RAB member nominees

ENSURING MEMBERSHIP
Diversity AND Balance



START A RAB



Steps to establish a RAB

SOLICITING COMMUNITY MEMBERS

Announce and distribute RAB interest forms through several methods to ensure as many people as possible in the community have the opportunity to respond

ROLES AND RESPONSIBILITIES

USACE Co-Chair

- Attend all RAB meetings
- Coordinate with the Community Co-Chair
- Ensure USACE participates in an open and constructive manner
- Ensure community issues and concerns related to CNALF restoration are addressed
- Refer issues not related to CNALF restoration to the appropriate officials
- Report back to USACE

Community Co-Chair

- Attend all RAB meetings
- Coordinate with the USACE Co-Chair
- Ensure community members participate in an open and constructive manner
- Ensure community issues and concerns related to CNALF restoration are addressed
- Report back to the community
- Serve without compensation

RAB Community Members

- Attend RAB meetings
- Provide advice and comment on CNALF restoration issues to the decision makers
- Represent and communicate community interests and concerns to the RAB
- Conduit for exchange of information between community, DoD installation, and regulatory agencies regarding CNALF restoration
- Serve without compensation

USACE

- Attend RAB meetings
- Communicate with RAB members, providing advice/input on CNALF removal project timelines, and contractor reports
- Ensure federal and state environment standards and regulations are identified and addressed
- Provide resources for communities and agencies regarding CNALF environmental and munitions response activities
- Assist with RAB member education and training

ROLES AND RESPONSIBILITIES

Facilitator

- Neutral
- Provide technical advice
- Ensure all viewpoints are considered
- Ensure all agenda items are addressed
- Monitor the progress of action items between RAB meetings

Public

- Participate in community RAB meetings
- Observe rules and operating procedures at meetings or when interacting with RAB members
- Ask questions to ensure understanding of RAB activities and impact on the community

Tribal

- Attend RAB meetings
- Ensure tribal env. standards and regulations are identified and addressed
- Educate RAB members regarding tribal sovereignty, tribal laws and their application to the property
- Assist with RAB member education and training

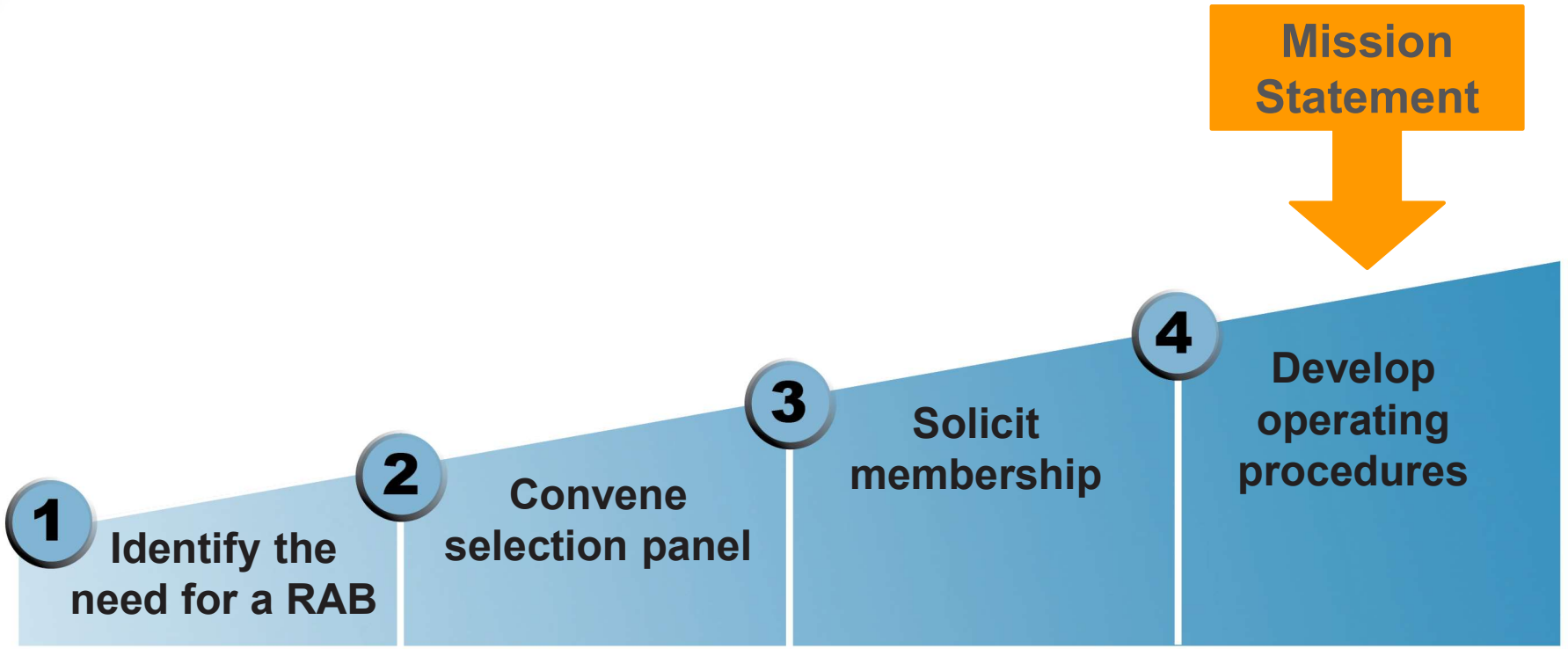
State Regulatory Agency

- Attend RAB meetings
- Ensure state env. standards and regulations are identified and addressed
- Serve as an information, referral and resource
- Assist with RAB member education and training

USFWS

- Attend RAB meetings
- Ensure federal environment standards and regulations are identified and addressed
- Assist with RAB member education and training

START A RAB



Steps to establish a RAB

OPERATING A RAB

An officially formed RAB should:

- Should set a goal to be in full operation within six months
- Announce formation and publish RAB members
- Announce meeting schedule, frequency, and location
- Develop a mission statement
- Establish formal operating procedures to govern RAB:
  - » Meetings
  - » Membership
  - » Conflict resolution

RAB MISSION STATEMENT

OPERATING PROCEDURES or BY-LAWS

Operating Instructions
[*DoD Site Name*] Restoration Advisory Board

Restoration Advisory Boards (RABs) were formed by the Department of Defense to promote cooperation between the government and communities by establishing equal membership status for all participants, and soliciting individual advice rather than forced consensus.

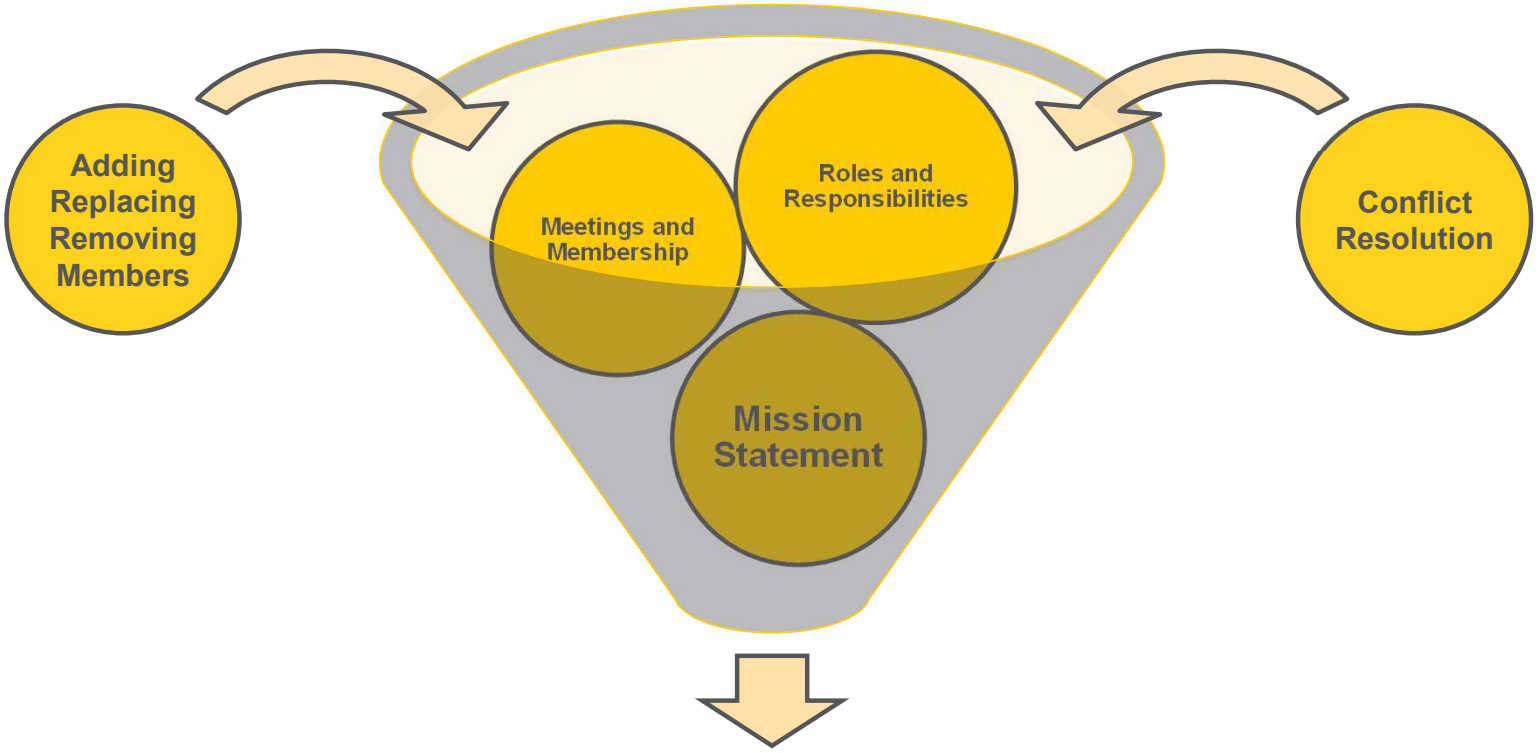
I. Mission of the Board

The [*DoD Site Name*] RAB advises the USACE and regulatory agencies of community concerns on environmental cleanup, funding, and priorities. Through open communication and the exchange of ideas, interest and concerns, the RAB supports the search for safe, timely and effective cleanup solutions so that the former [*DoD Site Name*] may be ultimately approved for transfer from USACE ownership to public/private ownership. The RAB is committed to public outreach and the representation of the interest of the community at large.

(RAB members adopted this statement at the [*MM/DD/YYYY*] *Executive Session.)*

MISSION STATEMENT and GOALS

FORMING A RAB



RESTORATION ADVISORY BOARD (RAB)

US Army Corps of Engineers ®
New England District

Community

RESTORATION ADVISORY BOARD (RAB)

WHY FORM A RAB?

Bad decisions occur when decision makers are poorly informed, due to incomplete, faulty, or bad information

Herbert A. Simon
Political Scientist and 1978 Nobel Prize Winner

BENEFITS OF A RAB

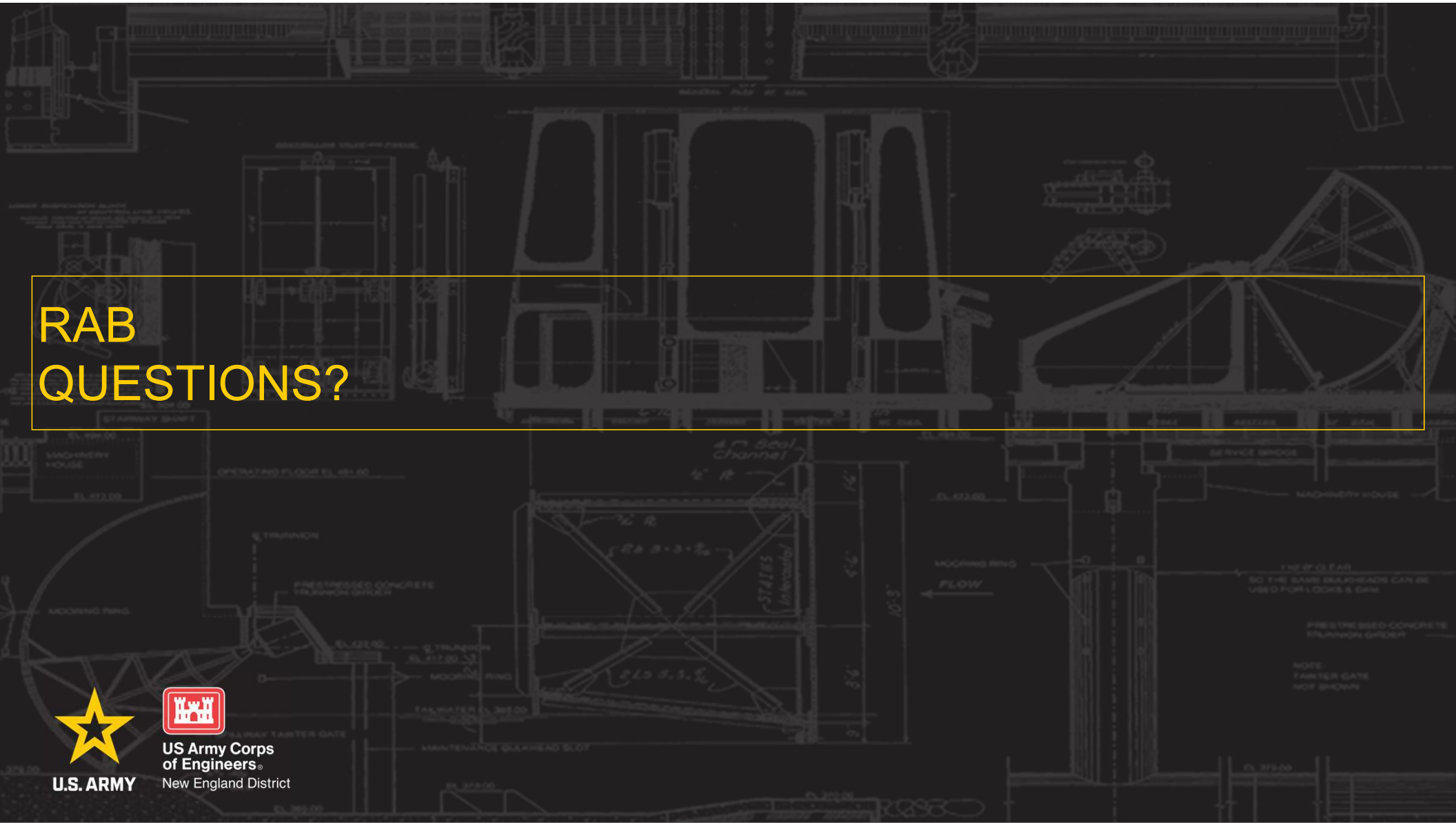
- It's an opportunity to **BECOME INVOLVED** in the CNALF FUDS restoration process through RAB membership or by attending a RAB meeting
- A RAB is a **COLLABORATIVE** forum for exchange of information and **PARTNERSHIP**
- Allow for more structured community **PARTICIPATION**
- RABs help **INFORM** government decision-makers
- RABs improve the **SOUNDNESS** of government decisions

BENEFITS OF A RAB

- A RAB with balanced representation of the entire community **BUILDS RELATIONSHIPS** and **TRUST**
- Opportunity to exchange **FACTS** and influence **PERSPECTIVES**
- Information and expertise from **ALL STAKEHOLDERS**
- Successful RABs **ALIGN** the project with **COMMUNITY GOALS**
- Identify the most efficient and productive means of **RESTORING OUR ENVIRONMENT**

WHY FORM A RAB?

- A RAB contributes to **BETTER UNDERSTANDING**
- A RAB contributes to **BETTER COMMUNICATION**
- A RAB contributes to **BETTER DECISIONS**
- RABs ensure environmental cleanup is responsive to **COMMUNITY NEEDS**
- This is your community – It's an opportunity for **YOU** to provide input on the environmental cleanup and restoration process at the CNALF FUDS



RAB QUESTIONS?

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