



## ANALYSIS OF BROWNFIELDS CLEANUP ALTERNATIVES

Mohawk Square  
220 East State Street  
Mason City, IA 50401

City of Mason City  
Brownfields Assessment Grant  
EPA Cooperative Agreement No. BF-96707401

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## 1.0 EXECUTIVE SUMMARY

The City of Mason City (City) is participating in the U.S. Environmental Protection Agency's (EPA) Brownfields Program. The City targeted a vacant former school located at 220 East State Street, hereinafter referred to as the "Site", for environmental investigation under its Community-wide Assessment Grant (refer to Appendix A for a site vicinity map). These activities identified the presence of asbestos containing materials (ACMs) within the structure. The City retained Eocene Environmental Group (Eocene) to prepare an Analysis of Brownfields Cleanup Alternatives (ABCA) to compare remediation options for the Site. Eocene evaluated three removal action alternatives in the context of effectiveness, ability to implement, and cost. After reviewing each option, Eocene recommends the complete abatement of all ACMs from the building in accordance with local, state, and federal regulations. This approach will also advance the City's redevelopment goal for the Site, which is to construct residential units. This ABCA will detail each vetted cleanup alternative.

## 2.0 INTRODUCTION

### 2.1 *Site Location*

The Site is in a mixed-use area near the southeastern edge of downtown Mason City. Adjacent parcels to the north and east consist of residential development including apartment buildings and single-family homes. The adjoining parcel to the south contains the municipal police station, while commercial offices and an apartment building are located immediately to the west.

The Site contains a five-story, brick-on-block building constructed in 1925 totaling 147,225 square feet of space across all floors. The structure does not include a basement. A severe weather event in May 2019 caused a partial roof collapse. The City has since deemed the former school unfit for occupancy due to structural integrity concerns and the widespread presence of mold.

### 2.2 *Previous Site Use(s)*

The Site operated as a school from its initial development in 1918 to at least 1966. The building was later renovated to accommodate various governmental and commercial uses, including a dance studio. The building has been vacant since 2019 following extensive damage, including a partial roof collapse, resulting from a storm. The City was awarded title to the Site in 2025 as an abandoned property as defined in Iowa Code Section 657A.

### 2.3 *Site Assessment Findings*

Eocene completed an ACM Inspection in October 2025 to identify and sample all suspected building materials located on the Site. Asbestos was detected in thirty-five (35) of the two hundred eight-eight (288) samples analyzed. ACMs include:

- Floor Tile(s)
- Pipe Insulation(s)
- Mudded Elbow(s)
- Sink Insulation(s)
- Ceiling Texture
- Parapet Tar
- Floor Tile Adhesive(s) and Mastic(s)
- Wall Adhesive
- Ceiling Tile Puck Adhesive(s)
- Light Fixture Insulation

All building materials similar in appearance, color, and/or texture to those determined to contain asbestos must be assumed to contain asbestos throughout this building.

ACMs must be removed by a certified asbestos abatement contractor within a full containment system and disposed of as asbestos waste prior to conducting redevelopment activities that may disturb them.

The ACM inspection containing the documented locations and estimated amounts is included in Appendix B.

#### **2.4 *Regional and Site Vulnerabilities***

The Site is located within a densely developed urban neighborhood. A Federal Emergency Management Agency (FEMA) Flood Zone Map identifies the Site as located in an area with minimal flood hazard, Zone X. Anticipated impacts of climate change, including increases in temperatures and precipitation, coupled with weather variability, increased precipitation events, and rises in sea level, are not anticipated to significantly affect the Site. It is also not anticipated that any increases in temperature and precipitation will significantly affect the Site more than the current conditions.

### **3.0 PROJECT GOAL**

The City plans to remove barriers for redevelopment by mitigating exposure to asbestos at the Site by abatement and removal of all ACMs.

In addition to the project goal highlighted above, the City's brownfields program has a green and sustainable remediation goal to protect human health and the environment from contaminants. As such, the air quality will be monitored as part of the proposed asbestos removal. The request for bids will ask bidders to provide details of all equipment that will be used on the Site for the removal of asbestos. Contractors using fewer emission emitting vehicles and equipment will be weighed into the final award decision. The project will include a waste management section into the Site management plan, to ensure that additional contamination does not occur. These efforts are to reduce the demands placed on the environment during cleanup.

### **4.0 APPLICABLE REGULATIONS AND CLEANUP STANDARDS**

#### **4.1 *Cleanup Oversight Responsibility***

Eocene will oversee the cleanup in accordance with local, state, and federal regulations and provide on-site guidance of regulations and observations during the cleanup process. Eocene will provide air monitoring services and project observation, which will include the collection and analysis of short-term excursion limit air samples, area air samples by each removal area, air samples at each entrance to a containment area, and HEPA exhaust air samples in order to document any potential fiber releases. These samples will be analyzed via the Phase Contrast Microscopy (PCM) method. At the completion of the asbestos removal and upon the passing of a visual inspection, final clearance air samples will be collected and analyzed using the PCM method.

All documents prepared during cleanup activities will be compiled into a final cleanup report.

#### **4.2 Cleanup Standards for Major Contaminants**

Asbestos is the major contaminant of concern. Prior to the demolition of the structure, an Iowa licensed asbestos abatement contractor will remove and dispose of identified ACM pursuant to National Emissions Standards Hazardous Pollutants (NESHAP) regulations.

The asbestos NESHAP regulations specify work practices for asbestos to be followed during demolitions and renovations of all structures, installations, and buildings (excluding residential buildings that have four or fewer dwelling units). The regulations require the owner of the building or the operator to notify the appropriate state agency before any demolition, or before any renovations that could contain a certain threshold amount of asbestos or asbestos-containing material. In addition, particular manufacturing, and fabricating operations either cannot emit visible emissions into the outside air or must follow air cleaning procedures, as well as follow certain requirements when removing asbestos-containing waste.

(<https://www.epa.gov/asbestos/asbestos-laws-and-regulations#ashara>)

#### **4.3 Laws & Regulations Applicable to the Cleanup**

Laws and regulations applicable to this cleanup project include the NESHAP standards, Federal Small Business Liability Relief and Brownfields Revitalization Act, Federal Davis-Bacon Act, and City of Mason City municipal ordinances. The City will comply with all federal, state, and local laws regarding the procurement of contractors to conduct the cleanup.

The Site building was constructed circa 1925. When federal funds are used on projects that will disturb historic structures or the ground associated with these structures, the State Historic Preservation Office (SHPO) must review the project under Section 106 of the National Historic Preservation Act. This Section 106 review will be submitted and approved prior to commencement of cleanup work at the Site.

All appropriate permits (i.e., Iowa Department of Natural Resources 10-Day Notification, Iowa One-Call, Disposal, etc.) will be obtained prior to commencement of work.

### **5.0 EVALUATION OF CLEANUP ALTERNATIVES**

#### **5.1 Cleanup Alternatives Considered**

To address the widespread asbestos contamination within the structure, three different alternatives were considered:

- Alternative #1 – No Action.
- Alternative #2 – Abatement limited to friable and deteriorated asbestos within the building. This alternative does not include abatement of areas where Regulated Asbestos-Containing Materials (RACM) demolition would be required.
- Alternative #3 – Abatement of all identified ACMs within the building, including approximately 22,000 square feet of RACM demolition across four floors.

#### **5.2 Cost Estimate of Cleanup Alternatives**

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

### **5.2.1 *Effectiveness***

- Alternative #1 – No Action:
  - The “No Action” alternative signifies that no remediation activities would be implemented at the Site. This approach does not include a means for mitigating or eliminating potential exposure to ACMs. This alternative also inhibits any future redevelopment initiatives at the Site as the building requires demolition.
- Alternative #2 – Abatement limited to friable and deteriorated asbestos within the building(s).
  - This alternative would utilize standard techniques to remove friable and deteriorated ACMs, which represent the greatest health hazard to building occupants. Friable and deteriorated ACMs would be removed by a state certified asbestos abatement contractor and properly disposed of at a licensed and permitted facility. The remaining ACMs at the Site would be in good condition or located on the exterior of the building at the time of abatement with this alternative; however, the building’s structural integrity concerns will continue to worsen the longer it remains exposed to the natural environment. Continual degradation of building materials will likely result in abatement costs inflating over time.
- Alternative #3 – Abatement of all identified ACMs within the buildings.
  - This alternative involves a state certified asbestos abatement contractor removing and properly disposing of ACMs at a licensed and permitted facility. This alternative includes areas where RACM demolition is required. Following abatement, the Site would be free of ACMs if this alternative is selected.

### **5.2.2 *Ability to Implement***

- Alternative #1 – No Action:
  - Easy to implement since no actions will be conducted.
- Alternative #2 – Abatement limited to friable and deteriorated asbestos within the building(s).
  - Moderately difficult to implement based on the structural integrity concerns.
- Alternative #3 – Abatement of all identified ACMs within the building(s).
  - Moderately difficult to implement based on the structural integrity concerns.

### **5.2.3 *Cost***

- Alternative #1 – No Action
  - The No Action alternative will not involve any direct costs; however, if the building remains in its rapidly deteriorating condition, city officials estimate it costs taxpayers nearly \$10,000 annually in code enforcement activities, maintenance (e.g., lawn mowing and snow removal), and emergency response calls (e.g., police and fire department).
- Alternative #2 – Abatement limited to friable and deteriorated asbestos within the building(s).
  - Estimated \$59,800 for ACM abatement considering current conditions; however, this figure will continually increase as the building remains exposed to the elements. The cost of RACM demolition or whole-structure demolition is not included in this estimate.
- Alternative #3 – Abatement of all identified ACMs within the building.

- Estimated \$900,000 for full ACM abatement, including areas of RACM demolition. The cost of renovation, redevelopment, or whole-structure demolition is not included in this estimate.

## 6.0 RECOMMENDED CLEANUP ALTERNATIVE

Each of the alternatives and the comparison criteria are summarized below in **Table 1**. Based on the evaluation of remedial alternatives presented above, the recommended alternative is Alternative #3, full abatement and disposal of ACM. The full abatement and disposal of ACM was selected because it eliminates exposure while allowing for eventual site redevelopment through the building demolition.

**Table 1 – Summary of Remedial Alternatives for Asbestos**

Evaluation Criteria	Alternative #1	Alternative #2	Alternative #3
Effectiveness & Reliability	Not Effective or Reliable.	Abatement limited to friable and deteriorated ACMs removes the exposure pathways and is proven to be an effective and reliable form of remediation of immediate health concerns. Long-term maintenance is required of the remaining ACMs. Physical condition of the structure is likely to continue degrading resulting in future deteriorated ACMs.	Abatement of all identified ACMs removes the exposure pathways and is proven to be an effective and reliable form of remediation. Long-term maintenance is not required.
Feasibility & Ease of Implementation	Not feasible but easily implementable.	Utilizes standard construction, remedial, and abatement techniques. Therefore, this alternative is technically practical but moderately difficult to implement based on structural integrity concerns. Intact building materials	Utilizes standard construction, remedial, and abatement techniques. Therefore, this alternative is technically practical and but moderately difficult to implement based on structural integrity concerns.

		containing asbestos will remain.	
Risk Reduction & Green and Sustainable Remediation	No reduction in risks to human health and the environment. No reduction in contaminant mobility or toxicity. No green and sustainable remediation benefits.	Immediate risk to human health by exposure to ACM is eliminated by abatement/removal of friable and deteriorated ACM. Intact and exterior ACM will remain in addition to materials containing <1% asbestos in the building. Remaining ACMs likely to become deteriorated in the future.	Risk to human health by exposure to ACM are permanently eliminated by abatement/removal.
Costs	\$10,000/annually*	\$59,800	\$900,000
Time to Reach Permanent Solution	Will not be achieved.	4-8 months (dependent on SHPO approval process timeframe)	4-14 months (dependent on SHPO approval process timeframe)

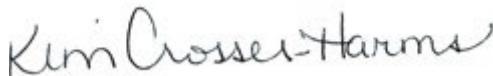
\* Code enforcement, maintenance (e.g., lawn mowing and snow removal), and emergency response calls (e.g., police and fire department)

## 7.0 SIGNATURES OF ENVIRONMENTAL PROFESSIONALS

Signatures of the environmental professionals responsible for this report:



Steve Prideaux, Project Manager II, Report Preparer



Kim Crosser-Harms, Project Manager II, Asbestos Project Designer



Jon Reis, Project Manager III, Quality Control and Assurance

**APPENDIX A**  
**Site Vicinity Map**

**APPENDIX B**

**Asbestos Containing Materials Inspection Report**

## **APPENDIX C**

### **Green and Sustainable Remediation Best Management Practices**