3.12 Hazardous Materials

This chapter provides a preliminary identification of known properties that could potentially contain hazardous waste sites or hazardous materials. This chapter analyzes effects of the Recommended Preferred Alternative (RPA) and the Refined RPA on these properties or potentially hazardous sites, including whether contaminated soils could be present within the construction footprint, and whether remediation or additional field analysis would be required. The chapter also analyzes the health and safety effects on construction workers or people who live near hazardous waste sites affected by the RPA and the Refined RPA.

3.12.1 CHANGES TO THIS CHAPTER SINCE THE DEIS

Since the Draft Environmental Impact Statement (DEIS), the following updates have been made to this section:
the discussion was updated to include the impacts from the Refined RPA; and,
information was updated regarding impacts to potential sources/sites of asbestos and lead-based paint.

3.12.2 WHAT ARE HAZARDOUS MATERIALS AND HAZARDOUS WASTE SITES?

What are hazardous materials?

Hazardous materials are defined as any material that has or will have, alone or when combined with other materials, a harmful effect on humans or the natural environment.

Hazardous materials are defined as any material that has or will have, alone or when combined with other materials, a harmful effect on humans or the natural environment. They may be characterized as reactive, toxic, infectious, flammable, explosive, corrosive, or radioactive.[1] Hazardous materials and waste sites are regulated primarily by the Resource Conservation and Recovery Act of 1976 (RCRA), as amended; the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA); and the Superfund Amendments and Reauthorization Act of 1986 (SARA).

Hazardous waste sites are defined as having hazardous materials, generating hazardous waste, or possessing hazardous materials storage tanks. These sites include, but are not limited to, the following:

- Aboveground storage tanks (ASTs), which typically store flammable, combustible liquids.
- Underground storage tanks (USTs), including leaking underground storage tanks (LUSTs), which mostly store petroleum products such as gasoline and diesel fuels.[2]
- Drycleaners, which are prioritized by a tier system that categorizes sites into one of five tiers, designed to identify sites which require immediate action to eliminate actual human exposure or to prevent imminent exposure to contaminants.[3, 4]

[1] RCRA Subtitle C, 40 CFR 251.
[2] SCDHEC *UST Registry Search.* 2013. http://www.scdhec.gov/apps/environment/ustregistry/ (accessed October 2017).
[3] SCDHEC *Solid Waste Facilities Lists.* 2014. http://www.scdhec.gov/Environment/LW/SolidWaste/FacilitiesLists/ (accessed October 2017).

- Hazardous waste generators, which are sites that generate, store, treat or dispose of RCRA hazardous waste.
- Solid waste facilities (landfills), which accept waste material, including municipal solid waste, industrial, construction and demolition debris, and road (soil, asphalt, and concrete) debris.[5]
- Hazardous waste sites considered for cleanup under CERCLA, or Superfund.[6]
- Solid waste or hazardous waste sites that had outstanding compliance-related issues and have been visited by state agencies for any number of reasons including compliance checks, enforcement visits, or emergency response activities. Some sites may be duplicates of sites found in other geographic information system (GIS) layers such as CERCLA, LUST, and UST.[7]
- Any facility that is proposed for or listed on the National Priorities List (NPL), which is a list of CERCLA/Superfund sites of national priority.[8]

3.12.3 WHAT IS THE AFFECTED ENVIRONMENT WITHIN THE PROJECT STUDY AREA?

Based on aerials and topographic maps, in the late 1930s, the primary use within the project study area was rural farmland and woodlands with unpaved dirt roads. By the early 1940s many roads had been realigned and by the early 1950s, dirt roads had become paved. By the mid-1950s, more homes had been constructed and by the mid-1960s, portions of I-26 and I-20 had been constructed. By the early 1980s, exit and entrance ramps had been constructed, surface streets had been widened, shopping centers had been built, and the project study area had become suburban with the appearance of gas stations, hotels, and restaurants. In the 1990s, more shopping centers and residences were constructed. With the exception of some infill development, little has changed in the project study area between 2000 and 2017. Potential hazardous materials sites are located throughout the project study area, including gas stations, dry cleaning facilities, and solid waste generating facilities.

What is the hazardous materials project study area?

The hazardous materials project study area is a ¼-mile buffer around the project study area.

3.12.4 WHAT METHODOLOGY WAS USED FOR ANALYSIS OF HAZARDOUS MATERIALS AND HAZARDOUS SITES?

An assessment of the project study area was performed to determine the presence of potentially hazardous materials or waste sites located within or in proximity to the project study area. To determine whether

[4] SCDHEC. *Drycleaners.* February 2015. http://www.scdhec.gov/Environment/LW/Drycleaners/ (accessed October 2017).
[5] SCDHEC *Solid Waste Facilities Lists.* 2014. http://www.scdhec.gov/Environment/LW/SolidWaste/FacilitiesLists/ (accessed October 2017).
[6] EPA. *Envirofacts.* June 2014. http://www.epa.gov/enviro/facts/cerclis/search.html.
[7] SCDHEC *Solid Waste Facilities Lists.* 2014. http://www.scdhec.gov/Environment/LW/SolidWaste/FacilitiesLists/ (accessed October 2017).
[8] Superfund: National Priorities List. August 2017. https://www.epa.gov/superfund/superfund-national-priorities-list-npl

hazardous materials are present along the project corridor, a project study area for hazardous materials was defined which established a ¼-mile buffer around the project study area (Figures 3.13.1A-D and 3.13.2A-D). From there, a two-step process was completed to determine properties with potential for or known to contain existing environmental contamination.

3.12.4.1 Step 1: Limited Environmental Records Review

Given the extent of the project study area, a limited environmental records review was conducted to identify potential properties of concern relative to soil and/or groundwater contamination that may be in or near the hazardous materials project study area and determine whether further investigation was warranted. The limited environmental records review was completed using publicly-available environmental records databases and GIS data provided by the South Carolina Department of Health and Environmental Control (SCDHEC). Online database records were reviewed to confirm incident reports/closure statuses for sites listed in the AST, drycleaner, and UST (including LUST) database files provided in the SCDHEC GIS files. Additionally, Environmental Data Resources (EDR) reports included a search of the USEPA hazardous materials databases.

What is a recognized environmental condition (REC)?

The presence or likely presence of any hazardous substances or petroleum products in, on, or at a property due to any release to the environment, under conditions indicative of a release to the environment, or under conditions that pose a material threat of a future release to the environment.

Based on the records review, identified properties were categorized utilizing a qualitative risk ranking system for low, medium, and high-risk classifications, as described below.

- **Low-risk** sites had few indications of the potential for the release of hazardous materials. On some occasions, sites that have had a hazardous materials issue in the past, but have been remediated with the approval of the state environmental agency or the U.S. Environmental Protection Agency (USEPA), may qualify as low risk. Examples of low-risk sites include undeveloped or agricultural properties, residential properties, or benign commercial properties such as office buildings, banks, or theaters.
- **Medium-risk** sites had some indications of possible hazardous materials issues. A medium-risk site may appear on a database list as having a permit to handle hazardous materials, but has no recorded violations to date. Additionally, a site could have been interpreted as a medium risk if the records search found no listing, but the site's operations and appearance may indicate a hazardous materials concern, such as a facility with visible surface staining. Examples of medium-risk sites include auto-repair garages, welding shops, or vacant manufacturing facilities with no listing in the environmental database report.
- **High-risk** sites had a high potential for releasing hazardous materials to the soil or groundwater, or have a recorded release of hazardous materials. Examples of high-risk sites include current service stations, violation sites listed in the environmental database report, or sites with known release incidents (such as the site of a train derailment with an associated hazardous materials release).

3.12.4.2 Step 2: Phase I Environmental Site Assessments

After high-risk sites were identified during the limited environmental records review, a site-specific Phase I Environmental Site Assessment (ESA) was conducted for each property (incorporated by reference and available upon request). The Phase I ESAs were conducted in accordance with the American Society for Testing and Materials (ASTM) *ASTM E1527-13, Standard Practice for Environmental Site Assessments: Phase I Site Assessment Process* to identify, to the extent feasible, RECs in connection with the subject properties. ASTM 1527-13 defines a REC as the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property due to any release to the environment, under conditions indicative of a release to the environment, or under conditions that pose a material threat of a future release to the environment.

The Phase I ESAs consisted of review of reasonable ascertainable SCDHEC records for the subject properties as well as records pertaining to properties within the minimum search distances as defined in ASTM 1527-13, a review of available current and past aerial photographs, EDR reports for the properties, and a site reconnaissance. Interviews with owners, operators, and/or occupants were not conducted. Interview information required for the Phase I ESA was gathered from interviews with government officials, where applicable and the lack of owner/operator interviews was noted as a data gap in the Phase I ESAs to be compliant with ASTM 1527-13 standards. Published geological information and site observations were utilized to estimate likely surficial and subsurface containment migration pathways. Recommendations were made as to the need for additional investigations, where applicable. The need for additional investigations is dependent on the proximity of the property to the alternatives. Contaminants may travel laterally in the subsurface; therefore, for the impacts assessment, a 200-foot-wide buffer is used as a basis for determining the potential for contamination.

3.12.4.3 What hazardous materials and hazardous waste sites exist in the project study area?

Under step 1 of the above methodology, 224 properties with potential for environmental contamination concerns were identified in the hazardous materials project study area. Of those, 145 were classified as low-risk sites, 42 were classified as medium-risk sites, and 33 were classified as high-risk sites. To confirm the presence and location of the sites, a visual reconnaissance, which consisted of a windshield survey from public roadways and photographic documentation, was performed for the 33 sites identified as high-risk within the hazardous materials project study area.

Based on the identification of active high-risk sites, Phase I ESAs described in Step 2 above were completed in accordance with ASTM International Practice E1527-13 for 30 of the 33 high-risk sites. Three properties were eliminated from further evaluation due to duplication across databases and inaccurate site and parcel information.

The majority of the 30 high-risk sites in the hazardous materials project study area are active or former gas stations containing LUSTs. Other sites include active or former drycleaners, solid waste generating facilities, a

hospital with USTs, and an active amusement park with USTs. Details about each site can be found in the Phase I ESAs incorporated by reference.

Table 3.12-1 Types of High Risk Sites In the Hazardous Materials Project Study Area

Site type	Number of sites
LUST/UST	24
Solid waste processing	2
Drycleaner	4
Total	**30**

Source: SCDHEC UST Registry Search; SCDHEC drycleaners, SCDHEC solid waste facilities lists.

Asbestos and lead-based paint assessments were completed for the nine existing bridges within the Carolina Crossroads corridor including:

- I-26 Bridge over I-20
- I-26 Westbound Bridge over I-126
- I-26 Westbound Bridge over I-26 Eastbound
- I-26 Westbound bridge to Bush River Road
- Bush River Road Bridge over I-26
- Colonial Life Boulevard Eastbound Bridge over Gracern and I-126
- Colonial Life Boulevard Westbound bridge over Gracern
- Broad River Bridge over I-20
- Browning Road Bridge over I-20

The purpose of the assessments was to identify asbestos-containing materials and lead-based paint coatings associated with the structures prior to renovation or demolition activities. The asbestos assessment was performed in general accordance with SCDHEC Regulation 61-86.1, *Standards of Performance for Asbestos Projects,* effective May 27, 2011. Painted surfaces associated with the bridge structure were considered suspect and analyzed for lead content. Painted surfaces exceeding the SCDHEC disposal criteria of 0.7 milligrams per square centimeter (mg/cm2) were considered lead-based paint for the purpose of the assessments.

3.12.5 HOW WOULD THE ALTERNATIVES IMPACT HAZARDOUS MATERIALS?

3.12.5.1 No-Build Alternative

The no-build alternative would not impact sites with potential hazardous materials or contamination.

3.12.5.2 RPA and Refined RPA

Overall, the proposed Carolina Crossroads I-20/26/126 Corridor Improvement Project would directly impact properties with potential hazardous materials or contamination.

Construction of the RPA or the Refined RPA would require right-of-way (ROW) acquisition, primarily around existing interchanges. The amount of ROW required would vary somewhat depending on the proposed interchange configurations, and would result in impacts to properties with potential hazardous materials or contamination, as shown in Table 3.12-2. These impacts are calculated by measuring the distance from the subject property boundary based on the county parcel tools to the footprints of the RPA and Refined RPA, which are based on the outermost construction limit or ROW. The subject properties are considered affected if they are directly overlapped by the footprint or within a 200-foot-wide buffer of the footprint of the RPA or the Refined RPA. Consideration of buffer zones is important because contaminants may travel laterally in the subsurface.

Of the 30 high-risk sites, 18 properties are within 200 feet of the RPA or the Refined RPA. Of these, 12 properties would be directly affected, and six properties are directly adjacent or hydrologically downstream, as noted in bold in Table 3.12-2. Each property is discussed in detail in the site-specific Phase I ESAs incorporated herein by reference.

No asbestos was identified on the aforementioned bridges, but transite asbestos (i.e., asbestos cement) telephone ducts are located beneath the Broad River Road bridge over I-20. Additionally, lead-based paint was identified on the steel foot plates on the following bridges:

- I-26 Bridge over I-20
- I-26 Westbound bridge to Bush River Road
- I-26 Westbound Bridge over I-126
- Broad River Bridge over I-20

Details about each site can be found in the Asbestos and Lead-Based Paint Assessments incorporated by reference and available upon request. Each of these bridges are located with the RPA and the Refined RPA.

Table 3.12-2 Potentially Affected High-Risk Sites by the RPA and the Refined RPA

Property identification number (see figures)	Parcel number	Property address	Facility name	Description/REC	Distance from the RPA and Refined RPA
1	R05916-10-01	**1204 Bush River Road; Columbia, SC 29210-7520**	**Vacant gas station**	**2 RECs from LUST releases**	**Direct impact**
2	R05916-11-01	**1203 Bush River Road; Columbia, SC 29210**	**Sunoco gas station**	**2 RECs from LUST releases**	**Direct impact**
3	R07402-03-01	**2116 Broad River Road; Columbia, SC 29210**	**Vacant gas station (former Sheppards Texaco)**	**5 RECs from LUST releases**	**Direct impact**
4	R07402-03-02	**2108 Broad River Road; Columbia, SC 29210**	**Vacant gas station/convenience store**	**5 RECs from LUST releases**	**Direct impact**
5	R07402-04-14	**2121 Broad River Road; Columbia, SC 29210**	**Jiffy Lube oil service station**	**5 RECs from LUST releases**	**Direct impact**
6	R07402-02-02	**2220 Broad River Road; Columbia, SC 29210-6730**	**Circle K gas station**	**2 RECs from LUST releases**	**Direct impact**
7	R07402-02-01	**2224 Broad River Road; Columbia, SC 29210-6730**	**North American Title Loans (former Speedway gas station)**	**2 RECs from LUST releases**	**Direct impact**
8	002898-03-004	**477 Piney Grove Road; Columbia, SC 29210 (Piney Grove Road @ I-26)**	**Vacant lot/former Gulf Service Station**	**1 REC from past LUST release**	**Direct impact**
9	002898-03-014	**495 Piney Grove Road; Columbia, SC 29210**	**Spinx gas station**	**1 REC from past LUST releases**	**Direct impact**
10	R06011-01-01	**800 St Andrews Road; Columbia, SC 29210-5814**	**Exxon gas station**	**2 RECs from past LUST releases**	**Direct impact**

Property identification number (see figures)	Parcel number	Property address	Facility name	Description/REC	Distance from the RPA and Refined RPA
11	003697-02-046	**742 St Andrews Road; Columbia, SC 29210**	**Best Catch Seafood and One Hour Martinizing drycleaner**	**1 REC from past release from drycleaner**	**Direct impact**
12	R04009-01-05	**7710 Broad River Road; Irmo, SC 29063**	**Gas station under construction/former gas station**	**2 RECs from LUST releases**	**Direct impact**
13	R05916-08-01	**830 Bush River Road; Columbia, SC 29210-7515**	**Citgo Express Zone 2 gas station**	**2 RECs from LUST releases**	**~<5 feet east of the alternatives (along ROW boundary)**
14	002898-01-004	**609 Giles Ct.; Columbia SC 29210**	**Giles Auto Service**	**1 REC from past LUST release**	**~35 feet west of the alternatives**
15	003697-02-051	**2201 Bush River Road; Columbia, SC 29210**	**Circle K gas station**	**1 REC from past LUST release**	**~15 feet north of the alternatives**
16	002899-04-050	**775 St Andrews Road; Columbia, SC 29210**	**BP gas station**	**1 REC from past LUST release**	**~90 feet north of the alternatives**
17	003697-07-036	**1900 Bush River Road; Columbia, SC 29210**	**Marathon (Express Lotto) gas station**	**1 REC from LUST release**	**~150 feet east of the alternatives**
18	003697-05-013	**1301 Bush River Road; Columbia, SC 29210**	**City Fuel & Food Speedway**	**1 REC from past LUST release**	**~200 feet northwest of the alternatives**
19	R04009-02-14	7735 Broad River Road; Irmo, SC 29063	Circle K BP gas station	1 REC from LUST release;	~700 feet southwest of the alternatives
20	002899-04-025	637 St Andrews Road; Columbia, SC 29210	Speedway gas station	1 REC from active LUST release	~715 feet west of the alternatives
21	003697-09-001	100 Independence Ave.; Columbia, SC 29210	C.R Jackson Construction (asphalt production)	4 RECs from past LUST release, a solid waste landfill, and ASTs.	~1,025 feet southeast of the alternatives

Property identification number (see figures)	Parcel number	Property address	Facility name	Description/REC	Distance from the RPA and Refined RPA
22	003697-01-001	538 St Andrews Road; Columbia, SC 29210	Shell gas station	1 REC from active LUST release	~1,475 feet west of the alternatives
23	002899-04-041	570 St. Andrews Road; Columbia, SC 29210	Dutch Cleaners & Laundry (Richardson Plaza Shopping Center)	1 REC from past release from drycleaner	~1,550 feet west of the alternatives
24	004597-03-026	2249 Sunset Blvd; West Columbia, SC 29169-4713	Sunset Court Shopping Center	2 RECs from past LUST release and former drycleaner release	~2,550 feet southeast of the alternatives
25	004597-09-029	2990 Sunset Blvd; Columbia, SC 29169	Mobil Scotchman gas station	1 REC from past LUST release	~2,715 feet west of the alternatives
26	004674-01-024	2250 Sunset Blvd; West Columbia, SC 29169	Westland Square Shopping Center	1 REC from past drycleaner release	~2,835 feet southeast of the alternatives
27	004599-10-019	105 Corporate Blvd; West Columbia, SC 29169-4609	Vacant former Purolator Courier Company (freight forwarder)	1 REC from active LUST release	~4,275 feet southeast of the alternatives
28	R05005-01-04	140 Parkridge Drive; Columbia, SC 29212	Frankie's Fun Park (amusement park)	No RECs	~65 feet west of Selected Alternative
29	004597-09-007	2720 Sunset Blvd; West Columbia, SC 29169-0000	Lexington Medical Center	No RECs	~550 feet west of the alternatives
30	003698-03-069	100 Rich-Lex Drive; Lexington, SC 29072	Crandall Corporation (solid waste and RCRA generating station)	No RECs	~975 feet west of the alternatives

Note: Bold text indicates site may be directly affected by the RPA and the Refined RPA, or directly adjacent or hydrologically downstream of the RPA and the Refined RPA (within 200 feet of footprint).

3.12.5.3 Would the RPA and the Refined RPA impact hazardous waste sites?

As shown in Table 3.12-2, the RPA and the Refined RPA would potentially affect 18 properties with potential hazardous materials or contamination, including 11 active gas stations or auto service stations, 6 former gas stations, and 1 drycleaner with active or past chemical leaks. Each of these 18 properties are located either within the RPA and the Refined RPA footprint or within a 200-foot-wide buffer around the footprints. Twelve properties are within the RPA and the Refined RPA footprints and six properties are within 200 feet of the RPA and Refined RPA footprints and would potentially be affected by them. The remaining high-risk sites are either over 700 feet away from the RPA and the Refined RPA and/or do not contain a REC and, therefore, would not be affected. Figure 3.12.1A-D shows the 30 high-risk sites in relation to the RPA and the Refined RPA within the hazardous materials project study area.

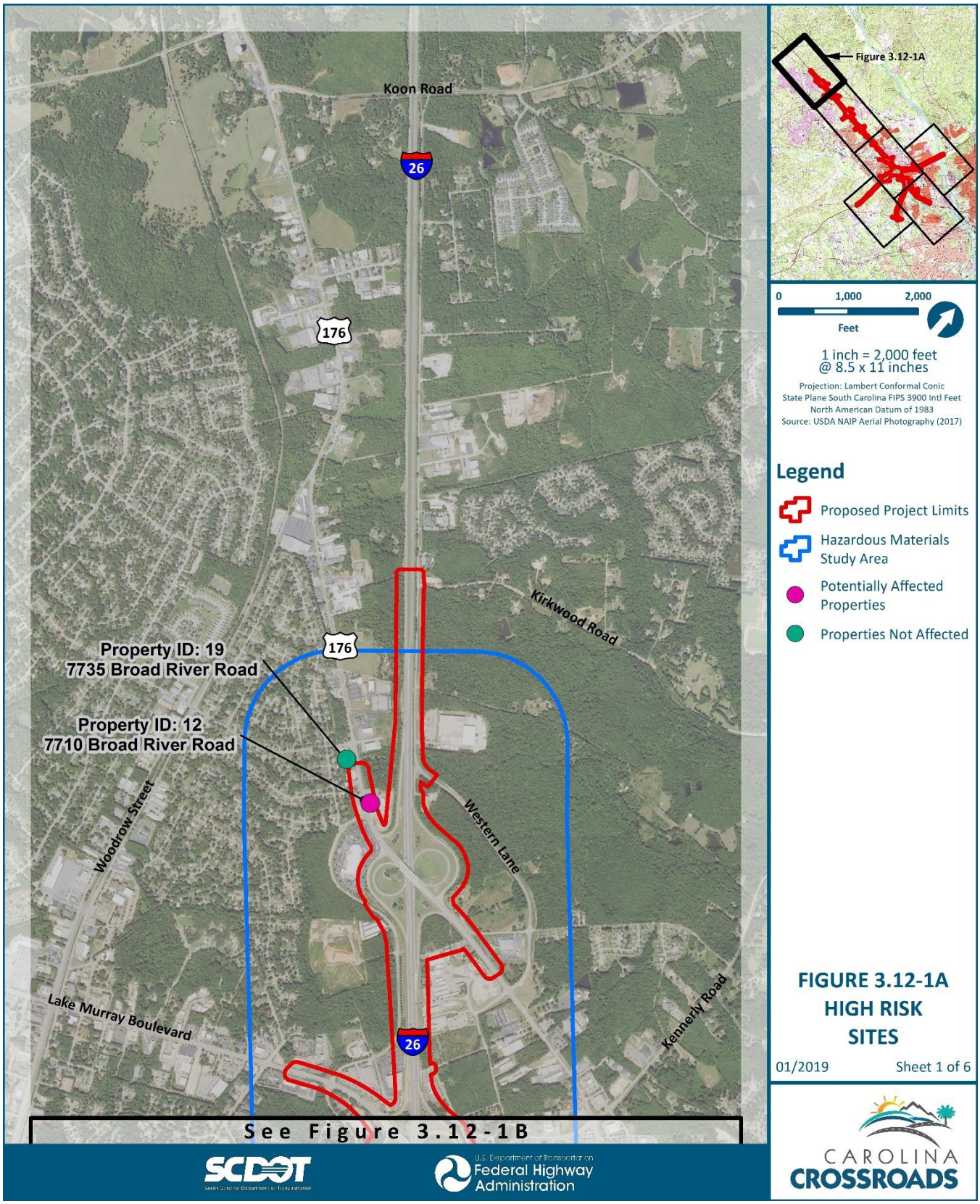
Would the RPA and the Refined RPA impact hazardous waste sites?

The RPA and the Refined RPA would potentially impact 18 sites with potential hazardous materials contamination.

Existing bridge structures containing asbestos and lead-based paint would be impacted by the RPA and the Refined RPA, including:

- I-26 Bridge over I-20 (lead-based paint)
- I-26 Westbound bridge to Bush River Road (lead-based paint)
- I-26 Westbound Bridge over I-126 (lead-based paint)
- Broad River Bridge over I-20 (transite asbestos and lead-based paint)

Overall, effects to hazardous waste sites are expected from the RPA and the Refined RPA. Therefore, both alternatives could result in health impacts to construction workers or the public from hazardous waste sites.


Koon Road
26
176
Kirkwood Road
176
Property ID: 19
7735 Broad River Road
Property ID: 12
7710 Broad River Road
Woodrow Street
Western Lane
Lake Murray Boulevard
26
Kennerly Road
See Figure 3.12-1B
Figure 3.12-1A
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Feet
1 inch = 2,000 feet
@ 8.5 x 11 inches
Projection: Lambert Conformal Conic
State Plane South Carolina FIPS 3900 Intl Feet
North American Datum of 1983
Source: USDA NAIP Aerial Photography (2017)
Legend
Proposed Project Limits
Hazardous Materials Study Area
Potentially Affected Properties
Properties Not Affected
FIGURE 3.12-1A
HIGH RISK SITES
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Federal Highway Administration
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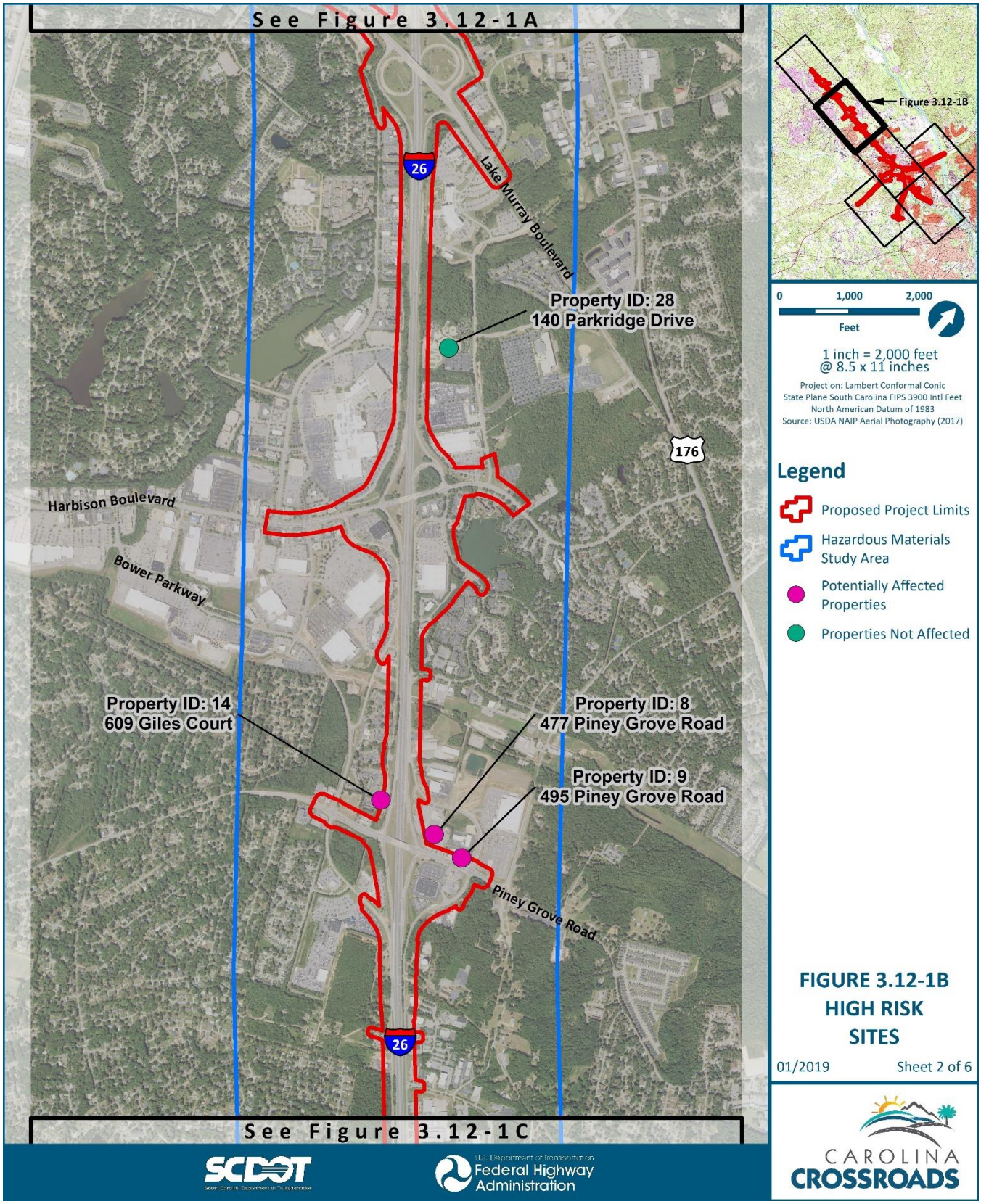
See Figure 3.12-1A
26
Lake Murray Boulevard
Property ID: 28
140 Parkridge Drive
176
Harbison Boulevard
Bower Parkway
Property ID: 14
609 Giles Court
Property ID: 8
477 Piney Grove Road
Property ID: 9
495 Piney Grove Road
Piney Grove Road
26
See Figure 3.12-1C
Figure 3.12-1B
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1 inch = 2,000 feet
@ 8.5 x 11 inches
Projection: Lambert Conformal Conic
State Plane South Carolina FIPS 3900 Intl Feet
North American Datum of 1983
Source: USDA NAIP Aerial Photography (2017)
Legend
Proposed Project Limits
Hazardous Materials Study Area
Potentially Affected Properties
Properties Not Affected
FIGURE 3.12-1B
HIGH RISK SITES
01/2019
Sheet 2 of 6
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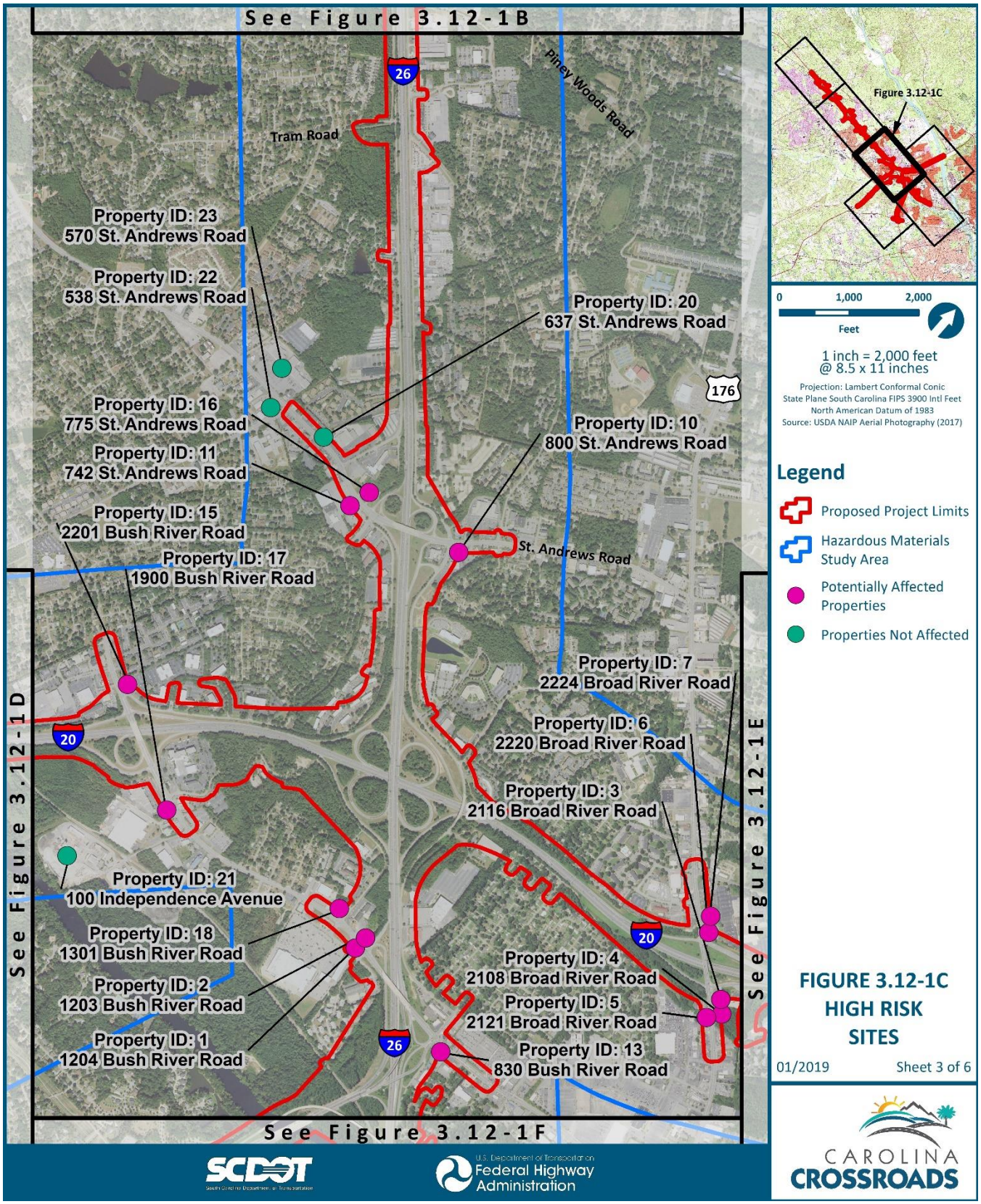
Federal Highway Administration
CAROLINA CROSSROADS


See Figure 3.12-1B
See Figure 3.12-1D
See Figure 3.12-1E
See Figure 3.12-1F
Tram Road
Piney Woods Road
St. Andrews Road
Property ID: 23
570 St. Andrews Road
Property ID: 22
538 St. Andrews Road
Property ID: 20
637 St. Andrews Road
Property ID: 16
775 St. Andrews Road
Property ID: 10
800 St. Andrews Road
Property ID: 11
742 St. Andrews Road
Property ID: 15
2201 Bush River Road
Property ID: 17
1900 Bush River Road
Property ID: 7
2224 Broad River Road
Property ID: 6
2220 Broad River Road
Property ID: 3
2116 Broad River Road
Property ID: 21
100 Independence Avenue
Property ID: 18
1301 Bush River Road
Property ID: 2
1203 Bush River Road
Property ID: 1
1204 Bush River Road
Property ID: 4
2108 Broad River Road
Property ID: 5
2121 Broad River Road
Property ID: 13
830 Bush River Road
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20
176
Figure 3.12-1C
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1 inch = 2,000 feet
@ 8.5 x 11 inches
Projection: Lambert Conformal Conic
State Plane South Carolina FIPS 3900 Intl Feet
North American Datum of 1983
Source: USDA NAIP Aerial Photography (2017)
Legend
Proposed Project Limits
Hazardous Materials Study Area
Potentially Affected Properties
Properties Not Affected
FIGURE 3.12-1C
HIGH RISK SITES
01/2019
Sheet 3 of 6
CAROLINA CROSSROADS
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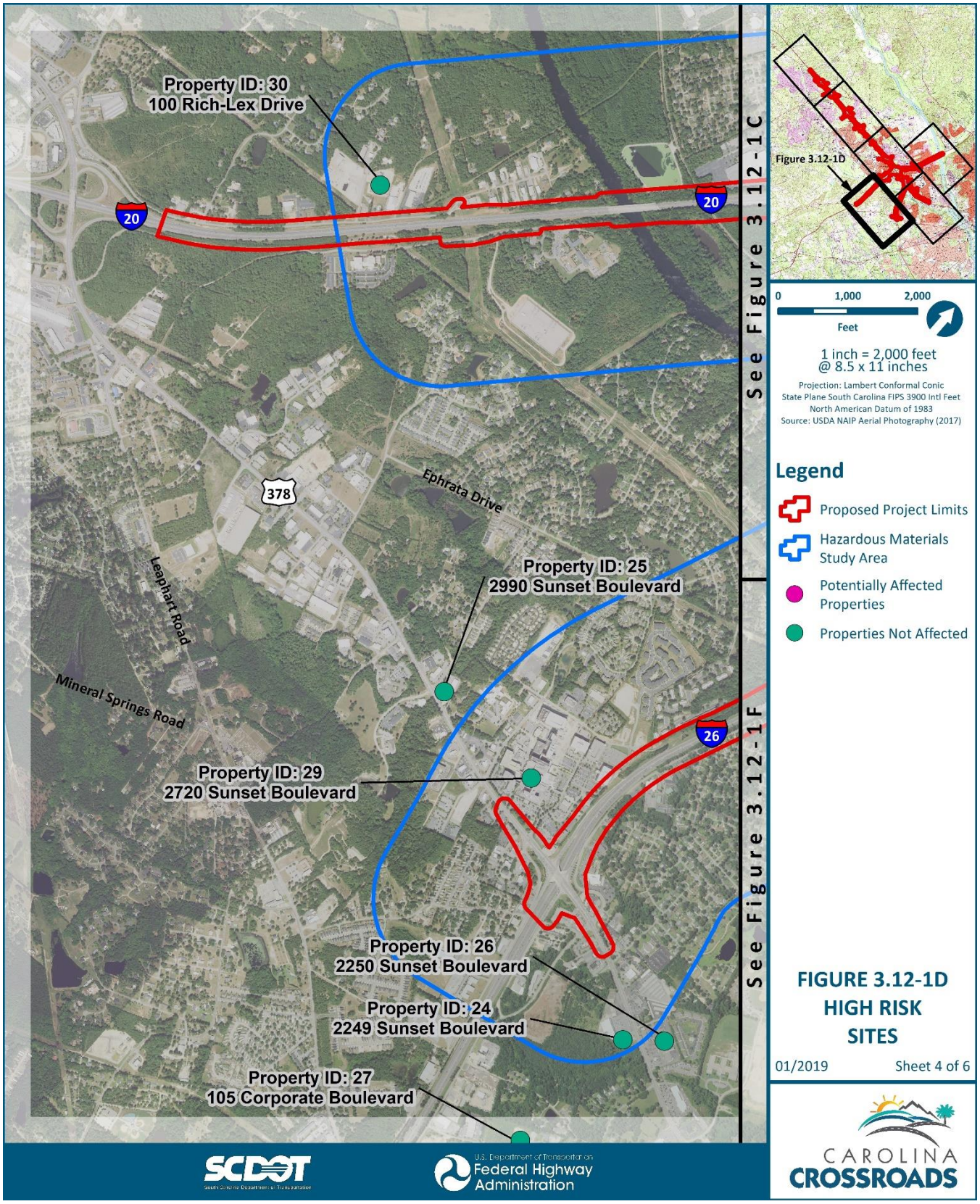
Property ID: 30
100 Rich-Lex Drive
Property ID: 25
2990 Sunset Boulevard
Property ID: 29
2720 Sunset Boulevard
Property ID: 26
2250 Sunset Boulevard
Property ID: 24
2249 Sunset Boulevard
Property ID: 27
105 Corporate Boulevard
20
20
378
26
Ephrata Drive
Leaphart Road
Mineral Springs Road
See Figure 3.12-1C
See Figure 3.12-1F
Figure 3.12-1D
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1 inch = 2,000 feet
@ 8.5 x 11 inches
Projection: Lambert Conformal Conic
State Plane South Carolina FIPS 3900 Intl Feet
North American Datum of 1983
Source: USDA NAIP Aerial Photography (2017)
Legend
Proposed Project Limits
Hazardous Materials Study Area
Potentially Affected Properties
Properties Not Affected
FIGURE 3.12-1D
HIGH RISK SITES
01/2019
Sheet 4 of 6
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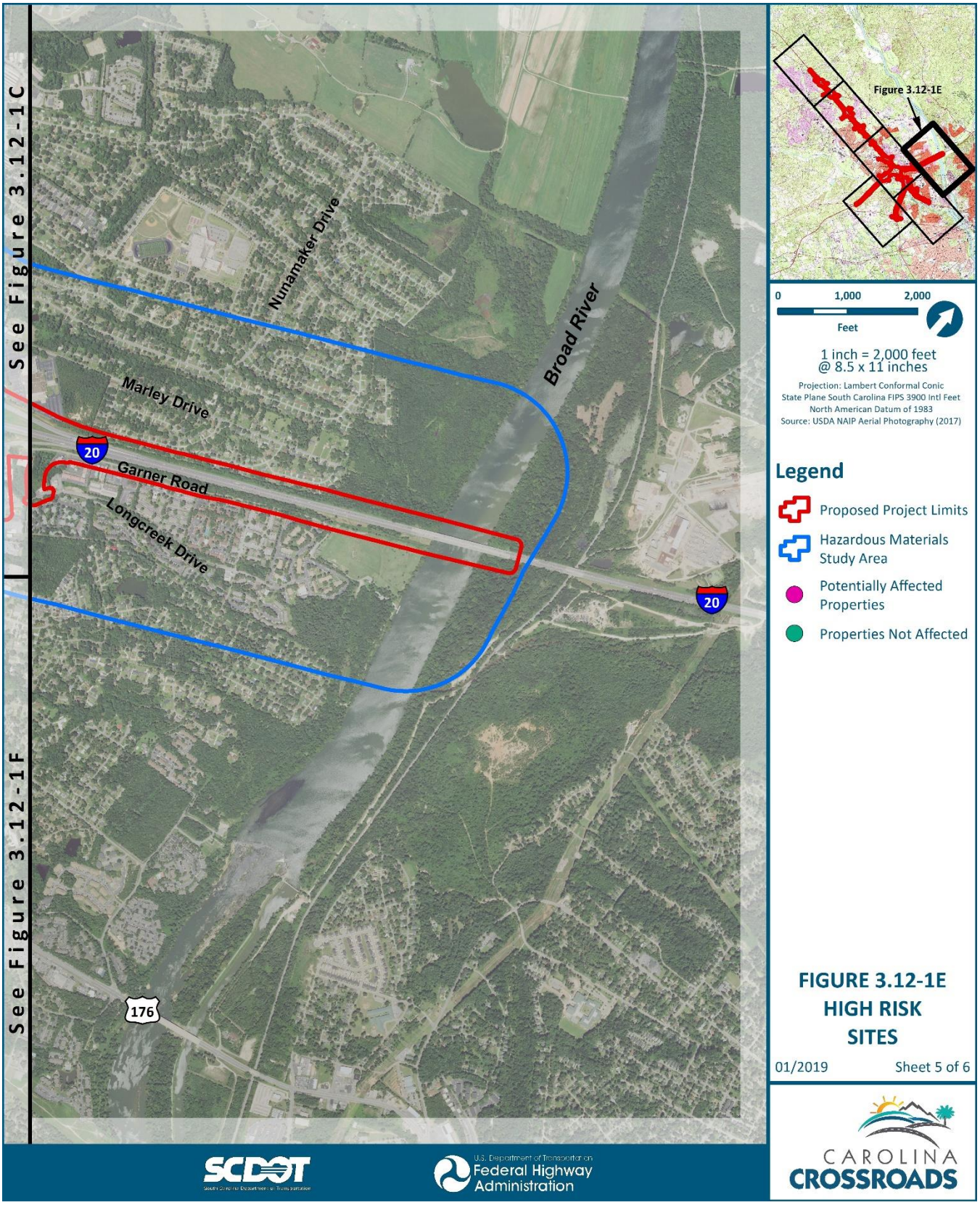
See Figure 3.12-1C
See Figure 3.12-1F
Numamaker Drive
Broad River
Marley Drive
Garner Road
Longcreek Drive
20
20
176
Figure 3.12-1E
0
1,000
2,000
Feet
1 inch = 2,000 feet
@ 8.5 x 11 inches
Projection: Lambert Conformal Conic
State Plane South Carolina FIPS 3900 Intl Feet
North American Datum of 1983
Source: USDA NAIP Aerial Photography (2017)
Legend
Proposed Project Limits
Hazardous Materials Study Area
Potentially Affected Properties
Properties Not Affected
FIGURE 3.12-1E
HIGH RISK SITES
01/2019
Sheet 5 of 6
SCDOT
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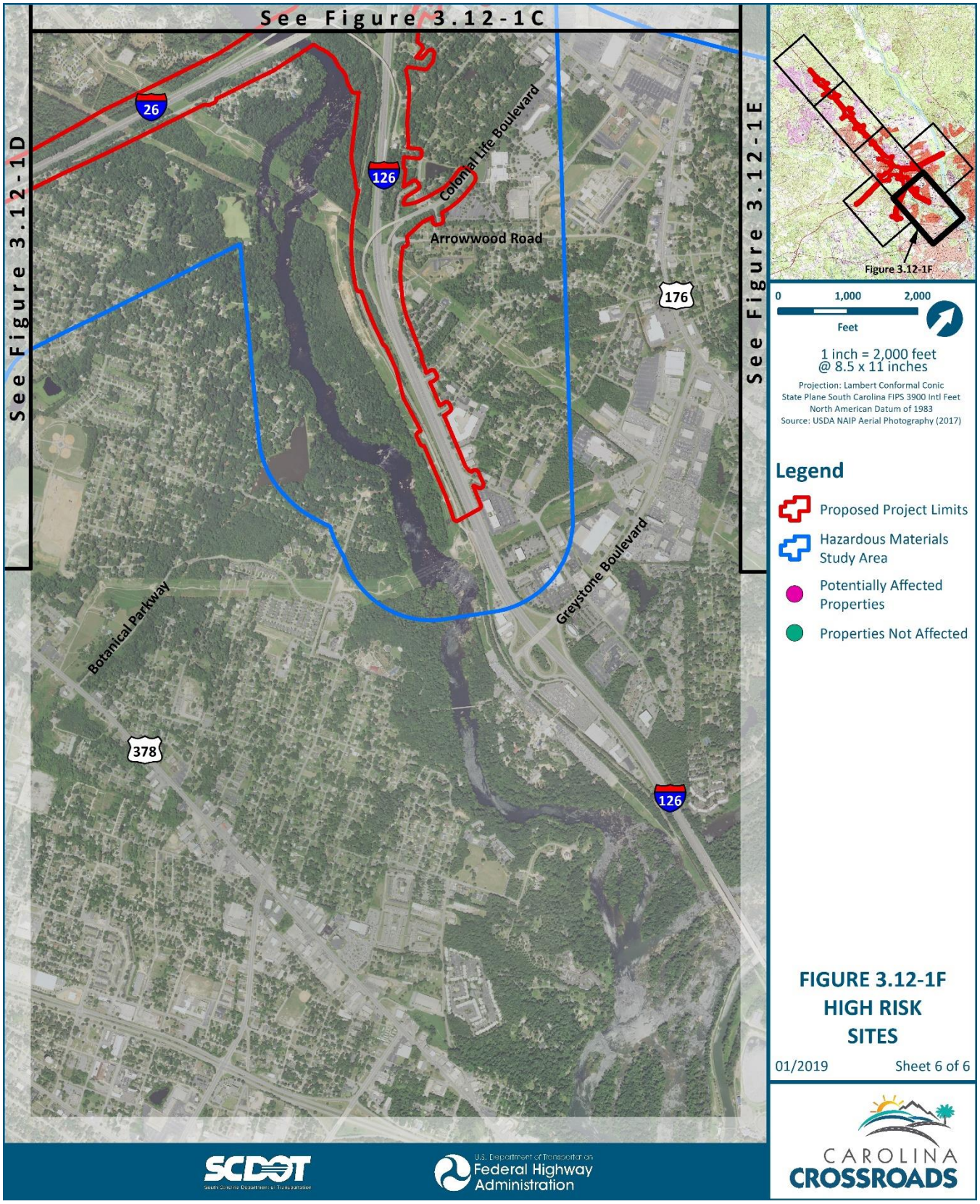
Federal Highway Administration
CAROLINA CROSSROADS


See Figure 3.12-1C
See Figure 3.12-1D
See Figure 3.12-1E
26
126
Colonial Life Boulevard
Arrowwood Road
176
Botanical Parkway
Greystone Boulevard
378
126
Figure 3.12-1F
0
1,000
2,000
Feet
1 inch = 2,000 feet
@ 8.5 x 11 inches
Projection: Lambert Conformal Conic
State Plane South Carolina FIPS 3900 Intl Feet
North American Datum of 1983
Source: USDA NAIP Aerial Photography (2017)
Legend
Proposed Project Limits
Hazardous Materials Study Area
Potentially Affected Properties
Properties Not Affected
FIGURE 3.12-1F
HIGH RISK SITES
01/2019
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SCDOT
U.S. Department of Transportation
Federal Highway Administration
CAROLINA CROSSROADS

3.12.6 HOW WOULD HAZARDOUS MATERIALS IMPACTS BE MITIGATED?

When possible, avoidance or minimization is the primary mitigation for identified hazardous materials sites. It is SCDOT's practice to avoid the acquisition of USTs and other hazardous materials, if possible. The site-specific Phase I ESAs recommend a Phase II ESA be performed prior to ground disturbance for 27 of the 30 properties due to the presence of RECs (see Table 3.13.2). The 27 properties recommended for Phase II ESAs were analyzed in comparison to proximity to the footprints of the reasonable alternatives and based on the methodology above. Of those 27 properties, 18 are within the 200-foot buffer of the RPA footprint and the Refined RPA footprint and would be potentially affected. Based on lack of proximity to the RPA footprint and the Refined RPA footprint or lack of RECs, the other nine properties would not require additional investigation.

Prior to construction, the project contractor would perform Phase II ESAs on the properties identified within the footprint, including the subject properties, and/or on the adjoining properties or the ROW. Ultimately, the Phase II ESAs would include environmental sample collection (e.g. soil, soil gas, and groundwater), specifically, in areas where a potential for disturbance of soil and/or groundwater exists. Asbestos Containing Material and/or Lead Based Paint testing would be assessed separately as it outside of ASTM guidelines and only if deemed necessary on a site-specific account.

For dry cleaning sites, the sampling strategy for the Phase II ESA would follow a logical progression from the information gathered during the Phase I ESA records research. This information would be used to develop a site-specific sampling plan with regards to the anticipated location(s) of potential contamination within the areas of disturbance during construction, as well as to establish sampling locations, depths, and media to be sampled. Samples would be analyzed for those parameters associated with dry cleaning contaminants (i.e. cis-1,2, dichloroethene, tetrachloroethene, trichloroethene, vinyl chloride, trans-1,2-dichloroethene), as noted in the Phase I ESAs of the subject properties.

For UST/LUST sites, the sampling strategy for the Phase II ESA would follow the field screening and sampling procedures, as directed in the SCDHEC Underground Storage Tank Programs Quality Assurance Program Plan (QAPP) to determine the presence of hydrocarbons. Samples should be analyzed for those parameters listed in the QAPP and those typical of a petroleum release, as noted in the research of the subject Property. If relocation or removal of an AST or UST is necessary, the removal/relocation would be addressed in accordance with the applicable laws and regulation of the State of South Carolina.

Materials containing asbestos and lead-based paints would be managed and disposed of properly at an appropriate permitted facility to minimize impacts during the construction and cleanup. Activities would be monitored by a professional that is certified in the removal, handling and disposal of lead-based paint and/or asbestos-containing materials.

A hazardous waste management plan would be prepared for the handling of hazardous materials during construction, and an on-site health and safety plan would be developed for construction activities to protect human health (i.e. workers, residents, recreation and trespassers) and the environment within proximate to the site. The hazardous waste management plan would also state that disposal of waste materials would be

disposed of in approved landfills. Should previously unknown contamination be discovered as the project moves forward, the contamination (contaminated soil and/or groundwater within the right-of-way) would be evaluated and addressed in accordance with regulatory requirements prior to the initiation of construction activities at the site. If soils that appear to be contaminated are encountered during construction, SCDHEC would be informed and measures would be employed to avoid, reduce, or otherwise mitigate environmental impacts associated with the proposed project. Tanks and other hazardous materials would be tested and removed and/or treated in accordance with USEPA and SCDHEC requirements. Cost of necessary remedial actions would be considered during the right-of-way appraisal and acquisition process.

A spill prevention, control, and countermeasures (SPCC) plan would be prepared in accordance with 40 CFR 112, for the handling of oils or oil-based products during construction to prevent a discharge of oil into navigable waters.