FINAL
DECISION DOCUMENT

for

Stratford Army Engine Plant
Stratford, Connecticut

Contract No.: W912WJ-15-D-003
Task Order No.: 0003

February 2021

Prepared for:

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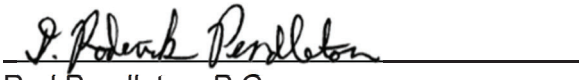
This is to certify that Wood has performed a peer technical review of this deliverable under USACE NAE Contract No. W912WJ-15-D-0005 consistent with Wood's Quality Management Program Procedure-PJM-PRO-002, Technical Review.

QUALITY ASSURANCE STATEMENT

Delivery Order Title: Stratford Army Engine Plant Focused Feasibility Study

Task Order No.: 0003

Wood Environment & Infrastructure Solutions, Inc. (Wood) has prepared this Final Decision Document for the Stratford Army Engine Plant located in Stratford, Connecticut. The Program Manager and Project Manager have completed a technical and quality assurance review of this document for technical accuracy and completeness, in accordance with the objectives of the revised Performance Work Statement, dated January 13, 2017 and Wood's (fka Amec Foster Wheeler) Final Proposal, dated March 2, 2017.



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GLOSSARY OF ABBREVIATIONS AND ACRONYMS

Amec Foster Wheeler	Amec Foster Wheeler Environment & Infrastructure
AOC	Area of Concern
ARAR	Applicable or Relevant and Appropriate Requirements
BERA	Baseline Ecological Risk Assessment
bgs	below ground surface
BRAC	Base Realignment and Closure
BTEX	Benzene, Toluene, Ethylbenzene, Xylene
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CDF	Confined Disposal Facility
CFR	Code of Federal Regulations
COPC	Chemical of Potential Concern
CSM	Conceptual Site Model
CT DEEP	Connecticut Department of Energy and Environmental Protection
CT DOT	Connecticut Department of Transportation
CWTS	Chemical Waste Treatment System
cy	Cubic Yard
EPA	Environmental Protection Agency
ERM-Q	Effects Range Median Quotient
FFS	Final Focused Feasibility Study
gpm	gallons per minute
ft	Feet
HHBRA	Human Health Baseline Risk Assessment
HI	Hazard Index
H_2S	Hydrogen Sulfide
I/C	Industrial/Commercial
LNAPL	Light Non-Aqueous Phase Liquid
LUC	Land Use Controls
mg/l	milligrams per liter
MSL	mean sea level
NAE	New England District
NAPL	Non-Aqueous Phase Liquid
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NMFS	National Marine Fisheries Service
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
O&M	Operations and Maintenance
PAH	Polycyclic Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyls

PFTM	Pneumatic Flow Tube Mixing
ppm	parts per million
PRG	Preliminary Remediation Goals
RAO	Remedial Action Objectives
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
RSR	Remediation Standard Regulation
SAEP	Stratford Army Engine Plant
SPLP	Synthetic Precipitation Leaching Procedure
SWPC	Surface Water Protection Criteria
TPH	Total Petroleum Hydrocarbons
TSCA	Toxic Substances Control Act
VOC	Volatile Organic Compound
USACE	United States Army Corps of Engineers
U.S. Army	United States Department of the Army
USFW	United States Fish and Wildlife Service
VC	Volatilization Criteria
Wood	Wood Environment & Infrastructure Solutions, Inc.

1.0 THE DECLARATION

1.1 Site Name and Location

The Stratford Army Engine Plant (SAEP) is located in the Town of Stratford, Fairfield County, Connecticut (the SAEP Site). In October 1995, SAEP was placed on the Base Realignment and Closure (BRAC) list, known as BRAC 95 (Public Law 101-510).

1.2 Statement of Basis and Purpose

This Decision Document does not address the entire SAEP facility. It presents the final remedy selected for the contaminated sediment related to the Tidal Flats (Area of Concern 24 and Area of Concern 52) and the Outfall-008 drainage ditch (Area of Concern 25) portion of the SAEP Site (the Site). This Decision Document was developed in accordance with the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), as amended, 42 U.S.C. §§ 9601 et seq., the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) as amended, 40 C.F.R. Part 300, and under authority granted to the Army through Executive Order 12580 and implemented through the Defense Environmental Restoration Program, 10 U.S.C. §2701. The remainder of the SAEP is regulated under a Resource Conservation and Recovery Act (RCRA) Stewardship Permit and will be addressed under separate action(s). This final decision for the Site is based on the Administrative Record which was developed and is maintained in accordance with Section 113(k) of CERCLA and 40 CFR 300.800, and is available for public review at the United States Army Corps of Engineers (USACE) New England District (NAE) Office, 696 Virginia Road, Concord, MA 01742-2751. The state support regulatory agency for this Site is Connecticut Department of Energy and Environmental Protection (CT DEEP).

1.3 Assessment of the Site

The sediments associated with the Tidal Flats and the Outfall-008 drainage ditch are impacted by metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, and zinc), polychlorinated biphenyls (PCBs), and polynuclear aromatic hydrocarbons (acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(ghi)perylene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd) pyrene, naphthalene, phenanthrene, and pyrene) (Amec Foster Wheeler, 2018e). These impacts are the result of historic Army operations at SAEP. The risk assessments generally showed limited risk to human receptors, with a hazard index (HI) for human ingestion of oysters slightly greater than 1; however, the assessment of ecological receptors, i.e., benthic invertebrates and foraging birds like herons and sandpipers where the HI were as high as 570 based on ingestion of chromium in sediment. The remedial targets (including CT DEEP's risk-based preliminary remedial goals) are documented in the Final Sediment Remediation Endpoints Report (Amec Foster Wheeler, 2018a) and include eliminating sediments that pose a toxic risk to semi- and

aquatic organisms and eliminating site-related impacts from chemicals that can accumulate in the tissue of the aquatic food chain, such as PCBs and mercury.

Based on the preliminary remediation goals (PRGs), remedial action objectives (RAOs) were established for the site according to the following:

- Tidal Flats - Reduce risk to the environment by reducing sediment toxicity in the top 4 feet (ft)[1] of sediment by removing sediment exceeding the following criteria:
    - Effects Range Median Quotient (ERM-Q) of 0.5 for the eight Site-related metals (arsenic, cadmium, chromium, copper, lead, nickel, silver, and zinc).
    - PCB concentrations exceeding 1 part per million (ppm); and
    - Mercury concentrations exceeding 0.55 ppm.[2]

  By achieving these RAOs, the CT DEEP requirements (CT DEEP, 2018) that the average concentrations of total PCBs and mercury remaining in sediments after remediation will be not substantially different from those found in background locations (0.2 ppm for total PCBs and 0.4 ppm for mercury) will also be achieved. The concentrations of total PCBs and mercury predicted to remain in sediments after remediation were statistically evaluated in Appendix A-2 of the Focused Feasibility Study (Amec Foster Wheeler, 2018e) and found to achieve the goal of consistency with CT DEEP determined background conditions.
- Outfall-008 Drainage Ditch - Reduce risk to the environment by reducing sediment toxicity in the top 4 ft of sediment through removal of all sediments in the top 4 ft along the entire length of the Outfall-008 drainage ditch including the last third of the ditch (the “T” section, extending to Route 113 to the southwest and to the tidal gate which discharges to the Marine Basin to the northeast).

The average ERM-Q for the eight metals for each sample was calculated as follows:

- Deriving an average ER-M for the eight metals by dividing the sediment metal concentration (for non-detects, the detection limit numeric value [reporting limit] was used) at each sample location by the published Effects Range-Medium (ER-M) value (Long, et al. 1995) for the metal; and

[1] CT DEEP and the Army determined that the reasonable exposure pathway for all potential future uses of the site, and all current unacceptable risks to site receptors (human health and ecological), rest only within the top 4ft of sedimentation and no excavation will be required to go beyond this reasonable exposure depth.
[2] Following remediation, a small number of individual sample results may exceed the RAO values or concentrations; however, the sediments remaining following remediation will have average concentrations less than the RAOs and CT DEEP proposed background concentrations

- Deriving an average ERM-Q for a sample by calculating the average of the ER-M ratios for the eight metals.

The response action selected in this Decision Document is necessary to protect public health and welfare and the environment from actual or threatened releases of hazardous substances.

1.4 Description of the Selected Remedy

Based upon the detailed and comparative analyses, the preferred remedy is Alternative 3, Mechanical Dredging and on-Site placement of sediments in the uplands. Key elements of the Selected Remedy include:

- Pre-design investigation to better define the limits of dredging.
- Removal of sediments in accordance with the RAOs.
- Initial gravity drainage of dredged sediments followed by treatment of dredged sediments with amendments (e.g., Portland cement) to improve handling and strength characteristics as necessary to meet on-Site storage and off-Site transportation and disposal requirements.
- Initial verification sampling consisting of real-time screening for metals to demonstrate if excavation is sufficient prior to termination of removal and verification to proceed with confirmation sampling.
- Confirmation sampling following verification sampling, and any resulting additional removals required to remove the target sediments, to verify that the RAOs have been met.
- Backfilling areas within the Tidal Flats to within one foot of pre-construction conditions with sandy materials imported from upland quarries and/or dredged and repurposed from the Housatonic River to allow natural deposition of the remaining one foot of sediment over time. Removal areas with only one foot of proposed excavation will be backfilled by the natural deposition of sediment over time (i.e., these areas will not be restored with backfill). The Army will perform periodic monitoring (years 1, 3, and 5 following remedial action completion) of the stability of the Tidal Flats backfill, and at year 5 will make a determination if the backfill is stable or additional backfill monitoring for stability is needed.
- Characterization of dredged sediment for on-Site placement in the upland and off-Site waste disposal purposes.
- On-site placement of dredged sediments in the upland (stockpiling) in accordance with the requirements of the RCRA Stewardship Permit and off-Site disposal of sediments containing > 10.0 ppm PCBs and exceeding CT Industrial/Commercial Direct Exposure Criteria (DEC) at appropriately permitted RCRA and TSCA disposal facilities.
- Site restoration in areas where there are existing salt marsh grasses (restored in kind).

Land Use Controls (LUCs) will not be necessary following completion of the remedy for the Tidal Flats and the Outfall 008 Drainage Ditch due to the Human Health Risk Assessment and Ecological Risk Assessment conclusions and final restoration work.

A physical post-construction monitoring program will be implemented by the Army to assure the remedy is in place and long-term success. The program will include surveying of the Tidal Flats at year one, three, and five after the completion of construction. After the five-year survey, the Site will be assessed by the Army, in consultation with CT DEEP, to determine if additional monitoring is required beyond the 5-year mark. In addition, weather-based surveys will be conducted after the following specific events, should they occur within the five-year period:

- Greater than or equal to a 10-year recurrence interval episodic storm based on rainfall amount or wind speed and direction.

In the event that the surveys identify areas of significant disturbance or where the sediment elevation is significantly different from the post-construction elevation, then additional data will be collected to verify the survey, and response actions may be taken, as appropriate, to repair or enhance the backfilled area.

Although unlikely given the relatively sheltered environment of the Tidal Flats area, significant disturbance and further evaluation with possible corrective actions may be considered, in consultation with the CT DEEP, if the backfill has eroded more than 15 inches (compared to the as-built post-backfill surface) over a surface area of 25% of the total excavated area.

In addition to surveying, a five-year monitoring and maintenance program will be implemented to ensure the re-establishment of the Tidal Flat salt marsh. The Outfall-008 drainage ditch will receive sand backfill and armor stone, where appropriate. Outfall-008 will be allowed to naturally vegetate; no monitoring and maintenance program will be implemented. The total estimated cost of implementing the Selected Remedy is approximately $70,000,000.

1.5 Statutory Determinations

Under CERCLA §121 and the NCP, the lead agency must select remedies that: are protective of human health and the environment; comply with applicable or relevant and appropriate requirements (ARARs) unless a statutory waiver is justified; are cost-effective; utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable; and satisfy the statutory preference for treatment as a principal element of the remedy which permanently and significantly reduces the toxicity, mobility, or volume of hazardous substances, pollutants, or contaminants. This section discusses how the Selected Remedy meets these statutory requirements.

1.5.1 Protectiveness of Human Health and the Environment

The Selected Remedy will provide adequate protection of human health and the environment by dredging to remove contaminated sediments from the Tidal Flats and Outfall-008 with concentrations exceeding the remedial goals within the top 4 feet. Sediments will be dewatered and treated as necessary to render them dry and non-leaching for metals, and temporarily stockpiled beneath clean cover on the upland areas of the SAEP facility. The treated sediment will ultimately be placed in the uplands areas adjacent to the Tidal Flats beneath a cover meeting the CT DEEP RSRs definition of an Engineered Control (also in accordance with the requirements of the RCRA Stewardship Permit). Sediments exceeding 10 mg/kg PCBs and CT Industrial/Commercial DEC will be disposed of off-Site in a secure landfill, thereby achieving the RAOs. After removal, sand backfill sourced from upland quarries and/or from the Housatonic River will be placed to within one foot of pre-construction conditions. Removal areas with only one foot of proposed excavation will be backfilled by the natural deposition of sediment over time (i.e., these areas will not be restored with backfill). Therefore, overall protection of human health and the environment will be achieved by the Selected Remedy.

1.5.2 Compliance with ARARs

The Selected Remedy will comply with all chemical-, location-, and action-specific ARARs identified in **Table 1-2**, including RCRA, TSCA, and CT RSRs.

1.5.3 Cost-Effectiveness

In the lead agency's (Army) judgment, the Selected Remedy is cost-effective and represents a reasonable value for the money to be spent.

1.5.4 Utilization of Permanent Solutions and Alternative or Resource Recovery Technologies

The Selected Remedy will remove sediment contaminated above the PRGs within the top 4-feet, thus eliminating residual risk of the Tidal Flats and Outfall-008 portions of the Site and leaving the Site in a condition which is considered consistent with background conditions LUC controls will not be necessary for the Tidal Flats and Outfall 008 drainage ditch following completion of the remedy based upon the Human Health and Ecological Risk Assessment conclusions and final restoration work. Sediments placed in the upland portions of the SAEP property will be managed under a RCRA Stewardship Permit issued to the Army and re-issued to the future landowner if the property is transferred. Five-year reviews will not be necessary, unless greater than 25% of the restored tidal flat topography area has been eroded by 15" or more, because the Selected Remedy will permanently remove accessible contaminated sediment and any remaining COCs will be considered ubiquitous anthropogenic background contamination, not subject to CERCLA. BRAC has determined that the Selected Remedy represents the maximum extent to which

permanent solutions and alternative resource recovery technologies can be utilized in a practicable manner at the Site.

1.5.5 Statutory Preference for Treatment as a Principal Element of the Remedy

The dredging, off-Site disposal and backfill alternative is not a treatment method, so it would not reduce the toxicity, mobility and volume of contaminants through treatment. The Selected Remedy does, however, result in the permanent removal of sediments within the top 4-feet with unacceptable risk levels of PCB concentrations >1 ppm and metals with ERM-Q ≥ 0.5. Therefore, the remedy allows for unrestricted use of the Site with a 5-year monitoring and maintenance program to ensure the re-establishment of the salt marsh mitigation area. UU/UE exposure scenarios for both human health and ecological receptors are determined to exist only in the top 4ft of sediment, thus excavation will address all unacceptable risks at the Site.

1.6 Data Certification Checklist

The following information is included in the Decision Summary section of this Decision Document (Section 2.0). Additional information can be found in the Administrative Record file for this Site.

- Chemicals of concern and their respective concentrations (Subsection 2.4.6).
- Baseline risk represented by the chemicals of concern (Subsection 2.6).
- Cleanup levels established for chemicals of concern and the basis for these levels (Subsection 2.7).
- How source materials constituting principal threats are addressed (Subsection 2.10).
- Current and reasonably anticipated future land use assumptions (Subsections 2.5).
- Potential land and groundwater use that will be available at the Site as a result of the Selected Remedy (Subsection 2.5). Estimated capital, annual operation and maintenance (O&M), and total present worth costs, discount rate, and the number of years over which the remedy cost estimates are projected (Subsection 2.11.3).
- Key factor(s) that led to selecting the remedy (i.e., a description of how the Selected Remedy provides the best balance of tradeoffs with respect to the balancing and modifying criteria (Subsection 2.9).

1.7 Authorized Signatures

The Selected Remedy for the Site is protective of human health and the environment, is readily implementable, and is determined to be cost effective. The Selected Remedy does not satisfy the statutory preference for remedies that utilize treatment as a principal element to reduce the toxicity, mobility, or volume of hazardous substances; however, implementation of the remedy

does provide a permanent solution resulting in unlimited use and unrestricted exposure to clean back fill, that in turn creates clean sediments in the top 3-feet.

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2.0 THE DECISION SUMMARY

2.1 Site Name, Location, and Description

The Stratford Army Engine Plant (SAEP) is located on 550 Main Street in Stratford, Fairfield County, Connecticut. The Site is on the border of the Bridgeport and Milford U.S. Geological Survey (USGS) Quadrangles. Latitudinal and longitudinal coordinates of the SAEP are approximately 41° 10' North and 73° 07' West. The location of SAEP is shown on **Figure 1-1**.

As part of the 2004 RI Report (ACSIM, 2004), the SAEP was organized into areas of concern (AOCs). This decision document is focused on three of these AOCs.

- Chemical Waste Treatment System (CWTS)
    - AOC 25 (Outfall-008 Drainage Ditch)
- Stormwater and Wastewater System
    - AOC 24 (Discharge to the Housatonic River at Outall-007)
    - AOC 52 (Outfalls-001 through -006 and the Tidal Flats)

For the purposes of this document, AOCs 24 and 52 are combined to represent the Tidal Flats sediments. The Tidal Flats and Outfall-008 define the Site as discussed herein. The remainder of the SAEP is regulated under a RCRA Stewardship Permit issued by the state to the Army and conveyed to the future landowner and will be addressed under separate action(s).

The United States Department of the Army (U.S. Army) is the lead agency for the Site under CERCLA and Executive Order 12580. CT DEEP is the state support agency.

2.2 Site History and Enforcement Activities

2.2.1 Site History

The property was developed in 1927 for Sikorsky Aircraft where aircraft and engines were manufactured from 1929 to 1948. The plant was expanded during World War II to accommodate mass production of the F4U Corsair fighter plane. During this time the shoreline was extended to provide land area for new buildings. The plant was idle from 1948 until 1951. From 1952 until it closed in 1997, the plant produced reciprocating aircraft engines and turbine engines for both commercial and military applications.

Process wastes generated on-Site included waste oils, fuels, solvents, and paints. An on-Site chemical waste treatment plant operated to treat waste generated at the facility and released effluent to the Housatonic River under a National Pollutant Discharge Elimination System

(NPDES) permit. Waste lagoons on the Site were regulated and evaluated under RCRA in the 1980s. The facility was cited in 1983 for violating the Toxic Substances Control Act (TSCA) regarding reporting of PCB-containing transformers. The Site was owned by the United States Air Force until 1976, when ownership was transferred to the U.S. Army (USEPA, 2016).

All manufacturing operations at the facility ceased in 1997. Since 1997 some building spaces have been demolished, and some building spaces are currently utilized for caretaker operations, site security and building maintenance.

2.2.2 Prior Investigations and Studies

There have been numerous investigations of the sediments in the Tidal Flats and Outfall-008 areas which are summarized as follows:

- Sampling of the Tidal Flats and Outfall-008 drainage ditch sediments was conducted by the U.S. Army in 1992, 1994, and 1999 as part of a remedial investigation (RI). These data are presented in the RI Report (ACSIM, 2004).
- Background/reference sediment sampling was conducted in 1994, 1999, 2009, and 2012.
- The Connecticut Department of Transportation (CTDOT) conducted sediment investigations in the Outfall-008 drainage ditch in August 2012.
- In April and May 2014, the Army conducted additional sediment sampling and toxicity testing in the Tidal Flats and Outfall-008 drainage area.
- In April 2015, the Army conducted additional sediment sampling in the Tidal Flats and Outfall-008 areas.
- In August 2017, the Army collected limited pre-design investigation samples of contaminated sediments from the Tidal Flats to conduct treatability studies for potential land-side reuse of sediments, as well as to characterize the sediments relevant to dredging, disposal, and treatment evaluations.
- In October 2017, the Army collected additional sediment samples for geotechnical parameter analysis at 10 locations across the Tidal Flats to provide a more comprehensive spatial representation of the material to be removed.
- In October 2017, the Army completed additional sediment coring activities to further evaluate locations where PCB concentrations historically exceeded 50 ppm.
- In January 2018, the Army completed the Final Sediment Remediation Endpoints Report (Amec Foster Wheeler, 2018a) to define and document the remedial targets, including CT DEEP's risk-based preliminary remedial goals.

2.2.3 Regulatory Background

In October 1995, SAEP was placed on the BRAC list, known as BRAC 95. U.S. Army BRAC properties must be investigated to determine the nature and extent of environmental contamination. The U.S. Army prepared a RI Report (ACSIM, 2004) for SAEP to characterize the nature and extent of contamination and evaluate potential risk to human health and the environment attributable to the Site.

In accordance with CERCLA §121(d) the lead agency is required to meet standards of control or a degree of cleanup required by statutes identified as Applicable or Relevant and Appropriate (ARARs). ARARs are further defined in the NCP at 40 CFR 300.400(g). The Army and CTDEEP identified two ARARs for this response action which will drive the remedial actions/cleanup standards at the site: (1) the CT RSRs for soil and groundwater outlined in Appendix A of Title 22a-133k of the Connecticut Administrative Regulations, and (2) the Connecticut Surface Water Standards.

The RI Report utilized the results of the investigations completed prior to 2002 to develop human health and ecological risk assessments to evaluate risk associated with the sediments of the Tidal Flats and Outfall-008 drainage ditch (40 CFR 300.430(d). The Human-Health Baseline Risk Assessment (HHBRA) considered exposure to sediments for recreational and commercial anglers and shell-fishermen. Human health and ecological risk assessments were performed for the sediment portion of the Site as part of previous remedial investigations (ACSIM, 2004). The risk assessments generally showed limited risk to receptors, with a hazard index (HI) for human ingestion of oysters slightly greater than 1, and potential risk to sandpiper exposure to chromium. The Environmental Protection Agency (EPA) defines a HI as the sum of hazard quotients for toxins that affect the same target organ or organ system. The EPA defines a hazard quotient as the ratio of the potential exposure to a substance and the level at which no adverse effects are expected (calculated as the exposure divided by the appropriate chronic or acute value) (USEPA, 2014). Based on the age of the sediment data (1992-1998) associated with the HHBRA (40 CFR 300.430(d)(4)) and Baseline Ecological Risk Assessment (BERA), the CT DEEP requested that additional sediment characterization be conducted prior to establishment of remedial goals for sediment in the Tidal Flats and Outfall-008 drainage ditch sediments. Sediment toxicity testing was performed for the 0 to 1 ft interval and all areas where results of testing indicated failures within the remedial footprint. Additional sediment characterization was conducted by the Army in 2014 and 2015 as discussed above, which ultimately led to CT DEEP's determination of remedial targets for site metals and PCBs. The remedial targets, including CT DEEP's risk-based preliminary remedial goals, are documented in the Final Sediment Remediation Endpoints Report (Amec Foster Wheeler, 2018a)

2.3 Community Participation

The *Final RI Report* (ACSIM, 2004) for the Site was completed in September 2004. The *Final Focused Feasibility Study* (Amec Foster Wheeler, 2018e) was completed in September 2018. The *Proposed Plan for Environmental Restoration* (Amec Foster Wheeler, 2020a), was issued for public review and comment in November 2019. The *RI Report*, *Final Focused Feasibility Study* (FFS), and *Proposed Plan for Environmental Restoration* (Proposed Plan) can be accessed at the USACE, NAE Office, 696 Virginia Road, Concord, MA 01742-2751 and at the USACE, NAE project website (https://www.nae.usace.army.mil/Missions/Projects-Topics/Army-Engine-Plant-Environmental-Restoration-Project/) . A public comment period was held from November 8 to December 13, 2019. In addition, a public meeting was held on December 10, 2019 to present the Proposed Plan to the public. During the public meeting, USACE answered questions about the preferred remedy for the Site. This meeting was also used to solicit comments and input regarding the Proposed Plan. Responses to the comments received during the public comment period and at the public meeting are included in the Responsiveness Summary provided in Section 3.0 of this Decision Document.

2.4 Site Characteristics

2.4.1 Conceptual Site Model

A Conceptual Site Model (CSM) for the SAEP, based upon all available data, was developed during preparation of the *Final RI Report* (ACSIM, 2004). This CSM presented in this section is specific to the Tidal Flats and Outfall-008 and describes the sources of contamination, release mechanisms to environmental media, contaminated media, exposure routes, and aquatic and semi-aquatic receptors.

During manufacturing processes, contaminants were released to the environment through several mechanisms:

- Potentially contaminated soil from the Main Site area was placed in the vicinity of the South Parking Lot. Overland land flow and runoff prior to paving may have been a potential contaminate source to Outfall-008.
- Liquid wastes from various industrial operations were transported to the CWTS; treated wastes were then released to a drainage ditch that discharged through Outfall-008 to a ditch that emptied into the Marine Basin. Prior to construction of the CWTS, wastes were historically discharged directly to the Tidal Flats through various outfalls.
- Stormwater that is collected from SAEP is discharged to the Tidal Flats.

In addition, chlorinated solvents have been detected in shallow groundwater beneath and within the sediment pore space of the Tidal Flats. Since the groundwater plumes originating at Building B-2 are not discharging to surface water, the source of chlorinated solvent contamination at the Tidal Flats is suspected of being related to discrete releases (historic disposal) of solvent waste in the vicinity of the Dike area (ACSIM, 2004).

Site operations also resulted in waste streams potentially containing nickel, copper, cadmium, aluminum, magnesium, zinc, and cyanide. Additionally, manometers containing mercury were used at the engine testing facilities (ACSIM, 2004). These sources could potentially have resulted in releases to environmental media associated with the Site. Erosion of soil and transport to surface water is not a complete pathway at SAEP because the site bounded by Sniffens Lane, Main Street, the North Parking Lot, and the Dike is completely covered by buildings, concrete and asphalt. The media considered to be affected by releases at the Site includes the shallow groundwater beneath the Tidal Flats; surface water, sediment and biota at the Tidal Flats; and the surface water, sediment, and biota at the Outfall-008 area.

2.4.2 Site Overview and Physical Setting

SAEP consists of approximately 124 acres, of which about 76 acres are improved land. Additionally, the Army has riparian rights (access) to approximately 48 acres of adjacent tidally influenced property bordering the Housatonic River. All tidal lands below the mean high-water line are owned by the State of Connecticut as public trust land. The 76 acres of improved land contain 49 buildings, paved roadway and grounds, and five paved parking lots. The 48 acres of tidally influenced property adjacent to the Housatonic River are known as the Tidal Flats. An area map is provided as **Figure 1-2**.

SAEP has a long industrial history and was used to develop, test, and manufacture aircraft, aircraft engines, and other aerospace products for 68 years. The plant closed in 1997. Access to the Site is restricted by perimeter fencing and security personnel. The Site is bordered by a paved parking lot and wetlands to the north; the Tidal Flats and Housatonic River to the east; an open field, a drainage channel, and small businesses to the south; and hangar buildings, the Sikorsky Memorial Airport, several small businesses, and Frash Pond to the west. Land near the Site is zoned light industrial, business, commercial, or residential. There are several businesses located west of Main Street across from SAEP, including a small strip mall, service stations, and a restaurant.

Nearby recreational areas include Short Beach Park ½-mile to the southeast, and public wildlife areas, including Nells Island and the Great Meadow Salt Marsh across the Housatonic River from SAEP.

2.4.3 Tidal Flats

The Tidal Flats are classified as estuarine and marine wetlands consisting of fine-grained sediments exposed twice daily during low tide. These sediments are mostly un-vegetated, with the northwest portion supporting limited areas of salt marsh vegetation. A Causeway extends from the upland to the river channel and divides the Tidal Flats into two areas. The Causeway was constructed over the Tidal Flats in 1929 to provide access to the river channel. A stone jetty in the northern portion of the Tidal Flats extends to the river channel and was built in 1932 to divert effluent from the Stratford Water Pollution Control Facility, which is located immediately upstream from the Tidal Flats. Several outfalls formerly released liquid waste streams from SAEP industrial operations to the Tidal Flats.

2.4.4 Outfall-008

The Outfall-008 drainage ditch is located at the southern boundary of the Site and was used to discharge treated wastewater associated with metal plating into a drainage ditch that flows to the south. The drainage ditch originates at Outfall-008. It is approximately 10 to 12 ft wide and generally less than 2 ft deep. From Outfall-008 the ditch extends south-southeast a distance of 1,100 ft where it intersects with a ditch perpendicular to it. The ditch carries runoff from the airport (located to the southwest, across Main Street) to Marine Basin (located 250 ft east of the junction of the Outfall-008 drainage ditch and the perpendicular ditch). Water in the ditch perpendicular to the Outfall-008 drainage ditch flows to Marine Basin, which in turn drains to the Housatonic River.

2.4.5 Geology and Hydrogeology

The following sections summarize information from the *Final RI Report* (ACSIM, 2004), primarily focused on the Tidal Flats and Outfall-008.

2.4.5.1 Overburden Geology

Overburden soil and sediment at the Tidal Flats and Outfall-008 consists primarily of estuarine silt and alluvium/outwash deposits.

The thick silt deposit typically consists of dark organic fine silts with very fine sands, occasionally clayey and have a hydrogen sulfide smell consistent with intertidal mud-flat deposits. This material is an estuarine sediment deposited by the Housatonic River and subsequently topped with fill (both artificial and glacial) during enlargement of the facility property. The thickness of the estuarine silt layer varies from as much as 30 ft beneath the Causeway and adjacent to the Dike at the north end of the facility, to nonexistent toward the interior of the facility. A thick zone of alluvium/outwash deposits (sand and gravel) underlies the estuarine silt deposits at the Site, and unconformably overlies the bedrock. The thickness of the alluvium/outwash deposits ranges from

less than 10 ft to 28 ft. The alluvium/outwash deposits consist of sands, silty sands, and gravely sands with occasional boulders, clay stringers, and varved silt.

2.4.5.2 Bedrock Geology

Bedrock beneath SAEP has been identified as black schist with greenstone. Results of a seismic refraction survey, coupled with soil boring information, indicate bedrock depth ranges from about 49 ft to 184 ft bgs beneath SAEP. These depths translate to elevations of approximately –50 ft above mean sea level (MSL) to 175 ft below MSL. The seismic refraction survey results showed that the bedrock surface elevation is highly variable, even over relatively short horizontal distances. Bedrock is deepest to the west/northwest and shallowest to the east/southeast. Site wide, results showed that the bedrock surface dips to the northwest and to the southwest, with a bedrock high (saddle).

2.4.5.3 Hydrogeology

Groundwater occurs at depths ranging from approximately 5 to 8 ft bgs. Groundwater flow in the shallow aquifer is generally from west to east and southeast toward the Tidal Flats and marine basin. The horizontal gradient beneath the southwest portion of the SEAP Site is relatively flat but increases near the Dike to the northeast. The estuarine silts act as a low permeability boundary to groundwater flow in this area resulting in the increased gradient. Groundwater flow in the deeper portions of the aquifer is also from west to east. Vertical gradients indicate slight upward to neutral gradients from deep monitoring wells screened on top of bedrock, to shallower wells. Horizontal gradients increase in the deep aquifer in the west. These steep gradients are attributable to high bedrock elevations in this area with corresponding lowered transmissivity of the overburden aquifer. The estimated horizontal groundwater velocity ranges from near zero ft per year beneath the southwest portion of the SEAP Site to 255 ft per year near the Tidal Flats. The higher velocities occur in the more permeable sections of the overburden deposits.

2.4.6 Nature and Extent of Contamination

The following sections summarize information from the *Final RI Report* (ACSIM, 2004), primarily focused on the Tidal Flats and Outfall-008.

2.4.6.1 Groundwater

Impacts to the shallow groundwater in the near shore Tidal Flats include the chlorinated solvents TCE, cis-1,2-DCE, and vinyl chloride, which were detected in groundwater adjacent to the Dike. The source of these chlorinated VOCs appears to be the unsaturated zone soils and shallow groundwater associated with the former Hazardous Waste Storage Areas and Former Jet Fuel Storage Area. Light non-aqueous phase liquid (LNAPL) is present between the western edge of

Building B-16 extending approximately 500 feet to the west within 150 feet of the top of the Dike (see **Figure 1-2**). Groundwater downgradient of the site is below Surface Water Protection Criteria (SWPC), indicating VOCs are being naturally attenuated and/or transport times have not been sufficient for the higher concentrations of VOCs beneath the facility to migrate beneath the Tidal Flats. Reducing conditions measured in groundwater near and north of the Dike may be stimulating reductive de-chlorination of the TCE to cis-1,2-DCE and vinyl chloride. Chemical transformations also limit the migration of the chlorinated solvents 1,1,1-TCA, PCE, and TCE in groundwater. These compounds degrade through the processes of natural attenuation. 1,1,1-TCA will abiotically degrade to 1,1-DCE, and biotically to 1,1-DCA and chloroethane; and PCE degrades to TCE, which then may degrade to dichloroethane. It is widely observed that cis- 1,2-DCE is the preferential form of dichloroethane resulting from PCE and TCE degradation, and correlations between TCE and 1,2-DCE concentrations at SAEP support this assumption. The 1,1-DCE has resulted from abiotic degradation of 1,1,1-TCA, which correlates spatially with 1,1-DCE concentrations.

2.4.6.2 Surface Water and Sediment

Surface water and sediment samples were collected from the Tidal Flats and the Outfall-008 drainage ditch as described in Section 2.2.2. VOCs, semi volatile organic compounds, PCBs, and metals were detected in surface water and sediment samples. The evaluation of chemical contamination in the Tidal Flats and Outfall 008 drainage ditch was based on the results of the human health and ecological risk assessments. The extent of impacts is as shown on Figures 1-3 and Figure 1-4.

2.5 Current and Potential Future Site and Resource Uses

The landside of the facility is currently vacant except for some building space that is being utilized for caretaker operations, site security and building maintenance. The Tidal Flats are mud at low tide and could potentially be accessible to recreational visitors. The Outfall-008 drainage ditch is mostly unsecured and accessible to the public. The current and potential future use of the tidal flats and Outfall-008 are unlikely to change: however, the potential remains for limited public access, i.e., limited frequency and duration direct contact exposure with soil/sediment.

2.6 Summary of Potential Site Risks

The RI Report (ACSIM, 2004) utilized the results of the investigations completed prior to 2002 to develop human health and ecological risk assessments to evaluate risk associated with the sediments of the Tidal Flats and Outfall-008 drainage ditch.

2.6.1 Human Health Risk Assessment

The BHHRA evaluated potential adverse human health effects of chronic exposures to compounds detected in samples of the environmental media collected from the Site. The HHBRA identified whether Site-related compounds present at the Tidal Flats or Outfall-008 at the Site posed a risk/hazard above target levels to human health.

The following summarizes the human health risks associates with Tidal Flat sediments:

- Risks associated with potential exposures to chemicals of potential concern (COPCs) in sediment under future recreational use conditions (wading or angling) at the Tidal Flats are 1E-05 (attributable to Aroclor-1248 and Aroclor-1254) and do not exceed the EPA acceptable risk range (1E-04 to 1E-06) or the CT DEEP cancer risk limit of 1E-05 but is above the TSCA cancer risk limit of 1E-06.
- Risks associated with hypothetical future commercial fishing for dermal contact and ingestion of sediment from the Tidal Flats are 1E-05, and do not exceed the EPA acceptable risk range (1E-04 to 1E-06) or the CT DEEP cancer risk limit of 1E-05.
- Risks to recreational fishermen associated with consumption of finfish (1E-04) and ribbed mussels (1E-04) at the Tidal Flats are at the upper boundary of the EPA acceptable risk range (1E-04 to 1E-06) and exceed the CT DEEP cancer risk limit of 1E-05, and an HI of 1, due to PCB Aroclors 1248, 1254, and 1260.
- Risks to hypothetical future commercial fishermen associated with consumption of finfish (1E-06), ribbed mussels (2E-06), and oysters (7E-06) taken from the Tidal Flats are within the EPA acceptable risk range (1E-04 to 1E-06) and less than the CT DEEP cancer risk limit of 1E-05.
- There is no unacceptable risk to future recreational visitors and commercial fishermen for consumption of oysters from the Tidal Flats because oysters require a hard substrate to live and given the very soft nature of the Tidal Flats sediments the presence of oysters is not anticipated. In addition, the is no evidence that oysters are harvested from the Tidal Flats.

The following summarizes the human health risks associated with Outfall-008 sediments:

- Total receptor risks associated with potential exposures to COPCs in sediment under future recreational use conditions (child, adolescent, and adult wading) at the Outfall-008 drainage ditch are 8E-06, and do not exceed the EPA acceptable risk range (1E-04 to 1E-06) or the CT DEEP cancer risk limit of 1E-05.
- The estimated HI value of <0.1 for future recreational use (wading) at the Outfall-008 drainage ditch does not exceed a value of 1 under the assumption that chromium detected

in ditch sediments is present as trivalent chromium (it is likely that the total chromium in the sediments is in the trivalent form because of the anaerobic conditions in this medium).

2.6.2 Ecological Risk Assessment

Multiple endpoint evaluations of potential impacts to the benthic community structure related to site contaminants were evaluated and the weight of evidence analysis performed in the BERA. The measurement endpoints and risk results were:

- Comparison of tissue concentrations with critical body residues (CBRs) – HQs greater than 1 and greater than background, ranging from 1.08 to 158, represent potential risk based on inorganics and Aroclor 1254 for the Tidal Flats, and inorganics forOutfall-008.

- Evaluation of sediment toxicity test results:
  - Tidal Flats: % Survival of *Leptocheirus Plumulosus* ranged from 0 to 64%, from 60 to 96% for *Neanthes Arenaceodentata,* and from 0 to 32.5% for *Ampelisc Abdita.*
  - Outfall-008: % Survival of *Leptocheirus Plumulosus* ranged from 59 to 85%, and from 92 to 100% for *Neanthes Arenaceodentata.*

- Evaluation of aquatic invertebrate community structure and function:
  - Tidal Flats: Taxa richness average (11-23 species); organismal density average 1,636 individuals/ft^2; conclusion – comparable to reference area
  - Outfall-008: Taxa richness low (6-19 species); organismal density average 789.5 indiv/ft^2; conclusion – stressed condition

- Comparison of sediment concentrations to sediment screening toxicity values:
  - Tidal Flats: HQs for nearly all inorganics, PAHs, and PCBs are >1
  - Outfall-008: HQs for nearly all inorganics, PAHs, and PCBs are >1

The results of the BERA suggest possible impacts to benthic invertebrates at some locations in the Tidal Flats; however, the overall benthic richness and abundance are not affected. The weight of evidence suggests there is an impact to the benthic community at Outfall-008 possibly linked to chromium, Aroclor 1260, and to a lesser extent barium and copper.

For shorebirds, waterfowl, and fish-eating birds using the Tidal and Outfall 008, the measurement endpoint used for evaluation of risk was comparison of modeled dietary doses of sediment COPCs to literature-derived RTVs. The endpoint was evaluated separately for two exposure scenarios for birds (Reasonable Maximum Exposure [RME] and Central Tendency [CT]) for the Tidal Flats and Outfall-008, and the results are summarized below:

- Tidal Flats (Note: CT exposures were not evaluated for duck because the RME HQs were <1):
  - RME Scenario - LOAEL-based HIs: duck (0.18), blue heron (1.4), sandpiper (3.5)
  - RME Scenario - NOAEL-based HIs: duck (1.3), blue heron (11), sandpiper (23)
  - CT Scenario - LOAEL-based HIs: duck (-), blue heron (1.2), sandpiper (3.1)
  - CT Scenario - NOAEL-based HIs: duck (-), blue heron (8.9), sandpiper (20)
  - Weight of evidence indicates that there is no significant risk to waterfowl or fish-eating birds foraging in the Tidal Flats, but a potential risk to shorebirds such as the sandpiper from chromium if they feed exclusively in the Tidal Flats.

- OF-008 (Note: CT exposures were not evaluated for duck because the RME HQs were <1):
  - RME Scenario - LOAEL-based HIs: duck (0.27), blue heron (120), sandpiper (74)
  - RME Scenario - NOAEL-based HIs: duck (1.4), blue heron (570), sandpiper (370)
  - CT Scenario - LOAEL-based HIs: duck (0.1), blue heron (39), sandpiper (25)
  - CT Scenario - NOAEL-based HIs: duck (0.57), blue heron (190), sandpiper (130)
  - Weight of evidence indicates that there is no significant risk to waterfowl, but there could be a potential risk to shorebirds and fish-eating birds foraging at the Outfall 008 drainage from exposure to chromium in sediment.

The following bullets summarize the BERA findings for potential risks to ecological receptors in the Tidal Flats and Outfall-008 drainage ditch:

- Tidal Flats:
  - Weight of evidence suggests possible impacts to benthic invertebrates at some locations in the Tidal Flats; however, the overall benthic richness and abundance are not affected.
  - Weight of evidence suggests no significant risk to forage fish; although there are some elevated concentrations in sediments, tissue concentrations are similar to those from reference areas.
  - No significant risk to the black duck and great blue heron (HI<1), but a potential risk to sandpipers (HI=3.9) due to chromium in sediment and mercury (assumed to be methyl mercury) in biota.
- Outfall-008:
  - Weight of evidence suggests potential risk to macroinvertebrates in the Outfall-008 drainage ditch due to inorganics (barium, chromium, and copper) and Aroclor-1260 in sediment.

- Based on HI's ranging up to 570 (heron), chromium concentrations in sediment may pose a risk to sandpipers, herons, and ducks if they frequently forage at this location (considered unlikely due to poor habitat quality).

2.6.3 Basis for Action

The basis for the response action is an unacceptable risk to human health or the environment and the selected CERCLA response action will ensure post-remediation concentrations at the Tidal Flats and Outfall-008 will be protective of human and ecological receptors. The results of the risk assessments performed for the Site indicate that a response action is necessary to ensure that conditions protective of human health and the environment, specifically the sediments, will exist within the Tidal Flats and Outfall-008 areas of the Site. The remedial targets are documented in the Final Sediment Remediation Endpoints Report (Amec Foster Wheeler, 2018a) and include eliminating sediments that pose a toxic risk to aquatic organisms (benthic community) and eliminating site-related impacts from chemicals that can accumulate in the food chain, such as PCBs and mercury.

2.7 Remedial Action Objectives

Based on the PRGs, RAOs were established for the site according to the following:

- Tidal Flats - Reduce risk to the environment by reducing sediment toxicity in the top 4 ft[3] of sediment by removing sediment exceeding the following criteria:
  - ERM-Q of 0.5 for the eight Site-related metals (arsenic, cadmium, chromium, copper, lead, nickel, silver, and zinc).
  - PCB concentrations exceeding 1 ppm; and
  - Mercury concentrations exceeding 0.55 ppm[4].

  By achieving these RAOs, the CT DEEP requirements (CT DEEP, 2018) that the average concentrations of total PCBs and mercury remaining in sediments after remediation will be not substantially different from those found in background locations (0.2 ppm for total PCBs and 0.4 ppm for mercury) will also be achieved. The concentrations of total PCBs and mercury predicted to remain in sediments after remediation were statistically

[3] CT DEEP and the Army determined that the reasonable exposure pathway for all potential future uses of the site, and all current unacceptable risks to site receptors (human health and ecological), rest only within the top 4ft of sedimentation and no excavation will be required to go beyond this reasonable exposure depth.
[4] Following remediation, a small number of individual sample results may exceed the RAO values or concentrations; however, the sediments remaining following remediation will have average concentrations less than the RAOs and CT DEEP proposed background concentrations.

evaluated in Appendix A-2 of the Focused Feasibility Study (Amec Foster Wheeler, 2018e) and found to achieve the goal of consistency with CT DEEP determined background conditions.

- Outfall-008 drainage Ditch - Reduce risk to the environment by reducing sediment toxicity in the top 4 ft of sediment through removal of all sediments along the entire length of the Outfall-008 drainage ditch inclusive of the last third of the ditch (the "T" section) extending to Route 113 to the southwest and to the tidal gate which discharges to the Marine Basin to the northeast.

2.8 Description of Alternatives

Remedial alternatives were developed by assembling combinations of applicable technologies and other unit processes into a sequence of actions which address the specific media to which they would be applied and the RAOs that are developed for a Site. Accordingly, remedial technology types and process options were identified and screened during the FFS (Amec Foster Wheeler, 2018e) as the first step in the development of alternatives for the Site. A total of eleven Alternatives for the Tidal Flats and three Alternative for Outfall 008 were developed and screened.

The eleven remedial alternatives (including No Action) developed and their key components to address RAOs for the sediment in the Tidal Flats are the following:

- **Alternative 1: No Action**
- **Alternative 2: Hydraulic Dredging**
  - Hydraulic dredging
  - Turbidity monitoring, management, and engineering controls (silt curtain)
  - Land-based Long-stick excavation of near shore sediments
  - Hydraulic slurry transport
  - Dewatering via belt filter or Geotube
  - Solidification/stabilization to meet on-Site re-use requirements
  - Water treatment and discharge back to Housatonic River
  - Mechanically placed backfill
  - Off-site disposal of sediments containing 10.0 ppm PCBs or greater
  - Placement of dredged sediments in the upland portion of the SAEP property for those meeting the requirements of the RCRA Stewardship Permit, or off-Site disposal of sediments
- **Alternative 3: Mechanical Dredging**

- Mechanical dredging
- Turbidity monitoring, management, and engineering controls (silt curtain) to control turbidity
- Land-based long-stick excavation of near shore sediments
- Mechanical off-loading of mechanically dredged sediment and truck transport of sediment to processing area
- Gravity dewatering
- Solidification/stabilization of dewatered sediments to meet on-Site re-use requirements or off-Site disposal acceptance criteria
- Water treatment and discharge back to Housatonic River
- Mechanically placed backfill
- Off-site disposal of sediments containing 10.0 ppm PCBs or greater
- Placement of sediments meeting the requirements of the RCRA Stewardship Permit in the upland portion of the SAEP property, or off-Site disposal of sediments

► **Alternative 4: Mechanical Dredging with Hydraulic Transport**

- Mechanical dredging
- Turbidity monitoring, management, and engineering controls (silt curtain) to control turbidity
- Land-based long-stick excavation of near shore sediments
- Hydraulic slurry transport and truck transport of sediments to processing area
- Dewatering via belt press
- Solidification/stabilization to meet on-Site re-use requirements
- Water treatment and discharge back to Housatonic River
- Mechanically placed backfill
- Off-site disposal of sediments containing 10.0 ppm PCBs or greater
- Placement of sediments meeting the requirements of the RCRA Stewardship Permit in the upland portion of the SAEP property, or off-Site disposal of sediments

► **Alternative 5: Pneumatic Flow Tube Mixing**

- Mechanical dredging followed by pneumatic conveyance and PFTM to solidify sediments and direct on-Site placement of treated sediments
- Turbidity monitoring, management, and engineering controls (silt curtain) to control turbidity

- Land-based long-stick excavation of near shore sediments and truck transport to processing area
- Gravity dewatering (minimal) of excavated sediments
- Solidification/stabilization of dewatered sediments
- Water treatment and discharge back to Housatonic River
- Mechanically placed backfill
- Off-site disposal of sediments containing 10.0 ppm PCBs or greater
- Placement of sediments meeting the requirements of the RCRA Stewardship Permit in the upland portion of the SAEP property, or off-Site disposal of sediments

► **Alternative 6: Mechanical Dredging and Off-Site Processing**

- Mechanical dredging
- Turbidity monitoring, management, and engineering controls (silt curtain) to control turbidity
- Initial gravity dewatering
- Water treatment and discharge back to Housatonic River
- Barge transport of all sediments to off-Site processing facility
- Processing (dewatering and solidification/stabilization) at an off-Site facility (e.g., Clean Earth)
- Mechanically placed backfill
- Off-site disposal of all sediments.

► **Alternative 7: Hydraulic Dredge/Cofferdam**

- Same components as Alternative 2 except for the following:
- Turbidity monitoring, management, and engineering controls - cofferdam installation in lieu of silt curtain to accomplish:
  - Turbidity control; and
  - Hydraulic control of water level to allow for dredging over entire tidal cycle.

► **Alternative 8: Mechanical Dredge/Cofferdam**

- Same components as Alternative 3 except for the following
- Turbidity monitoring, management, and engineering controls - cofferdam installation in lieu of silt curtain to accomplish:
  - Turbidity control; and
  - Hydraulic control of water level to allow for dredging over entire tidal cycle.

- **Alternative 9: Amphibious Dredge**
  - Either mechanical or hydraulic dredge operated on Tidal Flats or on water surface throughout tidal cycle
  - Remaining components as described above for Alternatives 2 and 3 for mechanical or hydraulic methods
- **Alternative 10: Hydraulic Dredge/Shoreline Confined Disposal Facility**
  - Hydraulic dredging
  - Turbidity monitoring, management, and engineering controls (silt curtain) to control turbidity
  - Hydraulic slurry transport
  - Installation of shoreline sheet pile with/ toe drains for confined disposal facility (CDF) construction
  - Building demolition to accommodate CDF
  - Dewatering via Geotube behind CDF wall
  - Water treatment and discharge back to Housatonic River
  - Mechanically placed backfill
  - Off-site disposal of sediments containing 1.0 ppm PCBs or greater
  - On-site placement of sediments containing less than 1.0 ppm PCBs as fill within shoreline CDF
- **Alternative 11: CAD Cell**
  - Hydraulic dredging
  - Turbidity monitoring, management, and engineering controls (silt curtain) to control turbidity
  - Hydraulic slurry transport
  - Installation/Excavation of CAD within either tidal flats or within Housatonic channel
  - Sheet pile for tidal flats CAD
  - Dewatering via Geotube on-Site
  - Water treatment and discharge back to Housatonic River
  - Mechanically placed backfill including use of clean CAD sediments
  - Off-site disposal of sediments containing 1.0 ppm PCBs or greater
  - Placement of sediments containing less than 1.0 ppm PCBs within near-site CAD cell

The three remedial alternatives (including No Action) developed and their key components to address RAOs for the sediment in the OF-008 drainage ditch are as follows:

- **Alternative 1: No Action**
- **Alternative 2: Mechanical Excavation**
  - Isolate and dewater area with sheet piles, earthen dams, and/or other temporary dam systems
  - Mechanical excavation “in the dry” with conventional excavation (standard reach and/or long-reach) equipment
  - Truck transport to sediment processing area
  - Gravity dewatering
  - Solidification/stabilization of dewatered sediments to meet on-Site re-use requirements or off-Site disposal acceptance criteria
  - Water treatment and discharge back to Housatonic River
  - Mechanically placed backfill
  - Site/habitat restoration
  - Placement of sediments meeting the requirements of the RCRA Stewardship Permit in the upland portion of the SAEP property
  - Off-site disposal of sediments containing 10.0 ppm PCBs or greater
- **Alternative 3: Mechanical Dredging**
  - Mechanical dredging with precision low turbidity mechanical dredge
  - Mechanical off-loading of mechanically dredged sediment and truck transport of sediment to processing area
  - Gravity dewatering
  - Solidification/stabilization of dewatered sediments to meet on-Site re-use requirements or off-Site disposal acceptance criteria
  - Water treatment and discharge back to Housatonic River
  - Mechanically placed backfill
  - Site/habitat restoration
  - Placement of sediments meeting the requirements of the RCRA Stewardship Permit in the upland portion of the SAEP property
  - Off-site disposal of sediments containing 10.0 ppm PCBs or greater

For the Tidal Flats, Alternatives 2 through 6 were retained because they all can achieve the RAOs, are implementable, and have comparable costs (moderately high).

Alternatives 1, 7, 8, 9, 10, and 11 as outlined above, were eliminated from further evaluation:

- Alternative 1 (No Action) was eliminated because the Army has determined that a remedial action must be taken to address unacceptable risks at the Site.
- Alternatives 7 and 8 were eliminated because of the complex implementation, extensive engineering, and high cost related to installation of a steel sheet pile cofferdam.
- Alternative 9 was eliminated due to the very soft nature of the site sediments and the elevated risk of generating excessive resuspended sediments using amphibious equipment. These risks outweigh the benefit of being able to work throughout tidal cycles.
- Alternative 10 (Shoreline CDF) was eliminated from further consideration due to high cost, technical complexity, and additional time required to complete, with no additional benefits to site cleanup.
- Alternative 11 (CAD cell) was eliminated from further consideration. The selected locations are considered very difficult and time consuming to implement given the multiple jurisdictions that would be involved and its location within a navigation channel (Housatonic River). A CAD cell located in the Tidal Flats was also evaluated but determined infeasible based on the Site logistics, equipment needs, potential for conflict with future development plans, and the need for sheet pile walls. Other locations are possible; however, this disposal technology is not considered feasible within the timeframes anticipated for implementation of the project (immediate) and would not relieve the U.S. Army of long-term liability and related monitoring and maintenance activities.

For the OF-008 Alternatives, Alternative 2 (isolate, dewater, and excavate), was retained because the technologies are well established and can be effectively implemented. Water control is a critical element of this alternative; however, the technologies and expertise to implement this work are widely available.

Alternatives 1 and 3 were eliminated from further evaluations:

- Alternative 1 was eliminated because no sediments would be removed, and it would not meet the RAOs or the U.S. Army's preference to eliminate long-term liability.
- Alternative 3 (Mechanical Dredging) has been eliminated due to the difficulty of accessing the site by water, its narrow footprint, and an inability to effectively haul dredged material to the Site for processing. Dredging and restoration with water present is more difficult than doing this work in a dewatered condition, and inherently less accurate or complete. Although costs were expected to be lower relative to excavation in the dry, the lack of effectiveness outweighed the potential cost advantages.

The technologies and alternatives that were retained resulted in five remedial alternatives to address the Tidal Flat sediments (Alternatives 2 through 6) and one remedial alternative to

address Outfall-008 sediments (Alternative 2). Description of Remedy Components Retained for Further Evaluation

2.8.1.1 Alternative 2 - Hydraulic Dredge to Hydraulic Transport with Dewatering (Belt Press or Geotextile Tubes)

2.8.1.1.1 Tidal Flats

Alternative 2 includes hydraulically dredging approximately 139,600 cubic yards (cy) of Tidal Flats sediment ranging in thickness from 1 to 4 ft over an area approximately 47 acres. For the purposes of evaluation in the FFS, it was assumed that two 8-inch swinging ladder cutter suction hydraulic dredges would remove sediments by collecting sediment and water at the suction end (intake) of the dredge pump. The hydraulic dredge slurry would be pumped through a floating pipeline to the sediment processing area(s) on the SAEP facility. This type of dredge has a typical vertical accuracy of 0.4 to 0.7 ft and can achieve an average over-dredge of approximately 0.4 ft which was applied to the cost and schedule as a factor for screening The hydraulic systems evaluated in the FFS had a combined average production of approximately 300 cy per 12-hour shift. However, actual productions may vary.

Two processing options were evaluated, belt filter press dewatering and geotextile tube dewatering. For the belt filter press, mechanical separation equipment, to facilitate coarse material removal, and a series of 2.2-meter belt filter presses were evaluated for dewatering. The incoming slurry going to the belt press would be dewatered in real time and would match the production of the dredge for the geotextile tube option, the hydraulic slurry was pumped directly into the geotextile tube. The geotextile tubes would be installed and operated to match the production of the dredge and facilitate dewatering over time.

Fluids generated from dewatering processes would be collected and pumped to a water treatment system capable of treating the influent to concentrations acceptable for discharge back into the Housatonic River.

The final step of dredged material processing is to dispose of or place the sediments in the upland portion of the SAEP property adjacent to the Tidal Flats. All TSCA-regulated sediment and sediment exceeding industrial/commercial DEC will be dredged, processed, and stockpiled separately. Once dewatered, sediments not in compliance with the RCRA Stewardship Permit will be loaded onto haul trucks and sent off-Site for disposal at a RCRA Subtitle D and/or TSCA-permitted facilities based upon PCB concentrations.

Sediments in compliance with the requirements of the RCRA Stewardship Permit will be stockpiled in the upland portion of the SAEP property for future placement. Once dewatered, sediment would be placed in a stockpile suitable for long-term storage and future use as fill

material. Sediment stockpiled on the SEAP property for future use will need to be protected against erosion and migration of contamination.

Backfilling of the dredged area in Alternative 2 would be performed mechanically. Backfill material would be delivered and stockpiled at a predetermined location at the Site. A Telebelt® or similar would be positioned in the vicinity of the Causeway and would be used to load shallow draft sediment barges which would then be positioned next to a mechanical dredge for backfill placement.

2.8.1.1.2 Outfall-008

This alternative includes mechanically dredging approximately 4,900 cy of sediment within the drainage ditch in the dry. Dredging will occur in sections utilizing temporary sheet-pile walls. Once the sheets are installed and the water is diverted, all debris discovered within the Outfall-008 drainage ditch would be removed and hauled to the staging area for off-Site disposal. Sediment would then be excavated in the dry using a long reach excavator to a uniform depth of 4 ft below the pre-dredging, existing conditions survey elevation.

To control stormwater entering the ditch from the outfall itself, a temporary pumping station would be constructed to divert water to the Marine Basin to the southeast. Water entering the drainage ditch from flood tides would also need to be controlled with an earthen berm or sheet pile wall.

The dredged sediment would be loaded into watertight off-road trucks which would drive to the staging area(s) where the sediment would be segregated and processed. For TSCA sediments, material would be staged for gravity drainage to allow for the maximum amount of de-watering. For non-TSCA sediments, gravity drainage is not necessary, and sediments can be solidified immediately following placement at the staging area with Portland cement.

Water generated from the staging area would be collected and pumped to an on-Site water treatment system capable of treating the influent to concentrations acceptable for discharge back into the Housatonic River. Treated water meeting discharge requirements would be discharged back to the Housatonic River.

The final step of dredged material processing is to place the processed sediments in the upland portion of the SAEP property adjacent to the Tidal Flats. All TSCA-regulated sediment and sediment exceeding the industrial/commercial DEC will be dredged, processed, and stockpiled separately. Once dewatered, sediments not in compliance with the RCRA Stewardship Permit will be loaded onto haul trucks and sent off-Site for disposal at a RCRA Subtitle D and/or TSCA-permitted facilities based upon PCB concentrations.

Sediments in compliance with the requirements of the RCRA Stewardship Permit will be stockpiled in the upland portion of the SAEP property for future placement. Once dewatered,

sediment would be placed in a stockpile suitable for long-term storage and future use as fill material. Sediment stockpiled on the SEAP property for future use will need to be protected against erosion and migration of contamination. The final step of dredged material processing is to dispose of or place the sediments in the upland portion of the SAEP property. All TSCA-regulated sediment and sediment exceeding industrial/commercial DEC will be dredged, processed, and stockpiled separately. Once dewatered, this sediment will be loaded onto haul trucks and sent off-Site for disposal at a RCRA Subtitle D and TSCA-permitted facilities based upon PCB concentrations.

Sediments in compliance with the requirements of the RCRA Stewardship Permit will be stockpiled in the upland portion of the SAEP property for future placement. Once dewatered, sediment would be placed in a stockpile suitable for long-term storage and future use as fill material. Sediment stockpiled on the SEAP property for future use will need to be protected against erosion and migration of contamination.

2.8.1.2 Alternative 3 - Mechanical Dredge to Mechanical Transport with Solidification

2.8.1.2.1 Tidal Flats

Alternative 3 includes mechanically dredging 139,600 cy of Tidal Flats sediment ranging in thickness from 1 to 4 ft over an area approximately 47 acres. Alternative 3 uses two mechanical dredge systems equipped with precision level cut environmental clamshell buckets which limit the amount of over-dredge and reduce the amount of excess water entrained in comparison to hydraulic dredging removal methods. The two mechanical systems would have an average total production of approximately 475 cy per 12-hour shift. This type of dredge has a typical vertical accuracy of 0.2 to 0.5 ft and can achieve an average over-dredge of approximately 0.2 ft which was applied to the cost and schedule as a factor for screening.

Dredged buckets of sediment would be loaded into shallow draft barges, with sump basins in the corners of the barges to facilitate dewatering. Once a barge is loaded to capacity, it would be transported via push boat to the barge offloading area positioned at the end of the causeway where adequate draft is available during the entire tidal cycle. The barge would be docked, and free-standing water will be collected and pumped through a water treatment system capable of treating the influent to levels acceptable for discharge back into the Housatonic River in accordance with the substantive provisions of the General Permit for the Discharge of Groundwater Remediation Wastewater.

A crane positioned at the end of the Causeway, would offload sediment from the barges and place the sediment into water-tight dump trucks (or similar) positioned on the Causeway. The trucks

would drive to the staging area where the sediment would be processed with Portland cement or similar reagent. TSCA sediments will be staged and allowed to dewater and separate solid and liquid phase wastes to the extent practicable prior to being mixed with reagents in accordance with 40 CFR Part 761.

Once mixed, sediment would be stockpiled and allowed to cure until able to pass the paint filter test and meet strength requirements.

The final step of dredged material processing is to place the sediments in the upland portion of the SAEP property adjacent to the Tidal Flats or for sediments exceeding 10 mg/kg to be sent for off-Site disposal. All TSCA-regulated sediment and sediment exceeding the industrial/commercial DEC will be dredged, processed, and stockpiled separately. Once dewatered, sediments not in compliance with the RCRA Stewardship Permit will be loaded onto haul trucks and sent off-Site for disposal at a RCRA Subtitle D and/or TSCA-permitted facilities based upon PCB concentrations.

Sediments in compliance with the requirements of the RCRA Stewardship Permit will be stockpiled in the upland portion of the SAEP property for future placement. Once dewatered, sediment would be placed in a stockpile suitable for long-term storage and future use as fill material. Sediment stockpiled on the SEAP property for future use will need to be protected against erosion and migration of contamination. Backfilling of the dredged area in Alternative 3 would be performed mechanically. Backfill material would be delivered by truck to a predetermined location at the Site for stockpiling then delivered and loaded onto barges via the crane. The shallow draft sediment barges would be pushed into position next to the mechanical dredge for backfill placement.

2.8.1.2.2 Outfall-008

Alternative 3 includes mechanical dredging in the dry as discussed in Alternative 2.

2.8.1.3 Alternative 4 - Mechanical Dredge to Hydraulic Transport with Dewatering (Belt Press or geotextile tubes)

2.8.1.3.1 Tidal Flats

Alternative 4 includes mechanical dredging technology as discussed in Alternative 3, with the ability to hydraulically transfer the dredged sediment.

Dredged buckets of sediment would be directly loaded into a slurry box with a screen located on the deck of the dredge barge. Water obtained adjacent to the operation would be used as makeup water for the slurry system. Once in the slurry, the sediment would be handled the same way as Alternative 2 with the exception that the slurry would have a higher value of percent solids.

Sediments would be dewatered using either a belt filter press or geotextile tubes. Fluids generated from the dewatering process would be treated to meet applicable discharge standards and discharged back to the Housatonic River.

The final step of dredged material processing is to dispose of or place the sediments in the upland portion of the SAEP property adjacent to the Tidal Flats. All TSCA-regulated sediment and sediment exceeding the industrial/commercial DEC will be dredged, processed, and stockpiled separately. Once dewatered, sediments not in compliance with the RCRA Stewardship Permit will be loaded onto haul trucks and sent off-Site for disposal at a RCRA Subtitle D and/or TSCA-permitted facilities based upon PCB concentrations.

Sediments in compliance with the requirements of the RCRA Stewardship Permit will be stockpiled in the upland portion of the SAEP property for future placement. Once dewatered, sediment would be placed in a stockpile suitable for long-term storage and future use as fill material. Sediment stockpiled on the SAEP property for future use will need to be protected against erosion and migration of contamination.

2.8.1.3.2 Outfall-008

Alternative 4 includes mechanical dredging in the dry as discussed in Alternative 2.

2.8.1.4 Alternative 5 - Mechanical Dredge to PFTM Transport and Solidification and Barge Transport

2.8.1.4.1 Tidal Flats

Alternative 5 includes mechanical dredging as discussed in Alternative 3. Once the sediment barge is loaded to capacity, it would be transported via push boat to the barge offloading area positioned at the end of the Causeway and adjacent to a floating spudded crane barge where adequate draft is available during all tidal ranges. The crane would offload the sediment from the scow and place it into a hopper for initial removal of large debris. Material that passes the debris screen would enter the PFTM system where it would be mixed with Portland cement and transported via pipeline in controlled amounts. The end of the pipeline would be positioned to place the mixed sediment where it would be placed on the upland portion of the SAEP property adjacent to the Tidal Flats (sediment meeting the requirements of the RCRA Stewardship Permit). This material would cure be placed in lifts of desired thickness based on the processing capacity of the PFTM system

This alternative assumes that all sediments meeting the requirements of the RCRA Stewardship Permit would be placed on-Site. Sediments exceeding the requirements of the RCRA Stewardship Permit would be dredged as described above, except the material would be trans-

loaded from smaller hopper barges to large capacity barges. The material would be transported via barge to an off-Site processing facility permitted to handle RCRA Subtitle D and TSCA materials.

Backfilling of the dredged area would be performed mechanically. Backfill material would be delivered to a predetermined location at the Site for stockpiling then transported and loaded onto decontaminated sediment barges with a Telebelt® or similar positioned at the base of the Causeway. The sediment barges would then be positioned next to the mechanical dredge and the dredge would reverse operations and place backfill material to the designed elevations.

2.8.1.4.2 Outfall-008

Alternative 5 includes mechanical dredging in the dry as discussed in Alternative 2.

2.8.1.5 Alternative 6 - Mechanical Dredge to Mechanical Transport for Off-Site Processing and Disposal

2.8.1.5.1 Tidal Flats

Alternative 6 includes mechanical dredging as discussed in Alternative 3.

Once a barge is loaded to capacity it would be transported via push boat to the barge offloading area positioned at the end of the Causeway. The barge would be docked, and free-standing water would be collected and treated by pumping through a water treatment system capable of treating the influent to levels acceptable for discharge back into the Housatonic River. Once the sediment on the barge is sufficiently dewatered, it would be offloaded from the loaded scow and place the material onto large capacity barges. The material would then be transported via barge to an off-Site processing facility permitted to handle RCRA Subtitle D and TSCA materials.

Backfilling of the dredged area would be performed mechanically. Backfill material would be delivered to a predetermined location at the Site for stockpiling then transported and loaded onto decontaminated sediment barges with a Telebelt® or similar positioned at the base of the Causeway. The sediment barges would then be positioned next to the mechanical dredge and the dredge would reverse operations and place backfill material to the designed elevations.

2.8.1.5.2 Outfall-008

Alternative 6 includes mechanical dredging in the dry as discussed in Alternative 2.

2.8.2 Common Elements to All Alternatives

Each Alternative would include the following components not specifically discussed above.

2.8.2.1 Pre-Design Investigation Sampling

A limited predesign investigation sampling program will be implemented to better define the vertical and horizontal extent of targeted contaminants in isolated areas below 4 ft bgs, where currently available data is insufficient to bound these limits. The proposed pre-design investigations are presented in Section 1.2.3 and Appendix A-3 of the FFS (Amec Foster Wheeler, 2018e). There are currently seven discrete areas that the U.S. Army proposes removal to a depth of 4 ft bgs but had incomplete deeper characterization data. Six of these seven areas have ERM-Q values exceeding RAOs over the sampling interval 3-4 ft bgs. Dredging limits may be modified in the design as a result of these pre-design investigations.

2.8.2.2 Odor Control

During dredging, there is potential for odor generation from the various components of dredging and dredged material management. Odor is generated by anaerobic bacteria which decompose organic matter and produce hydrogen sulfide (H2S). Dredged material itself and the exposed Tidal Flats will generate odors; however, as the sediment is exposed to air, the potential to produce H2S decreases. Other techniques to control odor would be employed in dredge material handling, including: increasing pH through the addition of Portland cement, lime, Calciment, caustic soda, etc., to sediment; adding oxidizers such as permanganate, ferric chloride, ferric sulfate, peroxide, or chlorine bleach to sediment slurry or water treatment processes (these chemicals can have additional health and safety concerns); covering stockpiles with foaming agents to contain and mask odors; incorporating air release and air venting systems and air treatment for enclosed spaces or targeted air handling systems over operations.

2.8.2.3 Verification Sampling

Verification sampling includes two steps. The first step is to confirm that target depths have been reached (via survey). Additional dredging may be necessary to remove the initially targeted contaminated sediment inventory based on the survey. Following completion of this first step, real-time field screening will be conducted to demonstrate that the RAOs have been met. Sediment core samples will be collected on a grid system (approximately 50 by 50 ft) and analyzed real-time using field-screening methods at prescribed sampling frequencies and collection methods. Additional removals may be needed as a result of the field screening results to ensure that the RAOs are met. Note that for known areas containing PCBs, only off-Site laboratory methods will be used for analysis of PCBs.

2.8.2.4 Confirmation Sampling

Following verification sampling, and any additional dredging required to remove the targeted sediment inventory, confirmation sampling will be performed. Confirmation would involve

analyzing additional core samples of the exposed sediment surface and analyzing the samples for metals and PCBs (where appropriate) at an off-Site laboratory. The site will be organized into Dredge Management Units (DMUs) and the results for each DMU will be compared to assure compliance with the RAOs. Additional targeted removals may be required based on the confirmation sampling results to meet the RAOs for the entire site.

2.8.2.5 Tidal Flats Backfilling

In general, and consistent with discussions held with CT DEEP, dredged areas within the Tidal Flats will be backfilled with approximately 81,000 cy of sandy material obtained from uplands or in-water sources from the Housatonic River to elevations that are approximately one foot below the pre-dredging, existing conditions survey elevation. Naturally deposited fine silts will gradually fill the remaining one foot over time to allow a natural substrate to return for re-establishment of biota.

2.8.2.6 Revegetation and Long-Term Monitoring

A physical post-construction monitoring program will be implemented by the Army to assure the remedy is in place and long-term success. The program will include surveying of the tidal flats at year one, three, and five after the completion of construction. After the five-year survey, the Site will be assessed by the Army to determine if additional monitoring is required. In addition, weather-based surveys will be conducted after the following specific events, should they occur within the five-year period:

- Greater than or equal to a 10-year recurrence interval episodic storm based on rainfall amount or wind speed and direction.

In the event that the surveys identify areas of significant disturbance or where the sediment elevation is significantly different from the post-construction elevation, then additional data will be collected to verify survey and response actions may be taken, as appropriate, to repair or enhance the backfilled area.

Although unlikely given the environment, significant disturbance and further evaluation with possible corrective actions may be conducted and considered if more than 25% of the backfill area thickness has eroded more than 15 inches compared to the as-built post-backfill surface.

Additionally, in areas where there are existing salt marsh grasses, the areas will be restored with in-kind vegetation. Elevation of the area will need to be carefully established to ensure proper inundation periods during the tidal cycle. A five-year monitoring and maintenance program would be implemented to ensure the re-establishment of the salt marsh vegetation. Outfall-008 will be allowed to naturally vegetate; no monitoring and maintenance program will be implemented.

2.8.3 Expected Outcomes of Each Alternative

Alternatives 2 through 6 were retained because they all can achieve the RAOs, are implementable, and have comparable costs.

2.9 Comparative Analysis of Alternatives

The NCP requires that a detailed analysis of remedial alternatives is conducted using nine criteria (40 CFR §300.430(e)) which encompass statutory requirements, technical, cost, and institutional considerations. The criteria are divided into three categories:

1. Threshold criteria (which must be satisfied for an alternative to be eligible for selection as the site remedy).
2. Balancing criteria (the primary criteria upon which the comparative analysis of alternatives is based); and
3. Modifying criteria (used to determine acceptability to the state or support agency and the public).

The nine evaluation criteria are listed below.

Threshold Criteria:

- Overall protection of human health and the environment
- Compliance with ARARs

Balancing Criteria:

- Long-term effectiveness and permanence
- Reduction of toxicity, mobility, or volume through treatment
- Short-term effectiveness
- Implementability
- Cost

Modifying Criteria:

- State acceptance
- Community acceptance

A detailed comparison of the five alternatives based on an evaluation of these nine criteria is provided below and summarized in **Table 1-1**.

2.9.1 Overall Protection of Human Health and the Environment

According to CERCLA, this criterion must be met for a remedial alternative to be chosen as a final site remedy.

Alternatives 2 through 6 would all provide adequate protection of human health and the environment by removing contaminated sediments from the Tidal Flats and Outfall-008, dewatering and treating those sediments as necessary to render them dry and non-leaching, and placing those sediments on-Site for future use as fill material, or disposing of those sediments off-Site at appropriately permitted facilities including, but not limited to, RCRA Subtitle D facilities and TSCA-permitted facilities.

Each of these alternatives would protect the environment by removing sediments exceeding the ERM-Q, mercury, and PCB cleanup criteria. While concentrations below 4 feet, specifically in the 7 to 8 ft sediment interval, may exceed ecological PRGs, the 0-4 foot interval is below the zone of biological activity, and since the ecological exposure pathway is incomplete, residual concentrations will not pose a risk to the environment. Short-term impacts to aquatic species would be mitigated through implementation of the remediation by qualified, experienced marine contractors using appropriate equipment, including installation and maintenance of turbidity curtains, experienced operators, and water quality monitoring. Additionally, the remediation will be overseen my experienced oversight staff capable of identifying quality issues and stopping work, if applicable.

The alternatives described herein would be protective of human health through removal of sediments in the top 4-feet exceeding the more conservative ecologically-based PRGs. By removing Site contaminant concentrations to levels below ERM-Qs and to background concentrations, human health and ecological risks associated with the Tidal Flats and Outfall-008 would be eliminated from sediments in the top-4-feet.

2.9.2 Compliance with ARARs

CERCLA requires that the selected alternatives also meet a second threshold criterion of compliance with ARARs or obtain a waiver if the criterion cannot be met. This criterion, according to CERCLA, must be met for a remedial alternative to be chosen as a final site remedy. **Table 1-2** presents the location-, chemical-, and action specific ARARs that have been identified for the Site.

Alternatives 2 through 6 will all meet chemical-, location- and action-specific ARARs.

All in-water work will be accomplished over a continuous 18-20 month construction period that best avoids sensitive environmental timeframes. Sensitive timeframes for impacted species in the

area include winter flounder spawning (February 1 to May 31), anadromous fish migration (March 1 to June 30), and oyster spawning and recruitment (June 1 to September 30). The anticipated construction timeframe for in-water work is September 1, 2021 through March 31, 2023. If there was work stoppage for each sensitive environmental timeframe, for each year, the project would take three to five years to complete. It was not feasible in terms of cost, time and continued environmental impact to work in compliance with all sensitive environmental timeframes over the course of the project. To avoid the need to demobilize and remobilize to the site and compress the overall timeframe of disturbance appropriate mitigation measures may be implemented if the work window is extended beyond the designated timeframe. All work will comply with substantive requirements of permits or certifications typically required for this work and in accordance with requirements negotiated with the agencies. A full-length turbidity curtain and water quality monitoring program with performance standards will be implemented during all in-water work to minimize impacts to the aquatic environment.

All alternatives would meet Water Quality Criteria (WQC) requirements for discharge of treated water back to the Housatonic River using appropriate water treatment technologies.

Any sediment placed on land at the upland portion of the SAEP property adjacent to the Tidal Flats would comply with the CT DEEP regulations RCSA 22a-133k-2(h) - “Use of Polluted Soil and Reuse of Treated Soil”, which is considered “relevant and appropriate.” The initial the processed dredge material stockpiles will be the responsibility of the Army until the completion of the project. Sediment stockpiles would be vegetated to limit erosion and erosion control measures installed downgradient of the stockpiles to prevent migration of sediments back to the Tidal Flats and Outfall-008. Long-term maintenance of stockpiles will comply with the requirements of the RCRA Stewardship Permit and the responsibility of the future landowner. Upon completion of the Project and demobilization of the contractor, the processed dredge material stockpiles and associated maintenance will become the responsibility of the property owner. Sediment placed in the upland portion of the SAEP property adjacent to the Tidal Flats would meet the CT DEEP Groundwater Protection Criteria (GB-classified aquifer) standards as measured by the Synthetic Precipitation Leaching Procedure (SPLP) test and sediments treated with reagents (i.e., Portland cement) would not be placed below the water table. In addition, a stockpile maintenance plan would be developed and implemented to ensure proper maintenance of the stockpile until reuse of the material occurs.

All alternatives will comply with the substantive requirements of TSCA and the RSRs for on-Site placement or off-Site disposal of contaminated sediments, segregation of materials, decontamination of equipment, and off-Site disposal at appropriately permitted facilities. In addition, sediments will be dewatered to the maximum extent feasible prior to solidification, and each of the alternatives would comply with the substantive requirements of obtaining risk-based approval ~~for solidification~~ under 40 CFR 761.61(c).

Sediment disposed of off-Site would be processed to meet the receiving facilities' acceptance criteria.

Restoration of the Tidal Flats and Outfall-008 will be completed using a backfill material composed of medium to fine-grained sand sourced from an upland quarry that will be determined visually clean and free from detectable contaminants. Physical and chemical data collected for the clean backfill material will be submitted to CT DEEP for review and approval. The flood storage capacity of the Tidal Flats would be increased.

2.9.3 Long-term Effectiveness and Permanence

Each of the alternatives would permanently remove sediments from the Tidal Flats and Outfall-008, and place backfill materials to reestablish habitat. There is essentially no difference between alternatives with respect to this criterion. The effectiveness of remedial activities in the Tidal Flats and the Outfall-008 drainage ditch would be demonstrated by showing that ERM-Qs in residual samples are below 0.5 for metals, that mercury is consistent with background, and that PCB concentrations are less than or equal to 1 ppm.

However, when comparing options for placement in the upland portion of the Site ~~beneficial reuse~~ and off-Site disposal, off-Site disposal has more permanence because the placement of the material would be at a secure off-Site landfill facility rather than placed in the upland portion of the SAEP property adjacent to the Tidal Flats. CT DEEP requires certain conditions to be met prior to placement of contaminated materials on land. These conditions (as defined for "polluted soils" under the CT DEC, would be met including placement above the water table, however, under CT DEEP DEC it is uncertain if the material would be considered "inaccessible soil" or "environmentally isolated" because the exact location for placement has not yet been determined and ultimately must be consistent with the future developer's plans. Therefore, the adequacy and reliability of the engineering controls to be used to ensure future isolation of the contaminated materials is uncertain until a full development plan is available. Sediments placed in the upland portion of the Site ~~beneficially reused~~ are required to be maintained in accordance with the requirements of the RSRs and the RCRA Stewardship Permit.

Furthermore, Alternatives 2 and 4, which rely on mechanical dewatering methods or geotextile tubes instead of solidification, do not require the addition of additives for placement in the upland adjacent to the Tidal Flats. Therefore, remedial activities may not be permanent since solidification may be required to meet future geotechnical reuse criteria.

2.9.4 Reduction of Toxicity, Mobility, or Volume Through Treatment

This criterion evaluates whether the alternatives meet the statutory preference for treatment under CERCLA. The criterion evaluates the reduction of toxicity, mobility, or volume of contaminants, and the type and quantity of treatment residuals.

None of the alternatives include destruction of Site contaminants as a principal element treatment. Alternatives 2 through 6 reduce contaminant toxicity, mobility, and volume through sediment removal, processing, and placement on land. Alternative 2 and Alternative 4 both include the hydraulic transport of a sediment slurry and therefore have a higher volume of water treatment required in comparison to Alternative 3 (mechanical transport), Alternative 5 (PFTM transport), and Alternative 6 (off-Site transport).

All dewatering fluids will be treated to remove metals and PCBs to acceptable concentrations for discharge. The contaminants concentrated in filtered solids and activated carbon will require off-Site disposal or regeneration.

Each of the alternatives that include mechanical dredging with barge movements have a slightly higher potential to temporarily resuspend sediments due to the movements of tugboats and barges when compared to hydraulic transport options. These resuspended sediments can be controlled using silt curtains and a properly implemented turbidity monitoring, management, and control program.

Alternatives that include solidification for placement within the upland portion of the Site or to facilitate transport for off-Site disposal once free liquids have been removed to the extent practicable (Alternatives 3, 5, and 6) have the potential to increase the volume of material due to bulking. Given the anticipated amount of additives to be used in the solidification process a volume increase of 5 to 10% is anticipated.

2.9.5 Short-term Effectiveness

CERCLA requires that potential adverse short-term effects to workers, the surrounding community, and the environment during implementation of a remedial action be evaluated.

Each of the alternatives include removal as a component of the remedial action, therefore, the RAOs will be met upon completion of the work. The primary differentiating factor under this criterion, as evaluated through preliminary calculations in the FFS (Amec Foster Wheeler, 2018e), is time required to achieve RAOs. Alternatives that include mechanical dredging and mechanical transport (Alternatives 3, 5, and 6) have the highest dredging productivity, and therefore the shortest overall schedule, and are evaluated more highly in this regard. Mechanical dredging with hydraulic transport (Alternative 4) has a slightly longer schedule due to the more complex slurry

component required to transport sediment to land. Alternative 2 (Hydraulic dredging) would have the longest overall schedule, and therefore is the least favorable option with regard to short-term effectiveness.

2.9.6 Implementability

This criterion evaluates each alternative's ease of construction and operation, and availability of services, equipment, and materials to construct and operate the alternative. Also evaluated is the ease of undertaking additional remedial actions and administrative feasibility.

Generally, the dredging technologies selected (mechanical and hydraulic) are widely available and proven. Therefore, the removal technologies are evaluated similarly for implementability. Alternatives 4 and 5 rely upon innovative technologies (mechanical dredging with hydraulic transport) or technologies that are not widely used (PFTM) and are therefore considered more difficult to implement given the scarcity of contractors able to perform the work. Alternatives that rely on significant water treatment systems (Alternatives 2 and 4) are considered more difficult to implement given the additional complexity of mobilizing and operating large dewatering and water treatment systems. Alternative 5 (PFTM) has the added advantage of very little or no water treatment required for sediment with PCB concentrations ≤10 ppm. In addition, the geotextile tube option is evaluated more favorably over the mechanical dewatering option (belt press) based on simplicity of operation. However, both the belt filter press and geotextile tube options require a larger footprint relative to alternatives that rely on gravity dewatering, complicating site logistics, particularly when considering on-Site placement of fill materials.

2.9.7 Cost

The FFS (Amec Foster Wheeler, 2018e) presents cost estimates based on conservative assumptions for the work schedule, including allowable months per year (based on "fish windows" for protected fish species, which protect the various species from possible harm during sensitive events occurring in their life cycles such as spawning and migration), hours per day, and days per week. The assumptions in the FFS (Amec Foster Wheeler, 2018e) included dredging between July 1st and January 31st, a seven-month window, five days per week, and 12 hours per day. Both upland placement and off-Site disposal were evaluated. For upland reuse, Alternative 3, Mechanical Dredging and Alternative 4, Hybrid Dredging (mechanical dredging followed by hydraulic transport and geotextile dewatering) have the lowest estimated costs at $70.5M and $69.6M, respectively. Alternative 6 (off-Site disposal via barge) had the highest overall cost at $83.0M. It is important to note that all the alternatives, including upland placement of sediments and off-Site disposal, have estimated costs which fall within the -30% to +50% range established

for a Feasibility Study under CERCLA (USEPA 1988).[5]

The above assumptions presented in the FFS (Amec Foster Wheeler, 2018e) result in construction schedules that range from two to five seasons, given the shortened allowable dredge window and shortened work week. To reduce the timeframe, cost and schedule sensitivities were conducted assuming 12 months per year allowable dredging, seven days per week, and 24 hours per day, including some allowable downtime for weather-related events. Based on discussions with the relevant state and federal agencies regarding environmental windows, and Town of Stratford officials, these expanded work periods are acceptable based upon the resulting shortened overall schedule to complete the project. Using these assumptions, the project was projected to be completed within approximately 18 months.

2.9.8 State Acceptance

The State has expressed support for Alternative 2 through 6 and concurs with the selected remedy. The State does not believe that Alternative 1 provided adequate protection of human health and the environment.

2.9.9 Community Acceptance

Based on the records collected during the public comment period for the Proposed Plan, the public has accepted the selected remedial alternative and expressed support for Alternatives 2, 3, and 4. A Responsiveness Summary that provides USACE responses to comments received from the public during the public comment period is provided in Section 3.

2.10 Principal Threat Wastes

The principal threat concept is applied to the characterization of source materials at a site. A source material is material that includes or contains hazardous substances, pollutants or contaminants that acts as a reservoir for migration of contaminants to groundwater, surface water or air, or acts as a source for direct exposure. Principal threat wastes are those source materials considered to be highly toxic or highly mobile that cannot be reliably contained or would present a significant risk to human health or the environment should exposure occur. The contaminated sediments in the Tidal Flats and Outfall-008 at the Site do not exceed USEPA's principal threat waste risk threshold of 1E-03. Therefore, the Site does not have principal threat wastes.

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5 Costs are presented in millions of dollars. Costs include 20% contingency, 11% project/construction management costs, and 5% design costs, per USEPA FS (USEPA 1988) and cost estimating guidance (USEPA 2000). Costs do not reflect escalation to reflect the anticipated increases in construction costs over the life of the project.

2.11 Selected Remedy

2.11.1 Summary of Rationale for the Selected Remedy

The preferred alternative for remediation at the Site is Alternative 3, mechanical dredging and placement of sediments in the upland portion of the SEAP property adjacent to the Tidal Flats.

Alternative 3 is recommended over Alternatives 2, 4, 5, and 6 because it:

- Has the highest anticipated productivity rates and therefore shortest overall schedule.
- Utilizes precise mechanical dredging methods and level-cut environmental clamshell buckets capable of minimizing over-dredge and generating a smaller volume of dredged material than hydraulic methods;
- Generates a significantly lower volume of water requiring treatment relative to hydraulic dredging or hydraulic transport options (Alternative 2 and 4).
- Reduces mixing of underlying clean sediments with dredged sediments relative to hydraulic dredging.
- Utilizes existing dredging equipment for backfilling reducing the need to mobilize separate equipment for backfilling operations thus reducing costs.
- Includes cement solidification processing of sediments which is a standard element of dredged material processing and not difficult to incorporate (Alternative 2 and 4 do not include Portland cement, so an additional cost for solidification would be realized to ultimately meet on-Site geotechnical requirements for upland placement); and
- Provides the above benefits at a relatively lower overall cost similar to Alternatives 2 (geotextile tube), 4, and 5, and represents the best combination of time to achieve a permanent solution, certainty of success (i.e., achieving a permanent solution), and reliability.

Alternative 3 offers the best balance of tradeoffs among the other alternatives with respect to the balancing and modifying criteria.

2.11.2 Description of the Selected Remedy – Alternative 3

A detailed description of the Selected Remedy is proved in Subsection 2.8.1.3.

2.11.3 Summary of Estimated Remedy Costs

The mechanisms employed in developing the cost estimate for implementing the Selected Remedy are described in Subsection 2.9.7. In accordance with CERCLA guidance, cost estimates

are intended to be accurate within a range of -30 to +50 percent of the actual costs. A summary of the capital costs and present worth costs for the Selected Remedy and comparison to other remedies is provided in **Table 1-3**.

2.11.4 Expected Outcomes of Selected Remedy

The expected outcome of the Selected Remedy is unlimited and unrestricted use of the Tidal Flats and Outfall-008.

2.12 Documentation of No Significant Changes

The Proposed Plan identified Alternative 3 as the Preferred Alternative for the Site (Wood, 2019). The public comment period for the Proposed Plan was November 8 to December 13, 2019. It was determined that no significant changes to the Selected Remedy, as originally described in the Proposed Plan, were necessary or appropriate.

3.0 RESPONSIVENESS SUMMARY

3.1 Introduction

The public notice of the Proposed Plan and public meeting was published in a local newspaper (the *Connecticut Post*) from November 12 through November 18, 2019. The public comment period began on November 8, 2019 and ended on December 13, 2019. The public meeting was held at the Baldwin Center in Stratford, Connecticut on December 10, 2019. The USACE received verbal comments during the public meeting and additional written comments via mail and email. A Responsiveness Summary was prepared to present the verbal and written comments received during the public comment period, as well as US Army responses to those comments.

3.2 Technical and Legal Issues

There were no technical or legal issues identified during the public comment period.

3.3 Comment Responses

The Responsiveness Summary is presented as **Appendix A** of this Decision Document.

4.0 REFERENCES

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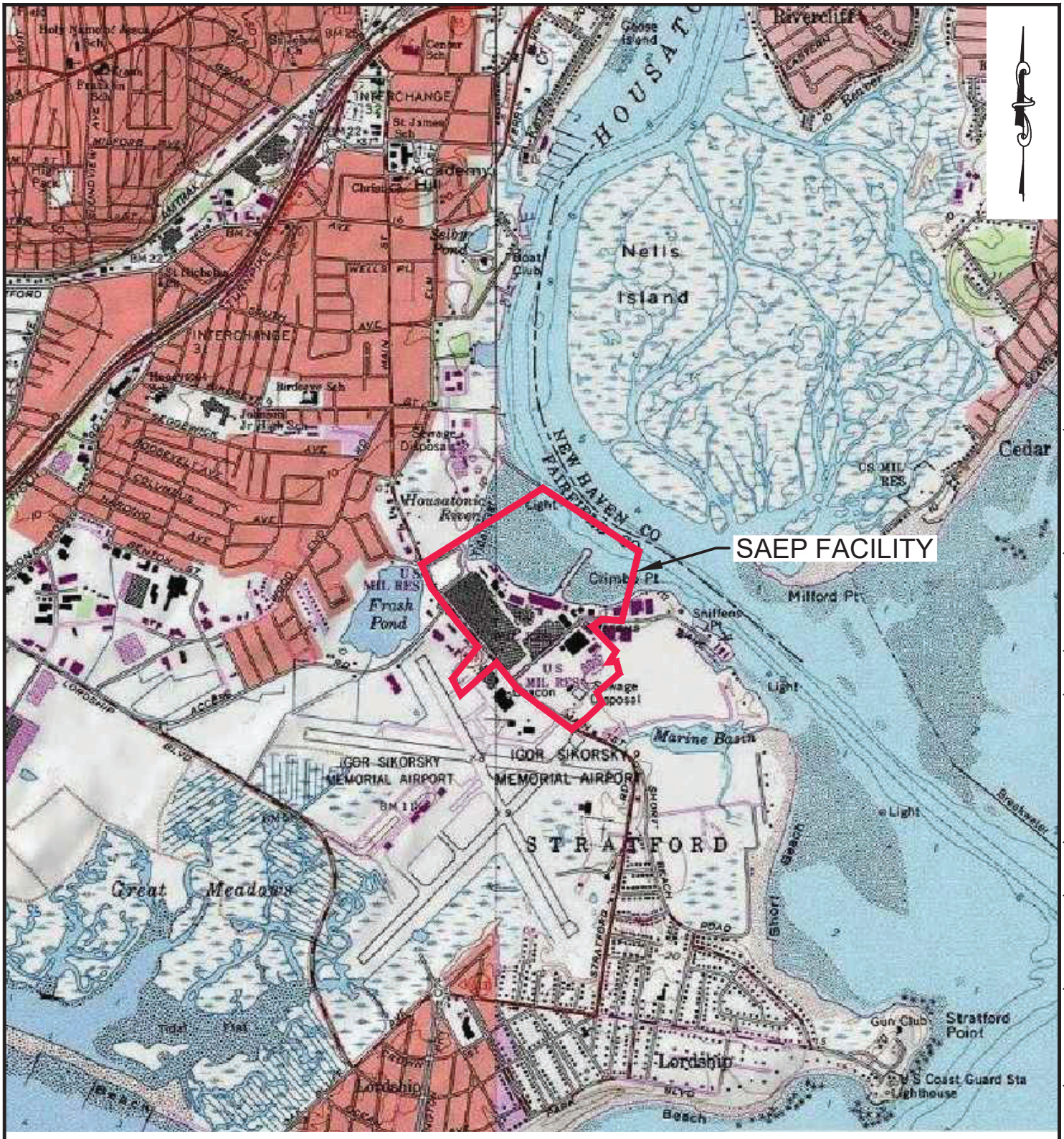
FIGURES



SOURCE:
www.ARCGIS.com – USA TOPO MAPS,
THIS MAP IS SUBJECT TO ESRI'S TERMS OF SERVICE,
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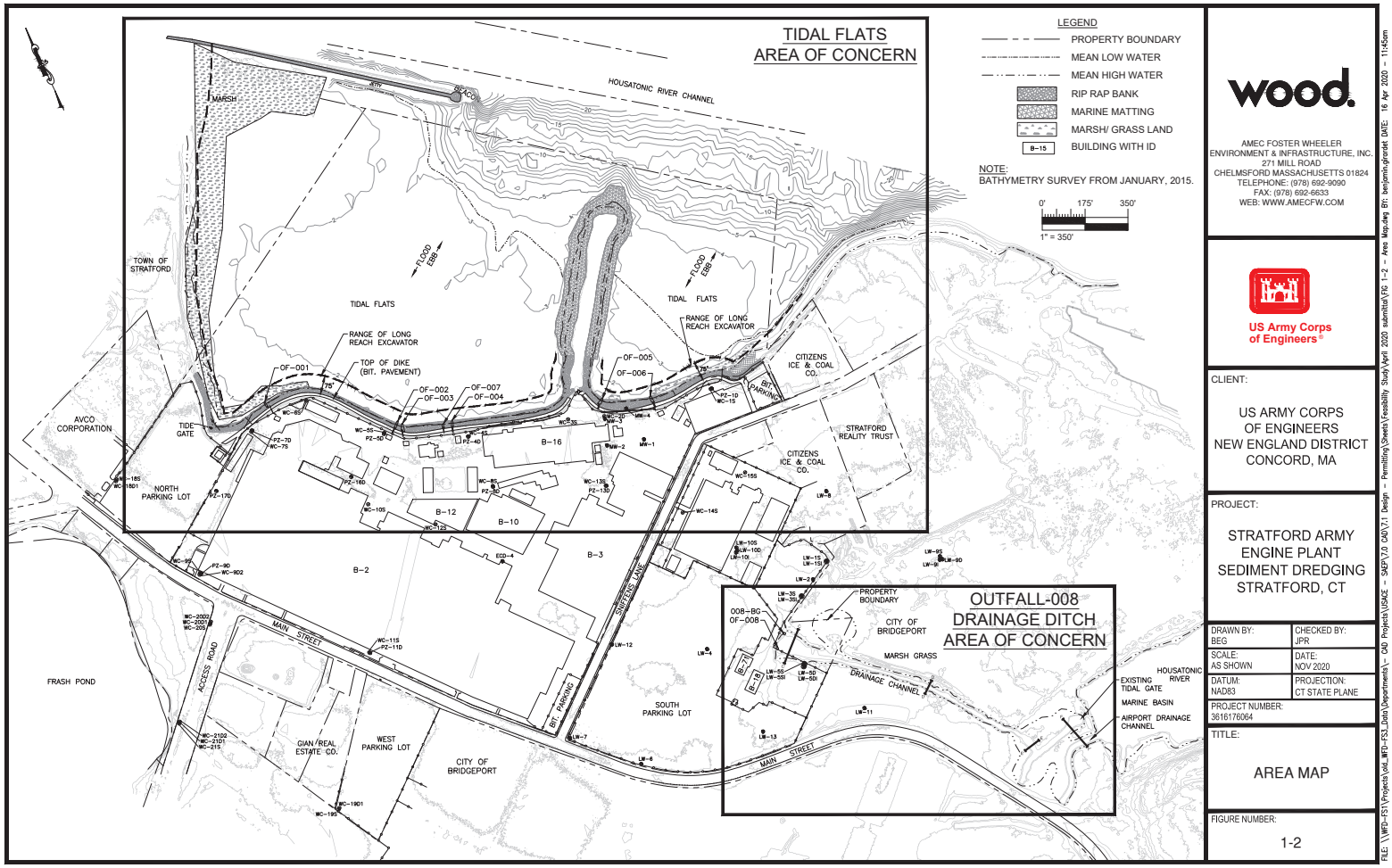
0' 1000' 2000' 3000'
1" = 2000'

CLIENT: US ARMY CORPS OF ENGINEERS NEW ENGLAND DISTRICT, CONCORD, MA	US Army Corps of Engineers®	wood. ENVIRONMENT & INFRASTRUCTURE, INC. 271 MILL ROAD CHELMSFORD, MA 01824	
PROJECT: STRATFORD ARMY ENGINE PLANT SEDIMENT DREDGING, STRATFORD, CT			
TITLE: SITE LOCATION MAP	DWN BY: BEG	SCALE: AS SHOWN	DATE: NOV 2020
	CHK'D BY: JPR	PROJECT NO: 3616176064	FIGURE No. 1-1



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US Army Corps of Engineers

CLIENT:

US ARMY CORPS
OF ENGINEERS
NEW ENGLAND DISTRICT
CONCORD, MA

PROJECT:

STRATFORD ARMY
ENGINE PLANT
SEDIMENT DREDGING
STRATFORD, CT

DRAWN BY: BEG	CHECKED BY: JPR
SCALE: AS SHOWN	DATE: NOV 2020
DATUM: NAD83	PROJECTION: CT STATE PLANE

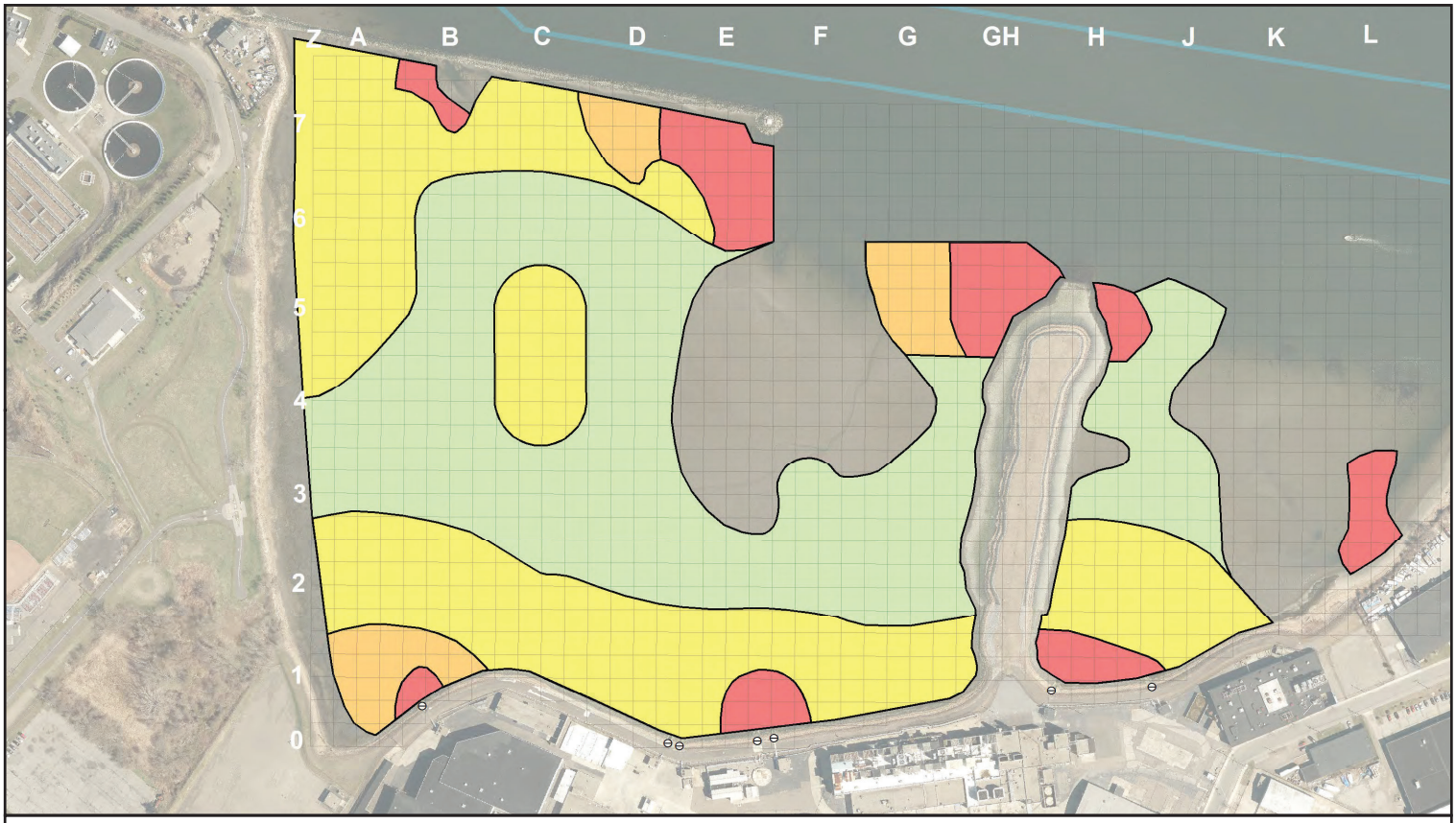
PROJECT NUMBER: 3616176064

TITLE:

AREA MAP

FIGURE NUMBER:

1-2



wood.

Note: Polygons are for data presentation purposes and remedial segregation activities will differ based upon design requirements and contractor work plans

2016 Aerial Imagery:
Connecticut Environmental Conditions Online

Prepared/Date: BRP 11-25-20 | Checked/Date: BPW 11-25-20

N

0 100 200 Feet

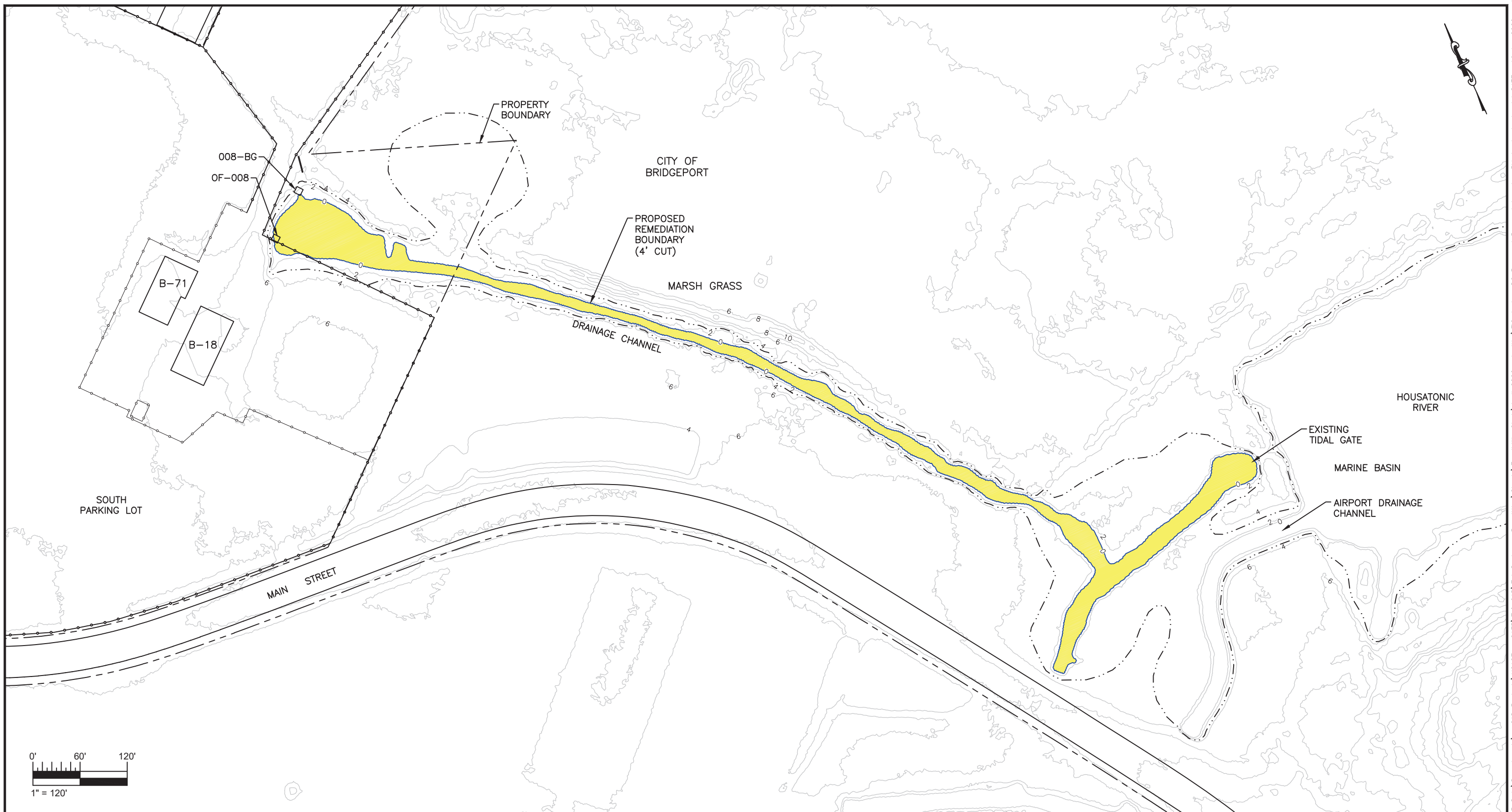
Legend

- Proposed Dredge Footprint 0-4 ft bgs
- Proposed Dredge Footprint 0-3 ft bgs
- Proposed Dredge Footprint 0-2 ft bgs
- Proposed Dredge Footprint 0-1 ft bgs
- Outfall Locations
- Margins of Dredged Housatonic River Channel

FIGURE 1-3
TIDAL FLATS PROPOSED REMEDIATION AREAS

Stratford Army Engine Plant
Stratford, Connecticut

Document: P:\Projects\USACE SAEP FS\4.0_Deliverables\4.5_Databases\GIS\MapDocuments\SED Remed Endpoints\SRE_Footprints_0to4_Tidal_Flats.mxd PDF: P:\Projects\USACE SAEP FS\4.0_Deliverables\4.1_Reports\2020 Tidal Flats & Outfall 008\Figures\Section 4 Figures\Figure 4-43 - Proposed Footprint 0-4 ft.pdf 11-25-2020 4:27 PM brian.peters



LEGEND

(yellow)	0-4 FOOT REMEDIATION AREA
— - —	PROPERTY BOUNDARY
— · · —	MEAN HIGH WATER

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NEW ENGLAND DISTRICT
CONCORD, MASSACHUSETTS

PROJECT: STRATFORD ARMY ENGINE PLANT
SEDIMENT DREDGING
STRATFORD, CONNECTICUT

DRAWN BY:	BEG
CHECKED BY:	JPR
DATUM:	NAD 83
PROJECTION:	CT STATE PLANE
SCALE:	AS SHOWN

wood.
ENVIRONMENT & INFRASTRUCTURE, INC.
271 MILL ROAD, CHELMSFORD, MASSACHUSETTS 01824

TITLE: OF-008 DRAINAGE DITCH
PROPOSED REMEDIATION AREA

DATE:	NOV2020
PROJECT NO:	3616176064
FIGURE No.	1-4

FILE: \\WFD-FS1\Projects\old_WFD-FS3_Data\Departments\- CAD Projects\USACE - SAEP\7.0 CAD\7.1 Design - Permitting\Sheets\Feasibility Study\April 2020 submittal\FIG 1-4 - DC Proposed Removal Area.dwg BY: benjamin.girardet DATE: 16 Apr 2020 - 1

TABLES

Table 1-1
Criteria Evaluation
Stratford Army Engine Plant Decision Document
Stratford, Connecticut

Alternative	Protection of Human Health and the Environment	Compliance with ARARs	Long Term Effectiveness and Performance	Reduction of Toxicity, Mobility, or Volume through Treatment	Short Term Effectiveness and Schedule	Implementability	Total Capital Cost[1,4]	
							On-Site Beneficial Reuse[2]	Off-Site Disposal[3]
Alternative 2 Tidal Flats: Hydraulic Dredge, Belt Press or Geotube dewatering, Hydraulic Transport Outfall-008: Isolate and Dewater, Mechanical Excavation, Gravity Dewatering Truck Transport	• Would provide Overall Protection of Human Health and the Environment by removing affected sediments from the tidal flats and drainage ditch. Disposing TSCA sediments off-site in a RCRA D or TSCA landfill and either beneficially reusing Non-TSCA sediment on-site or disposing off-site. • Will achieve remedial objectives, restore natural resources, and allow for reuse of property	• Will fully comply with ARARs, including those for aquatic species protection, water quality, and on-site reuse of materials. • Will fully comply with TSCA by segregating TSCA and non-TSCA materials, dewatering TSCA sediments to the maximum feasible, and meeting substantive requirement of a risk-based approval for solidification of sediments that do not pass the paint filter test under 40 CFR 761.61(c)	• High certainty of success with impacts removed by dredging and locally isolated by capping • High long-term effectiveness by removing the impacts by dredging • Habitat will be improved through restoration activities over the long term • Recreational use of the Tidal Flats will be restored for future • Minimal long-term risk to public/environment with on-site reuse or off-site disposal	• No reduction through treatment as a principle element • Will remove contaminant mass • Impacted sediment which poses a risk to be processed and reused on-site or disposed of off-site • Higher volume of water treatment required for hydraulic dredge/transport than mechanical dredging • Higher volume of sediment due to precision of hydraulic dredge equipment (0.4 ft over dredge) • Minimal potential for resuspension of sediments	• Larger treatment footprint for processing/dewatering • Potential odor issues with processing and stockpiling • Moderate import of materials for processing • 5-6 season construction duration • Moderate short-term risk to construction workers during implementation associated with use of heavy equipment and dredging of impacted sediment • Minimal short-term risk to public/environment during dredging, and transport • Silt curtains will protect downstream water resources	• Moderate technical complexity due to large footprint for sediment dredging and restoration, tide fluctuations, and existing bathymetry • More processing and water treatment required due to hydraulic slurry transport • High complexity of water treatment system with larger volume of water to be treated • Previously developed landside access used for processing, disposal • High availability of services, materials, equipment and specialists locally • Moderate availability of off-site disposal facilities	Belt Press $96.6 M Geotube $84.7 M	Belt Press $126.9 M Geotube $115.0 M
Alternative 3 Tidal Flats: Mechanical Dredge, Gravity Dewatering, Mechanical Transport Outfall-008: Isolate and Dewater, Mechanical Excavation, Gravity Dewatering Truck Transport	• Would provide Overall Protection of Human Health and the Environment by removing affected sediments from the tidal flats and drainage ditch. Disposing TSCA sediments off-site in a RCRA D or TSCA landfill and either beneficially reusing Non-TSCA sediment on-site or disposing off-site. • Will achieve remedial objectives, restore natural resources, and allow for reuse of property	• Will fully comply with ARARs, including those for aquatic species protection, water quality, and on-site reuse of materials. • Will fully comply with TSCA by segregating TSCA and non-TSCA materials, dewatering TSCA sediments to the maximum feasible, and meeting substantive requirements of a risk-based approval for solidification of sediments that do not	• High certainty of success with impacts removed by dredging and locally isolated by capping • High long-term effectiveness by removing the impacts by dredging • Habitat will be improved through restoration activities over the long term • Recreational use of the Tidal Flats will be restored for future • Minimal long-term risk to public/environment with on-site reuse or off-site disposal	• No reduction through treatment as a principle element • Will remove contaminant mass • Impacted sediment which poses a risk to be processed and re-used on-site or disposed of off-site • Lower volume of water treatment required for mechanical dredge/transport • Lower volume of sediment due to precision of mechanical dredge equipment (0.2 ft over dredge) • Potential for resuspension of	• Smaller treatment footprint for processing/dewatering • Potential odor issues with processing and stockpiling • Higher import of materials for processing • 3-4 season construction duration • Moderate short-term risk to construction workers during implementation associated with use of heavy equipment and dredging of impacted sediment • Moderate short-term risk to public/environment during dredging, transport and reuse or disposal	• Moderate technical complexity due to large footprint for sediment dredging and restoration, tide fluctuations, and existing bathymetry • Minimal water treatment required due to gravity drainage system • Minimal complexity of water treatment with gravity drainage • Previously developed landside access used for processing, disposal • High availability of necessary services, materials, equipment and specialists locally • Moderate availability of off-site disposal facilities	$70.5 M	$100.0 M

Table 1-1
Criteria Evaluation
Stratford Army Engine Plant Decision Document
Stratford, Connecticut

Alternative	Protection of Human Health and the Environment	Compliance with ARARs	Long Term Effectiveness and Performance	Reduction of Toxicity, Mobility, or Volume through Treatment	Short Term Effectiveness and Schedule	Implementability	Total Capital Cost[1,4]	
							On-Site Beneficial Reuse[2]	Off-Site Disposal[3]
		pass the paint filter test under 40 CFR 761.61(c)		sediments from operation of tug/push boats	• Silt curtains will protect downstream water resources			
Alternative 4 Tidal Flats: Mechanical Dredge, Hydraulic Transport, Belt Press or Geotube Dewatering Outfall-008: Isolate and Dewater, Mechanical Excavation, Gravity Dewatering, Truck Transport	• Would provide Overall Protection of Human Health and the Environment by removing affected sediments from the tidal flats and drainage ditch. Disposing TSCA sediments off-site in a RCRA D or TSCA landfill and either beneficially reusing Non-TSCA sediment on-site or disposing off-site. • Will achieve remedial objectives, restore natural resources, and allow for reuse of property	• Will fully comply with ARARs, including those for aquatic species protection, water quality, and on-site reuse of materials. • Will fully comply with TSCA by segregating TSCA and non-TSCA materials, dewatering TSCA sediments to the maximum feasible, and meeting substantive requirements of a risk-based approval for solidification of sediments that do not pass the paint filter test under 40 CFR 761.61(c)	• High certainty of success with impacts removed by dredging and locally isolated by capping • High long-term effectiveness by removing the impacts by dredging • Habitat will be improved through restoration activities over the long term • Recreational use of the Tidal Flats will be restored for future • Minimal long-term risk to public/environment with on-site reuse or off-site disposal	• No reduction through treatment as a principle element • Will remove contaminant mass • Impacted sediment which poses a risk to be processed and reused on-site or disposed of off-site • Moderate volume of water treatment required for mechanical dredge/hydraulic transport • Lower volume of sediment due to precision of mechanical dredge equipment (0.2 ft over dredge) • Minimal potential for resuspension of sediments	• Larger treatment footprint for processing/dewatering • Potential odor issues with processing and stockpiling • Moderate import of materials for processing • 3-4 season construction duration • Moderate short-term risk to construction workers during implementation associated with use of heavy equipment and dredging of impacted sediment • Moderate short-term risk to public/environment during dredging, transport and reuse or disposal • Silt curtains will protect downstream water resources	• Moderate technical complexity due to large footprint for sediment dredging and restoration, tide fluctuations, and existing bathymetry • More processing and water treatment required due to hydraulic slurry transport • High complexity of water treatment system with moderate volume of water to be treated • Previously developed landside access used for processing, disposal • High availability of services, materials, equipment and specialists locally • Moderate availability of off-site disposal facilities	Belt Press $76.0 M Geotube $69.6 M	Belt Press $103.8 M Geotube $97.5 M
Alternative 5 Tidal Flats: Mechanical Dredge, no dewatering (non-TSCA), Pneumatic Transport Gravity Dewatering; barge transport for TSCA sediments Outfall-008: Isolate and Dewater, Mechanical Excavation, Gravity Dewatering, Truck Transport	• Would provide Overall Protection of Human Health and the Environment by removing affected sediments from the tidal flats and drainage ditch. Disposing TSCA sediments off-site in a RCRA D or TSCA landfill and either beneficially reusing Non-TSCA sediment on-site or disposing off-site. • Will achieve remedial objectives, restore natural	• Will fully comply with ARARs, including those for aquatic species protection, water quality, and on-site reuse of materials. • Will fully comply with TSCA by segregating TSCA and non-TSCA materials, dewatering TSCA sediments to the maximum feasible, and meeting substantive requirements of a risk-based approval for solidification of sediments that do not pass the paint filter test under 40 CFR 761.61(c)	• High certainty of success with impacts removed by dredging and locally isolated by capping • High long term effectiveness by removing the impacts by dredging • Habitat will be improved through restoration activities over the long term • Recreational use of the Tidal Flats will be restored for future • Minimal long-term risk to public/environment with	• No reduction through treatment as a principle element • Will remove contaminant mass • Will achieve the remedial objective with impacts removed by dredging • Impacted sediment which poses a risk to be processed and reused on-site or disposed of off-site • Minimal volume of water treatment required for mechanical dredge and PFTM	• Small treatment footprint as little processing/dewatering required • Less potential odor issues with little processing required • Import materials for processing • 3-4 season construction duration • Moderate short-term risk to construction workers during implementation associated with use of heavy equipment and dredging of impacted sediment	• Moderate technical complexity due to large footprint for sediment dredging and restoration, tide fluctuations, and existing bathymetry • Little water treatment required due to PFTM transport. Little sediment handling. • Previously developed landside access used for processing, disposal • Limited availability of necessary services, materials, equipment and specialists locally for PFTM	$72.9 M	NA

Table 1-1
Criteria Evaluation
Stratford Army Engine Plant Decision Document
Stratford, Connecticut

Alternative	Protection of Human Health and the Environment	Compliance with ARARs	Long Term Effectiveness and Performance	Reduction of Toxicity, Mobility, or Volume through Treatment	Short Term Effectiveness and Schedule	Implementability	Total Capital Cost[1,4]	
							On-Site Beneficial Reuse[2]	Off-Site Disposal[3]
	resources, and allow for reuse of property		on-site reuse or off-site disposal	• Lower volume of sediment due to precision of mechanical dredge equipment (0.2 ft over dredge) • Potential for resuspension of sediments from operation of tug/push boats	• Minimal short-term risk to public/environment during dredging, transport and reuse or disposal • Silt curtains will protect downstream water resources	• Moderate availability of off-site disposal facilities		
Alternative 6 Tidal Flats: Mechanical Dredge, Gravity Dewatering, Barge Transport Off-Site Outfall-008: Isolate and Dewater, Mechanical Excavation, Gravity Dewatering, Truck Transport	• Would provide Overall Protection of Human Health and the Environment by removing affected sediments from the tidal flats and drainage ditch. Disposing TSCA sediments off-site in a RCRA D or TSCA landfill and either beneficially reusing Non-TSCA sediment on-site or disposing off-site. • Will achieve remedial objectives, restore natural resources, and allow for re-use of property	• Will fully comply with ARARs, including those for aquatic species protection, water quality, and on-site reuse of materials. • Will fully comply with TSCA by segregating TSCA and non-TSCA materials, dewatering TSCA sediments to the maximum feasible, and meeting substantive requirements of a risk-based approval for solidification of sediments that do not pass the paint filter test under 40 CFR 761.61(c)	• High certainty of success with impacts removed by dredging and locally isolated by capping • High long-term effectiveness by removing the impacts by dredging • Habitat will be improved through restoration activities over the long term • Recreational use of the Tidal flats will be restored for Future • Minimal long-term risk to public/environment with on-site reuse or off-site disposal	• No reduction through treatment as a principle element • Will remove contaminant mass • Will achieve the remedial objective with impacts removed by dredging • Impacted sediment which poses a risk to be processed and reused on-site or disposed of off-site • Minimal volume of water treatment required for mechanical dredge and off-site process and disposal • Lower volume of sediment due to precision of mechanical dredge equipment (0.2 ft over dredge) • Potential for resuspension of sediments from operation of tug/push boats	• Little treatment footprint for OF-008 only • Limited potential odor issues, only OF-008 processing and stockpiling • Little import materials for processing • 3-4 season construction duration • Moderate short-term risk to construction workers during implementation associated with use of heavy equipment and dredging of impacted sediment • Minimal short-term risk to public/environment during dredging, transport and reuse or disposal • Silt curtains will protect downstream water resources	• Moderate technical complexity due to large footprint for sediment dredging and restoration, tide fluctuations, and existing bathymetry • Minimal water treatment required due to gravity drainage system • Minimal complexity of water treatment with gravity drainage for OF-008 • Previously developed landside access used for OF-008 processing, disposal • High availability of necessary services, materials, equipment and specialists locally • Moderate availability of off-site disposal facilities	NA	$82.9 M

Notes:
1. Costs are engineer's estimates and are anticipated to be within minus 30% and plus 50% of actual quantities consistent with USEPA feasibility study guidance.
2. "On-Site beneficial reuse" cost includes off-site disposal costs for TSCA material (>= 50 mg/kg PCBs) and RCRA-D material (>=1 and < 50 mg/kg PCBs) and on-site processing and placement of sediments containing <1.0 mg/kg PCBs and otherwise meeting CT residential soil criteria.
3. See Appendix H of the FFS (Amec Foster Wheeler, 2018e) for additional cost information. Off-site disposal assumes all materials will be disposed of off-site.
4. Cost differences between on- and off-site options for Alternatives that have both options are driven by two main factors: 1. For options including hydraulic dredging (Alternative 2), the overdredge is larger than for options that include mechanical dredging, which requires the processing and disposal of a larger quantity of sediment; and 2. For options utilizing geotubes or belt press dewatering (Alternative 2 and 4), no Portland cement is included while for options that utilize mechanical dredging the addition of 6% Portland cement adds to the cost (Alternatives 3, 5, and 6).

Table 1-2
Applicable or Relevant and Appropriate Requirements
Stratford Army Engine Plant
Stratford, Connecticut

Regulatory Authority	Chemical, Action, or Location Specific	Requirement	Status	Requirement Synopsis	Action To Be Taken To Attain Requirement	Applicable To Alternative
Federal	Action		Relevant and Appropriate	The Resource Conservation and Recovery Act (RCRA) (42 U.S.C. §6901 et seq.) was established in 1976 to control non-hazardous and hazardous wastes, including the generation, transportation, treatment, storage and disposal of hazardous wastes. The 1984 amendments to RCRA granted the U. S. Environmental Protection Agency (USEPA) expanded authority to require corrective action at permitted and non-permitted treatment, storage, and disposal facilities. Section 268 identifies hazardous wastes or other designated wastes that are restricted from land disposal and defines those limited circumstances under which an otherwise prohibited waste may continue to be land disposed	RCRA Subtitle C (hazardous waste) will apply to the generation, transportation, treatment, storage, and disposal of any hazardous wastes that are generated during the course of remedial activities. This includes managing hazardous wastes or other wastes that exhibit the toxicity characteristic for metals or contain PCBs on-site as well as off-site at treatment, storage, or disposal facilities. RCRA hazardous wastes include both listed (specific lists of wastes from non-specific sources, specific sources, and discarded commercial chemical products) and characteristic (toxic, ignitable, corrosive, or reactive, as determined through testing). Dredged material will need to be properly categorized according to RCRA requirements.	No hazardous wastes are anticipated. Applicable only to off-site disposal activities.
Federal	Action			RCRA Subtitle D specifies the requirements that state permit programs must meet to be determined adequate by the EPA under section 4005(c)(1)(C) of RCRA and the procedures EPA will follow in determining the adequacy of state permit programs to regulate and non-hazardous waste disposal facilities, including Municipal Solid Waste Landfills	RCRA Subtitle D applies to the regulation of the disposal of all non-hazardous solid waste generated from remediation activities, including the applicability of state agencies regulating and enforcing RCRA requirements. Waste materials (other than materials to be beneficially reused) will need to be disposed of at facilities properly permitted by the State under RCRA.	Applicable to off-site disposal activities

Table 1-2
Applicable or Relevant and Appropriate Requirements
Stratford Army Engine Plant
Stratford, Connecticut

Regulatory Authority	Chemical, Action, or Location Specific	Requirement	Status	Requirement Synopsis	Action To Be Taken To Attain Requirement	Applicable To Alternative
Federal	Action	The Clean Water Act (CWA) 33 U.S.C. §1251 et seq. (1972) CWA Section 404 Permit Program	Applicable	The Clean Water Act (CWA) (33 U.S.C. §1251 et seq.1972), establishes the regulatory structures controlling discharge of pollutants and regulation of water quality in surface waters of the U.S. Permitting actions under different sections of the CWA are implemented by different agencies and will be potentially applicable to the various remediation alternatives considered, and ultimately implemented, for the Housatonic River a designated navigable water of the U.S. The basic premise of the program is that no discharge of dredged or fill material may be permitted if: (1) a practicable alternative exists that is less damaging to the aquatic environment or (2) the nation's waters would be significantly degraded. Permits are required to demonstrate that impacts have been avoided to the maximum extent practicable:	Section 404 of the CWA establishes the permit program whereby USACE regulates the discharge of dredged or fill material into waters of the U.S. (including wetlands and other aquatic areas). USACE conducts a "public interest review" of proposed actions to evaluate the benefits of a proposed activity against its potential detrimental impacts. USACE must determine that an applicant has taken all appropriate and practicable steps, including evaluating alternatives, to avoid and minimize adverse impacts to waters of the United States, and that unavoidable impacts are appropriately mitigated, including compensatory mitigation where deemed necessary. The USACE New England District has issued a General Permit for the State of CT authorizing categories of activities in both inland and tidal waters which meet the conditions of the General Permit as either Category 1 (self-verification notification required) or Category 2 (application to and written approval from USACE required). Activities that do not meet the conditions of the General Permit Category 1 or 2 require an Individual Permit, including public notice and a public comment period. The USACE General Permit serves as authorization under Section 404 of the CWA, as well as authorization for regulated activities under Section 10 of the Rivers and Harbors Act of 1899 and Section 103 of the Marine Protection, Research and Sanctuaries Act (MPRSA). In addition, USACE requires and evaluates compliance with several other federal laws, including as applicable (but not necessarily limited to) Sections 401 and 402 of the CWA, Section 307(c) of the Coastal Zone Management Act, the National Historic Preservation Act, the Endangered Species Act, the Fish and Wildlife Act, the Marine Mammal Protection Act, the Magnuson-Stevens Act and the Wild and Scenic Rivers Act, as well as applicable Executive Orders. Remediation activities requiring either dredge or fill activities in the Housatonic River will require authorization from USACE under Section 404 of the CWA. The level of permit required will depend on the regulated remedial alternative selected. Substantive requirements cover dewatering, barge transportation, disposal of dredged sediment, and discharge of treated waters back to the Housatonic.	All alternatives will meet the definition of discharging dredged or fill material into waters of the U.S. Onsite permits are not required, however all actions will comply with the substantive provisions of any permits that would otherwise apply.

Table 1-2
Applicable or Relevant and Appropriate Requirements
Stratford Army Engine Plant
Stratford, Connecticut

Regulatory Authority	Chemical, Action, or Location Specific	Requirement	Status	Requirement Synopsis	Action To Be Taken To Attain Requirement	Applicable To Alternative
Federal	Action	The Clean Water Act (CWA) 33 U.S.C. §1251 et seq. (1972) CWA Section 401 Certification		Section 401 of the CWA requires that any activity requiring a federal license or permit, which may result in any discharge into waters of the U.S., receive certification from the state in which it is to be located that such discharge will comply with applicable water quality standards. This certification is known as a Water Quality Certificate (WQC) and is issued by the appropriate state authority.	Under Section 401, a federal agency cannot issue a permit or license for an activity that may result in a discharge to waters of the U.S. until the state (or tribe) where the discharge would originate has granted or waived Section 401 certification. Granting certification, with or without conditions, allows the federal permit or license to be issued consistent with any conditions of the certification. States (and Tribes) make their decisions to deny, certify, or condition permits or licenses based in part on the proposed project's compliance with EPA-approved water quality standards and whether the activity leading to the discharge will comply with any applicable effluent limitations guidelines, new source performance standards, toxic pollutant restrictions, and other appropriate requirements of state or tribal law.	All alternatives will require Water Quality Certification substantive compliance
Federal	Action	The Clean Water Act (CWA) 33 U.S.C. §1251 et seq. (1972) CWA Section 402 National Pollutant Discharge Elimination System Program		Section 402 of the CWA establishes the National Pollutant Discharge Elimination System (NPDES) Program, which requires a permit for discharge of any pollutant to waters of the U.S. Discharges requiring permits include industrial, municipal, agricultural, stormwater, and commercial vessel wastewaters. The state of CT has permitting authority under the NPDES Program and issues general and individual permits through CTDEEP.	Under Section 402, stormwater discharge activities require compliance with state and federal NPDES regulations. A permit will be required from CT DEEP for applicable discharges. All substantive requirements will be met.	All alternatives have the potential to release stormwater into local surface waters and will comply with substance requirements
State	Chemical	Remediation Standard Regulations RCSA §22a--133k-2 (c) (all); especially Polluted Soil definitions and requirement; Appendix B Pollutant Mobility criteria	Relevant and Appropriate	These regulations were adopted on January 30, 1996 and amended on June 27, 2013, under the statutory authority provided by CGS §22a-133k. They provide specific numeric cleanup criteria for a wide variety of contaminants in soil, ground water, surface water and soil vapor. Copies of the regulation are available from http://eregulations.ct.gov/eRegsPortal/Browse/RCSA/%7BEAD3787B-7651-4803-8239-CCD2B569E8A0%7D DEEP web page with associated information is http://www.ct.gov/deep/cwp/view.asp?a=2715&q=325012&deepNav_GID=1626	Sediments placed on land at the site will meet CT RSRs for leaching to groundwater. Placement of sediment on land will follow the requirements for placing "polluted soil" on land, including meeting SPLP standards, required separation from the groundwater table, and engineering controls.	Relevant to any alternative where processed sediments are placed on land at the site.

Table 1-2
Applicable or Relevant and Appropriate Requirements
Stratford Army Engine Plant
Stratford, Connecticut

Regulatory Authority	Chemical, Action, or Location Specific	Requirement	Status	Requirement Synopsis	Action To Be Taken To Attain Requirement	Applicable To Alternative
State	Action	Connecticut Water Quality Standards CGS §22a-426 RCSA §22a-426-4 (Surface Waters), and 22-426-9 (Environmental Criteria)	Potentially Applicable	Connecticut's Water Quality Standards Regulations were initially adopted effective October 10, 2013 (last updated 11/21/2015), superseding earlier WQS adopted under the statute but not in the same regulatory form. They establish specific numeric criteria, designated uses, and antidegradation policies for groundwater and surface water. Statute available at https://www.cga.ct.gov/current/pub/chap_446k.htm#sec_22a-426. A summary of the WQS is available from DEEP's website at http://www.ct.gov/deep/cwp/view.asp?a=2719&q=325618&deepNav_GID=1654.	Discharges to Housatonic River will meet the substantive requirements for surface water discharges, antidegradation standards, and environmental criteria.	All alternatives impact surface waters through dredging, filling, and discharging.
State	Action	Hazardous Waste Management: Generator Standards RCSA §22a-449(c)102	Potentially applicable	This section establishes standards for various classes of generators. The standards of 40 CFR §262 are incorporated by reference. Storage requirements given at 40 CFR §265.15 are also included. Current regulations are available at http://eregulations.ct.gov/eRegsPortal/Browse/RCSA?id=Title%2022a|22a-449%28c%29|22a-449c-102|22a-449c-102	Waste stored at the site will be stored in accordance with these requirements.	Potentially all removal alternatives with upland sediment processing activities.
State	Action	Hazardous Waste Management: Land Disposal Restrictions RCSA §22a-449(c)108(a)(2)(V)	Potentially applicable	This section incorporates by reference the Federal Land Disposal Restrictions given at 40 CFR §268. See http://eregulations.ct.gov/eRegsPortal/Browse/RCSA?id=Title%2022a|22a-449%28c%29|22a-449c-108|22a-449c-108	If applicable, land disposal restrictions will be followed.	All removal alternatives with upland beneficial reuse.
State	Action	Disposition of PCBs CGS §§22a-463 through 469. Disposition of PCB regulated by §22a-467	Potentially applicable – depending on alternatives analyzed.	This section requires that PCBs be disposed under a permit issued by the Commissioner. PCBs may also be disposed of under a written approval of the Commissioner in a manner which results in the destruction of the PCB or in a manner not inconsistent with the Requirements of the Toxic Substances Control Act (TSCA), listed at 40CFR §761. This section of the Statutes is available at https://www.cga.ct.gov/current/pub/chap_446k.htm#sec_22a-463	PCBs will be disposed of in accordance with state and federal regulations (TSCA). PCBs between 1 and 50 mg/kg and PCBs > 50 mg/kg will be segregated for proper disposal apart from sediments containing <1 mg/kg PCBs	All removal alternatives.
State	Chemical	Air Pollution Control Control of Organic Compound Emissions RCSA §22a-174-20	Potentially relevant and appropriate.	This section regulates volatile organic compounds. Subsection (f) sets limits for emission of organic solvents. See http://eregulations.ct.gov/eRegsPortal/Browse/RCSA?id=Title%2022a|22a-174|22a-174-20|22a-174-20	Although not anticipated, any emissions of organic solvents exceeding thresholds will be properly controlled and/or treated. Will need to be evaluated at design and implementation stage depending on exact processes to be used.	Potentially all.

Table 1-2
Applicable or Relevant and Appropriate Requirements
Stratford Army Engine Plant
Stratford, Connecticut

Regulatory Authority	Chemical, Action, or Location Specific	Requirement	Status	Requirement Synopsis	Action To Be Taken To Attain Requirement	Applicable To Alternative
State	Action	Regulation of Dredging and Erection of Structures and Placement of Fill in Tidal, Coastal, or Navigable Waters CGS §§22a-361	Potentially relevant and appropriate.	These statutes regulate dredging, the erection of structures and placement of fill in tidal, coastal or navigable waters waterward of the high tide line. Section 361 Restricts dredging, erecting any structure, placing any fill, obstructing or encroaching or carrying out any work incidental to these activities, in the tidal, coastal or navigable waters of the state waterward of the coastal jurisdiction line until such person, firm or corporation has submitted an application and has secured from DEEP a certificate or permit for such work and has agreed to carry out any conditions necessary to the implementation of such certificate or permit.	Dredging and capping work will following substantive requirements.	All
State	Action	Tidal Wetlands Statutes CGS §§22a-32	Potential ARAR	These statutes regulate activities within tidal wetlands. Sec. 22a-32. Regulates work in tidal wetlands and states that "No regulated activity shall be conducted upon any wetland without a permit. Any person proposing to conduct or cause to be conducted a regulated activity upon any wetland shall file an application for a permit with the commissioner, in such form and with such information as the commissioner may prescribe".	Substantive requirements will be met.	All
State	Location	Standards for flow of water in rivers or streams RCSA §§ 26-141b-4	To be considered	These statutes provide for establishment of standards for flow of water in rivers or streams and regulations to implement these standards. Section 26-141(b)-4 establishes streamflow standards and regulations for various classes of rivers and stream segments. See the statutes at: Stream Flow Standards and Regulations are at https://eregulations.ct.gov/eRegsPortal/Browse/RCSA/%7B95FC4BE3-B209-4B6B-B103-E54948C7AC1C%7D General information can be found at http://www.ct.gov/deep/cwp/view.asp?a=2719&q=434018&deepNav_GID=1654	Substantive requirements will be met.	All
State	Action	Air Pollution Control Control of Odors RCSA §22a-174-23	Relevant and Appropriate	No person shall cause or permit the emission of any substance or combination of substances which creates or contributes to an odor, in the ambient air, that constitutes a nuisance. Air Pollution Control, Control of Odors can be found at: http://www.ct.gov/deep/lib/deep/air/regulations/mainregs/sec23.pdf	If applicable, odor control will be implemented.	Relevant to any alternative where sediments are processed and/or placed on land at the site.

Table 1-2
Applicable or Relevant and Appropriate Requirements
Stratford Army Engine Plant
Stratford, Connecticut

Regulatory Authority	Chemical, Action, or Location Specific	Requirement	Status	Requirement Synopsis	Action To Be Taken To Attain Requirement	Applicable To Alternative
Federal	Chemical	Toxic Substances Control Act (TSCA) PCB Remediation Wastes 40 CFR 761.61, 761.79	To be considered	Identifies storage, disposal, and decontamination requirements for various PCB waste types and specifies requirements for PCB remediation waste. PCB remediation waste is defined as waste containing PCBs as a result of a spill, release, or other unauthorized disposal at the following concentrations: • Materials disposed of prior to April 18, 1978, that are currently at concentrations > 50 ppm PCB, regardless of the concentrations of the original spill; • Materials currently at any volume or concentration where the original source was >500 ppm PCB beginning on April 18, 1978, or > 50 ppm PCB beginning on July 2, 1979; and • Materials currently at any concentration if the PCBs are from a source not authorized for use. Dredged materials are specifically regulated.	Dredged materials will be managed as PCB remediation wastes based on the concentrations at which the PCBs are found, as opposed to their original concentration. Requires coordination with USEPA TSCA Regional coordination per guidance to determine applicability and path forward.	All

Notes/Abbreviations:

ARAR = Applicable or Relevant and Appropriate Requirement
CFR = Code of Federal Regulations
RSR = Remediation Standard Regulations
TSCA = Toxic Substances Control Act
PCBs = Polychlorinated Biphenyls

Prepared by: JPR 5.21.20
Revised by: DB 5.21.20
Checked by: TD

Table 1-3
Alternative Cost Summary[1]
Stratford Army Engine Plant Decision Document
Stratford, Connecticut

	Cost Category	Alternative 2 (Belt Press)	Alternative 2 (Geotube)	Alternative 3	Alternative 4 (Belt Press)	Alternative 4 (Geotube)	Alternative 5	Alternative 6
On-Site Beneficial Reuse Tidal Flats	Mobilization, Temporary Construction, Surveys, Environmental Protection & Monitoring	$ 12,230,000	$ 10,130,000	$ 7,350,000	$ 8,900,000	$ 7,710,000	$ 6,210,000	$ 5,310,000
	Dredging, Offloading, Processing & Water Treatment	$ 27,780,000	$ 23,420,000	$ 18,430,000	$ 21,460,000	$ 19,260,000	$ 22,970,000	$ 9,940,000
	Backfill Material & Backfill Placement	$ 12,940,000	$ 12,940,000	$ 12,260,000	$ 11,520,000	$ 11,520,000	$ 11,520,000	$ 11,520,000
	Beneficial On-Site Reuse and/or Off-Site Disposal	$ 3,140,000	$ 3,140,000	$ 2,900,000	$ 2,740,000	$ 2,740,000	$ 2,930,000	$ 32,730,000
	Site Restoration & Demobilization	$ 8,140,000	$ 6,050,000	$ 4,580,000	$ 4,820,000	$ 3,640,000	$ 3,610,000	$ 3,600,000
	Tidal Flat Sub-Total	**$ 64,230,000**	**$ 55,680,000**	**$ 45,520,000**	**$ 49,440,000**	**$ 44,870,000**	**$ 47,240,000**	**$ 63,100,000**
On-Site Beneficial Reuse OF-008 Drainage Ditch	Mobilization, Temporary Construction, Surveys, Environmental Protection & Monitoring	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000
	Sheet Pile Installation for Water Diversion	$ 1,980,000	$ 1,980,000	$ 1,980,000	$ 1,980,000	$ 1,980,000	$ 1,980,000	$ 1,980,000
	Debris Removal, Excavation, Processing & Water Treatment	$ 1,220,000	$ 1,220,000	$ 1,220,000	$ 1,220,000	$ 1,220,000	$ 1,220,000	$ 1,220,000
	Backfill Material & Backfill Placement	$ 570,000	$ 570,000	$ 570,000	$ 570,000	$ 570,000	$ 570,000	$ 570,000
	Beneficial On-Site Reuse and/or Off-Site Disposal	$ 630,000	$ 630,000	$ 630,000	$ 630,000	$ 630,000	$ 630,000	$ 630,000
	Site Restoration & Demobilization	$ 360,000	$ 360,000	$ 360,000	$ 360,000	$ 360,000	$ 360,000	$ 360,000
	OutFall-008 Subtotal	**$ 5,010,000**	**$ 5,010,000**	**$ 5,010,000**	**$ 5,010,000**	**$ 5,010,000**	**$ 5,010,000**	**$ 5,010,000**
	Construction Subtotal	**$ 69,240,000**	**$ 60,690,000**	**$ 50,530,000**	**$ 54,450,000**	**$ 49,880,000**	**$ 52,250,000**	**$ 68,110,000**
	Construction Subtotal with 20% Contingency	$ 83,100,000	$ 72,830,000	$ 60,630,000	$ 65,330,000	$ 59,850,000	$ 62,680,000	$ 75,630,000
	Pre-Design Investigation	$ 200,000	$ 200,000	$ 200,000	$ 200,000	$ 200,000	$ 200,000	$ 200,000
	Project/Construction Management (11%) and Design (5%)	$ 13,300,000	$ 11,650,000	$ 9,700,000	$ 10,450,000	$ 9,580,000	$ 10,030,000	$ 7,220,000
	Total Design, Management & Construction with Contingency	**$ 96,600,000**	**$ 84,680,000**	**$ 70,540,000**	**$ 75,980,000**	**$ 69,630,000**	**$ 72,910,000**	**$ 83,050,000**
	Annual Inspection (Years 1-5)	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	NA

Notes: 1. See Appendix H of the FFS (Amec Foster Wheeler, 2018e for additional cost information.

APPENDIX A
PROPOSED PLAN RESPONSIVENESS SUMMARY

PROPOSED PLAN RESPONSIVENESS SUMMARY

for

Stratford Army Engine Plant
Stratford, Connecticut

Contract No.: W912WJ-15-D-003
Task Order No.: 003

February 2020

Prepared for:

New England District
U.S. Army Corps of Engineers
696 Virginia Road
Concord, MA 01742-2751

Prepared by:

wood.

Wood Environment & Infrastructure Solutions, Inc.
511 Congress Street
Portland, Maine 04101

This is to certify that Wood has performed a peer technical review of this deliverable under USACE NAE Contract No. W912WJ-15-D-0005 consistent with Wood's Quality Management Program Procedure-PJM-PRO-002, Technical Review.

QUALITY ASSURANCE STATEMENT

Delivery Order Title: Stratford Army Engine Plant Focused Feasibility Study

Task Order No.: 003

Contract Number: W912WJ-15-D-003

Wood Environment & Infrastructure Solutions, Inc. (Wood) has prepared this Responsiveness Summary for the Proposed Plan for the remediation of Tidal Flats and Outfall-008 sediments for the Stratford Army Engine Plant located in Stratford, Connecticut. The Program Manager and Project Manager have completed a technical and quality assurance review of this document for technical accuracy and completeness, in accordance with the objectives of the Performance Work Statement, dated August 7, 2017 and Wood's (fka Amec Foster Wheeler) Modification 001 Fee Proposal for Task Order 0003, dated August 21, 2017.

Rod Pendleton, P. G.
Senior Associate Proiect Manager

3/10/2020
Date

Jeff Pickett, P. G.
Principal Program Manager

3/10/2020
Date

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APPENDICES

GLOSSARY OF ABBREVIATIONS AND ACRONYMS

bgs	below ground surface
BRAC	Base Realignment and Closure
CENAE	United States Army Corps of Engineers New England District
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CTDEP	Connecticut Department of Environmental Protection (pre-2011)
CT DEEP	Connecticut Department of Energy and Environmental Protection
cy	Cubic Yard
ERM-Q	Effects Range Median Quotient
FFS	Focused Feasibility Study
ft	Feet
NCP	National Oil and Hazardous Substances Contingency Plan
PCB	Polychlorinated Biphenyls
ppm	parts per million
Project	Stratford Army Engine Plant Feasibility Study
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
SAEP	Stratford Army Engine Plant
SPLP	Synthetic Precipitation Leaching Procedure
TCLP	Toxicity Characteristic Leaching Procedure
TSCA	Toxic Substances Control Act
VOC	Volatile Organic Compound
USACE	United States Army Corps of Engineers
U.S. Army	United States Department of the Army
USEPA	United States Environmental Protection Agency
Wood	Wood Environment & Infrastructure Solutions, Inc.

1.0 OVERVIEW

The United States Army Corps of Engineers (USACE), New England District (CENAE) with the assistance of Wood Environment & Infrastructure Solutions, Inc. (Wood) has prepared this Responsiveness Summary to document comments, and USACE responses, on the Proposed Plan for Environmental Restoration (Proposed Plan) for the remediation of sediments in the Tidal Flats and the Outfall-008 (OF-008) drainage ditch (the Site) at the Stratford Army Engine Plant (SAEP), in Stratford, Connecticut (**Figure 1-1**). The responsiveness summary is being presented in accordance with the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

The purpose of the Responsiveness Summary is to provide a summary of the significant comments and questions from stakeholders regarding the Proposed Plan during the public comment period from November 11 through December 13, 2019 and provide USACE responses to submitted comments.

The Proposed Plan presents a summary of the remedial alternatives presented in the Focused Feasibility Study (FFS) and presents the preferred alternative for the Tidal Flats and Outfall-008 drainage ditch sediments - mechanical dredging and on-site beneficial re-use of sediments.

This responsiveness summary is divided into the following sections:

1.0 - Overview

2.0 - Formal Public Notice

3.0 - Summary of Individual Comments Received

4.0 - Public Meeting Transcript

During the public comment period, which started on November 11, 2019 and ended on December 13, 2019, the Town of Stratford and 13 members of the public submitted comments to USACE on the Proposed Plan (see Section 3.0). A public meeting was held in Stratford, Connecticut at the Baldwin Center on December 10, 2019 to formally present the Proposed Plan, answer questions, and receive oral and written comments. The meeting transcript is included in Section 4.0 and is part of the administrative record for the site. Comments and concerns summarized and addressed in Section 3.0 and 4.0 have been considered by the USACE for incorporation into the Decision Document, which will provide a consolidated source of information about the site, the remedy selection process, and the selected remedy for cleanup under the CERCLA process.

2.0 FORMAL PUBLIC NOTICE

The following public notice was printed in the *Connecticut Post* from November 12, 2019 through November 18, 2019:

PUBLIC NOTICE

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

Stratford Army Engine Plant
Stratford, CT

US Army Corps of Engineers Issues Proposed Remedial Action Plan

The United States Army Corps of Engineers, New England District (USACE) is seeking public comment on the Proposed Plan for Environmental Restoration (Proposed Plan) for the Tidal Flats and Outfall-008 drainage ditch sediments, a preferred mechanical dredging and on-site beneficial re-use of sediments alternative, at the Stratford Army Engine Plant Site located in Stratford, Connecticut.

To ensure that the community's concerns are addressed, **a public comment period runs from November 11, 2019 through December 13, 2019**. During this time, the public is encouraged to submit any comments on the Proposed Plan to USACE.

USACE will host a Public Meeting on Tuesday December 10, 2019 from 6:30pm - 8:30pm in the Baldwin Center located at 1000 W Broad St, Stratford, CT 06615 to present the Proposed Plan and take public comments. Written comments on the Proposed Plan may be sent to:

Erika L. Mark
U.S. Army Corps of Engineers
New England District (USACE)
696 Virginia Road
Concord, MA 01742-2751
Email: nae-pn-nav@usace.army.mil

USACE encourages the public to review the Proposed Plan and the documents that make up the Administrative Record to gain a more comprehensive understanding of the Site and the environmental investigation activities that have been conducted here. The Proposed Plan and Administrative Record for the Site can be accessed at https://www.nae.usace.army.mil/Missions/Projects-Topics/Army-Engine-Plant-Environmental-Restoration-Project/.

3.0 SUMMARY OF INDIVIDUAL COMMENTS RECEIVED

USACE received comment submissions from the Town of Stratford Mayor's Office, Environmental Conservation Division, Planning and Zoning, Health Department, and Waterfront & Harbor Management Commission. Comments from 13 individuals within the community were also received. This section presents these comments, as well as responses from the U.S. Army presented in blue italicized font.

3.1 TOWN OF STRATFORD

Town of Stratford (December 13, 2019 letter from Kelly Kerrigan, et. al., received via email)**:**

The Town of Stratford ("the Town") has reviewed the Proposed Plan for Environmental Restoration (the Plan) of the Tidal Flats at the Stratford Army Engine Plant {SAEP) dated August 2019, in addition to the commentary provided by the Connecticut Department of Energy and Environmental Protection (CT DEEP) and Environmental Protection Agency (EPA), dated October 03, 2019. The Town is in general agreement with the CT DEEP and US EPA review of the Plan. We are pleased to take this opportunity to provide additional comments on behalf of the Town. The following includes input from the Mayor's Office, Environmental Conservation Division, Planning and Zoning, and the Stratford Health Department:

Proposed Plan Commentary

General Questions & Comments

- The Town of Stratford Office of the Mayor and Conservation Division and the Stratford Health Department must be provided a project point of contact in the case time-sensitive communication is necessary during cleanup and restoration work. As noted in our public comments at the December 10th Public Hearing held in Stratford, communication is of paramount importance to be able to address community concerns. Our offices wish to be part of any on-going dialogue the US Army Corps of Engineers (USACE) has with area residents and the community at large.

  U.S. Army Response: Comment noted. A point of contact will be provided.

- As you are likely aware, the Stratford Army Engine Plant is bordered by operable units of the Raymark Industries, Inc. Superfund Site, including impacted wetlands. Coordination with the Environmental Protection Agency Superfund Program regarding cleanup activities and project timelines is strongly advised.

  U.S. Army Response: Comment noted. The Army has been coordinating with USEPA throughout the Feasibility Study and Proposed Plan process and will continue to do so.

- Is there a plan for any flora or fauna relocation prior to the commencement of remedial action?

U.S. Army Response: Potential flora and fauna relocation will be addressed during the Design process and a plan developed as determined necessary.

- Please provide details on how any listed species will be protected throughout the proposed project. The response from the CT DEEP Natural Diversity Database notes that no listed species will be impacted based on the proposed work. The letter does not identify the listed species identified on-site, which is atypical of NDDB responses. Please provide additional documentation on what listed species may exist within the project area, and what protective measures will be enacted prior, during, and after construction.

U.S. Army Response: Listed species will be evaluated as part of the Decision process and requirements for protection will be included as necessary.

- During the September 2019 inter-agency site walk with CT DEEP, USEPA, USACE, Stratford, and prospective developer, it was noted that the causeway does have an existing engineered control. Being that the causeway will be used for construction access, please provide a plan to ensure that the engineered control remains intact throughout the duration of the project. Examples may include periodic inspection checklists, or others.

U.S. Army Response: Protection of the engineered controls will be evaluated as part of the design process and appropriate requirements for protection of these structures for the Causeway.

- Please involve the Stratford Health Department in developing protocols and action levels for perimeter air monitoring to be used during active remediation. We will involve our partners at the CT Department of Public Health to assist in site-specific action level thresholds.

U.S. Army Response: Requirements for development of a contractor perimeter air monitoring plan will be evaluated as part of the Design process. Appropriate reviews by the Stratford Health Department and CT Department of Public will be conducted as appropriate.

- Please regularly provide the Stratford Health Department surface water quality data monitored during active remediation, specifically during warmer months of the year during which recreational swimmers may be utilizing the Housatonic River.

U.S. Army Response: Requirements for surface water monitoring will be evaluated as part of the Design process. Appropriate reviews by the Stratford Health Department will be requested as appropriate.

- The community has expressed concern regarding the former use of radioactive material at the plant. Please provide additional information explaining why screening for radionuclides (such as Strontium-90) and decay products was not performed in the Tidal Flats or Outfall 008 when identifying contaminants of concern. Historical information, such as where on site the radioactive material was utilized, may be useful.

U.S. Army Response: The following paragraphs provide information from the Remedial Investigation (RI) Report (ACSIM, 2004) and the Causeway Engineering Evaluation/Cost Analysis (EE/CA) (2000) about the use of radioactive materials at the SAEP facility.

Historical operations conducted at the SAEP utilized instruments and materials containing radioactive nuclear byproduct materials (i.e., cobalt 60, silver 110, cadmium 109, cesium 134, cesium 137, iridium 192, phosphorous 32, krypton 85, strontium 90, and hydrogen 3). Metallic materials (e.g., bearings) containing radioactive byproducts were used in the production and testing of missile components. The instruments and materials were reportedly used in the 1960s and 1970s in the production and testing of missile components, and were regulated under NRC License Numbers 06-08612-01, 06-08612-03, 06-08612-04, and 06-08612-05. Possession and use of the licensed materials was discontinued in the 1970s when the licenses expired. The instruments containing radioactive elements were used in testing and evaluating material thickness, density, temperature, corrosion, and ablation, and contained sealed sources of radioactive material. A sealed source means that the radioactive source material is shielded to prevent emission of radiation outside of the instrument.

Radiation and contamination surveys were performed and recorded semi-annually, and the SAEP Safety Office ensured compliance with the conditions of the NRC license and AlliedSignal's Standard Operating Procedures. Readings reportedly average 0.001 millirem per hour (mrem/hr). This radiation level was well below the 5-mrem/hr level allowable for occupational exposure (ESE, 1981). In accordance with license requirements, radiological inspections of the installation were conducted by the NRC every three years on an unannounced, random basis.

The use of magnesium thorium at SAEP was handled under NRC License Number STB-393. Magnesium thorium alloy metallic waste was generated during machining done during engine production. All machine turnings of the alloy and machining fluids were reportedly recovered and recycled. Building B-73 was used to store radioactive magnesium thorium waste in 55-gallon drums on pallets. Waste was stored for periods of up to one year prior to shipment to England for disposal (CDM FPC, 1992). Following completion of several radiological surveys, the NRC terminated License Number STB-393 on September 29, 2000, releasing former radioactive waste storage areas at SAEP for unrestricted use.

Prior to the 1999 pre-design investigation activities of the Causeway, the CTDEP identified four areas of particular concern due to locally elevated radiological readings from scans of the soils on the surface of the Causeway. According to the CTDEP, these areas showed elevated readings along linear trends; in plan view these trends are much longer in one direction relative to the other. Visually, the four areas all contained a thin layer of grayish-white "clay-like" material. These layers are at relatively shallow depths (generally 12-inches or less) within each test pit and appear to be the source of the elevated radiological readings. The CTDEP and AlliedSignal collected representative samples of the whitish "clay-like" material from selected locations for radionuclide analysis. The results of these

samples indicated the presence of thorium-234, thorium-228, and radium-226. In January 2000, a radiological survey was conducted on the Causeway to further delineate the extent of radiological contaminated material. The survey identified three areas with elevated radiological readings. This low-level radiological contaminated material was excavated on March 15 and 16, 2000. The excavated material was containerized in thirty 55-gallon drums and transported to an appropriate off-site licensed treatment/disposal facility.

Based on the information contained in the preceding paragraphs, the U.S. Army concludes that there is a low probability of radiological contamination of the Tidal Flats or the OF-008 drainage ditch sediments. Handling of radioactive materials, including containerization of machine turnings of alloys and machining fluids, were highly regulated under NRC licenses and limited to specific areas of the facility. In addition, the use of radioactive elements in processes generating significant volumes of liquid waste, which would have had potential to discharge to the Tidal Flats and OF-008, are not evident in the historic records for the SAEP facility. Closure of the NRC licenses at SAEP included final status surveys to obtain data of sufficient quality and quantity to prove, within a specified degree of confidence, that residual radioactivity levels within the survey areas are less than the limits for unrestricted release. Successful closure of the NRC licenses at the SAEP facility demonstrate that there is limited probability of release of radiological contamination to the environment.

- Many questions have been posed by residents to the Town regarding erosion and sediment controls at stockpile areas. An entire section should be added that carefully explains the various Erosion and Sediment Control measures that will be implemented at stockpile areas, such as: haybales, silt fences, ant-tracking pads at all access points, truck and equipment wash stations, etc. Stockpile areas should be discussed in more detail, explaining visibility from the road and consider stability of the stockpile areas for 5, 10, 25, 50 and 100 years. Although not statutorily required for State and Federal projects, erosion and sediment control plans should be submitted to the Office of Planning and Zoning for review.

U.S. Army Response: Stockpile management requirements including erosion controls will be developed as part of the design process and included in the design documents.

Page 4 - Summary of Site Risks

- There appears to be a typographic error under the second bullet point. For the mercury background conditions, it should be 0.4 mg/kg, not 0.4 mg/mg. Please correct if this is the case.

U.S. Army Response: Comment noted, the requested change will be made.

Under Remedial Action Objectives:

- If the clean-up goal for polychlorinated biphenyls (PCBs) and mercury are 0.2 mg/kg and 0.4 mg/kg (i.e., background conditions), why is it noted that sediments within the top four

feet will be removed for sediments with PCB concentrations over 1.0 ppm and mercury concentrations over 0.55ppm. Should those action levels be to background?

U.S. Army Response: As indicated in the paragraph before Remedial Action Objectives:

> *"Eliminating site-related impacts from chemicals that can accumulate in fish tissue, such as PCBs and mercury. When PCBs and mercury accumulate in fish tissue, people and wildlife that eat the fish can be affected. CT DEEP recommends that after remediation, PCB and mercury concentrations in sediments should closely approximate background conditions for these chemicals (determined by CT DEEP to be 0.2 mg/kg PCBs and 0.4 mg/mg mercury). CT DEEP evaluated the Army's proposal to remove sample locations with total PCB concentrations greater than or equal to 1 ppm and mercury concentration greater than or equal to 0.55 ppm and believes that approach to remediation, when combined with the removal of sediments to address sediment toxicity, will achieve the goal of consistency with CT DEEP determined background conditions."*

Summary of Remedial Actions:

- The Summary of Remedial Action states "sediments containing PCBs at concentrations less than 1.0 ppm, but still exceed ERM-Q and Hg RAOs, which are eligible for on-site beneficial reuse". How large are these exceedances expected to be in material to be reused on site? Will the material selected for beneficial on-site reuse be analyzed for Hg and metals in addition to PCBs? Please clarify.

  U.S. Army Response: Excavated sediments with PCB concentrations less than 1.0 ppm will be eligible for beneficial on-site re-use. Other site-related metals and mercury will be analyzed, and concentrations compared to CT DEEP Remediation Standard Regulations Direct Exposure Criteria (Residential) and Pollutant Mobility Criteria for a GB-classified aquifer. If concentrations in site sediments are below these standards they would be acceptable for beneficial on-site re-use. Results obtained during the Focused Feasibility Study show that concentrations of metals and PCBs in sediments meet the DEC and PMC criteria.

- Are the 3,800 cy of sediments containing PCBs at concentrations less than 1 ppm from Outfall 008, which are eligible for on-site beneficial reuse, also expected to exceed the ERM-Q and RAOs?

  U.S. Army Response: Yes. All sediments proposed for excavation from OF-008 exceed the ERM-Q of 0.5.

- Please note that the Town is interested in developing a town-marina near Crimbo Point and the dredged material would be available for material replacement in the mud flats.

  U.S. Army Response: Comment noted.

Page 8, Alternative 3 – Fourth Paragraph:

- What will the influent be treated for before discharge back into the Housatonic?

U.S. Army Response: The treatment processes to be used will depend upon the actual concentrations of contaminants in the influent and the required discharge standards which are yet to be determined. However, based upon initial work completed during the FFS, minimal or limited treatment may be required, including settling and particulate filtration. Additional processes such as carbon adsorption and dissolved metals removal are not currently anticipated to be necessary.

Page 8, Alternative 3 – Fifth Paragraph:

- It is advised not to describe the trucks as "dump trucks"; rather, "Water-tight" or "sealed" are more appropriate.

U.S. Army Response: Comment noted.

Page 8, Alternative 3 – Seventh Paragraph:

- What exactly is the one-foot layer of appropriate backfill material to meet restoration objectives? It is also noted that the other three feet of material will consist of common fill. In other areas of this document, it has been noted that the clean backfill material will consist of sand, while other areas references it differently. Consistency in referencing which backfill is needed.

U.S. Army Response: The Decision Document and Design will clearly and consistently lay out the backfill and restoration plans for both the Tidal Flats and Outfall 008, which differ. For the Tidal Flats, backfill material will be sand placed to a maximum finished elevation that is one foot lower than pre-existing bathymetric elevations. The remaining foot of backfill material will accumulate naturally over time from the river sediments to provide a sediment type consistent with the existing sediment. For Outfall 008, the backfill and restoration will consist of common fill overlain by a restoration and/or erosion protection layer. The details of the Outfall 008 drainage ditch restoration will be determined in the Design.

Page 9, Alternative 5:

- Generally, the more work that can be done on land would be preferred, as the use of barges and floating temporary water treatment systems could be more vulnerable to issues due to storm events or rough waters. Accordingly, erosion and sediment control measures with layered safeguards should be considered as a high priority. Best practices should be implemented with additional layers of protections to mitigate material breaching the stockpile perimeter.

U.S. Army Response: Requirements for erosion and sediment controls will be included in the Design documents.

Page 10, Pre-Design Investigation Sampling:

- How much data has been collected for sediments deeper than 4' below sediment grade? It appears that more sediment data will be collected in order to determine the vertical extent of impacted material. Please provide the findings of such data when it becomes available.

  U.S. Army Response: The current extent of sediment data for depths greater than 4 feet below grade are presented in Appendix A of the Focused Feasibility Study Report. Additional pre-Design investigations will be performed for sediments at depths greater than 4 feet below grade and results will be provided as a component of the Design document.

- Why is it noted definitively that the Army will not conduct any sediment excavation to depths greater than six feet below sediment grade?

  U.S. Army Response: The RAOs for the project limit the remedial action to the top four feet of sediment which is based on the conceptual site model. ERM-Q, PCB, and mercury concentrations in sediments generally decrease dramatically with depth over the 0 to 8 feet bgs interval, as depicted in Figures 4-1 through 4-8 of Appendix A-1 of the Focused Feasibility Study. The existing data presented in the referenced figures indicates ERM-Q, PCB, and mercury concentrations less than their respective RAOs in the depth intervals 5-6 and 7-8 feet bgs. In cases where contamination exceeding the RAOs was found at four feet, additional characterization will be performed to characterize sediments below this depth to ensure consistency with the site conceptual model. Note that the objective of cleanup will be sitewide averages to be below ERM-Q for the eight metals and below background for Hg and PCBs. Therefore, the Army does not anticipate excavation of sediments greater than four feet bgs, however, in the event that pre-Design investigations indicate contamination below four feet, the Army would consider the benefits of additional excavation to a depth of six feet, but would also consider the risk of exposure especially when taking into account the backfilling to be conducted.

Page 10, Odor Control:

- The odor control plan does not appear to be very definitive. What would an action level be, that would prompt the deployment of any of the suggested odor controls?

  U.S. Army Response: Requirements for odor control will be evaluated and develop as part of the Design process and presented in the Design document.

- We would like to visit the use of odor controls, as the ones noted have been associated with health and safety concerns. Foaming agents shall not contain any hazardous emerging contaminants such as per-and polyfluoroalkyl substances (PFAS).

  U.S. Army Response: Requirements for the odor control plan will be developed as part of the Design process and included in the Design document.

Page 10, Conformation Sampling:

- Why will the confirmation samples be collected within one foot of the bottom of the excavation as opposed to the surface of the excavation? This would dilute any potential contaminant concentrations at the bottom of the excavation.

  U.S. Army Response: As part of the design process, the Army has been reviewing this plan with the USEPA and has agreed to collect confirmation samples from the top six inches of the exposed sediment surface to minimize the potential for dilution of higher levels of contamination near the exposed sediment surface.

- Further, it may be appropriate to include provisions for the detection of previously unknown gross contamination uncovered during remedial activity.

  U.S. Army Response: If materials other than known site contaminants were discovered at gross levels based on visual or olfactory observations, additional sampling parameters would be run to determine if there was a potential concern.

Page 10, Tidal Flats Backfilling:

- Here it is noted that sandy material will be utilized, whereas in previous portions of the text, it was noted that three feet of common fill and one foot of an appropriate backfill will be utilized. Please clarify. If a native material can be sourced at the time of plan implementation, the plan should outline this as an option.

  U.S. Army Response: The Decision Document and Design will be consistent in presenting the first three feet of backfill as sand, and the last foot of backfill as material from the river which will naturally accumulate over time, and provide a sediment type consistent with the existing sediment.

Page 11, Re-vegetation and Long-Term Monitoring:

- Can the selected species grow in the sandy fill or common fill material that is being utilized? Will the area be re-vegetated after the siltier material is deposited over time, or will these be established prior? Please specify the selected species in order to ensure native species will be utilized.

  U.S. Army Response: The Design documents will detail the required wetland mitigation activities. The sandy material overlain by a loam material will meet the requirements for successful planting of native saltmarsh species, Spartina alternaflora, within designated areas of the Tidal Flats. Planting will be conducted soon after the sandy backfill material is placed, before natural sedimentation of silt occurs at the site. In these areas, establishing the correct elevations is critical to the success of the restoration; therefore, desired final elevations will be established in the Design.

Page 14, Community Participation:

- Regular community outreach should be conducted throughout the restoration project to keep the community informed and updated. Outreach that has been performed at other cleanup sites in Town that are strongly recommended include project websites with updates, regular public meetings, social media posts, development of a community email distribution list, mailings, and posting of information in public buildings. Any website should include an interactive timeline of milestones, showing real-time progress for each remedial phase. For example, residents should be able to look at the web platform and be able to visualize the project is, for example, "38% completed in milestone #2."

  U.S. Army Response: The Army will develop a Community Participation Plan which will include elements as identified above.

- It is strongly advised that a strategy for community outreach be developed before the start of work, including an internet platform including contact information to which residents can be directed.

  U.S. Army Response: The USACE website for the project has already been established, and the Army plans to provide updates to the public throughout the performance of the work to support community outreach activities. The address of the website is as follows:

  https://www.nae.usace.army.mil/Missions/Projects-Topics/Army-Engine-Plant-Environmental-Restoration-Project/

- Please note that the Stratford Star is no longer in production. Please edit this with another newspaper of general distribution in the area, such as the Connecticut Post.

  U.S. Army Response: Comment noted. As indicated in a previous response in this document, the Public Notice for the Proposed Plan public comment period was printed in the Connecticut Post.

Again, we appreciate the opportunity to comment on the US ACOE's proposed plan and look forward to establishing strong lines of communication to ensure the smooth execution of the cleanup of this vital and potentially vibrant piece of real estate along our coastline.

Waterfront & Harbor Management Commission (December 13, 2019 email received from Geoffrey Steadman)**:**

1. The WHMC's authorities and responsibilities for planning and managing beneficial use and conservation of the SHMA are established by the 1957 Special Law of the State of Connecticut establishing the Stratford Waterfront Authority; the Connecticut Harbor Management Act (Sections 22a-113k through 22a-113t of the Connecticut General Statutes); Chapter 210 of the Stratford Town Code; and the Harbor Management Plan adopted by the Town Council and approved by the State of Connecticut.

   U.S. Army Response: Comment noted.

2. Insofar as the SAEP is within the State of Connecticut coastal boundary and a significant part of the proposed remediation area is within the SHMA, the Proposed Plan and any future redevelopment proposals are subject to review by the WHMC to determine their consistency with the policies of the Harbor Management Plan. The requirements for this review are specified in Sec. 22a-113p of the General Statutes, Sec. 210-7 of the Town Code, and the Harbor Management Plan. Pursuant to Sec. 22a-113p of the General Statutes, a recommendation of the WHMC pursuant to the Harbor Management Plan and adequately supported by the Plan's policies is binding on a state official making a regulatory decision affecting the SHMA unless that official shows cause why a different action should be taken.

U.S. Army Response: Comment noted.

3. The Harbor Management Plan includes a number of provisions pertinent to preparation and review of redevelopment and remediation proposals affecting the SAEP, including provisions supporting: public access to and from the SHMA and SAEP; economic development linked to the SHMA; protection of environmental quality and coastal resources, including shellfish resources; educational and scientific uses of the SHMA; water-based tourism; and coordination among agencies for implementing the Plan. Among the pertinent provisions:

   - Reuse of the Stratford Army Engine Plant property should be encouraged and supported to achieve opportunities for public access to the Housatonic River and the economic development potential associated with the property's waterfront location.
   - Consistent with State and Federal laws and regulations, development and maintenance of public water access facilities utilizing the seaplane ramp, south basin, and the property's entire Housatonic River shoreline should be encouraged and supported.
   - Stratford Harbor Management Plan 1999 Plan Addendum, page 2-12.

U.S. Army Response: Comments noted. Re-use of the SAEP facility, including potential development of public access to the Housatonic River shoreline, are not within the scope of this Proposed Plan, which addresses remediation of sediments in the Tidal Flats and OF-008 drainage ditches in accordance with the Army's responsibilities under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980.

4. The WHMC encourages and supports reuse and redevelopment of the SAEP in accordance with a comprehensive, Town-guided plan based on detailed evaluation of potential land uses and selection of those uses that will provide the most substantial opportunities for: a) full achievement of the economic and community development potential associated with the SAEP's significant size and prominent waterfront location; and b) water-dependent facilities and amenities, including facilities and amenities for substantial public access to and from the Housatonic River. Planning for redevelopment of the SAEP should be guided by a vision of redevelopment providing a coastal destination of national and regional significance.

U.S. Army Response: Comments noted. Re-use and re-development of the SAEP facility are not within the scope of this Proposed Plan, which addresses remediation of sediments in the Tidal Flats and OF-008 drainage ditches.

5. The water-dependent component of redevelopment plans for the SAEP should include amenities for public access along the entire waterfront and docking and other facilities supportive of water-based tourism and enhanced by proximity to the Housatonic River Federal Navigation Project. In addition, redevelopment plans should have a historic component representative of Stratford's marine-related history and culture and the SAEP's distinguished place in the history of aviation.

   U.S. Army Response: Comments noted. Re-use and re-development of the SAEP facility are not within the scope of this Proposed Plan, which addresses remediation of sediments in the Tidal Flats and OF-008 drainage ditches.

6. The WHMC encourages and supports carefully planned remedial actions to remove aquatic and upland contamination associated with past industrial uses of the SAEP property as necessary to implement redevelopment plans, protect public health, safety, and welfare, and protect and enhance the natural environment and coastal resources. Remediation plans should include measures specifically designed to protect shellfish resources in the SHMA with recognition that the Housatonic River, including in the vicinity of the SAEP, supports the most productive seed oyster grounds in Long Island Sound. In addition, remediation plans should not preclude or diminish future water-dependent development opportunities on the SAEP property, including the Causeway (Seaplane Ramp).

   U.S. Army Response: Comments noted. Potential impacts and mitigation of such impacts resulting from the proposed sediment remediation will be considered in the Design document, which will be submitted to the Town of Stratford, CT DEEP, CT DABA, and USEPA for review and comment.

7. The WHMC is concerned that the Proposed Plan for environmental remediation of aquatic areas apparently has not been prepared in coordination with preparation of any plans for the required remediation of upland areas of the SAEP. The USACE should address the WHMC's concern that this lack of coordination may increase the risk of recontamination of aquatic areas at such time as the remediation of upland areas is conducted at a later date.

   U.S. Army Response: The Army is coordinating, and will continue to coordinate, with the potential buyer of the SAEP property to minimize risk of recontamination of aquatic areas. The RCRA Stewardship Permit, currently in the process of updates, will govern all upland work and will apply to all environmental activities to be conducted by whomever owns the property.

8. The WHMC is concerned that the Proposed Plan does not appear to include structural measures such as coffer dams and turbidity curtains as recommended by the Connecticut Bureau of Aquaculture to contain turbidity. The USACE should provide additional information and assurances addressing how turbidity during the proposed project will be

controlled to protect fisheries resources, including shellfish resources, in the Housatonic River.

U.S. Army Response: Requirements for turbidity control, monitoring, action levels, and response actions will be evaluated and developed as part of the design process. Additional details regarding turbidity control will be included in the design.

9. It is unclear to the WHMC how aquatic sediment containing PCBs will be identified and sequestered during dredging operations and prior to proper disposal. The USACE should provide additional information explaining how PCBs will be properly identified and sequestered.

U.S. Army Response: The delineation of PCB concentrations at the Site has been completed through investigations completed over the past 10 years. The results of these investigations are fully document in the FFS and its appendices. Only minor additional data gaps need to be filled as part of upcoming pre-design activities. Additional detail on characterization of sediments prior to off-site disposal will be provided in the Design document.

10. The Proposed Plan calls for the sandy backfill material that will be used for restoration of the tidal flats to be delivered to the site by truck. The WHMC recommends that all backfill material used for tidal flat restoration be obtained from suitable aquatic areas and that suitable dredged material from the Housatonic River be utilized for this purpose to the extent feasible.

U.S. Army Response: As part of the Design process, USACE will evaluate land and aquatic sources for backfill material.

11. At the WHMC's request and with the WHMC acting as the local sponsor, the USACE in 2017 conducted maintenance dredging of the Housatonic River Federal navigation channel. More than 270,000 cubic yards of sandy dredged material were removed from the channel and used to nourish the public beach at Hammonasset State Park at a cost of approximately $10 million. This was the largest, completely State-funded maintenance dredging project in recent Connecticut history. In addition to maintaining continued safe and efficient navigation and providing clean sand for beach nourishment, this project was intended to enhance opportunities for future water-dependent uses on the Stratford water- front, including future uses on the SAEP property.

U.S. Army Response: Comment noted.

12. The WHMC has prepared professionally engineered concept plans for development of boating access facilities on the Causeway utilizing a navigation fairway that would be dredged to the Federal navigation channel. The WHMC is concerned that the Proposed Plan, insofar as it involves dredging and backfilling of subtidal areas in the vicinity of the Causeway, does not recognize the opportunities for future water-dependent use of the Causeway and does not contribute to achievement of those opportunities. The Proposed Plan, insofar as it involves dredging and backfilling of subtidal areas in the vicinity of the

Causeway, should be modified to anticipate and facilitate dredging of a future navigation fairway between the Causeway and the Federal channel.

U.S. Army Response: Re-use and re-development of the SAEP facility are not within the scope of this Proposed Plan, which addresses remediation of sediments in the Tidal Flats and OF-008 drainage ditches.

3.2 INDIVIDUALS

Redacted - Privacy Act (November 18, 2019 email):

Hello Ms. Mark, my name is Redacted - Privacy Act. I am a recent homeowner in Stratford, CT and grew up in the region in nearby Bridgeport. I am writing in regards to the call for public comment on the restoration of Tidal Flats and Site. I hope to make the public meeting on December 10th but wanted to send across an email as well in case I can't.

My understanding of the Proposed Plan is focused more on the initial cleanup of the site and how that can be achieved. Does any part of this public comment section ask for plans for the site once proposed clean up and contamination is finished?

If so, I have comments below. If this is too early in the process - I apologize. My limited understanding of the Proposed Plan may not be pertinent then. I would love to see this massive area able to be re-purposed for multiple uses for the Stratford and greater Fairfield County community. Below are a few proposed ideas that may help add real estate back into the Stratford tax base and improve quality of life for the residents.

- With Bridgeport having started revitalization to its waterfront, it'd be great to try and create some kind of marine industry that would create jobs. I know Park City Wind is setting up plants in Harbor Point, some kind of renewable energy plant for Wind that could create skilled labored jobs would be a welcome addition.
- Also, with Bridgeport's revitalization, there is a lack of sport recreation entertainment. They are converting the old ballpark to an outdoor amphitheater. The size of the plant's footprint makes me think there is space to create a soccer or baseball facility to attract minor league affiliation that is currently missing in this portion of the state. I think a baseball stadium and minor league affiliation could generate tourist revenue to Stratford, while adding family entertainment options.
- I also think part of this area should be turned into more greenspace for public use. Greenways, walking trails, boardwalks, nature preserve adds to the already existing beach and park opportunities of Short Beach and Long Beach in Lordship, along with public use plans for the Shakespeare Theater grounds after the theater burned last year.

These are just a few ideas from one taxpaying Stratford resident. I know there is a LONG way to go before any revitalization and redevelopment can be truly considered. Whatever needs to be done to clean the area to make those future options possible I am in favor of.
Thank you for reading and the consideration.

Best,
Redacted - Privacy Act
Stratford Resident

U.S. Army Response: Re-use and re-development of the SAEP facility are not within the scope of this Proposed Plan, which addresses remediation of sediments in the Tidal Flats and OF-008 drainage ditches.

Redacted - Privacy Act (November 28, 2019 email):

Hi Erika,
Just as background, I was employed at SAEP for 16 years. I also served 8 years as chairman of the SAEP Restoration Advisory Board (RAB). I have 3 current questions:

1. Many years ago, development plans were proposed that required the current SAEP buildings to be demolished and the site subdivided for commercial development. The US government position at that time was that they would not pay to remove functional buildings. While useless at the moment, they are functional buildings. Has the government's position changed on this?
2. Environmental studies have concluded that the contamination in the mud flats is largely due to effluent from industrial activities on the Naugatuck river. It has nothing to do with SAEP other than location. Why then are the mud flats relevant to SAEP reuse?
3. The issue of environmental cleanup at SAEP continues to be a development blocker. Basically, it is an open-ended liability for any developer. The DEEP and EPA continually move the goalposts as instrumentation gets better. Has the DEEP and EPA established when "clean enough" is "good enough"? That is, when does a developer know when he's done?

Hope to see you at the Stratford meeting.
Jim Otto

U.S. Army Response: Comments noted. Re-use and re-development of the SAEP facility are not within the scope of this Proposed Plan, which addresses remediation of sediments in the Tidal Flats and OF-008 drainage ditches.

Redacted - Privacy Act (December 1, 2019 email):

We need senior housing!

U.S. Army Response: Comment noted. Re-use and re-development of the SAEP facility are not within the scope of this Proposed Plan, which addresses remediation of sediments in the Tidal Flats and OF-008 drainage ditches.

Mike Nisenbaum, Systems Resources (December 3, 2019 email):

Ms. Marks,
Very exciting, that will become prime land that will greatly add much needed help to Stratford's tax base.
Regards,
Mike

U.S. Army Response: Comment noted. Re-use and re-development of the SAEP facility are not within the scope of this Proposed Plan, which is for remediation of sediments in the Tidal Flats and OF-008 drainage ditches.

Redacted - Privacy Act (December 3, 2019 email):

I am a resident of Stratford, CT. I would like to know where the toxic waste will be disposed of?

U.S. Army Response: PCB-contaminated sediments are managed under the Resource Conservation and Recovery Act (RCRA) and all sediments excavated with total PCB concentrations equal to or greater than 1.0 ppm but less than 50 ppm will be disposed of offsite in a RCRA Subtitle D landfill, RCRA Subtitle C landfill, or permitted Toxic Substances Control Act (TSCA) facility. PCB-impacted sediments equal to or greater than 50 ppm will be disposed of offsite in a TSCA landfill or a RCRA-permitted hazardous waste landfill. The specific landfills to be used will be identified by the remediation contractor during the development of construction work plans.

Redacted - Privacy Act (December 4, 2019 email):

What is the long-term plan for the rest of the site? What is the long-term plan for the stockpiled material? Will the stockpiled material cover the complete parking lot? How will erosion of the material be control and at who's expense?

U.S. Army Response: Re-use and re-development of the SAEP facility are not within the scope of this Proposed Plan, which is for remediation of sediments in the Tidal Flats and OF-008 drainage ditches; however, the purpose of and current agreement in principle for stockpiling the material on-site is for the material to be used on the Site as needed fill material for site redevelopment. Stockpile management requirements including erosion controls will be evaluated as part of the Design process and included in the Design document. Costs for maintaining the stockpiles will be the responsibility of the future property owner.

Redacted - Privacy Act (December 8, 2019 email):

This letter is in response to the request for public comments by the Army Corps of Engineers regarding the remediation proposals for the tidal wetlands adjoining the Stratford Army Engine Plant.

I worked at AVCO Lycoming as a development engineer for ten years when it occupied the SAEP. It was a bustling place back in the late sixties and seventies. I believe that it was also the second highest taxpayer in town after Sikorsky Aircraft, and it didn't even own the property! The plant has been closed for over twenty years, with the seventy-acre site providing absolutely no discernible benefit to the town, and costing US taxpayer millions of

dollars a year to maintain and safeguard it. I am not exactly sure for what purpose because there is a high probability that most of the buildings will be torn down either for environmental reasons, or because they cannot be re-adapted for other purposes.

As a Stratford town taxpayer, I have been extremely disappointed at the apparent foot-dragging and a lack of a sense of urgency at getting the property to be a tax-producing entity again. Several years ago, there was great hope that a buyer had been found who would develop the property and place it back on the tax rolls. Sadly, it appears that nothing, with the exception of environmental studies, has been accomplished since then. The main stumbling block has been who is going to pay for the remediation at a level for the eventual intended use of the site. I seem to recall that at one time, again several years ago, the G.S.A. would absorb the total cost of the remediation, the cost of which was a huge impediment to the buyers proceeding with their project. This was understandable, considering the fact that the costs of such remediation would be onerous, and not well-defined as to its full extent. The discussion regarding as to who was responsible for contaminating the wetlands appears to have been based, in my opinion, on the flawed assumption that the operators of the factory, since its inception in 1927, were the sole culprits. This conclusion blatantly ignores the fact that the Housatonic River had been treated for numerous decades as an open sewer into which any form of dumping was not considered to be much of concern as long as factories continued humming. Certainly, the plant may to have done its share of contamination of the wetlands due to their proximity, but it would be wrong to attribute all of the contamination to the plant. To wit, an EPA website (www.epa.gov > ge-housatonic) states the following:

> *"From 1932 to 1977 General Electric manufactured and serviced electrical transformers containing PCB's. Years of PCB's and industrial chemical use and improper disposal led to contamination around Pittsfield, MA as well down the entire length of the Housatonic River."*

So, it's not just in the area of Pittsfield that the river was contaminated, it was "down the entire length of the Housatonic River." Obviously, this would include the Housatonic River estuary. And that's just contamination by the GE plant.

Elsewhere, the same EPA website clearly demonstrates the extent to which GE had contaminated the river with PCB's with the following statement:

> *"GE had discharged an estimated 600,000 pounds of PCB's into the Housatonic."*

Fortunately, GE was required to clean up the river in the Pittsfield area as well as other areas, but not including, to the best of my knowledge, the riparian area next to the SAEP Located as it is at the estuary of the Housatonic River, it appears that the plant is being unfairly blamed as being the sole contributor to the contamination of the wetlands. Don't any of the other factories along the entire river also share a responsibility in this regard? Of course, with the massive decline of industry in New England, many of those factories, which

once severely polluted the river, are long gone, so the SAEP owners become a convenient target to pay for the necessary cleanup, at taxpayer expense.

Let's make the AEP site productive once again with an attitude that time is of the essence. Stratford residents have waited long enough!

U.S. Army Response: While the Army does not disagree with the comments provided and has previously attempted to provide evidence of the potential sources of Tidal Flats sediments contamination to the CT DEEP, the proposed excavation of sediments will proceed. The current plan provides the best overall balance of completing the work quickly and minimizing the need for long-term monitoring at the site because site contaminants will be reduced to concentrations consistent with background conditions.

Redacted - Privacy Act (December 10, 2019 email):

Level the plant, turn it into part of the national seashore for everyone's enjoyment.

U.S. Army Response: Comment noted.

Redacted - Privacy Act (December 10, 2019 typed comments submitted at Public Meeting):

I am a bit perplexed this evening about commenting on your Proposed Plan for Environmental Restoration Stratford Army Engine Plant CT- Contract No W912WJ-15-0-093. While the mechanics of correcting the problem are well documented there are facets of the project in my opinion should be addressed:

- What is goal of the entire project of which your Plan is one piece?
- How does this segment tie into the overall toxic remedial solution?
- Is there an overall Project Milestone chart with realistic completion dates, including developer) maintained by BRAC Headquarters whom you are also representing today?

U.S. Army Response: The goal of the Proposed Plan for Environmental Restoration of the Tidal Flats and OF-008 sediments is to reduce risk to the environment by removing sediment with concentrations of PCBs, metals, and mercury that pose a risk to aquatic and human receptors. Remediation of the SAEP facility is not within the scope of this Proposed Plan, as environmental liability for the land-side of the facility will be transferred to the new owner. All environmental cleanup and monitoring work on the SAEP property will become the responsibility of the new landowner, which will be detailed in an updated RCRA Stewardship permit which is being reviewed and developed by the CT DEEP and the Army. USACE has a project schedule maintained by the Project Manager.

DOD has a responsibility to see this project to the finish as it is sector-specific for the Defense Base Sector. This Site once employed upwards of 10,000 people.

Point of Interest: In January of this year Reuters reported that Intel the U.S Chip Manufacturer was going to invest $11 billion dollars on New Israel chip plant - why not Stratford Army Engine site? Reason been toxic for over 21 years. Dutch are leaders in this field, America lagging, China busy gathering technology to build their own plant. With current administration push to grow our own manufacturing capability at home, Intel recently put a hold on further participation in this project.

- What toxicities other than the aforementioned subject matter exist today?
- Who is responsible for their correction and when will they start and finish? Are there inter-dependencies that either aid or hinder?
- If any, can the work be done in parallel to reduce redundant costs, if any and shorten time?

U.S. Army Response: The Proposed Plan for Environmental Restoration of the Tidal Flats and OF-008 sediments only relates to remediation of the referenced sediments. Remediation of the SAEP facility is not within the scope of this Proposed Plan, as environmental liability for the land-side of the facility will be transferred to the new owner. The start and finish of the land-side remediation will depend on the date of sale of the property, the financial backing of the developer, and regulatory approval of any proposed remedial action, to name only a few of the variables associated with a schedule. As the sediment remediation and land-side remediation programs evolve, the Army will continue to work with the developer to find schedule efficiencies. Work performed by the future landowner will be governed by an updated RCRA Stewardship Permit.

Without a project milestone chart it is difficult to see the picture!
It appears your Plan favors on mechanical over hydraulic equipment solutions.

- Maybe in simple terms it's like comparing a broom with a vacuum cleaner. Could you (cost & time factors excluded) state which of the five candidates do the best job with least adverse environmental impact?

U.S. Army Response: The Focused Feasibility Study provides a detailed analysis of these factors. In summary, mechanical dredging was selected because overall, the work could be completed most efficiently with the least environmental impact. Cost among the alternatives was generally quite similar (within the estimated accuracy range given the level of project definition).

I believe, within reason, safest results for this type project are the prime determiner of choice. Not privy to the Contingent Purchase and Sale Agreement, when finalized I would like to see a statement (in proper legal terms) in the subject Plan and the P&S to the effect that the Town-of Stratford is protected by the DOD from any legal entanglements/costs from any associated source/s. e.g. Bankruptcy/non-performance of Developer, Subsequent sale to 3rd party Bankruptcy/non-Performance, etc.

- Does DOD have a contingency plan that will be funded by DOD in the event of Developer default or non-performance?

U.S. Army Response: The Army will have no liability for the performance of the Developer following completion of the Purchase and Sale Agreement. Should the existing Purchase and Sale Agreement fail to be completed, the Army will open the sale of the SAEP facility to other bidders.

Knowing your Plan only addresses two items of the total remediation remedies and yet they impact the Housatonic river/ fishing (both sides), tidal/marsh flats fishing (both sides) drainage ditches, and Long Island Sound Housatonic River affect-- Aquaculture Oysters/Clams, swimming, fishing. No mention in Plan of how you will replant disturbed marshlands.

- If appropriate wild rice could be beneficial to wildlife? Marshlands are vital to the Sound's Health.

U.S. Army Response: The Army will evaluate vegetative species to be re-established during the Design phase of the project.

- Has any part of Long Island Sound been tested for toxicity, especially the clam and oyster beds at or outside the Housatonic River Mouth? I understand the Housatonic River has a toxic value that limits the number of fish it is safe to eat.

  U.S. Army Response: Unknown. CTDEEP and the Office of Long Island Sound Programs may be able to provide additional information.

- Does your plan detox the site to the current river level or a lessor more safe value?

  U.S. Army Response: The objective of the proposed remediation is to provide adequate protection of human health and the environment by eliminating, reducing, or controlling risk through removal of contaminated sediments. Upon completion of the work, contaminant levels will be reduced to levels consistent with background levels of metals and PCBs.

- Supposing the river toxic level improved to a lower level could the EPA demand that owner must now comply to the new safe level of the river if he had drainage or seepage?

  U.S. Army Response: The Developer will be required to present remediation plans which will require the approval of CT DEEP and the USEPA. The requirements of the remediation will be documented within the RCRA stewardship permit and will be enforceable.

- Who is handling ground water toxicity, PCB's, asbestos (site & buildings) remediation, is your Plan affected?

  U.S. Army Response: The Developer is responsible for the referenced elements of land-side remediation; the Army does not anticipate any impacts to the proposed sediment remediation.

- Is EPA up to date on their responsibilities as they affect your work?

  U.S. Army Response: Yes.

- Do you believe that periodic meetings of EPA (Federal/State), DOA, & Town teams or representatives that can speak for their respective areas with direct access to a person of authority for their respective areas when a major problem occurs would facilitate the remediation process?

  U.S. Army Response: Yes.

- What is your safety and traffic plan?

  U.S. Army Response: The safety and traffic plan will be addressed during the Design phase of the project.

- Is your Plan fully funded and up to date?

  U.S. Army Response: USACE is in the Design phase, which will include an estimate for construction costs. U.S. Army will make every attempt to fund construction of the remediation project, but at this time it is unknown how much the project will cost.

Law Offices of Neal Rogan, LLC (December 12, 2019 email)**:**

Please be advised this firm has been retained by Norm Bloom & Son. LLC to represent its interests relative to the Proposed Plan for Environmental Restoration in the Housatonic River in Stratford. Connecticut.

By way of factual background. Norm Bloom & Son. LLC owns and operates an oyster farm headquartered in Norwalk. Connecticut. It is important for you to understand that unlike other oystermen, Norm Bloom & Son, LLC has been actively engaged for many years in the farming of oysters to ensure an ongoing supply in an environmentally friendly manner. One of the key locations where that work is done is in the Housatonic River. The Town of Stratford provides my client with permits to allow it to harvest seed oysters from the Housatonic River from certain designated, long-standing oyster beds.

The basis for our client's objection to the proposed plan is as follows: First. our client is very concerned about the effects the proposed dredging operation will have on the shellfish beds in the Housatonic River. Specifically, based upon our client's fifty-plus years in the oyster farming business. the dredging project will severely damage the productive oyster beds adjacent to the dredge sites and render them unusable. What is even more troubling is our client's concern that the proposed plan will contaminate the oysters in the river with PCBs, heavy metal or other contaminates in the dredged materials.

The very real and negative consequences that will flow from the proposed plan will result in the loss of substantial jobs for employees of the company as well as a concomitant substantial loss of revenues on an annualized basis.

As such. our client objects to the plan as proposed by the U.S. Army Corp of Engineers as ill-advised. poorly thought out and there needs to be a different alternative. The oyster farming business has been a vital and integral part of both the Connecticut economy and culture and your proposed plan would destroy that.

U.S. Army Response: The Army appreciates the concerns brought forth in the comments. The re-suspension of sediments during dredging will be addressed via the Design document, which will include a comprehensive water quality management plan that will monitor impacts to the water column resulting from the proposed project. Engineering controls (e.g., environmental clamshell bucket) and management controls (i.e., dredge operation) will be utilized to provide protection of the public natural oyster seed beds adjacent to the Tidal Flats.

Adam J. Salce, Owner S&A Shellfish LLC (December 12, 2019 email)**:**

I am a shell fisherman who fishes the Housatonic river. My father's business also leases shellfish grounds from the state of CT that are situated right outside the mouth of the river to the East and the West. Is this project going to negatively impact the industry? I would like to know what the plan is for shell fishermen here. Are we supposed to not work the river? Are we supposed to not work our grounds that we pay a lot of money for each year in lease fees to the state? Not to mention the amount of product we take off of these lots and that is already on them. If we lost the ability to work these grounds, we would be crippled. I would like more information on this project, and if it will impact the shellfish industry.

U.S. Army Response: The Army appreciates the concerns brought forth in the comments. The re-suspension of sediments during dredging will be addressed via the Design document, which will include a comprehensive water quality management plan that will monitor impacts to the water column resulting from the proposed project. Engineering controls (e.g., environmental clamshell bucket) and management controls (i.e., dredge operation) will be utilized to provide protection of the public natural oyster seed beds adjacent to the Tidal Flats.

Alfred Kovalik, PE, LEP, LEED AP, COO / Tipping Point Resources Group, LLC (December 13, 2019 email)**:**

Tipping Point Resources Group (TP), a Connecticut registered environmental service company that focuses on dredged material processing via stabilization and beneficial use applications, appreciates the opportunity to comment on the SAEP Property Proposed Plan. TP attended the 10 December SAEP Property Public Meeting.

The Proposed Plan which centers on mechanical dredging of the impacted sediments with subsequent stabilization for (1) transport and (2) upland beneficial use applications/restoration is a well-known and accepted practice for RCRA, Superfund and Dredged Material Maintenance Programs.

Amended dredged material is commonly used for upland beneficial use of impacted properties to assist in the restoration and revival of impacted properties for redevelopment and economic re-vitalization. TP supports these efforts for the SAEP Property as well as other impacted properties in the New England corridor. The fact that the US Army Corps of Engineers NAE (USACE) would support beneficial upland use on the said property as opposed to a haul and dump scenario (most probably out of State) is a positive sustainable direction and use of amended dredged material.

The in-water and upland environmental assessment of the impacted property and marsh is a long process typical of these campaigns. Back-end design and engineering regarding dredging, materials handling, processing and subsequent placement is usually less developed for remedy design and typically the most challenging with respect to construction time and economics. In the case of the SAEP Property these challenges are highlighted since the stabilized sediment needs to be geotechnically suitable for what the upland placement use will be in the development. The communication between the stabilization method, delivery, and proposed geotechnical use should be optimized before a “pile” is left on the SAEP Property for “beneficial use”.

In the Proposed Plan, the Pneumatic Flow Tube Mixing (PFTM) process was evaluated as one of the processing and stabilization alternatives. PFTM is a TP process that is well established as an efficient in-line sediment mixing tool that provides a high-quality structural fill for redevelopment purposes than can be strategically pumped, placed and reworked onsite. The USACE and your engineering contractor Wood has evaluated PFTM as a processing and delivery system as well as conducting treatability studies of the geotechnical

strength of the project sediments that were provided to TP. The results were highly favorable compared to other options and was evaluated as an alternative. The design flexibility, speed of processing, safety of having the sediment in-line (minimal exposure), elimination of trucks for on-site material transport, reliable generation high quality geotechnical product for varied end-use applications, more efficient mixing and overall site-related and logistics cost factors would be a benefit in the SAEP design functions.

The SAEP Proposed Plan was developed over the last 2 years. Since then there have been improvements to the PFTM delivery design, cost structures and knowledge base among marine contractors. It was mentioned in the Proposed Plan that there is less marine contractor familiarity with the PFTM process.

We have delivered information about PFTM and our company to the regional dredging contractors in this marketplace who have shown a willingness to work with us as evidenced by their requests for bids and proposals for multiple project throughout the region.

The SAEP Property is the best example of the optimal application of the PFTM system since the dredging and placement will occur within the allowable distance for direct placement of the material without secondary handling. The SAEP end-use requirements (material quality and placement logistics) by any proposed developer should be considered in parallel with the USACE/contractor design functions.

The USACE mentioned at the 10 December SAEP Public Meeting that flexibility in the alternative design functions would be considered. Given the attributes of the PFTM system above and considering substantial time has passed since pricing was provided to Wood during the FS effort, we would appreciate the USACE maintaining the PFTM technology as a sediment stabilization and onsite delivery option for executing this project and potentially reducing risk, project costs and schedule for both the USACE and the developer.

U.S. Army Response: PFTM was fully evaluated in the FFS based on available information at the time. As part of the design and contracting process the Army plans to solicit both a base approach (the selected remedy) and alternate approaches. Alternate approaches must meet the performance objectives of the project and would need to have clearly demonstrable advantages over the base alternative in terms of cost, protectiveness, and schedule. In addition, alternate approaches must meet site constraints such as available space and coordination with future development activities.

Redacted - Privacy Act (December 13, 2019 email):

I have been tracking the dredging and pending dredging of the mudflats at the Stratford Army Engine Plant. Based on the meeting discussion and the information provided online, I have to submit some comments.

It was said that the material would be mechanically dredged, put into barges, brought up on shore, transferred to trucks than taken to a location on-site where it would be dewatered. It sounds like a lot of handling. They also mentioned that the material might have to have cement added. Why isn't hydraulic dredging being considered? It makes no sense. The

mechanical process is very messy. I am concerned that once the material reaches land and gets moved around it will turn to mush and be very difficult to control. It will be splashed all over the place and spread around on land and equipment adding to the potential for cleaning up anything that spills. The other side of that is once the mud dries, it could become dust and further spread around the site. Additionally, mud from mudflats can smell, so having it exposed and handled many times may not be pleasant.

The area they talked about doing the offloading is very small, and the area to go from land to the offloading area is very narrow and could cause difficulty for a large truck. Additionally, if it had to be improved, it would be costly and could cause a further impact on the mudflats.

If hydraulic dredging is used the mud would be contained in a pipe. I know there are ways to collect and dewater the dredged mud using filter presses or geosynthetic tubes. I would think it would be much more cost-effective, cleaner and safer. I understand that there would be more water, but the collection and treatment could not be as expensive as handling the mud 4-5 times.

I think there should be some consideration of hydraulic dredging as an option.

U.S. Army Response: Hydraulic dredging was fully evaluated in the FFS. Please refer to that document for the advantages and disadvantages of this technology relative to other dredging methods. As part of the design and contracting process the Army plans to solicit both a base approach (the selected remedy) and alternate approaches. Alternate approaches must meet the performance objectives of the project and would need to have clearly demonstrable advantages over the base alternative in terms of cost, protectiveness, and schedule. In addition, alternate approaches must meet site constraints such as available space and coordination with future development activities.

4.0 PUBLIC MEETING TRANSCRIPT

This section presents the text from the minutes of the Public Meeting held December 10, 2019, from 6:30PM to 8:30PM at the Baldwin Center, located at 1000 West Broad Street in Stratford, Connecticut. The official copy of the meeting minutes from Chait Digital Court Reporting & Videography of Greenwich, Connecticut is presented as **Appendix A**. The Public Meeting agenda consisted of the following elements:

- Purpose and Summary of the Proposed Plan (PP)
- Site Location and History
- CERCLA Process
- Remedial Action Objectives
- Summary of the Remedial Action
- Summary of the Feasibility Study
- Preferred Remedy
- Project Timeframe
- Questions from the Public

Following the presentation provided by the US Army Corps of Engineers, attendees of the meeting who had requested the opportunity to ask questions about the Proposed Plan and presentation were asked to step forward individually and ask their questions. Those questions, and answers from representatives of the Army, are presented in the text of the minutes below. If the Army felt that there was additional information, not provided during the meeting, required to address the questions, that information is inserted below in italicized text.

SPEAKERS:

BETH GOSSELIN, Chief of Public Affairs, USACE; moderator and facilitator

ERIKA MARK, USACE Project Manager for the Environmental Restoration at Stratford Army Engine Plant; Hearing Officer

TOM LINEER, Base Realignment Enclosure Program Manager, Headquarters - Department of the Army

TONY DELANO, USACE Environmental Engineer, Environmental Restoration for Stratford Army Engine Plant

MS. GOSSELIN: Good evening. I'd like to welcome you to the public meeting for the Proposed Plan for Environmental Restoration for the Tidal Flats and Outfall-008 Drainage Ditch sediments at the Stratford Army Engine Plant site located in Stratford, Connecticut. My name is Beth Gosselin, and I'm the Chief of Public Affairs for the U.S. Army Corps of Engineers in New England. I will be your moderator and facilitator tonight. Our hearing officer today is Erika Mark, the U.S. Army Corps of Engineer's Project Manager for the Environmental Restoration at Stratford Army Engine Plant. At this time, I will introduce the people at the front table. Tom Lineer, Base Realignment Enclosure Program Manager from Headquarters - Department of the Army. Tony Delano, Environmental Engineer, Environmental Restoration for Stratford Army Engine Plant. Brendan Spray, U.S. Army Corps of Engineers, Civil Design Engineer for the Environmental

Restoration at Stratford Army Engine Plant. Should you need copies of the public notice, the meeting procedures, or other pertinent information, it is available at the registration table.

We're here tonight to conduct a public meeting regarding the proposed plan for environmental restoration at the Stratford Army Engine Plant. We understand that there's great interest on the redevelopment of this area. However, the U.S. Army Corps of Engineers does not have a role in these particular decisions. As such, I would request that you direct any questions about the development to the Town of Stratford.

To obtain an accurate record of all statements, this meeting is being recorded by a court reporter, and a transcript will be prepared.

The agenda for the meeting is our hearing officer, Erika Mark, will address the meeting. She will be followed by Tom Lineer who will say a few words. The environmental engineer, Tony Delano, will then provide an overview of the project. Before we begin, I'd like to remind you of the importance of completing the registration cards that were available at the door. These cards serve two purposes. First, they let us know that you're interested in this project so we can keep you informed. Second, they provide a list of those who wish to speak tonight. Those who wish to speak or ask questions will be provided three minutes. If you did not complete a card but wish to speak or receive further information, you can go back to the registration desk or at the end of the meeting they'll be available to speak. It's important to note that these statements said here tonight, or these questions will be given equal consideration along with the written or e-mail statements. Ladies and gentlemen, at this time I'll turn it over to our hearing officer, Erika Mark.

MS. MARK: Good evening. Welcome to the Corps of Engineers public meeting. Again, this is on the Proposed Plan for the remediation of the Tidal Flats and Outfall-008 at the Stratford Army Engine Plant. Before we begin, I would like to thank you for involving yourself in this process.

We take our public comment period very seriously, and we appreciate all of your attendance here tonight. Please feel free to bring up any topics that you feel need to be provided on record specific to the work that we're doing which is the remediation of the Tidal Flats and Outfall-008, and I assure you that all of your comments will be considered during this process. Today's meeting is being conducted for the purpose of acquiring information that will be considered and evaluated in the proposed plan. I will now invite Tom Lineer from Army BRAC to make a few opening comments.

MR. LINEER: The Corps tonight will present the Proposed Plan. It has been a long time in coming. They will be able to answer your questions or at least address or take your questions. The Proposed Plan as well as a more extensive final Feasibility Study is available on the website to review if you choose. I'd like to note two things. One, this came together through teamwork from the regulators, which is the U.S. Environmental Protection Agency and the Connecticut Department of Energy and Environmental Protection, the experts from the Corps of Engineers, as well as the State of Connecticut and the local government and officials here. So, they've gotten us to this point, and it's been a long time in coming. It will be a team effort that makes this work that we are proposing to do a success for the community and for the state. The last note that I want to make is this meeting is focused on the Proposed Plan. The eventual reuse of the facility is not a topic of this meeting. So, please hold those questions until another time or another entity. Thank you.

MS. GOSSELIN: At this time, Tony Delano will be providing some remarks.

MR. DELANO: Thanks, Beth. I'm Tony Delano with the Army Corps of Engineers New England District, and tonight I'm going to discuss the proposed plan for the Tidal Flats site and the Outfall-008 site at the Army Engine Plant. Can I have the next slide. So, our agenda for this evening, I'm going to run through obviously the purpose and summary of the proposed plan, a few details on the site location and history. I'm sure you all know where it is, but we'll have a map up there. A brief discussion of the CERCLA process, that is the process that we're following, similar to Superfund. That's the Comprehensive Environmental Response, Compensation and Liability Act. That's the process we're following. I'll discuss, again, the remedial action objectives, what we're trying to accomplish out there by doing these remediations. I'll also summarize the remedial act itself in terms of what we're cleaning up, the depths, the material. And then the nuts and bolts of it really is a summary of the feasibility study which is one of those parts of the CERCLA process that we just completed over the past couple of years and culminates in a preferred remedy and a proposed plan. So, we'll talk about the different options we looked at in the Feasibility Study. And then of course I'll discuss the components of the proposed remedy and then the project timeline.

So, the Proposed Plan: The purpose of this document is to present a summary of the alternatives that are analyzed in the feasibility study, and it also recommends preferred alternatives to address the risks of human health and ecological risks. It's important to note that this is a proposed plan, we're taking comments, and that it can be modified in the future based on comments that are received from the state or public or other stakeholders. So, as we mentioned, we're taking comments and we'll consider them, and that will be documented later in the CERCLA process in the record of decision.

Okay. So, why are we doing this? What are we protecting? So, there's some risks that have been identified at the site both to human health and ecological risks, receptors. For humans, it includes contact with sediment during recreational activity and consumption of fish and shellfish. For ecological health, we've got -- you can see some of the shore birds there, some fish, different wildlife and threatened and endangered species that we are protecting through the actions that we take both long-term and short-term. And also, wetland resources. There are some wetlands within the bounds of our site that we will -- when we execute the work, we'll do our best to minimize impacts and restore on a one-to-one basis what gets impacted through the work. Next slide.

So, site location. Again, I'm sure most of you know where it is. It's immediately adjacent to the Army Engine Plant at 550 Main Street. You can see the Tidal Flats -- I wish I had a laser pointer -- right in there, the orange, and then the Outfall-008 is kind of a separate site off to the side. The Outfall-008 area is a ditch about a quarter mile long and then the Tidal Flats is about 47 acres. So, the proposed plan covers the remedial action for both of those areas. So, a little bit on the history of the site. The site was established in -- from about 1927 it was operated by Sikorsky, and then the Air Force took over in about 1951. And later the Army was operating it through about 1997, and they used various chemicals in the processes that they had out there. You can see there's a photo of a Corsair there and also a photo of when the facility was in its prime. Next slide. I'm looking at it. Yeah.

So, up there you'll see a photo of the model of airplane that was produced and also manufacturing for where they produced engines and different aircraft. So, through the different processes, some releases did occur, both to the Tidal Flats and Outfall-008, and there were various chemicals used in the operations there including plating. There were -- okay. Next slide. There's a nice aerial. Looking right in the foreground is the Army Engine Plant and then the Tidal Flat area immediately adjacent to Housatonic River and that crosses Nells Island. This gives you good perspective on the main part of the site. So, the Outfall-008 ditch received some links that had been minimally treated from a chemical waste treatment plant after 1958, and also those contaminants included a series of metals and organic contaminants and PCBs. The site was listed in October 1995 on the BRAC list and then was closed in 1997, and since about that time or even earlier, there had been numerous environmental investigations which culminated in the feasibility study. Okay.

Here is our CERCLA process flowchart. The green boxes to the left have all been completed through remedial activities, remedial investigation or RI, and we have attached feasibility studies. We've completed those activities. We're in the process of identifying the preferred alternative, but we put out the proposed plan for review now. And we're actually -- we've started to run parallel with this for the remedial design so that we don't lose time in the schedule. But also, you'll see in the upper right is the decision document. That's the record of decision that will document the selected remedy after we receive public comment, take into account public and safety comment, and then finalize the remedy. And as I mentioned, it might stay the same, it might change a little bit based on comments received through this process. And then after that we move on to contracting and executing the work. Next slide. Okay.

Remedial action objectives: These are essentially the numerical standards that we are going to achieve by cleaning up the site. And at the Tidal Flats we're going to remove up to four feet of sediment over roughly about a 47-acre area that includes the removal of contaminants, PCBs, and mercury and a series of eight metals as well. For example, copper, chromium, lead, and a few other metals as well. When we do this, we're going to essentially achieve background conditions. That was an important thing, that we're able to get low enough so that we're achieving what we have in the background. The numerical standards, they're just -- I'll just say them. You may have questions on them. There are eight metals that essentially it's an average of those eight metals of 0.5. It's a calculation, it's a quotient. The PCB standard is 1 ppm and lower and the mercury is no more than 0.55 ppm. Next one.

The Outfall-008 drainage ditch has some similar goals in terms of numerical value, but we're going to take an even four feet out throughout that ditch. Again, with both of these sites, we're protecting ecological receptors and human receptors, and the Outfall-008 ditch will also be consistent with background conditions. Next slide. Okay. So, here we have kind of a summary of what we're going to be removing. This is the removal action. The project involves removing sediments from the Tidal Flats and from the Outfall-008 ditch. And the way you see this table on here where we've essentially listed this out according to the type of material, and it's important because of the PCB concentration. We have to segregate and manage according to how much -- what concentration of PCBs is present. So, you'll see that for the majority of the site at the Tidal Flats, we've got about 130,000 cubic yards. That's less than 1 ppm. So, that's basically not regulated under the PCB regulation laws. And similarly, most of the Outfall-008 area is also regulated that way. There are also other categories that include 1 to 50 parts per million PCBs

and then greater than 50 ppm. Those have to be off-site. Those materials above 1 all have to be taken off-site. The material below 1 can stay on-site. That's why it's important. An important aspect of this project is that sediments less than 1 part per million PCBs would be used on-site, be placed in a stockpile for future use on-site. So, again, from these volumes, you can see most of the material is reusable on-site, and then a fraction of it, about 10 percent, maybe a little less, would have to go off-site, and that typically means a landfill. And the two drawings on there, the one on the left is the Tidal Flats. The darker colors indicate four-foot removal, and then with the lighter and lighter colors it goes three, two, one. So, you can see that a large area of it is one and two feet and there's some deeper areas that are three and four feet. The drawing on the right is the Outfall-008 ditch in purple. That's the limits of our remediation, and that is a four-foot cut in the ditch. You can imagine a drainage ditch. We're going to dewater that ditch and excavate four feet of sediment at the bottom of the ditch. Next slide.

A little bit on the Feasibility Study process and the alternatives, the other options that we looked at. The purpose of the Feasibility Study is to identify the universe of technologies that are applicable to remediate the site. You screen those technologies to a more promising list and then you assemble them into site-wide alternatives. Those again get screened to a most promising list of site-wide alternatives. We started out with about 11 alternatives, screened that down to about six alternatives -- sorry -- five alternatives, and then we evaluate those five in detail according to EPA's CERCLA criteria. There are nine criteria. After you do that detailed evaluation, you then kind of rack and stack them, figure out which one is best. We used an objective ranking system scoring them and then came up with a preferred remedy by scoring the alternatives. So, some of the alternatives that we evaluated included hydraulic dredging, mechanical dredging with truck transport, mechanical dredging with a hydraulic pipeline. That's also known as hybrid where you're digging it one way and conveying it in a pipeline hydraulically. And then also there's another technology. We looked at mechanical dredging followed by pneumatic pipeline which uses air to convey the sediments. And then finally mechanical dredging with barge transport off-site meaning it doesn't come on land. It ends up in a barge and it's taken elsewhere. So, we evaluate those five alternatives, and as I said, against the nine criteria, and rank them.

So, out of all that, our preferred remedial alternative is Alternative 3 for the Tidal Flats in the Feasibility Study. Some of the key considerations that you have to meet when you're selecting preferred remedy are that, number one, it has to be protective of human health and the environment. The alternative has to comply with ARARS. ARARS is an acronym. It's Applicable or Relevant and Appropriate Requirements. You have to basically comply with the relevant laws. They have to be cost-effective. And then there's a series of criteria that are known as balancing criteria. You have to provide the best overall balance of those -- the best trade-off of the balancing criteria. So, our analysis led to, as I mentioned, Alternative 3 which includes mechanical dredging with truck transport on-site, gravity drainage, solidification which is the addition of Portland cement to the material to help make it a workable, placeable, compatible material and useable material, and also that allows you to use it on-site for beneficial reuse in the future. And then also we have components that include confirmation sampling to ensure that we've removed all contamination. And then backfilling which would come from either an upland source or a local in-water source, and that material would likely be a medium sand, like a beach sand type of material for backfill. And then finally restoration. There's a component of wetland restoration as well. I mentioned

that earlier. So, Outfall-008 is the quarter-mile long ditch four-foot excavation. To execute that work we would isolate and dewater the ditch and essentially do the work in the dry. It won't be completely dry, but it will be mostly -- most of the water will be removed and we would maintain low water conditions so we can see what we're doing in four feet. The excavated material will be gravity-drained again and then solidified as necessary. The ditch will be backfilled and restored, and then material would either -- as I mentioned earlier, some of the material needs to go off-site because of the PCBs and then some will remain on-site for beneficial reuse. Next slide.

So, why the preferred remedy? What are the benefits to this remedy? Again, it's a mechanical dredging followed by on-site truck transport. You dredge it, you place it in a -- there's a couple of steps involved. You place it in a barge and then you place it in a truck and haul it on the site for processing. In our evaluations, that operation had the highest productivity, meaning how many cubic yards, how much material can you take out in a day. That one was evaluated as the best. It's also reusing a special bucket. There's a picture of it there on the slide. It's an environmental plant shell bucket that's level-cut. You probably can't see it, but if you have handouts or look on the website, you'll see on the bottom there's a demonstration of what level-cut means. It means that you're not scooping out material in an arc. You're doing it in a straight line, and that helps minimize taking out extra material. It makes things more efficient. So, also this process minimizes the over-dredge and the resuspension of sediments which is important because you don't want to be stirring things up. And then there's minimal mixing when you do this of underlying clean material as well with the material you're targeting for removal. This alternative also generates the lowest volume of water among those alternatives that I discussed. Its essentially gravity draining. You don't get a lot of extra water in this bucket. You get some, but not like the other options that include hydraulic dredging. So, it's efficient, it's an efficient process. And, again, this alternative provides the best balance and cost benefits overall. So, a few things. This preferred remedy has been developed in concert with EPA and the state, and the Army has throughout this process placed the emphasis on reducing exposure through removal of sediments. And the benefit of that is you're getting the material out, you're getting the site clean, and there are no long-term monitoring requirements. In these sediment projects, sometimes there's other options that don't include removal. We're doing a complete removal of the material that's affected. Again, the alternative would reduce ecological and human risks of two contaminants back down to background levels. The Army, the Connecticut DEEP, and EPA have developed this together, and we agree that this is the best option to be protective of the health and the environment. So, finally here on the project schedule, today is the public meeting, and then the commentary closes this Friday. So, there's several more days to get written comments in. Then we'll evaluate those, and through the process we'll develop a response and summary which is essentially we take the comments, we develop a formal response, and that goes into the record decision as an appendix. And then the preferred remedy as discussed tonight may or may not be altered in some way based on those comments, and that's in -- on February 17th we'll have that draft, a decision available, and then they'll be a final record decision in April, April 10th. So, the project time frame. What we've got in the proposed plan is a schedule that includes essentially working 12 months per year, 24 hours a day for dredging, seven days per week for dredging. That's the best option for getting this project done in about 18 months. It minimizes -- it's going to minimize the time required to complete the work to do it this way. You only need one mobilization. We get the equipment to the site, prepare the site, work straight for about 18 months, and then we're done. That's the in-water work. The on-land work because of some other things that have to be done

on-site is probably going to be about 24 months. That's the estimate that we have. It's also important to note that the Army continues to work with the city and with the Connecticut DEEP on this proposed plan and the scheduling and all those key details. That's essentially what I have tonight. Next slide.

Comments are open through the end of this week, and you can submit them. There's more information on the website, but you can mail them in, you can e-mail them. And then project information is located at the website on here. That concludes what I wanted to say.

MS. GOSSELIN: Thank you. Okay. Thank you very much, Tony. The meeting today will be conducted in a manner so that all who desire to express their views will be given an opportunity to do so. To preserve the right of all to express their views, I ask that there be no interruptions and that all speakers abide by the three-minute time restriction so that all who wish to speak will have an opportunity. As noted before, a transcript of the meeting will be prepared, and the record will remain open. Written comments may be submitted tonight. There's a worksheet in the back that you can submit and hand to one of us directly. You may e-mail or send it by mail, and you have until December 13th. Individual speaking today will be called to the microphone in the order that they signed in. When making a statement, please come forward to the microphone and state your name and the interest you represent. If you speak as an individual, please say so. We will now receive your comments according to our meeting protocols, and I'd like to take a minute to recognize the elected officials in the room here and thank them for their time in coming. So, the first speaker will be Ed Scinto.

AUDIENCE MEMBER: Mr. Scinto couldn't get off work. He's the chairman of the Waterfront Harbor Management Commission. He's asked us to speak in place of him.

MS. GOSSELIN: Yes, please. Come on up. You can use the microphone. That's fine. So, if you didn't hear, Mr. Scinto is not available right now, but he has colleagues that will provide comments.

MR. STEADMAN: My name is Geoff Steadman. I'm a planning consultant with the Waterfront Harbor Management Commission. I've been a planning consultant for 32 years. That, of course, doesn't mean a whole lot other than I know 32 years ago we were encouraging and talking about redevelopment of this property and cleanup of the river. Our interests, and I'll summarize them quickly, is that we encourage and support redevelopment of the property and achievement of the economic benefits that would provide to the region and to the town, but we also support a redevelopment of the substantial water-dependent component and the public access amenities that are a benefit to the people in Stratford and support remediation of the river in a way that's done to protect the river's substantial shellfish resources. The river supports, as you know, the most important sea oyster grounds in the State of Connecticut. The Harbor Commission's authorities in this regard are established by a special act of the legislature in 1957 and by the state's Harbor Management Act in 1984 which was introduced by Stratford State Senator "Doc" George Gunther who is the longest-serving legislator in Connecticut history. His intent with the Harbor Management Act was to increase local responsibility and authority in managing and navigating waterways. The town has a harbor management plan.

Of course, the plan doesn't say how this area should be remediated, but it has policies to protect and encourage water-dependent uses and to protect coastal resources and provide

public access. So, the Harbor Commission will be reviewing permit applications for the different work that needs to be done on this property including many applications for state approvals, and pursuant to the general statutes and recommendations the Harbor Commission pursuant to the Harbor Management Plan is binding on the decisions of state officials unless they show cause otherwise. The other thing we hope will be part of the redevelopment is the substantial historic component, this site's place in the history of aviation which I won't go into now. Also, two years ago we supported -- and Ms. Mark was the project officer -- the largest state funded-dredging project in Connecticut history which was to dredge the Housatonic River, not just for beach erosion at Hammonasset but for maintaining water-dependent usage and opportunities for future water-dependent usage. So, we hope that this remediation plan can be done in a way that does not diminish opportunities for future water-dependent uses and we've prepared some plans for that. With respect to remediation -- and we'll put all of these comments into a letter. I've got 18 seconds left. But we have questions about the remediation that I think you should address in your decision. For example, why are you doing the in-water first, water remediation, before you do the upland remediation? How are you segregating the PCBs to move off-site? And I guess my time limit is up. So, sorry to talk so quickly. But we look forward to reviewing these plans. We support the remediation being done in a way that protects the river's substantial environmental resources and shellfish resources.

U.S. Army Response: See response to Town of Stratford Waterfront & Harbor Management Commission comments in Section 3.1 of the Responsiveness Summary.

MS. GOSSELIN: Thank you. And as we noted earlier, written comments and oral comments tonight have the same amount of weight.

MR. STEADMAN: Thank you.

MS. GOSSELIN: I notice, is Geoff Steadman also going to speak?

MR. STEADMAN: That was me.

MS. GOSSELIN: That was you. Okay, okay. Redacted - Privacy Act

AUDIENCE MEMBER: He had to leave.

MS. GOSSELIN: Johnathan Ackley. I apologize in advance for butchering any names.

MR. ACKLEY: I'm going to speak as an individual tonight, but I am a Harbor Waterfront commissioner. I'm speaking from growing up in Lordship. I've been living in Stratford for years. We all enjoy that river. We all go to Short Beach. It's very important, and we're happy to assist you in any way we can to get this project going and running. But we have to be cognizant of the fact that along the river there's golf clubs, there's boating, there's fishing boats, and there's an oyster industry and possibly a clam industry. So, we certainly don't want to end anybody's livelihood. Thank you.

MS. GOSSELIN: Thank you. Susmitha Attota. We made it -- it's like you're going down the aisle. I apologize.

MS. ATTOTA: It's okay. At least you said my name right.

MS. GOSSELIN: Oh, good.

MS. ATTOTA: Thank you for the presentation. I applaud what you're doing here. I just have one concern I would say. I'm a town planner, and we have a question with the plan that was adopted in 2016. And the plan recommends that the existing river by the SAEP property be elevated at least to sixteen feet so that it can create a levee in the future, and that's part of our strategy by the town to help overcome where there's coastal flooding. So, the plan recommends some beneficial reuse of sediment, and I was wondering if some of that sediment could be used for elevating the levee that is currently at eight or nine feet which will help with our strategy to overcome coastal flooding as well.

MS. GOSSELIN: Erika, anyone on your team?

MS. MARK: That would be the responsibility of the developer who takes over the property. So, that is definitely something that should be raised with them by the town.

MR. DELANO: I'll just add to what Erika said. One of my slides had the volume and materials, 130,000 cubic yards roughly. That material will be provided for future use. I wouldn't be able to say whether that's appropriate for the levee itself, but it is appropriate for use on the site based on our studies.

MS. ATTOTA: Thank you. And also to add to this, there is also a breakwater jetty that comes from the site and maybe, you know, part of the long-term strategy for the greenways, promoting greenways and scenic views and public access to waterfront, is also to make sure that that part of the town is improved for public access. So, maybe we could, you know, split between both. Thank you.

U.S. Army Response: The Developer will be responsible for any modifications to the land-side of the facility.

MS. GOSSELIN: Thank you. Next, we have Redacted - Privacy Act

Redacted - Privacy Act: Good evening. My name is Redacted - Privacy Act I reside out in Lordship. I've worked on the site for 47 years at Avco. I've watched them go down and make all their catch runs out there in that muck. One question I have is, are you going to isolate the water between the river and the dredging site, or will it be open to have back and flow from the sediment that's going to be disturbed? Will the river be cut off in any way or will it just be open to the flow? Another thing the lady just made mention of, that ramp was originally to put down the flying boats into the river. It was leveled off and had electricity put on it. And at the end of the river site it was supposed to be a pavilion or something out there for the town to enjoy. Will that still be there or are you going to take that out? And other than that, I'm happy to finally see this go because I used to follow it when it was open to the public when we developed -- I think Pete Szymanski was the man on the site. I knew him. So, I hope that we can get this done. How much of this stuff is going to be used on-site back on the other side of the levee, or will that -- and are you going to fill this stuff that you're taking out or are you going to leave that four foot out of there to make it so we can get boats and stuff in there? Is there anything on that?

MS. MARK: The material that we're removing from the Tidal Flats, we would be backfilling to about a foot below current grade. So, the areas that we're excavating four feet would be backfilled three feet. Areas that are dredged two foot will be backfilled to one.

U.S. Army Response: The Design document will propose the means (e.g., turbidity curtain) for controlling flow between the proposed areas of dredging and the river. The electrical conduit and footings for a potential pavilion will remain beneath the Causeway erosion control cover system. The dredged sediment containing PCBs at concentrations less than 1.0 ppm are proposed to be used on the land-side of the facility to raise the elevation during re-development.

Redacted - Privacy Act: So, they can't get boats in there and stuff?

MS. MARK: No. We're just doing remediation. So, any future plans --

Redacted - Privacy Act: So, if they want to make a boatyard --

MS. MARK: Yeah. That would be up to the town and require additional permitting.

Redacted - Privacy Act: Thank you.

MS. MARK: Yes, sir. Thank you.

MS. GOSSELIN: Thank you. Next up is Redacted - Privacy Act

Redacted - Privacy Act: Good evening. I'm Redacted - Privacy Act I'm a private developer and also a property owner in the Town of Stratford. I'm just curious about the -- great presentation on the partnership and all the studies and the work that you put forth, but it's always a team effort based on money. The developer you have I believe from the last I picked up from a private meeting with the mayor was the Sedgewick Partners. Are they still involved with the Army Corps of Engineers?

MR. LINEER: Sedgewick Partners -- the Army has a purchase and sales agreement with Stratford Renewal which -- I mean, I'm not quite sure of their corporate entity. I know the name so --

Redacted - Privacy Act: I believe it's Sedgewick Partners, LLC, out of, once again, Greenwich, Putnam -- 100 Putnam Lane in Greenwich. Obviously, my concern is if by chance your partner -- because we had this wonderful article that was put out 11 years ago how "Hollywood is Coming to Stratford." Remember that? So, Hollywood never came to Stratford. So, if by chance your partnership, my question is, if it falters, do you have a backup plan or is the Army prepared to pay for everything?

MR. LINEER: Sir, the Army does not have a partnership. We have a purchase and sales agreement. The Army is selling the property. Okay?

Redacted - Privacy Act: Right.

MR. LINEER: So, it's not a partnership.

Redacted - Privacy Act: Gotcha.

MR. LINEER: So, if this agreement does not go through, the Army would then go back out as it did before, as you noted previously our prior failures, we would go back out and try to sell the property again.

Redacted - Privacy Act: So, it's my understanding, though, going back -- of course it's all hearsay -- from my point of view, that the town will -- actually, the developer was going to pay for half of the cleanup and the other half was going to be paid by the government. But that's not true?

MR. LINEER: Well, I can tell you what the Army is going to do, and it's exactly what Tony briefed with the remediation of the Tidal Flats and Outfall-008. That's the Army's responsibility.

Redacted - Privacy Act: So, everything that Tony talked about today, the presentation that was made, will be done regardless whether the developer participates or not, which is really a good thing because that means the property is going to be cleaned up?

MR. LINEER: The cleanup of the uplands is the responsibility of the purchaser.

Redacted - Privacy Act: You mean -- "the uplands" meaning referring to the buildings, the structures, is that what you're talking about?

MR. LINEER: That is correct.

Redacted - Privacy Act: Okay. Good. So, basically, it's that everything that's going to be going forward would not be stopped in any way because, once again, the uplands has nothing to do with the downlands?

MR. LINEER: There are two different projects.

Redacted - Privacy Act: Right. So, that's a good thing.

MR. LINEER: That's what we're talking about today. The project that the Army is doing which is the Outfalls and the mudflats.

Redacted - Privacy Act: Great. So, the answer to the question is whether or not the developer maintains the agreement that they had with the town or the government because no one knows the details. Obviously, you're prepared as the government to clean up the downland?

MR. LINEER: Under the purchase and sales agreement, the purchaser has the requirement to clean up the uplands.

MS. GOSSELIN: Thank you.

Redacted - Privacy Act: Yup. Thank you.

MS. GOSSELIN: Next up we have Patrick Gribbon.

MR. GRIBBON: Thanks for coming. I'm on the Waterfront Commission also. I just wanted to point out a couple of things because timing in life and timing in Stratford and timing is used to be prepared. Just giving you an example what we did last October. We hired someone to take all the sand from here, 20,000 cubic yards, up to Hammonasset Beach, and they had from October 1st to March 31st. They finished on December 14th. They worked 24 hours a day. They had some bad weather, but they did it. And I think it was great people. And I think one of the things that we could look at what you're doing now with 47 acres, I would think that the timing could be much better. The work has been done outside of Connecticut. Whether it was down on the Jersey Shore or in Maryland, it's done normally in about six months. So, I would appreciate it if people could take a look at that. I know that you really don't know what could happen. I'm sure you're not saying you want to do 18 months and pay for that. It's a job that needs to be done. You know, it took almost 10 years to measure the dirt out there. It was done three times, started 10 years ago. We were aware of it. Started with two feet, then went to four feet, then it went to nine feet, and the answer is -- whatever. But I think that I appreciate that and I thank all the other people in Stratford and in the State of Connecticut and I think you would too if we only had to worry about it for six months. So, thank you.

MS. GOSSELIN: Thank you. Next up is Andrea Boissevain, and after that it Andrea will be Harold Watson.

MS. BOISSEVAIN: Good evening. My name is Andrea Boissevain. I'm the Director of Health for the Town of Stratford. I want to let you know that we are in the midst of drafting comments with my department, Oliva Coleman from my office, as well as the conservation department, Kelly Carrigan. We are focusing on some technical aspects of ecological risks and wetland restoration. We're also going to ask that you work in concert, which I trust that you will, but work in concert with the Connecticut DEEP and the EPA because some of the Stratford Army Engine Plant borders some operable units from the Raymark Superfund site, and for better or for worse, we are home to that site and we've been working on that site for a long time. And because of that, we also encourage very strong community engagement. I think tonight's showing of people interested in this project shows that there's a large concern. People need to be engaged, and I would like to have our office be availed of working with you to work with whether it's, you know, websites or community meetings, community advisor groups. I've been working with the Raymark community advisory groups since 1991. So, we have a lot of experience, and I think that we could bring a lot to bear to the project. Thank you.

U.S. Army Response: The Army will provide a point of contact for community relations.

MS. MARK: Beth, could we just respond to the gentleman before (MR. GRIBBON)?

MS. GOSSELIN: Yes. I apologize.

MR. DELANO: So, I just wanted to clarify why is it 18 months and not six months. Basically, we talked about the difference between navigational dredging and environmental dredging, and at this particular site -- actually, the picture up there is a great example as to why it's more complex. You can see the low tide line out there. A lot of our work is above the low tide line. So, we lose anywhere from five to seven hours per tidal cycle because there's no water for dredging. So, we lose half our day. The other piece of it is we're using smaller equipment. It's precision work. We don't want to take out more than we really need to because the objective is very different from a navigational job. So, we looked at this very carefully. We did a lot of

analysis of productivity rates. We understand the point, but this is kind of different. It's a different animal. But we will look at it again. That's part of the process. We're constantly evaluating how to do it better. So, we obviously appreciate the comment and we are trying to get that time frame more efficient.

MS. GOSSELIN: Thank you. Harold Watson. After Mr. Watson, it will be Redacted - Privacy Act Redacted - Privacy Act

MR. WATSON: Good evening. I'm Harold Watson. I'm on the Planning Commission in Stratford, but I'm also a citizen here tonight talking about the whole shoreline that you're working on is a part of our greenway current and projected. We're very fortunate that we've managed to raise about two-and-a-half-million dollars for funds to implement the next phases of our greenway. We are spending a lot of money in the spring completing the section that will end up right where you're starting your work. So, what I don't want is everybody out riding on our scenic greenway to end up not being able to go. So, I'm here to request that in your planning that you allow the area along DeLuca Field and the area along Main Street to remain as part of our greenway that takes our riders down to Short Beach for as much as possible. We managed to do this the last time we did a remediation and kept the greenway open as long as we could. Also, at the north end of the property there's an area that also -- on planning, I'm also working on our Coastal Resiliency Project, and we have an area that we need to have filled in, that we need to have a dike, a short area several hundred yards, that you are putting an access road on. And if there's a way that you could make that access road be a permanent basis for our eventual land dike, what you will be doing is helping us provide the connectivity between our existing greenway and the greenway that's going to run across the top of the existing dike. So, you actually win a lot of new friends in Stratford if there's any way you can accomplish that. And our planner or any of our greenway people would be happy to talk with you about it. Thank you.

U.S. Army Response: The Developer will be responsible for any modifications to the land-side of the facility.

MS. GOSSELIN: Thank you. Redacted - Privacy Ac. No. Okay. Redacted - Privacy Act. No. Redacted - Privacy Act Redacted - Privacy Act. And after Redacted - Privacy Act it will be Bill O'Brien.

Redacted - Privacy Act: My name is Redacted - Privacy Act. Most people know me as Redacted - Pri. But, anyway, 30 years ago one of my sons was a machinist at Avco, and he was told at the time he was working on metals that had low-grade -- I can't think of the right word. It has to do with --

AUDIENCE MEMBER: Radioactive.

Redacted - Privacy Act: Radio, yes. Thank you. As a matter of fact, the company made them sign with all the fellas that were working on that particular metal. Even though they were told it was low-grade radioactivity, they had to sign a paper I guess waiving any rights to sue. My question to you is: Of all the materials that you tested, did you test for radioactivity?

MR. DELANO: I don't believe that we did. That information would be in a remedial investigation report which was done some years ago. But, no, we have not done it recently in our recent studies.

U.S. Army Response: See response to Town of Stratford comments in Section 3.1 of the Responsiveness Summary.

MS. GOSSELIN: Thank you. Bill O'Brien. And after Mr. O'Brien, it will be Redacted - Privacy Act

MR. O'BRIEN: Bill O'Brien, long-time resident and current 9th District councilman. I'm certainly no expert at this. I'm so happy to see this progress. I learned to swim at Short Beach. My one claim to fame is I swam across the Housatonic River by myself one time. Luckily, I didn't drown. But we recently were rated number five in the state, small town with a good quality of life, and I see this project will just move us forward more. So, let's make it happen as soon as possible.

MS. GOSSELIN: Thank you. Redacted - Privacy Act. And after Redacted - Privacy Act, Redacted - Privacy Act Redacted - Privacy Act. Okay. And after it will be Redacted - Privacy Act.

Redacted - Privacy Act: Hi. Is there going to be a copy of this presentation?

MS. MARK: Yes, on the website.

MS. GOSSELIN: The question was will there be a copy of the presentation, and it will be available on the website.

Redacted - Privacy Act: Is there going to be anything regarding airborne quality, air quality? We're a next-door neighbor to that site, and the winds are pretty strong over there. Is that going to be monitored during this cleanup?

MR. DELANO: Yes. During the remediation, we would have an air-monitoring program to look at the dust, if there is any, but they'll also be measures in place to minimize any airborne contamination as well. That will be a requirement in the Army Corps' specifications.

Redacted - Privacy Act: My name is Redacted - Privacy Act. I know I look different, but I have to say what I have to say. It's terrible. Every time they say here they're going to do something, it's not done. By the time they do something, I'll be dead because of my age. I'm 86 years old. And, you know, I lost a son. He worked over at Avco in the labor department. He died from Lou Gehrig's disease. I don't know if it caused that. He died 11 years ago.

Redacted - Privacy Act: We have the same concerns as the lady regarding the radioactive material.

MS. GOSSELIN: Thank you very much. Redacted - Privacy Act.

Redacted - Privacy Act: I'm just a resident of Stratford. And my primary concern was the reuse of the materials that were dredged out, and a lot of that was addressed, 10 percent contaminated, remove 90 percent, stored on-site. And will it remain on-site for use in Stratford, or is that the decision of the developer?

MS. MARK: Yes. Yes. As Tony said in his presentation, the roughly 130,000-or-so cubic yards of material will be amended with Portland cement to increase the strength, and the developer can use it as fill to raise the elevation of the property when they come in to do their --

Redacted - Privacy Act: Will it become the developer's property so to speak?

MS. MARK: They'll be responsible for maintaining it, yes.

Redacted - Privacy Act: Thank you. Redacted - Privacy Act. And after Redacted - Privacy Act, it will be Redacted - Privacy Act

Redacted - Privacy Act: Hi. Thank you. I am a private citizen in Stratford. Two questions I have. You're dredging down four feet. Are you sealing that off? Is there any potential for some of it that's below four feet to leach back up to the property? That's one question. Second question is, the waters, will it leach back into the waters, because you're maybe sealing on top? Is there a chance for it to leach into the river or the waterways?

MR. DELANO: Thank you for your question. The first part of the question is will contamination rise upward from the dredged surface. We're essentially dredging to clean material, to background conditions. So, the answer is, no, there really is no chance for that to happen in the Tidal Flats. There won't be remaining contamination. The other part of it -- so your question is would water from I think --

Redacted - Privacy Act: From the waterways.

MR. DELANO: Groundwater?

Redacted - Privacy Act: Right.

MR. DELANO: So, again, is the responsibility -- it's not the Army Corps' responsibility or the Army's. Sorry. That becomes an upland issue, meaning that is for the future owner of the site to control.

Redacted - Privacy Act: And a follow-up to that question is, is there ongoing monitoring of that property after it's developed and is that by the town, the Army Corps of Engineers or --

MR. DELANO: It's not the Army Corps. I might defer to Tom on this question. It would be the future owner of the property.

MR. LINEER: That is a very good question which goes beyond the scope of what we have here. The future owner has to keep the property in compliance with the State and Federal laws. The Army does not go back and monitor them, but I would think the future owner has to abide by the state and federal laws and reinforce them.

Redacted - Privacy Act: Okay. Two quick ones. Where Raybestos was redone, I understand there's some piping under there to kind of seal the gases and that's being monitored on the Raybestos? The second is, do you have examples of the properties that have been remediated and the viability of those properties now, meaning what do they look like, how are they developed, so we can get an idea?

MR. LINEER: I could give you some examples of properties that have been -- have been done. For example, what comes to my mind in my experience at BRAC, the example that I would

give you is the Indiana Army Ammunition Plant which is near Louisville, Kentucky, which is now a rather large complex of warehouses and businesses. To the point, that a major entity built a huge distribution site there to utilize the air -- the commercial -- not the commercial but the airfreight capabilities for Louisville distribution. So, that would be an example that the Army cleaned up the site and then sold the property.

Redacted - Privacy Act: So, if they can on the website, can you just list a couple of places, examples, so we can get an idea?

MR. LINEER: Yeah.

Redacted - Privacy Act: That would be great.

MS. GOSSELIN: Thank you. Redacted - Privacy Act please. And Redacted - Privacy Act is the last speaker that registered ahead of time. However, we have time. So, if there's anyone that did not register and would like a chance to speak, please feel free to do so after Redacted - Privacy Act.

Redacted - Privacy Act: Can everyone hear me? First of all, I want to commend the group here for what they've done. I doubt there are very few people that can comment on your study, but I will say this, that the study is 21 years in passing. Twenty-one years ago, the DOD, which is responsible for industrial property adjudged the Army Engine Plant is not required any longer. It was an unfortunate period of time because it was a period of time when we were retracting. We were sending all our manufacturing overseas. Now, unfortunately, we're in the reverse position where we have a toxic site and people looking for space. So, it behooves us to find out what we want to do to a plant that once employed over 10,000 people. The one thing I would like to dwell upon is some of the missing points in your plan, in my opinion. I don't think you addressed the main goal which is kind of an elusive thing to me. I don't really know what the main goal is of this total project, toxic cleanup of the total site, not just the portion of which your plan -- I think it takes two elements of the main site. Is that correct?

MS. MARK: Yeah.

Redacted - Privacy Act: So, we really need a grand plan. I see the need for a project, overall project plan, with milestone charts, with milestone goals keeping track and see how this thing is going. I wrote a letter to President Trump several years back. Several months later he responded via the Environmental Protection Agency whom I thought -- who he thought was the major player. And she responded with a visit, Mayor Hoydick, Trump, who I want to commend because he's doing a lot of the work. I'm kind of in the background. He's aware I'm there, but I'm just in the background there. They had a good meeting, and from that meeting the EPA did a lot of work. However, it was very obvious that the Department of Defense was not doing their job. They were slow on the ball. So, I wrote a letter to three secretaries of defense. Estes (phonetic) I think is the last one. And I got a response from I think your boss saying that they were going to do certain things, but he did not respond to the overall milestone plan which I suggested. I also did suggest it because I have some experience in this project management that there are times when you need a team effort. Now, I see everyone working individually. I see the federal, EPA, the state, I see the DOD, I see the Department of Environment, a whole bunch. These people should get

some members and have periodic meetings and a leader so that when you have a problem you go to this leader. And then each of these individual representatives, they should have access to some senior individual in their own respective groups that can make a decision when there's a problem arising.

MS. GOSSELIN: Thank you so much. If you don't mind, we're going to allow the panel to answer your first question.

Redacted - Privacy Act: Okay.

MR. LINEER: Sir, I do remember your letters. So, I'm familiar with what you wrote and what you said. As far as what the response was, we're doing exactly what the response to you was. We are proceeding with the environmental piece. There's two parts to this equation. One is the environmental piece which the Army is doing Outfall-008 and mudflats, and the second part of the equation, which we do not address and is not part of this meeting, is the uplands which is to sell the property from the Army to the purchaser. Okay. So, that, if you will, is the grand plan. Now, what the purchaser does with the property is a different discussion.

Redacted - Privacy Act: It can't be -- there's one goal. There's one goal that we have to achieve. Everyone has to work towards that goal. You can't do it individually.

MR. LINEER: I agree with you, and my brief comment at the beginning, what I tried to convey, was the team effort that got us here, and that includes the regulators, both federal and state, the officials from the federal and state, as well as the Corps of Engineers and the Department of the Army. This has not been a one-person show. This has been many people. Before you are some very talented and gifted experts.

Redacted - Privacy Act: May I ask, is there a major milestone plan? Do you have one major milestone plan that I can look at and monitor the progress?

MR. LINEER: Well, we can -- you're looking for something that isn't there at this time. The best milestone is what Tony briefed as far as what we have to get to the record of decision which then becomes our cleanup. We abide by that record of decision which the state, federal, and the Army signed as far as the cleanup which is protective of human health as well as the ecological health. That part we can control. The other part is the other part of the equation. That is not subject to this hearing and which I cannot give you.

MS. GOSSELIN: Thank you so much. We have another speaker waiting.

Redacted - Privacy Act: I have in addition to my -- I have a written thing of what I planned to say.

MS. GOSSELIN: Great. I will take that and we can give it to the stenographer who will transcribe it. Thank you so much. (Redacted - Privacy Actwritten submission is annexed as an addendum to the hearing minutes.)

U.S. Army Response: See response to Redacted - Privacy Act written comments in Section 3.2 of the Responsiveness Summary.

MS. GOSSELIN: Next. Yes.

Redacted - Privacy Act: Hi. Redacted - Privacy Act. I live on the Housatonic River just north of Outriggers. I have two questions. One is -- maybe I misread the maps, but it seems like a fairly small area that's going to be cleaned up, and I wonder -- I know you did a lot of testing. Is it that only that area is contaminated and everything on the other side is zero, or is there some acceptable level of contamination that we've designed?

MR. DELANO: We're going to go to a slide so you can see it. Are you referring to that plan?

Redacted - Privacy Act: No. It was a skinny purple --

MR. DELANO: All right. So, on the left is the Tidal Flats. That's a 40-something acre area. To the right is Outfall-008. That's essentially a ditch. That's why it's a long skinny shape.

AUDIENCE MEMBER: Down at the end of the runway?

MR. DELANO: Correct. That's right. In the lower middle of that right-hand figure, you can see the end of the runway and you see our ditch. The subject of our remediation is the purplish color. And then to the right you'll see what's known as the Marine Basin. That goes out to the Housatonic River. So, that footprint that you see there is reflective of our testing. And also the fact that this is a depressed -- it's a ditch. It's four feet deep or so. And the way the discharges came out of that outfalling on the left, it traveled down the ditch and settled in the ditch.

Redacted - Privacy Act: And where we're not seeing your map showing excavation, that's clean?

MR. DELANO: Correct.

Redacted - Privacy Act: Okay. And my other question is, I swim in that river, and I wonder if I have any concerns when this work is being done. I'm not too far up from Outriggers.

MR. DELANO: I'm not familiar with where Outriggers is.

Redacted - Privacy Act: Maybe a half a mile north of the Army Engine plant, maybe a mile.

MR. DELANO: So, during our dredging we'll use what's known as best management practices to limit -- I think your question is related to what gets stirred up.

Redacted - Privacy Act: Right.

MR. DELANO: To limit that. And we'll have a robust monitoring program to make sure that we're not -- I'm not going to say there won't be anything stirred up because that's how dredging works. That's what happens. But we'll have an up and downstream. Keep in mind, it's tide of course. So, that changes. But we'll have monitoring stations which monitor turbidity which

is the amount of light-reflecting solids in the water, and we'll also have another program to measure water quality parameters.

Redacted - Privacy Act: Is there a place where I can monitor that myself before I go in, the website maybe or --

MR. DELANO: Oh. We haven't discussed that, but we'll take that as a comment.

U.S. Army Response: Discussion of the types and frequency of monitoring to be conducted during the remediation will be presented in the Design document.

Redacted - Privacy Act: Okay. Thank you.

MS. GOSSELIN: Yes.

MR. GRESKO: Hi. I'm Joe Gresko, a state representative. I'm fortunate enough to serve in the district that this is in. Is the Army Corps going to do the work or contract it out?

MS. MARK: We'll be contracting that out.

MR. GRESKO: Is there a contractor in mind or you bid it?

MS. MARK: We would be putting out a request for bids at a later date.

MR. GRESKO: As far as the dewatering, do you do a dewatering right where you excavate, or are you going to pull it upland to the parking lot or --

MS. MARK: It will be dewatered in a location upland on a part of the Army site.

MR. GRESKO: So, you would be able to see it from Main Street as you're driving by kind of thing? I'm just trying to prepare people when they see this stuff, they have an idea of what's being accomplished.

MR. DELANO: We'll look for another slide. The dewatering might mean a few different things to different people. In the context of dredge sediments, so looking at the Tidal Flats, the large green area, that will be dredged from beneath the water. When that comes up, there will be extra water that needs to drain out. That's one aspect of dewatering. There's immediate dewatering, and then it's placed in a barge or a scow with some warm water. Also, when you put it -- I think we referred to stockpiles. There could be additional dewatering as well. The stockpile sits, water comes out, eventually you add Portland cement to dry it up. So, you'll see on that drawing there is an area shown in brown like this. It's a square-ish area where some of that work will happen. So, I think your question is would you be able to see it. There are buildings in front of it now. So, as it is now, you would not be able to see it from the road. Was that --

MR. GRESKO: Yeah, that's fine. Also, will the stockpiles be permanent or, like you said, once they're finished with the reuse -- and this kind of dovetails into my next question as far as is the foot less in all remediated and dredged areas there purposefully because it's just how much

that is being taken out, or are you leaving it down a foot because eventually the river is going to fill it up anyway?

MR. DELANO: I might have lost the first part of the question, but the second part was about the backfill material. So, yes, one foot below I'll call it the current mud line, where the sediment is today, we're going to backfill to one foot below. The idea there is we can obtain a sandy material and place it. It's workable. But if you look at the material that's out there now, it's not sand. It's -- someone referred to it as I think muck. It's a silty material. It's -- you don't want to try to walk in it. So, the idea is one foot less, and then over time there will be similar materials that come in and repopulate the area with the right material.

MR. GRESKO: My last question as far as storm outflows go, there was some work done there that kind of capped some of the storm outflows. Is that something that is going to stay permanently capped, or will you be restoring them?

MR. DELANO: Okay. I think that would be an upland issue related to what the developer, future property owner, has for plans. They were capped at one point. Any new development is going to have to have an approved storm water drainage system, and there would be no reason to uncap anything old that I know of. But, again, that's not what we're addressing tonight.

MR. GRESKO: Thank you.

MS. GOSSELIN: Thank you.

Redacted - Privacy Act: Redacted - Privacy Act. I'm a resident of Stratford. Couple of quick questions. Could you clarify the timing, please? You talked about 8 months and then a 24-month period. What's going on in those two periods, and can any of that be successive -- or at the same time I should say, simultaneous?

MR. DELANO: I'll take that one. So, one of our colleagues here is working on this issue. The 18 months is what we'll call an allowable work window in the river, and that's for in-river, in-water work. We want to get that work done in basically a season and a half. But as you see on this -- I've got to look at it -- you see this figure that's shown on there. I think it's one of the posterboards. There's some work on-site that we have to do to be able to handle the dredge sediments. So, when the dredge is out there, we've got lead time to prepare the site, two or three months on either end to prepare the site and close the site. So, we've got 18 months of in-water dredging plus a little bit on either end to handle material on the site.

Redacted - Privacy Act: So, is it 18 plus 24?

MR. DELANO: No, no. It's 24.

Redacted - Privacy Act: 24 total?

MR. DELANO: Right. The 18 falls within the 24.

Redacted - Privacy Act: Got it. Thank you. And I wonder how this project affects the timing of when the sale could be closed or when the development on the property could begin regardless of who it is?

MR. LINEER: Under the current purchase and sales agreement, there are some parts of the agreement which require the purchaser to take the property. One of the requirements is when the record of decision is signed there is a two-month window for the conveyance of the property. So, that could happen in the spring, and that's what we're in talks about with them right now, to do that, which then allows them to move forward on their side of it.

Redacted - Privacy Act: So, you believe they could do some work on the land while you're working in the river?

MR. LINEER: The idea would be it would be done in parallel. The devil is going to be in the details and the coordination. It's not simple.

Redacted - Privacy Act: Thank you.

MS. GOSSELIN: Thank you. Yes, sir.

Redacted - Privacy Act: Hello. I'm Redacted - Privacy Act (phonetic). I'm just a resident. I just have one quick question. Who is paying for this?

MR. LINEER: Well, I could say my boss is paying for it, but the Army is paying for it. This is Army from the BRAC Division from Headquarters - Department of the Army. MR.

Redacted - Privacy Act: So, no state money, no town money?

MR. LINEER: That is correct. That is correct.

Redacted - Privacy Act: Thank you.

MS. GOSSELIN: Anybody else that would like to provide a comment or have a question answered? Okay. I would like to call up -- yes.

AUDIENCE MEMBER: Who is paying for knocking down building 16, that brown spot?

MS. GOSSELIN: The question was who is paying for building 16.

MR. LINEER: The Army is removing building 16 for several reasons. Plus, it also, provides an area for the remediation once we have -- the building had severe problems to it, both health and structural.

AUDIENCE MEMBER: I know. I was there for 47 years. That was my home away from home.

MR. LINEER: I'm sorry to take away your home away from home. But the Army is paying for it. That should be done sometime this spring.

AUDIENCE MEMBER: I see you've started.

MR. LINEER: Oh, yes. Yes.

MS. GOSSELIN: Yes.

AUDIENCE MEMBER: Can I ask a question?

MS. GOSSELIN: Yes.

AUDIENCE MEMBER: Two questions. Is the Army aware that we remediated the south -- what is it -- western side of the property where you have Outfall-008 coming through, that all the land around that was remediated when we did the realignment of Main Street two or three years ago?

MS. MARK: Yes.

AUDIENCE MEMBER: So, they're essentially just going within the water area and dredging more which was not done in the original remediation?

MS. MARK: Right.

AUDIENCE MEMBER: My second question is, are you removing any of the existing dike with the area that you're -- the building that you're tearing down?

MR. LINEER: No.

AUDIENCE MEMBER: So, that we still -- our plan still for having a greenway on top of the dike going out to the causeway would still be an existing possibility for us?

MR. LINEER: Yes.

AUDIENCE MEMBER: Someone mentioned here earlier that it was 20-foot reef. The Town of Stratford has an agreement with the Army that when the property is sold we will have a 200-foot greenway along the high tide mark. So, someone mentioned it was 20 feet, and I don't want that misinformation to be spread in any way.

MS. GOSSELIN: Thank you. Final questions, comments? Yes.

AUDIENCE MEMBER: Just quickly. At the bottom of one of the slides, there was this very long website.

MS. GOSSELIN: Yes.

AUDIENCE MEMBER: Is that the one website to get this information?

MS. GOSSELIN: Yes, it is. We will -- if you want to see us at the registration table, we'll make sure you get the very long website. You're correct.

AUDIENCE MEMBER: Thank you.

MS. GOSSELIN: Yes. I apologize. So, seeing there are no more comments, I'd like to call in the Hearing Officer, Erika Mark, to provide closing remarks.

MS. MARK: We have heard many thoughtful statements this evening, and your comments and concerns will be considered as we move forward with the design of this project and the finalization of the decision document in the spring of 2020. I would like to thank you, everyone, for attending the public meeting today on our decision regarding the Proposed Plan for the Environmental Restoration at the Stratford Army Engine Plant site. As a reminder, public Comments can be submitted to the Corps through December 13, 2019. Thank you for your participation in this meeting. This meeting is now officially closed. I just wanted to make a correction. On Tony's last slide, if anybody wrote down my e-mail address, it was written incorrectly on the slide. My middle initial is “L”. I wanted to make that one final correction. Thank you again for coming tonight.

(Proceedings ended.)

APPENDIX A

MINUTES OF PUBLIC MEETING
December 10, 2019

Stratford, Connecticut

Proceedings 1

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

PROPOSED PLAN FOR
ENVIRONMENTAL RESTORATION

Stratford Army Engine Plant, Stratford, Connecticut
Contract No. W912WJ-15-D-003

MINUTES OF PUBLIC MEETING

December 10, 2019, 6:30pm to 8:30pm

Baldwin Center

1000 W. Broad Street

Stratford, Connecticut 06615

S P E A K E R S:

BETH GOSSELIN, Chief of Public Affairs, USACE; moderator and facilitator
ERIKA MARK, USACE Project Manager for the Environmental Restoration at Stratford Army Engine Plant; Hearing Officer
TOM LINEER, Base Realignment Enclosure Program Manager, Headquarters - Department of the Army
TONY DELANO, USACE Environmental Engineer, Environmental Restoration for Stratford Army Engine Plant

Jennifer Gruseke, Certified Shorthand Reporter

CHAIT DIGITAL COURT REPORTING & VIDEOGRAPHY
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Proceedings

MS. GOSSELIN: Good evening. I'd like to welcome you to the public meeting for the Proposed Plan for Environmental Restoration for the Tidal Flats and Outfall-008 Drainage Ditch sediments at the Stratford Army Engine Plant site located in Stratford, Connecticut.

My name is Beth Gosselin, and I'm the Chief of Public Affairs for the U.S. Army Corps of Engineers in New England. I will be your moderator and facilitator tonight. Our hearing officer today is Erika Mark, the U.S. Army Corps of Engineer's Project Manager for the Environmental Restoration at Stratford Army Engine Plant.

At this time I will introduce the people at the front table. Tom Lineer, Base Realignment Enclosure Program Manager from Headquarters - Department of the Army. Tony Delano, Environmental Engineer, Environmental Restoration for Stratford Army Engine Plant. Brendan Spray, U.S. Army Corps of Engineers, Civil Design Engineer for the Environmental Restoration at Stratford Army Engine Plant.

Should you need copies of the public notice, the meeting procedures, or other pertinent information, it is available at the registration table.

We're here to conduct a public meeting regarding the Proposed Plan for environmental restoration

at the Stratford Army Engine Plant. We understand that there's great interest on the redevelopment of this area. However, the U.S. Army Corps of Engineers does not have a role in these particular decisions. As such, I would request that you direct any questions about the development to the Town of Stratford.

To obtain an accurate record of all statements, this meeting is being recorded by a court reporter, and a transcript will be prepared.

The agenda for the meeting is our hearing officer, Erika Mark, will address the meeting. She will be followed by Tom Lineer who will say a few words. The environmental engineer, Tom Delano, will then provide an overview of the project.

Before we begin, I'd like to remind you of the importance of completing the registration cards that were available at the door. These cards serve two purposes. First, they let us know that you're interested in this project so we can keep you informed. Second, they provide a list of those who wish to speak tonight. Those who wish to speak or ask questions will be provided three minutes. If you did not complete a card but wish to speak or receive further information, you can go back to the registration desk or at the end of the meeting

they'll be available to speak.

It's important to note that these statements said here tonight or these questions will be given equal consideration along with the written or e-mail statements.

Ladies and gentlemen, at this time I'll turn it over to our hearing officer, Erika Mark.

MS. MARK: Good evening. Welcome to the Corps of Engineers public meeting. Again, this is on the Proposed Plan for the remediation of the Tidal Flats and Outfall-008 at the Stratford Army Engine plant.

Before we begin, I would like to thank you for involving yourself in this process. We take our public comment period very seriously, and we appreciate all of your attendance here tonight. Please feel free to bring up any topics that you feel need to be provided on record specific to the work that we're doing which is the remediation of the Tidal Flats and Outfall-008, and I assure you that all of your comments will be considered during this process.

Today's meeting is being conducted for the purpose of acquiring information that will be considered and evaluated in the Proposed Plan.

I will now invite Tom Lineer from Army BRAC to

make a few opening comments.

MR. LINEER: The Corps tonight will present the Proposed Plan. It has been a long time in coming. They will be able to answer your questions or at least address or take your questions. The Proposed Plan as well as a more extensive final feasibility study is available on the website to review if you choose.

I'd like to note two things. One, this came together through teamwork from the regulators, which is the U.S. Environmental Protection Agency and the Connecticut Department of Engineering and Environmental Protection, the experts from the Corps of Engineers, as well as the State of Connecticut and the local government and officials here. So, they've gotten us to this point, and it's been a long time in coming. It will be a team effort that makes this work that we are proposing to do a success for the community and for the state.

The last note that I want to make is this meeting is focused on the Proposed Plan. The eventual reuse of the facility is not a topic of this meeting. So, please hold those questions until another time or another entity. Thank you.

MS. GOSSELIN: At this time, Tony Delano will be providing some remarks.

MR. DELANO: Thanks, Beth. I'm Tony Delano with the Army Corps of Engineers New England District, and tonight I'm going to discuss the Proposed Plan for the Tidal Flats site and the Outfall-008 site at the Army Engine Plant.

Can I have the next slide. So, our agenda for this evening, I'm going to run through obviously the purpose and summary of the Proposed Plan, a few details on the site location and history. I'm sure you all know where it is, but we'll have a map up there. A brief discussion of the CERCLA process, that is the process that we're following, similar to Superfund. That's the Comprehensive Environmental Response, Compensation and Liability Act. That's the process we're following.

I'll discuss, again, the remedial action objectives, what we're trying to accomplish out there by doing these remediations. I'll also summarize the remedial act itself in terms of what we're cleaning up, the depths, the material. And then the nuts and bolts of it really is a summary of the feasibility study which is one of those parts of the CERCLA process that we just completed over the past couple of years and culminates in a preferred remedy and a Proposed Plan. So, we'll talk about the different options we looked at in the

feasibility study. And then of course I'll discuss the components of the proposed remedy and then the project timeline.

So, the Proposed Plan: The purpose of this document is to present a summary of the alternatives that are analyzed in the feasibility study, and it also recommends preferred alternatives to address the risks of human health and ecological risks. It's important to note that this is a Proposed Plan, we're taking comments, and that it can be modified in the future based on comments that are received from the state or public or other stateholders.

So, as we mentioned, we're taking comments and we'll consider them, and that will be documented later in the CERCLA process in the record of decision.

Okay. So, why are we doing this? What are we protecting? So, there's some risks that have been identified at the site both to human health and ecological risks, receptors. For humans it includes contact with sediment during recreational activity and consumption of fish and shellfish.

For ecological health, we've got -- you can see some of the shore birds there, some fish, different wildlife and threatened and endangered species that we

are protecting through the actions that we take both long-term and short-term. And also wetland resources. There are some wetlands within the bounds of our site that we will -- when we execute the work, we'll do our best to minimize impacts and restore on a one-to-one basis what gets impacted through the work.

Next slide. So, site location. Again, I'm sure most of you know where it is. It's immediately adjacent to the Army Engine Plant at 550 Main Street. You can see the Tidal Flats -- I wish I had a laser pointer -- right in there, the orange, and then the Outfall-008 is kind of a separate site off to the side. The Outfall-008 area is a ditch about a quarter-mile long and then the Tidal Flats is about 47 acres. So, the Proposed Plan covers the remedial action for both of those areas.

So, a little bit on the history of the site. The site was established in -- from about 1927 it was operated by Sikorsky, and then the Air Force took over in about 1951. And later the Army was operating it through about 1997, and they used various chemicals in the processes that they had out there. You can see there's a photo of a Corsair there and also a photo of when the facility was in its prime.

Next slide. I'm looking at it. Yeah. So, up

there you'll see a photo of the model airplane of what was produced and also manufacturing for where they produced engines and different aircraft. So, through the different processes, some releases did occur, both to the Tidal Flats and Outfall-008, and there were various chemicals used in the operations there including plating.

There were -- okay. Next slide. There's a nice aerial. Looking right in the foreground is the Army Engine Plant and then the Tidal Flat area immediately adjacent to Housatonic River and that crosses Nells Island. This gives you good perspective on the main part of the site.

So, the Outfall-008 ditch received some links that had been minimally treated from a chemical waste treatment plant after 1958, and also those contaminants included a series of metals and organic contaminants and CDs. The site was listed in October 1995 on the BRAC list and then was closed in 1997, and since about that time or even earlier, there had been numerous environmental investigations which culminated in the feasibility study.

Okay. Here is our CERCLA process flowchart. The green boxes to the left have all been completed through remedial activities, remedial investigation or

RI, and we have attached feasibility studies. We've completed those activities. We're in the process of identifying the preferred alternative, but we put out the Proposed Plan for review now. And we're actually -- we've started to run parallel with this for the remedial design so that we don't lose time in the schedule.

But also you'll see in the upper right is the decision document. That's the record of decision that will document the selected remedy after we receive public comment, take into account public and safety comment, and then finalize the remedy. And as I mentioned, it might stay the same, it might change a little bit based on comments received through this process. And then after that we move on to contracting and executing the work.

Next slide. Okay. Remedial action objectives: These are essentially the numerical standards that we are going to achieve by cleaning up the site. And at the Tidal Flats we're going to remove up to four feet of sediment over roughly about a 47-acre area that includes the removal of contaminants, PCBs, and mercury and a series of eight metals as well. For example, copper, chromium, lead, and a few other metals as well.

When we do this, we're going to essentially achieve background conditions. That was an important

thing, that we're able to get low enough so that we're achieving what we have in the background.

The numerical standards, they're just -- I'll just say them. You may have questions on them. There's eight metals that essentially it's an average of those eight metals of .5. It's a calculation, it's a quotient. The PCB standard is 1 ppm and lower and the mercury is no more than .55 ppm.

Next one. The Outfall-008 drainage ditches has some similar goals in terms of numerical value, but we're going to take an even four feet out throughout that ditch. Again, with both of these sites, we're protecting ecological receptors and human receptors, and the Outfall-008 ditch will also be consistent with background conditions.

Next slide. Okay. So, here we have kind of a summary of what we're going to be removing. This is the removal action. The project involves removing sediments from the Tidal Flats and from the Outfall-008 ditch. And the way you see this table on here where we've essentially listed this out according to the type of material, and it's important because of the PCB concentration. We have to segregate and manage according to how much -- what concentration of PCBs is present.

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So, you'll see that for the majority of the site at the Tidal Flats, we've got about 130,000 cubic yards. That's less than 1 ppm. So, that's basically not regulated under the PCB regulation laws. And similarly, most of the Outfall-008 area is also regulated that way.

There's also other categories that include 1 to 50 parts per million PCBs and then greater than 50 ppm. Those have to be off-site. Those materials above 1 all have to be taken off-site. The material below 1 can stay on-site. That's why it's important. An important aspect of this project is that sediments less than 1 part per million PCBs would be used on-site, be placed in a stockpile for future use on-site.

So, again, from these volumes, you can see most of the material is reusable on-site, and then a fraction of it, about 10 percent, maybe a little less, would have to go off-site, and that typically means a landfill. And the two drawings on there, the one on the left is the Tidal Flats. The darker colors indicate four-foot removal, and then with the lighter and lighter colors it goes three, two, one. So, you can see that a large area of it is one and two feet and there's some deeper areas that are three and four feet.

The drawing on the right is the Outfall-008

ditch in purple. That's the limits of our remediation, and that is a four-foot cut in the ditch. You can imagine a drainage ditch. We're going to dewater that ditch and excavate four feet of sediment at the bottom of the ditch.

Next slide. A little bit on the feasibility study process and the alternatives, the other options that we looked at. The purpose of the feasibility study is to identify the universe of technologies that are applicable to remediate the site. You screen those technologies to a more promising list and then you assemble them into site-wide alternatives. Those again get screened to a most promising list of site-wide alternatives.

We started out with about 11 alternatives, screened that down to about six alternatives -- sorry -- five alternatives, and then we evaluate those five in detail according to EPA's CERCLA criteria. There are nine criteria.

After you do that detailed evaluation, you then kind of rack and stack them, figure out which one is best. We used an objective ranking system scoring them and then came up with a preferred remedy by scoring the alternatives.

So, some of the alternatives that we evaluated included hydraulic dredging, mechanical dredging with truck transport, mechanical dredging with a hydraulic pipeline. That's also known as hybrid where you're digging it one way and conveying it in a pipeline hydraulically.

And then also there's another technology. We looked at mechanical dredging followed by pneumatic pipeline which uses air to convey the sediments. And then finally mechanical dredging with barge transport off-site meaning it doesn't come on land. It ends up in a barge and it's taken elsewhere. So, we evaluate those five alternatives, and as I said, against the nine criteria, and rank them.

So, out of all that, our preferred remedial alternative is Alternative 3 for the Tidal Flats in the feasibility study. Some of the key considerations that you have to meet when you're selecting preferred remedy are that, number one, it has to be protective of human health in the environment. The alternative has to comply with ARARS. ARARS is an acronym. It's Applicable or Relevant and Appropriate Requirements. You have to basically comply with the relevant laws. They have to be cost-effective. And then there's a series of criteria

that are known as balancing criteria. You have to provide the best overall balance of those -- the best trade-off of the balancing criteria.

So, our analysis led to, as I mentioned, Alternative 3 which includes mechanical dredging with truck transport on-site, gravity drainage, solidification which is the addition of Portland cement to the material to help make it a workable, placable, compatible material and useable material, and also that allows you to use it on-site for beneficial reuse in the future.

And then also we have components that include confirmation sampling to ensure that we've removed all contamination. And then backfilling which would come from either an upland source or a local in-water source, and that material would likely be a medium sand, like a beach sand type of material for backfill. And then finally restoration. There's a component of wetland restoration as well. I mentioned that earlier.

So, Outfall-008 is the quarter-mile long ditch four-foot excavation. To execute that work we would isolate and dewater the ditch and essentially do the work in the dry. It won't be completely dry, but it will be mostly -- most of the water will be removed and we would maintain low water conditions so we can see what we're

doing in four feet.

The excavated material will be gravity-drained again and then solidified as necessary. The ditch will be backfilled and restored, and then material would either -- as I mentioned earlier, some of the material needs to go off-site because of the PCBs and then some will remain on-site for beneficial reuse.

Next slide. So, why the preferred remedy? What are the benefits to this remedy? Again, it's a mechanical dredging followed by on-site truck transport. You dredge it, you place it in a -- there's a couple of steps involved. You place it in a barge and then you place it in a truck and haul it on the site for processing.

In our evaluations, that operation had the highest productivity, meaning how many cubic yards, how much material can you take out in a day. That one was evaluated the best. It's also reusing a special bucket. There's a picture of it there on the slide. It's an environmental plant shell bucket that's level-cut. You probably can't see it, but if you have handouts or look on the website, you'll see on the bottom there's a demonstration of what level-cut means. It means that you're not scooping out material in an arc. You're doing

it in a straight line, and that helps minimize taking out extra material. It makes things more efficient.

So, also this process minimizes the over-dredge and the resuspension of sediments which is important because you don't want to be stirring things up. And then there's minimal mixing when you do this of underlying clean material as well with the material you're targeting for removal.

This alternative also generates the lowest volume of water among those alternatives that I discussed. It's essentially gravity-draining. You don't get a lot of extra water in this bucket. You get some, but not like the other options that include hydraulic dredging. So, it's efficient. It's an efficient process. And, again, this alternative provides the best balance and cost benefits overall.

So, a few things. This preferred remedy has been developed in concert with EPA and the state, and the Army has throughout this process placed the emphasis on reducing exposure through removal of sediments. And the benefit of that is you're getting the material out, you're getting the site clean, and there are no long-term monitoring requirements.

In these sediment projects, sometimes there's

other options that don't include removal. We're doing a complete removal of the material that's affected. Again, the alternative would reduce ecological and human risks of two contaminants back down to background levels.

The Army, the Connecticut DEEP, and EPA have developed this together, and we agree that this is the best option to be protective of the health and the environment.

So, finally here on the project schedule, today is the public meeting, and then the commentary closes this Friday. So, there's several more days to get written comments in. Then we'll evaluate those, and through the process we'll develop a response and summary which is essentially, we take the comments, we develop a formal response, and that goes into the record decision as an appendix. And then the preferred remedy as discussed may or may not be altered in some way based on those comments, and that's in -- on February 17th we'll have that draft, a decision available, and then they'll be a final record decision in April, April 10th.

So, the project time frame. What we've got in the Proposed Plan is a schedule that includes essentially working 12 months per year, 24 hours a day for dredging, seven days per week for dredging. That's the best option for

getting this project done in about 18 months. It minimizes -- it's going to minimize the time required to complete the work to do it this way. You only need one mobilization. We get the equipment to the site, prepare the site, work straight for about 18 months, and then we're done. That's the in-water work.

The on-land work because of some other things that have to be done on-site is probably going to be about 24 months. That's the estimate that we have. It's also important to note that the Army continues to work with the city and with the Connecticut DEEP on this Proposed Plan and the scheduling and all those key details. That's essentially what I have tonight.

Next slide. Comments are open through the end of this week, and you can submit them. There's more information on the website, but you can mail them in, you can e-mail them. And then project information is located at the website on here.

That concludes what I wanted to say.

MS. GOSSELIN: Thank you.

Okay. Thank you very much, Tony.

The meeting today will be conducted in a manner so that all who desire to express their views will be given an opportunity to do so. To preserve the right of

all to express their views, I ask that there be no interruptions and that all speakers abide by the three-minute time restriction so that all who wish to speak will have an opportunity.

As noted before, a transcript of the meeting will be prepared and the record will remain open. Written comments may be submitted tonight. There's a worksheet in the back that you can submit and hand to one of us directly. You may e-mail or send it by mail, and you have until December 13th.

Individual speaking today will be called to the microphone in the order that they signed in. When making a statement, please come forward to the microphone and state your name and the interest you represent. If you speak as an individual, please say so.

We will now receive your comments according to our meeting protocols, and I'd like to take a minute to recognize the elected officials in the room here and thank them for their time in coming.

So, the first speaker will be Ed Scinto.

AUDIENCE MEMBER: Mr. Scinto couldn't get off work. He's the chairman of the Waterfront Harbor Management Commission. He's asked us to speak in place of him.

MS. GOSSELIN: Yes, please. Come on up. You can use the microphone. That's fine.

So, if you didn't hear, Mr. Scinto is not available right now, but he has colleagues that will provide comments.

MR. STEADMAN: My name is Geoff Steadman. I'm a planning consultant with the Waterfront Harbor Management Commission. I've been a planning consultant for 32 years. That, of course, doesn't mean a whole lot other than I know 32 years ago we were encouraging and talking about redevelopment of this property and cleanup of the river.

Our interests, and I'll summarize them quickly, is that we encourage and support redevelopment of the property and achievement of the economic benefits that would provide to the region and to the town, but we also support a redevelopment of the substantial water-dependent component and the public access amenities that are a benefit to the people in Stratford and support remediation of the river in a way that's done to protect the river's substantial shellfish resources. The river supports, as you know, the most important sea oyster grounds in the State of Connecticut.

The Harbor Commission's authorities in this

regard are established by a special act of the legislature in 1957 and by the state's Harbor Management Act in 1984 which was introduced by Stratford State Senator "Doc" George Gunther who is the longest-serving legislator in Connecticut history. His intent with the Harbor Management Act was to increase local responsibility and authority in managing and navigating waterways.

The town has a harbor management plan. Of course, the plan doesn't say how this area should be remediated, but it has policies to protect and encourage water-dependent uses and to protect coastal resources and provide public access.

So, the Harbor Commission will be reviewing permit applications for the different work that needs to be done on this property including many applications for state approvals, and pursuant to the general statutes and recommendations the Harbor Commission pursuant to the Harbor Management Plan is binding on the decisions of state officials unless they show cause otherwise.

The other thing we hope will be part of the redevelopment is the substantial historic component, this site's place in the history of aviation which I won't go into now.

Also, two years ago we supported -- and Ms. Mark was the project officer -- the largest state funded-dredging project in Connecticut history which was to dredge the Housatonic River, not just for beach erosion at Hammonasset but for maintaining water-dependent usage and opportunities for future water-dependent usage.

So, we hope that this remediation plan can be done in a way that does not diminish opportunities for future water-dependent uses and we've prepared some plans for that.

With respect to remediation -- and we'll put all of these comments into a letter. I've got 18 seconds left. But we have questions about the remediation that I think you should address in your decision. For example, why are you doing the in-water first, water remediation, before you do the upland remediation? How are you segregating the PCBs to move off-site?

And I guess my time limit is up. So sorry to talk so quickly. But we look forward to reviewing these plans. We support the remediation being done in a way that protects the river's substantial environmental resources and shellfish resources.

MS. GOSSELIN: Thank you. And as we noted

earlier, written comments and oral comments have the same amount of weight.

MR. STEADMAN: Thank you.

MS. GOSSELIN: I notice, is Geoff Steadman also going to speak?

MR. STEADMAN: That was me.

MS. GOSSELIN: That was you. Okay.

Okay. Redacted - Privacy Act .

AUDIENCE MEMBER: He had to leave.

MS. GOSSELIN: Johnathan Ackley. I apologize in advance for butchering any names.

MR. ACKLEY: I'm going to speak as an individual tonight, but I am a Harbor Waterfront commissioner. I'm speaking from growing up in Lordship. I've been living in Stratford for 68 years. We all enjoy that river. We all go to Short Beach. It's very important, and we're happy to assist you in any way we can to get this project going and running.

But we have to be cognizant of the fact that along the river there's golf clubs, there's boating, there's fishing boats, and there's an oyster industry and possibly a clam industry. So, we certainly don't want to end anybody's livelihood.

Thank you.

MS. GOSSELIN: Thank you. Susmitha Attota. We made it -- it's like you're going down the aisle. I apologize.

MS. ATTOTA: It's okay. At least you said my name right.

MS. GOSSELIN: Oh, good.

MS. ATTOTA: Thank you for the presentation. I applaud what you're doing here. I just have one concern I would say. I'm a town planner, and we have a question with the plan that was adopted in 2016. And the plan recommends that the existing river by the SAEP property be elevated at least to sixteen feet so that it can create a levee in the future, and that's part of our strategy by the town to help overcome where there's coastal flooding.

So, the plan recommends some beneficial reuse of sediment, and I was wondering if some of that sediment could be used for elevating the levee that is currently at eight or nine feet which will help with our strategy to overcome coastal flooding as well.

MS. GOSSELIN: Erika, anyone on your team?

MS. MARK: That would be the responsibility of the developer who takes over the property. So, that is definitely something that should be raised with them by

the town.

MR. DELANO: I'll just add to what Erika said. One of my slides had the volume and materials, 130,000 cubic yards roughly. That material will be provided for future use. I wouldn't beep able to say whether that's appropriate for the levee itself, but it is appropriate for use on the site based on our studies.

MS. ATTOTA: Thank you. And also to add to this, there is also a breakwater jetty that comes from the site and maybe, you know, part of the long-term strategy for the greenways, promoting greenways and scenic views and public access to waterfront, is also to make sure that that part of the town is improved for public access. So, maybe we could, you know, split between both.

Thank you.

MS. GOSSELIN: Thank you. Next we have Redacted - Privacy Act

Redacted - Privacy Act

Redacted - Privacy Act: Good evening. My name is Redacted - Privacy Act Redacted - Privacy Act I reside out in Lordship. I've worked on the site for 47 years at Avco. I've watched them go down and make all their catch runs out there in that muck. One question I have is, are you going to isolate the water between the river and the dredging site, or will it be

open to have back and flow from the sediment that's going to be disturbed? Will the river be cut off in any way or will it just be open to the flow?

Another thing the lady just made mention of, that ramp was originally to put down the flying boats into the river. It was leveled off and had electricity put on it. And at the end of the river site it was supposed to be a pavilion or something out there for the town to enjoy. Will that still be there or are you going to take that out?

And other than that, I'm happy to finally see this go because I used to follow it when it was open to the public when we developed -- I think Pete Semenski was the man on the site. I knew him.

So, I hope that we can get this done. How much of this stuff is going to be used on-site back on the other side of the levee, or will that -- and are you going to fill this stuff that you're taking out or are you going to leave that four foot out of there to make it so we can get boats and stuff in there? Is there anything on that?

MS. MARK: The material that we're removing from the Tidal Flats, we would be backfilling to about a foot below current grade. So, the areas that we're excavating

four feet would be backfilled three feet. Areas that are dredged two foot will be backfilled to one.

Redacted - Privacy Act: So, they can't get boats in there and stuff?

MS. MARK: No. We're just doing remediation. So, any future plans --

Redacted - Privacy Act: So, if they want to make a boatyard --

MS. MARK: Yeah. That would be up to the town and require additional permitting.

Redacted - Privacy Act: Thank you.

MS. MARK: Yes, sir. Thank you.

MS. GOSSELIN: Thank you. Next up is Redacted - Privacy Act.

Redacted - Privacy Act: Good evening. I'm Redacted - Privacy Act. I'm a private developer and also a property owner in the Town of Stratford. I'm just curious about the -- great presentation on the partnership and all the studies and the work that you put forth, but it's always a team effort based on money. The developer you have I believe from the last I picked up from a private meeting with the mayor was the Sedgewick Partners. Are they still involved with the Army Corps of Engineers?

MR. LINEER: Sedgewick Partners -- the Army has a purchase and sales agreement with Stratford Renewal

which -- I mean, I'm not quite sure of their corporate entity. I know the name so --

Redacted - Privacy Act: I believe it's Sedgewick Partners, LLC, out of, once again, Greenwich, Putnam -- 100 Putnam Lane in Greenwich. Obviously my concern is if by chance your partner -- because we had this wonderful article that was put out 11 years ago how "Hollywood is Coming to Stratford." Remember that? So, Hollywood never came to Stratford. So, if by chance your partnership, my question is, if it falters, do you have a backup plan or is the Army prepared to pay for everything?

MR. LINEER: Sir, the Army does not have a partnership. We have a purchase and sales agreement. The Army is selling the property. Okay?

Redacted - Privacy Act: Right.

MR. LINEER: So, it's not a partnership.

Redacted - Privacy Act: Gotcha.

MR. LINEER: So, if this agreement does not go through, the Army would then go back out as it did before, as you noted previously our prior failures, we would go back out and try to sell the property again.

Redacted - Privacy Act: So, it's my understanding, though, going back -- of course it's all hearsay -- from my point of view, that the town will -- actually, the developer

was going to pay for half of the cleanup and the other half was going to be paid by the government. But that's not true?

MR. LINEER: Well, I can tell you what the Army is going to do, and it's exactly what Tony briefed with the remediation of the Outfalls in Outfall-008. That's the Army's responsibility.

Redacted - Privacy Act: So, everything that Tony talked about today, the presentation that was made, will be done regardless whether the developer participates or not, which is really a good thing because that means the property is going to be cleaned up?

MR. LINEER: The cleanup of the uplands is the responsibility of the purchaser.

Redacted - Privacy Act: You mean -- "the uplands" meaning referring to the buildings, the structures, is that what you're talking about?

MR. LINEER: That is correct.

Redacted - Privacy Act: Okay. Good. So, basically it's that everything that's going to be going forward would not be stopped in any way because, once again, the uplands has nothing to do with the downlands?

MR. LINEER: There are two different projects.

Redacted - Privacy Act: Right. So, that's a good thing.

MR. LINEER: That's what we're talking about today. The project that the Army is doing which is the Outfalls and the mudflats.

Redacted - Privacy Act: Great. So, the answer to the question is whether or not the developer maintains the agreement that they had with the town or the government because no one knows the details. Obviously you're prepared as the government to clean up the downland?

MR. LINEER: Under the purchase and sales agreement, the purchaser has the requirement to clean up the uplands.

MS. GOSSELIN: Thank you.

Redacted - Privacy Act: Yup. Thank you.

MS. GOSSELIN: Next up we have Patrick Gribbon.

MR. GRIBBON: Thanks for coming. I'm on the Waterfront Commission also. I just wanted to point out a couple of things because timing in life and timing in Stratford and timing is used to be prepared.

Just giving you an example what we did last October. We hired someone to take all the sand from here, 320,000 cubic yards, up to Hammonasset Beach, and they had from October 1st to March 31st. They finished on December 14th. They worked 24 hours a day. They had some bad weather, but they did it. And I think it was

great people. And I think one of the things that we could look at what you're doing now with 47 acres, I would think that the timing could be much better.

The work has been done outside of Connecticut. Whether it was down on the Jersey Shore or in Maryland, it's done normally in about six months. So, I would appreciate it if people could take a look at that. I know that you really don't know what could happen. I'm sure you're not saying you want to do 18 months and pay for that. It's a job that needs to be done.

You know, it took almost 10 years to measure the dirt out there. It was done three times, started 10 years ago. We were aware of it. Started with two feet, then went to four feet, then it went to nine feet, and the answer is -- whatever.

But I think that I appreciate that and I thank all the other people in Stratford and in the State of Connecticut and I think you would too if we only had to worry about it for six months. So, thank you.

MS. GOSSELIN: Thank you. Next up is Andrea Boissevain, and after that it Andrea will be Harold Watson.

MS. BOISSEVAIN: Good evening. My name is Andrea Boissevain. I'm the Director of Health for the

Town of Stratford. I want to let you know that we are in the midst of drafting comments with my department, Oliva Coleman from my office, as well as the conservation department, Kelly Carrigan. We are focusing on some technical aspects of ecological risks and wetland restoration.

We're also going to ask that you work in concert, which I trust that you will, but work in concert with the Connecticut DEEP and the EPA because some of the Stratford Army Engine Plant borders some operable units from the Raymark Superfund site, and for better or for worse, we are home to that site and we've been working on that site for a long time.

And because of that, we also encourage very strong community engagement. I think tonight's showing of people interested in this project shows that there's a large concern. People need to be engaged, and I would like to have our office be availed of working with you to work with whether it's, you know, websites or community meetings, community advisor groups. I've been working with the Raymark community advisory groups since 1991.

So, we have a lot of experience, and I think that we could bring a lot to bear to the project. Thank you.

MS. MARK: Beth, could we just respond to the

gentlemen before?

MS. GOSSELIN: Yes. I apologize.

MR. DELANO: So, I just wanted to clarify why is it 18 months and not six months. Basically we talked about the difference between navigational dredging and environmental dredging, and at this particular site -- actually, the picture up there is a great example as to why it's more complex. You can see the low tide line out there. A lot of our work is above the low tide line. So, we lose anywhere from five to seven hours per tidal cycle because there's no water for dredging. So, we lose half our day.

The other piece of it is we're using smaller equipment. It's precision work. We don't want to take out more than we really need to because the objective is very different from a navigational job. So, we looked at this very carefully. We did a lot of analysis of productivity rates. We understand the point, but this is kind of different. It's a different animal.

But we will look at it again. That's part of the process. We're constantly evaluating how to do it better. So, we obviously appreciate the comment and we are trying to get that time frame more efficient.

MS. GOSSELIN: Thank you. Harold Watson. After

Mr. Watson, it will be Redacted - Privacy Act

MR. WATSON: Good evening. I'm Harold Watson. I'm on the Planning Commission in Stratford, but I'm also a citizen here tonight talking about the whole shoreline that you're working on is a part of our greenway current and projected. We're very fortunate that we've managed to raise about two-and-a-half-million dollars for funds to implement the next phases of our greenway. We are spending a lot of money in the spring completing the section that will end up right where you're starting your work. So, what I don't want is everybody out riding on our scenic greenway to end up not being able to go.

So, I'm here to request that in your planning that you allow the area along DeLuca Field and the area along Main Street to remain as part of our greenway that takes our riders down to Short Beach for as much as possible. We managed to do this the last time we did a remediation and kept the greenway open as long as we could.

Also, at the north end of the property there's an area that also -- on planning, I'm also working on our Coastal Resiliency Project, and we have an area that we need to have filled in, that we need to have a dike, a short area several hundred yards, that you are putting

an access road on.

And if there's a way that you could make that access road be a permanent basis for our eventual land dike, what you will be doing is helping us provide the connectivity between our existing greenway and the greenway that's going to run across the top of the existing dike. So, you actually win a lot of new friends in Stratford if there's any way you can accomplish that. And our planner or any of our greenway people would be happy to talk with you about it.

Thank you.

MS. GOSSELIN: Thank you. Redacted - Privacy Act. No.

Okay. Redacted - Privacy Act. No.

Redacted - Privacy Act. And after Redacted - Privacy Act it will be Bill O'Brien.

Redacted - Privacy Act: My name is Redacted - Privacy Act. Most people know me as Redacted - Privacy Act. But, anyway, 30 years ago one of my sons was a machinist at Avco, and he was told at the time he was working on metals that had low-grade -- I can't think of the right word. It has to do with --

AUDIENCE MEMBER: Radioactive.

Redacted - Privacy Act: Radio, yes. Thank you. As a matter of fact, the company made them sign with all the fellas that were working on that particular metal. Even

though they were told it was low-grade radioactivity, they had to sign a paper I guess waiving any rights to sue. My question to you is: Of all the materials that you tested, did you test for radioactivity?

MR. DELANO: I don't believe that we did. That information would be in a remedial investigation report which was done some years ago. But, no, we have not done it recently in our recent studies.

MS. GOSSELIN: Thank you. Bill O'Brien. And after Mr. O'Brien, it will be Redacted - Privacy Act.

MR. O'BRIEN: Bill O'Brien, long-time resident and current 9th District councilman. I'm certainly no expert at this. I'm so happy to see this progress. I learned to swim at Short Beach. My one claim to fame is I swam across the Housatonic River by myself one time. Luckily, I didn't drown.

But we recently were rated number five in the state, small town with a good quality of life, and I see this project will just move us forward more. So, let's make it happen as soon as possible.

MS. GOSSELIN: Thank you. Redacted - Privacy Act. And after Redacted - Privacy Act, Redacted - Privacy Act. Okay. And after it will be Redacted - Privacy Act.

Redacted - Privacy Act: Hi. Is there going to be a

copy of this presentation?

MS. MARK: Yes, on the website.

MS. GOSSELIN: The question was will there be a copy of the presentation, and it will be available on the website.

Redacted - Privacy Act: Is there going to be anything regarding airborne quality, air quality? We're a next-door neighbor to that site, and the winds are pretty strong over there. Is that going to be monitored during this cleanup?

MR. DELANO: Yes. During the remediation we would have an air-monitoring program to look at the dust, if there is any, but they'll also be measures in place to minimize any airborne contamination as well. That will be a requirement in the Army Corps' specifications.

Redacted - Privacy Act: My name is Redacted - Privacy Act. I know I look different, but I have to say what I have to say. It's terrible. Every time they say here they're going to do something, it's not done. By the time they do something, I'll be dead because of my age. I'm 86 years old. And, you know, I lost a son. He worked over at Avco in the labor department. He died from Lou Gehrig's disease. I don't know if it caused that. He died 11 years ago.

Redacted - Privacy Act: We have the same concerns as the lady regarding the radioactive material.

MS. GOSSELIN: Thank you very much. Redacted - Privacy Act.

Redacted - Privacy Act: I'm just a resident of Stratford. And my primary concern was the reuse of the materials that were dredged out, and a lot of that was addressed, 10 percent contaminated, remove 90 percent, stored on-site. And will it remain on-site for use in Stratford, or is that the decision of the developer?

MS. MARK: Yes. Yes. As Tony said in his presentation, the roughly 130,000-or-so cubic area material will be amended with Portland cement to increase the strength, and the developer can use it as fill to raise the elevation of the property when they come in to do their --

Redacted - Privacy Act: Will it become the developer's property so to speak?

MS. MARK: They'll be responsible for maintaining it, yes.

Redacted - Privacy Act: Thank you. Redacted - Privacy Act. And after Redacted - Privacy Act, it will be Redacted - Privacy Act

Redacted - Privacy Act: Hi. Thank you. I am a private citizen in Stratford. Two questions I have. You're dredging down four feet. Are you sealing that off? Is

there any potential for some of it that's below four feet to leach back up to the property? That's one question. Second question is, the waters, will it leach back into the waters, because you're maybe sealing on top? Is there a chance for it to leach into the river or the waterways?

MR. DELANO: Thank you for your question. The first part of the question is will contamination rise upward from the dredged surface. We're essentially dredging to clean material to background conditions. So, the answer is, no, there really is no chance for that to happen in the Tidal Flats. There won't be remaining contamination. The other part of it -- so your question is would water from I think --

Redacted - Privacy Act: From the waterways.

MR. DELANO: Groundwater?

Redacted - Privacy Act: Right.

MR. DELANO: So, again, is the responsibility -- it's not the Army Corps' responsibility or the Army's. Sorry. That becomes an upland issue, meaning that is for the future owner of the site to control.

Redacted - Privacy Act: And a follow-up to that question is, is there ongoing monitoring of that property after it's developed and is that by the town, the Army Corps of

Engineers or --

MR. DELANO: It's not the Army Corps. I might defer to Tom on this question. It would be the future owner of the property.

MR. LINEER: That is a very good question which goes beyond the scope of what we have here. The future owner has to keep the property in compliance with the state and federal laws. The Army does not go back and monitor them, but I would think the future owner has to abide by the state and federal laws and reinforce them.

Redacted - Privacy Act: Okay. Two quick ones. Where Raybestos was redone, I understand there's some piping under there to kind of seal the gases and that's being monitored on the Raybestos? The second is, do you have examples of the properties that have been remediated and the viability of those properties now, meaning what do they look like, how are they developed, so we can get an idea?

MR. LINEER: I could give you some examples of properties that have been -- have been done. For example, what comes to my mind in my experience at BRAC, the example that I would give you is the Indiana Army Ammunition Plant which is near Louisville, Kentucky, which is now a rather large complex of warehouses and

businesses. To the point, that a major entity built a huge distribution site there to utilize the air -- the commercial -- not the commercial but the airfreight capabilities for Louisville distribution. So, that would be an example that the Army cleaned up the site and then sold the property.

Redacted - Privacy Act: So, if they can on the website, can you just list a couple of places, examples, so we can get an idea?

MR. LINEER: Yeah.

Redacted - Privacy Act: That would be great.

MS. GOSSELIN: Thank you. Redacted - Privacy Act please. And Redacted - Privacy Act is the last speaker that registered ahead of time. However, we have time. So, if there's anyone that did not register and would like a chance to speak, please feel free to do so after Mr. Myers.

Redacted - Privacy Act: Can everyone hear me? First of all, I want to commend the group here for what they've done. I doubt there are very few people that can comment on your study, but I will say this, that the study is 21 years in passing. Twenty-one years ago, the DOD, which is responsible for industrial property adjudged the Army Engine Plant is not required any longer. It was an unfortunate period of time because it was a period of

time when we were retracting. We were sending all our manufacturing overseas. Now, unfortunately, we're in the reverse position where we have a toxic site and people looking for space. So, it behooves us to find out what we want to do to a plant that once employed over 10,000 people.

The one thing I would like to dwell upon is some of the missing points in your plan, in my opinion. I don't think you addressed the main goal which is kind of an elusive thing to me. I don't really know what the main goal is of this total project, toxic cleanup of the total site, not just the portion of which your plan -- I think it takes two elements of the main site. Is that correct?

MS. MARK: Yeah.

Redacted - Privacy Act: So, we really need a grand plan. I see the need for a project, overall project plan, with milestone charts, with milestone goals keeping track and see how this thing is going.

I wrote a letter to President Trump several years back. Several months later he responded via the Environmental Protection Agency whom I thought -- who he thought was the major player. And she responded with a visit, Mayor Hoydick, Trump, who I want to commend

because he's doing a lot of the work. I'm kind of in the background. He's aware I'm there, but I'm just in the background there.

They had a good meeting, and from that meeting the EPA did a lot of work. However, it was very obvious that the Department of Defense was not doing their job. They were slow on the ball. So, I wrote a letter to three secretaries of defense. Estes (phonetic) I think is the last one. And I got a response from I think your boss saying that they were going to do certain things, but he did not respond to the overall milestone plan which I suggested.

I also did suggest it because I have some experience in this project management that there are times when you need a team effort. Now, I see everyone working individually. I see the federal, EPA, the state, I see the DOD, I see the Department of Environment, a whole bunch. These people should get some members and have periodic meetings and a leader so that when you have a problem you go to this leader. And then each of these individual representatives, they should have access to some senior individual in their own respective groups that can make a decision when there's a problem arising.

MS. GOSSELIN: Thank you so much. If you don't

mind, we're going to allow the panels to answer your first question.

Redacted - Privacy Act: Okay.

MR. LINEER: Sir, I do remember your letters. So, I'm familiar with what you wrote and what you said. As far as what the response was, we're doing exactly what the response to you was. We are proceeding with the environmental piece. There's two parts to this equation. One is the environmental piece which the Army is doing Outfall-008 and mudflats, and the second part of the equation which we do not address and is not part of this meeting is the uplands which is to sell the property from the Army to the purchaser.

Okay. So that, if you will, is the grand plan. Now, what the purchaser does with the property is a different discussion.

Redacted - Privacy Act: It can't be -- there's one goal. There's one goal that we have to achieve. Everyone has to work towards that goal. You can't do it individually.

MR. LINEER: I agree with you, and my brief comment at the beginning, what I tried to convey, was the team effort that got us here, and that includes the regulators, both federal and state, the officials from the federal and state, as well as the Corps of Engineers

and the Department of the Army. This has not been a one-person show. This has been many people. Before you are some very talented and gifted experts.

Redacted - Privacy Act: May I ask, is there a major milestone plan? Do you have one major milestone plan that I can look at and monitor the progress?

MR. LINEER: Well, we can -- you're looking for something that isn't there at this time. The best milestone is what Tony briefed as far as what we have to get to the record of decision which then becomes our cleanup. We abide by that record of decision which the state, federal, and the Army signed as far as the cleanup which is protective of human health as well as the ecological health. That part we can control. The other part is the other part of the equation. That is not subject to this hearing and which I cannot give you.

MS. GOSSELIN: Thank you so much. We have another speaker waiting.

Redacted - Privacy Act: I have in addition to my -- I have a written thing of what I planned to say.

MS. GOSSELIN: Great. I will take that and we can give it to the stenographer who will transcribe it.

Thank you so much.

Redacted - Privacy Act written submission is annexed as

an addendum to the hearing minutes.)

MS. GOSSELIN: Next. Yes.

Redacted - Privacy Act: Hi. Redacted - Privacy Act. I live on the Housatonic River just north of Outriggers. I have two questions. One is -- maybe I misread the maps, but it seems like a fairly small area that's going to be cleaned up, and I wonder -- I know you did a lot of testing. Is it that only that area is contaminated and everything on the other side is zero, or is there some acceptable level of contamination that we've designed?

MR. DELANO: We're going to go to a slide so you can see it. Are you referring to that plan?

Redacted - Privacy Act: No. It was a skinny purple --

MR. DELANO: All right. So, on the left is the Tidal Flats. That's a 40-something acre area. To the right is Outfall-008. That's essentially a ditch. That's why it's a long skinny shape.

AUDIENCE MEMBER: Down at the end of the runway?

MR. DELANO: Correct. That's right. In the lower middle of that right-hand figure, you can see the end of the runway and you see our ditch. The subject of our remediation is the purplish color. And then to the right you'll see what's known as the Marine Basin. That goes out to the Housatonic River.

So, that footprint that you see there is reflective of our testing. And also the fact that this is a depressed -- it's a ditch. It's four feet deep or so. And the way the discharges came out of that outfall on the left, it traveled down the ditch and settled in the ditch.

Redacted - Privacy Act: And where we're not seeing your map showing excavation, that's clean?

MR. DELANO: Correct.

Redacted - Privacy Act: Okay. And my other question is, I swim in that river, and I wonder if I have any concerns when this work is being done. I'm not too far up from Outriggers.

MR. DELANO: I'm not familiar with where Outriggers is.

Redacted - Privacy Act: Maybe a half a mile north of the Army Engine plant, maybe a mile.

MR. DELANO: So, during our dredging we'll use what's known as best management practices to limit -- I think your question is related to what gets stirred up.

Redacted - Privacy Act: Right.

MR. DELANO: To limit that. And we'll have a robust monitoring program to make sure that we're not -- I'm not going to say there won't be anything stirred up

because that's how dredging works. That's what happens. But we'll have an up and downstream. Keep in mind, it's tide of course. So, that changes. But we'll have monitoring stations which monitor turbidity which is the amount of light-reflecting solids in the water, and we'll also have another program to measure water quality parameters.

Redacted - Privacy Act: Is there a place where I can monitor that myself before I go in, the website maybe or --

MR. DELANO: Oh. We haven't discussed that, but we'll take that as a comment.

Redacted - Privacy Act: Okay. Thank you.

MS. GOSSELIN: Yes.

MR. GRESKO: Hi. I'm Joe Gresko, a state representative. I'm fortunate enough to serve in the district that this is in. Is the Army Corps going to do the work or contract it out?

MS. MARK: We'll be contracting that out.

MR. GRESKO: Is there a contractor in mind or you bid it?

MS. MARK: We would be putting out a request for bids at a later date.

MR. GRESKO: As far as the dewatering, do you do a dewatering right where you excavate, or are you going

to pull it upland to the parking lot or --

MS. MARK: It will be dewatered in a location upland on a part of the Army site.

MR. GRESKO: So, you would be able to see it from Main Street as you're driving by kind of thing? I'm just trying to prepare people when they see this stuff, they have an idea of what's being accomplished.

MR. DELANO: We'll look for another slide.

The dewatering might mean a few different things to different people. In the context of dredge sediments, so looking at the Tidal Flats, the large green area, that will be dredged from beneath the water. When that comes up, they'll be extra water that needs to drain out. That's one aspect of dewatering. There's immediate dewatering, and then it's placed in a barge or a scow with some warm water. Also, when you put it -- I think we referred to stockpiles. There could be additional dewatering as well. The stockpile sits, water comes out, eventually you add Portland cement to dry it up.

So, you'll see on that drawing there there is an area shown in brown like this. It's a square-ish area where some of that work will happen. So, I think your question is would you be able to see it. There's buildings in front of it now. So, as it is now, you would

not be able to see it from the road. Was that --

MR. GRESKO: Yeah, that's fine. Also, will the stockpiles be permanent or, like you said, once they're finished with the reuse -- and this kind of dovetails into my next question as far as is the foot less in all remediated and dredged areas there purposefully because it's just how much that is being taken out, or are you leaving it down a foot because eventually the river is going to fill it up anyway?

MR. DELANO: I might have lost the first part of the question, but the second part was about the backfill material. So, yes, one foot below I'll call it the current mud line, where the sediment is today, we're going to backfill to one foot below. The idea there is we can obtain a sandy material and place it. It's workable. But if you look at the material that's out there now, it's not sand. It's -- someone referred to it as I think muck. It's a silty material. It's -- you don't want to try to walk in it. So, the idea is one foot less, and then over time there will be similar materials that come in and repopulate the area with the right material.

MR. GRESKO: My last question as far as storm outflows go, there was some work done there that kind of

capped some of the storm outflows. Is that something that is going to stay permanently capped, or will you be restoring them?

MR. DELANO: Okay. I think that would be an upland issue related to what the developer, future property owner, has for plans. They were capped at one point. Any new development is going to have to have an approved storm water drainage system, and there would be no reason to uncap anything old that I know of. But, again, that's not what we're addressing tonight.

MR. GRESKO: Thank you.

MS. GOSSELIN: Thank you.

Redacted - Privacy Act: Redacted - Privacy Act. I'm a resident of Stratford. Couple of quick questions. Could you clarify the timing, please? You talked about 18 months and then a 24-month period. What's going on in those two periods, and can any of that be successive -- or at the same time I should say, simultaneous?

MR. DELANO: I'll take that one. So, one of our colleagues here is working on this issue. The 18 months is what we'll call an allowable work window in the river, and that's for in river, in-water work. We want to get that work done in basically a season and a half. But as you see on this -- I've got to look at it -- you see this

figure that's shown on there. I think it's one of the posterboards. There's some work on-site that we have to do to be able to handle the dredge sediments.

So, when the dredge is out there, we've got lead time to prepare the site, two or three months on either end to prepare the site and close the site. So, we've got 18 months of in-water dredging plus a little bit on either end to handle material on the site.

Redacted - Privacy Act: So, is it 18 plus 24?

MR. DELANO: No, no. It's 24.

Redacted - Privacy Act: 24 total?

MR. DELANO: Right. The 18 falls within the 24.

Redacted - Privacy Act: Got it. Thank you. And I wonder how this project affects the timing of when the sale could be closed or when the development on the property could begin regardless of who it is?

MR. LINEER: Under the current purchase and sales agreement, there are some parts of the agreement which require the purchaser to take the property. One of the requirements is when the record of decision is signed there is a two-month window for the conveyance of the property. So, that could happen in the spring, and that's what we're in talks about with them right now, to do that, which then allows them to move forward on their

side of it.

Redacted - Privacy Act: So, you believe they could do some work on the land while you're working in the river?

MR. LINEER: The idea would be it would be done in parallel. The devil is going to be in the details and the coordination. It's not simple.

Redacted - Privacy Act: Thank you.

MS. GOSSELIN: Thank you. Yes, sir.

Redacted - Privacy Act: Hello. I'm Redacted - Privacy Act (phonetic). I'm just a resident. I just have one quick question. Who is paying for this?

MR. LINEER: Well, I could say my boss is paying for it, but the Army is paying for it. This is Army from the BRAC Division from Headquarters - Department of the Army.

Redacted - Privacy Act: So, no state money, no town money?

MR. LINEER: That is correct. That is correct.

Redacted - Privacy Act: Thank you.

MS. GOSSELIN: Anybody else that would like to provide a comment or have a question answered?

Okay. I would like to call up -- yes.

AUDIENCE MEMBER: Who is paying for knocking down building 16, that brown spot?

MS. GOSSELIN: The question was who is paying for building 16.

MR. LINEER: The Army is removing building 16 for several reasons. Plus, it also provides an area for the remediation once we have -- the building had severe problems to it, both health and structural.

AUDIENCE MEMBER: I know. I was there for 47 years. That was my home away from home.

MR. LINEER: I'm sorry to take away your home away from home. But the Army is paying for it. That should be done sometime this spring.

AUDIENCE MEMBER: I see you've started.

MR. LINEER: Oh, yes. Yes.

MS. GOSSELIN: Yes.

AUDIENCE MEMBER: Can I ask a question?

MS. GOSSELIN: Yes.

AUDIENCE MEMBER: Two questions. Is the Army aware that we remediated the south -- what is it -- western side of the property where you have Outfall-008 coming through, that all the land around that was remediated when we did the realignment of Main Street two or three years ago?

MS. MARK: Yes.

AUDIENCE MEMBER: So, they're essentially just

going within the water area and dredging more which was not done in the original remediation?

MS. MARK: Right.

AUDIENCE MEMBER: My second question is, are you removing any of the existing dike with the area that you're -- the building that you're tearing down?

MR. LINEER: No.

AUDIENCE MEMBER: So, that we still -- our plan still for having a greenway on top of the dike going out to the causeway would still be an existing possibility for us?

MR. LINEER: Yes.

AUDIENCE MEMBER: Someone mentioned here earlier that it was 20-foot reef. The Town of Stratford has an agreement with the Army that when the property is sold we will have a 200-foot greenway along the high tide mark. So, someone mentioned it was 20 feet, and I don't want that misinformation to be spread in any way.

MS. GOSSELIN: Thank you. Final questions, comments? Yes.

AUDIENCE MEMBER: Just quickly. At the bottom of one of the slides, there was this very long website.

MS. GOSSELIN: Yes.

AUDIENCE MEMBER: Is that the one website to get

this information?

MS. GOSSELIN: Yes, it is. We will -- if you want to see us at the registration table, we'll make sure you get the very long website. You're correct.

AUDIENCE MEMBER: Thank you.

MS. GOSSELIN: Yes. I apologize. So, seeing there are no more comments, I'd like to call in the Hearing Officer, Erika Mark, to provide closing remarks.

MS. MARK: We have heard many thoughtful statements this evening, and your comments and concerns will be considered as we move forward with the design of this project and the finalization of the decision document in the spring of 2020.

I would like to thank you, everyone, for attending the public meeting today on our decision regarding the Proposed Plan for the Environmental Restoration at the Stratford Army Engine Plant site.

As a reminder, public Comments can be submitted to the Corps through December 13, 2019. Thank you for your participation in this meeting. This meeting is now officially closed.

I just wanted to make a correction. On Tony's last slide, if anybody wrote down my e-mail address, it was written incorrectly on the slide. My middle initial

is L. I wanted to make that one final correction. Thank you again for coming tonight.

(Proceedings ended.)

THIS IS TO CERTIFY THAT THE FOREGOING IS A TRUE AND ACCURATE TRANSCRIPT OF THE ORIGINAL STENOGRAPHIC RECORD.

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JENNIFER GRUSEKE, CSR

Senior Court Reporter