

Analysis of Brownfield Cleanup Alternatives

**Naval Support Activity Building 602
4400 Dauphine Street
New Orleans, Louisiana**

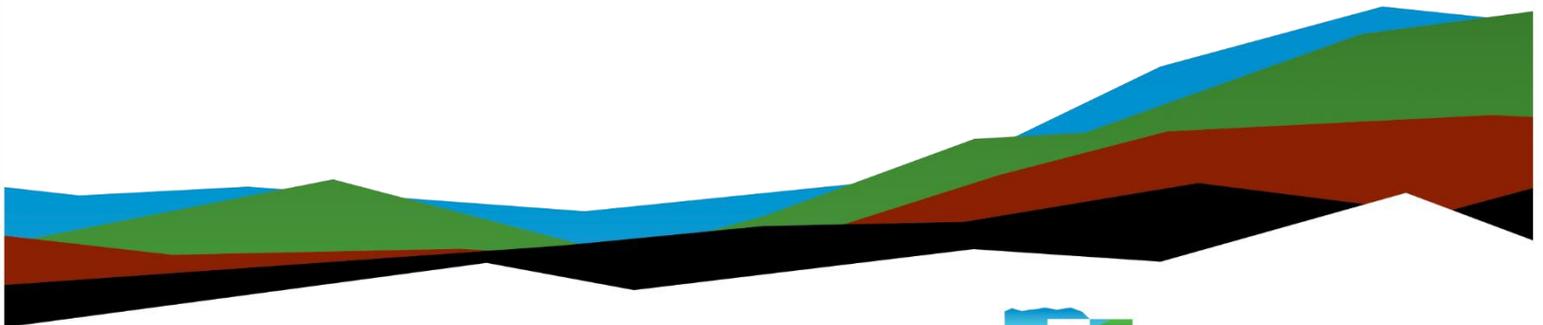
**June 13, 2025 | Terracon Project Number: ET247244
EPA Brownfields Cooperative Agreement 4B02F44601**

Prepared for:

City of New Orleans, Louisiana

Prepared By:

Terracon Consultants
New Orleans, Louisiana



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**Prepared by:
Terracon Consultants**

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The Analysis of Brownfields Cleanup Alternatives reported herein was funded wholly or in part through a cooperative agreement between the Environmental Protection Agency’s (EPA’s) Brownfield and Land Revitalization Program and the City of New Orleans’ (City) Brownfields Program (EPA Cooperative Agreement No. 4B02F44601). The contents of this document do not necessarily reflect the views and policies of the EPA or the City, nor does the EPA or the City endorse trade names or recommend the use of commercial products mentioned in this document.

1.0 INTRODUCTION AND BACKGROUND

This Analysis of Brownfield Cleanup Alternatives (ABCA) evaluates cleanup alternatives and establishes the costs for cleanup activities necessary to address hazardous substances including asbestos-containing material (ACM) and Lead Containing Paint (LCP) to support redevelopment of the Naval Support Activity (NSA) Building 602 (Site) located at 4400 Dauphine Street in New Orleans, Louisiana.

This ABCA is intended to briefly summarize information about the site and contamination issues, cleanup standards, applicable laws, cleanup alternatives considered, and the proposed cleanup, and includes information on the effectiveness, the ability of the grantee to implement each alternative, the cost of each proposed cleanup alternative, an evaluation of how environmental resilience to extreme weather/natural disaster events, and an analysis of the reasonableness of the various cleanup alternatives considered, including the one chosen. The ABCA is intended as a brief document summarizing the larger and more detailed technical and financial evaluations performed in addressing each of these areas. The ABCA may be modified technically and financially or in more depth relative to each of these areas upon award of funding and in response to community interaction.

Cleanup alternatives were evaluated in accordance with EPA Region 6 protocols and general guidance required prior to implementation of a cleanup design using EPA Brownfields Grant funding. More specifically, viable cleanup alternatives based on site-specific conditions, technical feasibility, resiliency to extreme weather/natural disaster events, and preliminary cost/benefit analyses are summarized herein. Specific cleanup alternatives and associated recommendations are presented in the applicable sections of this report.

1.1 Background

NSA Building 602 is one of three buildings making up the NSA complex. The former NSA complex was completed in 1919 by the United States Navy and was used as a logistic station to protect the Port of New Orleans from attack, a shelter and training center for the unemployed and homeless during the Great Depression and later as a recruiting and training station for multiple military branches. It was deactivated and transferred to the City of New Orleans in 2011 to facilitate its redevelopment. The site is located at 4400 Dauphine Street in New Orleans, Orleans Parish, Louisiana. NSA Building 602 is a 6-story building, approximately 500,000 square feet, and is currently vacant. The location of the site is depicted on Exhibit 1 of Appendix A, which was reproduced from a portion of the USGS 7.5-minute series topographic map. The site vicinity and site layout are depicted on Exhibit 2 of Appendix A.

1.2 Site Assessment Findings

A *Hazardous Materials Assessment* of the site was conducted by Terracon Consultants, Inc. (Terracon) and the results were provided in a report dated January 3, 2022. Samples collected were analyzed using Polarized Light Microscopy (PLM) by a Louisiana Environmental Laboratory Accreditation Program (LELAP) and National Voluntary Laboratory Accreditation Program (NVLAP) accredited laboratory. The assessment identified quantities of asbestos and lead paint identified in the tables below.

The report recommended that the ACM to be disturbed during renovation or demolition activities be abated by a State of Louisiana licensed asbestos abatement contractor and that third-party air monitoring be performed during the abatement of the ACM.

The following table provides a summary of the ACM that were identified in the structure in the Hazardous Materials Assessment – Naval Activities Support Building 602 report:

HA	Material Description	Material Location	Condition	NESHAP Category	Estimated Quantity of ACM
01	Residual black, white, window caulk	Exterior windows	Damaged	Cat II NF	300 Windows
03	Black flashing tar	602 Roof	Damaged	RACM	12,000 SF
11	Maroon 9x9 floor tile with black mastic Black refrigerator mastic	Cafeteria Kitchen and Dining Area	Damaged	RACM	7,500 SF
18	Light Brown 12'x12' floor tile with black mastic	Corridors, Offices beneath carpet and/or HA-13	Good	CAT I NF	55,000 SF
23	Black torch down membrane and tar	Level Awning	Damaged	CAT I NF	20,000 SF
61	Black waterproofing beneath bathroom floor	602 Bathrooms	Good	CAT II NF	6,000 SF
67	Black stud adhesive	602 -At ceiling/wall junctions	Good	CAT II NF	10,000 SF

SF=Square Feet

A Limited Lead Containing Paint Survey was performed to determine if LCP are present and to identify the locations within the structure. A Viken Pb200i (serial no. 2029) XRF (PB200i) was used to determine if a surface coating contained LCP. The Viken Pb200i is a field portable XRF spectrum analyzer capable of identifying lead concentrations in coatings and paint, which are expressed in mg/cm².

The following table provides a summary of the LCP that was identified in the structure in the Hazardous Materials Assessment – Naval Activities Support Building 602 report:

Area	Component	Substrate	Color	Location
Parking	Parking Stripe	Concrete	Yellow	6th Floor
Parking	Fire suppression pipe	Metal	Red	6th Floor
Stairwell	Wall	Concrete	White	6th Floor
Roof	Fire Door	Metal	Gray	Penthouse
Elevator Lobby	Elevator Door	Metal	Gray	Elevator
602 – 4A	Wall	Concrete	Gray	4th Floor
Cafeteria	Column	Concrete	Tan/Gray	2nd Floor
Stairwell	Wall	Concrete	White	6th Floor
Stairwell	Rail	Metal	Blue	6th Floor

Lead-containing, white paint on levels 1 and 2 of the subject structure is concealed beneath a brown, fireproofing/acoustical treatment applied to the concrete ceilings, which was previously confirmed to be non-ACM. This material will require removal to facilitate the treatment of the identified lead-containing paint.

2.0 PROJECT GOALS AND RE-USE PLAN

The City of New Orleans owns the site and plans to address hazardous materials at the Naval Support Activity (NSA) Building 602. Successful cleanup will allow for the pursuit of additional funding, leading to meaningful reuse of the property beneficial to the surrounding community. Plans for NSA Building 602 include renovations for a multi-family affordable housing structure with a grocery store located on the ground floor.

EPA brownfield funding will be used to abate select ACM and LCP in Building 602 Floor 1 and Floor 2 prior to renovations using other funding sources. This allows immediate and definitive resolution of the public health issue, while final renovations can then proceed on a schedule that time and resources allow without worry or expense of maintaining and isolating damaged materials from public exposure.

3.0 APPLICABLE REGULATIONS AND CLEANUP STANDARDS

Asbestos Containing Materials

The regulated contaminant of concern for remedy is asbestos. Asbestos is the name given to a group of six different fibrous minerals that occur naturally in the environment. Asbestos

minerals have separable long fibers that are strong and flexible enough to be spun and woven and are heat resistant. Because of these characteristics, asbestos has been used for a wide range of manufactured goods, mostly in building, friction products, heat-resistant fabrics, packaging, gaskets, and coatings. Asbestos fibers can enter the air or water from the breakdown of natural deposits and manufactured asbestos products. Asbestos fibers do not evaporate into air or dissolve in water. Small diameter fibers and particles may remain suspended in air for a long time and be carried long distances by wind or water before settling down. Larger diameter fibers and particles tend to settle more quickly. Asbestos fibers are not able to move through soil. Asbestos fibers are generally not broken down to other compounds and will remain virtually unchanged over long periods. Exposure to asbestos usually occurs by breathing contaminated air in workplaces that make or use asbestos. Asbestos is also found in the air of buildings containing asbestos that are being torn down or renovated. Asbestos exposure can cause serious lung problems and cancer.

Lead Containing Paint

Another regulated contaminant of concern for remedy is LCP. Lead was previously added to paint to improve drying time, durability, and moisture resistance. Lead is a highly toxic metal that may cause a range of health problems, especially in young children. When lead is absorbed into the body, it can cause damage to the brain and other vital organs, like the kidneys, nerves, and blood. Symptoms can include neurological damage, developmental delays, learning difficulties, slowed growth, and cardiovascular issues.

3.1 Cleanup Responsibility

The City of New Orleans (owner) is the funding recipient. The City is responsible for hiring contractors and will use a Qualified Environmental Professional (QEP) to assist with contracting documents, cleanup contractor oversight and final documentation. The cleanup will be conducted by an asbestos abatement contractor licensed in the State of Louisiana. Demolition and renovation permits and notifications will be obtained from the Louisiana Department of Environmental Quality (LDEQ) and local agencies. Applicable documentation will be submitted as required to the LDEQ.

3.2 Cleanup Standards

Asbestos Containing Materials

Any individual or company contracted to perform a demolition or renovation activity that disturbs RACM in excess of the established thresholds must be recognized by the Louisiana Licensing Board for Contractors to perform asbestos abatement. Asbestos removal shall be conducted according to applicable Federal, State, and local rules/regulations, including but not limited to, NESHAP 40 CFR Part 61, Subpart M OSHA regulations under 29 CFR 1910.1001

and 1926.1101, and LAC Title 33, Part III Chapter 27 and Chapter 51 Subchapter M.

The United States Occupational Safety and Health Administration (USOSHA) asbestos standard for construction (29 CFR 1926.1101) regulates workplace exposure to asbestos. The USOSHA standard requires that employee exposure to airborne asbestos must not exceed 0.1 fibers per cubic centimeter of air (0.1 f/cc) as an eight-hour time weighted average (TWA) and not exceed 1.0 fibers per cubic centimeter of air (1.0 f/cc) over a 30-minute time period known as an excursion limit (EL). The TWA and EL are known as USOSHA's asbestos permissible exposure limits (PELs). The USOSHA standard classifies construction and maintenance activities that could disturb ACM and specifies work practices and precautions that employers must follow when engaging in each class of regulated work. The standard also specifies requirements for handling materials containing asbestos in concentrations less than or equal to 1%.

After abatement is complete, the AC shall conduct a visual assessment to ensure the work area is clean of all ACM debris. If the contractor deems the is visibly area clean, Terracon shall perform a final visual assessment to confirm that abatement has been completed and all surfaces are free of visible residue, dust, debris and asbestos contaminated equipment and wastes. The visual assessment will be performed in general accordance with LAC 33:III:Section 2717:J and ASTM E1368-23 Standard Practice for Visual Inspection of Asbestos Abatement Projects.

Lead Containing Paint

USOSHA Lead standard for construction (29 CFR 1926.62) regulates workplace exposure to lead. The USOSHA standard requires that employee exposure to airborne lead must not exceed 50 micrograms per cubic meter of air. OSHA does not define lead-containing coatings. Any detectable level of lead presents a potential source of exposure depending on how the material is disturbed. Personnel and/or contractors should utilize work practices pursuant to the OSHA lead standard (29 CFR 1926.62) when impacting lead-containing components.

Removal of the identified coatings containing lead must be done by competent persons who are trained, knowledgeable, qualified, and licensed in the techniques of abatement, handling and disposal of these materials.

The debris stream generated from demolition activities should be analyzed via the Toxicity Characteristic Leaching Procedure (TCLP) for lead prior to disposal and is typically included in required profiling for the landfill selected to receive the waste stream. The landfill should be contacted to determine specific disposal requirements prior to transportation.

3.3 Laws and Regulations Applicable to the Cleanup

Asbestos Containing Materials

Asbestos is regulated by the Asbestos Hazard Emergency Response Act (AHERA), the Toxic Substance Control Act (TSCA), and the Clean Air Act (CAA), and the Louisiana Administrative Code (LAC).

The asbestos NESHAP (40 CFR Part 61, Subpart M) regulates asbestos fiber emissions and asbestos waste disposal practices. The asbestos NESHAP regulation also requires the identification and classification of existing ACM according to friability prior to demolition or renovation activity. Under NESHAP, ACM is identified as either friable, Category I non-friable or Category II non-friable ACM. Friable ACM is a material containing more than 1% asbestos that, when dry, can be crumbled, pulverized or reduced to powder by hand pressure. All friable ACM is considered regulated asbestos containing material (RACM).

RACM includes all friable ACM, along with Category I and Category II non-friable ACM that has become friable, will be or has been subjected to sanding, grinding, cutting or abrading, or ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder in the course of renovation or demolition activity.

Category I non-friable ACM are exclusively asbestos-containing packings, gaskets, resilient floor coverings, resilient floor covering mastics and asphalt roofing products that contain more than 1% asbestos. Category II non-friable ACM are all other non-friable materials other than Category I non-friable ACM that contain more than 1% asbestos. Category II non-friable ACM generally includes but is not limited to cementitious material such as: cement pipes, cement siding, cement panels, glazing, mortar and grouts.

The State of Louisiana has established Chapter 27 of the ERC (LAC 33:III.Chapter 27) to regulate the identification, management, and abatement of ACM in schools and state buildings. Chapter 27 requires any asbestos-related activity in a school or state building to be performed by an individual or company accredited by the State of Louisiana, through the LDEQ. An asbestos-related activity consists of the disturbance (whether intentional or unintentional) or abatement of ACM, the performance of asbestos surveys, the development of management plans and response actions, asbestos project design, the collection or analysis of asbestos samples, monitoring for airborne asbestos or any other activity required to be accredited under Louisiana Department of Environmental Quality Chapter 27 Appendix A.

In non-state, non-school buildings, the State of Louisiana sets forth emission standards for asbestos under Chapter 51 of the ERC (LAC 33:III.Chapter 51). Per Chapter 51 Section P, the following activities, when conducted, must be performed by accredited individuals: asbestos surveys, asbestos abatement, and monitoring for airborne asbestos.

The Louisiana Air Quality Regulations (LAC 33:III.Chapter 51, Subchapter M) require that an inspection be conducted by a person currently accredited as an LDEQ asbestos inspector. LDEQ requires a notification by submitting either an AAC-2 (a) form or AAC-2 (b) form. An AAC 2 (a) form is required when requesting Asbestos Disposal Verification Forms (ADVF) for Asbestos Contaminated Debris Activities (ACDA), Demolition, Renovation, and/or Response Action projects where Regulated Asbestos Containing Material (RACM) is present, or assumed to be present, above the established thresholds or as otherwise required by LAC 33:III.5151.F.1. The AAC-2 (a) form must be either postmarked or hand delivered to the Department at least 10 working days prior to the scheduled dates of asbestos removal. An AAC 2 (b) form is required when greater than 64 square feet of Vinyl Asbestos Tile (VAT) is removed without the intent of making it RACM, or when lab analysis of properly sampled materials indicates that no ACM is present; that ACM present is not RACM and will not be made RACM by the demolition; or that all RACM present is less than established thresholds. The established thresholds per LAC 33:III.5151.F.1 include the combined amount of RACM less than 60 linear feet on pipes, 64 square feet on other facility components or 27 cubic feet of material where length or area could not be measured previously. A Form AAC-2 (b) must be postmarked or hand delivered to the Department at least 5 working days prior to the scheduled date of asbestos removal or 3 working days if the removal only includes resilient floor covering per LAC 33:III.5151.F.2.c.

The following work practices should be followed prior to the initiation of demolition activities on the project site:

- Prepare abatement specifications by an LDEQ Accredited Project Designer;
- Notify the LDEQ of intention to renovate or demolish by the required notification form and receive approval for abatement activities;
- Remove all regulated ACM from facilities being demolished or ACM to be impacted by renovations before disruptive activity begins;
- Handle and dispose of ACM in an approved manner (USEPA, 2006a: Asbestos/NESHAP Regulated Asbestos-Containing Materials Abatement and LAC 33:III.Chapter 51);
- Comply with applicable OSHA standards;
- Perform third-party asbestos air monitoring prior to, during, and at the conclusion of the abatement activities by an LDEQ accredited Asbestos Contractor/Supervisor;
- Within 24 hours after passing the final air clearance testing, the contractor shall notify the LDEQ regional office of the completion of the abatement activity. All asbestos abatement materials (ie filters from control devices, bags, poly sheeting, disposable equipment, clothing and used PPE) are to be removed and disposed as Asbestos-Containing Waste Materials (ACWM) before demobilizing from the site; and
- Prepare an asbestos abatement close-out report at the conclusion of the project.

Lead Containing Paint

Under the US EPA Hazard Standards for Lead in Paint, Dust and Soil (TSCA Section 403), Lead Containing Paint means paint or other surface coatings that contain lead equal to or in excess

of 1.0 milligrams per square centimeter or more than 0.5 percent by weight. This rule establishes standards to help property owners, lead paint professionals and government agencies identify lead hazards in residential paint, dust and soil. The rule establishes standards for Lead Containing Paint hazards (including hazards from lead in dust and soil) in most pre-1978 housing and child-occupied facilities.

OSHA 29 CFR 1926.62 Subpart D, Lead, applies to all renovation/demolition where an employee may be occupationally exposed to lead. The employer shall communicate information concerning lead hazards and communicating information concerning hazards and appropriate protective measures to employees, including training. Where lead is present, it should be assumed that workers will be exposed to lead above the action level and personal protective measures (based on the type of disturbance) should be implemented until an exposure assessment is completed.

OSHA does not define lead-containing coatings. Any detectable level of lead presents a potential source of exposure depending on how the material is disturbed. Therefore, Terracon recommends that potential contractors are made aware of the findings of this limited lead paint survey. Personnel and/or contractors should utilize work practices pursuant to the OSHA lead standard (29 CFR 1926.62) when impacting lead-containing components. The full OSHA lead standard should be referenced for compliance.

The debris stream generated from demolition activities should be analyzed via the Toxicity Characteristic Leaching Procedure (TCLP) for lead prior to disposal and is typically included in required profiling for the landfill selected to receive the waste stream. The landfill should be contacted to determine specific disposal requirements prior to transportation.

3.4 Environmental Resiliency Considerations

Effective with Fiscal Year 2013, EPA's Brownfields Program initiated a change to cooperative agreements for Cleanup and Revolving Loan Fund awards. It requires cooperative agreement recipients to evaluate the resilience of remedial options funded by the award in light of reasonably foreseeable extreme weather/natural disaster events. As directed under EPA's Climate Adaptation Plan, the ABCA must include a discussion of extreme weather/natural disaster factors for the area of the project and the associated site-specific risk factors. Specifically, this is to be presented as part of the ABCA. As EPA Brownfields cleanup grant funds will be utilized for cleanup actions at the site, extreme weather/natural disaster events have been considered in this ABCA.

3.4.1 General Considerations

In considering remedy resiliency Terracon consulted the following resources as authoritative sources.

- Climate Resources on Data.gov

- U.S. Global Change Research Program (USGCRP)
- U.S. Climate Resilience Toolkit
- USDA Climate Hub

3.4.2 Site-Specific Considerations

The site and Louisiana are in EPA’s climate designation of South Central. In this region, rising temperatures, extreme precipitation, sea level rise, coastal inundation and frequency/intensity of storms are the primary natural disaster conditions. These changing conditions have significant effects on the site and will most likely require permanent clean-up of contaminants due to the potential for hurricanes in this region. The site is located in the Bywater Historic District, an urbanized area and is planned for redevelopment as a multi-tenant housing development. In such an urban environment, are related to human health, primarily due to dangerous temperature extremes, flash flooding, and air quality issues related to higher humidity, ground-level ozone, and pollen pollution.

These considerations do not identify property-specific risks in considering resiliency of remedy at this property as part of feasibility and implementability.

4.0 EVALUATION OF CLEANUP ALTERNATIVES

Asbestos and Lead Containing Paint is considered a hazardous substance relative to grant funding. EPA requires the ABCA, at a minimum, to consider two different cleanup remedies and a “no action” alternative. Asbestos mitigation in the environmental industry is an established practice. Due to its chemical and physical nature, asbestos can, generally speaking, only be managed. Unlike chemical contamination, it cannot be readily altered or broken down. The industry has historically evolved two basic approaches: removal with off-site management and in-place isolation and on-site management.

In addition to effectiveness, implementability, and cost considerations, consideration was given to the resiliency of cleanup alternatives in regard to current and future extreme weather events. According to the National Oceanic and Atmospheric Administration’s (NOAA) National Climate Assessment, the primary natural disaster events identified for the southeast region include increased extreme weather activity. Increased weather activity has been identified as site-specific natural disaster considerations, and the resiliency of each cleanup alternative will be evaluated against these considerations.

Cleanup Alternatives Considered

To address hazardous substances at the Site, three different alternatives were considered. These alternatives are outlined below. The following subsections present each alternative in

greater detail, including estimated costs and potential contingency items:

- Cleanup Alternative A: Pre-Renovation ACM and Lead Containing Paint Abatement with Select Encapsulation
- Cleanup Alternative B: ACM and Lead Containing Paint Encapsulation
- Cleanup Alternative C: No Action

4.1 Cleanup Alternative A: Pre-Renovation ACM and Lead Abatement with Select Encapsulation

Alternative A includes conventional removal/abatement of ACMs to be disturbed by renovation using standard industry practices. Abatement areas would be contained prior to the removal using polyethylene sheeting, controlled negative pressure conditions and/or other applicable measures to prevent asbestos fiber migration beyond the work zone. Abatement procedures require wet removals to further control potential spreading of damaged or friable asbestos and airborne particulates. During and following the abatement, ACM dust, particulates and other residual materials would be vacuumed and filtered out using a high efficiency particulate air (HEPA) filtration system.

ACM would be removed in accordance with LDEQ regulations and containerized for off-site landfill disposal as a special or regulated waste under LDEQ issued ADVF. Waste will be containerized (commonly double bagged) to contain ACM in manageable quantities. Leak-tight containers may also be used. Landfill disposal authorizations would be secured prior to initiating the work. These authorizations are specific to the disposal facility.

ACM removal must be performed by a Louisiana-licensed abatement contractor. In addition, this work requires a 10-business day notification to the LDEQ and appropriate coordination with LDEQ representatives, as needed, throughout the abatement project. An air monitoring program will be required for removal of friable or highly damaged ACM, termed regulated asbestos-containing materials (RACM).

Alternative A includes conventional removal/abatement of lead paint parking stripes and stabilization/encapsulation of remaining interior lead paints using standard industry practices. Abatement areas would be contained prior to the removal using polyethylene sheeting and/or other applicable measures to prevent lead migration beyond the work zone. All waste generated will be containerized for off-site landfill disposal as a hazardous waste.

4.1.1 Effectiveness – Including Environmental Resiliency Considerations

The ACM and LCP to be disturbed by renovation activities are permanently removed. This approach is technically effective as a definitive and direct physical elimination of the contaminants that produce unacceptable public risk. The remedy usually does not significantly alter structural conditions due to typical ACM and lead uses. Demolition restrictions would not

remain following demonstration of clearance criteria. Excluding clearance sampling, follow-up inspections and maintenance will not be required. With removal and off-site disposal of contaminants, the approach requires no special post-remedy institutional or land use controls for the property.

Errors will be prevented and minimized by utilizing accredited abatement contractors to conduct the abatement activities in accordance with state regulations and best management practices. Final clearance would be granted following a visual examination of the work area followed by receipt of acceptable air quality testing results.

Site-specific conditions to consider include increased weather activity which could affect building integrity (damage from storms). Removal of ACM and lead paints that will be disturbed during renovation activities reduces the potential for environmental contamination.

4.1.2 Implementability

This alternative is technically achievable. It is a mature remedy common in the remediation industry. The approach requires specialized equipment readily available in the local demolition and engineering markets. A specialized labor force exists in Louisiana to accomplish the remedy. The implementation period is shorter-term and can be conducted during any time of the year.

4.1.3 Cost

The City of New Orleans issued a Request for Proposals to obtain bids for Alternative A and a cost of \$1,557,105 was determined to be the lowest qualified bid amount; which includes necessary abatement/removal/demolition activities, third-party industrial hygiene consulting services, waste removal, and disposal. This cost includes necessary demolition scope items to remove asbestos and remove/treat lead components. Cost is inclusive of Qualified Environmental Professional (QEP) services of \$102,700, select demolition costs of \$600,000, and abatement costs of \$854,405.

4.2 Cleanup Alternative B: ACM Encapsulation

Alternative B involves encapsulating or enclosing the ACM and LCP within the structure. Encapsulation is defined as the treatment of ACM with a liquid that covers the surface with a protective covering or embeds the fibers with an adhesive matrix to prevent the release of asbestos fibers. Enclosing the ACM would consist of covering the materials with a rigid and permanent material such as plywood. Encapsulation of friable and non-friable regulated materials is considered an abatement activity. Abatement areas would be contained prior to the encapsulation using polyethylene sheeting, controlled negative pressure conditions and/or other applicable measures to prevent asbestos fiber migration beyond the work zone. Abatement procedures require wet removals of damaged ACM or ACM debris to further control potential spreading of damaged or friable asbestos and airborne particulates. Following the

removal of any damaged ACM or ACM debris the remaining ACM would be sprayed with a bridging compound (similar to Fiberlock Asbestos Binding Compound). During and following the abatement, ACM dust, particulates and other residual materials would be vacuumed and filtered out using a high efficiency particulate air (HEPA) filtration system.

ACM would be encapsulated in accordance with applicable state regulations and may require LDEQ notifications. Any waste generated would be containerized for off-site landfill disposal as a special or regulated waste. Landfill disposal authorizations would be secured prior to initiating the work. These authorizations are specific to the disposal facility.

ACM encapsulation for RACM must be performed by a Louisiana-licensed abatement contractor. In addition, this work requires a 10-business day notification to the LDEQ and appropriate coordination with LDEQ representatives, as needed, throughout the abatement project. An air monitoring program will be required for removal of friable or highly damaged ACM. Final clearance would be granted following a visual examination of the work area followed by receipt of acceptable air quality testing results (for RACM).

ACM encapsulation of non-friable flooring and mastics are not considered a regulated abatement activity as long as the ACM remains intact in a non-friable state. This can be achieved by covering the ACM flooring and mastic with a flowable cement covering and re-caulking windows. This activity does not require an LDEQ notification or an LDEQ-licensed abatement contractor.

Encapsulation of LCP in its current state is not an option due to current building conditions. The LCP is degrading and flaking in multiple locations throughout the NSA Building 602; therefore stabilization of flaking and degrading paints followed by repainting would be necessary.

4.2.1 Effectiveness – Including Environmental Resiliency Considerations

The ACM and LCP are isolated in a manner in which it does not come into direct contact with humans. This approach is technically effective as a direct physical elimination of the contaminants available to public exposures. However, follow-up inspections and maintenance would be required. Damaged materials will still require abatement. Additionally, renovation to the structure can potentially disturb the ACM and LCP and cause a fiber release and /or lead dust contamination. Therefore, based on the current damage and potential disturbance of the materials during planned renovations, this alternative is an ineffective option.

Potential disadvantages include errors during the application that could potentially release asbestos fibers to the environment, encapsulating materials is not a long-term solution and may fail in some environments. This option also creates a waste generation stream from removal of damaged materials and associated liabilities for the generator. Not all ACM lends itself to encapsulation, such as window glazing, therefore abatement activities will still be

required to remove select materials. Asbestos that will remain will need to be managed in-place under an operations and management plan that would limit the ability to do certain minor activities such as hanging items on ACM walls, as well as maintenance activities.

Site-specific conditions to consider include increased weather activity which could affect building integrity (damaged from storms). Encapsulation still leaves the asbestos-containing materials in-place and has the potential for environmental contamination with damage.

4.2.2 Implementability

This alternative is not technically achievable for all ACM and LCP at this project. Asbestos-containing materials and lead paints in the structure are damaged or materials that do not lend itself to encapsulation. Damaged materials cannot be encapsulated without repair.

4.2.3 Cost

Based upon Terracon's experience with similar projects, the estimated cost to encapsulate ACM and stabilize/recoat LCP from Building 602 Floor 1 and Floor 2 is approximately \$846,000; including professional environmental consulting services, waste removal and disposal and encapsulation. Additional costs of approximately \$292,000 can be anticipated to perform the abatement of the materials not able to be encapsulated or likely to be disturbed by proposed renovations of the facility.

4.3 Cleanup Alternative C: No Action

The "no action" scenario is required by the EPA ABCA process. This alternative is to not address contaminants and trust that exposures as airborne particulate/fibers or dust through further weathering and degradation of the structure does not make contaminants available for human exposure by inhalation.

4.3.1 Effectiveness

This alternative is deemed ineffective and unacceptable for continued Brownfield redevelopment for this Site because:

- It is likely to be considered unacceptable to the community because citizens, nearby workers and construction workers could unknowingly be placed at risk in the future. No-action provides neither remedy nor preventive value to site conditions or in support of improved public health.
- This approach is unacceptable technically in that the microscopic asbestos fibers are known human carcinogens and provide no readily discernable exposure warning mechanism such as odor or other sensory identification. Without an expensive and long-term outdoor air/dust sampling program, there is no ability to identify if and when

residual contaminants may be available for exposure.

- The continued presence of ACM in the building would continue to pose a long-term health risk to the public and also to workers entering the building. The No Action Alternative would make no progress toward achieving the goals of reduction of health risks to the surrounding public and facilitating the demolition of the building for redevelopment.

4.3.2 Implementability

By its definition, taking no action precludes a discussion of implementation. The structure would be left in the unused state in which it currently exists. The identified ACM would still pose a hazard to those entering the building and asbestos fibers would be a continued threat to be released to ambient air. The value of the building would continue to decrease due to deterioration.

4.3.3 Cost

By its definition, taking no action precludes a discussion of cost to implement. This cleanup alternative would not include any specific efforts to remove or maintain ACM in-place. There would be no direct cleanup costs associated with this alternative. Further, this alternative may later result in demolition complications, delays, and increased demolition costs due to ACM remaining within the structures. Direct costs associated with the No Action Alternative and associated non-use of the building would consist of providing site security.

Expanded costs could occur if fugitive asbestos and lead is released during future storms or weathering of damaged structures that might result in secondary deposition and contamination of soils. This would impair re-use and value of surrounding property adjacent to the structure.

4.4 Cost Comparison Alternatives

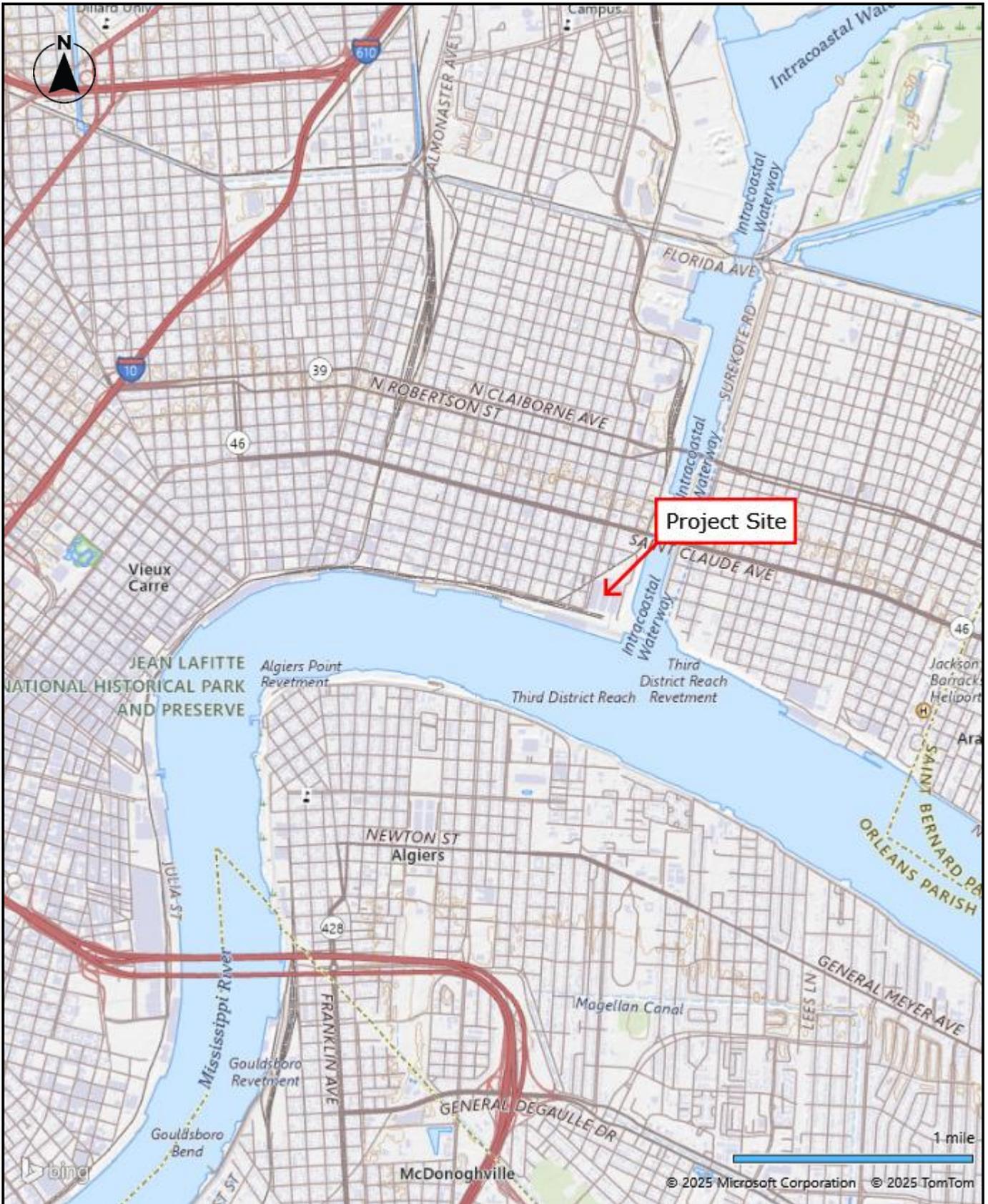
The table below presents a summary of the estimated costs for all alternatives under consideration. There would be no capital cost if the site were to remain as an unused, vacant building.

ALTERNATIVE	CAPITAL COST	ANNUAL COST
A – Pre-renovation ACM/LCP Abatement with select Encapsulation	\$1,557,105	N/A
B – ACM/LCP Encapsulation	\$1,118,200	\$4,000 [‡]
C – No Action	\$0	\$4,000 [‡]

[‡] - Includes costs for annual re-inspection of ACMs to document condition.

5.0 RECOMMENDED CLEANUP ALTERNATIVE

The recommended cleanup approach is Alternative A: Pre-Renovation ACM and Lead Abatement with Select Encapsulation. This alternative would address exposure risks using a proven approach consistent with recognized industry standards while at the same time easily garnering LDEQ approval. This option would remain comparably cost-effective under almost all abatement scenarios and building conditions. ACM removal would not require the need for subsequent inspections, maintenance and/or regulatory oversight. This alternative addresses ACM liabilities, potential contaminant sources or potential limitations to future land use and brownfields redevelopment potential consistent with City of New Orleans goals and re-use planning.



Project No.	ET247244
Scale:	AS SHOWN
Client:	City of New Orleans
Date:	June 13, 2025

Terracon
 524 Elmwood Park Blvd Ste 170
 New Orleans, LA 70123-6814

TOPOGRAPHIC MAP
 Naval Support Activity Building 602
 4400 Dauphine Street
 New Orleans, LA

Exhibit	1
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Terracon
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SITE DIAGRAM
 Naval Support Activity Building 602
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 New Orleans, LA

Exhibit	2
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