

**Analysis of Brownfields Cleanup Alternatives – Preliminary Evaluation
Wood Island Life Saving Station Site, Wood Island, Kittery, Maine
State Tracking Number/ID: “Former Wood Island USCG Life Saving Station”
Prepared by: Town of Kittery, Wood Island Life Saving Station Association, &
Ransom Consulting, Inc.**

Please refer to Frequently Asked Questions (FAQ) regarding submission of this document. Please note that the draft Analysis of Brownfields Cleanup Alternatives (ABCA) submitted as part of the proposal is intended as a brief preliminary document. The format of this document is suitable for the purpose of grant proposal submission, but not for compliance with the Terms and Conditions of an awarded grant. In addition, this document may not meet state requirements for the evaluation of cleanup alternatives.

I. Introduction & Background

a. Site Location (address):

The Former United States Coast Guard (USCG) Life Saving Station Facility (the “Site”) is located on Wood Island, which is an approximate 1.25-acre island located in Portsmouth Harbor, approximately ¼-mile east of the Maine-New Hampshire state border. Wood Island is developed with two buildings, (the Site buildings”), which are described as the former USCG Life Saving Station building and a tool house. Remaining portions of the Site are improved with a “marine railway”, which extends into the ocean at the northwestern portion of the island and two marine seawalls.

b. Previous Site Use(s) and any previous cleanup/remediation:

Based on the available information, the Site buildings were constructed in 1908, for use by the United States Lifesaving Service and Coast Guard as a lifesaving station until circa 1941. The U.S. Navy reportedly used the facility as an observation station during World War II from circa 1941 through 1945. The Site buildings have been vacant since the early 1950s. No previous environmental cleanup or remediation activities have occurred at the Site.

c. Site Assessment Findings (briefly summarize the environmental investigations that have occurred at the site, including what the Phase I and Phase II assessment reports revealed in terms of contamination present, if applicable):

From 2009 to 2010, Ransom Consulting, Inc. (Ransom) completed a Phase I Environmental Site Assessment (ESA) and Hazardous Materials Inventory (HMI) for the Site using EPA Brownfields funding under the Southern Maine Regional Planning Commission’s (SMRPC’s) Brownfields Assessment Program and under the oversight of the Maine Department of Environmental Protection (MEDEP) Brownfields Program. The results of these environmental investigations identified that various hazardous building materials were prevalent throughout the Site buildings, including asbestos-containing materials (ACM) and lead-based paint (LBP). Ransom also identified biological hazards in the form of bird droppings (guano) throughout the buildings, which may induce the growth of the fungal spores that can lead to respiratory disease. As part

of the HMI, preliminary cost estimates were also prepared for the abatement and cleanup of the hazardous building materials and bird droppings.

Building materials containing asbestos at concentrations greater than one percent were identified in several areas of the Site buildings and primarily included thermal system insulation (TSI) materials, boiler/tank insulation materials, and flooring and exterior siding paper.

The HMI also included an inspection for the presence of lead-based paint (LBP) and collection of paint chip samples for laboratory analysis, as warranted. According to the laboratory results, several painted surfaces throughout the Site buildings were found to contain elevated levels of lead, significantly greater than 0.5 percent lead by weight, which are considered "lead-based" according to the U.S. Housing and Urban Development (HUD) Lead-Based Paint Guidelines.

In accordance with local, State, and Federal laws and regulations, all of these hazardous building materials are required to be abated, removed, and properly disposed of off-site, prior to or during Site restoration activities. Ransom also recommended that the bird droppings be removed in conjunction with the removal of friable ACM, since these removal activities require a regulated work area and properly trained workers with respiratory protection.

d. Project Goal (*site reuse plan*):

The Town of Kittery advertised a Request for Proposals for qualified not-for-profits to propose plans to restore and reuse the Station in the fall of 2011. Kittery selected the Wood Island Life Saving Station Association (WILSSA) to be the not-for-profit organization that it would work with to plan for the repair of the building. The WILSSA proposed a Passive Recreation Program for the island involving passive boater services and facility exhibits of the Life Saving Station history and Wood Island's role in maritime history. Kittery has agreed to allow WILSSA to repair the Station pending a successful EPA Brownfields grant.

If the Site remains vacant, the historic buildings will continue to deteriorate, be subject to vandalism and blight, and will negatively impact Wood Island. Since they are currently unused and deteriorating, they will also represent an ongoing drain on the Town's finances, since the properties will continue to require significant maintenance, security, emergency response, and present significant potential liability risks. Of greater concern is not restoring and preserving these buildings, depriving the community of these significant historic assets and degrading the history of Wood Island. Delaying the rehabilitation will lead to increasing deterioration, increasing the probability that any future restoration efforts would not be able to incorporate the historic and culturally significant elements of the structures.

Following cleanup and abatement of the hazardous building materials, the buildings will be repaired and the specifics regarding the proposed recreational/tourism facility, including maritime exhibits and a partial museum, as part of the Island Trail Program will be discussed with Kittery. These efforts are entirely in concert with attempts to increase

the maritime facilities and tourism attraction of Pepperrell Cove as the First Port in Maine Campaign. Reuse plans also include restoring the grounds around the structures to the pre-1950's appearance.

II. Applicable Regulations and Cleanup Standards

a. Cleanup Oversight Responsibility (*identify the entity, if any, that will oversee the cleanup, e.g., the state, Licensed Site Professional, other required certified professional*):

The Town of Kittery will hire a qualified environmental professional (QEP) to oversee and document the cleanup in accordance with local, State, and Federal requirements. A qualified abatement contractor, licensed and certified in the State of Maine will be hired to conduct the cleanup and abatement work. Furthermore, the cleanup will be overseen by the MEDEP Brownfields and VRAP programs and all documents prepared for this Site will be submitted to the MEDEP for review and approval in order to receive a VRAP Certificate of Completion, upon completion of the cleanup work.

b. Cleanup Standards for major contaminants (*briefly summarize the standard for cleanup e.g., state standards for residential or industrial reuse*):

The Town of Kittery currently anticipates that the State and Federal standards for the abatement of hazardous building materials including asbestos and lead-based paint will be employed in this project. However, it is possible that other risk-based cleanup standards will be generated for compounds of concern, in accordance with State and Federal regulations, as necessary.

c. Laws & Regulations Applicable to the Cleanup (*briefly summarize any federal, state, and local laws and regulations that apply to the cleanup*):

Laws and regulations that are applicable to this cleanup include the Federal Small Business Liability Relief and Brownfields Revitalization Act, the Federal Davis-Bacon Act, Maine DEP environmental laws, and local Town by-laws and ordinances. Federal, State, and local laws regarding procurement of contractors to conduct the cleanup will be followed. Specifically, the Town of Kittery will competitively bid and retain a qualified environmental consultant and abatement/cleanup contractors, in accordance with the competitive procurement provisions of 40 CFR Part 31.36 (for eligible government entities) or 40 CFR Part 30 (for non-profit organizations). In addition, all appropriate permits (*e.g.*, State abatement notifications/permits for asbestos and lead-based paint, and hazardous building materials transport/disposal manifests) will be obtained, prior to the work commencing.

III. Cleanup Alternatives

a. Cleanup Alternatives Considered (*minimum two different alternatives plus No Action*):

To address contamination at the Site, three different alternatives were considered, including Alternative 1 - No Action; Alternative 2 - Combination Targeted

Abatement/Removal and Operations & Maintenance (O&M); and Alternative 3 – Full Abatement/Removal with Off-Site Disposal.

b. Evaluation of Cleanup Alternatives (*brief discussion of the effectiveness, implementability and a preliminary cost estimate for each alternative*)

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

Effectiveness:

- Alternative 1: The No Action alternative is not effective in controlling or preventing the exposure of receptors to contamination at the Site. A No Action alternative signifies that no remediation activities would be conducted at the Site. The No Action alternative does not include a means for mitigating exposure to identified hazardous material and is not protective of human health or the environment; therefore, the potential for human exposure to hazardous building materials, such as asbestos and lead, and biological hazards of bird droppings, through direct contact, ingestion, and inhalation continues to exist for potential future site occupants, site workers, or trespassers.
- Alternative 2: The Combination Targeted Abatement/Removal and Operations & Maintenance (O&M) alternative is an effective way to prevent exposure to certain hazardous building materials. This alternative involves mitigating the potential for human exposure through direct contact, ingestion, and inhalation of the hazardous building materials and biological hazards identified at the Site, using a combination of targeted removal and material stabilization and maintenance in accordance to State and Federal regulations.

Each area where asbestos-containing material (ACM) and bird droppings are located is anticipated to be affected by the proposed restoration of the Wood Island Life Saving Station facility. Current federal and state regulations require the removal of friable (easily reduced to powder using hand pressure) ACM, prior to conducting renovation or demolition activities that impact these areas. To meet these federal and state regulations, the identified ACM in the buildings will be completely removed, and therefore, encapsulation and maintenance is not an option for asbestos. Bird droppings should also be removed in conjunction with the removal of friable ACM, since these removal activities require a regulated work area and properly trained workers with respiratory protection.

Due to both interior and exterior lead-based paint that is, in part, deteriorating on several surface of the Wood Island Life Saving Station facility buildings, this alternative includes a combination of the full removal and off-site disposal of portions of the deteriorating lead-based paint and the stabilization and encapsulation of relatively intact (non-deteriorating) lead-based paint. A potential for adverse impacts to human health from exposure to lead-based paint would still exist in the extreme case that the encapsulated exterior surfaces are disturbed, such as future restoration and building repair activities. The greatest risk of disturbance would involve future restoration projects. However, an effective O&M plan would significantly reduce the risk of exposure to the remaining

exterior lead. In addition, an institutional control (land use restriction) would need to be recorded on the deed to indicate the need to maintain the O&M plan for the site in order to prevent future exposure to lead-based paint, unless these materials are removed and properly disposed of in the future.

- Alternative 3: The third remediation alternative evaluated in this ABCA is the Full Abatement/Removal with Off-Site Disposal alternative. This alternative involves mitigating the potential for human exposure through direct contact, ingestion, and inhalation of the identified hazardous building materials and bird droppings at the Site through full abatement and removal activities. This alternative is an effective way to eliminate risk at the Site, since the contamination and its associated hazards will be removed and the exposure pathways will no longer exist; therefore, this alternative is fully effective in the short-term, as well as the long-term control of each of the identified hazardous building materials and bird droppings.

Implementability:

- Alternative 1: The No Action alternative is easy to implement, since no actions will be conducted. However, the Site will need continued maintenance and security.
- Alternative 2: Under the Combination Targeted Abatement/ Removal and O&M alternative, each area where asbestos-containing material (ACM) is located is anticipated to be affected by the proposed renovation. Current federal and state regulations require the removal of friable (easily reduced to powder using hand pressure) ACM and universal wastes, prior to conducting renovation or demolition activities that disturb/impact these areas. To meet these federal and state regulations, the identified ACM identified at the Wood Island Life Saving Station facility will be completely removed, and therefore, the encapsulation and/or maintenance alternative is not an option for asbestos. Bird droppings are also planned to be removed in conjunction with the removal of friable ACM, since these removal activities require a regulated work area and properly trained workers with respiratory protection.

Paint stabilization, targeted removal, and maintenance of lead painted surfaces at the Site is technically feasible and is an effective action for reducing or eliminating the risk of human exposure to lead. Services and materials necessary to conduct this O&M alternative are readily available, although ongoing monitoring and maintenance of the encapsulated areas will require periodic coordination and reporting. In addition, this alternative requires the implementation of a deed restriction for maintaining the proposed O&M plan for lead-based paint remaining in the buildings.

- Alternative 3: Full Abatement and Removal of the identified hazardous building materials is moderately difficult to implement. Coordination (e.g., dust suppression and monitoring) during cleanup activities and short-term disturbance to the community (e.g., barges/boats and trucks transporting contaminated materials for off-site disposal) are anticipated. However, ongoing monitoring and maintenance will not be required following abatement and offsite disposal.

Removal of asbestos-containing materials and bird droppings at the Site is technically feasible, and is an effective action for reducing or eliminating the risk of direct human

contact to asbestos and these biological hazards. The necessary services and materials to complete the remedial tasks are readily available, including the necessary equipment and contractors.

Removal of interior and exterior lead-based paint at the Site is also technically feasible, and is an effective action for reducing or eliminating the risk of direct human contact to lead. The necessary services and materials to complete the remedial tasks are readily available, including the necessary equipment and contractors.

Cost:

- There will be no costs under Alternative 1 - No Action.
- It is estimated that Alternative 2 – Combination Targeted Abatement/Removal and Operations & Maintenance costs will be on the order of \$175,000 to \$200,000 (estimated cleanup contractor costs with contingency), excluding engineering, oversight, reporting, meetings, and other programmatic cleanup costs.
- Alternative 3 – Full Abatement & Removal with Off-Site Disposal is estimated to cost roughly \$275,000 to \$300,000, including full de-leading of painted surfaces (estimated cleanup contractor costs with contingency), excluding engineering, oversight, reporting, meetings, and other programmatic cleanup costs.

c. Recommended Cleanup Alternative

The Combination Targeted Abatement/Removal and Operations and Maintenance alternative (Alternative 2) was selected as the preferred cleanup alternative, since it is financially less burdensome, effective, technically feasible/practical, and is equivalent to the removal alternative in meeting the remedial objectives, including the protection of human health and the environment. Based on the criteria evaluated, the No Action alternative (Alternative 1) is unacceptable due to the fact that it does not meet evaluation and threshold criteria, including the overall protection of human health and the environment. Although the Full Abatement/Removal alternative (Alternative 3) is also effective, technically feasible/practical, and protective of human health and the environment, it comes with a greater cost and was not selected as the preferred alternative.

Green and Sustainable Remediation Measures for Selected Alternative

To make the selected alternative greener or more sustainable, several techniques are planned. The Town of Kittery will require the cleanup contractor to follow an idle-reduction policy and use abatement equipment (e.g., boats, trucks, and generators) with advanced emissions controls operated on ultra-low sulfur diesel and the number of mobilizations to the island will be minimized to conserve fuel. Metal pipes and apertures are proposed to be recycled upon removal of ACM and bird droppings may potentially be reused and recycled as fertilizer materials at the Site or other commercially available application sites. In addition, the Town of Kittery anticipates asking the bidding cleanup contractors to propose additional green remediation techniques in their response to the Request for Proposals for the cleanup contract.

The selective alternative also provides some level of resilience in light of reasonably foreseeable changing climate conditions. Specifically, the Wood Island Life Saving Station buildings are located in the center and at the highest elevation/points of Wood Island and no structures are constructed within the tidal zone. The buildings are anchored on bedrock and protected by sea walls, which should provide stability to handle potential flooding and increased storm intensity and frequency due to potential climate change. Furthermore, the majority of hazardous building materials are planned to be fully abated and removed from the structures and island, which will mitigate long-term concerns for future flooding and storms as a result of climate change. The buildings have also survived and withstood many significant storms (nor'easters) with only minor damage, since their construction in 1908.

