Removal Action Work Plan for the Carter Carburetor Superfund Site

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Removal Action Work Plan
for the
Carter Carburetor Superfund Site
St. Louis, Missouri

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Project No.: 242413183
7 January 2014

amec

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ABBREVIATIONS AND ACRONYMS

ACF	ACF Industries, LLC
ACM	asbestos containing material
AMEC	AMEC Environment & Infrastructure, Inc.
ASA AOC	Administrative Settlement Agreement and Order on Consent
AST	above ground storage tank
bgs	below ground surface
CBI	Carter Building, Inc.
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
DCE	dichloroethylene
EE/CA	Engineering Evaluation/Cost Analysis
EPA	US Environmental Protection Agency
ft	foot (or feet)
ft^2	square feet
ft^3	cubic feet
g/cm^2	grams per square centimeter
HAZWOPER	Hazardous Waste Operations and Emergency Response
ISTD/VE	In-Situ Thermal Desorption and Vapor Extraction
LRA	Land Reutilization Action of the City of St. Louis
HASP	Health and Safety Plan
MDNR	Missouri Department of Natural Resources
mg/kg	milligrams per kilogram
µg/l	microgram per liter
MSD	Metropolitan St. Louis Sewer District
NIOSH	National Institute of Occupational Safety and Health
OSHA	Occupational Safety and Health Administration
PA/SI	Preliminary Assessment/Site Inspection
PCB	polychlorinated biphenyl
PCM	phase contrast microscopy
PEP	Project Execution Plan
PID	photo ionization detector
PM	Project Manager
POTW	publicly owned treatment works
PPE	personal protective equipment
ppm	parts per million
QA/QC	Quality Assurance/Quality Control
QC	Quality Control
QCM	Site Quality Control Manager
RAGs	Risk Assessment Guidelines
RAWP	Removal Action Work Plan
RCRA	Resource Conservation and Recovery Act
SHE	Safety, Health, and Environment
SHSC	Site Health and Safety Coordinator
Site	Carter Carburetor Superfund Site
SM	Site Manager
SOW	Scope of Work
SRE	Streamlined Risk Evaluation
Survey	universal waste survey
TCE	trichloroethylene
TEM	transmission electron microscopy
TSCA	Toxic Substances Control Act
TSDF	treatment storage and disposal facility
TSI	thermal system insulation
UAO	Unilateral Administrative Order for Removal Response Activities
yd^3	cubic yard
USC	United States Code
VC	vinyl chloride

1.0 INTRODUCTION

The purpose of this Removal Action Work Plan (RAWP) is to document the scope of work (SOW) to be executed to meet the performance standards for the response action at the Carter Carburetor Site. This RAWP was prepared in accordance with the guidance provided in Administrative Settlement Agreement and Order on Consent CERCLA 07 2013 0008, Section III Tasks. Major scope items are listed below:

- Abate the asbestos containing material (ACM) in the CBI Building
- Separate the CBI Building from the Willco Building
- Demolish the CBI Building
- Removal action at the Die Cast Area (Polychlorinated Biphenyl [PCB] Area)
- Remediate the Trichloroethylene (TCE) Area

This RAWP is being developed prior to the major scope items being subcontracted. Specific details for each major scope item will be provided in revisions to this RAWP. Specifically, plans or specifications required to execute these major scope items will be provided in appendices to this RAWP.

The Baseline Project Schedule for the response action of the Carter Carburetor Superfund Site is located in Appendix A.

2.0 BACKGROUND

2.1 Site Location

The Carter Carburetor Superfund Site (Site) is located at 2800-2840 North Spring Avenue in the north-central portion of the City of St. Louis, in a mixed residential and commercial neighborhood. The Site is located on the west side of Grand Boulevard as shown on Figure 2-1 (Appendix B). The Site is bounded by St. Louis Avenue to the south, Dodier Street to the north, and North Spring Avenue to the west. The western half of the site is occupied by the former Carter Building, Inc. (CBI) building, a four-story building, with a two-story addition (the Willco Plastics Building) located at the southeast corner of the former CBI Building. The east half of the Site is partially paved, with concrete floors remaining in place after the demolition of the former warehouse and die cast buildings. Sidewalks border the Site on all four sides. The Site includes property located to the west of North Spring Avenue, with a street address of 2827 North Spring Avenue. This property is the former location of an aboveground storage tank (AST) which held TCE. This portion of the Site (TCE AST area) is vacant, with some ground-level concrete structures in place.

Surrounding property use includes residential and commercial properties on the east side of Grand Boulevard, commercial and vacant properties south of St. Louis Avenue, vacant property on the west side of Spring Avenue, and the Boys and Girls Club of Greater St. Louis on the north side of Dodier Street.

The Site is 80 feet (ft) in elevation above the Mississippi River which is located approximately 6,800 ft to the east. The Site is not within a 100-year flood plain zone.

2.2 Site History

ACF Industries, Incorporated (ACF) owned the property from 1956 until April 26, 1985, when the Site property and buildings were deeded to Land Reutilization Action of the City of St. Louis (LRA). During ACF's period of property ownership, carburetors were manufactured for use in gasoline and diesel powered equipment. When ACF closed the Site in 1984, the manufacturing lines were dismantled and most of the equipment was shipped to new locations or sold. At the time the Site property was deeded to the LRA, approximately 20 transformers and an undisclosed number of capacitors and switch gears [all of which contained polychlorinated biphenyl (PCB) fluids], remained on-site. Respondent ACF believes the transformers, capacitors and switch gears were operational and intact at the time of the conveyance to LRA. ACF Industries, Inc. became ACF Industries, LLC on May 1, 2003.

On April 26, 1985, LRA deeded the Site to Hubert and Sharon Thompson (the Thompsons). On January 9, 1986, the Thompsons sold a portion of the Site to Edward Pivirotto and his wife (the Pivirottos). The Pivirottos subsequently failed to pay the real estate taxes on the portion of the Site they owned, resulting in a Sheriff's sale on August 20-22, 1991. Because no substantive bids were received at the sale, the property reverted to LRA by operation of law. Thus, on February 2, 1992, LRA became the owner of the northeastern portion of the Site previously owned by the Pivirottos. The LRA currently owns the property containing the die cast buildings, the south warehouse site, and an adjacent north parking lot.

Carter Building, Inc. (CBI), a Delaware Corporation, was the owner of the CBI Building and WILLCO Building from June 20, 1989 until 2013. In 2013, the deed for the CBI Building was transferred to ACF. In addition, the WILLCO Building reverted back to the possession of LRA. Previously, CBI leased areas of the CBI and WILLCO buildings to several different businesses including a metal fabrication shop, an auto repair shop, a plastics company and storage companies.

In the early 1980s, ACF was required by the Industrial Pollution Control Section of the MSD to monitor and control waste water discharges containing PCBs. ACF instituted physical and procedural controls to reduce PCBs in their waste water discharges. These controls were reported to be in effect until the Site was decommissioned in 1984. A source of the current contamination was the hydraulic fluid containing PCBs in machinery and equipment used in the Carter Carburetor manufacturing processes at the Site during ACF's ownership of the Site.

In August 1987, the US Environmental Protection Agency (EPA) conducted a Toxic Substances Control Act (TSCA) inspection of the Site which led to the issuance of a Complaint and Notice of Hearing to Hubert Thompson. In April 1988, Mr. Thompson contracted with US Pollution Control Inc. to cleanup, remediate and remove the PCB containing transformers. In June 1988, a Consent Order issued by EPA required Mr. Thompson to remove and dispose of the PCB transformers.

In February 1989, the Missouri Department of Natural Resources (MDNR) conducted an inspection at the Site. The inspection determined that transformers, transformer oil, switches, and contaminated concrete had been shipped offsite for disposal pursuant to the June 1988 Consent Order. Samples collected during the MDNR inspection revealed PCB contamination in soils under an old transformer area. Following the response actions by the Thompsons, a cleanup verification study was performed by Environmental Operations, Inc. in November 1989. This study indicated that PCBs were still present in the pump room (electrical substation #1). In April 1989, EPA collected samples at the Site and found PCB concentrations in the soils ranging from 17.2 parts per million (ppm) to 18.5 ppm.

In March 1990, EPA conducted another TSCA inspection to determine if further cleanup action was necessary. Analysis of samples collected during this inspection indicated that surface wipe samples still exceeded PCB regulatory cleanup standards (40 Code of Federal Regulations [CFR] Part 761]. A PCB transformer and two drums of PCB containing material remained on-site.

Another PCB study was conducted by Environmental Science and Engineering, Inc. in September 1990 on behalf of Mr. Thompson. This study focused solely on the first floor pump room (electrical substation #1) which had originally contained six transformers. As a result of this study, EPA requested Mr. Thompson to provide a description of completed and/or planned cleanup activities at the Site. In February 1991, Mr. Thompson responded, indicating that he did not have the assets to continue the cleanup activities at the Site.

The EPA Emergency Planning and Response Branch conducted Site investigations in November 1993 and January 1994. The primary reason for the investigations was to collect environmental samples and conduct an assessment of the Site to determine if anyone had access to and could be exposed to areas previously determined to contain PCBs. Samples were collected from areas at the Site that were known or suspected to have concentrations of PCBs. These areas included: (1) a vaulted pump room near the center of the CBI portion of the Site that contained pumps, old boilers and other equipment, and once housed electrical substation #1; (2) locations near and below electrical substation #3 which was on the roof of the LRA portion of the Site; and (3) locations near electrical substation #4 which was in the northeast comer of the LRA portion of the Site. Analysis of a sediment sample taken from the floor drain in the pump room indicated the presence of PCBs; however, it could not be determined if PCBs had or were capable of being released to the city sewer system through this floor drain. Analytical results from samples taken during the November 1993 and January 1994 investigations confirmed the presence of PCBs at and near two large PCB transformers at electrical substations #3 and #4, indicating that releases of PCBs had occurred from each transformer. Two drums of oil containing PCBs were also found near the PCB transformer at electrical substation #4. A large PCB stained area, approximately 15 ft by 40 ft in size, was discovered immediately west of the drums of PCB oil. Analytical results from samples collected also indicated that PCBs were on certain areas of the floors in the main part of the manufacturing building. As a result of the discoveries, EPA requested the LRA to immediately over pack and secure the two drums of PCB oil, restrict access to the Site, and post PCB warning stickers.

The EPA conducted another Site investigation in March of 1994. The purpose of this investigation was to collect additional air, wipe and dust samples to further characterize the Site and determine the potential threat to those individuals who were in the building on a daily basis. Analytical results from the air sampling and from

50 wipe samples of the floors, walls and equipment at the Site confirmed the existence of PCBs throughout the Site.

Based upon analytical results from samples collected during EPA's November 16, 1993 and January 6, 1994 investigations, significant PCBs existed outside of the die cast buildings in the north parking lot area. This PCB contamination was at least partially the result of releases from a PCB transformer (electrical substation #4) located on the northeast corner of the north die cast building. PCB contamination in this outside area was as high as 180,000 milligrams per kilogram (mg/kg).

As part of the Integrated Assessment Investigation, soil samples were collected from the nearby Boys and Girls Club of Greater St. Louis and from two occupied residential properties and analyzed for the presence of PCBs. Analytical results of the samples from these properties revealed the presence of PCBs in surface soils, but below levels of concern.

In December 1995 and January 1996, EPA and its contractors conducted an Integrated Assessment Investigation in order to complete a Preliminary Assessment/Site Inspection (PA/SI) to determine if off-site migration had occurred and to provide recommendations for further action based on the results of the PA/SI. This investigation revealed six potential sources of releases of hazardous substances, based on the operational history and past investigations. The potential sources of PCBs within the Site were transformers, drums, metal shavings, smokestack/exhaust ventilation, sumps and trenches and building material and dust. Pydraul® (hydraulic fluid) containing PCBs was used in the die cast machines during the carburetor manufacturing process.

The Thompsons and Pivirottos did not operate die casting machinery after they became owners of portions of the Site property. Based upon the November 1993, January and March 1994 investigations, and the December 1995 and January 1996 Integrated Assessment Investigation, EPA determined that releases of PCBs occurred on all four floors of the CBI Building. PCBs were located outside the north die cast building near electrical substation #4 and on the roof of the building near electrical substation #3, as well as surfaces inside the die cast building. Sample analytical results exceeded cleanup levels as outlined in EPA's Office of Solid Waste and Emergency Response, Directive No. 9355.4-01, "Guidance on Remedial Actions for Superfund Sites with PCB Contamination" and the PCB Spill Cleanup Policy set forth in Subpart G of40 CFR Part 761.

On March 18, 1996, EPA determined that a time-critical removal action should be performed at the LRA-owned portion of the Site in order to reduce the immediate threat to human health and the environment posed by conditions at the Site.

In July 1996, EPA issued a Unilateral Administrative Order for Removal Response Activities (UAO), Docket Number VII-96-F-0026, pursuant to Section 106(a) of Comprehensive Environmental Response, Compensation, and Liability Act, 42 (US Code [USC] § 9606(a), to Respondent, ACF. The UAO required ACF to undertake the actions identified in the March 1996 Removal Action Memorandum, which included: (1) the removal and disposal of a PCB transformer; (2) characterization, removal and disposal of all contaminated building material and debris located on the north side of the north die cast building; (3) characterization and disposal of the contents of the two die cast buildings and south warehouse, followed by the demolishing of the three structures and off-site disposal of the demolition debris; and (4) the installation of an interim cover over the die cast buildings' foundation floors following the demolition of the two die cast buildings and south warehouse.

In May of 1997, ACF began on-site removal actions pursuant to the 1996 UAO. The time-critical removal action required by the UAO primarily focused on the demolition and disposal of PCBs and asbestos in buildings on the LRA-owned portion of the Site. The buildings included two die cast buildings and the south warehouse. The south warehouse was completely demolished including the foundations and floor. The die cast buildings were partly demolished, leaving the PCB-contaminated foundation walls and floors of the die cast buildings in place. The foundations were cleaned, coated with epoxy and covered with limestone aggregate. Also, approximately 1,100 tons of soil were removed from the north parking lot transformer leak area. ACF has complied with the requirements of the UAO.

Since the conclusion of the UAO removal action, a portion of the walls of the die cast building has become exposed as the limestone aggregate has eroded away. The epoxy coating has also weathered and flaked off of the exposed concrete foundation walls that are not currently covered by the limestone aggregate.

In July 1998, EPA conducted an investigation at the Site and collected chip, wipe and water samples from the Carter Carburetor Manufacturing Building (also referred to as the CBI Building), the largest remaining Site building, which is currently owned by CBI. Results of analyses of the wipe samples collected on the first floor indicated the presence of PCBs at levels as high as 247.5 grams per 100 square centimeters (g/100 cm^2) with an average wipe sample concentration inside the CBI building on the first floor of 61.5 g/100 cm^2. The concrete chip sample analytical results from the first floor indicated PCBs as high as 858 ppm, with an average chip sample PCB concentration of 176 ppm. Results of analyses of two water samples collected from a pit on the first floor indicated PCBs at 841 and 490 micrograms/liter (µg/l). On the second floor, only one wipe sample analytical result exceeded 10 g/100 cm^2 with a concentration of PCBs at 11.2 g/100 cm^2. The third floor sample analytical results indicated PCB concentrations as high as 38.3 g/100 cm^2, with an average PCB concentration of 11.1 g/100 cm^2.

In April 2003, ACF voluntarily contracted with an environmental consulting company to conduct additional environmental sampling at the Site. Several soil boring samples were collected at the Site. The majority were collected from beneath the concrete foundation floor of the two former die cast buildings. The analytical results from these soil samples indicated PCB concentrations as high as 11,470 ppm in the sampled subsurface area; primarily beneath the die cast building's concrete foundation floors.

Based on the results of these soil samples, ACF estimated that 1,750 cubic yards of PCB impacted material at concentrations above 10 ppm were present beneath or near the former die cast buildings. In addition to the PCBs, various hydrocarbon and chlorinated solvents have been identified at the Site. Tetrachloroethylene and trichloroethylene were identified in subsurface soils at concentrations of 3.46 ppm and 1.05 ppm respectively.

In September 2005, ACF entered into an Administrative Settlement Agreement and Order on Consent for Removal Action (2005 Settlement Agreement) with EPA, which required ACF to conduct an engineering evaluation/cost analysis (EE/CA) at the Site for the purpose of developing response action alternatives to address the remaining on-Site contamination. The 2005 Settlement Agreement included the collection of additional data to determine the extent of contamination and an investigation of a former TCE storage tank area for possible subsurface contamination.

In the summer of 2006, ACF and its contractors conducted environmental assessments for lead-based paint, asbestos, PCBs and TCE. The results of this investigation confirmed and further delineated the following: PCBs in the CBI Building; asbestos and lead paint in the CBI Building and Willco Building; and friable/non-friable asbestos and peeling lead paint throughout both buildings. In addition, ACF's contractors identified the presence of relatively high levels of TCE in subsurface soils beneath the location of a former storage tank that Respondent ACF used to store TCE during the Site's operations prior to 1985. After review of the 2006 investigation reports, EPA determined that further investigations were needed to define the extent of TCE contamination so that adequate response action alternatives could be developed for the EE/CA Report.

In the summer of 2007, ACF's contractors conducted an additional investigation that better delineated the extent of the TCE contamination in subsurface soils. In addition, ACF voluntarily investigated and cleaned all accessible sewer lines at the Site. The sewer lines were previously sampled by MSD in the early 1980s and the analytical results indicated the presence of PCB-containing debris. The PCB-containing sewer line debris was removed to the extent possible and properly disposed of off-site. After reviewing all of the data, EPA directed Respondent ACF to begin conducting the Stream-Lined Risk Evaluation portion of the EE/CA.

The Department of Health and Senior Services recommended further assessment of the potential for TCE vapor intrusion. In October 2008, EPA conducted an on-site vapor intrusion study by collecting samples directly beneath the buildings' floors and other concrete slabs at the Site. The results of this study indicated that TCE vapors were present beneath the on-site buildings and slabs at concentrations of concern. Further vapor intrusion sampling was conducted along the east side of the Boys and Girls Club of Greater St. Louis property. Based on the analytical results from these samples, and the groundwater flow direction, it was determined that TCE from the Site was not significantly impacting the Boys and Girls Club of Greater St. Louis.

On September 20, 2010, EPA approved the EE/CA Report with comments and ACF submitted the final EE/CA Report, dated September 22, 2010, to EPA. On September 27, 2010, EPA initiated a 30-day public comment period through advertisements placed in several local St. Louis newspapers announcing the availability of the EE/CA Report and the Administrative Record. On October 4, 2010, EPA held a public meeting for the purpose of; describing the recommended actions for the Site, receiving comments, and answering questions concerning the EE/CA and the Site in general. The public comment period ended on January 31, 2011, after EPA had granted two extensions to the original 30-day comment period.

After the close of the public comment period, EPA prepared a Responsiveness Summary that addressed the significant comments submitted during the public comment period. The Responsiveness Summary is part of the Administrative Record. EPA subsequently issued its decision document, an Enforcement Action Memorandum, on March 30, 2011.

3.0 PROJECT ORGANIZATION

3.1 AMEC Team

The AMEC Project Team is comprised of experienced environmental and project management professionals. Corporate Project Team Members are limited to the Central Group HSE Manager Support for this project. Local and Site Project Team Members include Program Manager, Project Manager (PM), Site Manager (SM), Site Quality Control Manager (QCM) and the Site Health and Safety Coordinator (SHSC). The Organization Chart for the Project is depicted on Figure 3-1. Contact information for the Project Team Members is provided in Table 3-1. Stakeholders are identified in Table 3-2. Roles and responsibilities for the Local and Project Team Members are provided in the following subsections.

3.1.1 Central Group Health Safety and Environment Manager

The Central Group HSE Manager director is responsible for coordinating the implementation of health and safety procedures through supervision/direction of the SHSC. The Central Group HSE Manager is also responsible for approval of all changes made to the Health and Safety Plan (HASP).

3.1.2 Program Manager

The Program Manager is a senior level operations individual assigned to ensure that the project delivery is in accordance with the client's and AMEC's overall business objectives. The Program Manager will have sufficient seniority, experience, and skills to deal effectively with the client and all project stakeholders.

Responsibilities

- Ensure continuous and effective Client engagement
- Communicate relevant feedback to the Project Manager and Operations Management
- Assist Project Manager understand and deliver the Client's critical success factors
- Act as an ambassador for AMEC at all times
- Request Program Manager meetings with Client as required by the Project Manager
- Ensure that the Project follows the scope of work provided to the Client
- Ensure that suitable resources are utilized and maximized for the project
- Ensure Project sharing and application of relevant lessons learned and good practices through the Project Directorate

3.1.3 Project Manager (PM)

The Project Manager (PM) is the leader of the project and is certified by AMEC Environment & Infrastructure (AMEC) to manage projects. The PM is responsible for successful execution of all aspects of project performance: work scopes, allocation of required resources, and delivery of quality products that meet our clients' needs.

Responsibilities

- Execute tasks in accordance with the Contracts Plan and AMEC Limits of Authority, including but not limited to obtaining appropriate operations approvals
- Ensure tasks are set up in the system correctly, with accurate client, budget, work breakdown structure and contractual information
- Execute all necessary planning and communicate with project team: PEP, Health & Safety Plan, Staffing Plan, Communication Plan, Risk Management Plan, Procurement Plan, etc. Monitors plans during project execution and modifies as needed;
- Attend internal and external project meetings, document key issues and action items and ensure all are addressed
- Proactively manage scope, schedule and budget to meet Client expectations and deliver "as-proposed" profit to the Company
- Manage vendors and subcontractors
- Maintain project documentation and files
- Prepare or review project deliverables
- Ensure compliance with the Project Review Policy and other Company QA requirements
- Review and approve project charges and invoices
- Train and mentor junior members of project team
- Promote behavior consistent with AMEC values and vision.

3.1.4 Site Manager (SM)

The Site Manager (SM) is the field leader for the project. As the field leader of the project, the SM is responsible to support the PM for successful execution of all aspects of project performance: work scopes, allocation of required resources, and delivery of quality products that meet ACFs' needs. The SM and the PM have similar and overlapping responsibilities.

Responsibilities

- Execute all necessary planning and communicate with project team. Monitor plans during project execution and notifies the PM to recommended changes as needed
- Attend internal and external project meetings, document key issues and action items, and ensure all are addressed

- Proactively manage scope, schedule and budget to meet client expectations
- Assume the role of the Health and Safety Coordinator as needed
- Manage vendors and subcontractor on-site
- Maintain project documentation and files
- Prepare or review project deliverables
- Ensure compliance with the Project Review Policy and other Company QA requirements
- Review project charges and invoices
- Promote behavior consistent with AMEC values and vision.

3.1.5 Site Quality Control Coordinator (QCM)

The Site Quality Control Manager (QCM) oversees the Quality Assurance/Quality Control (QA/QC) processes implemented on the project and ensures appropriate QA/QC measures are applied to the project.

<u>Responsibilities</u>

- Perform daily site inspections of work being performed and note discrepancies
- Bring noted discrepancies to the attention of the SM and PM as appropriate
- Ensure that Subcontractors are prepared to execute awarded scope of work prior to first day on site
- Consider the goals and objectives of the Client in conducting daily inspections
- Provide an informed and objective second opinion.
- Engage in critical stages of the project - meetings, testing, analyses, draft report for Client, definitive site meetings, and the final report
- Ensures proper project review documentation is provided to the SM for inclusion in the project file.

3.1.6 Site Health and Safety Coordinator (SHSC)

A detailed description of the role and responsibility of the SHSC is contained in the Site Specific HASP. The SHSC or designee will be on site during all field activities. A daily log of activities will be generated and provided to the QCM for inclusion in the Daily Report.

3.1.7 Technical Staff

The Technical Staff is responsible for technical work on a project. The Technical Staff report to the SM.

<u>Responsibilities</u>

- Complete the work allocated by the SM in accordance with the requirements of the project plans, operating procedures and instructions

- Follow project engineering standards, as required
- Report all difficulties in complying with the above requirements to the SM including and all technical and commercial matters which arise
- Report of any changes in scope to the SM, either identified by them or requested by the Client
- Maintain an awareness of what others are doing and advise the SM of coordination problems
- Observe the general responsibilities of all employees for quality engineering work in accordance with other company policies and procedures.

3.1.8 Subcontractors

Responsible for the safe and efficient execution of the scope of work. Inform the project management staff of any change of conditions to the awarded scope of work. The Subcontractors are also responsible for the conduct of their personnel while on the site and ensuring that their personnel adhere to the Site HASP and their task specific HASP, where applicable..

Table 3-1. Project Team Contact Information

Role	Name	Email	Phone
Corporate Support H&S	John Mazur	John.mazur@amec.com	910.431.2330
Program Manager	Gene Watson	Gene.watson@amec.com	314.922.3828
Project Manager	William Hladick	William.hladick@amec.com	636.200.5102
Site Manager	Dan Williams	Daniel.williams@amec.com	314.277.1610
Site QCM			
SHSC			
Hazardous Waste Coordinator	Chris Tedder	Chris.tedder@amec.com	314.210.7851

Table 3-2. Stakeholder Identification

Role	Name	Email	Phone
ACF Industries Inc Representative	Mark Crinnion	mcrinnion@acfindustries.com	636.949.2399
US EPA On Scene Coordinator	Jeff Weatherford	Weatherford.Jeffery@epamial.epa.gov	.636.326.4720
MDNR Representative	Brandon Wiles	Brandon.Wiles@dnr.mo.gov	573.526.4208

4.0 PROJECT COMMUNICATIONS

The Carter Carburetor Communication Plan is located in Appendix C of this RAWP. As with any project communication is essential to the proper flow of information among the Project Team members and Stakeholders.

4.1 Forms of Communication

During the execution of the scope for the Project, several forms of communications will take place between Project Team members and Stakeholders. There will be two (2) different forms of communication expected on this project; Formal Communication and Informal Communication.

4.1.1 Formal Communication

For the purpose of this RAWP, Formal Communication will be defined as Letters, Reports, Schedules, Records of Teleconferences, Meeting Minutes and Plans. This form of communication will be used only for the conveyance of the exchange important project related information in a traceable/recallable format.

4.1.2 Informal Communication

For the purpose of this RAWP, Informal Communication will be defined as oral conversations, emails and text messages. Although this form of communication can be used to provide immediate update of a situation or immediate response to a request from a Project Team member of Stakeholder, it is not to be used in place of the Formal Communication methods described above. If informal communication is used and the information exchanged is project related and important it should be followed up with a Formal Communication method. Informal communication should not be considered traceable or recallable.

5.0 QUALITY CONTROL

To ensure that all construction and remedial activities comply with the project specifications, the QCM will complete, in conjunction with the subcontractors, inspections for each phase of work as described in the following subsections.

5.1 Phase I Preparatory Inspection

Preparatory inspection will be performed prior to beginning work on any phase of the project and will include:

- Review of submittal requirements and all other contract requirements with the performance of the work
- Check to assure that provisions have been made to provide required field quality control testing, as required
- Examine the work area to ascertain that all preliminary work has been completed;
- Verify all field dimensions and record any discrepancies
- Perform a physical examination of materials and equipment to assure that they conform to approved submittal data or shop drawings and that all required materials and/or equipment are on hand and comply with the contract requirements.

Subsequent to the preparatory inspection and prior to commencement of work, the contractor shall instruct each applicable worker on the level of workmanship required to meet contract specifications.

5.2 Phase II Initial Inspections

Initial phase inspections will be performed as soon as a representative portion of the particular scope of work has been accomplished. Initial inspections include, but are not limited to, examination of the quality of workmanship; review of control testing for compliance with control requirements; and identification of defective, damaged, or unsafe materials, omissions, and dimensional requirements.

This initial phase inspection provides the opportunity to discuss and agree on the required level of quality associated with a given work activity. Any discrepancies relative to work quality should be addressed at this time.

5.3 Phase III Follow-Up Inspections

Follow-up inspections will be performed daily as work progresses to ensure continuing compliance with contract requirements, including control testing, until completion of the particular scope of work. Final follow-up inspections will be conducted and deficiencies corrected prior to demobilization from the Site or the beginning of any new work at the Site.

Notes/meeting minutes of all inspections will be recorded in the Daily Quality Control Report. Examples of the inspection forms to be used are presented in Appendix D.

5.4 Procurement

Copies of purchase orders or subcontracts related to procurement of goods or services will be reviewed by the QCM. If a procured item requires vendor certification of materials, equipment, or supplies, the certification is to be verified for accuracy and conformance and may be used in lieu of a test for those properties covered by the certification. Copies of certifications will be maintained in the project QC file.

In addition, all procurement activities performed in conjunction with this Remedial Action shall conform to AMEC policy AMEC-CCP-004, Commercial Procurement Procedure. In addition, all prospective subcontractors which will provide services (including delivery of goods, even if done by a third party) must pass AMEC's HSE evaluation or be approved by an AMEC Regional Safety Manager.

5.5 Work Execution

In order to ensure compliance with regulatory requirements and contract specifications, the QCM will conduct daily inspection during the Follow-up phase. The results of the inspection will be documented in the Daily Quality Control Report. Any work that does not comply with the contract will be noted on the Deficiency List. The Deficiency List will identify the items that require rework and the date that the item was originally discovered. This list of deficiencies will be included in the quality control documentation, as required, and will include the estimated date by which the deficiencies will be corrected. Once the deficient items have been corrected, the QCM will make a second inspection to ensure that all deficiencies have been corrected.

The QCM and the subcontractor's representative will inspect the work activity while the work is in progress and again upon its completion.

This Deficiency List will be filed by the QCM or designee. This list will state the deficient item, the date it was found, the corrective action necessary, the date the work was corrected, and the name of the person verifying that the work has been satisfactorily completed.

Follow-up actions on those discrepancies that cannot be corrected at the time of discovery will be the responsibility of the QCM. These types of discrepancies may be contributed to faulty equipment, weather, or time restrictions.

The Deficiency List will be maintained by the QCM and discussed at each QC meeting. The QCM and SM will agree on a reasonable time line for correction.

Deficiencies that have been identified since the last meeting will be discussed and proposed correction dates will be established.

The QCM shall be responsible for listing items needing rework, including those identified by the owner's representative. The results of all quality control inspections, including those deficiencies noted and corrected on the spot, will be recorded by the QCM.

The original report will be filed at the job site trailer and will be made available as required.

The following items require the preparation of task specific inspection checklists:

- ACM Abatement- Inspection checklist will include: installation and maintenance of critical barriers; proper installation and use of decontamination shower; establishment and use of HAZWOPER control zones; and site specific air monitoring requirements (personal protection and clearance)
- Demolition - Inspection checklist will include: dust control measures; stormwater control measures/plan; segregation and proper handling of waste/debris/recyclable materials; safe work practice
- Sheet Pile Installation - Inspection checklist will include: proper installation of sheet piles, including correct material and placement; daily inspection of sheet piles
- Soil Excavation - Inspection checklist will include: Site access control; use of proper PPE; dust monitoring, review of manifests/BOLs; placarding; equipment decontamination in accordance with 40 CFR 761.79(c)(2); proper benching of excavation; dust control measures; maintenance of haul routes; maintenance and effectiveness of truck wash station; limits of excavation established, updated as necessary; correct placement of backfill
- In-situ Thermal Desorption - Inspection checklist will include: pre-installation clearance of subsurface; proper installation of all components; emissions controls in place.

As the phases of the response actions are designed, specific checklists will be developed for use in the field. All phases of the project will require strict adherence to the Site Specific HASP. Site security will also be an integral component to of each phase of the response action.

5.6 Site Access/Site Security

Goals of Site Security:

- To protect the public from inadvertently or purposefully entering the project site and being injured
- Ensure timely response of emergency responders in the event of an emergency call
- Secure on-site materials and equipment
- Support safe and efficient transportation of materials, equipment, and personnel on and off the project site
- Control site access and limit vehicular traffic thereby limiting the generation of dust and preventing migration of contaminated material off-site
- Control unauthorized access to the Site.

The areas of the Site undergoing response actions will be fenced, with primary access through the vehicle and man gates located on St. Louis Avenue near Grand Boulevard. Additional gates in the perimeter fence will be kept locked unless under direct control of the designated person. All workers and visitors to the Site will be required to check in at the project trailer. The general Site Access and location of the Administration Area are depicted on Figure 5-1. Other routes for site access are discussed in Section 11, Traffic Plan.

All individuals (workers, visitors, deliveries, etc.) shall understand the following:

- Site access and exit via entry control points only by properly HAZWOPER trained workers or escorted visitors. All vehicles entering exclusion zones require inspection or cleaning upon every exit from the exclusion zone.
- All personnel exiting exclusion zones will require decontamination commensurate with the work being performed.
- Protective clothing beyond standard work clothes may be required dependent on the task being performed, as specified in the HASP.
- No smoking, chewing, eating, or drinking will be allowed in the exclusion zones, including vehicles and equipment.

Subcontractors will be required to prepare and submit an activity specific HASP for approval by AMEC prior to work on Site. All subcontractor workers will be required to have the appropriate level of HAZWOPER training for the task to be performed. Additional training will be required for certain tasks (asbestos abatement, confined space entry, fall protection, etc.). Copies of training certification will be kept on-file at the on-site project trailer. It is the subcontractor's responsibility to ensure that all worker training and certification is current.

All companies and site workers who initiate equipment or supply delivery must inform and enforce the site requirements for that delivery. Prior to arrival, the driver shall be informed, by the company responsible for the shipment, of the PPE requirements of hard hat, safety glasses, reflective vest, and safety boots if he/she is to leave the cab of the truck. The driver must be briefed by the host on the site rules which apply to them and must sign the visitor orientation form. If the delivery requires entry into the exclusion zone or contamination reduction zone, untrained drivers must be escorted by an authorized person and must not perform any activities which would involve contact with impacted materials. The escort will remain with the driver and vehicle until they leave the site.

Keys for access gates will be numbered and issued to essential personnel as required. Keys are not to be copied without the express authorization of the Project Manager. The SM, PM, and QCM are authorized to issue keys. A record of key issuance will be maintained in the project files.

5.7 Health and Safety Plan

Prior to the performance of Site Work, AMEC will update the Site Specific HASP. The HASP will be in compliance with Occupational Safety and Health Administration (OSHA) 1910.120 Hazardous Waste Operations and Emergency Response (HAZWOPER) regulations and AMECs Integrated Health, Safety and Environment Program Manual. The HASP will be submitted to AMECs Regional Health and Safety Manager for review and approval prior to implementation. All contractors working on the Site shall be responsible for preparing a task specific HASP. The HASP prepared by the contractor shall be in compliance with OSHA 1910.120 HAZWOPER regulations and approved by AMEC.

6.0 ASBESTOS ABATEMENT

An asbestos survey was performed during 2006 in the CBI Building to determine the extent of asbestos used in the interior and exterior of the building. The areas included in the survey were the pump room, the boiler room, the first floor through the fourth floor and the roof including mechanical rooms.

Analysis results of the 2006 asbestos survey can be found in the Asbestos Survey Report Former Carter Carburetor Building St. Louis, Missouri (Crystal Environmental Group, Inc., 2006). A description of the results is provided below:

- Pump Room - 600 linear ft of thermal system insulation (TSI) pipe insulation, mud fittings and 100 cubic feet (ft^3) of insulation on floor;
- Boiler Room - 700 linear ft of TSI piping insulation, mud fittings 1,200 ft^3 of insulation on floor and 2,400 square ft (ft^2)of transite panels;
- First Floor - 1,400 ft^2 of asbestos floor tile/mastic, 178 linear ft of TSI piping insulation, 920 ft^2 of duct wrap/mastic, 560 ft^2 of drywall, mud fittings, door caulking and 30,257 ft^2 of window glazing;
- Second Floor - 30,601 ft^2 of asbestos floor tile/mastic, 64 linear ft of TSI piping insulation, 100 ft3 of asbestos debris, mud fittings, 500 ft^2 of drywall, 240 ft^2 of duct insulation and 37,237 ft^2 of window glazing;
- Third Floor - 308 ft^2 of asbestos floor tile/mastic, 174 linear ft of TSI piping insulation, mud fittings, and 36,237 ft^2 of window glazing;
- Fourth Floor - 15,120 ft^2 of asbestos floor tile/mastic, 719 linear ft of TSI piping insulation, 150 ft^2 of ceiling tile/mastic, 150 ft^2 of ceiling insulation, mud fittings, 120 ft^2 of duct insulation, asbestos adhesive pucks covered 700 ft^2 of wall surface, 750 ft^2 felt under tile floor, 3200 ft^3 of roof debris, 19,500 ft^2 of asbestos plaster, 3,494 500 ft^2 of drywall and 38,767 ft^2 of window glazing;
- Roof Levels and Mechanical Areas - 600 ft^2 roofing material, 4,825 linear ft of roof flashing/mastic, 1,700 lineal ft of TSI piping insulation, mud fittings, and 2,600 ft^2 of transite.

Note: Amounts of asbestos for each area surveyed in the CBI Building are approximate.

A second asbestos survey was performed in October 2012. The purpose of this asbestos survey was to verify the quantity of ACM compared to the 2006 Asbestos Survey Report prepared by Crystal Environmental Group, Inc and to collect soil samples from the parking area to determine contamination due to airborne asbestos at the site.

Analysis results of the October 2012 asbestos survey can be found in the Limited Asbestos Investigation (Lafser & Associates, Inc., 2012). A description of the results is provided below:

- Pump Room - 11 of 14 samples tested positive for asbestos including pipe insulation, pipe insulation debris and pipe elbows;
- Boiler Room - 10 of 17 samples tested positive for asbestos;
- First Floor - 3 of 25 samples tested positive for asbestos (excluding the pump and boiler rooms) including pipe insulation and building debris;
- Second Floor - 8 of 23 samples tested positive for asbestos including building debris and pipe insulation debris;
- Third Floor - 1 of 9 samples tested positive for asbestos - pipe debris;
- Fourth Floor - 8 of 25 samples tested positive for asbestos including ceiling plaster, building debris, pipe insulation debris and felt paper;
- Roof Levels and Mechanical Areas - 4 of 31 samples tested positive for asbestos including roofing material and pipe elbows.

Note: Samples were not collected on all previously identified asbestos material.

The results of both surveys will be utilized in the development of the asbestos abatement design and specifications.

The asbestos design and abatement will adhere to the asbestos standard for the construction industry, 29 CFR Part 1926.1101, which regulates asbestos exposure for the following activities:

- Demolishing or salvaging structures where asbestos is present.
- Removing or encapsulating ACM.
- Constructing, altering, repairing, maintaining, or renovating asbestos-containing structures or substrates.
- Installing asbestos-containing products.
- Cleaning up asbestos spills/emergencies.
- Transporting, disposing, storing, containing, and housekeeping involving asbestos or asbestos-containing products on a construction site.

Note: The standard does not apply to asbestos-containing asphalt roof coatings, cements, and mastics.

The asbestos design and specification will be the basis of the request for proposal sent to asbestos abatement contractors for cost proposals. Upon award of the subcontract and development/approval of abatement work plan, this RAWP will be revised to include the work plan in Appendix E.

A traffic plan for the task of Asbestos Abatement is described in Section 11.0 Traffic Plan. The purpose of the traffic plan is to analyze each major task and the operational need for equipment/trucks traffic which may impact the surrounding community and develop a plan to minimize the impact.

7.0 CBI BUILDING DEMOLITION

The EE/CA for the Former Carter Carburetor Site (MACTEC, 2010) provides the various alternatives and associated costs with implementing the cleanup of the Site. For the CBI Building, demolition and select off-site disposal of PCB contaminated concrete and building material and reuse of select building debris, as described in Section 7.4.6, as on-site backfill was selected as the most effective alternative. The location of the CBI Building Demolition Area is depicted on Figure 7-1.

There are several activities that need to be completed prior to demolition of the CBI Building; abatement of the known asbestos material, removal of universal waste, and the separation of the CBI and Willco Building.

A traffic plan for the CBI Building Demolition task is described in Section 11.0 Traffic Plan. The purpose of the traffic plan is to analyze each major task and the operational need for equipment/trucks traffic which may impact the surrounding community and develop a plan to minimize the impact.

7.1 Asbestos Abatement

The location of known asbestos in the CBI Building is detailed in Section 6.0 Asbestos Abatement. Specifications and design of the abatement have not been developed to date. However, known asbestos containing material will be removed, properly packaged and disposed prior to demolition of the CBI Building.

7.2 Universal Waste Removal

Universal Waste is a hazardous waste that meets the criteria in 40 CFR Part 266.80 or the Universal Waste Rule 40 CFR Part 273 and the Missouri Universal Waste Rule found in Chapter 16 of the Missouri Hazardous Waste Management Regulations. Universal wastes observed in the CBI Building are mercury switches in thermostats, mercury thermometers, light ballasts and fluorescent/mercury vapor light bulbs.

A universal waste survey (Survey) will be completed by AMEC personnel to determine the location and amount of universal waste remaining in the CBI Building. Upon completion of the Survey, subcontractors will be identified and provided a copy of the Survey for the development of a cost estimate for the off-site treatment/disposal of the universal waste.

Prior to demolition of the CBI Building, a verification survey for the removal of universal waste will be performed. If the additional universal waste is identified, it will be removed and sent off-site for treatment/disposal. If no additional universal waste is identified, plans for the demolition of the CBI Building can proceed.

7.3 CBI/WILLCO Building Separation

The selected alternative for the CBI Building is demolition (MACTEC, 2010) with the Willco Plastics Building to remain intact and freestanding for future use. A common wall between the CBI and Willco Plastics Building is shared along the southeastern side of the CBI Building. Prior to demolition, the CBI and Willco Buildings need to be mechanically separated. Caution and other mechanical means will be used to protect the Willco Plastics Building from damage during demolition of the CBI Building.

A building separation plan will be developed detailing the means and method for the separation of the buildings. Once the building separation plan is developed and approved, this RAWP will be revised to include the plan in Appendix F.

7.4 Demolition

CBI Building location and the location to be used for: the staging of equipment, the sorting of material and the sizing of demolition debris is depicted on Figure 7-1.

A demolition plan will be developed and reviewed/approved by a Structural Engineer licensed in the State of Missouri. It is anticipated that the general methodology for demolition will be to utilize heavy machinery, shears, etc. Once the demolition plan is solicited and awarded it will be located in Appendix G. The physical act of demolition will only take place once all permits, utility terminations are verified, asbestos abatement activities are complete, the universal waste has been removed and the buildings have been separated. In addition to the aforementioned prerequisites for demolition of the CBI Building, the following activities will be completed (order of completion not important):

- Inspect CBI Building to ensure there are no unauthorized occupants
- Active demolition postings are in place
- Adequate dust suppression water is available
- Debris sorting and sizing area is available to accept material
- Ensure temporary fencing is in place, as needed
- Landfill profile is complete and approved
- PCB contaminated areas of the CBI Building marked with high visibility paint

7.4.1 Demolition Debris Sorting

The CBI Building debris is planned to be used as backfill in the Die Cast PCB excavation area. To facilitate building debris to be used as backfill it must meet the PCB concentration performance standard for the excavation, 0 to 3 ft below ground surface (ft bgs) PCB contamination cannot exceed 1 ppm, from 3 to10 ft bgs PCB contamination cannot exceed 25 ppm and from 10 ft bgs to bedrock PCB contamination cannot exceed 100 ppm.

Portions of the CBI Building are contaminated with PCBs and cannot be used on-site for backfill unless sampled to verify levels are acceptable for use as previously discussed. To aid in the identification of the building portions contaminated with PCB, high visibility paint will be used. The area identified in the EE/CA (MACTEC, 2010) as PCB contaminated will be identified by use of this high visibility paint. Building debris marked with high visibility paint will be segregated from the remaining building debris as much as possible to minimize the amount of debris requiring off-site disposal.

7.4.2 Demolition Debris Sizing

As stated above, demolition debris has several pathways; used on-site for backfill, removed from site and disposed as non-TSCA material and removed from site and disposed as TSCA contaminated waste. Demolition debris will be sized to allow for use as backfill in the Die Cast PCB removal action area.

To ensure the proper effort is used to size debris, Pace Laboratory will be contacted for the maximum size of sample media for analysis. Only the debris selected for sampling will be sized to meet the laboratories sample size requirement. All other debris in a sample stockpile will be sized based on the sample results; if suitable for use as backfill at greater than 10 ft bgs, from 3 to 10 ft bgs or from 0 to 3 ft bgs or removal for off-site disposal.

The selected TSCA landfill and the local construction debris landfill will be contacted to determine the maximum size of material that can be received for disposal without further size reduction.

7.4.3 Sampling for PCBs

Building debris will be sampled for PCBs in accordance with the Quality Assurance Project Plan and the Sampling Analysis Plan Section 10 of this RAWP.

7.4.4 Recyclable Material

It is not anticipated that building debris will be available suitable for recycling or that there is enough structural metal to warrant recycling. However if the amount of material available for backfill exceeds the volume required for backfill and sample data shows the material is acceptable for recycling, every attempt will be made to recycle.

Structural metal and other metals that can be segregated from demolition debris will be segregated. If enough metal can be segregated, it will be sent to a local metal recycling facility.

7.4.5 Off-Site Disposal

There are two disposal pathways for off-site disposal of building debris; a TSCA regulated landfill and a construction debris landfill. Debris that cannot be used for on-site backfill at any depth will be transported to the TSCA regulated landfill for disposal. A certificate of disposal will be provided by the landfill to confirm the receipt of debris. These certificates of disposal and associated hazardous waste manifests for each shipment will be maintained in the project files and used as backup in the various reports.

Debris that does not require disposal at a TSCA regulated landfill and is not used for on-site backfill may be transported to a local construction debris landfill for disposal if the material is not accepted for recycling.

7.4.6 Reuse as Backfill

Demolition debris is allowable for use as on-site backfill in accordance with the Statement of Work and the ASA AOC CERCLA 07 2013 0008. For demolition debris to be acceptable for use as backfill it must meet the PCB concentration performance standard for the excavation, 0 to 3 ft bgs PCB contamination can not contain any PCBs, from 3 to 10 ft bgs PCB contamination cannot exceed 25 ppm and from 10 ft bgs to bedrock PCB contamination cannot exceed 100 ppm PCB concentration.

The debris will also require sizing to ensure compaction and prevent/minimize future subsidence of the backfilled area. Backfill size requirements will be determined in the future and included in the backfill/restoration plan which will also include the specifications for the protective cover and long term monitoring, if necessary.

7.5 Sampling CBI Footprint

Upon the completion of demolition and the removal/disposal or re-use of all debris the underlying soils will be sampled. Samples will be collected and analyzed for hazardous substance contamination that could be reasonably expected to be present based on previous site operations. If sample data exceeds screening levels as found in the Regional Screening Levels for Chemical Contaminants at Superfund Site, this RAWP will be modified to address the impacted soils.

If any soils underlying the CBI Building first floor slab exceed 25 ppm PCBs they will be addressed as discussed in Section 8.0 Die Cast Removal Action. Any underlying soils that contain TCE above the performance standard of 24 ppm will either be consolidated within the TCE area and treated as described in Section 9.0 TCE Remediation Area or removed from the site and transported for off-site disposal.

8.0 DIE CAST AREA REMOVAL ACTION

The removal action method selected for the Die Cast Area removal action is selective excavation and off-site disposal of soils and concrete with a PCB concentration greater than 100 ppm. Once the removal action of the Die Cast Area is awarded and the excavation plan is developed it will be located in Appendix H. The Die Cast Area is depicted on Figure 8-1.

A traffic plan for the Die Cast Area Removal action task is described in Section 11.0 Traffic Plan. The purpose of the traffic plan is to analyze each major task and the operational need for equipment/trucks traffic which may impact the surrounding community and develop a plan to minimize the impact.

8.1 Performance Standard

The Performance Standard for PCB-impacted soil, concrete and other residual waste or porous surface in the Die Cast Area is as follows:

- Removal of all soil, concrete and other residual waste in the top 3 ft of the Die Cast Areas as defines as the top of the concrete floor of the former Die Cast Buildings to 3 ft bgs.
- Removal of all PCB-impacted soils greater than 25 ppm from 3 ft bgs to 10 ft bgs.
- Removal of all PCB-impacted soils greater than 100 ppm from 10 ft bgs to bedrock. Soils from beneath the CBI Building and building debris may be used as backfill in the Die Cast Area as follows:
    - All PCB-impacted materials with concentrations less than 100 ppm may be used as fill in the Die Cast Area below 10 ft bgs.
    - All PCB-impacted materials with concentrations less than 25 ppm may be used as fill anywhere in the Die Cast Area excavation below 3 ft bgs.
    - If following excavation, a utility corridor is constructed in the Die Cast Area it shall protect construction workers from exposure to PCBs, be indicated on a survey of the Site and recorded as part of the Institutional Controls for the Site.
    - For any soils greater than 1 ppm but less than 25 ppm PCBs institutional controls in perpetuity will be required to prevent high occupancy uses such as residential, school or daycare.

- If PCBs remain at levels in soil greater than 25 ppm, but less than 100 ppm PCBs institutional controls in perpetuity, pursuant to 40 CFR 761.61 (a)(8), will be required to prevent high occupancy uses such as residential, school or day care, including engineering controls pursuant to 40 CFR 761.61 (a)(7). Such controls limit and/or monitor certain activities in the Die Cast Area (i.e., excavation) that may affect contaminated soils. Engineering controls, including a protective cover of concrete, asphalt or similar material pursuant to 40 CFR 761.61 (a)(7) will be required to cover the entire Die Cast Area.

A protective cover , long term monitoring , deed restrictions and/or environmental covenants may be required if remaining soils in the Die Cast Area have a PCB concentration greater than 25 ppm and all other performance Standards are not achieved.

All institutional and engineering controls shall be maintained and reviewed for effectiveness and/or inspected on a periodic basis in accordance with a schedule established and approved by EPA in the Institutional Control Plan.

8.2 Sheet Pile Design/Installation

A review of the sample data for PCB concentrations in the Die Cast Area indicate contamination extends to a depth of 25 ft bgs. To excavate the Die Cast Area to this depth along the eastern edge of the proposed excavation area, a sheet pile wall will need to be installed to prevent subsidence or failure of the soils under Grand Avenue. To ensure that the sheet pile wall is installed to the correct depth and width, a design will be developed and reviewed/stamped by a Professional Engineer. To date, the sheet pile design task has not been solicited. Once solicited and awarded, this RAWP will be revised to include details of the design in this section and located in Appendix I.

8.3 Utility Locate/Relocation

At this time there are no known utilities that traverse the Die Cast Area to be remediated. However, prior to the start excavation activities a utility locate will be performed in expected excavation and surrounding area.

If active utilities are identified in the proposed excavation area, it will be determined if the utility can be terminated, supported in place during the excavation activity or if the utility needs to be relocated or rerouted to allow for continued service. AMEC personnel will discuss the options with the utility provider and develop a plan for any of the aforementioned selected options regarding active utilities.

If inactive utilities are identified in the proposed excavation area, they will be terminated at a location outside of the proposed excavation. Portions of the utility that traverse the excavation area will be treated as other materials found in the excavation.

8.4 Dust Control

During excavation of the Die Cast Area, the exposed soils may become dry and be a point source for dust generation. Fugitive dust will be controlled from leaving the site by using one of the following methods:

- Water mist during excavation
- Covering stockpiles (at the end of each shift), as necessary
- Lining the excavation with poly sheeting (weighted down with sand bags)
- Applying a fixative to the exposed soil.

Any one of the aforementioned methods may be used independently or a combination of methods may be needed to control fugitive dust from leaving the Site.

8.5 Excavation

The Die Cast Area will be remediated by excavating the PCB-impacted soils/material. It is anticipated that the maximum depth of the excavation is 26 ft bgs. An excavation design will be developed prior to beginning excavation. The design will be based on previous sampling and analysis of soils in excess of the Performance Standards established for the Die Cast Area. This design will include the placement of sheet pile the expected vertical and horizontal extents of the excavation including layback for slope stability and erosion and sediment control.

8.6 Waste Loading

Excavated material will be loaded in to tandem dump trucks, or equivalent, for transport off-site and disposal at a regulated landfill. Each tandem dump truck load will be covered prior to leaving the Site. Additionally each tandem dump truck will be visually inspected to ensure no extraneous waste material is spilled onto the outside of the truck or tires. If waste material is noted on the dump truck, it will be removed by dry wiping or by wet decontamination methods to prevent the spread of contamination.

8.7 Waste Manifesting

A hazardous waste manifest must accompany hazardous waste and/or PCB waste that is shipped off site. The Uniform Hazardous Waste Manifest is the shipping document that travels with hazardous waste from the point of generation, through transportation, to the final treatment, storage, and disposal facility. To ensure proper chain of custody for the shipment, each party in the chain of shipping, including the generator, signs and keeps one of the manifest copies, creating a "cradle-to-grave" tracking of the hazardous waste. EPA ID numbers are needed by all parties on the manifest. An example of a Hazardous Waste Manifest is located in Appendix D.

8.8 Waste Transportation and Disposal

PCB-impacted soils/material that cannot be used on site for backfill or that cannot be left in place will be transported off-site for disposal. It is anticipated that the impacted soils/materials will be transported via dump truck to the permitted treatment storage and disposal facility (TSDF) for disposition. Dump trucks will be equipped with a tarp to cover the loaded soil/material during transport to the TSDF. The specific TSDF for the disposition of PCB-impacted soils/material from the Die Cast Area has not been determined. The selected TSDF will need to be permitted appropriately to accept PCB waste. Upon determination of the excavation methodology and sampling plan and the selected TSDF, this RAWP will be revised.

8.9 Waste Certificate of Disposal

All Die Cast Area waste removed from the Site and transported to a regulated disposal facility will be required to provide a Certificate of Disposal. Each certificate will describe the waste (i.e., soil, soil/debris, etc.) and the disposition of the material. Each certificate will be matched to the corresponding Waste Manifest and placed in the project files and used as backup for future use.

8.10 Equipment Decontamination

Equipment used for the removal action of the Die Cast Area will be decontaminated in accordance with the requirements of 40 CFR 761.79(c)(2). Waste generated from the decontamination will be handled as TSCA waste described above in Subsections 8.6 through 8.9.

9.0 TCE AREA REMEDIATION

The TCE remediation area is depicted on Figure 9-1. TCE-impacted soil in the above ground storage tank (AST) area will be remediated using a combination of In-Situ Thermal Desorption (ISTD) and vacuum extraction (VE). ISTD/VE combines the elements of ISTD and VE into an integrated process. Thermal probes are installed at predetermined spacing, with vapor extraction wells installed between the thermal probes. An impermeable vapor barrier is installed over the existing ground surface to prevent the escape of vapors and to enhance the effectiveness of the vapor extraction wells. As the thermal probes are energized, the TCE is volatilized and drawn to the extraction wells by the applied vacuum. Groundwater (if present) within the treatment zone is also treated through heating the groundwater above the boiling point of TCE, vaporization, and removal through the extraction wells. The TCE content is typically removed from the subsurface in the vacuum extraction process due to the increased mobility from the application of heat and destroyed in the aboveground thermal oxidizer or adsorbed to granular activated carbon in the aboveground treatment process and is then disposed of at a permitted facility. Once the remediation of the TCE Area is awarded and the TCE Area ISTD/VE Remediation Plan is developed this RAWP will be revised to include the Plan in Appendix J.

Chlorinated solvents, primarily TCE and its associated breakdown products dichloroethylene (DCE) and vinyl chloride (VC) are present in surface and subsurface soil in the AST area and Die Cast Area. The results of the sampling conducted during the Site evaluation performed from 2005 through 2008 under the Settlement Order indicates that TCE, DCE and VC are present at concentrations exceeding the RAGs.

ISTD/VE Project Concept and Design

Once initial engineering calculations and a review of project data are performed, a conceptual design for the project will be developed. The conceptual design will be based on the initial conceptual model of site conditions together with an understanding of the remedial goals and project objectives (performance cleanup standards of 24 ppm for TCE).

The design will seek to ensure cleanup to the required remedial standards and within the shortest timeframe. Sensitive areas near occupied structures and within established neighborhoods will be addressed in order to prevent unwanted mobilization of contaminants and ensure effective capture and treatment of vapors.

10.0 SAMPLING AND ANALYSIS

10.1 Asbestos Abatement Air Sampling

The asbestos-containing material abatement will be designed by an accredited asbestos abatement Project Designer. This design subcontractor will develop detailed specifications for the removal of ACM by a registered asbestos abatement contractor. The specifications will include detail regarding air monitoring and sampling during ACM abatement and prior to clearance. Air Sampling Technicians and Professionals will generally collect the following types of air samples:

- Barrier samples;
- Personnel samples;
- Work area samples;
- HEPA filtration exhaust samples; and
- Clearance samples.

The specification will describe each type of air monitoring required during abatement and the frequency of such sampling. Samples are typically analyzed by phase contrast microscopy (PCM) via NIOSH Method 7400 (fiber-counting method). Because the NIOSH 7400 method is not asbestos-specific, the design specification may employ the use of transmission electron microscopy (TEM), if needed. TEM is specific to asbestos.

10.2 CBI Building Debris PCB Sampling

Prior to demolition of the CBI Building (the Building), those elements of the Building which have been found to contain PCBs which require disposal in a Resource Conservation and Recovery Act (RCRA) Subtitle C or TSCA facility will be marked with high visibility paint to allow for ease of segregation during demolition. The demolition debris destined for a RCRA Subtitle C or TSCA facility will not be sampled beyond characterization sampling required by the disposal facility.

Those portions of the facility which are not segregated for RCRA/TSCA disposal during demolition will be segregated into separate stockpiles based on material type (masonry and concrete), resized, and then sampled to determine if the material meets the standard for use as fill material within the Die Cast Area excavation. The performance standard for reuse of material as fill within the Die Cast Area is:

- Soil, concrete, and other residual waste with PCB concentration greater than 100 ppm may not be used as fill material;
- Soil, concrete, and other residual waste with PCB concentration less than 100 ppm may be used as fill material below 10 ft bgs;

- Soil, concrete, and other residual waste with PCB concentration less than 25 ppm may be used as fill material below 3 ft bgs;
- If Soil, concrete, and other residual waste with PCB concentration greater than 1 ppm is left on-site, institutional controls in perpetuity will be required to prevent, at a minimum, high occupancy uses such as residential, school or day care.

All material considered for use as fill material or controlled fill material will be sampled and analyzed for PCB content by USEPA Method 8082, with stockpile samples collected and submitted for analysis at the rate of 1 sample per 100 cubic yards of material, with the sample to be made up of 10 sample points from within the stockpile. The sample locations will be chosen to ensure that the sample submitted for analysis is representative of the material within the stockpile. The samples will be composited from equal aliquots of material, placed into laboratory supplied containers, labelled, and placed into coolers with the chain of custody form for transport to the laboratory.

All non-porous scrap metal building debris will be sampled in accordance with the requirements of 40 CFR Part 761 (hexane wipe samples within a 100 square centimeter grid, analyzed for PCBs by EPA Method 8082), with all non-porous metal verified to be below the performance standard of 10 micrograms per 100 square centimeters of PCBs prior to shipment to a metal recycling facility.

All samples will be collected using laboratory furnished supplies, new disposable sampling equipment, or properly decontaminated stainless steel sampling equipment, as appropriate.

10.3 CBI Building Footprint Sampling

Upon completion of the demolition of the CBI Building, the soils formerly below the Building will be sampled in order to determine the extent of hazardous substance contamination, if necessary. Only those areas where the soils were reasonably expected to have been impacted by hazardous substances, either by visual inspection, detection by screening instruments, or previous sampling will be sampled to determine the presence or extent of impact. The samples will be analyzed for the constituents expected to be present based on the previous use of the area, previous analytical results, or detection by screening instruments. Possible analyses include trichloro-ethylene (TCE) and PCBs.

In those areas where PCB sampling is deemed necessary, the surface soil (0 to 6 inches) will be sampled in order to determine if further sampling is required for vertical characterization. If the soil meets the performance standard of 1 ppm, no further PCB sampling will be conducted in that area.

If TCE sampling is deemed necessary, the soils will be vertically profiled to determine the extent of soils present above the performance standard of 24 ppm.

Shallow/surface soil samples will be collected using typical sampling methods, including hand augers and direct push sampling rigs, as appropriate. The analytical methods will be USEPA approved SW846 methods appropriate for the constituent(s) of concern.

10.4 Die Cast Area Sampling

In order to determine the compliance of the removal action with the performance standard established for the Site, samples of exposed soils will be collected along the sidewalls and base of the excavation will be collected at the rate of one sample per 30 linear ft of sidewall and one sample per 1000 ft^2 of exposed soil at the base of the excavation. The samples will be collected using stainless steel sampling equipment when possible, unless the excavation cannot be entered safely. In that instance, the sample will be collected from the tip of the excavator bucket, from soils which are not in contact with the bucket.

The samples will be placed into clean laboratory supplied containers, labelled, and placed into a cooler with the chain of custody for transport to the laboratory. The samples will be analyzed for PCB content by USEPA Method 8082.

All on-site material utilized as backfill in the Die Cast Area will be sampled to determine PCB content in accordance with the stockpile sampling and analysis procedures outlined in the section on Building Debris Sampling.

If it becomes necessary to remove water from the excavation, the water will be sampled prior to disposal to the POTW. In that event, the POTW will be contacted to determine the analytical parameters and discharge criteria prior to disposal of the water.

10.5 TCE Area Sampling

At the completion of in-situ thermal desorption and vacuum extraction, AMEC will establish a sampling protocol to be implemented to determine the soil in the remediated area has been remediated to the performance cleanup standard of 24 ppm TCE. Approximately 12 boring locations will be advanced in the remediated area using direct-push drilling techniques. Soil samples will be collected every 5 ft to bedrock (20 to 36 ft bgs) and submitted to the laboratory for analysis of TCE. Results will be evaluated relative to the performance standard (24 ppm) to determine if any residual to TCE exists and what actions, if any, will be taken. The TCE area to be sampled is depicted on Figure 10-1.

10.6 Air Monitoring During TCE ISTD/VE

Air monitoring will be performed during the installation and operation of the ISTD/VE system. The types of air monitoring are discussed below.

Stack Monitoring

Effluent stack monitoring will be performed to ensure combustion by-products are in compliance with the ambient air requirements prescribed by MDNR and USEPA. The test methods used will be determined based on the final accepted remedial design.

Ambient Air Monitoring

Construction activities are not expected to be a significant exposure potential for workers. Work associated with the ISTD/VE system will generally be limited to borings associated with the install of subsurface probes and extraction wells, and above grade infrastructure work. During system install, general area and breathing zone monitoring will be performed using a photo ionization detector (PID) or other direct-reading instrument. Action levels will be established in the Site Specific Health and Safety Plan. Based on atmospheric conditions and organic screening data provided by the PID, AMEC's HSSE Supervisor may determine that direct personnel monitoring be required. The sample collection methods and analytical methods will be determined later.

Vapor probes or other types of organic vapor monitors may also be placed around the perimeter of the treatment area to monitor whether any soil gasses are escaping.

11.0 TRAFFIC PLAN

Traffic volumes attributed to the response action of the Carter Carburetor Project will include contractor employee vehicles and construction vehicles typically associated with the response action/construction on an industrial site. The Project Team will work with the City of St. Louis during the permit process and response action to identify and minimize impacts to existing traffic patterns, including potential roadway closures or lane reductions. No access interruptions are anticipated during response action but if any should arise, interruptions will be coordinated with the relevant residents and businesses to minimize impacts.

If over-sized equipment is needed on-site then the delivery of such equipment will be coordinated to avoid peak hour traffic times to minimize the impact to the surrounding community. There are three main traffic corridors for trucks and personnel to get to and from the Site; utilizing Grand Boulevard from Interstate 70, utilizing St. Louis Avenue from Interstate 70 and utilizing Grand Boulevard from Interstate 64. These three main traffic corridors are depicted on Figure 11-1.

11.1 Road Closures

Throughout the execution of the project roads around the Site may need to be closed for public safety concerns. Road closures will be scheduled during off-peak times to minimize the impact to the public. Figure 11-2 depicts the areas of the surrounding roads that may need to be closed to local traffic.

11.1.1 Long Term Road Closures

It is anticipated that North Spring Avenue from St. Louis Avenue to Dodier Street will be closed early in the execution of the project until the completion of the restoration of the TCE Area remediation. This road closure is necessary to ensure work being performed on the northwest side of the CBI Building minimizes the potential impact to public safety during remediation activities.

11.1.2 Temporary Road Closures

During demolition for the northern portion of the CBI Building along Dodier Street, it may be necessary to close Dodier Street from Grand Boulevard to North Spring Avenue. This closure will be coordinated with the occupants of the Boys and Girls Club to minimize disruption of services provided. The reason for this closure is due to the “fall height” of the CBI Building. An area within 1.5 times the height a building undergoing demolition needs to be clear of ground personnel and traffic until demolition of this area is complete.

During demolition for the southern portion of the CBI Building along St. Louis Avenue, it may be necessary to close a portion of St. Louis Avenue from Grand Boulevard to North Spring Avenue. This closure will be coordinated with the City of St. Louis to minimize impact to the local community. The reason for this closure is due to the “fall height” of the CBI Building. An area within 1.5 times the height a building undergoing demolition needs to be clear of ground personnel and traffic until demolition of this area is complete.

11.1.3 CBI Building Demolition

Additional traffic to the surrounding area and the Site will be dump trucks hauling waste from the site to an off-site TSDF, recycling center or local landfill. The amount of traffic will vary based on; the volume of material with PCB contamination in excess of 100 ppm, the amount of non-PCB contaminated metal and the volume of building debris that has a PCB concentration less than the Performance Standard for on-site use as backfill.

Figures 11-3 and 11-4 depict projected flows for traffic on and around the Site during the demolition of the CBI Building. It should be noted that the traffic pattern may change due to unforeseen conditions arising during the demolition of the CBI Building. Changes to the flow of traffic in the immediate area of the Site will be discussed with ACF prior to implementation.

11.1.4 Die Cast Area Removal Action

Similar to the demolition of the CBI Building, the removal action of the Die Cast Area will add additional truck traffic to the local area surrounding the Site. As depicted on Figure 11-1, there are three traffic corridors to reach the Site. Trucks will enter the Site off of St. Louis Avenue and leave the Site once loaded with PCB-impacted soils via St. Louis Avenue. This traffic flow will minimize impact to the surrounding areas. Figure 11-5 depicts the projected flow of traffic for the Die Cast Area Removal Action.

11.1.5 TCE Area Remediation

Remediation of the TCE Area will not add additional truck traffic to the local area surrounding the Site. The TCE Area is being remediated in-situ, therefore once the trucks arrive at the site they will stay in place until the remediation is complete. As depicted on Figure 11-1, there are three traffic corridors for the ISTD/VE process to reach the Site. Trucks will enter the Site off of North Spring Avenue, setup in the TCE Remediation Area (see Figure 9-1) and leave the Site once TCE-impacted soils are remediated via North Spring Avenue. Figure 11-4 depicts the projected flow for traffic to and from the TCE Area.

12.0 REFERENCES

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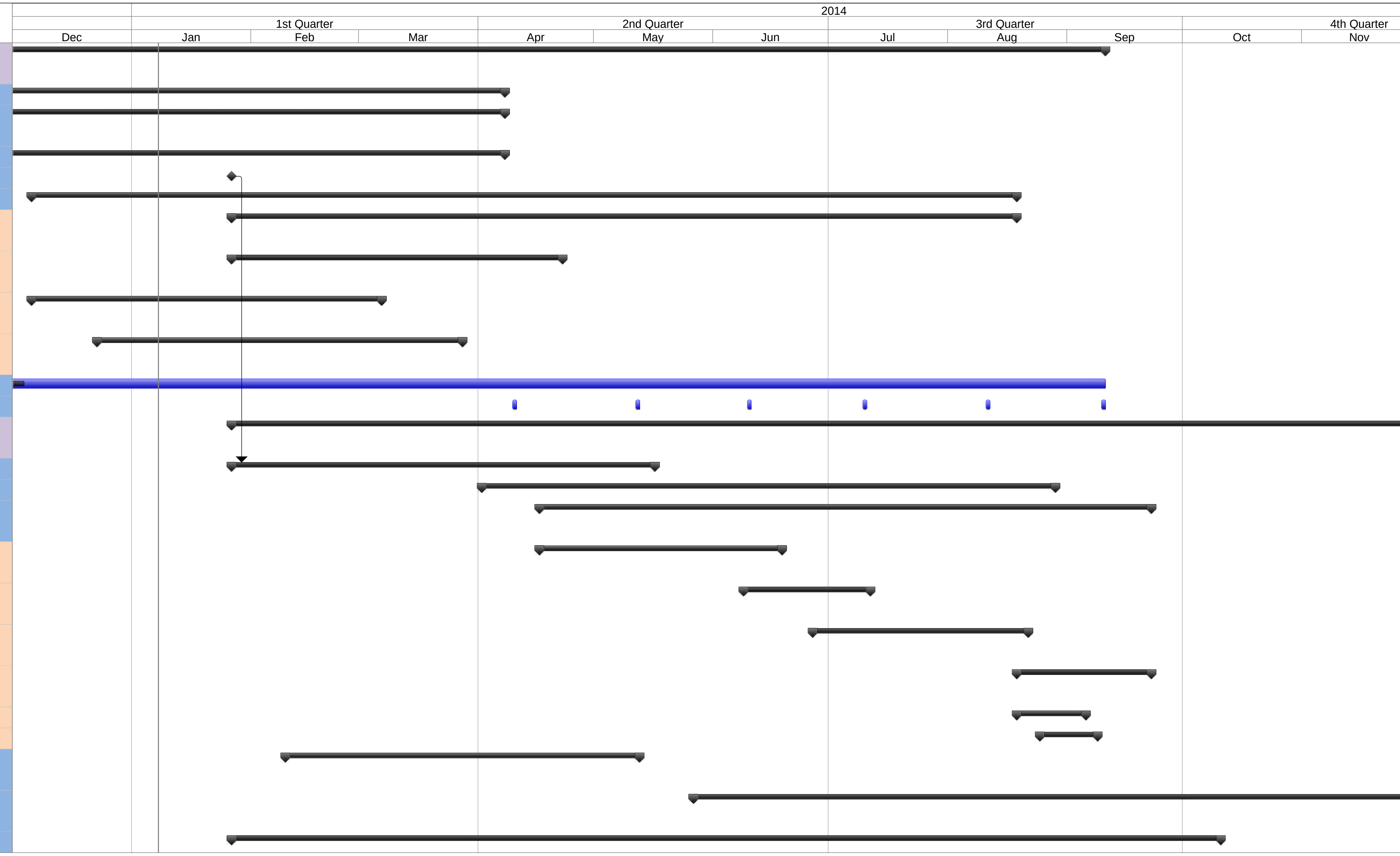
Appendix A
Project Schedule

Carter Carburetor Superfund Project Schedule

ID	WBS	Task Name	Start	Finish
2	2	Phase 1 - Work/Safety Plans and Project Management	Tue 9/10/13	Wed 9/10/14
3	2.1	Removal Action Work Plan (RAWP)	Thu 11/7/13	Mon 4/7/14
14	2.2	Quality Assurance Project Plan (QAPP)	Mon 10/28/13	Mon 4/7/14
25	2.3	Health and Safety Plan (HASP)	Wed 10/23/13	Mon 4/7/14
38	2.5	Master Service Agreement Executed	Mon 1/27/14	Mon 1/27/14
39	2.6	Phase 1 Procurement Activities	Fri 12/6/13	Mon 8/18/14
40	2.6.1	WILLCO/CBI Building Separation Plan	Mon 1/27/14	Mon 8/18/14
60	2.6.2	Selection of TSCA/General Construction Waste Contractor	Mon 1/27/14	Tue 4/22/14
70	2.6.3	Selection of ACM Design Subcontractor	Fri 12/6/13	Thu 3/6/14
80	2.6.4	Select ACM Abatement Subcontractor	Mon 12/23/13	Thu 3/27/14
90	2.7	Public Meeting/Project Management	Tue 9/10/13	Wed 9/10/14
91	2.8	Monthly Progress Reports	Thu 4/10/14	Wed 9/10/14
98	3	Phase 2 - CBI Abatement and Demolition Preparation	Mon 1/27/14	Wed 12/31/14
99	3.1	Site Mobilization	Mon 1/27/14	Fri 5/16/14
108	3.2	ACM Abatement Preparation	Wed 4/2/14	Thu 8/28/14
115	3.3	ACM Abatement/ACM Clearance and Waste Disposal	Thu 4/17/14	Mon 9/22/14
116	3.3.1	ACM Abatement/ACM Clearance 4th Floor	Thu 4/17/14	Wed 6/18/14
121	3.3.2	ACM Abatement/ACM Clearance 3rd Floor	Mon 6/9/14	Fri 7/11/14
126	3.3.3	ACM Abatement/ACM Clearance 2nd Floor	Fri 6/27/14	Thu 8/21/14
131	3.3.4	ACM Abatement/ACM Clearance 1st Floor	Tue 8/19/14	Mon 9/22/14
136	3.3.5	Pump Room	Tue 8/19/14	Fri 9/5/14
141	3.3.6	Boiler Room	Mon 8/25/14	Mon 9/8/14
145	3.4	Selection of CBI Building Demolition Contractor	Mon 2/10/14	Mon 5/12/14
155	3.5	Preparation/USEPA Review of Demolition RAWP	Tue 5/27/14	Wed 12/31/14
166	3.6	Prepare CBI Building for Demolition	Mon 1/27/14	Fri 10/10/14

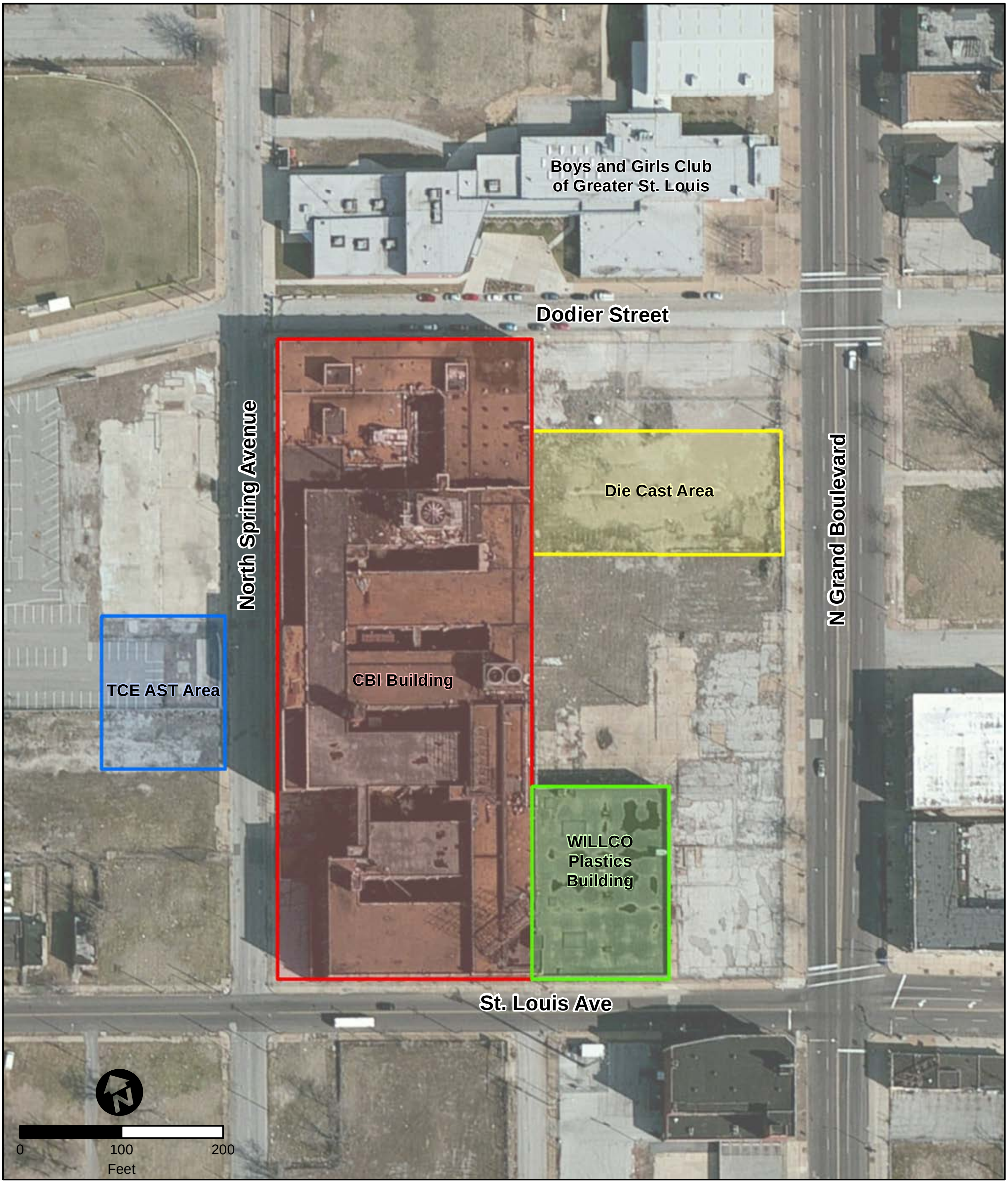


Project: 20130130_DRAFT Schedule
Date: Wed 1/8/14

Task	Rolled Up Task	Split	Inactive Task	Duration-only	Finish-only
Critical Task	Rolled Up Critical Task	External Tasks	Inactive Milestone	Manual Summary Rollup	Progress
Milestone	Rolled Up Milestone	Project Summary	Inactive Summary	Manual Summary	Deadline
Summary	Rolled Up Progress	Group By Summary	Manual Task	Start-only	

Appendix B

Figures



Legend

- CBI Building
- Die Cast Area
- TCE AST Area
- Willco Plastics Building

Drawn By: BSM Approved by: EMW

Checked By: DEW Date: 12/5/2013

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Figure 2-1.
Site Layout

Carter Carburetor Superfund Site
St. Louis, Missouri

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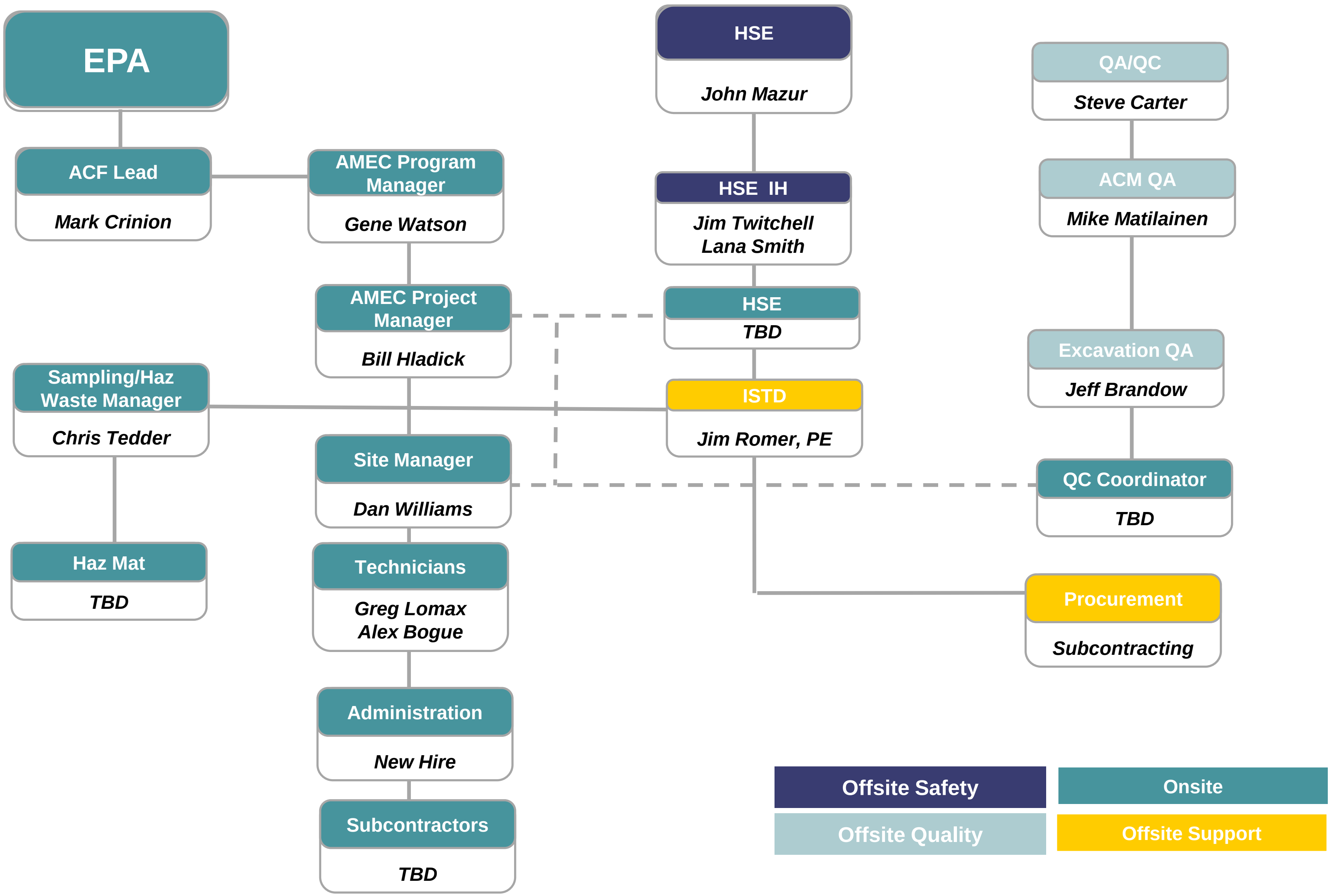
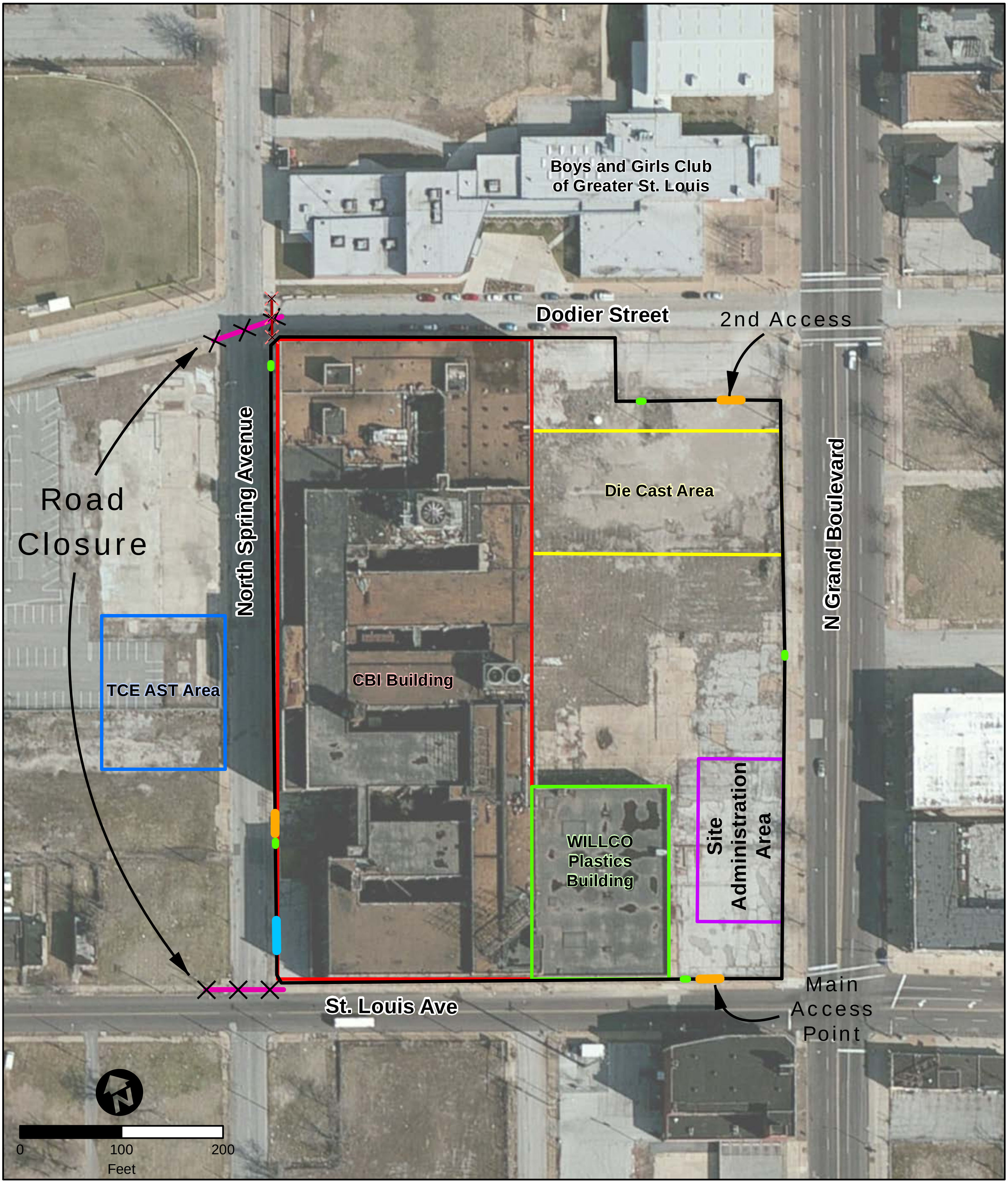
Figure 3-1
Carter Carburetor Superfund Project Organization Chart





Legend

CBI Building
Die Cast Area
TCE AST Area
Willco Plastics Building
Gate - 4'
Gate - 20'
Gate - 30'
Fence
Roadblock
Road Closure
Administration Area

Drawn By: BSM Approved by: EMW
Checked By: DEW Date: 12/5/2013

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Figure 5-1.
Site Access

Carter Carburetor Superfund Site
St. Louis, Missouri

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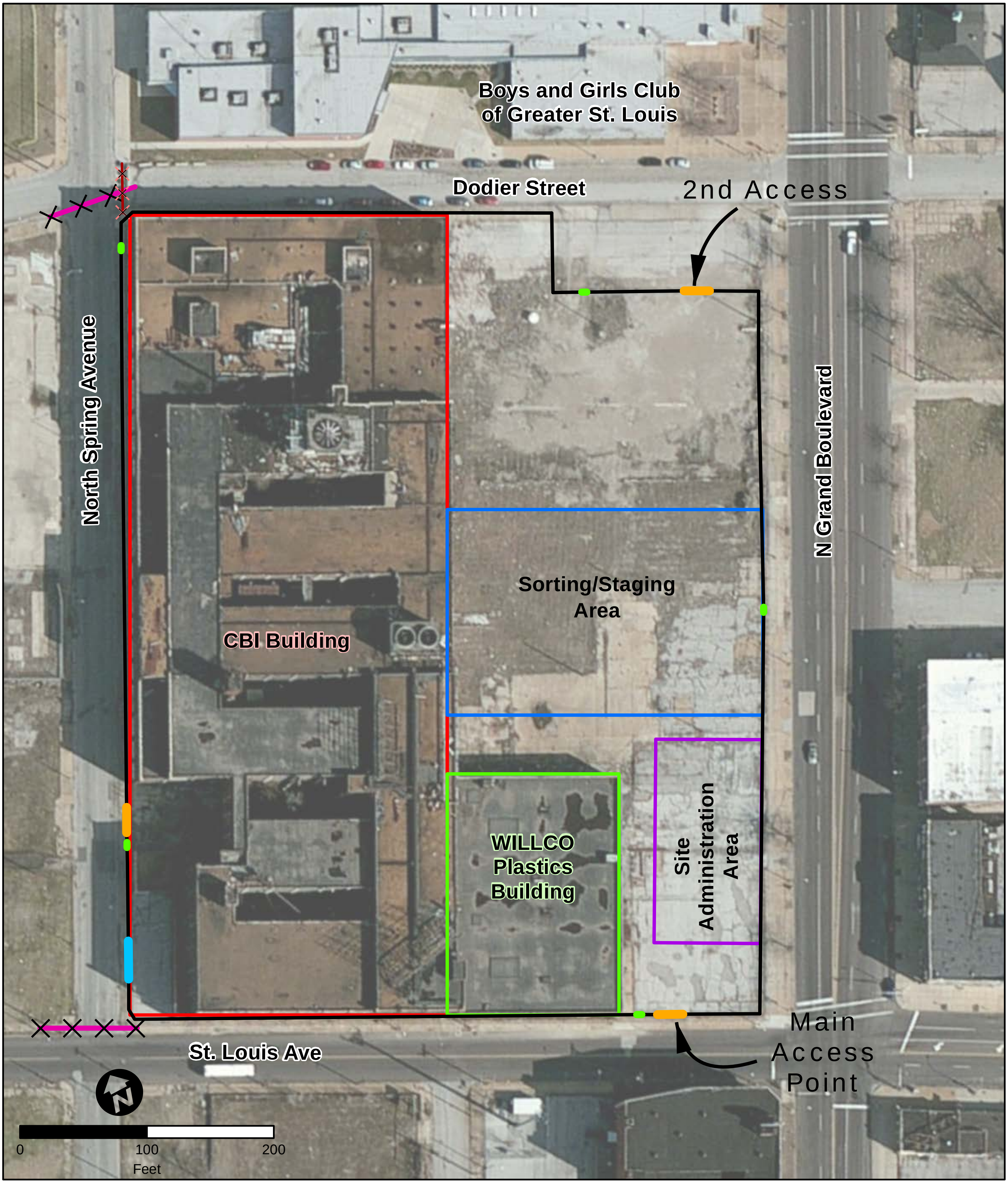

Legend

- CBI Building
- Willco Plastics Building
- Site Administration Area
- Sorting/Staging Area
- Gate - 4'
- Gate - 20'
- Gate - 30'
- Fence
- Roadblock
- Road Closure

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Checked By: DEW Date: 12/5/2013

Figure 7-1.
CBI Building Demolition

Carter Carburetor Superfund Site
St. Louis, Missouri

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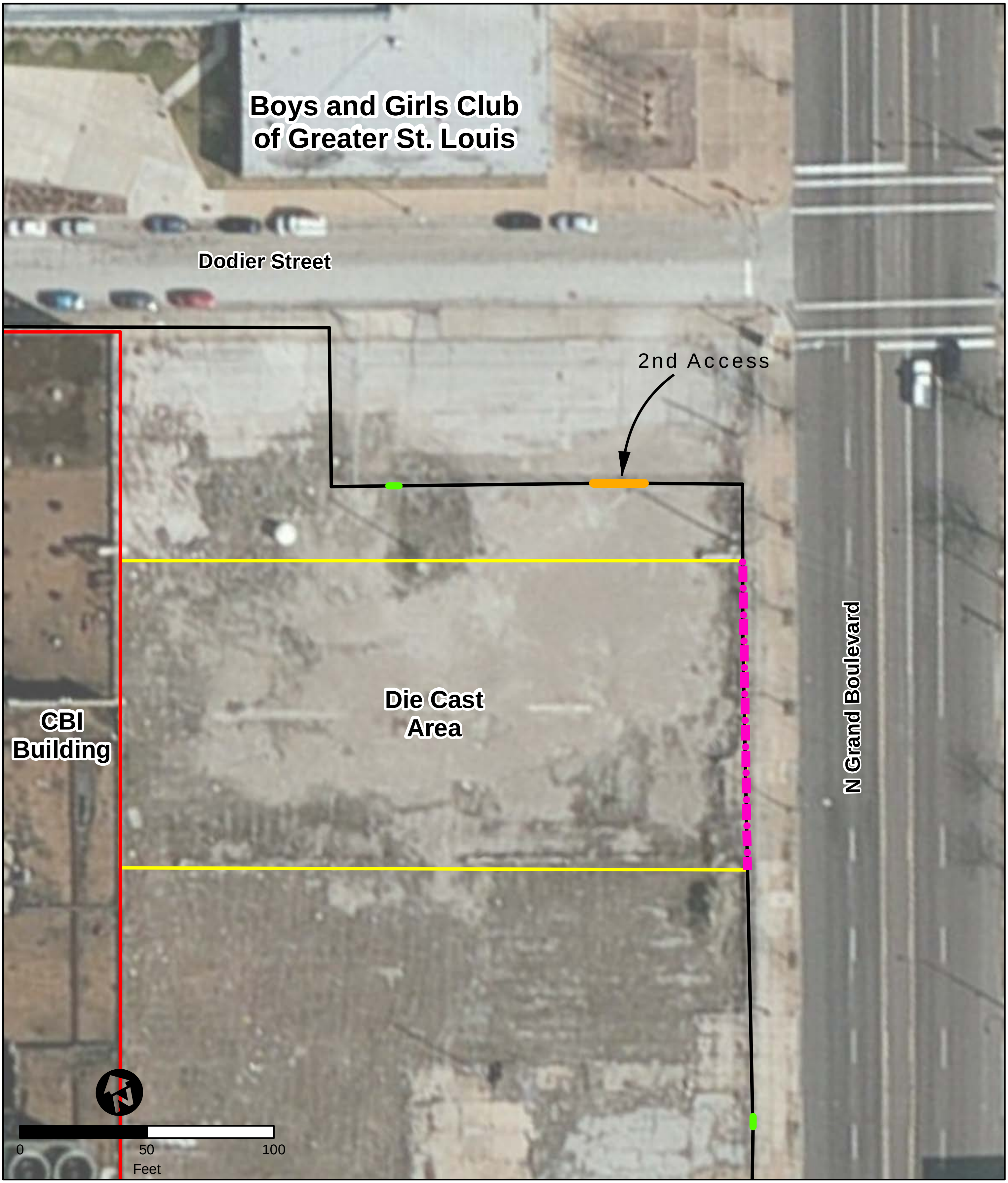

Legend

- CBI Building
- Die Cast Area
- Gate - 4'
- Gate - 20'
- Fence
- SHEET PILE WALL

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Figure 8-1.
Die Cast Area
Removal Action

Carter Carburetor Superfund Site
St. Louis, Missouri

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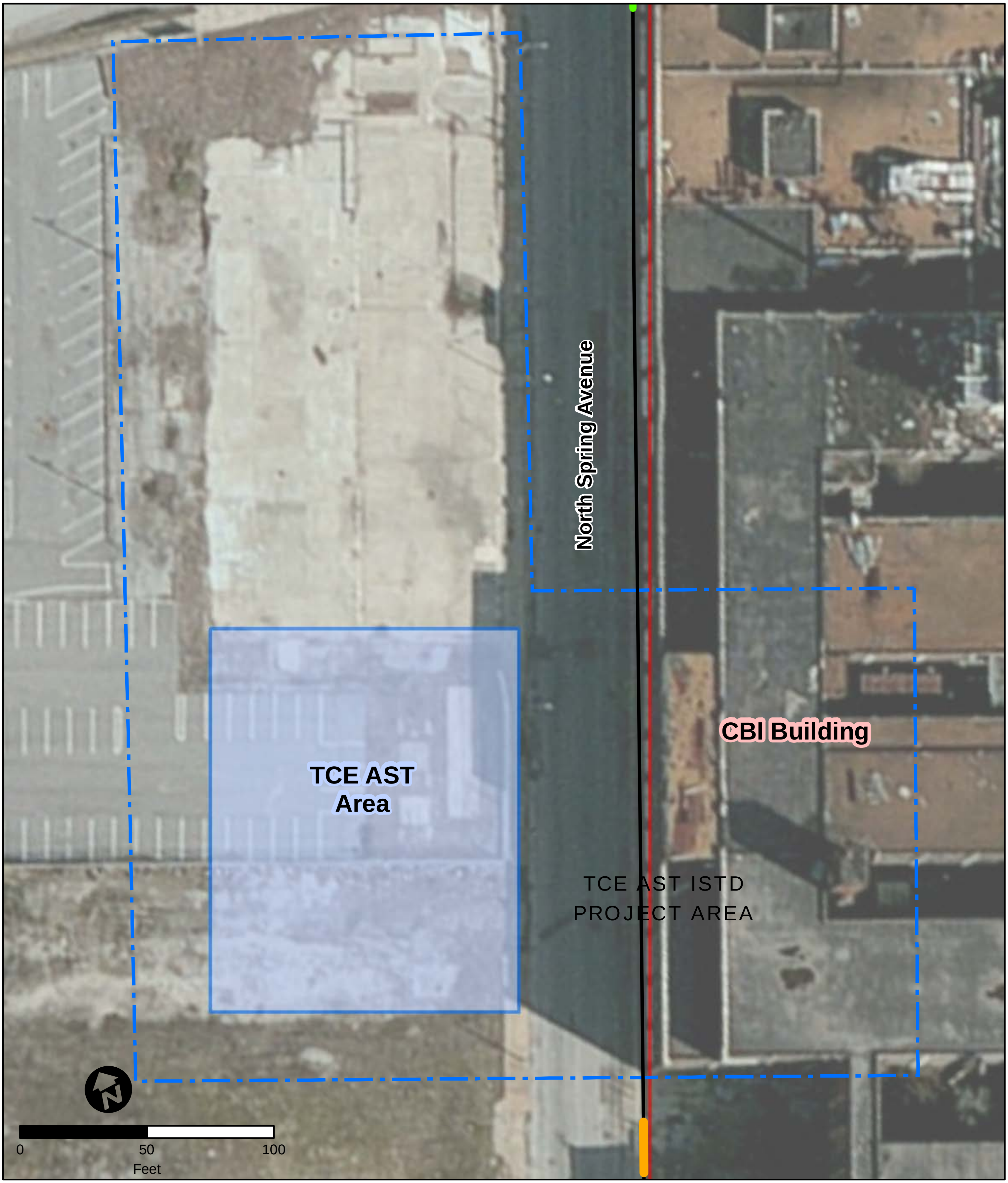

Legend

- CBI Building
- TCE AST Area
- TCE AST ISTD Project Area
- Gate - 4'
- Gate - 20'
- Fence
- SHEET PILE WALL

Drawn By: BSM Approved by: EMW
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Figure 9-1.
TCE Area
Remediation

Carter Carburetor Superfund Site
St. Louis, Missouri

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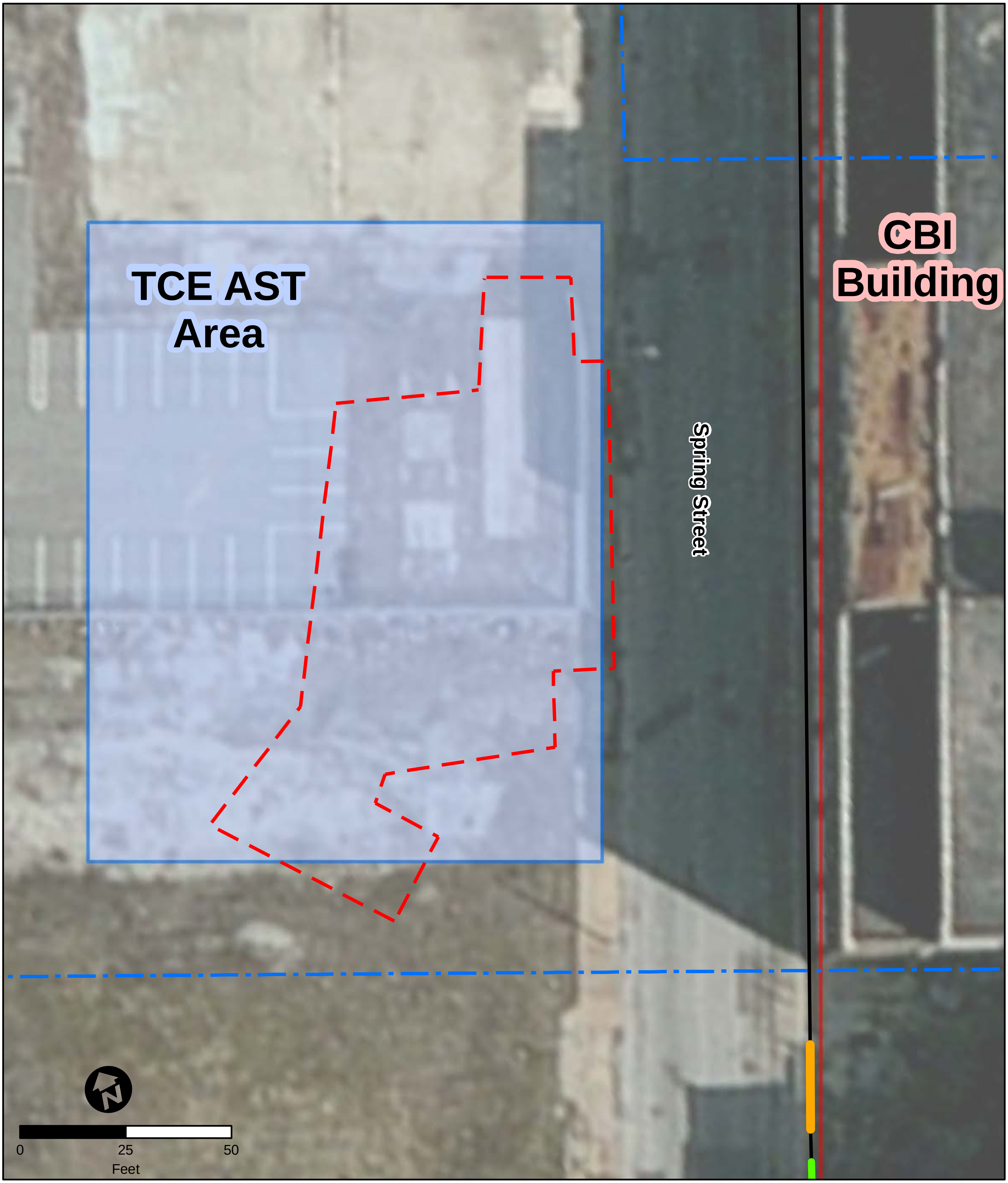

Legend

- CBI Building
- TCE AST Area
- TCE AST ISTD Project Area
- Soil Remediation Area (7,623 square feet)
- Gate - 4'
- Gate - 20'
- Fence

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Figure 10-1.
TCE AST Remediation and Performance Sampling Area

Former Carter Carburetor Site
St. Louis, Missouri

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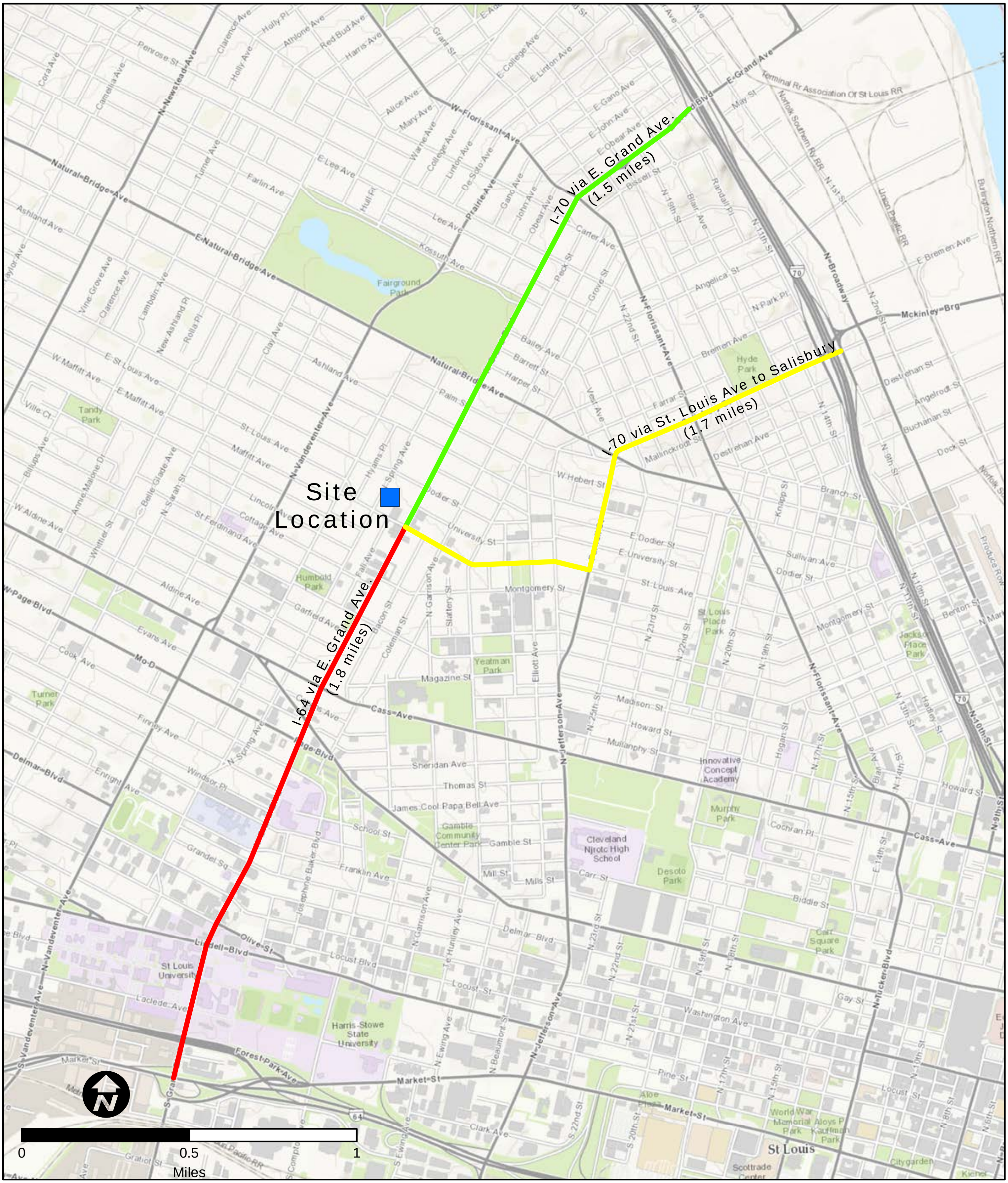

Legend

Site Location	
	I-70 via E. Grand Ave.
	I-70 via St. Louis Ave to Salisbury
	I-64 via E. Grand Ave.

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Checked By: DEW Date: 12/5/2013

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Figure 11-1.
Traffic Corridors

Carter Carburetor Superfund Site
St. Louis, Missouri

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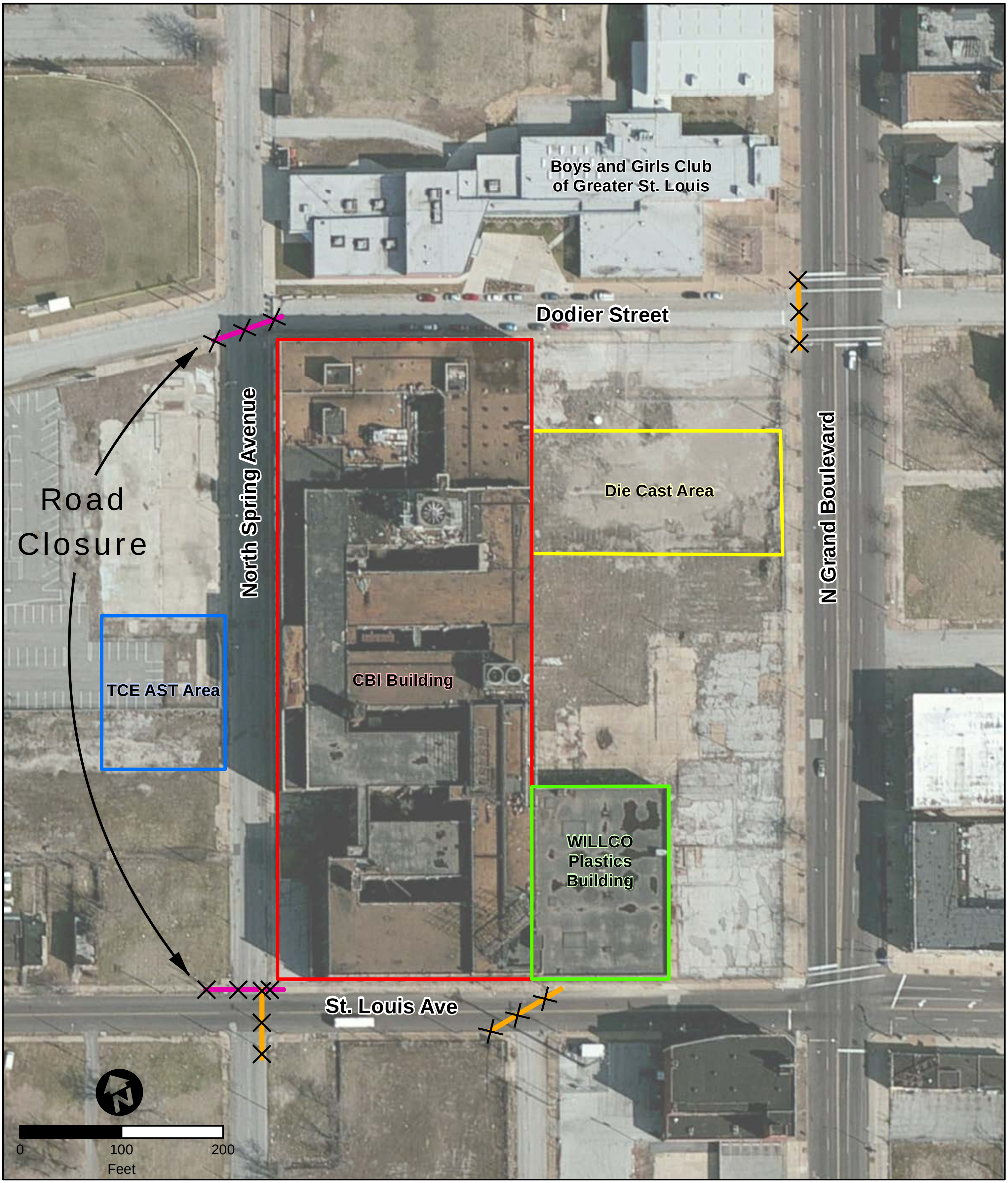

Legend

- CBI Building
- Die Cast Area
- TCE AST Area
- Willco Plastics Building
- Road Closure
- Temporary Road Closure

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Checked By: DEW Date: 12/5/2013

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Figure 11-2.
Road Closure

Carter Carburetor Superfund Site
St. Louis, Missouri

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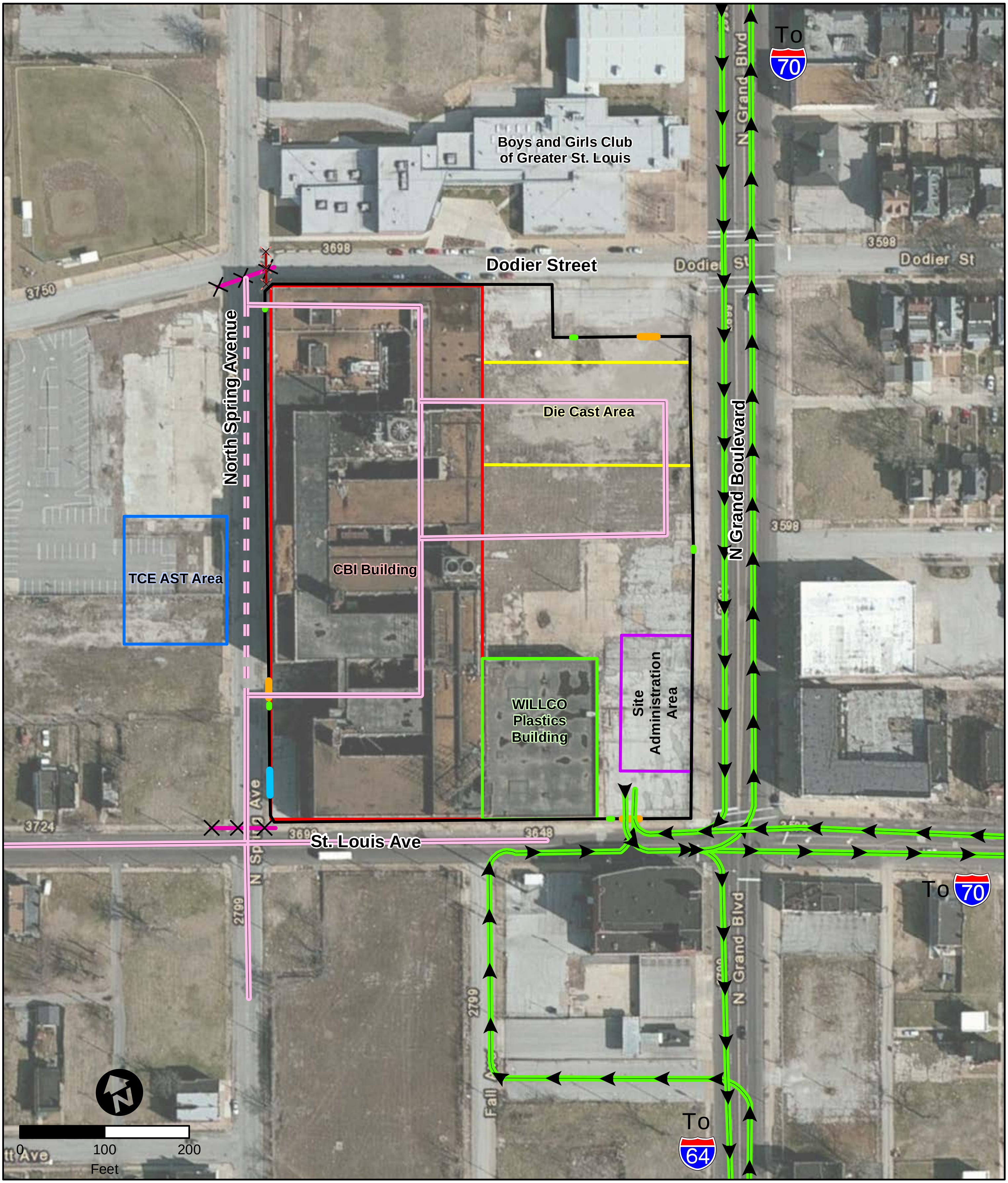

Legend

CBI Building	Gate - 4'	Road Closure
Die Cast Area	Gate - 20'	Site Truck Route
TCE AST Area	Gate - 30'	Site Truck Route as Available
Willco Plastics Building	Fence	Off-Site Truck Route
Administration Area	Roadblock	

Drawn By: BSM Approved by: EMW

Checked By: DEW Date: 12/5/2013

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Figure 11-3. East CBI Demolition Truck Route

Carter Carburetor Superfund Site
St. Louis, Missouri

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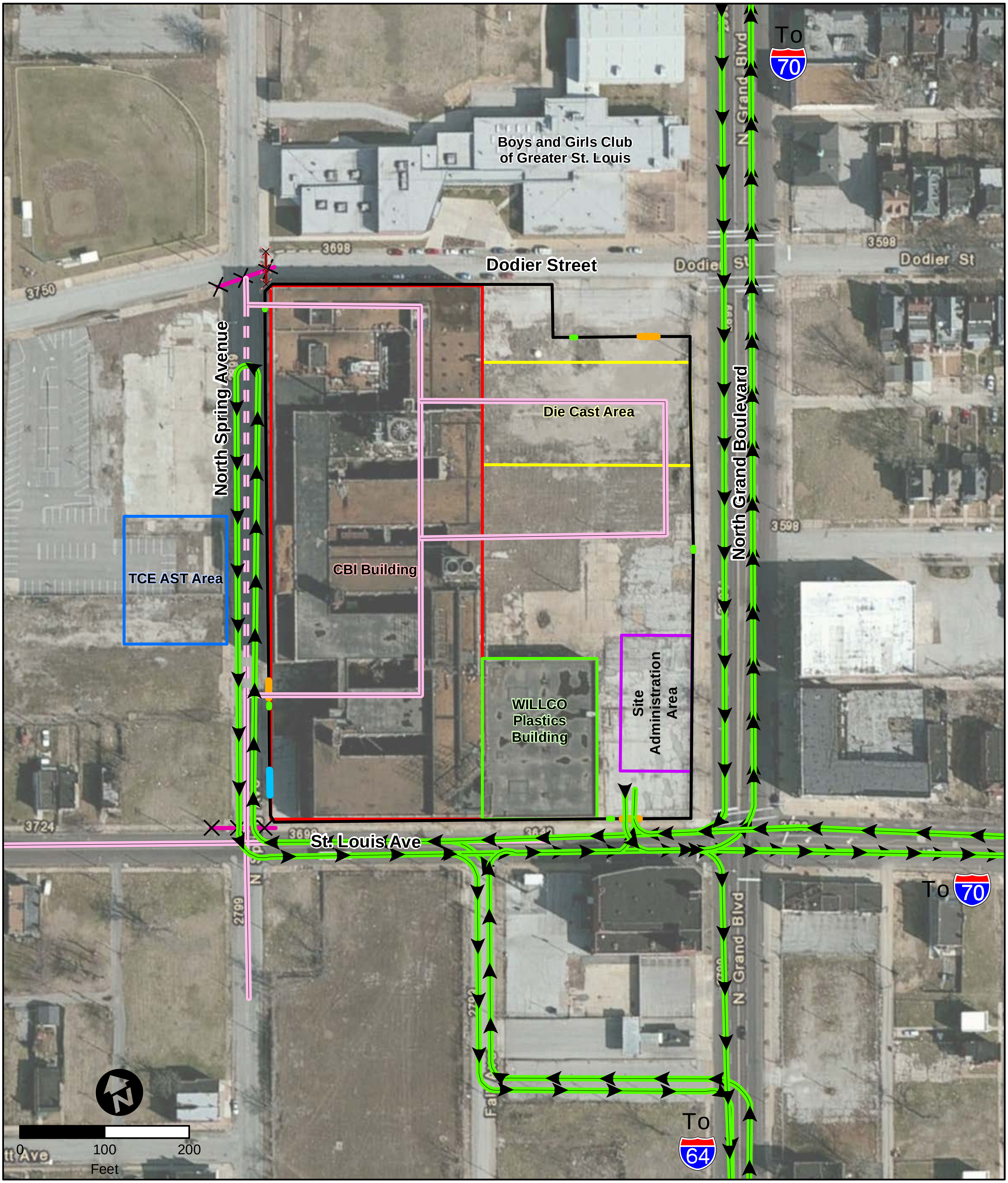

Legend

- CBI Building
- Die Cast Area
- TCE AST Area
- Willco Plastics Building
- Administration Area
- Gate - 4'
- Gate - 20'
- Gate - 30'
- Fence
- Roadblock
- Road Closure
- Site Truck Route
- Site Truck Route as Available
- Off-Site Truck Route

Drawn By: BSM Approved by: EMW
Checked By: DEW Date: 12/5/2013

amec

Figure 11-4.
West Demolition
Truck Route

Carter Carburetor Superfund Site
St. Louis, Missouri

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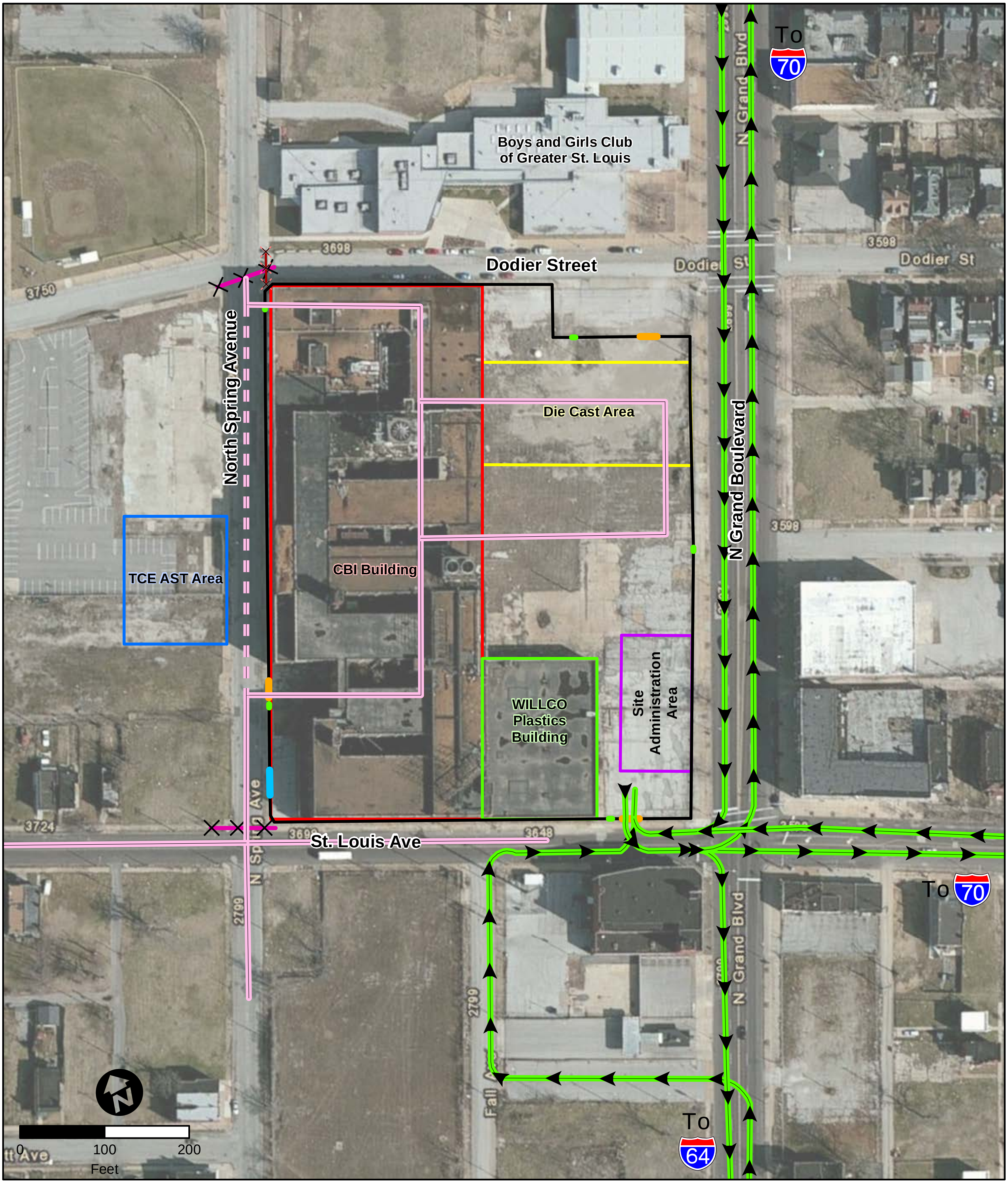

Legend

- CBI Building
- Die Cast Area
- TCE AST Area
- Willco Plastics Building
- Administration Area
- Gate - 4'
- Gate - 20'
- Gate - 30'
- Fence
- Roadblock
- Road Closure
- Site Truck Route
- Site Truck Route as Available
- Off-Site Truck Route

Drawn By: BSM Approved by: EMW

Checked By: DEW Date: 12/26/2013

amec

Figure 11-5. Die Cast Area Removal Action Truck Route

Carter Carburetor Superfund Site
St. Louis, Missouri

Path: P:\1_Gis\3250035028\a_mxd\2013_Figures\Work_Plan\Final_131205\Fig_11-5_Die_Cast_131226.mxd

Appendix C

Communication Plan

Communications Management Plan
for the
Carter Carburetor Superfund Site

Prepared for:

ACF Industries LLC
101 Clark Street
St. Charles, Missouri 63301

Prepared by:

AMEC Environment & Infrastructure, Inc.
15933 Clayton Road, Suite 215
Ballwin, Missouri 63011

Project No. 242413183

January 8, 2014

IMPORTANT NOTICE

This plan was prepared exclusively for ACF Industries, Inc. (ACF) by AMEC Environment & Infrastructure, Inc. (AMEC). The quality of information, conclusions and estimates contained herein is consistent with the level of effort involved in AMEC's services and based on: i) information available at the time of preparation, ii) data supplied by outside sources and iii) the assumptions, conditions and qualifications set forth in this plan. This plan is intended to be used by ACF only, subject to the terms and conditions of its contract with AMEC. Any other use of, or reliance on, this plan by any third party is at that party's sole risk.

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2.1.3 United States Environmental Protection Agency**Error! Bookmark not defined.**

3.0 PROJECT TEAM DIRECTORY....................3-3

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ABBREVIATIONS AND ACRONYMS

PM	Project Manager

1.0 INTRODUCTION

This Communications Management Plan sets the communications framework for the Carter Carburetor Superfund Project. It will serve as a guide for communications throughout the life of the project and will be updated as communication needs change. This plan identifies and defines the roles of persons involved in this project. It also includes a communications matrix which maps the communication requirements of this project. This plan also describes how project information is disseminated to the Project Team including the resolution of conflict. A Project Team directory is included to provide contact information for all Team members directly involved in the project.

2.0 COMUNICATIONS MANAGEMENT APPROACH

The Project Manager will take a proactive role in ensuring effective communications on this project. The communications requirements are documented in the Meetings and Communications Matrix presented in this document. The Meetings and Communications Matrix will be used as the guide for what information to communicate, who is to do the communicating, when to communicate it and to whom to communicate.

2.1 Roles

2.1.1 Corporate Support for Health and Safety

Corporate Support consists of the corporate level functions for Health and Safety. Corporate Support is critical to insure that the project is in compliance with corporate policies and procedures. The Corporate Support is expected to disseminate technical expertise and mentor to their project level counterparts. Additionally, Corporate Support is responsible to their project counterparts to assist in the identification and resolution project level issues and conflicts that any member of the project Team does not feel is being adequately addressed by the project manager.

2.1.2 ACF Industries, LLC

The ACF Industries, LLC (ACF) is the client for the Carter Carburetor Superfund Project. ACF will monitoring the project and participate in operational decision making. ACF will have a periodic on-site presence during remediation and a technical/project management oversight for the duration of the project. ACF is responsible for media, regulatory, and public relation interactions.

2.1.3 AMEC

PROGRAM MANAGER

The Program Manager is responsible for the direct interactions with ACF personnel. He conveys the information from the client and disseminates the information as necessary to the Project Team. The Program Manager receives updates on the project status from the Project Manager and the Site Manager.

PROJECT MANAGER

The Project Manager (PM) has overall responsibility for the execution of the project. The PM manages day-to-day scope, cost, and schedule on the project. The PM is responsible for day-to-day utilization of resources and provides project guidance to the project Team. Members of the Project Team are encouraged to present issues and concerns to the Site Manager and the Project Manager for resolution. Most issues can be resolved at the project level but, the Project Manager is responsible to utilize corporate support if the issues/concerns cannot be resolved at the project level. Further, any member of the Project Team may contact Corporate Support to present issues if they do not feel that project management is being responsive.

PROJECT TEAM

Site Manager

The Site Manager has responsibility for the field operations of the project. The Site Manager manages day to day resource coordination, on-site client interaction, and tracking cost and schedule metrics on the project. The Site Manager in association with the Project Manager is responsible for day-to-day utilization of resources and provides project guidance to the project Team. Members of the project Team are encouraged to present issues and concerns to the Site Manager and the Project Manager for resolution.

As the person responsible for the field execution of the project, the Site Manager is the primary communicator for the project site distributing information according to this Communications Management Plan.

Site Health and Safety Coordinator

The project Site Health and Safety Coordinator (SHSC) is responsible for ensuring site personnel have the proper training, safety-related licenses, and are medically-qualified to perform the work. The SHSC works with the SM in performing daily health and safety briefings to site personnel in the field; coordinates additional site-specific safety training and verifies the Health and Safety Plan is followed. The SSHO is a focal point, along with the SM for safety-related communications with field personnel and answering safety-related questions for field personnel. The SHSC has authority to issue stop work orders on-site tasks that he/she believes may be unsafe. When stopped, work will not recommence until the SHSC and SM believe all tasks are being conducted safely. If the SHSC disagrees with the on-site management decision, the SHSC can address the issue with the Corporate Health & Safety Manager.

Other Field Team Members

Other field team members are responsible for following the day-to-day direction of their functional on-site supervisor. All Team members are encouraged to raise issue to the Site Manager and Project Manager for resolution. Issues can also be directed to the SHSC and Site Quality Control Coordinator for resolution.

Technical Lead

The Technical Lead is a person on the Project Team who is designated to be responsible for ensuring that all technical aspects of the project are addressed and that the project is implemented in a technically sound manner. The Technical Lead is responsible for all technical designs, overseeing the implementation of the designs and developing as-build documentation. The Technical Lead requires close communications with the Project Manager and the Project Team.

3.0 Project Team Directory

The following table presents contact information for all persons identified in this communications management plan. The email addresses and phone numbers in this table will be used to communicate with these people.

Role	Name	Email	Phone
Corporate Support H&S	John Mazur	John.Mazur@AMEC.com	
Program Manager	Gene Watson	Gene.Watson@AMEC.Com	314.922.3828
Project Manager	Bill Hladick	William.Hladick@AMEC.Com	314.657.7922
Site Manager	Dan Williams	Daniel.Williams@AMEC.Com	314.277.1610
Administrative Assistant			
Site Quality Control Coordinator			
Site H&S Coordinator			

4.0 MEETING AND COMMUNICATIONS MATRIX

The meeting and communications requirements for this project are presented on Table 4-1.

Meeting and Communications Matrix

Objective of Communication	Medium	Frequency	Audience	Owner	Deliverable
QC Meetings					
Pre-Job Meeting for Subcontractors and AMEC personnel	Face to Face	As needed	ACF Project Team involved with the work	Site QC	Note in Daily Report
Project Team Meetings					
End of the Day meeting to review events of the day and plan tomorrow activities	Face to Face	Daily	Site Manager ACF SSHO, QCC	Site Manager	Plan of the Day
ACF Status Meetings					
Discuss project status	Face to Face Conference Call	Weekly	ACF Project Management Staff	Site Manager during site operations Program Manager or PM during non-operations	Agenda Meeting Minutes
Monthly Project Review Meeting					
Report on the status of the project to management.	Face to Face Conference Call	Monthly	Corporate Project Management Staff Site Manager	Program Manager or Project Manager	Project workbook
Daily Tailgate Briefing					
Present a safety topic and review the work day assignments	Face to Face	Daily	Project Team ACF EPA Subcontractors	Site Manager	Plan of the Day

4.1.1 Email Communications

Email documentation is encouraged as a communication tool. Be sure that your Email passes the “sunshine tests.” Please include Carter Carburetor Superfund Project as part of the subject line to facilitate subject based queries (separates project based Emails from other company Email).

4.1.2 Electronic File Naming

The Carter Carburetor Superfund Project will rely on electronic files to execute many aspects of the project. The purpose of the date reference is to eliminate the use of obsolete or superseded project data and information. Please include a date reference in the subject line as follows:

- YYYYMMDD File Name
- 20140505 Plan of the Day

4.1.3 Public Relations, Regulatory, and Media Communication

Members of the Carter Carburetor Superfund Project Team and management are not authorized to communicate with members of the public, regulators, or the media without expressed authorization from ACF or the Program Manager. All public, regulators, or the media communications must go thru the Program Manager.

4.1.4 Emergency and Weather Advisory Communication

In the event of an emergency at the Site, the Site Manager or designee will immediately notify the Program Manager and the Project Manager of the event. Further dissemination of information regarding the event will be performed by the Program Manager in accordance with AMEC policy and procedures.

Adverse weather can impact the start, continuation and completion of Site activities. A recall list of Site personnel and subcontractors will be generated and maintained by the Site Manager and the Site H&S Coordinator. If adverse weather is predicted or imminent prior to the start of work, the recall list will be activated and personnel will be advised about a revised start time for work or the cancellation of work for the day. Adverse weather during the workday or at the end of the workday will be communicated orally to site personnel to advise of the weather condition and the impact to Site operations. Any delays in work due to weather will be communicated to the Program Manager and the Project Manager for dissemination to ACF personnel.

Appendix D
Sample Forms

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number

GENERATOR

5. Generator's Name and Mailing Address

Generator's Site Address (if different than mailing address)

Generator's Phone:

6. Transporter 1 Company Name | U.S. EPA ID Number

7. Transporter 2 Company Name | U.S. EPA ID Number

8. Designated Facility Name and Site Address | U.S. EPA ID Number

Facility's Phone:

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
	1.					
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name	Signature	Month	Day	Year

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name	Signature	Month	Day	Year
Transporter 2 Printed/Typed Name	Signature	Month	Day	Year

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator) | U.S. EPA ID Number

Facility's Phone:

18c. Signature of Alternate Facility (or Generator)	Month	Day	Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name	Signature	Month	Day	Year

Preparatory Phase Checklist

Contract: **Date Preparatory Held:**

Spec. Section & Paragraph **Definable Feature of Work:**

Drawing Sheet Numbers **Major Definable Feature:**

1) Personnel Present

Name	Position	Company

2) Has each spec. paragraph, drawing, and shop drawing detail been studied?
Yes___ No___

3) Transmittals Involved

Number and Item	Code	Contractor Approval

C-1Have all items involved been approved? Yes ____ No

1. Are all materials on-hand? Yes ____ No ____.

Are the materials on the job-site to be incorporated the same as those approved?
Yes ___ No

Have all materials been checked for contract compliance against approved shop drawings?
Yes ____ No

Equipment to be Used in Executing the Work:

Items not on-hand or not in compliance with transmittals:

2. Tests required in accordance with contract requirements:

Test	Paragraph

Accident Prevention Planning - Hazard Control Measures:
Activity Hazard Analyses (Job Hazard Analyses)

F-1 Applicable Outlines (Attach completed copies)
Activity Hazard Analysis

Activity	Hazard(s)	Controls

F-2 Operational Equipment Checklist
Attached For:

On File For:

3. Have procedures for accomplishing work been reviewed with appropriate people?
   Yes ___ No ___

Scope of Work/Method of Construction:

Safety Issues:

Spill Prevention Issues:

4. Has all preliminary work been accomplished in accord with contract requirements and is this segment of work ready to start? Yes ____ No ___

H-1Explain any problems:

1. Remarks:

2. QCM Comments:

Contractor's Comments:

____
Quality Control Representative

Initial/Follow-Up Phase Inspection Checklist

Inspection Type: Initial Phase Follow-Up Phase

Date: ______________________ **Specifications Paragraph:**

Description and Location of Work Inspected:

-

-

Reference Contract Drawings:

A. Personnel Present

Name **Position** **Company**

B. Materials Being Used Are In Strict Compliance With The Contract Plans and Specifications

YES ______ **NO** _____

If not, explain:

C. Procedures And/Or Work Methods Witnessed Are In Strict Compliance With The Requirements Of The Contract Specifications: YES ____ **NO** _____

If not, explain:

D. Workmanship Is Acceptable. YES ____ **NO** ______ **State Areas Where Improvement Is Needed:**

E. Safety Violations and Corrective Actions Taken:

____

F. Remarks:

____

Quality Control Representative

Final Phase Inspection Checklist

Date: ________________________ **Specifications Paragraph:**

Definable Feature of Work:

Description and Location of Work Inspected:

-

-

Reference Contract Drawings:

A. Personnel Present

Name	Position	Company

B. Materials Used In Strict Compliance With The Contract Plans and Specifications

YES ______ **NO** _____

If not, explain:

C. Procedures And/Or Work Methods Witnessed Are In Strict Compliance With The Requirements Of The Contract Specifications: **YES** ____ **NO** _____

If not, explain:

-

C. Workmanship is Acceptable: **YES** ____ **NO** _____

State Areas Where Improvement is Needed:

E. Remarks:

____

Quality Control Representative

Appendix E

Asbestos Specifications and Abatement Work Plan

Appendix F

Building Separation Plan

Appendix G

CBI Building Demolition Plan

amec

Appendix H

Die Cast Area Excavation Design

Appendix I

Sheet Pile Design

Appendix J

TCE Area ISTD/SVE Plan