Draft Analysis of Brownfields Cleanup Alternatives

Former Photech Imaging System
330 Cole Avenue
Williamstown, Massachusetts

Prepared for: The Town of Williamstown (the Town)
Prepared by: Fuss & O'Neill, Inc.

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Final ABCA (Post-Public Meeting): TBD

1 Project Introduction and Background Information

1.1 Site Description, History, and Future Site Use

The subject site (the Site) consists of a single, 4.9-acre formerly industrial parcel located at 330 Cole Avenue, Williamstown, Massachusetts. The Site was initially developed circa 1865 and occupied by a series of textile mills until circa 1939, when it was purchased by a photographic film company. Manufacturing of photographic film products continued at the Site until 1989, when Photech Imaging Systems, abandoned the Site. The Site has remained vacant since that time. The Town acquired the Site via eminent domain in 2007 and is pursuing redevelopment as multi-unit affordable housing.

The conceptual redevelopment plan includes refurbishment of the existing building as a residential apartment building, as opposed to comprehensive demolition. In addition to renovation of the existing building, construction of new housing units at the Site is also planned. The development is intended to provide much needed affordable housing for the Williamstown community, and offer past residents who were displaced by 2011 flooding associated with Hurricane Irene an opportunity to return to the Town in safe housing that is situated outside the floodplain.

1.2 Previous Environmental Investigations and Findings

Numerous environmental investigations have been conducted at the Site between 1993 and 2014. These investigations culminated with the preparation of a May 2014 Phase II Comprehensive Site Assessment and Class A-3 Response Action Outcome Statement prepared in accordance with the Massachusetts Contingency Plan (MCP). Previous investigations generally included advancement of soil borings, collection of soil and groundwater samples for laboratory analysis, and performance of a Method 3 Ecological Risk Assessment to evaluate potential impacts to the abutting Hoosic River. Pertinent findings from these assessments included the following:

- Soil throughout the Site was documented to contain heavy metals at concentrations greater than applicable regulatory standards, attributed to past film manufacturing activities. Metals concentrations in soil were particularly high in the vicinity of former wastewater holding tanks.
- Discrete releases of petroleum had degraded soil quality in the vicinity of former underground storage tanks.
- Polycyclic aromatic hydrocarbons are present in Site-wide soil due to historical application of fill materials.

Cleanup response actions conducted to date have included the following:

- Excavation and off-site disposal of contaminated soil
- Removal of underground storage tanks
- Partial capping in areas deemed infeasible for excavation
- Implementation of an Activity and Use Limitation (AUL) to limit the types of residential activity that can occur at the Site

In October 2015, Fuss & O'Neill also performed a Limited Hazardous Building Materials Inspection of the Site building. Materials determined to contain 1% asbestos or greater included:

- Black tar under terra cotta floor tiles;
- Red glue under terra cotta base cove;
- Black tar on HVAC components;
- Black tar on cork pipe insulation
- Pipe insulation;
- Roofing materials;
- Glazing compounds;
- Boiler gaskets; and
- Tar compounds

The following building components were also determined to contain levels of lead greater than 1.0 milligram per square centimeter (mg/cm^2):

- Interior doors
- Interior door jambs
- Interior door casings

Abatement of these hazardous materials will be warranted to protect both construction workers during future redevelopment as well as future residential occupants of the existing building.

1.3 Project Goal

The Cleanup grant will help to reduce liabilities and public health risks associated with building material hazards and supplement additional funding sources targeted for construction of 46 units of affordable housing at the Site. Revitalization of the Site will significantly increase the inventory of affordable housing in Town, thereby easing the trend of rising housing costs which have contributed to the displacement of low-income families from Williamstown. This impact will ensure greater housing stability and cost certainty for existing residents, as well as provide low-income residents who have migrated from Town or were displaced by the Hurricane Irene flooding with an opportunity to return to their hometown and live in quality, modern housing that is free of hazardous building materials, and which they can afford without being over-burdened.

2 Applicable Regulations and Cleanup Standards

2.1 Cleanup Oversight Responsibility

The United States Environmental Protection Agency (USEPA) Brownfield Cleanup Grant which the Town has secured will be used to abate the hazardous building materials identified in the Site structure slated for refurbishment and reuse.

The cleanup oversight responsibility will be with contracted Lead and Asbestos Inspectors, Abatement Project Designers, and Monitors certified by the Massachusetts Department of Labor Standards (MADLS).

2.2 Cleanup Standards

The following cleanup standards apply to anticipated asbestos abatement activities:

- The Massachusetts Department of Environmental Protection (MassDEP) defines any material that contains equal to or greater than one percent (≥ 1%) asbestos as being an asbestos containing material (ACM).
- MassDEP further defines waste material containing any detectable amount of asbestos as an asbestos containing waste material (ACWM), which must be managed and disposed as asbestos waste.
- Occupation Safety and Health Administration (OSHA) worker protection regulations apply to materials containing any amount of detectable asbestos.

The following cleanup standards apply to anticipated lead abatement activities:

- A level of lead-based paint (LBP) exceeding 1.0 mg/cm^2 is considered toxic or dangerous for compliance with residential standards.
- The level of 1.0 mg/cm^2 will be utilized as a threshold for areas where possible worker exposures may occur.

- The EPA Resource Conservation and Recovery Act (RCRA) defines toxic concentrations for lead which is commonly identified in paint to be greater than 5.0 milligrams per liter (mg/L), or parts per million (ppm).

2.3 Laws and Regulations Applicable 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, state environmental law, and Town by-laws.*

Federal, state, and local laws regarding procurement of contractors to conduct the cleanup will be followed. In addition, appropriate state and local permits will be obtained prior to the work commencing.

The following laws apply specifically to anticipated asbestos and lead abatement activities:

- A property Owner must ensure that a thorough ACM inspection has been performed prior to possible disturbance of suspect ACM during renovation or demolition activities. This is a requirement of the EPA National Emission Standards for Hazardous Air Pollutants (NESHAP) regulation located at Title 40 CFR, Part 61, Subpart M.
- The EPA NESHAP regulation does not specifically identify a minimum number of samples to be collected for each homogeneous material, but the NESHAP regulation does recommend the use of sampling protocols included in Title 40 CFR, Part 763, Subpart E: Asbestos Hazard Emergency Response Act (AHERA).
- Abatement worker protection is regulated by OSHA regulations, as well as MADLS regulations.
- Applicable Massachusetts laws and regulations include:
    - 310 CMR 7.00: Air Pollution Control Regulations
    - 310 CMR 7.15: Final Asbestos Amendments
    - 310 CMR 30.00: Hazardous Waste Regulations
    - 310 CMR 40.00: Massachusetts Contingency Plan
    - 310 CMR 19.00: Solid Waste Facility Regulations
    - 310 CMR 33.00: Employee & Community "Right to Know" Regulations
    - MGL c. 111 s. 142A-E: Pollution or contamination of atmosphere; prevention; regulations; violation; enforcement
    - MGL c. 21E: Oil and Hazardous Material Release Prevention and Response Act
    - MGL c. 149 s. 6A-G: Monitoring, inspection, and investigation of work involving asbestos
    - MGL c. 111 s. 150A-B: Solid waste disposal facilities, maintenance and operation
    - Massachusetts Childhood Lead Poisoning Prevent Program administered by the Department of Health and Human Services
- EPA RCRA, as well as MassDEP, regulate disposal of lead-containing waste.
- OSHA published a Lead in Construction Standard (OSHA Lead Standard) Title 29 CFR, Part 1926.62

3 Evaluation of Cleanup Alternatives

3.1 Cleanup Alternatives Considered

The cleanup alternatives listed below were considered based on the assumption that the Site would be redeveloped in accordance with the Town's objectives, as described above. The following cleanup alternatives were considered for the Site:

- Alternative No. 1: No action
- Alternative No. 2: Abatement via encapsulation
- Alternative No. 3: Abatement via removal and off-Site disposal at an appropriately-licensed disposal facility

3.2 Evaluation of Effectiveness, Implementability, and Cost

To satisfy USEPA requirements, the effectiveness, implementability, and cost of each alternative were considered prior to selecting the recommended cleanup alternative.

3.2.1 Effectiveness

- Alternative No. 1 – As noted above, numerous ACM and other hazardous materials were confirmed throughout the Site building. Furthermore, the primary Site usage for the past approximately 100 years has involved industrial activities. As a result, the interior condition and layout was designed for this specific usage only. Given the Town's goal of redeveloping the Site building for residential use, significant renovation of the building interior is required to provide spaces which can be retrofitted to suit the needs of residential users. The extent of interior demolition and renovation activities necessary to facilitate this goal will result in disturbance of ACM and lead hazards throughout the building. Without appropriate prior action, uncontrolled release of asbestos and hazardous materials during interior demolition and renovation would pose unacceptable health risk to renovation workers, building visitors, residents and visitors of nearby properties, and future Site users. Therefore, the alternative of no action to address ACM and hazardous materials was not considered protective of human health.

- Alternative No. 2 – By encapsulating ACM and lead hazards prior to initiation of interior demolition and renovation activities, health risks posed to workers, visitors, and other potential human receptors would be minimized. However, once encapsulated the hazardous materials could not be disturbed without implementation of additional protective measures. Encapsulated materials would have to remain in-place and be avoided during the preparation

of space for occupancy or performance of nearby building repairs, if not otherwise abated. These factors would need to be revisited each time an occupant of the interior space changes, or when repair or mechanical/utility upgrades are necessary in the future. Furthermore, substantial demolition of the building, with the exception of the concrete structural shell, is anticipated to be necessary to achieve the project goals. While protective in the short-term, encapsulation was not considered to be the alternative which provided the most long-term protectiveness, in consideration of the potential future need to disturb the encapsulated materials. Encapsulated materials would warrant long-term monitoring and maintenance to ensure that they remain in a condition which does not pose human health risk.

- Alternative No. 3 – Removal of the ACM and other hazardous materials would mitigate the health risk posed to future Site users and other human receptors by removing the source of the risk. To mitigate risk to workers and others during abatement, the removal activities would need to be performed in a controlled manner, using industry-standard personal protective equipment. As warranted, the removal activities would be conducted in partitioned and sealed exclusion zones, in which unauthorized entry would be prohibited. Abatement workers would be equipped with personal air monitoring devices and air samples would be collected and analyzed following abatement to confirm that airborne asbestos fibers were not present. Upon such a confirmation, the particular area would be deemed safe for occupancy. The removed materials would be properly containerized during staging activities and would be transported to an appropriately-licensed disposal facility. Following the completion of abatement and disposal activities, the building will not pose a continued risk to building visitors, residents and visitors of nearby properties, and future Site users.

3.2.1.1 Resiliency to Changing Climate Conditions

According to the US Global Change Research Program (USGCRP), climate trends for the northeast region of the United States (including Massachusetts) include increased temperatures, increased precipitation with greater variability, increased extreme precipitation events, and rises in sea level. As follows are brief discussions of each alternative's resiliency to climate change:

- Alternative No. 1 – As a cleanup alternative, No Action would be resilient to climate change. However, because No Action would not effectively position the Site for the intended redevelopment, this alternative would not achieve the benefits of reuse of the existing infrastructure and land for needed residential space. As a result, pressure for establishment of housing in other areas of the region, which may be more prone to impacts from climate change, would increase. Furthermore, clearing of virgin woodland or greenfields to provide the residential development which could otherwise be provided at the Site could contribute to climate change and related impacts by increasing stormwater runoff, increasing greenhouse gas emissions, and reduction in vegetation which sequesters carbon dioxide.

- Alternative No. 2 – Encapsulation would also be generally resilient to climate change conditions. However, the presence of hazardous building materials, even if encapsulated, could pose risk to future Site occupants or visitors during emergency scenarios or prolonged power outages that could increase as a result of climate changes. The on-going presence of encapsulated hazardous materials also has the potential to reduce the efficiency and increase the energy demand associated with future necessary building renovations and modifications. As a result, additional greenhouse gas emissions, thereby exacerbating climate change, may occur.

- Alternative No. 3 – Complete removal of hazardous materials would be resilient to climate changes. This alternative also has the added advantage of more effectively facilitating in-fill redevelopment of the Site and reuse of existing infrastructure, thereby reducing development pressure on other areas that may be more prone to climate change impacts and limiting greenhouse gas emissions that would otherwise occur as a result of development of greenfields. Furthermore, the comprehensive removal of hazardous materials from the building would eliminate a potential risk that would otherwise be present during future emergency scenarios or power outages, as well as make future renovations more energy-efficient.

3.2.2 Implementability

- Alternative No. 1 – Implementation of a "no action" alternative is technically feasible, as no action would be taken. However, the building layout and interior condition are outdated, deteriorated, and not currently conducive to occupancy by residential users. As such, inaction would eliminate the possibility of safely and legally conducting the necessary demolition to refurbish the building. Therefore, deliberate inaction would not facilitate the Town's goal of renovating and redeveloping the building to be suitable for residential occupancy. While technically implementable, this alternative does not achieve Town's eventual goal for reuse of the Site building.

- Alternative No. 2 – Encapsulation of ACM and hazardous materials is feasible for the Town to implement. However, retaining and encapsulating ACM and hazardous materials would complicate future renovation and repair activities. The need to avoid disturbing these materials in the future, as discussed above, could deter prospective occupants and limit the nature of future building improvements and interior designs. As such, the on-going presence of these materials could reduce the number of occupants that would consider moving into the building and reduce the options for future modifications that may be needed to support long-term residential occupancy. Though encapsulation of ACM and hazardous materials is technically feasible to implement, this alternative was not considered the best for facilitating Town's future reuse goal.

- Alternative No. 3 – Implementation of abatement via removal and off-site disposal is technically feasible. Abatement activities can be completed prior to initiation of interior demolition and renovation, to ensure safety of workers performing those activities. Once removed and disposed at an appropriately-licensed disposal facility, the ACM and other

hazardous building materials would no longer complicate future renovation activities and would not be a factor which could limit interest from near- or long-term prospective occupants. Nor would these materials be impediments to future interior modifications, repairs, or mechanical/utility upgrades.

3.2.3 Cost

- Alternative No. 1 – By not conducting response actions, the Town would not incur an immediate cost. However, as noted above, such inaction would eliminate the possibility of returning the Site to productive use which meets the needs of the community. Therefore, the potential opportunity cost of inaction (i.e. reduction in market value, reduction in on-going real estate taxes, lack of improvement of economic lives of residents, and the elimination of construction and permanent jobs which could be afforded by renovation) would be borne by the Town. The building was utilized for a specific purpose for many years and is not anticipated to be sufficiently utilized in the future without significant renovation. Therefore, the above-referenced costs would not have a specific endpoint and could far exceed the cost of abatement activities that could be implemented at this time.

- Alternative No. 2 – In the short term, the cost of encapsulation of ACM and hazardous materials may appear to be lower than other alternatives. However, the cost of this alternative could increase over the long-term due to the potential need to abate, avoid, or otherwise manage these materials in the future. Such a need may arise due to the changing needs of existing occupants, occupant turnover, or repair of the nearby building components. Moreover, the need to monitor and repair the encapsulated materials as warranted in the future would contribute to the long-term costs associated with this alternative. Though financially feasible in the short-term, the long-term cost of this alternative is uncertain and could be significantly higher than other options. Based on a preliminary Order of Magnitude Opinion of Cost developed as part of the October 2015 hazardous materials inspection, the approximate cost of encapsulation of identified hazardous materials and subsequent long-term maintenance is estimated to range from $200,000 to $350,000.

- Alternative No. 3 – The Town is prepared to conduct abatement via removal and disposal using funds from the site-specific USEPA Cleanup Grant, if awarded. Following the abatement, future renovation activities would be conducted using funds from other sources, which can be leveraged upon completion of the abatement. Even though the initial costs of removal and off-site disposal may be relatively high, unlike the other alternatives, these costs can be estimated with greater certainty, as future maintenance or selective abatement costs would not be warranted to support future building repairs and modifications. Furthermore, in comparison to the other alternatives, this abatement approach will provide the greatest benefit to the overall redevelopment value of the building and best position the Site for meeting the redevelopment objectives of the community. Therefore, of all the alternatives presented herein, removal and off-site disposal of ACM and hazardous materials is the most cost effective over the long-term. Based on a preliminary Order of Magnitude Opinion of Cost developed as part of the October 2015 hazardous materials inspection, the approximate

cost of removal and off-site disposal of identified hazardous materials is estimated to range from $150,000 to $200,000.

3.3 Remedial Alternatives Summary

The following table includes a summary of each alternative discussed above with their advantages, disadvantages, and potential costs.

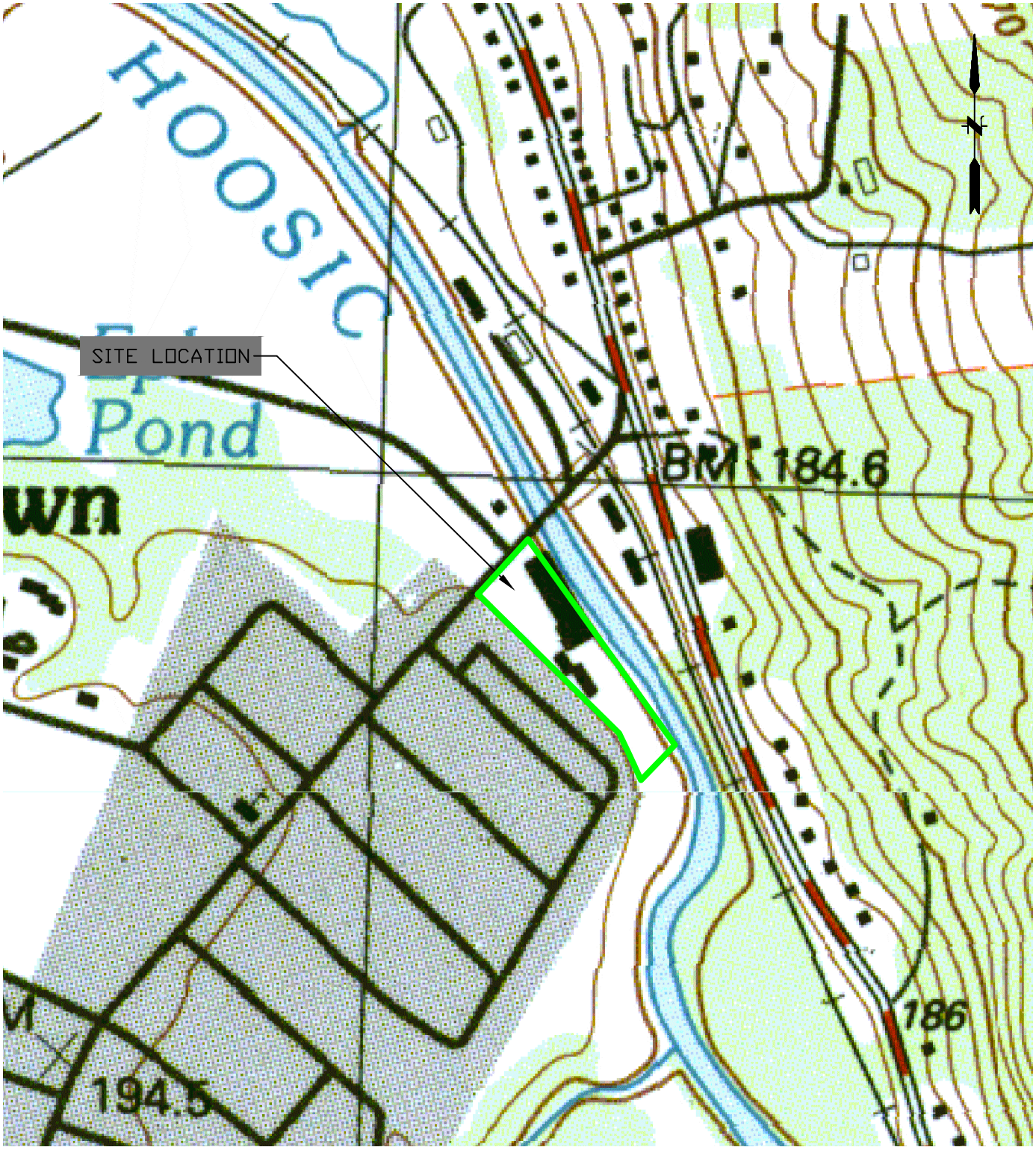
Alternative	Advantages	Disadvantages	Relative Cost to Implement
#1. No Action	· Lowest cost · Easily implemented	· Not effective in addressing the building materials hazards at the Site · Not compatible with the Site reuse plan	· Lowest cost
#2. Abatement via encapsulation	· Minimizes health risks posed by hazardous building materials during typical site operations · Short-term cost effectiveness	· Presence of encapsulated hazardous building materials would complicate future building renovations and modifications · Would require long-term monitoring and maintenance · May deter prospective occupants	· Highest estimated cost of $200,000 to $350,000, inclusive of long-term monitoring and maintenance
#3. Abatement via removal and off-site disposal at an appropriately-licensed facility	· Most compatible with Site reuse plan · Long-term cost effectiveness · Provides greatest level of human health protectiveness without complicating future building renovations · Resilient to climate change · Does not necessitate long-term monitoring or maintenance	· Higher short-term cost than encapsulation	· Moderate estimated cost of $150,000 to $200,000; greater cost certainty given the lack of need for long-term monitoring and maintenance

3.4 Recommended Cleanup Alternative

Based on the evaluation of cleanup alternatives documented above, Fuss & O'Neill considers Alternative #3: Abatement via removal and off-Site disposal at an appropriately-licensed disposal facility to be the most feasible, protective, and cost-effective strategy for reducing risks posed by ACM and hazardous building materials at the Site. Other alternatives that were evaluated in the analysis had potentially lower initial costs but would leave the Site in a less favorable position with respect to redevelopment and long-term occupancy potential. Thus, although cost was considered in this analysis, the potential benefits of addressing ACM and hazardous materials in a manner which will not interfere with future reuse options and will not warrant long-term maintenance were the dominant factors in selecting this preferred abatement approach.

Attachments: Figure 1: Site Location Map
Figure 2: Site Plan

Figures



MAP REFERENCE

THIS MAP WAS PREPARED FROM USGS TOPOGRAPHIC QUADRANGLE IMAGES

SOURCE: OFFICE OF GEOGRAPHIC AND ENVIRONMENTAL INFORMATION (MASSGIS), COMMONWEALTH OF MASSACHUSETTS EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS

SCALE:
HORZ.: 1" = 500'
VERT.:
DATUM:
HORZ.:
VERT.:
0 250' 500'
GRAPHIC SCALE

FUSS & O'NEILL
1550 MAIN STREET, SUITE 400
SPRINGFIELD, MA 01103
413.452.0445
www.fando.com

TOWN OF WILLIAMSTOWN

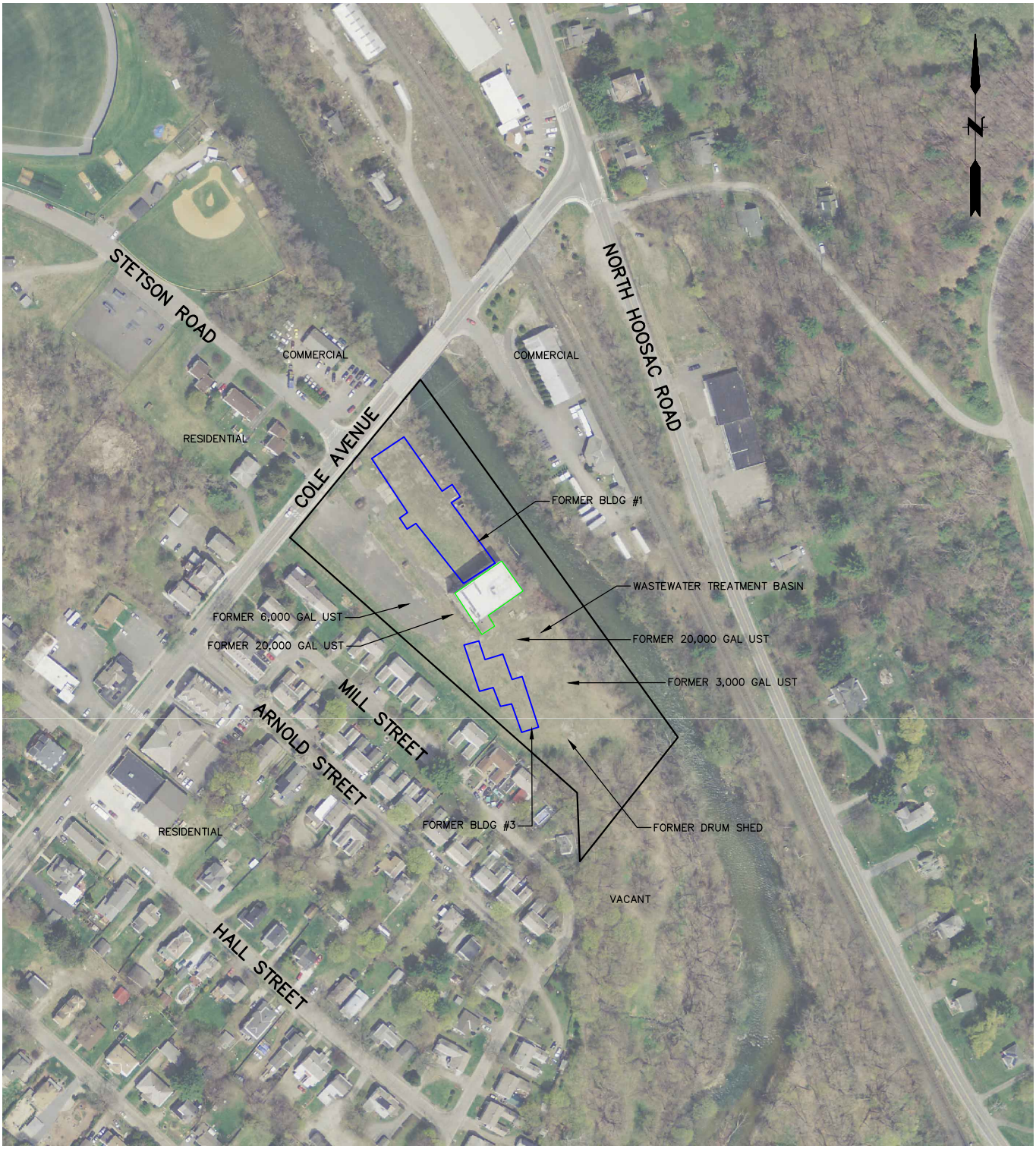
SITE LOCATION MAP

330 COLE AVENUE

WILLIAMSTOWN MASSACHUSETTS

PROJ. No.: 20150720.A20
DATE: FEBRUARY 2018

Figure 1



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PARCEL BOUNDARIES WERE APPROXIMATED BASED ON MASSGIS DATA

FORMER BUILDING OUTLINES APPROXIMATED FROM SANBORN FIRE INSURANCE MAPS

LEGEND

- SITE BOUNDARY
- BUILDING #2
- FORMER BUILDINGS OUTLINE

SCALE:
HORZ.: 1" = 250'±
VERT.:
DATUM:
HORZ.:
VERT.:
0 250
GRAPHIC SCALE

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SPRINGFIELD, MA 01103
413.452.0445
www.fando.com

TOWN OF WILLIAMSTOWN

SITE PLAN

330 COLE AVENUE

WILLIAMSTOWN MASSACHUSETTS

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FIGURE 2