Appendix G12. Hazardous Materials Technical Report

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Hazardous Materials Technical Report

West Lake Corridor Project

Federal Transit Administration
and
Northern Indiana Commuter Transportation District

March 2018

NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT

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Acronyms and Abbreviations

AOC	area of concern
AST	aboveground storage tank
ASTM	ASTM International
bgs	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CFR	Code of Federal Regulations
CMAP	Chicago Metropolitan Agency for Planning
CMMP	Contaminated Media Management Plan
CN	Canadian National Railway
COC	Contaminant of Concern
CREC	controlled recognized environmental condition
DEIS	Draft Environmental Impact Statement
ESA	Environmental Site Assessment
et seq.	and subsequent sections
FEIS	Final Environmental Impact Statement
FTA	Federal Transit Administration
HASP	Health and Safety Plan
HREC	historical recognized environmental condition
IDEM	Indiana Department of Environmental Management
IEPA	Illinois Environmental Protection Agency
IHB	Indiana Harbor Belt
ILCS	Illinois Compiled Statutes
LUST	leaking underground storage tank
MGP	manufactured gas plant
MTG	migration to groundwater
NEPA	National Environmental Policy Act
NFRAP	No Further Response Action Planned
NICTD	Northern Indiana Commuter Transportation District
NIRPC	Northwestern Indiana Regional Planning Commission's
NPL	National Priorities List
OSHA	Occupational Safety and Health Administration

PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PPE	personal protective equipment
Project	West Lake Corridor Project
RCG	Remediation Closure Guide
RCRA	Resource Conservation and Recovery Act
REC	recognized environmental condition
RSL	regional screening level
S.	south
SL	screening level
SOP	standard operating procedure
SSL	South Shore Line
TPSS	traction power substation
U.S.	United States
USC	United States Code
USEPA	United States Environmental Protection Agency
UST	underground storage tank
VI	vapor intrusion
VOC	volatile organic compound
VRP	Voluntary Remediation Program

1 Introduction

The Federal Transit Administration (FTA) and the Northern Indiana Commuter Transportation District (NICTD) are conducting the environmental review process for the West Lake Corridor Project (Project) in Lake County, Indiana, in accordance with the National Environmental Policy Act (NEPA) and other regulatory requirements. A Final Environmental Impact Statement (FEIS) has been prepared as part of this process, with the FTA as the federal lead agency and NICTD as the local Project sponsor responsible for implementing the Project under NEPA.

1.1 Purpose of Report

The purpose of this report is to evaluate the impacts that hazardous materials could cause to the Project. To conduct this evaluation, a two-phased approach was conducted during the NEPA process. This report summarizes the results of the Phase I and Phase II Environmental Site Assessments (ESAs) conducted for the Project.

The evaluation of the Project began with a modified scope Phase I ESA that was prepared for the Draft Environmental Impact Statement (DEIS) (NICTD 2016) and that is included in **Attachment 1**. The Phase I ESA served to document parcels of concern within a larger Project Area (that encompassed the Project alternatives) and to identify land use related to historic and current involvement with hazardous materials, hazardous waste, and/or petroleum products. The Phase I ESA then identified recognized environmental conditions (RECs), controlled RECs (CRECs), and historical RECs associated with the Project alternatives. The RECs and CRECs were also ranked with regard to severity as Low Risk, Medium Risk, or High Risk.

A Phase II ESA was later conducted to evaluate the RECs identified in the Phase I ESA. The Phase II investigation was targeted only at properties that met certain criteria (further details provided in Section 3.0). The Phase II ESA served to quantify whether contamination was present on these properties at concentrations that exceeded applicable regulatory standards.

REC Definitions

REC- the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment.

CREC- a REC that has been addressed to the satisfaction of the applicable regulatory authority, with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls).

HREC- a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls.

1.2 Project Description

The environmental review process builds on NICTD's prior West Lake Corridor studies that examined a broad range of alignments, technologies, and transit modes. The studies concluded that a rail-based service between the Munster/Dyer area and Metra's Millennium Station in downtown Chicago, shown in **Figure 1.2-1**, would best meet the transportation needs of the northwest Indiana area. Thus, NICTD advanced a Preferred Build Alternative for more-detailed analysis in the FEIS. NEPA also requires consideration of a No Build Alternative to provide a basis for comparison to the Build Alternative.

1.2.1 No Build Alternative

The No Build Alternative is defined as the existing transportation system, plus any committed transportation improvements included in the Northwestern Indiana Regional Planning

Commission's (NIRPC) *2040 Comprehensive Regional Plan* (NIRPC 2011) and the Chicago Metropolitan Agency for Planning's (CMAP) *GO TO 2040 Comprehensive Regional Plan* (CMAP 2014) through the planning horizon year 2040. It also includes capacity improvements to the existing Metra line and Millennium Station, documented in NICTD's *20-Year Strategic Business Plan* (NICTD and Regional Development Authority 2014).

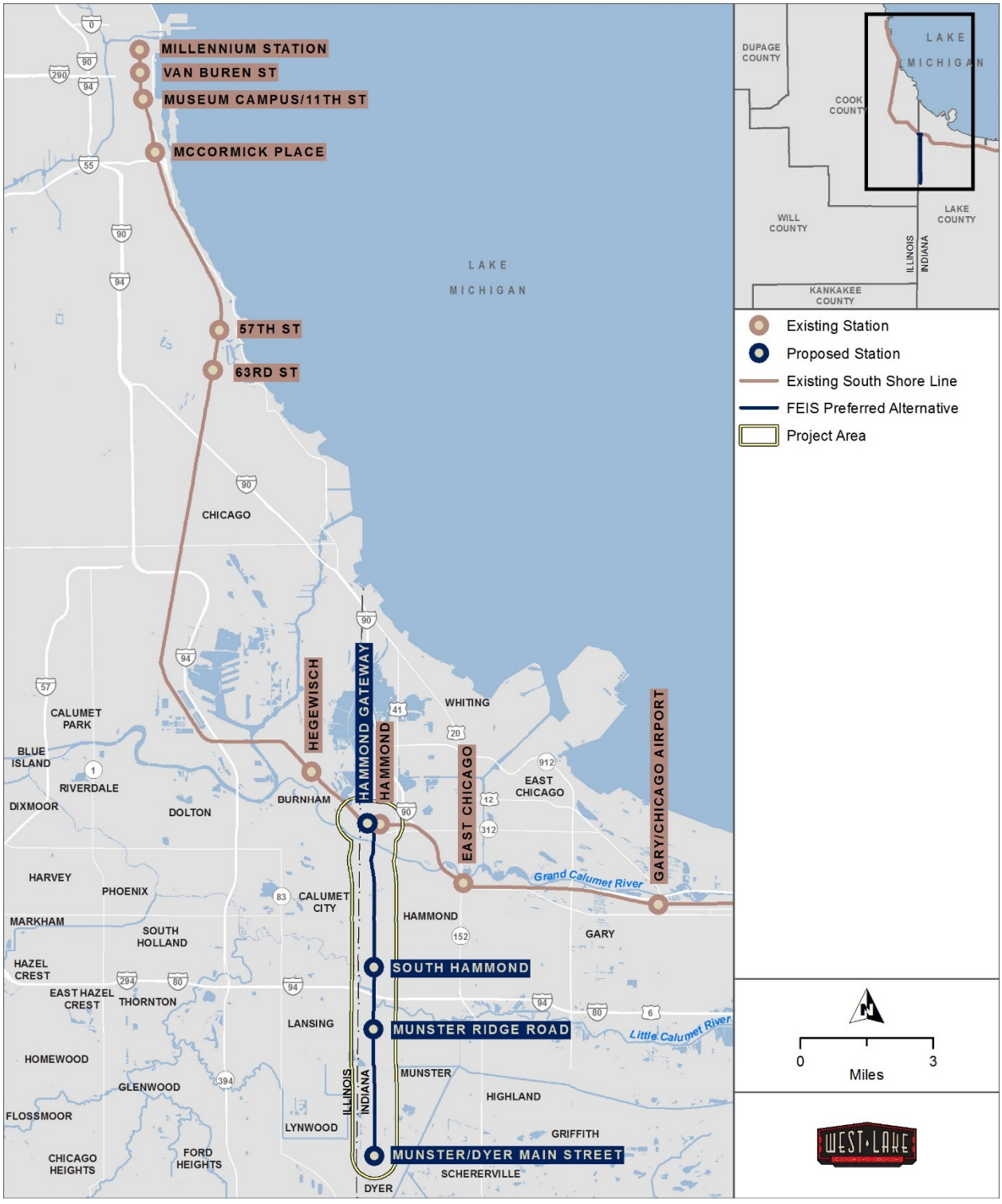
1.2.2 FEIS Preferred Alternative

The Project is an approximate 9-mile southern extension of the existing NICTD SSL between the town of Dyer and city of Hammond, Indiana. Traveling north from the southern terminus near Main Street at the Munster–Dyer municipal boundary, the Project would include new track operating at grade on a separate right-of-way to be acquired adjacent to the CSX Transportation Monon Subdivision rail line in Dyer and Munster. The Project alignment would be elevated from 45th Street to the Canadian National Railway (CN) Elsdon Subdivision rail line at Maynard Junction. North of the CN line, the Project alignment would return to grade and join with the publicly owned former Monon Railroad corridor in Munster and Hammond, Indiana, and continue north. The Project would relocate the existing Monon Trail pedestrian bridge crossing over the Little Calumet River and build a new rail bridge at the location of the former Monon Railroad bridge. The Project alignment would cross under Interstate 80/94 (I-80/94) and continue north on the former Monon Railroad corridor to Sibley Street. From Douglas Street north, the Project would be elevated over all streets and rail lines using a combination of retaining walls, elevated structures, and bridges. The Project would terminate just east of the Indiana Harbor Belt at the state line, where it would connect with the SSL. Project trains would operate on the existing Metra Electric District line for the final 14 miles, terminating at Millennium Station in downtown Chicago.

Four new stations would be constructed along the alignment; Munster/Dyer Main Street, Munster Ridge Road, South Hammond, and Hammond Gateway Stations. Each station would include station platforms, parking facilities, benches, trash receptacles, bicycle racks, and other site furnishings. Shelter buildings would only be located at the Munster/Dyer Main Street and Hammond Gateway Stations.

The Project would include a vehicle maintenance and storage facility with a layover yard and traction power substation (TPSS) to power the overhead contact system, located just south of the Hammond Gateway Station, west of Sheffield Avenue. Additional TPSSs would be located at the South Hammond Station parking lot and Munster/Dyer Main Street Station. The TPSS would be enclosed to secure the electrical equipment and controls, with a footprint of about 20 feet by 40 feet.

Figure 1.2-1: West Lake Corridor Project Area



Source: HDR 2017.

2 Regulatory Setting

Numerous federal and state laws and regulations govern the handling, treatment, storage, and transportation of hazardous and contaminated materials. Key requirements directing the investigation pertinent to hazardous, contaminated, and regulated materials relevant to the Project include:

- The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 United States Code [USC] § 9601 et seq.)
- Superfund Amendments and Reauthorization Act (Public Law 99-499)
- Resource Conservation and Recovery Act of 1976 (RCRA) (42 USC § 6901 et seq.)
- Federal Occupational Safety and Health Act (OSHA) (29 USC § 651 et seq.)
- Toxic Substance Control Act (15 USC § 2601 et seq.)
- Indiana Title 329 Solid Waste Management Division (329 Indiana Administrative Code 3.1-1-2)
- Illinois Solid Waste Management Act (45 Illinois Compiled Statutes [ILCS] 20)

FTA's Office of Planning and Environment issued Standard Operating Procedure 19 (SOP 19) – Consideration of Contaminated Properties including Brownfields in August 2016. SOP 19 provides guidance relating to properties being considered for FTA-funded projects. The FTA states that the condition of a property being considered for acquisition should be as thoroughly assessed as possible prior to approval of the final environmental document.

3 Methodology

The evaluation of the Project began with a modified-scope Phase I ESA that was prepared for the DEIS (West Lake Corridor DEIS, *Hazardous Materials Technical Report*, November 2016) and that is included as **Attachment 1**. The Phase I ESA served to document parcels of concern within a larger Project Area (that encompassed the Project alternatives) and to identify land use related to historic and current involvement with hazardous materials, hazardous waste, and/or petroleum products. The Phase I ESA then identified RECs, CRECs, and historical RECs (HRECs) associated with the Project alternatives. The RECs and CRECs were also ranked by considering risk to the Project corridor using identified criteria for Low Risk, Medium Risk, or High Risk, as defined later in Section 3.1.

A Phase II ESA was later conducted to evaluate the RECs identified in the Phase I ESA. The Phase II investigation was performed only for properties that fulfilled all three of the following characteristics:

- Identified as either High, Medium, and Low Risk in the Phase I ESA;
- Located within the FEIS Preferred Alternative; and
- Being acquired for the Project.

In addition to the criteria outlined above, the NIPSCO Corporation MGP site (discussed in the sections below) was also recommended for inclusion in the Phase II ESA, even though an easement/lease is only being pursued for the Project. Elevated concentrations of contaminants in the areas of proposed construction and ongoing remedial activities have the potential to greatly influence the engineering design and construction of the Project at this site.

3.1 Phase I ESA

The limited-scope Phase I ESA was prepared by AECOM and was included in the DEIS as a *Hazardous Material Technical Report* (NICTD 2016). According to the DEIS *Hazardous Material Technical Report* , the limited-scope Phase I ESA was performed in general conformance with applicable portions of ASTM International (ASTM) Practice E 1527-13 for ESAs. The purpose of the limited-scope Phase I ESA was to identify RECs and to provide NICTD with information for risk management for the Project.

Per the ASTM standard, potential findings can include RECs, including historical RECs (HRECs) and CRECs, and *de minimis* conditions. A REC is defined by the ASTM standard as “the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment.” The term includes hazardous substances or petroleum products, even when these materials are used under conditions in compliance with laws.

An HREC is a past release of any hazardous substances or petroleum products that has occurred in connection with the property, and has been addressed to the satisfaction of the applicable regulatory authority, or meets unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls.

A CREC is a Recognized Environmental Condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority, with hazardous substances or petroleum products allowed to remain in

place subject to the implementation of required controls. A CREC can be considered a REC if the conditions of the site closure are changed, or if residual contamination is likely to be encountered in relation to the controlled condition.

De minimis conditions are those situations that do not present a material risk of harm to public health or the environment, and generally would not be subject to enforcement action if brought to the attention of the regulating authority.

By definition, each REC and CREC identified has the potential to affect the Project Area. For the purpose of this analysis, AECOM classified each REC and CREC as a Low, Medium, or High Risk site within the findings of the report (**Attachment 1**). These risk classifications are defined as follows:

- **Low Risk:** Properties identified as CRECs.
- **Medium Risk:** Properties identified as RECs that have closed leaking underground storage tank (LUST) or other spill incidents, aboveground storage tank (AST)/underground storage tank (UST) sites with no spill-related listings, vehicle repair sites, junk yards, or sites without long-term historical industrial use.
- **High Risk:** Properties identified as RECs that have active or open LUST or other spill incidents, historical dry cleaners, historical auto stations (that is, gas stations), active LUST sites, or sites with identified long-term historical industrial use.

The assessment is based on a review of existing conditions, reported pre-existing conditions, and observed operations in the Project Area and adjacent properties. The limited-scope Phase I ESA included a site visit, regulatory research, historical review, and environmental database analysis of the Project. In conducting the limited-scope Phase I ESA, the Project Area was assessed for visible signs of contamination, historical records were reviewed to identify historical uses that could indicate hazardous materials use or release, and environmental database records were analyzed for the Project Area and surrounding sites. This assessment was performed in general accordance with applicable portions of the ASTM E1527-13 and AECOM's Scope of Services, dated April 23, 2014.

Deviations from the ASTM E1527-13 standard included:

- Interviews with owners and operators in the Project Area were not performed.
- An ASTM E1527-13 User Questionnaire was not completed by the user.
- A search of title records and environmental liens was not performed.
- Data gaps and data failures were not evaluated as part of this Project.
- Local agency interviews and agency file reviews were limited to AECOM's review of publicly accessible online databases maintained by the United States Environmental Protection Agency (USEPA), Indiana Department of Environmental Management (IDEM), and Illinois Environmental Protection Agency (IEPA).

3.2 Phase II ESA

A Phase II ESA report was completed in September 2017 and is included as **Attachment 2**. The Phase II ESA was a targeted subsurface investigation. The Phase II included High, Medium, and Low Risk areas located along the FEIS Preferred Alternative that are under consideration for purchase or easement for the Project. The scoping of the Phase II ESA began by grouping the RECs identified in the Phase I ESA into Areas of Concern (AOCs). The AOCs that fit the criteria for additional investigation, or that were still deemed a large enough risk of contamination for the Project, were included in the investigation.

The subsurface investigation consisted of advancing soil borings and constructing temporary groundwater monitoring wells to collect soil and groundwater samples for laboratory analysis. The number and locations of the soil borings and temporary monitoring wells, the quantity and interval of samples collected, and the parameters selected for laboratory analyses were based on the nature of the RECs and site conditions identified in the field for each AOC.

Laboratory analytical results of soil samples collected were compared to the most recent IDEM Remediation Closure Guide (RCG) screening levels (SLs) including Migration to Groundwater (MTG) SLs, Residential Direct Contact SLs, and Commercial/Industrial Direct Contact SLs. Laboratory analytical results of groundwater samples collected were compared to Tap Groundwater SLs, Residential Vapor Intrusion (VI) SLs, and Commercial/Industrial VI SLs.

The IDEM RCG describes the use of risk-based SLs to help evaluate contaminated sites. The SLs were derived from Regional Screening Levels (RSLs) published by the USEPA. The analytical results of the investigation were compared against these SLs under various scenarios. Under the proposed future use of the Project corridor, the Commercial/Industrial Direct Contact SL and Excavation Direct Contact SL are the most applicable for soils. The IDEM RCG Residential Tap SL was used to evaluate groundwater samples.

4 Affected Environment

4.1 Phase I ESA

A Phase I ESA was prepared for the DEIS and included the evaluation of the Project relative to the following proposed alternatives:

- Commuter Rail Alternative Options 1–4
- Indiana Harbor Belt Alternative
- Hammond Alternative Options 1–3

The DEIS NEPA Preferred Alternative is the Hammond Alternative, Option 2, described in the Phase I ESA. **Table 4.1-1** summarizes the number of RECs (and their risk rankings) in the Project Area (0.5 mile on either side of the centerline for each alternative) in the Phase I ESA.

Table 4.1-1: Summary of RECs in the Project Area

Alternative and Options	High Risk (REC)	Medium Risk (REC)	Low Risk (CREC)
Commuter Rail Alternative (all options)	23	22	2
Indiana Harbor Belt Alternative (all options)	25	18	2
Hammond Alternative (all options)	32	21	2

Source: NICTD 2016.

4.1.1 FEIS Preferred Alternative

Of the sites in **Table 4.1-2**, the following properties are located within or directly adjacent to the FEIS Preferred Alternative. The FEIS Preferred Alternative includes areas for the proposed railroad tracks, station, maintenance and storage facility, parking, bridges, etc.

Current or former activity associated with the properties listed above in **Table 4.1-2** might have contaminated the soil and groundwater on site. For the properties listed as adjacent to the FEIS Preferred Alternative, off-site migration of contamination is possible.

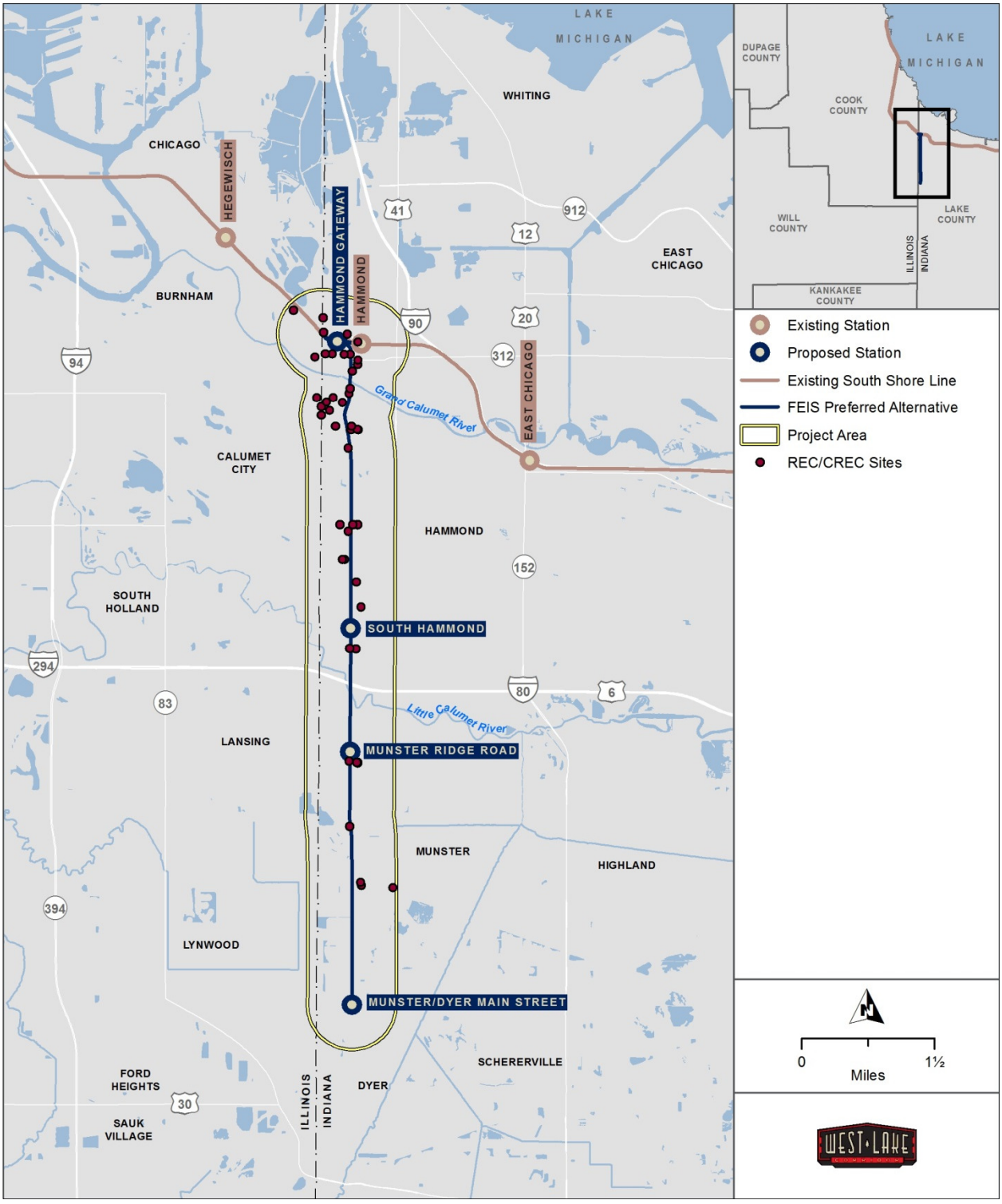
Table 4.1-2: Sites within and adjacent to the FEIS Preferred Alternative

ID	Facility Name	Facility Address	AECOM Phase I Rank	Within FEIS Preferred Alternative	Adjacent Property
1	Munster Public Works	508 Fisher Street	High		X
2	Phillips Petroleum 66	323 Ridge Road	High		X
3	Sunny Cleaners	428 173rd Street	High		X
4	Monon Rail Yard	173rd Street and Lyman Avenue (north and south of 173rd Street)	Low (CREC)	X	
5	None	6922 Harrison Avenue	High		X
6	MRL Enterprises (scrap yard)	421 Locust Street	High		X
7	Ridgeway II/Mobil Gas	260 165th Street	High		X
8	Various tenants (Alpha Storage, Ferree Transportation, Straube Piano Co.)	252 Wildwood Road	High		X
9	Henry Pratt Co. (also known as Specialty Steel Co.)	403 Conkey Street	High		X
10	F & H Properties	430 Russell Street	Low (CREC)		X
11	Roy's Auto Body	474 Fayette Street	Medium		X
12	Calumet Industrial Corridor	North of Plummer Avenue and west of Hohman Avenue	High		X
13	NIPSCO Corp. MGP	Wilcox Street and Hohman Avenue	High	X	
14	Unnamed (former Best Auto Repair)	5004 S. Hohman Avenue	Medium	X	
15	Dombrowski & Holmes	4805 Sheffield Avenue	High	X	
16	Marble Street Industrial Area	West of Sheffield Avenue on the north and south sides	High	X	
17	Marble Street Dump A, B, and C/GM Wrecking	150 Marble Street	High	X	
18	Polish Army Veterans Association (#1 and #2)	241–243 Gostlin Street	High		X
19	Ridgeway IV	21 Gostlin Street	High		X
20	Steel Container Corp.	3631 State Line Road	Medium		X

Source: HDR 2017; NICTD 2016.

Figure 4.1-1 shows the locations of RECs along the FEIS Preferred Alternative.

Figure 4.1-1: Locations of RECs along FEIS Preferred Alternative



Source: HDR 2017.

4.2 Phase II ESA

Findings from the Phase I ESA were used to establish high-priority AOCs where subsurface investigations were needed to assess whether a release of hazardous substances and/or petroleum hydrocarbons had occurred within the Project footprint, and whether the release could adversely affect the scope, schedule, and costs of the Project. The following activities are proposed as a part of the Project:

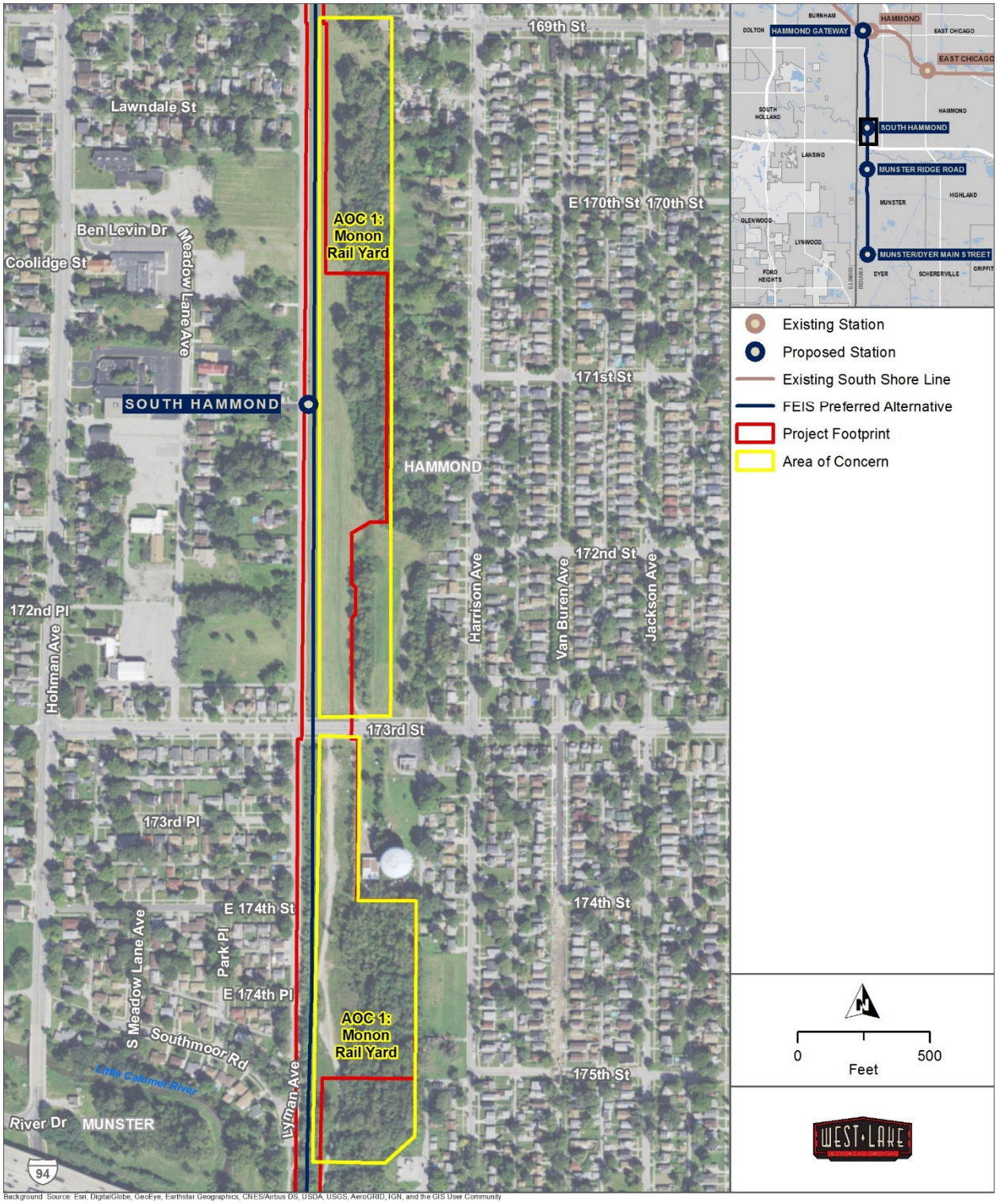
- Redevelopment of the former Monon Yard
- Construction of a new maintenance and storage facility and yard in an industrial area in Hammond
- Areas of major ground disturbance, such as underground utility relocations
- Acquisition of properties along the railroad route
- Proposed bridge abutments spanning the Grand Calumet River in an environmentally impaired area

These proposed activities were evaluated in conjunction with the RECs identified in the Phase I ESA to determine the need for additional investigation. Sixteen AOCs were initially selected for subsurface investigation shown in **Table 1.1-1** in **Appendix C** of the Phase II ESA (**Attachment 2** of this report). The 16 AOCs were high- and medium-risk sites that were identified in the Phase I ESA search area (within and adjacent to the alignment). The Monon Rail Yard was later added as an additional AOC (even though it was ranked as a low-risk site), based on proposed redevelopment of this AOC and its CREC status indicating that contaminants are still present at the site. These 17 AOCs were then assessed relative to FTA and NICTD requirements, alignment modification, and property acquisition. The AOCs were then narrowed down to the following five AOCs for the proposed subsurface investigation:

- AOC 1: Monon Rail Yard
- AOC 2: NIPSCO Corporation Manufactured Gas Plant (MGP) Site
- AOC 3: Dombrowski & Holmes
- AOC 4: Marble Street Industrial Area
- AOC 5: Marble Street Dump A, B, and C

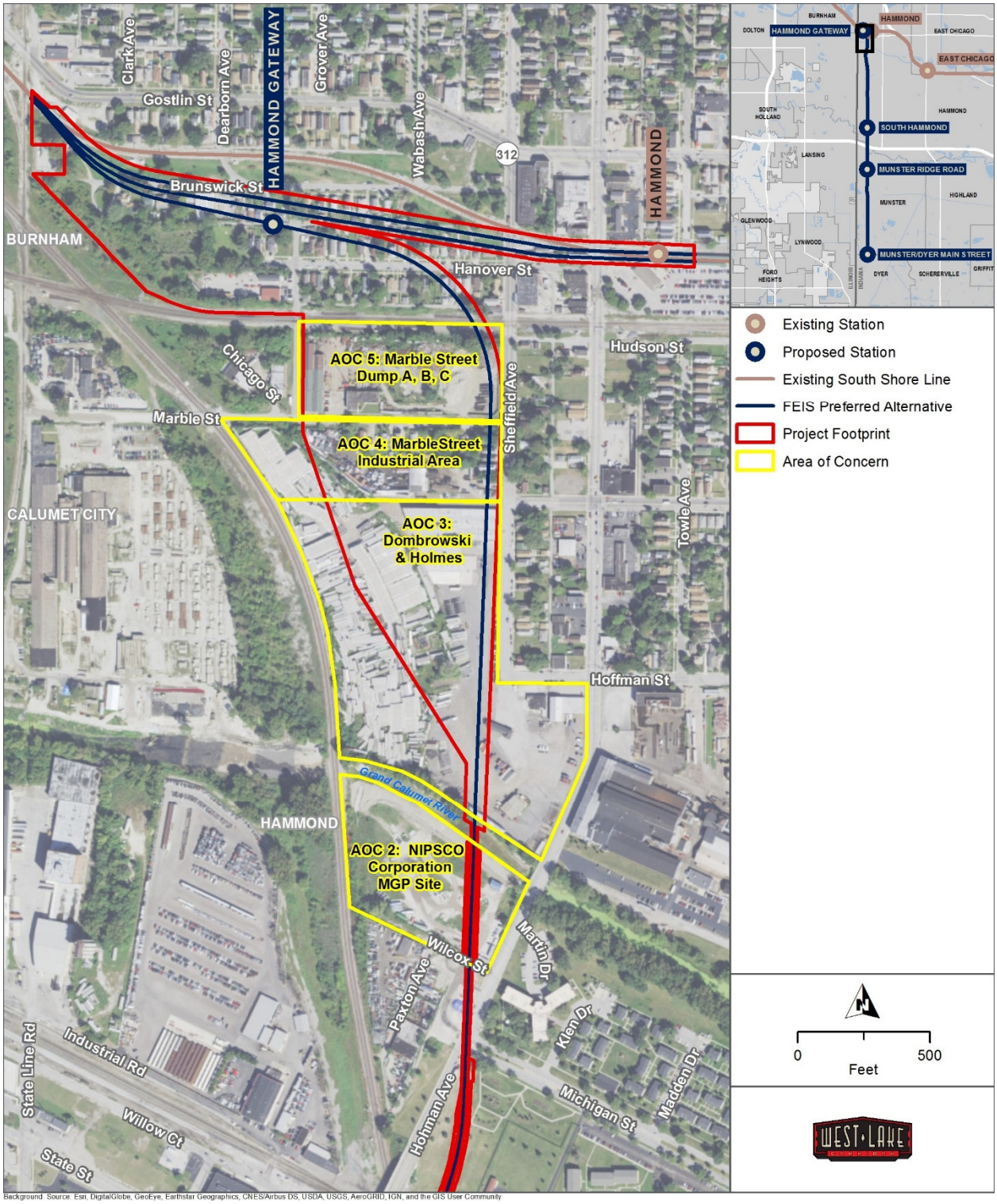
Figure 4.2-1 and **Figure 4.2-2** show the locations of the five AOCs located along the FEIS Preferred Alternative. AOCs 1, 3, 4, and 5 were selected for the Phase II ESA, because of their risk ranking and proposed future property acquisition for the Project. The NIPSCO Corporation MGP site (AOC 2) is under considered for lease/easement, but due to the documented contamination onsite and ongoing remediation, this site was also included to aid in final engineering and construction planning. All five of the AOCs include privately owned parcels. Access agreements for the subsurface investigation (drilling and sample collection) were arranged through NICTD's Real Estate Department. Access to the Monon Rail Yard (AOC 1) and Marble Street Dump A, B, and C (AOC 5) was not granted by the property owners for each of these properties; therefore, they were excluded from further investigation during this stage, but investigation would be conducted prior to acquisition and construction.

Figure 4.2-1: Location of AOC 1



Source: HDR 2017.

Figure 4.2-2: Locations of AOCs 2, 3, 4, and 5



Source: HDR 2017.

4.2.1 AOC 2: NIPSCO Corporation MGP Site

4.2.1.1 Overview

The former NIPSCO Corporation MGP, located at the intersection of Wilcox Street and Hohman Avenue in Hammond, Indiana, was constructed in 1900. Manufactured gas was produced using coal carbonization and water gas processes from 1904 through about 1930. Records indicate that the site was then used as a gas transfer station until 1950. By 1951, the facility was shut down, site buildings abandoned, and the property converted to a supply yard and storage area for NIPSCO.

The former Hammond MGP was entered into the IDEM Voluntary Remediation Program (VRP) in 1998, after investigative activities indicated that residual contaminants from former gas-manufacturing operations had affected the former MGP parcel and adjacent properties. Active remediation is occurring at the site. A groundwater extraction system and underground barrier walls are present on site. A permeable reactive cap associated with the Great Lakes Legacy Act cleanup of the Grand Calumet River was completed along the north side of the site (outside the fence) in 2016. Installation of a low-permeability cap in the upland area (inside the fence) is planned in the near future.

Planned Project activities in AOC 2 include excavation for bridge piers and abutments, and negotiated land lease and easement.

4.2.1.2 Sample Collection and Analysis

Seven borings were advanced in AOC 2, one located outside the southern fence line and the remaining six located inside the fence at the locations of proposed piers for the elevated track (**Figure 4.2-3**). Groundwater was encountered between 6 and 13 feet below ground surface (bgs). A clay (confining) layer was located at about 20 feet bgs across the site. Two soil samples were collected from each boring: a surface soil sample (0 to 2 feet bgs) and a deeper one at an interval selected based on the results of field screening or identified likely contaminant pathways. No groundwater samples were collected at this site, due to the presence of a groundwater extraction system and regular monitoring program currently in place. The soil samples were analyzed for volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), and RCRA metals.

The laboratory analysis found the following exceedances.

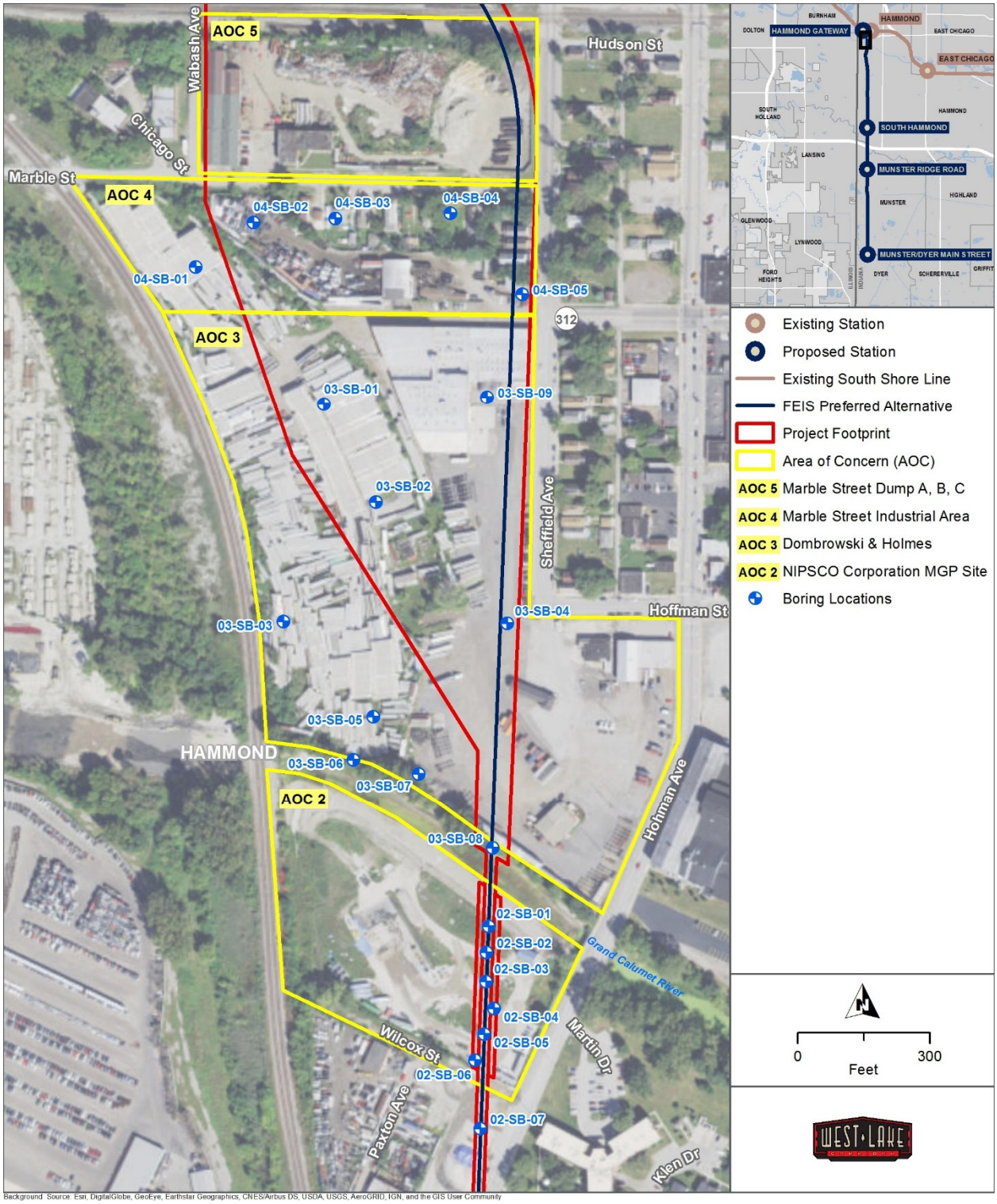
Soil Analytical Results

- RCRA metals
  - Of the RCRA metals, arsenic and/or mercury concentrations exceeded at least one of the SLs in 7 of the 14 soil samples collected. Other analyzed metals were not present in concentrations exceeding the applicable standards.
    - Arsenic concentrations exceeded the MTG SL in 6 of the 14 soil samples [02-SB-01 (0 to 2 feet), 02-SB-01 (18 to 20 feet), 03-SB-03 (0 to 2 feet), 02-SB-04 (10 to 12 feet), 02-SB-05 (0 to 2 feet), and 02-SB-06 (0 to 2 feet)]. Further exceedance of the Residential Direct Contact SL was reported in the shallow soil samples from 02-SB-05 and 02-SB-06.
    - Mercury concentrations exceeded the Excavation Direct Contact SL in 5 of the 14 soil samples [02-SB-01 (0 to 2 feet), 02-SB-03 (0 to 2 feet), 02-SB-04 (0 to 2 feet), 02-SB-05 (0 to 2 feet), and 02-SB-06 (0 to 2 feet)]. Mercury was not detected above laboratory method detection limits in the remaining soil samples.

- PAHs
  - PAH concentrations exceeded MTG SLs in all but 3 of the 14 soil samples collected [02-SB-02 (0 to 2 feet), 02-SB-04 (10 to 12 feet), and 02-SB-06 (12 to 14 feet)]; however, PAH concentrations did not exceed the Excavation Direct Contact SLs in any of the soil samples collected.
  - PAH concentrations exceeded Residential Direct Contact SLs in 8 of the 14 soil samples collected, with further exceedance of the Commercial/Industrial Direct Contact SL at 02-SB-01 (0 to 2 feet) and 02-SB-02 (16 to 18 feet).
  - The sample collected at 02-SB-02 (16 to 18 feet) reported the highest concentrations and number of PAH parameters in exceedance of SLs.
- VOCs
  - VOC concentrations above laboratory method detection limits were reported in 5 of the 14 soil samples collected. VOC concentrations in samples 02-SB-03 (0 to 2 feet), 02-SB-03 (10 to 12 feet), and 02-SB-05 (6 to 8 feet) were all below SLs.
  - VOC concentrations, including benzene, ethylbenzene, naphthalene, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene, exceeded the MTG SLs in samples 02-SB-01 (18 to 20 feet) and 02-SB-02 (16 to 18 feet).
  - The Residential Direct Contact SLs were exceeded for ethylbenzene and naphthalene in sample 02-SB-01 (18 to 20 feet) and benzene, ethylbenzene, and naphthalene in sample 02 SB-02 (16 to 18 feet).
  - The concentration of naphthalene in sample 02-SB-02 (16 to 18 feet) also exceeded the Commercial/Industrial Direct Contact SL.

The soil analytical results are summarized in **Appendix C**, **Table 4.1-2**, of **Attachment 2**.

Figure 4.2-3: Boring Locations



4.2.2 AOC 3: Dombrowski & Holmes

4.2.2.1 Overview

The former Dombrowski & Holmes recycling facility was located at 4805 Sheffield Avenue in Hammond. This site is listed in the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) No Further Response Action Planned (NFRAP) database. The database listing indicated that the site was added to the CERLCA program in 1980. Preliminary assessment that year classified the site as a high priority for further assessment. However, following a site inspection later in 1980, the site did not qualify for the National Priorities List (NPL) and was delisted as an NFRAP site. Based on the industrial history of this site, and the lack of details concerning cleanup and site closure, the DEIS *Hazardous Material Technical Report* listed the site as a REC.

Planned Project activities in AOC 3 include property acquisition and construction of a maintenance and storage facility.

4.2.2.2 Sample Collection and Analysis

Nine soil borings were advanced throughout AOC 3 (see **Figure 4.2-3**). Groundwater was encountered between 7 and 12 feet bgs. Two soil samples were collected from each boring: a surface soil sample (0 to 2 feet bgs) and a deeper one at an interval selected based on the results of field screening or likely contaminant pathways. Temporary monitoring wells were constructed at three boring locations to collect groundwater samples for analysis. The soil and groundwater samples were analyzed for VOCs, PAHs, and RCRA metals.

The laboratory analysis found the following exceedances.

Soil Analytical Results

- RCRA metals
    - Of the RCRA metals, arsenic and/or lead were detected above at least one of the SLs in 10 of the 17 soil samples collected. Other analyzed metals were not present in concentrations exceeding the applicable standards.
    - Concentrations of arsenic and/or lead exceeded Residential Direct Contact SLs in 8 of the 17 soil samples at 03-SB-02 (0 to 1 foot), 03-SB-03 (6 to 8 feet), 03-SB-04 (0 to 1 foot), 03-SB-05 (0 to 1 foot), 03 SB-05 (8 to 10 feet), 03-SB-06 (0 to 1 foot), 03-SB-06 (6 to 8 feet), and 03-SB-08 (0 to 1 foot).
    - Concentrations of arsenic in shallow soil samples 03-SB-04, 03-SB-06, and 03-SB-08 exceeded the Commercial/Industrial Direct Contact SL.
    - Concentrations of lead in samples 03-SB-04 (0 to 1 foot) and 03-SB-06 (6 to 8 feet) exceeded the Excavation Direct Contact SL.
- PAHs
    - PAH concentrations were detected above laboratory method detection limits in 14 of the 17 soil samples. However, PAH concentrations in 6 soil samples [03-SB-01 (0 to 1 foot), 03 SB-01 (6 to 8 feet), 03-SB-03 (6 to 8 feet), 03-SB-07 (0 to 1 foot), 03-SB-08 (10 to 12 feet), and 03-SB-09 (0 to 1 foot)] did not exceed any of the SLs.
    - Naphthalene, benzo(a)pyrene, and/or benzo(a)anthracene concentrations were detected above MTG SLs in 8 of the 17 soil samples; further exceedance of the Residential Direct

Contact SLs was reported in soil samples 03-SB-02 (0 to 1 foot), 03-SB-03 (0 to 1 foot), 03-SB-05 (8 to 10 feet), and 03-SB-06 (0 to 1 foot).

- PAHs concentrations did not exceed either the Commercial/Industrial or Excavation Direct Contact SLs in any of the soil samples collected.

- VOCs
  - VOC concentrations above the laboratory method detection limits were reported in 8 of the 17 soil samples; however, the concentrations did not exceed any SLs in any of the soil samples collected.

The soil analytical results are summarized in **Appendix C**, **Table 4.2-1**, of **Attachment 2**.

Groundwater Analytical Results

No Contaminants of Concern (COCs) were present in the groundwater samples collected at concentrations exceeding Groundwater Residential Tap SLs. The groundwater analytical results are summarized in **Appendix C**, **Table 4.2-2**, of **Attachment 2**.

4.2.3 AOC 4: Marble Street Industrial Area

4.2.3.1 Overview

The Marble Street Industrial Area has been the location of industrial facilities since at least 1915. Between 1915 and 1930, industrial occupants included Federal Cement Tile Co., the Prest-O-Lite Co. (a manufacturer of acetylene gas), Standard Oil Co. of Indiana Bulk Oil Yard, Hammond Foundry Co., Champion Corporation (manufacturer of farm machinery and auto bodies), Page & Jones Chemical Co. Inc., and others. This corridor is situated along the north side of the Grand Calumet River, and might also be affected by contaminants associated with the NIPSCO Corporation MGP situated along the south side of the Grand Calumet River.

Planned Project activities in AOC 4 include property acquisition and construction of a maintenance and storage facility.

4.2.3.2 Sample Collection and Analysis

Five borings were advanced at AOC 4 (see **Figure 4.2-3**). Groundwater was encountered between 6 and 8 feet bgs. Two soil samples were collected from each boring: a surface soil sample (0 to 2 feet bgs) and a deeper one at an interval selected based on the results of field screening or likely contaminant pathways. Temporary monitoring wells were constructed at three boring locations to collect groundwater samples for analysis. The soil and groundwater samples were analyzed for VOCs, PAHs, and RCRA metals.

The laboratory analysis found the following exceedances.

Soil Analytical Results

- RCRA metals
  - Of the RCRA metals, arsenic and lead were detected above SLs in five of the nine soil samples collected. Other analyzed metals were not present in concentrations exceeding the applicable standards.
  - Arsenic concentrations exceeded only the MTG SL in four soil samples [04-SB-01 (6 to 8 feet), 04-SB-03 (0 to 1 foot), 04-SB-04 (0 to 1 foot), and 04-SB-05 (0 to 1 foot)].

  - Arsenic and lead concentrations exceeded the Residential Direct Contact SLs in soil sample 04-SB-01 (0 to 1 foot)
  - RCRA metals concentrations did not exceed Commercial/Industrial or Excavation Direct Contact SLs in any of the soil samples collected.
- Polychlorinated piphenyls (PCBs)
  - The concentration of PCB-1254 (Aroclor 1254) in sample 04-SB-02 (6 to 8 feet) exceeded the MTG SL.
  - PCB concentrations did not exceed SLs in any of the remaining eight samples collected.
- PAHs
  - PAH concentrations above the laboratory method detection limits were reported in all but two soil samples; however, only the MTG SL was exceeded in soil samples 04-SB-01 (0 to 1 foot), 04-SB-02 (0 to 1 foot), 04-SB-03 (0 to 1 foot), 04-SB-05 (0 to 1 foot), and 04-SB-05 (6 to 8 feet).
  - PAH concentrations did not exceed Residential, Commercial/Industrial, or Excavation Direct Contact SLs in any of the soil samples collected.
- VOCs
  - VOC concentrations above the laboratory method detection limits were reported in three soil samples [04-SB-01 (6 to 8 feet), 04-SB-02 (0 to 1 foot), and 04-SB-05 (0 to 1 foot)]; however, concentrations did not exceed any of the SLs in soil samples collected.

The soil analytical results are summarized in **Appendix C**, **Table 4.3-1**, in **Attachment 2**.

Groundwater Analytical Results

- RCRA metals
  - Arsenic concentrations exceeded the Groundwater Residential Tap SL in both the filtered and unfiltered groundwater samples taken from boring 04-SB-03. The arsenic concentrations in soil sample 04-SB-03 (0 to 1 foot) exceed MTG SL; therefore, the arsenic in the soil is suspected to be the source of groundwater quality impacts at this location.
  - Lead concentrations exceeded the Groundwater Residential Tap SL in the filtered and unfiltered groundwater samples taken from boring 04-SB-01. The lead concentration in soil sample 04-SB-01 (0 to 1 foot) exceeded MTG SL; therefore, the lead in the soil is suspected to be a source of groundwater quality impacts at these locations.
  - The lead concentration exceeded the Groundwater Residential Tap SL in the unfiltered groundwater sample taken from boring 04-SB-05, but was not detected above the laboratory method detection limit in the filtered groundwater sample. Therefore, the lead concentrations in the unfiltered groundwater sample at 04-SB-05 are likely to be a result of sediments in the groundwater, and are not suspected to represent elevated concentrations of dissolved lead.
- PCBs, PAHs, and VOCs
  - No concentrations of these COCs were detected above laboratory method detection limits in any of the groundwater samples collected.

The groundwater analytical results are summarized in **Appendix C**, **Table 4.3-2**, in **Attachment 2**.

5 Environmental Consequences

The presence of hazardous materials and/or petroleum product releases can adversely affect both the environment and the overall Project. Based on the investigation results discussed in the previous sections, it is likely that the Project would encounter hazardous materials and/or petroleum products during construction and operation.

5.1 Operating-Phase Impacts

5.1.1 No Build Alternative

The No Build Alternative would not encounter any hazardous materials and/or petroleum products, since the Project would not be constructed.

5.1.2 FEIS Preferred Alternative

The Project would include the operation of the proposed North Hammond Maintenance and Storage Facility. The maintenance and storage facility would be used to maintain commuter rail vehicles. Oils, greases, solvents, and other materials for rail vehicle maintenance would be used and stored at the facility. The facility would also generate wastes such as used oil during the course of operation.

NICTD would operate the Project under a health and safety program that includes provisions for the safe handling, storing, and disposing of regulated materials. In doing so, operational impacts regarding regulated materials are protected against.

Restrictive covenants relating to land use and exposure of contaminants to the public might be required during the operation of the Project. Existing contamination might be left in place at concentrations above residential standards, but below commercial/industrial standards on some parcels within the FEIS Preferred Alternative.

5.2 Construction-Related Impacts

Construction activities for the Project could disturb existing hazardous materials and/or petroleum-related contamination in the soil and/or groundwater inside the construction footprint, particularly in the vicinity of identified RECs and CRECs from the Phase I ESA and known contaminated areas identified in the Phase II ESA. Identified RECs or CRECs located outside the construction footprint could still affect the Project, if off-site migration of contaminants has occurred.

5.2.1 No Build Alternative

The No Build Alternative would not encounter any hazardous materials and/or petroleum products, since the Project would not be constructed.

5.2.2 FEIS Preferred Alternative

The FEIS Preferred Alternative would require ground disturbance for bridge piers (elevated track), stations, facilities, utility relocation, and other construction-related activities. Twenty RECs or CRECs were identified along the FEIS Preferred Alternative. Among these sites, five areas were then characterized as AOCs in the Phase II ESA. These sites were prioritized during the NEPA process for further subsurface evaluation, based on requirements of FTA's SOP 19 and the likelihood of property acquisition in the future.

The following sections discuss the known information regarding contamination that could be encountered during Project construction at these sites.

AOC 1: Monon Yard

Site access for the subsurface investigation of this site was not granted by the landowner. This AOC was identified as a CREC in the Phase I ESA and has a restrictive covenant indicating that the site cannot be used for residential purposes. It is likely that soil and/or groundwater contamination could be encountered if this site is developed for the Project.

AOC 2: NIPSCO Corporation MGP Site

Contamination in exceedance of Commercial/Industrial Direct Contact SLs for some PAHs and VOCs were found in the samples collected near the north end of the property. Mercury concentrations in exceedance of the Excavation Direct Contact SL were found in nearly all the surface soil samples collected on site.

AOC 3: Dombrowski & Holmes

The majority of shallow soil samples contained arsenic and lead concentrations that exceeded the Commercial/Industrial Direct Contact SLs. Lead concentrations exceeded the Excavation Direct Contact SL in samples collected at two locations. No COCs were present in the groundwater samples collected at concentrations exceeding Groundwater Residential Tap SLs.

AOC 4: Marble Street Industrial Area

No COCs exceeded Commercial/Industrial or Excavation Direct Contact SLs in the soil samples collected; however, arsenic and lead exceeded Residential Direct Contact SLs for soil at one location and Groundwater Residential Tap SL for groundwater.

AOC 5: Marble Street Dump A, B, and C

Site access for the subsurface investigation of this site was not granted by the landowner. This AOC was identified as a REC in the Phase I ESA. The CERCLIS database listing indicates that the site was discovered as a contaminated site in 1980, and it is also listed in the Brownfields database. Former site uses included manufacturing of agricultural chemicals and sulfuric acid from 1952 to 1982 and use as an open dump for auto fluff, foundry sand, and unknown wastes between 1989 and 1993. It is likely that soil and/or groundwater contamination would be encountered if this site is developed for the Project.

6 Mitigation

6.1 Long-term Operating Effects

The operational impacts of the FEIS Preferred Alternative are expected to be minor. The operation of the proposed maintenance and storage facility could result in additional storage and generation of regulated wastes including oils, greases, solvents, and other waste materials. These items will be disposed of in accordance with state and local guidelines. NICTD will establish procedures and staff training for proper storage and use of hazardous materials and petroleum products.

Long-term operating effects to the public would also be considered minor. Existing contamination might be left in place at concentrations that are below commercial/industrial standards on some parcels within the FEIS Preferred Alternative. Exposure to the public would be further mitigated by the construction of impervious surfaces (e.g. parking lots and structures) as a part of the Project and use of restrictive covenants that would limit certain land uses and/or activities onsite.

6.2 Short-term Construction Effects

For the No Build Alternative, no mitigation measures are needed since construction-related impacts would not occur.

Short-term construction effects for the FEIS Preferred Alternative include addressing contamination identified in the Phase II ESA at AOCs 2, 3, and 4. Concentrations of arsenic, lead, and/or mercury were found in exceedance of the Commercial/Industrial Direct Contact SLs and Excavation Direct Contact SLs. Mercury is a particularly difficult contaminant to segregate during construction. To protect construction workers from exposure, a Contaminated Media Management Plan (CMMP) and Health and Safety Plan (HASP) for the Project will be prepared with special provisions for contaminated media management and worker safety considerations beyond normal construction recommendations. Standard personal protective equipment (PPE) is not considered suitable for the planned construction activities in these areas and will be upgraded to an appropriate level in accordance with OSHA 29 Code of Federal Regulations (CFR) § 1920.120. Construction workers performing excavation or working within the subsurface will be advised of the existing conditions and will be trained per the requirements of OSHA 29 CFR § 1920.120.

Additional coordination of construction activity and mitigation measures will occur at AOC 2 (NIPSCO Corporation MGP site), since the property is undergoing active remediation with engineering controls in place. Disturbance of the protective cap installed by USEPA, located within the Grand Calumet River and along the north side of AOC 2, will be avoided during construction and operation. USEPA, IDEM, and NIPSCO will be consulted regarding construction mitigation measures on site to eliminate or/minimize the spread of existing contamination associated with the property.

Subsurface investigation of AOC 1 and 5 will occur after site access is granted but prior to property acquisition and construction. These sites will be evaluated relative to the original work plan submitted for the Phase II ESA for the Project. Any remediation and construction safety measures needed following the investigation will be incorporated with the construction plans.

Prior to construction, NICTD will coordinate with IDEM and will enroll in the voluntary clean-up program to address areas of known contamination. The results of the Phase II ESA will be used

to determine areas that could require soil removal, restrictive covenants, or other mitigation measures agreed upon with IDEM for the Project.

If previously unidentified hazardous materials and/or petroleum contamination are encountered during construction, the appropriate precautions will be taken to prevent exposure to workers and to minimize the spread of contaminants to the environment. NICTD's CMMP will address any unforeseen contamination that is encountered during construction. The plan will include awareness training and a response plan for engineering and construction crews to properly identify signs of contamination during subsurface activity, regardless of the site's Phase I ESA risk ranking. Engineering and construction crews will be required to immediately stop work and report the apparent contamination to their supervisor, who will take immediate and appropriate action to protect worker and public safety.

Inactive water wells, USTs, or other hazardous materials or wastes could be encountered during Project planning or construction. If present, they will be properly closed and removed in accordance with state and local requirements. Inactive water wells will be closed so as to not provide a conduit for possible groundwater contamination. If a UST is encountered, it will be removed in accordance with applicable regulatory requirements, and confirmation soil sampling will be conducted to determine whether a release occurred. If hazardous materials or wastes are encountered, the appropriate state regulatory agency will be contacted. If site buildings are to be demolished or renovated, asbestos and lead-based surveys will be conducted by a qualified contractor.

7 References

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