ANALYSIS OF BROWNFIELDS CLEANUP ALTERNATIVES
Boat School
16 Deep Cove Road
Eastport, Maine

ACRES ID 138601

Prepared for:
Friends of the Boat School Marine Trades Development Corporation
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1.0 INTRODUCTION AND BACKGROUND

1.1 Site Location and History

The Boat School Site, also known as the Marine Trade Center Site, consists of an approximately 8.4-acre parcel located at 16 Deep Cove Road, in Eastport, Maine (Site). Currently owned by the nonprofit organization Friends of the Boat School Marine Trades Development Corporation, the Site includes three buildings and is identified by the City of Eastport on Tax Map I4 as lot A5-01. Building #1 is located at the northeast corner of the Site and consists of a single-story metal structure constructed on a concrete slab. The building is approximately 21,000 square feet in size and was previously used for boat storage and maintenance as well as classroom space. Building #2 is located in between Building #1 and #3, and consists of a 6,400 square foot two-story metal structure also constructed on a concrete slab. Building #2 was historically used for various academic and administrative purposes and includes office space, a library, and an expansive community room similar to a large classroom or cafeteria. The facility's third building (Building #3) is also constructed on a concrete slab and features metal siding. Building #3 is approximately 4,800 square feet in size and houses a former laboratory as well as the facility's boiler room, maintenance area, and attic loft space. The Boat School Site is currently unused, however, the intent is to redevelop the property as a post-secondary technical education center for marine trades.

Boat School Site Diagram

The Site was originally owned by the Lyons family and in 1924, was granted to the City of Eastport for use as a park. However, in 1942 as a result of the war, the Navy began developing the Site as a seaplane base. Construction of the base was reportedly never completed and the Site was converted to a Pearl essence manufacturing facility in 1967. The Paispearl Products Company manufactured synthetic pearl essence at the property until the early 1970s. The State of Maine Department of Education acquired the property in 1977, at which time it began operating as the Washington County Technical College Marine Trades Center. The Site continued to function as a marine trades center and boat building school for approximately 30 years. During that time, ownership of the facility changed from the Maine Technical College System (1977-2002) to the Maine Community College System (2002-2008) and then eventually to the City of Eastport (2008-2011). The Boat School facility was closed in 2011 and the majority of the property was conveyed to First Perry Realty, LLC, who were associated with the Ocean Renewable Power Company and the manufacturing of tidal power turbines. First Perry Realty proceeded to subdivide the approximately 20.8-acre lot and In December 2011, 8.4 acres including the Site's three buildings, were donated to Friends of the Boat School. The property transfer was recorded with the Washington County Registry of Deeds in book 3800, Page 121.

1.2 Surrounding Land Use

The surrounding area consists of rural oceanfront property used primarily for commercial and industrial purposes. The Eastport Municipal Airport is located less than 800 feet to the north and northeast of the Site. Moose Island Marine maintains a boatyard and repair facility immediately to the north and west of the Boat School Site. The City of Eastport maintains Cony Park, which consists of oceanfront greenspace to the southeast. Shackford Head State Park is located less than 250 feet to the southwest of the Site.

Table 1
Adjacent Properties Owners

Map/Lot	Street Address	Owner	Use
I4 / 0A4-01	14 Deep Cove Road	First Perry Realty, LLC	Commercial/Marine
I4 / 0A5-1A	19 Deep Cove Road	Moose Island Marine	Commercial/Marine
I4 / 0A5-02	16 Deep Cove Road	Moose Island Marine	Commercial/Marine
I5 / B1-001	12 Deep Cove Road	City of Eastport	Cony Park
Notes:			

Boat School Site and surrounding area

1.3 Site Geology and Hydrology

According to available Maine Geological Survey Maps, the Site is not located on or adjacent to a sand and gravel aquifer and is underlain by deformed sedimentary and volcanic rocks of the Eastport Formation. Subsurface investigations conducted at the Site by MEDEP indicate depth to bedrock in the vicinity of the on-site buildings is approximately 12 feet below ground surface. MEDEP records also indicate the property is overlain by the Presumpscot Formation, consisting primarily of low permeability silt and clay with little sand. Groundwater at the Site reportedly flows to the south and southeast in areas to the east of the on-site buildings and to the west, in areas to the west of the buildings. The site and surrounding area are serviced by public water and the Atlantic Ocean is located less than 500 feet southeast of the Site.

Based on prior Site investigations, a groundwater divide bisects the site with flow generally west along areas west of the Site buildings, and south-southeast along areas east of the buildings. Bedrock outcrops were not observed on the Site. The Site is connected to the municipal water supply and has an on-Site septic disposal system.

1.4 Previous Remediation and Environmental Site Assessments

The information contained in this section is presented as was described in previous Site reports. Previous assessment and remedial activities associated with the Boat School Site generally refer to the historical 20.8-acre parcel. As a result, while the information remains relevant, some references to the Boat School Site may not be specific to the current 8.4-acre lot, but rather adjacent parcels. The Site is currently listed in the U.S. EPA Assessment, Cleanup and Redevelopment Exchange System (ACRES) as Site# 138601. The Site is also identified on the MEDEP Division of Remediation's database as Site# REM00519.

MEDEP was reportedly informed of groundwater contamination at the site as the result of an anonymous complaint made in the mid-1980s. Response activities apparently confirmed the presence 1,2-dichloroethane (1,2-DCA) in groundwater at the Site. Granular-activated carbon filters were installed on both wells and the site was eventually referred to the Emergency Planning and Response Branch of the United States Environmental Protection Agency (U.S. EPA).

1992 - Phase I Environmental Site Assessment, Robert G. Gerber, Inc.

Robert G. Gerber, Inc. conducted a Phase I ESA at the Site for Washington County Technical College. The Phase I ESA identified the historical commercial and industrial uses of the property as potential sources for the groundwater and soil contamination. These sources included the use of solvents in engine and metals cleaning and airplane maintenance by the former Navy base and the use of solvents in the manufacturing of pearl essence by the former Paispearl facility. The Phase I ESA also identified the marine educational facility operations as a potential source of oil and hazardous materials (OHM) from marine paints, fiberglass fabrication, wood working/finishing, solvents, general waste disposal, storage, and housekeeping practices, and operation of leach fields.

The ESA identified a chemical storage area south of Building 1, from which drums and smaller containers were collected by Clean Harbors in spring of 1992. Lead boat keels were reportedly poured near this area and the ESA cited evidence of spilled lead. The ESA indicated that Building 2 was once the main processing building for the former pearl essence facility, and the northern section of Building 3 was used to store hazardous materials at the time of the Site visit.

The former municipal landfill and Moose Island Marine boatyard that abut the Site were identified as potential OHM sources. However, the ESA identified the former Paispearl facility as the probable source of the soil and groundwater contamination on the Site.

1995-2011 Additional Assessment and Remediation Activities

MEDEP conducted additional background research and subsurface investigations at the Site from 1995 to 1998. In addition to the former solvent ASTs, MEDEP identified other potential areas of concern on the Site, including a former settling pond used by Paispearl to the west of the Site buildings and apparent fuel oil-impacted soil near Building 1. Subsurface investigations by MEDEP did not identify concentrated sources of contamination at these locations, but groundwater and soil were found to be impacted by petroleum constituents. In 1997, a 2-ft diameter steel cylinder that was interpreted to be a tank was identified about 1 foot below ground surface approximately 100 feet south of Building 1. MEDEP records indicate the tank may have been part of the wastewater disposal system at the Paispearl facility;

According to a MEDEP spill report B-0681-96, approximately 50 to 100 gallons of No. 2 fuel oil leaked from a fill pipe and into the excavation of a newly installed 10,000-gallon capacity underground storage tank (UST) in December 1996. The UST is located approximately 30 ft southwest of Building 3, and according to its MEDEP registration certificate, it replaced a 20,000- gallon capacity fuel oil tank installed in 1970 and removed in 1996. Remediation included the collection of liquid-phase product to the extent feasible near the UST excavation, placement of sorbent booms in a downgradient stream, and adding fertilizer to promote biodegradation. During the Site visit, personnel from The Boat School indicated that the UST was found to contain water in 2010 which was pumped out by the City of Eastport. Reportedly, the tank last contained fuel oil in spring of 2011 and is now disconnected from the Site boilers. No information was obtained regarding plans for its removal.

In May 2000, U.S. EPA Response Personal conducted preliminary assessment activities and confirmed the presence of 1,2-DCA in soil and groundwater at the Site. The source of the 1,2-DCA was determined to be above ground storage tanks maintained by the Paispearl Company. Remedial activities were initiated by U.S.EPA and MEDEP in October 2000, resulting in the excavation and disposal of approximately 2,000 cubic yards of 1,2-DCA impacted soil from an area immediately south of Buildings #2 and #3. In 2003, the City of Eastport extended public water to the Site and an Environmental Covenant was recorded with the Washington County Registry of Deeds in 2004, prohibiting groundwater extraction. The Covenant indicated that the on-Site wells would remain for MEDEP sampling and would be abandoned when no longer needed. At that time, MEDEP personnel indicated that continued sampling of groundwater at the Site was unlikely, and provided that if the use of the Site did not change from marine-related operations, no additional investigation or the requirement of additional Site control measures would be anticipated. The former supply wells have been disconnected but have not been

properly abandoned. Remedial activities associated with 1,2-DCA contamination at the Site are documented in a report titled *Removal Program After Action Report For The Marine Trade Center Site, Eastport, Washington County, Maine, 2 October 2000 Through 6 December 2000,* dated February 2001. The report was prepared by Roy F. Weston Inc., of the Superfund Technical Assessment and Response Team, and submitted to the U.S. EPA Region 1 Emergency Planning and Response Branch.

In the fall and winter of 2000, U.S. EPA contractors excavated an approximately 5,000 square ft area to a depth of approximately 10 ft and removed contaminated soil near the former solvent above ground storage tanks (ASTs) to the south of the Site buildings. Limited areas of soil containing 1,2-DCA at concentrations up to 250 parts per million (ppm) were left in place and covered with clean fill, at the discretion of U.S. EPA and their contractors. MEDEP installed two bedrock monitoring wells (MTC-1 and MTC-2) near the excavated area in 2003 and sampled them until 2008. MEDEP also collected groundwater samples from two former water supply wells (Blue and Red) from the mid-1990s to 2008. Results indicated that concentrations of 1,2-DCA remained above the Maximum Exposure Guideline (MEG) for drinking water in the former supply wells and MTC-2. Additionally, vinyl chloride was found to be above the MEG in MTC-2, which is the nearest well to the excavated area. MEDEP records indicate that since the U.S. EPA-led excavation of the former solvent ASTs, the 1,2-DCA concentration in the former supply wells had remained relatively stable and had decreased in MTC-2. Concentrations of 1,2-DCA and other analytes in MTC-1 had been below laboratory detection limits since its installation in 2003. Several other chlorinated benzene compounds detected in the former supply wells were no longer detected.

2011 - Phase I Environmental Site Assessment, GEI Consultants

In 2011, GEI Consultants, Inc. of Falmouth, Maine (GEI), completed a Phase I Environmental Site Assessment at the Site as part of the Washington County Council of Governments Brownfields Program.

GEI summarized the following recognized environmental conditions (RECs):

1. Past identification of 1,2-DCA and other contaminants in the Site soil and groundwater;
2. Historical operation of a Navy seaplane base, pearl essence manufacturing facility, and marine trades educational facility on the Site with the potential for OHM release beyond that already identified and remediated by Maine DEP and EPA;
3. Floor drains in Buildings 1 and 3 with unknown discharge locations; and
4. Past spills associated with the fuel oil UST on the Site.

The ESA reported that MEDEP acknowledged that the primary 1,2-DCA contamination source areas have been mitigated. The MEDEP also recognized that past Site activities had potentially resulted in impacts to soil and groundwater from metals, cleaning solvents, petroleum constituents, and other compounds; however, under its current use as a marine-related commercial facility, the risk of exposure to workers or visitors appeared to be low. If site use changes, these potential risks should be evaluated further and proper management strategies should be emplaced.

Based on the information contained in this ESA, GEI offered the following recommendations:

1. The two former supply wells, two MEDEP bedrock monitoring wells, and the small monitoring well south of Building 1 should be properly abandoned, pursuant with the agreement included in the deed restriction;
2. The fuel oil UST should be properly removed in accordance with applicable rules;
3. Debris from burning and dismantling of boats located in the western gravel area should be properly disposed of;
4. A soil management plan should be developed for Site activities that involve disturbance of soils that may be impacted by petroleum, chlorinated compounds, or other contaminants. This plan should include provisions for minimizing dust and proper storage, handling, and disposal of excess soil, as necessary;
5. The construction of new buildings on the Site should include either proactive vapor mitigation, such as a geomembrane or passive vapor piping beneath the slab, or characterization of soils within the building footprint to assess vapor intrusion risk from petroleum or solvent vapors;
6. Conduct a review of Site operations to identify Best Management Practices for environmental aspects at the facility. This should include management of waste generated during maintenance operations, among others;
7. Submit an application to the MEDEP Voluntary Response Action Program (VRAP). Once the application is approved, MEDEP would issue a "No Action Assurance" letter contingent on implementation of recommended response measures. The Site owners would be required to provide MEDEP documentation that the response measures were implemented. Once implemented, MEDEP would issue a "Certificate of Completion," documenting fulfillment of Site closure obligations. MEDEP often requires that any contingencies for VRAP closure be included within an environmental covenant recorded on the property deed such as implementation of a soil management plan or construction of a proactive vapor mitigation system.

2012-2013 MEDEP Voluntary Response Action Program (VRAP)

After acquiring the Site in 2001, First Perry Realty worked with the MEDEP VRAP receive a No Further Action Assurance letter and subdivide the historical property.

A Declaration of Environmental Covenant was filed with the Washington County Registry of Deeds as Book 3993 Page 170. Granted on February 11th 2013 by First Perry Realty. The MEDEP's Bureau of Remediation and Waste Management issued First Realty of Freeport, Maine, a VRAP No Further Action Assurance Letter, requiring a Declaration of Environmental Covenant. The First Perry Realty Site is described in Washington County Registry of Deeds Book 3800, Page 91.

2020, Hazardous Materials Assessment Report, CES Inc.

CES Inc., of Bangor Maine, prepared a *Hazardous Materials Assessment Report, 16 Deep Cove Road, Eastport, Maine,* dated August 10, 2020. The assessment was conducted to identify any asbestos-containing materials (ACM), lead-based paint, and potentially hazardous materials, wastes, or Universal

Wastes located at the facility. Three structures were evaluated in the process, including;

- Building #1 - Classroom/Maintenance;
- Building #2 - Office/Multipurpose;
- Building #3 - Laboratory/Boiler House; and
- Exterior Pipe Bridges between buildings.

According to MEDEP regulations, locations and occurrences of materials that tested positive and are homogenous (similar in color and texture) in nature are considered ACM, provided the material contains greater than or equal to (≥) one percent (1%) asbestos based on laboratory analysis. A material can only be considered negative for asbestos if analytical results from all bulk samples in a group of samples representing that material indicate an asbestos content of less than (<) 1%. ACM identified at the Site by laboratory analysis consisted of:

- Building #1, Classroom/Maintenance:
  - 187 Linear Feet of Mudded pipe fitting insulation
  - 543 Square Feet of Black floor tile adhesives
  - 650 Square Feet of asphalt roof penetration covering with evidence of silver coating
- Building #2, Office/Multipurpose:
  - 3,018 Square Feet of Black floor tile adhesives
- Building #3, Laboratory/Multipurpose:
  - One Mudded pipe fitting insulation

The report also identified Universal Waste and Potentially hazardous materials at the Site, including;

Building #1

Item	Number/Volume
Fluorescent Light Tubes - 2 foot	48
Fluorescent Light Tubes - 4 foot	1,640
Fluorescent Light Tubes - 8 foot	30
Suspect PCB-Containing Light Ballasts	844
Emergency Light	7
Mercury-containing Thermostats	5
Emergency Exit Signs	10

Building #2

Item	Number/Volume
Fluorescent Light Tubes - 4 foot	362
Suspect PCB-Containing Light Ballasts	179
Emergency Light	5
Mercury-containing Thermostats	3
Emergency Exit Signs	5
Paint Cans	13

Building #3

Item	Number/Volume
Fluorescent Light Tubes - 4 foot	14
Suspect PCB-Containing Light Ballasts	69
Emergency Light	1
Mercury-containing Thermostats	2
Emergency Exit Signs	3
275-gallon Above-Ground Storage Tank (AST)	3

Recent site reconnaissance indicates the ASTs may contain a small amount of residual product. Additionally, several containers of waste oil and 5-gallon pails of miscellaneous petroleum related chemicals including hydraulic fluid and motor oil are currently located at the Site.

1.5 Project Goals / Site Reuse Plan

Friends of the Boat School Marine Trades Development Corporation intend to redevelop the property as a post-secondary technical education center for marine trades. A detailed five-year Strategic Plan outlining this process is available on their website at;

https://theboatschool.org/strategic-plan/#goals-and-strategies

2.0 APPLICABLE REGULATIONS AND CLEANUP STANDARDS

2.1 Cleanup Oversight Responsibility

Cleanup of the Site will be overseen by the MEDEP.

2.2 Cleanup Standards

2.2.1 Universal Waste & Potentially Hazardous Materials

Universal waste and potentially hazardous materials at the Site should be properly removed, stored, and transported off-site for disposal and or recycling at a licensed facility. The intent of this work is to limit potential threats to human health and the environment including accidental exposure and or release. Appropriate disposal or recycling also ensures these materials do not enter the general waste stream.

Universal waste is a general term used to describe a broad range of material managed under the reduced requirements of the US EPA's Universal Waste Rule. U.S. EPA's Universal Waste Regulations streamline hazardous waste management standards for federally designated "universal wastes," which include but not limited to fluorescent light bulbs and mercury-containing equipment. The State of Maine has expanded the designation of Universal Waste to include automobile mercury switches and totally enclosed non-leaking PCB containing ballasts.

2.2.2 Asbestos Containing Materials

The removal and disposal of ACM at the Site should be conducted in accordance with U.S EPA and MEDEP requirements. The intent of any removal or long-term maintenance of ACM at the Site is to eliminate potential exposure to humans as the result of inhalation.

2.3 Laws and Regulations Applicable to the Cleanup

Asbestos Containing Materials

Construction work involving exposure or potential exposure to any concentration of asbestos is regulated by OSHA 29 CFR 1910. Post renovation conditions required for the Site are discussed in Maine DEP Chapter 425: Asbestos Management Regulations (Chapter 425). Asbestos removal, handling, and oversight will be conducted by appropriately trained and certified personnel. A visual clearance of the asbestos abatement areas by a Maine-certified Asbestos Air Monitor may be required prior to releasing the abatement area.

Universal Waste & Potentially Hazardous Materials

Miscellaneous wastes including Universal, Solid, and Regulated wastes located inside the facility may be regulated by USDOT 49 CFR 100-199 (Transportation of Hazardous Materials), MEDEP Chapter 400 (Solid Waste Management), and MEDEP Chapters 850 to 857 (Maine Hazardous Waste Management Regulations).

Other laws and regulations that may be applicable to the Project include any federal, state, and local laws related to the procurement of contractors conducting or providing oversight during remedial activities. Applicable permits to conduct the work and hazardous waste manifests for off-site disposal of the contaminated materials may also be required.

3.0 EVALUATION OF CLEANUP ALTERNATIVES

3.1 Cleanup Alternatives Considered

To address contamination at the Subject Property, three alternatives were considered and include:

1. No action;
2. Partial remediation with Operation & Maintenance Plan; and
3. Removal and disposal of all identified potential contaminants.

3.2 Effectiveness and Cost Estimate of Cleanup Alternatives

To satisfy U.S. EPA requirements, the effectiveness, implementability, and cost of each alternative must be considered prior to selecting a recommended cleanup alternative.

3.2.1 Effectiveness

Alternative 1 - No Action is not effective in controlling or preventing the exposure of human and environmental receptors to contaminants identified at the Site.

Alternative 2 – Partial removal of asbestos and potentially hazardous materials combined with an Operation and Maintenance Plan would be effective in limiting potential exposure hazards. However, potential contaminants would need to be managed or even removed depending on future land use or redevelopment activities. While this approach would limit initial costs, ongoing maintenance would be required and potential health and environmental hazards would remain on-site.

Alternative 3 – Removal and disposal of all identified contaminants is an effective remedial alternative that severs any exposure pathway to potential receptors and eliminates the need for future clean-up of these materials

3.2.2 Implementability

Alternative 1 – No action

This is the easiest alternative to implement.

Alternative 2 – Partial Remediation

In this scenario, ACM associated with the Building #1 roof penetrations and mudded pipe fitting insulation detected in Building #1 and Building #3, would be abated by a licensed professional. However, asbestos-containing black floor tile adhesive detected in Building #1 and Building #3 could be capped in place with a new flooring material. Leaving the adhesive in place and covering it with new flooring would be a relatively simple solution to implement, however, the ACM would remain on-site and need to be disposed of and or managed as part of any future repairs or renovation. Additionally, an Operation and Maintenance Plan would need to be drafted and adhered to by the owners and future occupants of the facility. The Operation and Maintenance Plan would likely require regular training, inspections, and notices to employees or contractors working at the facility. Based on current regulations, any ACM remaining at the facility would still require complete abatement prior to any future demolition activities. This alternative would also require the procurement of one additional contractor to install the flooring necessary to complete remedial activities.

A similar approach could be taken with universal waste and potentially hazardous materials identified at the Site. Products being actively used or stored at the facility for future use do not constitute waste. As a result, a variety of items identified in the CES Hazardous Materials Assessment Report could be left on-site for future use. This includes but may not be limited to functioning fluorescent light bulbs, light ballasts, and emergency exit signs. In this scenario, potentially hazardous materials would remain on-site and associated disposal costs could be deferred. This would be a relatively simple strategy to implement, however, any future leaks or spills associated with the remaining materials would likely require reporting to the applicable regulatory agency and potentially costly remediation. There is also a heightened possibility that these materials could eventually enter a general non-hazardous waste stream.

Alternative 3 – Removal of all ACM, Universal Waste & Potentially Hazardous Materials

Contracting the removal and disposal of all identified contaminants at the Site would likely be easier to implement than Alternative #2. It would not require safely storing or managing any materials on-site for future use. A licensed asbestos contractor would be hired to conduct abatement of ACM at the facility, while a second contractor could be employed to remove universal waste and potentially hazardous materials.

3.2.3 Cost

Alternative 1 – No action
This option is the cheapest alternative and requires no money spent.

Alternative 2 – Partial Remediation
In this scenario, asbestos-containing pipe insulation and the silver coated asphalt roof material would be abated by a licensed professional. Given the media involved, it is anticipated that this will be a destructive process requiring the removal of roof penetrations in their entirety, leaving openings throughout the existing roof. Additionally, non-asbestos containing roofing materials attached to, or underlying identified ACM, will also need to be removed and disposed of during the abatement process. As a result, the cost of asbestos abatement needs to incorporate replacing the roof on Building #1.

Similarly, partial abatement of the facility's tile flooring and underlying asbestos-containing adhesive is dependent on the installation of new flooring over these materials. Universal waste and potentially hazardous materials would be collected and transported off-site for disposal or recycling, with the exception of those materials actively being used or stored for future use, including fluorescent light bulbs, light ballasts, and emergency exit signs. This Alternative also require drafting an Operation and Maintenance Plan for managing on-site materials moving forward.

Approximate Remediation Costs for Alternative #2:

Asbestos –

Building #1		
187 linear feet (ACM) mudded pipe insulation	- $9,350.00	
650 square feet of silver-coated asphalt roof material	- $6,500.00	
543 Square Feet of new flooring	- $3,801.00	
Roof repair/replacement	- $450,000.00	
Building #2		
3,018 square feet of new flooring	- $21,126.00	
Building #3		
1 (ACM) mudded-insulation pipe fitting	- $300.00	
Operations & Maintenance Plan	- $1,500.00	- Subtotal $492,577.00

Potentially Hazardous Materials & Universal Waste

Labor:	- $1,980.00	
Equipment	- $1,792.50	
Transportation:	- $935.00	
Universal Wastes:	- $1,057.10	
Paint Related Waste:	- $957.00	
Oil Waste disposal:	- $330.00	
Tank removal and disposal:	- $1,402.50	
Reporting & Documentation	- $1,200.00	- Subtotal $9,654.10

Total approximate costs associated with Alternative #2 would be approximately **$502,231.10**

Alternative 3 – Removal of all ACM, Universal Waste & Potentially Hazardous Materials

Contracting the removal and disposal of all identified contaminants at the Site would result in the highest initial costs. However, this option could ultimately prove less expensive than Alternative #2 due to the liability and potential issues associated with leaving hazardous contaminants on-site. A licensed asbestos contractor would be required to conduct abatement of ACM and a second contractor would collect and dispose of universal waste and potentially hazardous materials.

Remediation of asbestos-containing floor tile adhesive will require the removal and disposal of all associated non-ACM floor tiles as Special Waste. This activity would be considered a "non-regulated" activity by MEDEP. Following tile removal, the least expensive option would involve using a chemical application to remove the ACM adhesive. This would be also considered a "non-regulated" activity by MEDEP and no full containment system would be required. Cost for this method would be approximately $8 per square foot, however, some new flooring manufacturers will not warranty their product if it is installed on a floor that has been chemically stripped. The alternative removal method would involve using shot blast, or similar equipment, to mechanically remove the adhesive. This is the most costly approach and would need to be completed under full containment with final air clearance testing. Using this method would increase removal costs to approximately $10 per square foot, but would allow for any new floor covering to be installed with no warranty related issues.

Asbestos-containing mudded fittings would be abated using the MEDEP "wrap and cut" method. This would involve wrapping two layers of 6 mil poly around each fitting and then cutting the impacted area from the system. This can be completed with minimal work area preparation and would cost between $40.00 and $50.00 dollars per fitting.

Removal of asbestos containing roof penetration coverings with silver coat is considered a "non-regulated" activity by MEDEP assuming the material is not cut, abraded, or drilled in the process. Based on the poor condition of the existing roof and costs associated with alternative methods, abatement of this ACM may involve removing the entire roof penetration for disposal as "special waste". An estimated cost for abatement would be $10 per square foot and includes the special waste being placed into a lined container, transported by a licensed non-hazardous waste transporter, and disposed of at a landfill licensed to accept non-friable asbestos waste. As previously discussed, a new roof would need to be installed on the building following remedial activities.

Approximate Remediation Costs for Alternative #3:

Asbestos –

Building #1		
187 linear feet (ACM) mudded pipe insulation	- $9,350.00	
650 square feet of silver-coated asphalt roof material	- $6,500.00	
543 square Feet tile adhesive and special waste	- $5,430.00	
Roof Repair/Replacement	- $450,000.00	
Building #2		
3,018 square Feet tile adhesive and special waste	- $30,180.00	
Building #3		
1 (ACM) mudded-insulation pipe fitting	- $300.00	- Subtotal $501,760.00
Potentially Hazardous Materials & Universal Waste		
Labor:	$4,026.00	
Equipment:	$1,243.00	
Transportation:	$1,540.00	
Fluorescent Light Tubes	$1,959.76	
PCB Ballasts	$7,807.80	
Universal Wastes:	$1,153.20	
Paint Related Waste:	$957.00	
Oil Waste disposal:	$165.00	
Tank removal and disposal:	$1,402.50	
Reporting & Documentation	$1,200.00	- Subtotal $21,454.26

Total costs associated with Alternative #3 would be approximately **$523,214.26**

3.2.4 Climate Adaptation & Resilience

As part of this ABCA, CEG conducted a review an authoritative resource in an effort to identify observed and potential changing climate conditions for the area in which the cleanup project is located. According to NOAA National Centers for Environmental Information, temperatures in Maine have risen almost 3.5 degrees Fahrenheit since the beginning of the 20th century. If higher emissions prevail, seasonal average temperatures across Maine are projected to rise 10°F to 13°F above historic levels in winter and 7°F to 13°F in summer by late-century, while lower emissions would cause roughly half this warming. Since 2005, precipitation has averaged 6.6 inches more than averaged recorded during 1895-2004. Global sea level is projected to rise between 1 and 4 feet by 2100. According to Federal Emergency Management Agency's (FEMA) National Flood Hazard data, the Site is located in an *Area of Minimal Flood Hazard* (Zone X). USEPA's National Stormwater Calculator indicates that the Site as currently developed, should not be particularly vulnerable to impacts associated with increased participation and stormwater runoff. The Site is also located between 41 and 61 feet above sea level, which is above hazards associated with anticipated sea level rise and coastal flooding.

The Site is serviced by public water and a private septic system. The property is overlain by the Presumpscot Formation, consisting primarily of low permeability silt and clay with little sand. Groundwater reportedly flows to the south and southeast. Existing and proposed infrastructure should not be particularly vulnerable to the effects of climate change including changes in soil moisture and other

hydraulic conditions. Observed and forecasted climate change conditions for the project area should not impact proposed site reuse and redevelopment.

3.3 Recommended Alternative

Based on anticipated effectiveness, feasibility of implementation, and cost, CEG recommends selecting Alternative #3. While both Alternative #2 and Alternative #3 would provide a reasonable approach, costs associated with Alternative #3 are only marginally higher and would result in the total removal of all potentially hazardous materials and universal wastes at the Site. CEG believes the potential liability associated with leaving these materials in place is prohibitive. All three remedial alternatives should be equally effective in accommodating climate change risk factors during anticipated cleanup activities and long-term reuse.

4.0 SPOKESPERSON AND INFORMATION REPOSITORY

The Spokesperson for this project is Joanne O'Grady on behalf of the Friends of the Boat School, who may be contacted at:

Joanne O'Grady
Friends of the Boat School Board of Directors
16 Deep Cove Road
P.O. Box 16
Eastport, ME 04631
info@theboatschool.org

The information repository for this project, including the environmental assessments, remediation plans, and other environmental information is located at the:

Maine Department of Environmental Protection
Michael Mars, Brownfields Project Manager
State House Station 17
28 Tyson Drive
Augusta, Maine 04333-0017
Michael.Mars@maine.gov

Public meetings will be held at the Eastport Port Authority Welcome Center, at the following address;

Eastport Port Authority Welcome Center
141 Water Street
Eastport, Maine 04631