Analysis of Brownfield Cleanup Alternatives

Brownfields Asbestos Cleanup
Willow Branch Apartments
822 N Indian Creek Drive
Clarkston, DeKalb County, Georgia

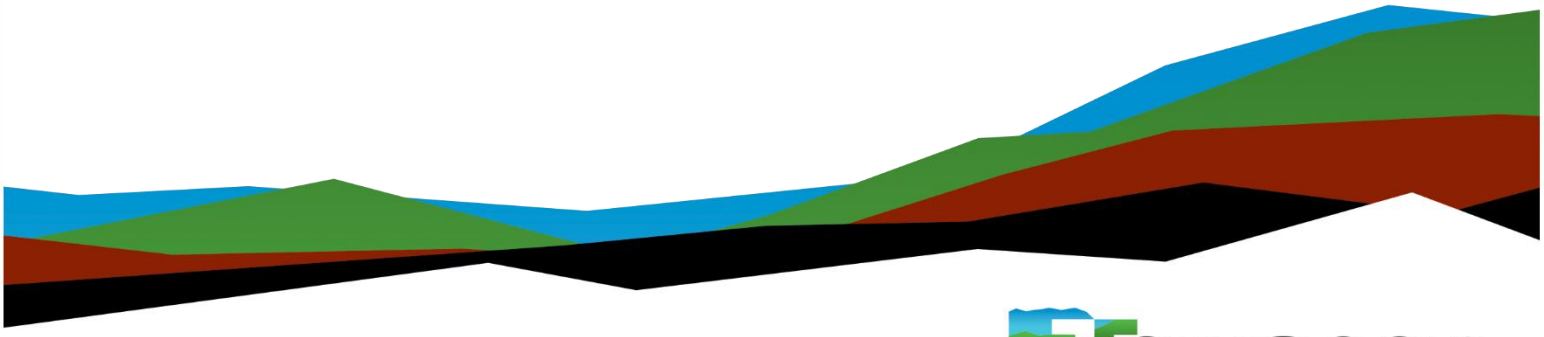
November 19, 2025 | Terracon Project Number: HN257429
EPA FY2022 Brownfields Revolving Loan Fund (BRLF) Grant

Prepared for:

Housing Development Corporation of DeKalb
750 Commerce Drive, Suite 110
Decatur, DeKalb County, Georgia

Prepared By:

Terracon Consultants
Macon, Georgia



Analysis of Brownfield Cleanup Alternatives

Willow Branch Apartments
822 North Indian Creek Drive
Clarkston, DeKalb County, Georgia

EPA Brownfield Revolving Loan Fund (BRLF) Grant
Date: November 19, 2025

Prepared by:
Terracon Consultants, Inc.

PROJECT MANAGER _____ **Date** 11/19/2025
Tameka Gordon / Terracon Consultants, Inc.

QA REVIEWER _____ **Date** 11/19/2025
Lem Dial / Terracon Consultants, Inc.

Table of Contents

Appendices

Appendix A - Exhibits

The Analysis of Brownfields Cleanup Alternatives reported herein was funded wholly or in part through a Brownfield Revolving Loan Fund (BRLF) between the Environmental Protection Agency's (EPA's) FY2022 Brownfields Revolving Loan Fund (BRLF) and Decide DeKalb Development Authority (DDDA) (EPA Cooperative Agreement No. 4B02D38522). The Housing Development Corporation, EduHousing, Inc., and the Housing Authority of DeKalb County are forming a joint venture (JV) partnership to acquire and rehabilitate Willow Branch Apartments. The Housing Development Corporation of DeKalb, Terracon's client, is in discussion with Decide DeKalb (DeKalb County) regarding the BRLF and is currently working on a Loan Application for the project. The borrower will follow the procedure and process as outlined in *Decide DeKalb Development Authority BRLF Program Guidelines and Procedures Manual*, including the loan terms and conditions for repayment. The contents of this document do not necessarily reflect the views and policies of the EPA or the Housing Development Corporation of DeKalb (HDC), nor does the EPA or HDC 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 such as asbestos-containing material (ACM) to support rehabilitation of the Willow Branch Apartments (Site) located at 822 North Indian Creek Drive in Clarkston, Georgia. The Housing Development Corporation of DeKalb intends to remove the hazardous materials from the site in support of their rehabilitation plan that includes substantial capital improvements and renovations to Willow Branch's 186 residential units, including but not limited to: new flooring, new windows, fresh paint, energy-efficient appliances, LED lighting, the installation of low-flow plumbing fixtures and creating 10 accessible units. Upgrades to the approximately 13.7-acre site will include new roofing for the residential buildings, landscaping upgrades throughout the site, accessibility upgrades, installation of dumpster enclosures, renovations to the laundry room and mail kiosk, and many other improvements that will enhance the site.

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 commonly accepted extreme weather conditions might impact proposed cleanup alternatives, 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 4 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 conditions, 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

The site is located at 822 North Indian Creek Drive in Clarkston, DeKalb County, Georgia and is comprised of one tax parcel (Parcel No. 18 067 01 026). The site encompasses approximately 13.7 acres and consists of 14, two-story buildings housing 186 residential units and one office/community building and a laundry room. The buildings were constructed in 1971. According to tax records, the site has been owned by Willow Investment Partners, LLC since 2013. 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.

Terracon completed a Phase I Environmental Site Assessment (ESA), dated July 26, 2024, was conducted on the property, as part of a 4% Low Income Housing Tax Credit (LIHTC) award from the Georgia Department of Community Affairs (DCA). The Phase I identified no recognized environmental conditions (RECs), as that term is defined in the ASTM standard, for the subject property.

A *Hazardous Materials Inspection* of the site was conducted by Terracon, and a report was issued on November 12, 2024, that identified asbestos containing materials associated with the buildings. This hazardous substance qualifies for remediation/abatement/corrective action under the BRLF Cooperate Agreement between EPA and DDDA.

The Willow Branch Apartments are included in the Global City – Memorial Drive Community Revitalization Plan as part of the strategy to preserve and enhance affordable housing options within the Clarkston area. The Global City – Memorial Drive Community Revitalization Plan is an effort focused on the Clarkston area in DeKalb County, Georgia. The plan is designed to address the unique needs of this diverse community by supporting access to resources, jobs, education, affordable housing, and economic opportunities. The plan calls for investment in existing residential properties such as Willow Branch Apartments to support neighborhood stability, infrastructure improvements, and healthy living conditions. The plan highlights the importance of maintaining safe, affordable rental communities like Willow Branch to ensure continued access for the region's significant refugee and immigrant populations. Willow Branch Apartments are seen as a crucial asset for families seeking affordable homes close to resources, educational institutions, and job opportunities. The plan promotes ongoing improvements in connectivity, public safety, and amenities affecting residents in Willow Branch as part of broader efforts to revitalize Memorial Drive and promote inclusive growth.

1.2 Site Assessment Findings

A *Hazardous Materials Inspection* provided by Terracon included an asbestos survey where asbestos samples collected were analyzed using Polarized Light Microscopy (PLM) by a National Voluntary Laboratory Accreditation Program (NVLAP) accredited laboratory. The asbestos survey identified asbestos in black mastic under carpet from concrete flooring (main office), black sink undercoat, textured ceiling, wallboard and joint compound (WB/JC), brown/black exterior door caulk, popcorn ceiling, exterior black and pink door caulk, and exterior black and pink window caulk.

The report recommended that the asbestos-containing materials (ACM) to be disturbed during renovation or demolition activities be abated by a State licensed asbestos abatement contractor.

The following table provides a summary of the ACM that were identified in the structures in the *Hazardous Materials Assessment* – Willow Branch Apartments report dated November 12, 2024:

Homogeneous Area ID	Material Description	Material Location	Estimated Quantity
1	Wallboard and Joint Compound (WB/JC)	Bldgs. M-5, M-17, M-20, P-12, P-9, P-15, P-5, H-28, H-14, L-4, K-16, K-3, J-1, P-6	658,232 SF
2	Textured Ceiling	Bldgs. M-3, M-5, M-14, M-17, M-20, P-12, P-9, P-15, P-5, H-28, L-4, K-16, K-3, P-6	37,500 SF
3	Window Caulk	Bldg. L-1	836 Windows
9	Black Sink Undercoat	Bldgs. M-3, M-17, H-28	186 Units
10	Brown/Black/Pink Exterior Door Caulk	Bldgs. P-12, L-1	372 Doors
12	Popcorn Ceiling	Bldgs. H-14, G-6	37,500 SF
13	Black Mastic Under Carpet on top of Concrete Flooring	Main Office Building	1,000 SF

SF=Square Feet, LF=Linear Feet

2.0 PROJECT GOALS AND RE-USE PLAN

The Housing Development Corp., EduHousing, Inc., and the Housing Authority of DeKalb County are forming a joint venture (JV) partnership to acquire and rehabilitate Willow Branch Apartments. The JV's rehabilitation plan includes substantial capital improvements and renovations to Willow Branch's 186 residential units, including but not limited to: new flooring, new windows, fresh paint, energy-efficient appliances, LED lighting, the installation of low-flow plumbing fixtures and creating 10 accessible units. Upgrades to the 13-acre site will include new roofing for the residential buildings, landscaping upgrades throughout the site, accessibility upgrades, installation of dumpster enclosures, renovations to the laundry room and mail kiosk, and many other improvements that will enhance the site.

EPA brownfield funding will be used to abate ACM from the structures prior to renovations. This allows immediate and definitive resolution of the public health issue, while 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 ROLES, REGULATIONS AND CLEANUP STANDARDS

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.

3.1 Applicable Roles

Corporate Environmental Risk Management (CERM) is the Qualified Environmental Professional (QEP) procured by DDDA. The Housing Development Corporation will be the funding recipient responsible for hiring contractors and has retained Terracon to assist with contracting documents, cleanup contractor oversight and final documentation. Work will be conducted in accordance with an EPA approved SSQAPP, Remediation/Abatement/Corrective Action Plan and Specifications with periodic oversight and reporting to EPA by CERM as QEP for DDDA. In compliance with the Community Involvement Plan (CIP), a 30-day public notice period will be observed prior to the commencement of work. During this period, the ABCA and associated project documents will be made available for public review and comment. The borrower will follow the procedure and process as outlined in *Decide DeKalb Development Authority BRLF Program Guidelines and Procedures Manual*, including the loan terms and conditions for repayment.

3.2 Cleanup Responsibility

The cleanup will be conducted by an asbestos abatement contractor licensed in the State of Georgia in accordance with applicable federal, state, and local regulatory requirements. The contractor will comply with the federal Davis-Bacon Prevailing Wage requirements, as set forth in 29 CFR §5.6. Renovation permits and notifications will be obtained from the Georgia Environmental Protection Division (GAEPD) and local agencies, as needed. Applicable documentation will be submitted as required to the GAEPD.

3.3 Cleanup Standards

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 Georgia Environmental Protection Division (GA-EPD) 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, the GA-EPD Solid Waste Management Rule, Chapter 391-3-4, and GA-EPD Asbestos Removal and Encapsulation Rule, Chapter 391-3-14.

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 asbestos abatement contractor shall conduct a visual assessment to ensure the work area is clean of all ACM debris. If the contractor deems the area is visibly clean, Terracon shall perform a final visual assessment to confirm that abatement has been completed and surfaces are free of visible residue, dust, debris and asbestos contaminated equipment and wastes. The visual assessment will be performed in general accordance with ASTM International (formerly known as the American Society for Testing and Materials) Designation E1368-23 Standard Practice for Visual Inspection of Asbestos Abatement Projects.

3.4 Laws and Regulations Applicable to the Cleanup

Asbestos is regulated by the Asbestos Hazard Emergency Response Act (AHERA), the National Emission Standards for Hazardous Air Pollutants (NESHAP).

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; Category I non-friable ACM that has become friable or will be or has been subjected to sanding, grinding, cutting, or abrading; and Category II non-friable 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 following work practices should be followed prior to the initiation of demolition activities on the project site:

- Prepare a Site Specific Quality Assurance Project Plan (SSQAPP) to be approved by EPA;
- Prepare quarterly progress reports, financial details and budget tracking to include backup documentation of the expenditure of funds;
- Review and compliance with Davis Bacon Act wage requirements;
- Prepare abatement specifications by a Georgia Accredited Asbestos Project Designer;
- Notify the GA-EPD of intention to renovate and/or demolish by the required notification form and receive approval for abatement activities;
- Remove all ACM from facilities being renovated and/or demolished;
- Handle and dispose of ACM in an approved manner (USEPA, 2006a: Asbestos/NESHAP Regulated Asbestos-Containing Materials Abatement and GA-EPD Asbestos Removal and Encapsulation Rule, Chapter 391-3-14);
- Comply with applicable OSHA standards;
- All asbestos abatement materials (i.e. 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. The report should include the post-abatement visual clearance report, waste manifest documentation, and any other pertinent information collected during the renovation or demolition operations;
- Prepare a Remediation/Abatement/Corrective Action Report.

3.5 Extreme Weather Considerations

Executive Order 13514, Federal Leadership in Environmental, Energy, and Economic Performance, establishes an integrated strategy for sustainability within the Federal Government. Under the Executive Order, each agency is required to evaluate their extreme weather risks and vulnerabilities to manage the effects of extreme weather on the agency's mission and operations in both the short and long-term as part of the formal Strategic Sustainability Performance Planning process.

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 changing climate conditions. As directed under EPA's extreme weather Adaptation Plan, the ABCA must include a discussion of observed and forecasted extreme weather conditions 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 the possibility exists that Cleanup grant funds may be utilized for cleanup actions at the site, extreme weather has been considered in this ABCA.

3.5.1 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
- EPA Extreme Weather on EPA.gov
- USDA Climate Hub

3.5.2 Site-Specific Considerations

The site and Georgia are in EPA's climate designation of Southeast. In this region, rising temperatures, extreme weather events, and drought are the primary extreme weather conditions. These changing conditions have significant effects on the Southeast's most widespread economic contributions: forestry and agriculture. According to the USDA, the Southeast is the largest producer of timber, which is the region's largest valued crop, in the United States. Other major agricultural and agriculture-related commodities of the Southeast include hogs, poultry, peanuts, tobacco, and sweet potatoes. The site is located in urban Atlanta and is currently developed as a multifamily property featuring 186 apartment residential units. Site renovation plans include but are not limited to: new flooring, new windows, fresh paint, energy-efficient appliances, LED lighting, the installation of low-flow plumbing fixtures and creating 10 accessible units. Upgrades to the 13-acre site will include new roofing for the residential buildings, landscaping upgrades throughout the site, accessibility upgrades, installation of dumpster enclosures, renovations to the laundry room and mail kiosk, and many other improvements that will enhance the site.

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

A Brownfields Site Eligibility Determination Checklist was submitted by DDDA to the EPA on June 18, 2025, to help determine whether the site was eligible for cleanup activities under the EPA Brownfields Program. The EPA Project Officer determined that the site was eligible for EPA Brownfields Funds on June 27, 2025.

The site must meet the definition of a brownfield per 42 USC § 9601(39)A "brownfield site means real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant". Based on this definition, the site is a brownfield site. Asbestos is considered a hazardous substance relative to grant funding. This hazardous substance qualifies for remediation/abatement/corrective action under the BRLF Cooperate Agreement between EPA and DDDA.

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 sustainability of cleanup alternatives in regard to current and future extreme weather concerns. According to the National Oceanic and Atmospheric Administration's (NOAA) National Climate Assessment, the primary extreme weather conditions identified for the southeast region include increased weather activity. Increased weather activity has been identified as site-specific extreme weather 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: ACM Removal Pre-Renovation
- Cleanup Alternative B: ACM Encapsulation/Enclosure
- Cleanup Alternative C: No Action

4.1 Cleanup Alternative A: Pre-Renovation ACM Removal

Alternative A includes conventional removal/abatement of ACM 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. Asbestos abatement procedures require wet removals to further control potential spreading of damaged or friable asbestos and airborne particulates. During and following the abatement, 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 GA-EPD and/or US-EPA regulations, as applicable, and containerized for off-site landfill disposal as a special or regulated waste. 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 Georgia-licensed abatement contractor. In addition, this work requires a 10-business day notification to Georgia EPD and appropriate coordination with Georgia EPD 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).

4.1.1 Effectiveness – Including Extreme Weather Considerations

The ACM is 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 uses. Rehabilitation 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.

The site-specific extreme weather conditions identified include increased weather activity which could affect building integrity (damaged from storms). Removal of ACM 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 Georgia 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 Housing Development Corporation of DeKalb has received a quote from a licensed abatement contractor that was utilized as a basis of estimate for this alternative. The quote included costs for abatement and disposal of ACM of $804,216 with an additional $344,664 to complete necessary demo removal and disposal of non-ACM. The quote does not include third-party oversight services to prepare a cleanup QAPP, abatement specifications, or oversight/air monitoring and clearance services. Based upon Terracon's experience with similar projects, the estimated third-party oversight costs related to the abatement of ACM from the structures is approximately $282,000.

4.2 Cleanup Alternative B: ACM Management In-Place

Alternative B involves managing asbestos containing materials in-place through an operations and maintenance (O&M) plan and avoiding disturbance. An O&M plan is a comprehensive

strategy for safely managing asbestos that is not severely damaged and does not pose an immediate threat. It is a long-term, proactive approach that leaves the material in place while documenting and monitoring its condition. The O&M plan is a recognized method for asbestos management under applicable regulations.

4.2.1 Effectiveness – Including Extreme Weather Considerations

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

- Renovation activities that would impact in-place ACM cannot occur. Based on the planned renovation of the structures, this alternative is an ineffective option.
- 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 site-specific extreme weather conditions identified include increased weather activity which could affect building integrity (damaged from storms). This alternative leaves the asbestos-containing materials in-place and has the potential for environmental contamination with damage.

4.2.2 Implementability

Although this alternative is achievable and could result in lower upfront costs and avoid large-scale abatement for now, managing asbestos containing materials by monitoring and avoiding disturbance at this time can result in delayed renovations/improvement of affordable units. In addition, this alternative will require continuous O&M plan and monitoring, limit compliance with the Global City plan, and lead to the property being ineligible for renovation financing or public subsidies.

4.2.3 Cost

Based upon Terracon's experience with similar projects, the estimated cost to develop an O&M Plan is between approximately $25,000-$50,000, and ongoing inspection and management would be approximately $5,000/year. The deferred cost of eventual abatement will not decrease as time passes.

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 do 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:

- Without addressing the ACM, the renovation activities cannot occur. No-action violates NESHAP, if renovation occurs, health risks remain for tenants and workers, and the site is ineligible for EPA funding and code compliance.

- This approach is unacceptable technically in that the microscopic asbestos fibers are known human carcinogens and lead is a toxic metal; and neither provide a 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 renovation of the building.

4.3.2 Implementability

By its definition, taking no action precludes a discussion of implementation. No action would leave the asbestos-containing materials in place without intervention. The identified ACM would still pose a hazard to those entering the building and asbestos fibers/lead 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 alterative. Further, this alternative may later result in renovation complications, delays, and increased renovation 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 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	$1.4M-$1.5M	N/A
B – ACM Management In-Place	$25,000-$50,000 (plus future abatement)	$5,000‡
C – No Action	$0	$0‡

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

5.0 RECOMMENDED CLEANUP ALTERNATIVE

The recommended cleanup approach is Alternative A: Asbestos Removal Pre-Renovation. This alternative would address exposure risks using a proven approach consistent with recognized industry standards while at the same time easily garnering GA-EPD approval. This option would remain comparably cost-effective under most 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 the HDC's goals and re-use planning.