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Analysis of Brownfields  
Cleanup Alternatives (ABCA) Report  
of  
Former Town of Superior High School  
98 North High School Avenue  
Superior, Arizona 85173  
Atlas Project No. 1052000424 (Phase 3)  
April 25, 2023

**Prepared for:**

Copper Corridor Blight Busters Coalition and  
Todd Pryor, Manager  
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Superior, Arizona 85173

**Submitted by:**

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## Project Responsibility

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This report was prepared in general accordance with the scope of services presented in the United States Environmental Protection Agency (USEPA) Guidelines for Analysis of Brownfields Clean-up Alternatives (ABCA) for the former historic High School, located in the Town of Superior, Arizona. The data presented herein is based on information and costs provided to Atlas by Arizona Department of Environmental Quality (ADEQ) qualified abatement contractors and Atlas Technical Consultants' (Atlas') asbestos and lead-based paint surveys of the historic High School campus completed in October 2022.

Atlas appreciates this opportunity to assist the Copper Corridor Blight Busters Coalition and the Town of Superior with this project. Thank you for allowing our firm to perform these consulting services. Please contact the undersigned if you have any questions or need additional information.

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## Table of Contents

|          |   |           |
|----------|---|-----------|
| <b>1</b> | <b>Introduction</b>   | <b>1</b>  |
| <b>2</b> | <b>Background and Site History</b>  | <b>2</b>  |
| 2.1      | Site Description and Features   | 2         |
| 2.2      | Site History and Land Use   | 2         |
| 2.3      | Summary of Previous Environmental Studies                                       | 2         |
| 2.4      | Future Use of Site  | 4         |
| <b>3</b> | <b>Hazardous and Regulated Materials On-Site</b>                                | <b>5</b>  |
| 3.1      | Asbestos-Containing Materials (ACM)   | 5         |
| 3.2      | Lead-Based Paint  | 5         |
| <b>4</b> | <b>Nature of Threat to Public Health</b>  | <b>6</b>  |
| <b>5</b> | <b>Applicable Laws and Regulations</b>  | <b>7</b>  |
| 5.1      | Asbestos Laws and Regulations   | 7         |
| 5.2      | Lead-Based Paint Laws and Regulations   | 7         |
| 5.3      | Miscellaneous Hazardous Materials Laws and Regulations                          | 7         |
| <b>6</b> | <b>Analysis of Clean-up Alternatives</b>  | <b>8</b>  |
| 6.1      | Alternative 1: No Action  | 8         |
| 6.2      | Alternative 2: Operate and Manage (O&M) Asbestos and Lead-based Paint in Place. | 9         |
| 6.3      | Abate Asbestos and Abate or Stabilize Lead-based Paint                          | 9         |
| <b>7</b> | <b>Preferred Clean-up Alternative and Recommendation</b>                        | <b>11</b> |
| <b>8</b> | <b>Green and Sustainable Remediation and Climate Change</b>                     | <b>12</b> |
| 8.1      | Administrative  | 12        |
| 8.2      | General Site Operations   | 12        |
| 8.3      | Remediation Operations  | 12        |
| 8.4      | Climate Change Conditions   | 12        |

## Figures

- Figure 1 Site Vicinity Map  
Figure 2 Site Plan

# 1 Introduction

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Atlas Technical Services LLC (Atlas) is submitting this Analysis of Brownfields Clean-up Alternatives (ABCA) on behalf of the Copper Corridor Blight Busters Coalition (CCBB) and the Town of Superior. The subject of this ABCA is the historic High School campus located at 98 North High School Avenue in Superior, Arizona; hereinafter, referred to as the Site (Figure 1, Site Vicinity Map).

This report presents an evaluation of alternatives for the disposition of the Site. Currently, the Town of Superior has specific renovation plans for the Site.

As part of the ABCA, an evaluation of applicable remedial methods was completed for the renovation of the Site including:

- Alternative 1: No Action
- Alternative 2: Operate and Manage (O&M) Asbestos and Lead-based Paint in Place.
- Alternative 3: Abate Asbestos and Abate or Stabilize Lead-based Paint.

Based on the information provided and researched for this ABCA, Alternative 1 is not practical as extensive renovation is planned for all seven buildings on the campus. Alternative 2 is the more costly alternative over the life of the building and would subject the Town to additional staffing burdens. Alternative 3 is the more costly up-front endeavor, but most cost efficient over the life of the building. Alternative 3 is the most advantageous cleanup alternative for the Site, in accordance with the goals of the Town of Superior.

## 2 Background and Site History

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The following is a background of Site history and a summary of previous environmental studies conducted at the Site.

### 2.1 Site Description and Features

The Site consists of approximately five acres of land that operated as a high school campus with seven buildings. There are seven permanent structures on the Site: the main building and gym with and attached converted residential living space, classroom and storage building, an industrial arts building, an old garage, a tool shed and a residential house. The Site is multi-sided and is bounded by undeveloped land and several homes to the north and east, residential properties to the west and a county courthouse to the south (Figure 2, Site Plan). The Site is in an area generally developed for mixed use in the Community.

### 2.2 Site History and Land Use

The Site operated as a public high school between 1925 and 2004. Prior to this time, the Site was undeveloped residential land and earlier consisted of native desert land.

The Site's property originally only had one residence/ school building then from the mid-1920s to the mid-1970s most of the buildings at the Site were constructed. Starting in the 1960s the property was solely used for the purposes of education, no one lived on the property through the early 2000s when purchased by the current property owner.

### 2.3 Summary of Previous Environmental Studies

Various environmental investigations have been conducted at the Site and are summarized below.

- **Phase I Environmental Site Assessment (ESA)** prepared by Atlas, dated October 29, 2021. The purpose of the Phase I ESA was to evaluate environmental conditions at the Site in order to determine the existence of *recognized environmental conditions* (RECs) prior to the Site being purchased by the Town of Superior in October 2019. The results of the Phase I ESA revealed no *recognized environmental conditions*, de minimis conditions, environmental concerns, or *business environmental risks* in connection with the Site. However, the report recommended the following: based on the age of the construction for most of the buildings at the Site, 1925 to mid to late-1950s and 1970s, it is possible that asbestos-containing building materials (ACM) were used along with lead-based paint.
- **Building 1: Pre-Demolition Asbestos Survey and Toxicity Characteristic Leaching Procedure (TCLP) for Lead-Based Paint Survey** prepared by Atlas, dated October 12 and 13, 2019. The purpose of the Survey was to identify ACM that may be impacted by future renovations, additions, or demolitions of the buildings/structures, as well as to determine lead content for the painted surfaces that will be demolished. Building 1 of the Site consisted of the lake and the wastewater lift station. Asbestos was detected in Building 1 in one location. The TCLP X-Ray fluorescence (XRF) readings indicated that one reading showed lead at the Site was 1.3 milligrams per centimeter squared (mg/cm<sup>2</sup>), which is above the TCLP limit for lead of 1.0 mg/cm<sup>2</sup>. Based on the XRF readings, the samples from the surveyed Site were determined to be hazardous.

- **Building 2: Pre-Demolition Asbestos Survey and Toxicity Characteristic Leaching Procedure (TCLP) for Lead-Based Paint Survey** prepared by Atlas, dated October 12 and 13, 2019 collected a total of 60 representative bulk samples of suspect ACMs were collected from 20 identified HAs in Building 2. Subsequent laboratory analyses determined that all 20 of the HAs were not considered ACMs. The painted surfaces within Building 2 were generally in intact condition during the LBP Inspection. LBP was not identified in Building 2.
- **Building 3: Pre-Demolition Asbestos Survey and TCLP for Lead-Based Paint Survey** prepared by Atlas, dated October 12 and 13, 2019. The purpose of the Survey was to identify ACM that may be impacted by future renovations, additions, or demolitions of the buildings/structures, as well as to determine lead content for the painted surfaces that will be demolished. The collection of samples from Building 3 at the Site showed asbestos was detected in multiple areas within Building 3. The TCLP XRF readings indicated that three readings showed lead at the Site was greater than or equal to  $1.0 \text{ mg/cm}^2$ , which is above the TCLP limit for lead of  $1.0 \text{ mg/cm}^2$ . Based on the XRF readings, the samples from the surveyed Site were determined to be hazardous.
- **Building 4: Pre-Demolition Asbestos Survey and TCLP for Lead-Based Paint Survey** prepared by Atlas, dated October 12 and 13, 2019. The purpose of the Survey was to identify ACM that may be impacted by future renovations, additions, or demolitions of the buildings/structures, as well as to determine lead content for the painted surfaces that may be impacted. The collection of samples from Building 4 at the Site showed asbestos was detected in multiple areas within Building 4. The TCLP XRF readings indicated that multiple readings showed lead at the Site was greater than or equal to  $1.0 \text{ mg/cm}^2$ , which is above the TCLP limit for lead of  $1.0 \text{ mg/cm}^2$ . Based on the XRF readings, the samples from the surveyed Site were determined to be hazardous.
- **Building 5: Pre-Demolition Asbestos Survey and TCLP for Lead-Based Paint Survey** prepared by Atlas, dated October 12 and 13, 2019. The purpose of the Survey was to identify ACM that may be impacted by future renovations, additions, or demolitions of the buildings/structures, as well as to determine lead content for the painted surfaces that will be demolished. The collection of samples from Building 5 at the Site showed asbestos was detected in multiple areas within Building 5. . The painted surfaces within Building 5 were generally in intact condition during the LBP Inspection. LBP was not identified in Building 5.
- **Building 6: Pre-Demolition Asbestos Survey and TCLP for Lead-Based Paint Survey** prepared by Atlas, dated October 12 and 13, 2019. The purpose of the Survey was to identify ACM that may be impacted by future renovations, additions or demolitions of the buildings/structures, as well as to determine lead content for the painted surfaces that will be demolished. The collection of samples from Building 6 at the Site showed asbestos was detected in multiple areas within Building 6. The TCLP XRF readings indicated that multiple readings showed lead at the Site was greater than or equal to  $1.0 \text{ mg/cm}^2$ , which is above the TCLP limit for lead of  $1.0 \text{ mg/cm}^2$ . Based on the XRF readings, the samples from the surveyed Site were determined to be hazardous.
- **Building 7: Pre-Demolition Asbestos Survey and TCLP for Lead-Based Paint Survey** prepared by Atlas, dated October 12 and 13, 2019. The purpose of the Survey was to identify ACM that may be impacted by future renovations, additions or demolitions of the buildings/structures, as well as to determine lead content for the painted surfaces that will be

demolished. The collection of samples from Building 7 at the Site showed asbestos was detected in two areas within Building 7. The TCLP XRF readings indicated that one reading showed lead at the Site was greater than or equal to  $1.0 \text{ mg/cm}^2$ , which is above the TCLP limit for lead of  $1.0 \text{ mg/cm}^2$ . Based on the XRF readings, the samples from the surveyed Site were determined to be hazardous.

## **2.4 Future Use of Site**

Cleanup alternatives depend on future Site use by the Property Owner, the Town of Superior. At the writing of this ABCA, the Town of Superior have identified a specific renovation and development plan. The campus will be utilized as a Community Center, new Town offices, and Business Accelerant Meeting space.

## 3 Hazardous and Regulated Materials On-Site

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### 3.1 Asbestos-Containing Materials (ACM)

Based on the Asbestos Surveys conducted at the Site, asbestos was identified in all buildings except Building 2. The identified asbestos in the six structures will be removed and disposed of by an ADEQ qualified and Arizona licensed and certified asbestos abatement contractor prior to renovation/redevelopment actions.

### 3.2 Lead-Based Paint

The buildings and their painted surfaces were generally in intact condition during the LBP Inspection. LBP was not identified in Buildings 2 and 5.

The results from the paint that was tested showed LBP exists, as defined in the Residential LBP Hazard Reduction Act of 1992 (Title X) and as defined by the EPA regulation published in the January 5, 2001, Federal Register. LBP is defined as paint or other surface coatings that contain lead equal to or exceeding 1.0 milligram per square centimeter (mg/cm<sup>2</sup>).

Thirty-six (36) XRF readings were detected as positive from components on the exterior and interior of the property buildings 1, 3, 4, 6, and 7, which were equal to or exceeded 1.0 mg/cm<sup>2</sup> for lead in paint.

As a result of the lead inspection conducted on July 26 to 28, 2022, 36 LBP surface coatings were identified on the Site. Atlas provides the following recommendations:

- **Disclosure Requirements** – A copy of this complete report must be made available to new lessees (tenants) and/or must be provided to purchasers of this Site under Federal law before they become obligated under any future lease or sales contract transactions (Section 1018 of Title X-found in 24 CFR Part 35 and 40 CFR Part 745), until the demolition of this Site. Appendix G includes a copy of the EPA Lead Disclosure. As applicable, Landlords (Lessors) and/or sellers are also required to distribute an educational pamphlet developed by the EPA entitled “Protect Your Family From Lead in Your Home” (Appendix H) and include standard warning language in their leases or sales contract to ensure that parents have the information they need to protect their children from LBP hazards.
- **Future Remodelling Precautions** – The LBP Inspection conducted on this Site will help the Client and owner to ensure the health and safety of the occupants and the neighbourhood. Details concerning lead-safe work techniques and approved hazard control methods can be found in the HUD publication entitled: “Guidelines for the Evaluation and Control of LBP Hazards in Housing” ([www.hud.gov/offices/lead](http://www.hud.gov/offices/lead)). Future remodelling, repair, renovation and painting at the structure beyond the scale of minor repair and maintenance activities must be conducted in accordance with the EPA’s website on the Renovation, Repair and Painting (RRP) Rule at <http://www.epa.gov/lead/pubs/renovation.htm> for the scope and requirements of the Rule. Future LBP abatement or LBP hazard abatement at the structure must be conducted in accordance with the EPA’s Lead Abatement Rule (also within 40 CFR 745); see the EPA’s website for Lead Abatement Professionals.



## 4 **Nature of Threat to Public Health**

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The extensive renovation and partial demolition of the Site buildings and structures would disturb ACM materials at the Site. Disturbance of ACM will result in airborne asbestos fibers and could result in inhalation and exposures to those involved with the demolition work. Disturbance of the LBP materials at the Site could result in dangerous exposures to workers and releases to the air and soil. Any uncontrolled disturbance could potentially result in exposure to nearby public.

## **5 Applicable Laws and Regulations**

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The objective of the remediation and disposition of the Site is to remove a potential environmental and public safety hazard by elimination or management of environmental conditions that pose a risk to human health and/or the environment. To achieve this objective, the following cleanup goals and/or regulatory standards and/or guidelines are applicable.

### **5.1 Asbestos Laws and Regulations**

OSHA 29 CFR 1910 – Asbestos

OSHA 29 CFR 1926.1101 - Asbestos

40 CFR Part 61, Subpart M, National Emissions Standards for Hazardous Air Pollutants (NESHAP)

### **5.2 Lead-Based Paint Laws and Regulations**

OSHA 29 CFR 1926.62 - Lead in Construction Standard

### **5.3 Miscellaneous Hazardous Materials Laws and Regulations**

OSHA 29 CFR 1910.120 – Hazardous Waste Operations and Emergency Response

USDOT 49 CFR 100-199 - Transportation of Hazardous Materials

EPA Region 9 – Solid Waste Management on Tribal Lands

Maricopa County Air Pollution Control Regulations – Rule 200, Rule 310

## 6 Analysis of Clean-up Alternatives

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Each remedial alternative was evaluated with respect to the comparative evaluation criteria including: effectiveness, reliability, implementability, preliminary cost, and the impact of potential climate changes to the remedy based on selection.

The preliminary cost estimates presented (including preliminary engineering, bidding, remediation, contingency, etc.) are approximate estimates prepared solely for the relative comparison of the identified alternatives. As such, these cost data are not to be used as design level estimates.

Potential alternatives were evaluated for addressing the environmental conditions that could pose a risk to human health and/or the environment at the Site. A limited number of practicable remedial alternatives that could be implemented at the Site based on available Site data were developed. The “No Action” alternative was included as part of the evaluation to establish a basis for conducting remedial actions at the Site and as required in the Cleanup Grant application.

Cleanup alternatives depend on future Site use by the Town of Superior. At the writing of this ABCA, the Town of Superior has identified a specific renovation/ redevelopment plan which is to develop the campus as a Community Center, new Town offices, and Business Accelerant Meeting space.

The remedial alternatives identified for consideration under this alternatives analysis include:

- Alternative 1: No Action
- Alternative 2: Operate and Manage (O&M) Asbestos and Lead-based Paint in Place.
- Alternative 3: Abate Asbestos and Abate or Stabilize Lead-based Paint.

### 6.1 Alternative 1: No Action

This alternative involves no additional response actions at the Site. Under this alternative, the Site buildings would not be abated of ACM, LBP, or have the LBP surfaces stabilized. The buildings and structures would not meet the Town’s needs and could fall into disrepair. The No Action alternative would not prevent exposure of Site contaminants to humans and the environment. Therefore, the No Further Action alternative will not meet the remedial action objectives and cleanup goals.

**Effectiveness:** The effectiveness of the No Action alternative in achieving project goals would be negligible. The continued presence of ACM, and LBP at the Site, as would be the case under the no-action alternative, would pose a long-term health risk to the public and to workers entering the buildings. The no-action alternative would be highly ineffective in achieving the goals of reduction of health risks and facilitating the redevelopment of the Site.

**Implementation:** Implementation of the No Action alternative would be straightforward. The Site and remaining structures would be left in an underutilized state. The identified ACM, and LBP would still pose a hazard to those entering the Site structures. Under the No Action alternative, if the Site remains underused for an extended period, the Site buildings and structures will continue to deteriorate increasing the risk to those entering them.

**Cost:** A No Action alternative would leave the Site in an underused condition making it undesirable for redevelopment and difficult to obtain interest for reuse of the Site.

**The costs for Remedial Alternative 1 is \$0.00.**

**Summary:** The only advantages to No Action are those related to immediate avoidance of expenses that would be incurred by acting. However, in the long term, expenses associated with no action may exceed those related to acting at the present time due to a continued deterioration of the Site. Redevelopment of the Site will eliminate potential impacts to human health and the environment due to underutilization or abandonment of Site.

## 6.2 Alternative 2: Operate and Manage (O&M) Asbestos and Lead-based Paint in Place.

**Effectiveness:** The management of ACM, and LBP would assure the proper maintenance of ACM and Lead-based Paint at the seven buildings and would prevent exposure to asbestos fibers or lead containing dust. The USEPA and the Occupational Safety and Health Administration (OSHA) require special training for maintenance personnel, outside contractors, notifications to Building occupants and creating and compiling records of material maintenance for the life of the Buildings.

**Implementation:** The O&M Plan is designed to:

- 1) Facilitate clean-up of released asbestos fibers and lead dust.
- 2) Reduce future asbestos fiber and lead dust release by minimizing ACM and LBP surface disturbance or damage.
- 3) Control maintenance, custodial, and renovation activities to prevent uncontrolled disturbance of ACM and LBP.
- 4) Monitor the condition of ACM and the LBP.

The O&M Plan provides for the notification of the seven buildings' staff and outside contractors as to the presence, location, and quantity of ACM and LBP. In addition, it will include the institution of proper work practices and engineering controls when conducting activities that involve contacting or disturbing ACM and LBP, the establishment of a process that documents that ACM and LBP is not disturbed in an uncontrolled manner.

**Cost:** This alternative is the least costly in the short term but the costliest alternative over the life of the seven buildings. It also fails to solve the Town's immediate need, which is to prepare the buildings for extensive renovation and partial demolition so that the Site may become fully utilized.

**The initial costs for Remedial Alternative 2 is estimated at \$50,000.00.** This estimate includes initial staff training, implementing medical surveillance of Town staff, purchase of worker protection Personal Protection Equipment (PPE). This does not include the annual re-training, medical physicals, and reassessment of the ACM and LBP or record keeping.

**Summary:** This alternative would not remediate the ACM and Lead-based Paint and allow the Town of Superior to renovate and redevelop the Site for its intended future uses. This alternative only allows limited future use of the Site and increases the Town's operational budget and places a burden on its staffing.

## 6.3 Abate Asbestos and Abate or Stabilize Lead-based Paint

Under this alternative, the Site buildings would be abated of ACM, and LBP would be abated or stabilized. The campus buildings would be ready for extensive renovation and partial demolition

following the completion of Alternative 3. The Site would be ready for its intended purpose as a Community Center, Town offices and Business Accelerant Meeting space.

The Abatement of ACM and Abatement or Stabilization of LBP alternative would prevent exposure of Site contaminants to humans and the environment and allow the Town of Superior to expand community growth and income.

**Effectiveness:** The removal of ACM, and removal or stabilization of LBP will properly mitigate the hazardous materials and achieve the project goal of future Community Center, Town offices and Business Accelerant Meeting space. This alternative provides the safest environment for renovation and partial demolition due to complete removal of asbestos hazards and the stabilization of lead-based painted surfaces. This alternative prevents exposure to workers, building occupants and the public. This alternative also improves the overall aesthetics of the Site and allows the Town of Superior to expand community growth and income.

**Implementation:** Implementation of this alternative would involve asbestos abatement, lead abatement or stabilization of all Site buildings. ACM would be removed by an ADEQ qualified asbestos and Lead abatement contractor. Waste will be disposed of according to applicable laws and regulations.

**Cost:** The cost to implement Alternative 3 is the greatest initially but the most cost effective over the life of the buildings. Implementing Alternative 3 would allow for subsequent renovation and partial demolition of the Site.

**The costs for Remedial Alternative 3 is estimated at \$250,000.00**

**Summary:** This alternative prepares the Site for new infrastructure, buildings and services that would benefit the Town of Superior. It yields a Site prepared for redevelopment following completion of the removal of ACM and removal or stabilization of Lead-based Paint.

## 7 Preferred Clean-up Alternative and Recommendation

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An ABCA has been performed for hazardous substances and regulated building material abatement alternatives at the historic Superior High School campuses. Three alternatives were considered for implementability, cost and effectiveness.

The No Action Alternative (Alternative 1) was included in this analysis for comparative purposes only and is not a feasible alternative because it does not meet the remedial action objectives

- Alternative 1: No Action
- Alternative 2: Operate and Manage (O&M) Asbestos and Lead-based Paint in Place
- Alternative 3: Abate Asbestos and Abate or Stabilize Lead-based Paint

Based on an evaluation of the criteria, the preferred remedial alternative is Alternative 3: Abate Asbestos and Abate or Stabilize Lead-based Paint. Alternative 3 yields a Site prepared for renovation and partial demolition. This is necessary for the Site to be utilized for the Town's intended purposes and allows the Town to expand community growth and income.

## 8 Green and Sustainable Remediation and Climate Change

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The following measures will be implemented where applicable, beneficial, or feasible to improve the overall sustainability of the proposed remedial alternative. When implemented effectively, green and sustainable remediation enhances the environmental benefits offered by federal cleanup and redevelopment programs such as the EPA Brownfields Program.

### 8.1 Administrative

- Green remediation principles will be incorporated into the contracting process, as possible.
- Interim and final documents will be submitted in digital rather than hardcopy format, unless otherwise requested by the EPA or required by law, to save paper. This is especially applicable to voluminous data reports.
- Optimize the use of electronic and centralized communication and outreach to the Community.

### 8.2 General Site Operations

- Utilize existing buildings for field office, if possible/safe.
- Use energy efficient equipment.
- Reuse or recycle waste.
- Protect and conserve water.
- Use alternative fuel vehicles (hybrid-electric, biodiesel, ultra-low sulfur diesel), where possible.
- Carpool for site visits and project meetings and/or use public transportation.
- Schedule activities efficiently to minimize travel to and from the site.

### 8.3 Remediation Operations

- Encourage use of fuel-efficient / alternative fuel vehicles and equipment.
- Minimize mobilizations.
- Provide for erosion control to minimize runoff into environmentally sensitive areas.
- Maximize use of machinery equipped with advanced emission controls.

### 8.4 Climate Change Conditions

Scientific evidence demonstrates that the climate is changing at an increasingly rapid rate as a result of human activities, outside the range to which society has adapted in the past. These changes can pose significant challenges to EPA's ability to fulfill its mission. EPA must adapt to climate change if it is to continue fulfilling its statutory, regulatory, and programmatic requirements. EPA is therefore anticipating and planning for future changes in climate to ensure it continues to fulfill its mission of protecting human health and the environment, even as the climate changes.

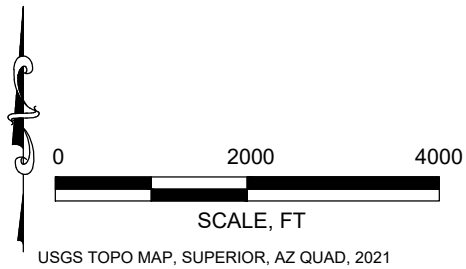
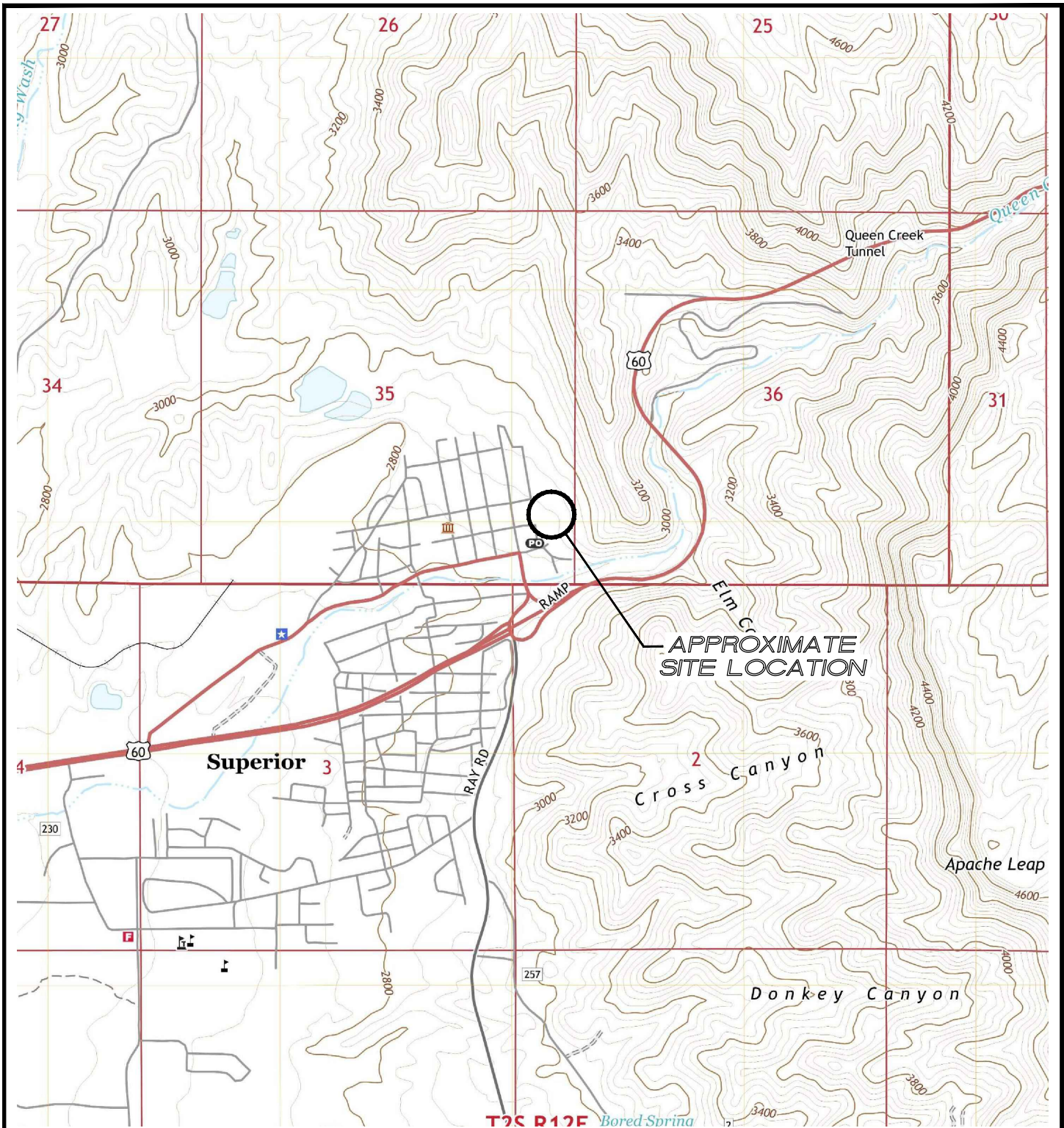
In February 2013, EPA released its draft Climate Change Adaptation Plan to the public for review and comment. The plan relies on peer-reviewed scientific information and expert judgment to identify vulnerabilities to EPA's mission and goals from climate change. The Region 9 Plan identifies vulnerabilities in Region 9 (which encompasses Arizona), including lack of rainfall and the prospect of future droughts, reduction in groundwater supply, sea-level rise, projected temperature increase and its impact on urban areas, wildfire prevalence, agricultural and ocean productivity, and habitat loss and ecosystem shift. Priority is being placed on mainstreaming climate adaptation within EPA and to encourage adaptation planning across the entire federal government.

In evaluating climate change conditions, the proposed remediation activities and disposition of the Site were evaluated about proximity to a coastline, flood plain, in an area with a potential increase of drought, and impact of increased frequency and intensity of storms. The Site is not located near a coastline or located along a waterway where flooding has been identified. The Site topographic elevation is approximately 1,200 feet above mean sea level, and local topography slopes to the south-southwest. The Site is located within 0.22 miles of a 500-year flood zone. The remedial activities proposed for the Site include the abatement of building materials and overall Site demolition; therefore, flooding or other climate-related activities are not believed to be a concern for the Site.


Based on Atlas' review of the EPA plan, Alternatives 3 is the most advantageous cleanup alternative in accordance with the goals of the EPA's Climate Change Adaptation Plan.

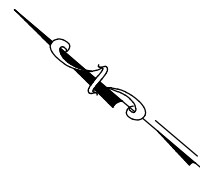


## FIGURES

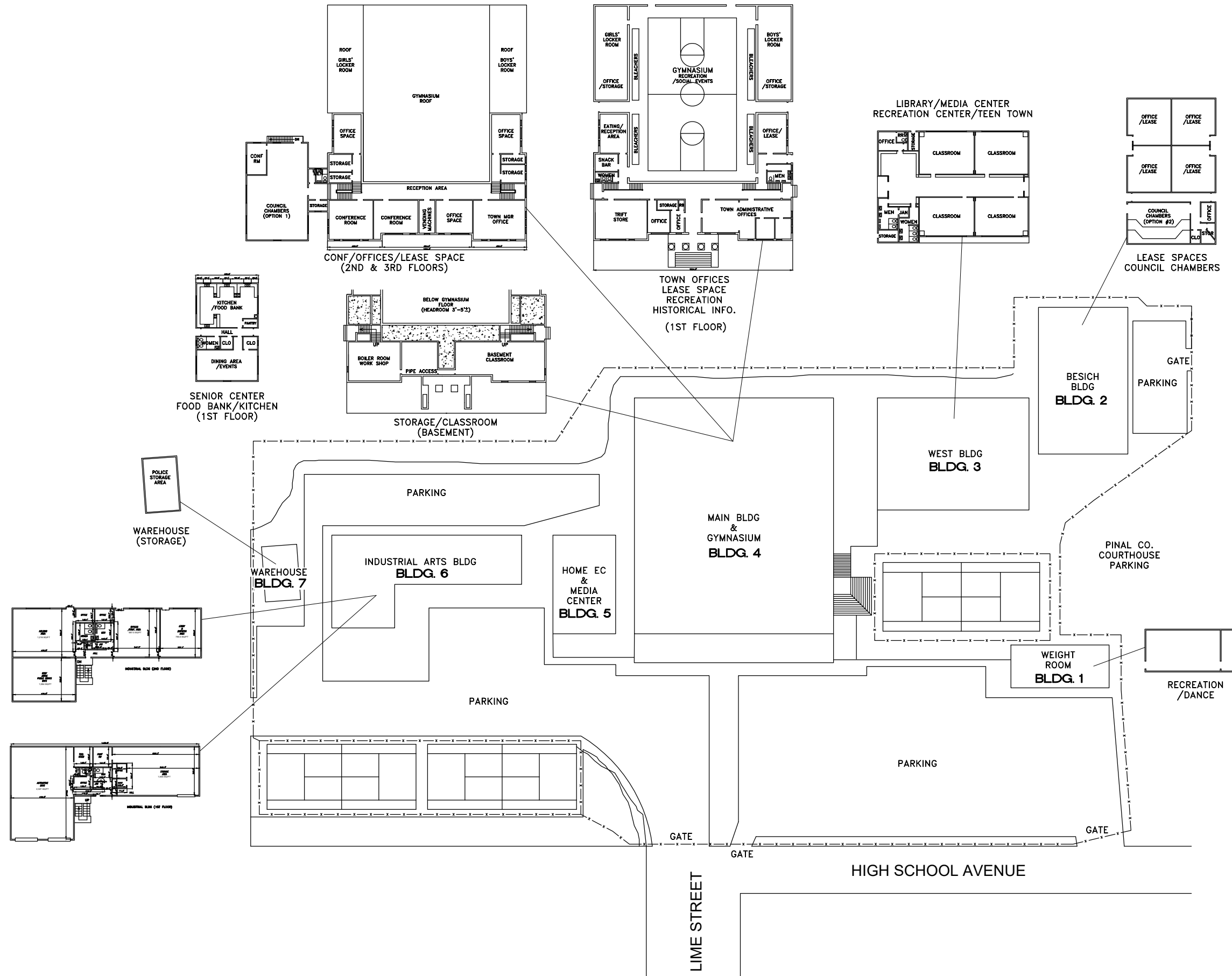


**SITE VICINITY MAP**  
 SUPERIOR HIGH SCHOOL  
 98 HIGH SCHOOL AVENUE  
 SUPERIOR, AZ

|  |               |                    |
|--|---------------|--------------------|
| PROJECT NUMBER: 1052000242   | DATE: 3/10/23 | FIGURE<br><b>1</b> |
| APPROVED BY: TH  | DRAWN BY: BK  |                    |
|  9185 S. Farmer Ave., Ste. #111<br>Tempe, Arizona 85284-2912<br>Ph: (480) 894-2056 *** Fax: (480) 894-2497 |               |                    |



NOT TO SCALE  
NOTE: ALL LOCATIONS ARE APPROXIMATE



PROJECT NUMBER: 1052000242  
 APPROVED BY: TH  
 DATE: 9/15/22  
 DRAWN BY: BK  
**FIGURE 2**

**ATLAS**  
 9185 S. Farmer Ave., Ste. #1111  
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**SITE PLAN**  
 RECREATION / DANCE  
 98 HIGH SCHOOL AVENUE  
 SUPERIOR, AZ 85273