

3. Existing Conditions and Environmental Consequences

3.1 Land Use

The purpose of this chapter is to discuss existing land uses, project consistency with local plans that address land use, and future growth trends to assess potential impacts resulting from the no-build and reasonable alternatives. Using comprehensive planning and zoning processes, Lexington and Richland Counties (and municipalities in the area) identify goals in their land use plans which serve as a basis for developing and modifying zoning ordinances, providing the regulatory authority to approve development. Local plans are then integrated into regional transportation plans. When combined, both local and regional goals can be established to determine logical growth and development for an area. Maintaining a regional transportation network goes hand-in-hand with, not only land use planning, but the overall planning efforts of local, regional, and state entities.

3.1.1 WHO IS RESPONSIBLE FOR LAND USE PLANS WITHIN THE PROJECT STUDY AREA?

Local jurisdictions, including Richland and Lexington Counties, the City of Columbia, and the Central Midlands Council of Governments (CMCOG), are responsible for land use planning within the proposed Carolina Crossroads I-20/26/126 Corridor Improvement Project (Carolina Crossroads). These entities address existing and future land use in comprehensive plans and other planning documents. The public has the opportunity to participate in the development of these documents before they are approved. As a note, the CMCOG also serves as the Metropolitan Planning Organization (MPO) responsible for transportation planning in the Columbia Area Transportation Study (COATS); the COATS MPO boundary encompasses much of Lexington and Richland Counties, along with small portions of other adjoining Counties.

3.1.2 WHAT METHODOLOGY WAS USED FOR ANALYSIS OF LAND USE?

The following questions were used to develop methodologies to guide the land use analysis:

- **What is the land use project study area?**

Methodology: The Federal Highway Administration (FHWA) guidance document entitled Community Impact Assessment: A Quick Reference for Transportation¹ was utilized to identify an overall project study area and communities where land use could be affected by the project. This project study area is discussed in Section 3.1.3.

- **What is the affected environment in the project study area?**

Methodology: Geographic information system (GIS) data layers, 2013 and 2015 digital aerial photography, 2015 field visit notes, and plans and policies for the area were gathered and used to identify and summarize existing land uses within the overall project study area, communities, and at

¹ Federal Highway Administration (FHWA). 1996. Community Impact Assessment: A Quick Reference for Transportation. Office of Environment and Planning. Prepared by North Carolina DOT, California DOT, Florida DOT, Maine DOT, Columbus, GA Department of Community & Economic Development, Maryland State Highway Administration, Arkansas State Highway & Transportation Department, and Illinois DOT in consultation with Apogee Research, Inc. and Parsons Brinckerhoff Quade Douglas, Inc.

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existing interchanges. In order to describe the land uses around the interchanges, a half mile buffer (one mile in diameter) was centered on each existing interchange. The half mile buffer encompasses the existing interchange footprints and captures the direct impacts related to modified interchanges. The vast majority of direct impacts are within the half mile buffers. Indirect effects are expected to be minimal, but are discussed in Section 3.15.

- **Is the proposed project consistent with area plans?**

Methodology: The regional transportation plans and local land use plans (listed in Section 3.4, Table 3.2) were reviewed to determine whether the proposed project would be in alignment with the goals of the plans.

- **What are the growth trends within the project study area?**

Methodology: The growth and development trends are discussed in the context of the project study area communities and within the interchange areas. Proposed and approved developments were identified through local plans and desktop research.

- **What are the environmental consequences?**

Methodology: Analysis of the previous questions provided an understanding of the potential impacts of the no-build alternative and reasonable alternatives on land use, and whether these alternatives would be able to accommodate projected growth and planned development while avoiding, to the extent practicable, negative land use impacts in the project study area. To evaluate the potential impacts to land use from the reasonable alternatives, the types of land use within the reasonable alternatives' anticipated right-of-way limits were assessed. Direct land use impacts were identified at the corridor level (by reasonable alternative) and at the interchange level. In addition, each reasonable alternative's consistency with local and regional land use plans was assessed.

What is the land use project study area?

The land use project study area is the area where existing and planned land use patterns could be affected by the proposed project.

3.1.3 WHAT IS THE LAND USE PROJECT STUDY AREA?

The project limits for the proposed Carolina Crossroads project encompass I-20 from the Saluda River to the Broad River, I-26 from Broad River Road to US-378 (Sunset Boulevard), and I-126 from I-26 to Colonial Life Boulevard.

For the land use project study area, the community boundaries previously developed in the 2016 Community Characterization Report² were used for continuity of land use related discussions. This project study area consists of seven defined communities (Columbiana, Seven Oaks, Saluda, Riverbanks, Harbison, St. Andrews, and

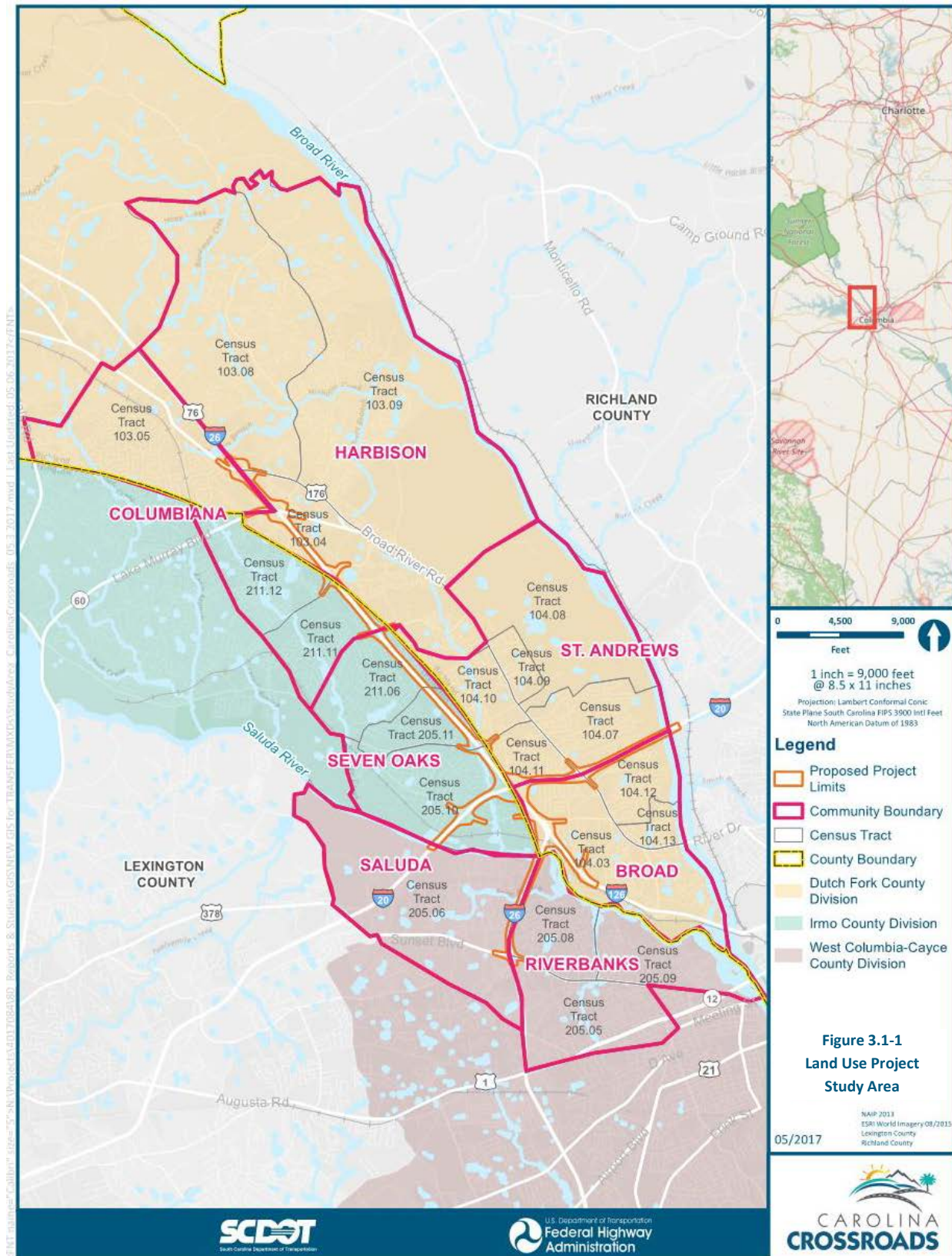
² South Carolina Department of Transportation (SCDOT). 2016. Carolina Crossroads I-20/26/126 Corridor Improvement Project: Community Characterization Report. Prepared by STV Incorporated, in association with HDR.

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Broad) and established the foundation for the existing conditions analysis. The project study area and communities are shown in Figure 3.1-1. While existing land use was identified throughout the project study area, and regional and local plans for the entire area were evaluated, direct impacts to land use outside of the half mile buffers would be minimal and similar for both reasonable alternatives.

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Neighborhoods and communities within approximately one mile of the Carolina Crossroads project limits were identified in the project study area during the Community Characterization process. For ease of data collection, the US Census Bureau (Census Bureau) tract/block group boundaries and Transportation Analysis Zone (TAZ) boundaries, which encompass those neighborhoods and communities, were used to delineate the project study area. The Census Bureau and TAZ boundaries also generally follow visible natural or man-made features such as streams, rivers, or major roadways.

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

This section describes the land uses within the overall project study area, the seven communities, and the 12 project interchange areas. The interchanges are evaluated because land use impacts are generally concentrated at the interchanges where access modification is proposed. Land use impacts outside of the interchange areas are expected to be minimal and similar across both reasonable alternatives.

3.1.4.1 Existing Land Use

The project study area encompasses 28,800 acres (over 45 square miles) of land around the proposed Carolina Crossroads project. This acreage does not include transportation use (right-of-way). Eight different land use categories have been identified. As shown in Figure 3.1-2, land use is predominantly residential (43.1 percent) throughout the project study area. Undeveloped lands are also dispersed throughout the project study area, but collectively make up the second largest percent of land use (20.8 percent). The majority of the undeveloped lands are clustered in the north and southwestern parts of the project study area, in the Harbison and Saluda communities, respectively. Institutional uses, such as schools, places of worship, and correctional facilities make up 12.2 percent, and parks and recreation uses make up 9.0 percent of project study area land use. These are primarily located within the St. Andrews community. The commercial uses (8.3 percent) within the project study area border the I-20/26/126 corridor. Industrial land uses including utilities (3.5 percent) are concentrated along the Saluda River and Sunset Boulevard (Seven Oaks, Saluda, and Riverbank communities) and north of the I-26/Broad River Road Interchange in the Harbison community. Office (2.1 percent) and municipal/county owned (1.0 percent) land uses are scattered throughout the project study area and account for the two smallest land use types. The existing project study area land uses are summarized in Table 3.1-1 and illustrated in Figure 3.1-2.

Existing Land Use:

Existing land use in the project study area is predominately residential.

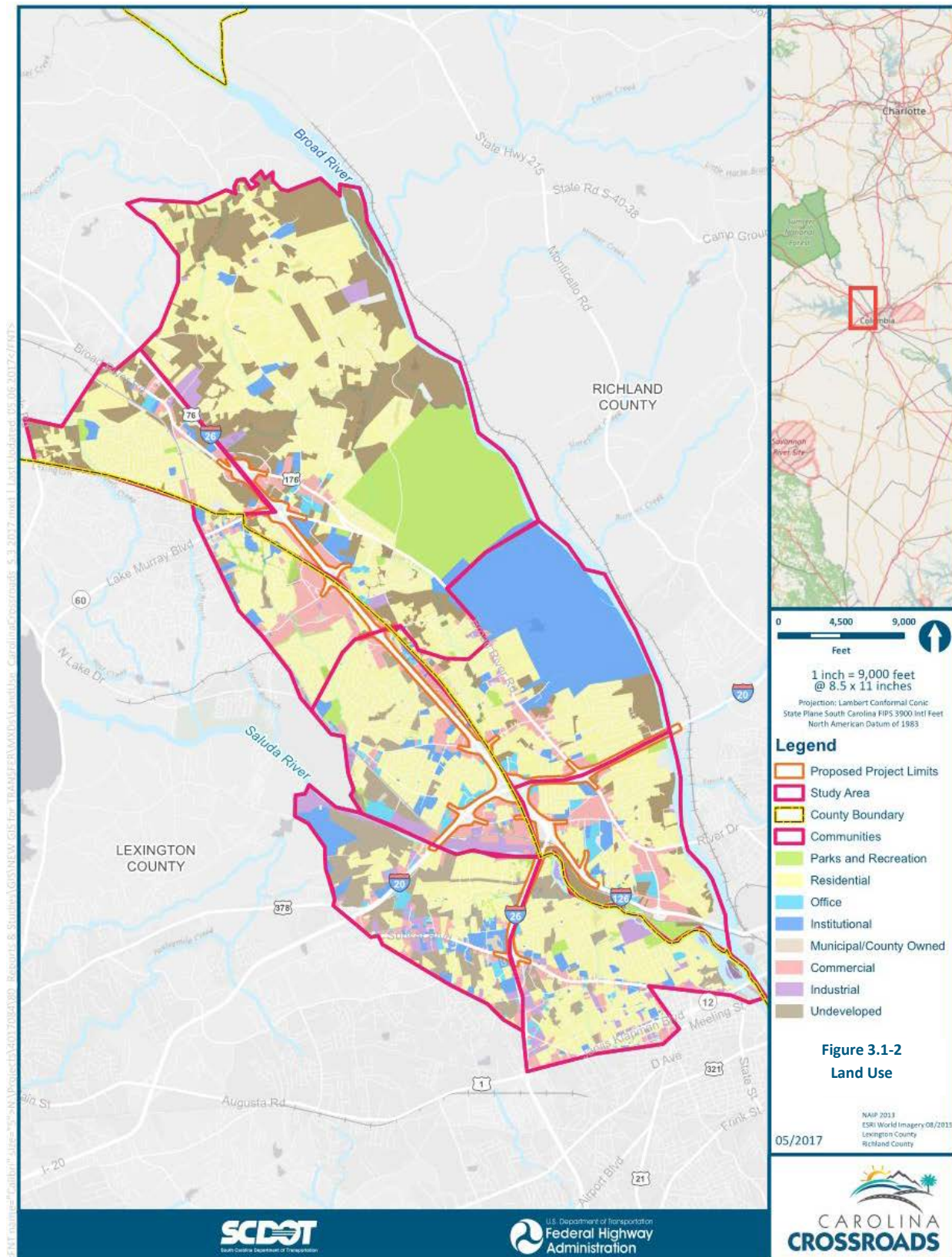
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Table 3.1-1 Project Study Area Land Use

Land use category	Total acres	Percent of project study area
Commercial (Example: local shops/businesses)	2,400	8.3%
Industrial (Example: manufacturing facility)	1,000	3.5%
Institutional (Example: school/college)	3,500	12.2%
Municipal/county owned (Example: county courthouse)	300	1.0%
Office (Example: office park)	600	2.1%
Parks/recreational (Example: greenway trail)	2,600	9.0%
Residential (Example: single family home)	12,400	43.1%
Undeveloped (Example: vacant land)	6,000	20.8%
Total	28,800	100.0%

Source: NAIP 2013, ESRI World Imagery 2015, Lexington County, Richland County

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Columbiana

The Columbiana community is located in Lexington County, situated west of I-26 and north of Piney Grove Road. The majority of the community is residential. There are office uses along Lake Murray Boulevard and St. Andrews Road and commercial uses along Lake Murray Boulevard and Harbison Boulevard. The large, regional commercial centers of Columbiana Centre and Columbiana Station are both located near the Harbison Boulevard interchange at I-26.



Columbiana Centre (<http://www.malls.com>)



Whitehall subdivision in the Seven Oaks Community

Seven Oaks

The Seven Oaks community is located in Lexington County, positioned west of I-26 and south of Piney Grove Road. Like the Columbiana community, the majority of the Seven Oaks community is residential. There are some office uses along I-20, and institutional uses are concentrated along St. Andrews Road and Bush River Road. Commercial uses, such as restaurants and retail stores, are concentrated near the I-26/St. Andrews Road and I-26/Bush River Road interchange, while industrial uses are concentrated along the Saluda River.

Saluda

The Saluda community is located in Lexington County, west of the Saluda River and I-26. Much of the area north of I-20 is undeveloped. The majority of the community south of I-20 is residential. There are some office uses scattered throughout the community, and commercial uses are concentrated along Sunset Boulevard. The community is anchored by the Lexington Medical Center at the interchange of I-26 and US-378 (Sunset Boulevard).

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Riverbanks

The Riverbanks community is located in Lexington County, between I-26 and I-126. The majority of this community is located within the city limits of West Columbia and is residential in nature. There are some office and institutional uses scattered throughout the community, and commercial uses are concentrated along the Sunset Boulevard and I-26 corridors. The Riverbanks Zoo and Botanical Garden sits on a large site along the Saluda River; the garden is located in the Riverbanks community, and the zoo is located across the river in the Broad community of Richland County.



Riverbanks Botanical Garden
(<http://www.riverbanks.org>)

Harbison

The Harbison community is located in Richland County, between I-26 and the Broad River. This community has the greatest amount of undeveloped land in the project study area. The majority of developed portions of the community are residential. There are some office and industrial uses scattered throughout the community, while commercial uses are concentrated along US-176 or Broad River Road. This community is anchored by the Harbison Environmental Education Forest (formerly Harbison State Forest), which is situated on more than 2,000 acres in the southern portion of the Harbison community.

St. Andrews

The St. Andrews community is located in Richland County, west of the Saluda River and I-26 and just northeast of the I-20/26 interchange. Several correctional institutions encompass large tracts of land in this community. The remainder of the community is predominantly residential. Commercial uses are concentrated along Broad River Road.



Seminole Road Apartments in the St. Andrews Community

Broad

The Broad community is located in Richland County, situated between I-20 and I-126. The majority of the community is residential. There are some office and industrial uses scattered throughout the community, and commercial uses are concentrated along Bush River Road and Greystone Boulevard. The community is anchored by the Dutch Square Center, a large mall on Bush River Road. The Riverbanks Zoo is located in the southern portion of the community.

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3.1.4.2 Existing Land Use – Interchanges

The I-20/26/126 corridor has varying land uses, particularly immediately adjacent to the interstate corridors themselves. Around the interchange locations, land uses are predominately commercial, including retail commercial, large big-box retail commercial, small-scale strip malls, restaurants, hotel/motels, automotive services, offices, medical facilities, and restaurants. Land uses generally transition to residential or undeveloped, with pockets of office/commercial uses outside of the direct interchange locations. In order to describe the land uses around the interchanges, a half mile buffer (one mile diameter) was centered on each existing interchange. The half mile buffer encompasses the existing interchange footprints and the area most likely to be directly impacted related to as a result of modified interchanges under each reasonable alternative.

Figure 3.1-3 Figure 3.1-3 summarizes the land uses within a half mile of each interchange, and these land uses are illustrated in Figures 3.1-4 through 3.1-15.

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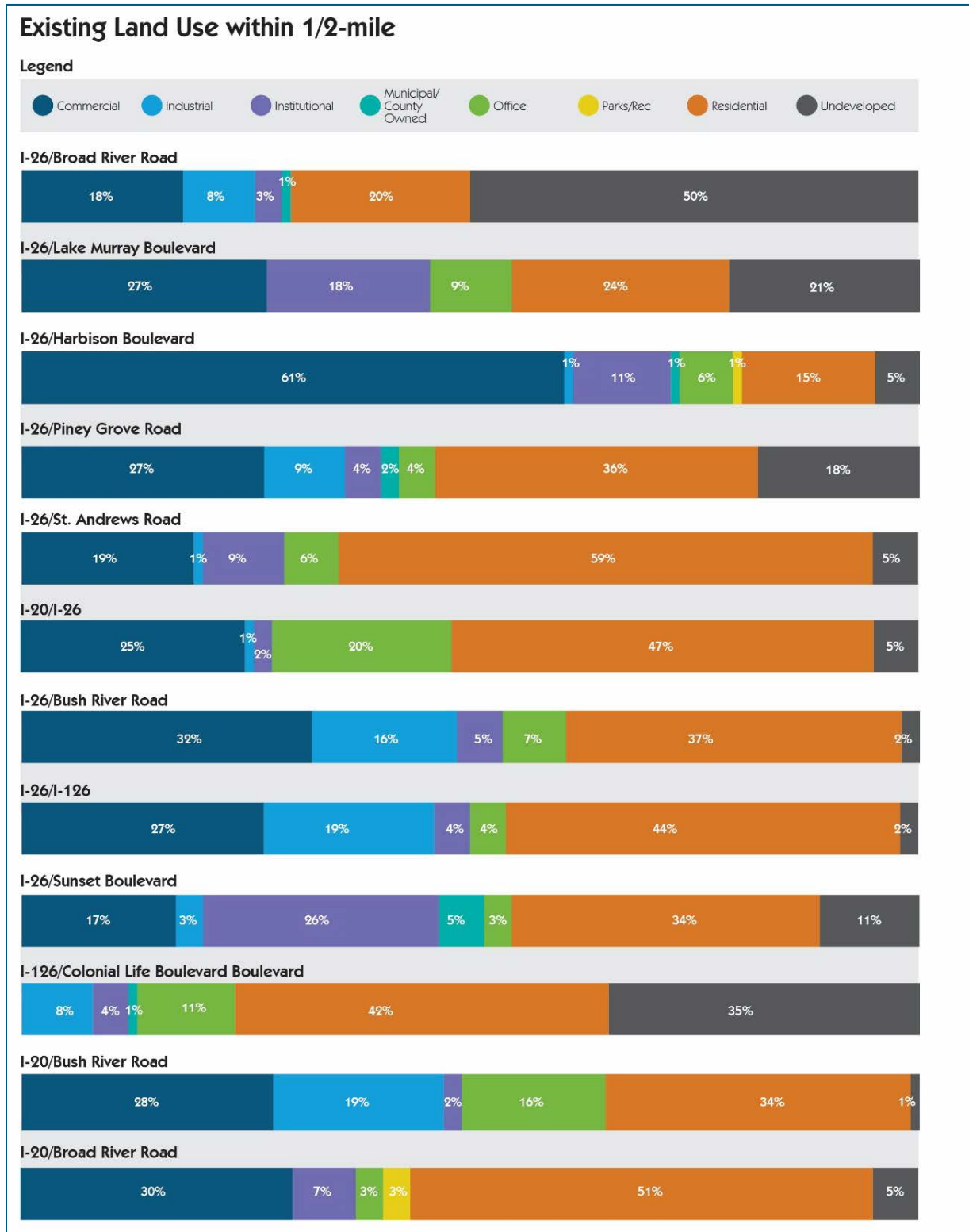
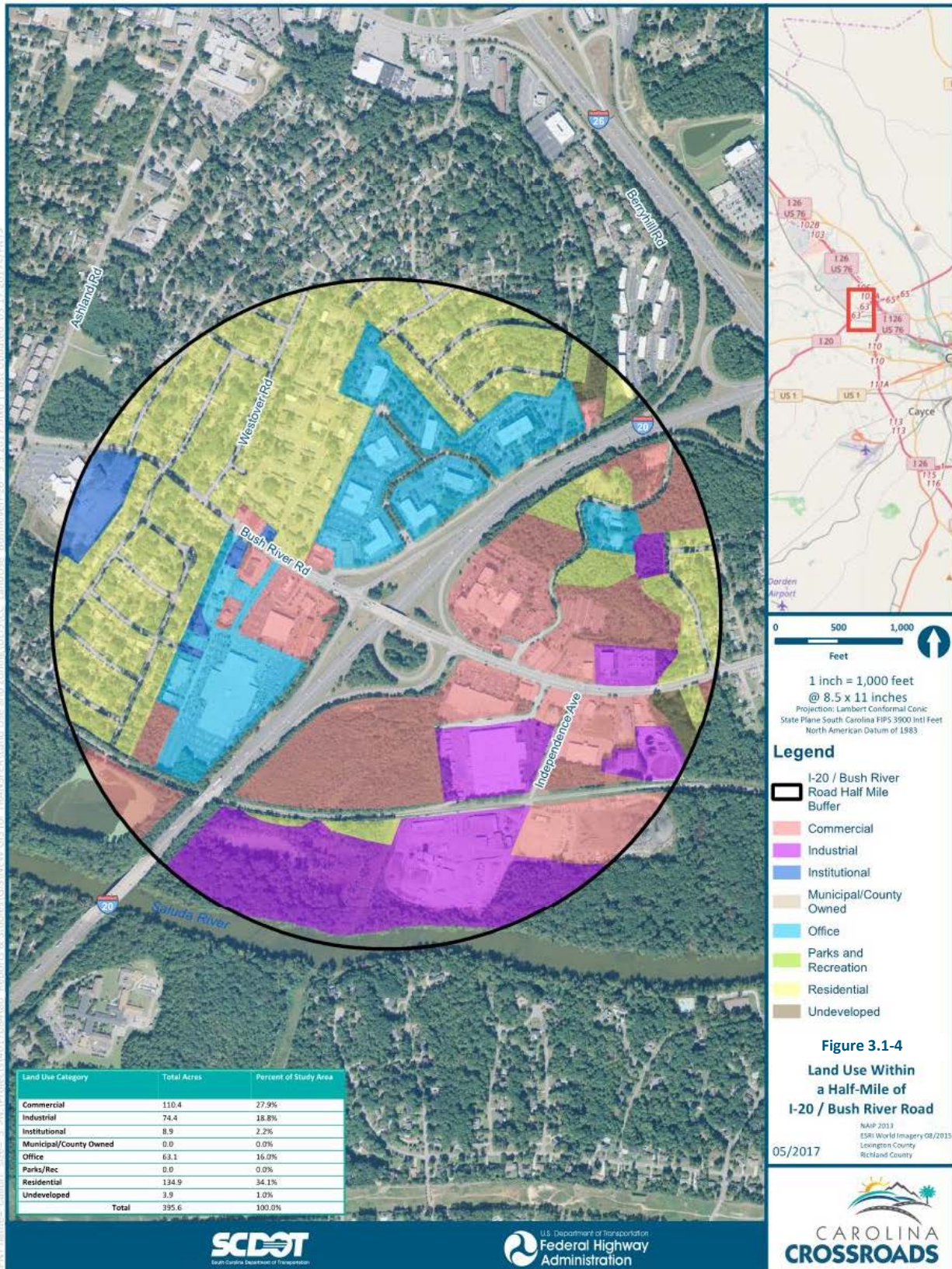
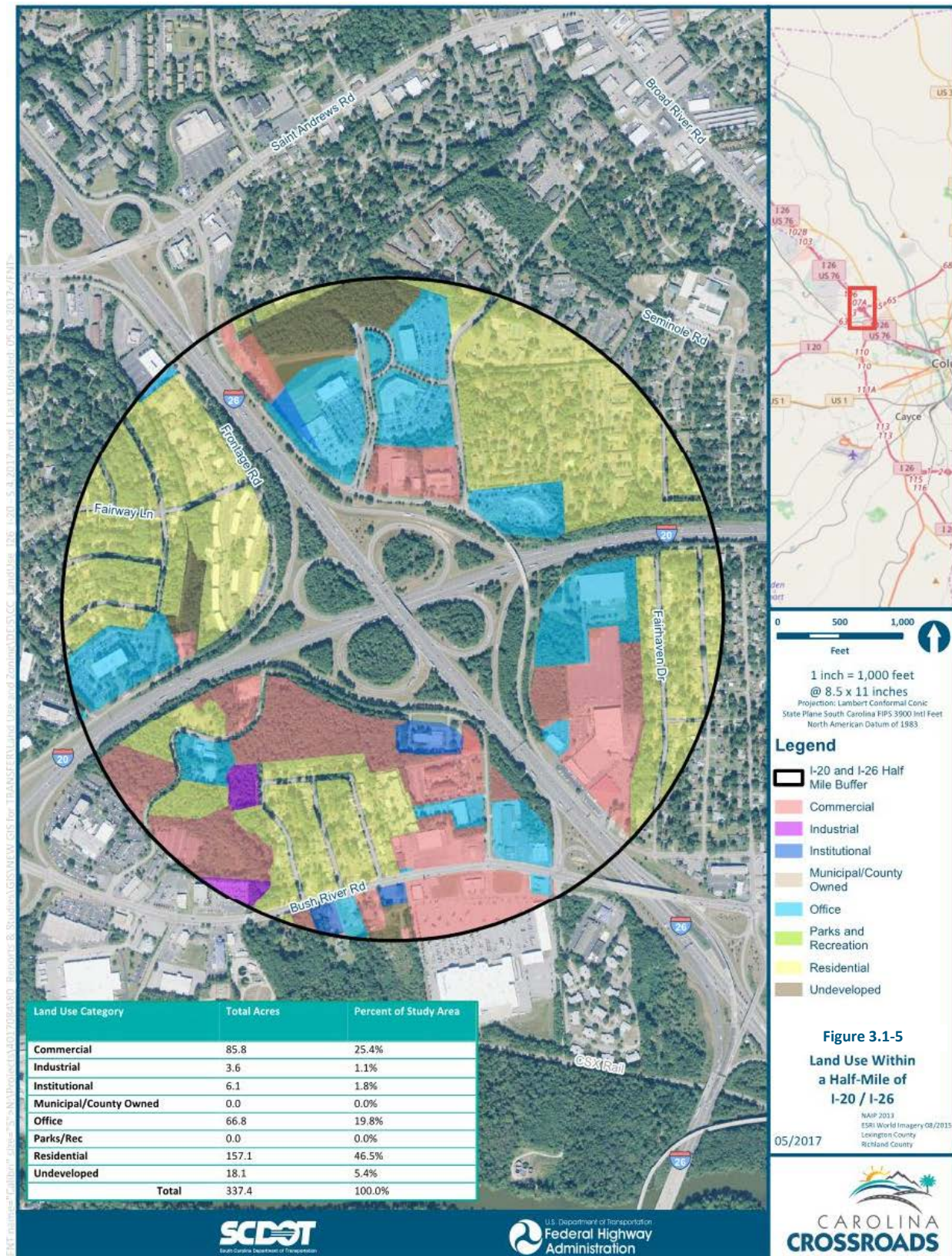


Figure 3.1-3 Existing land use within a half mile radius of interchanges

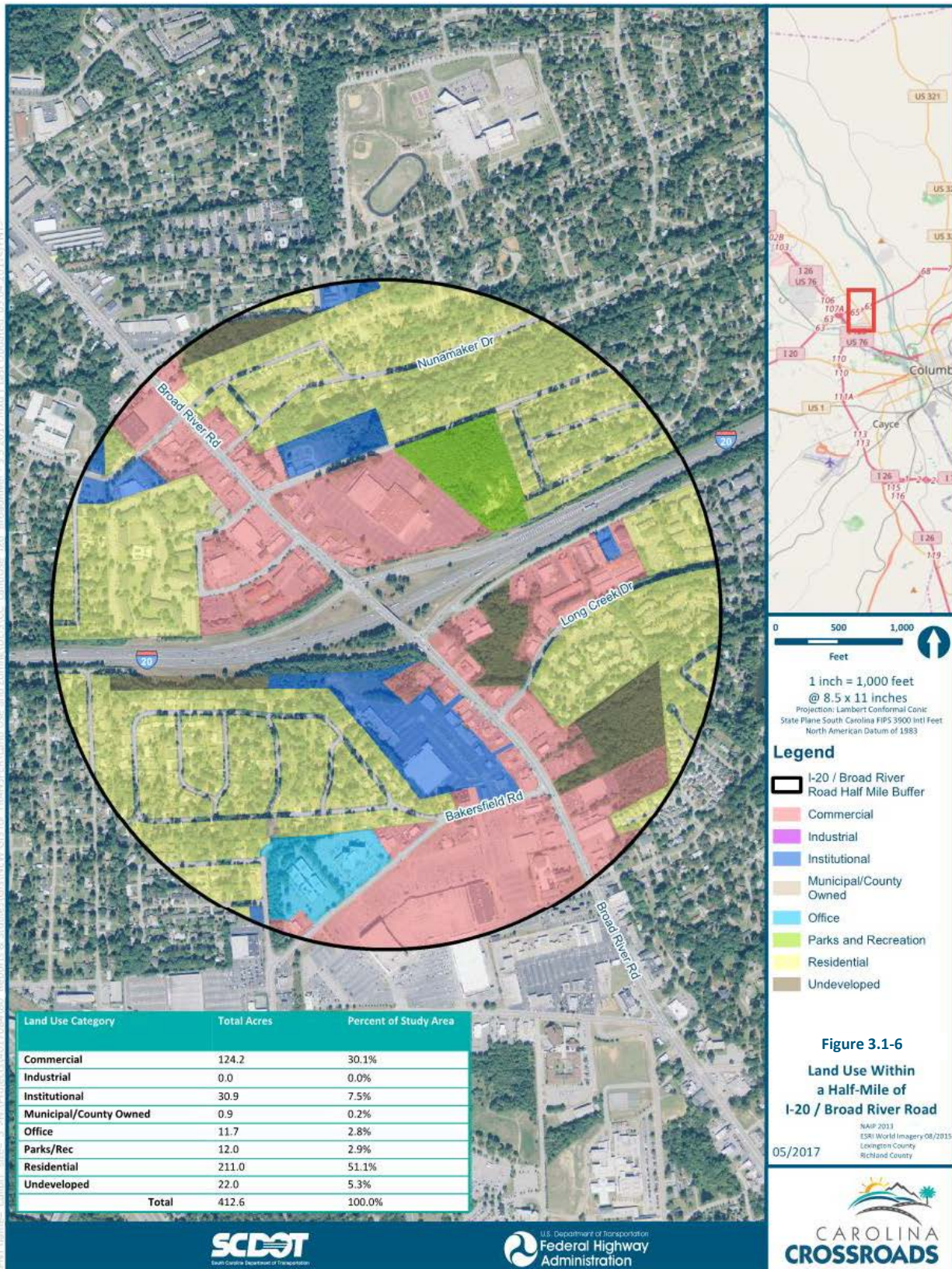
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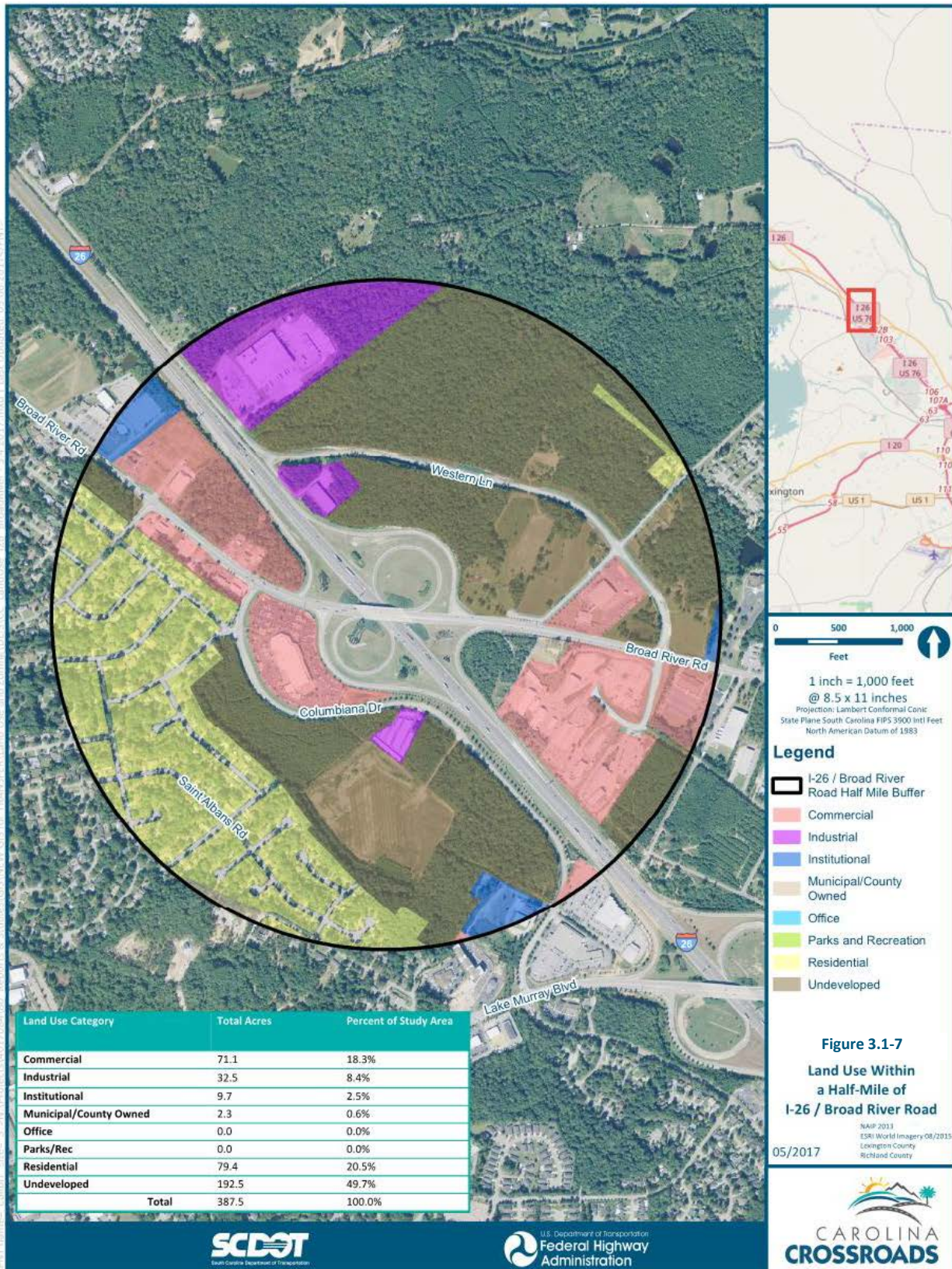
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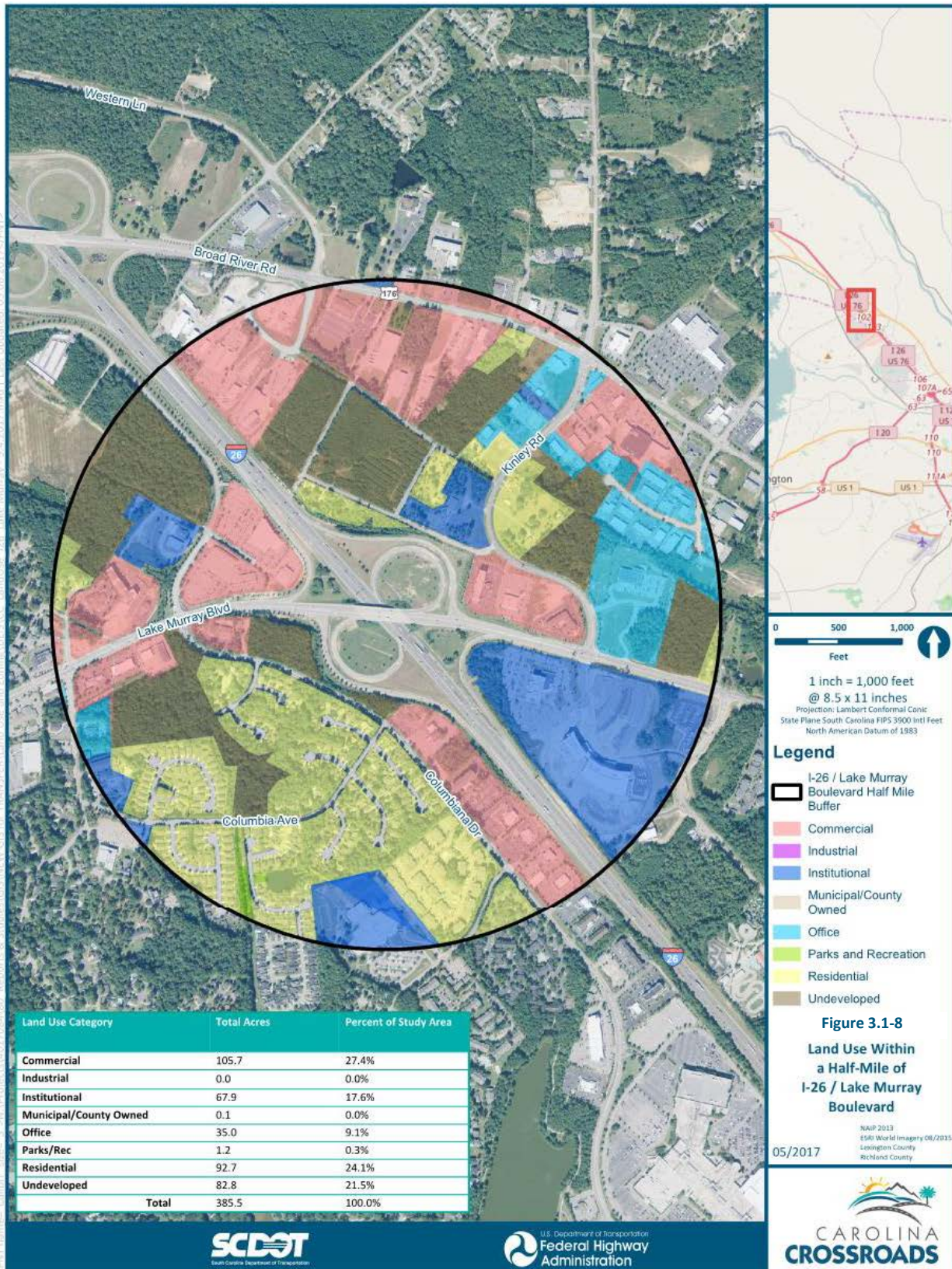
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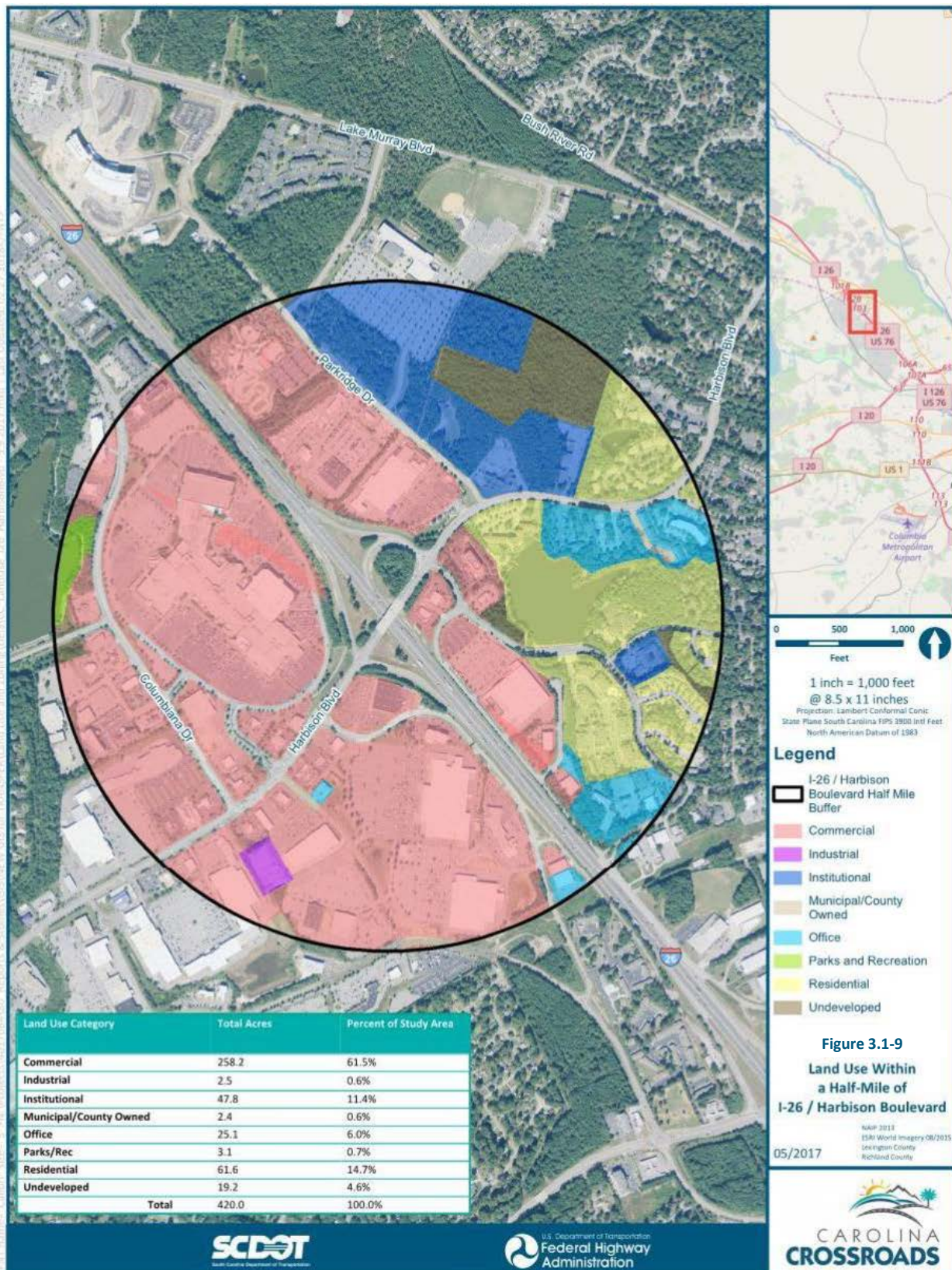
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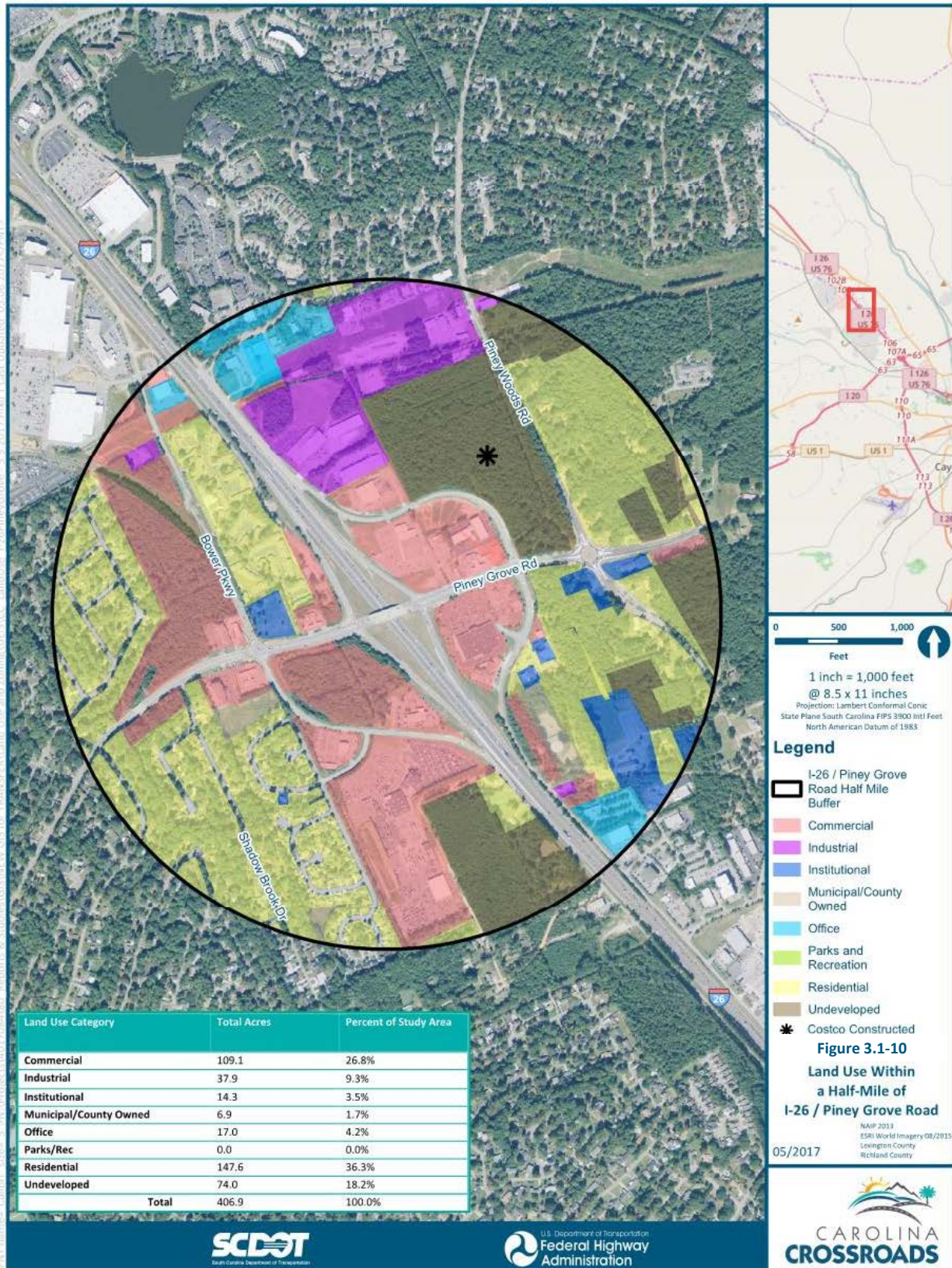
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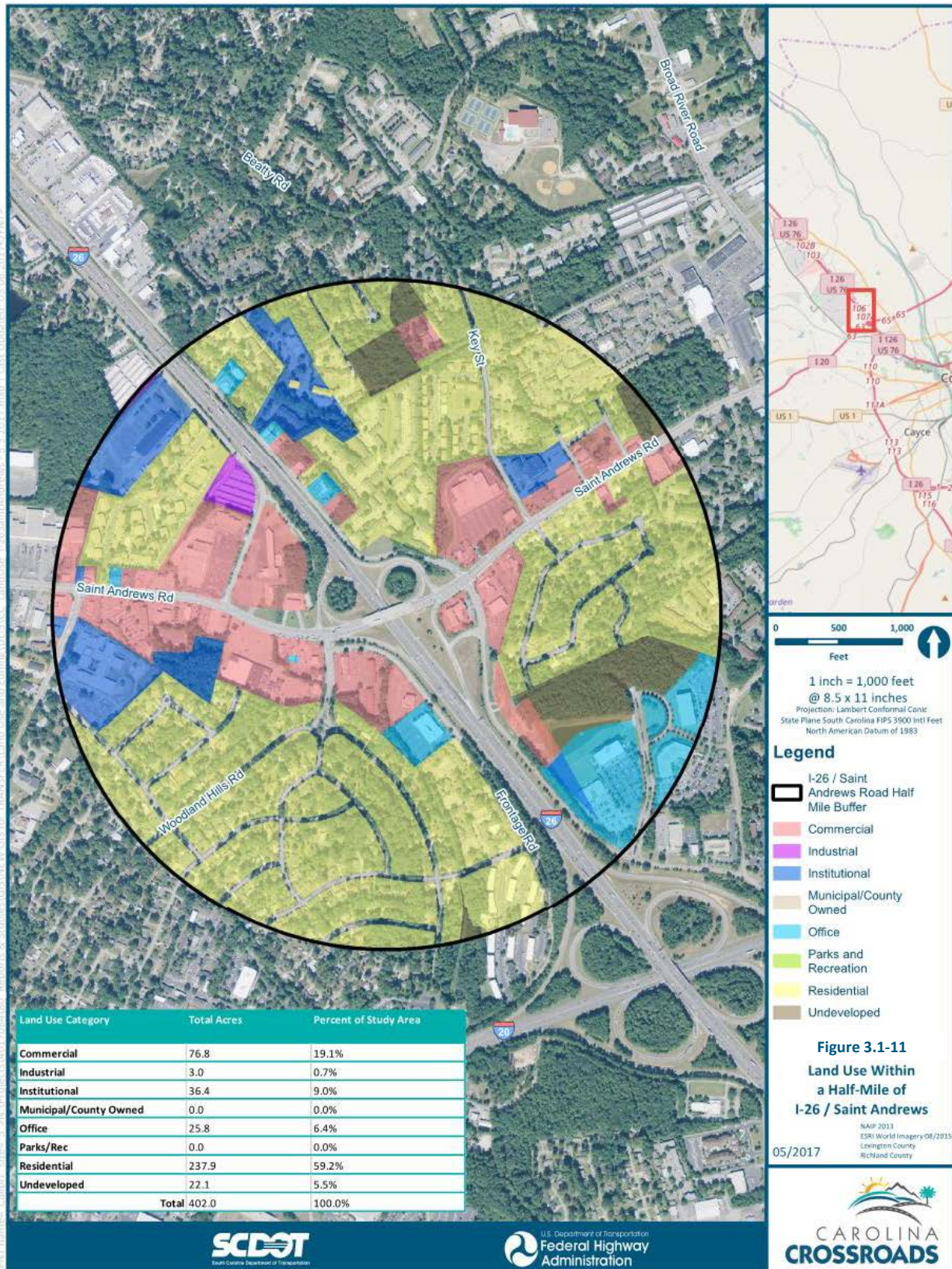
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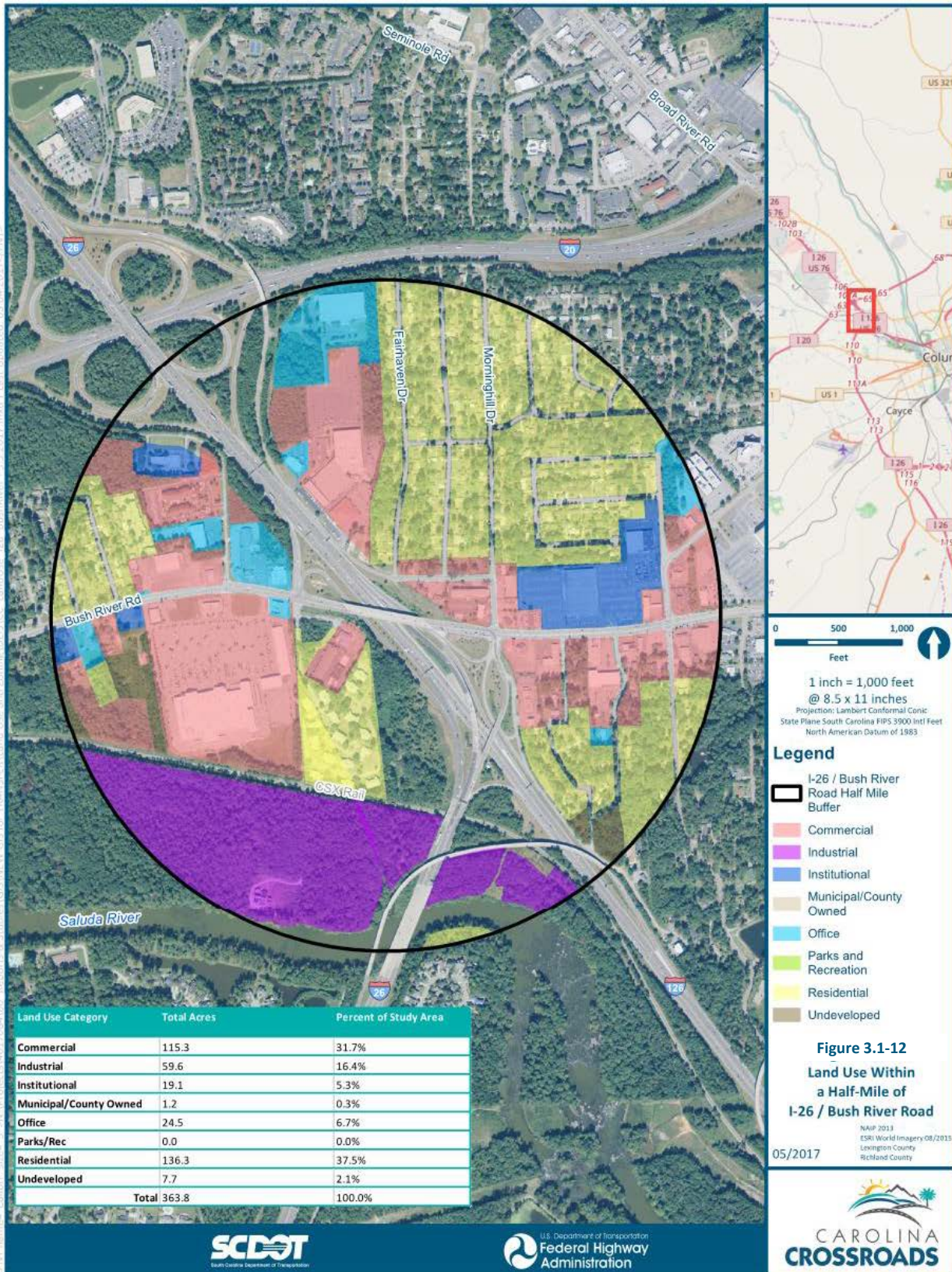
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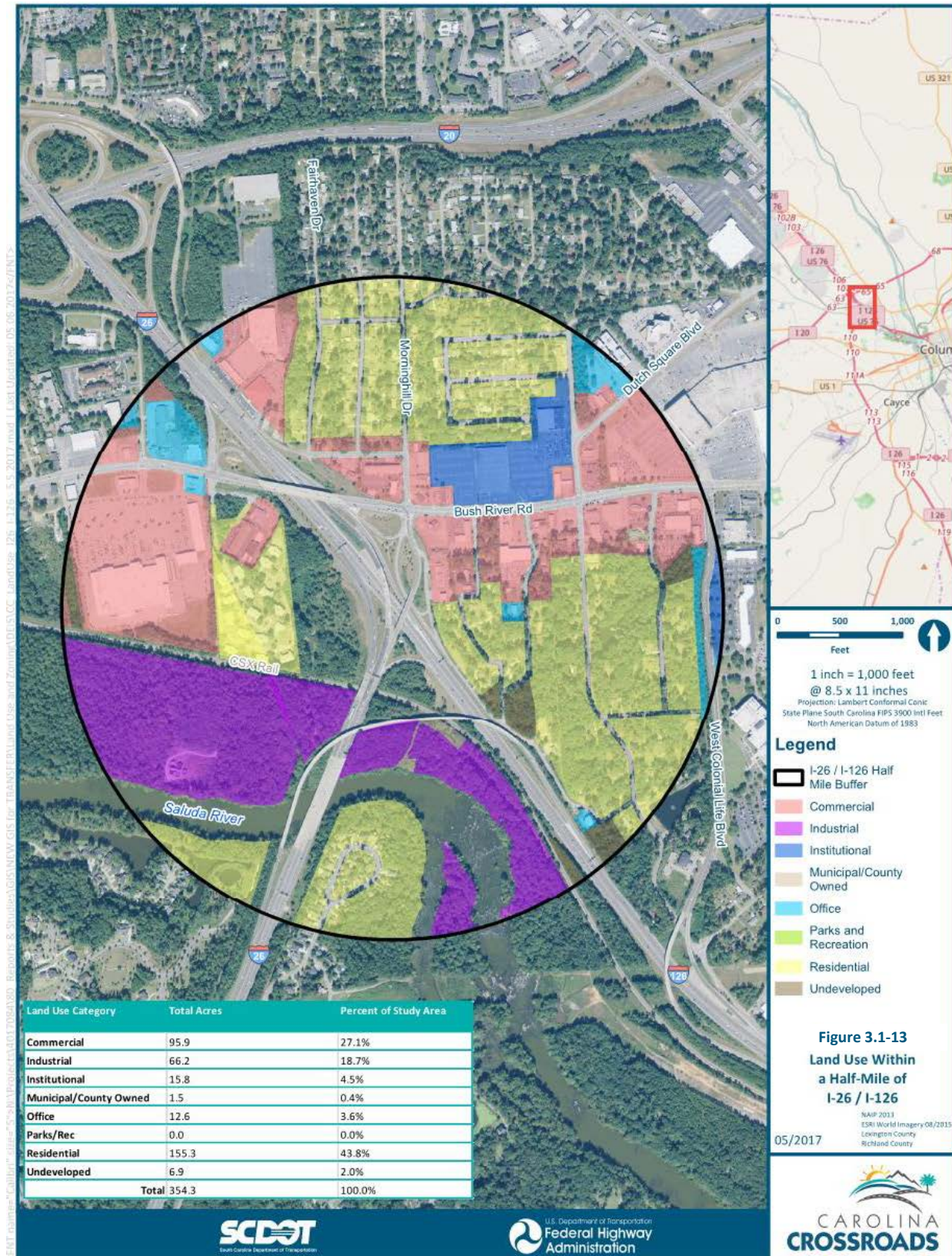
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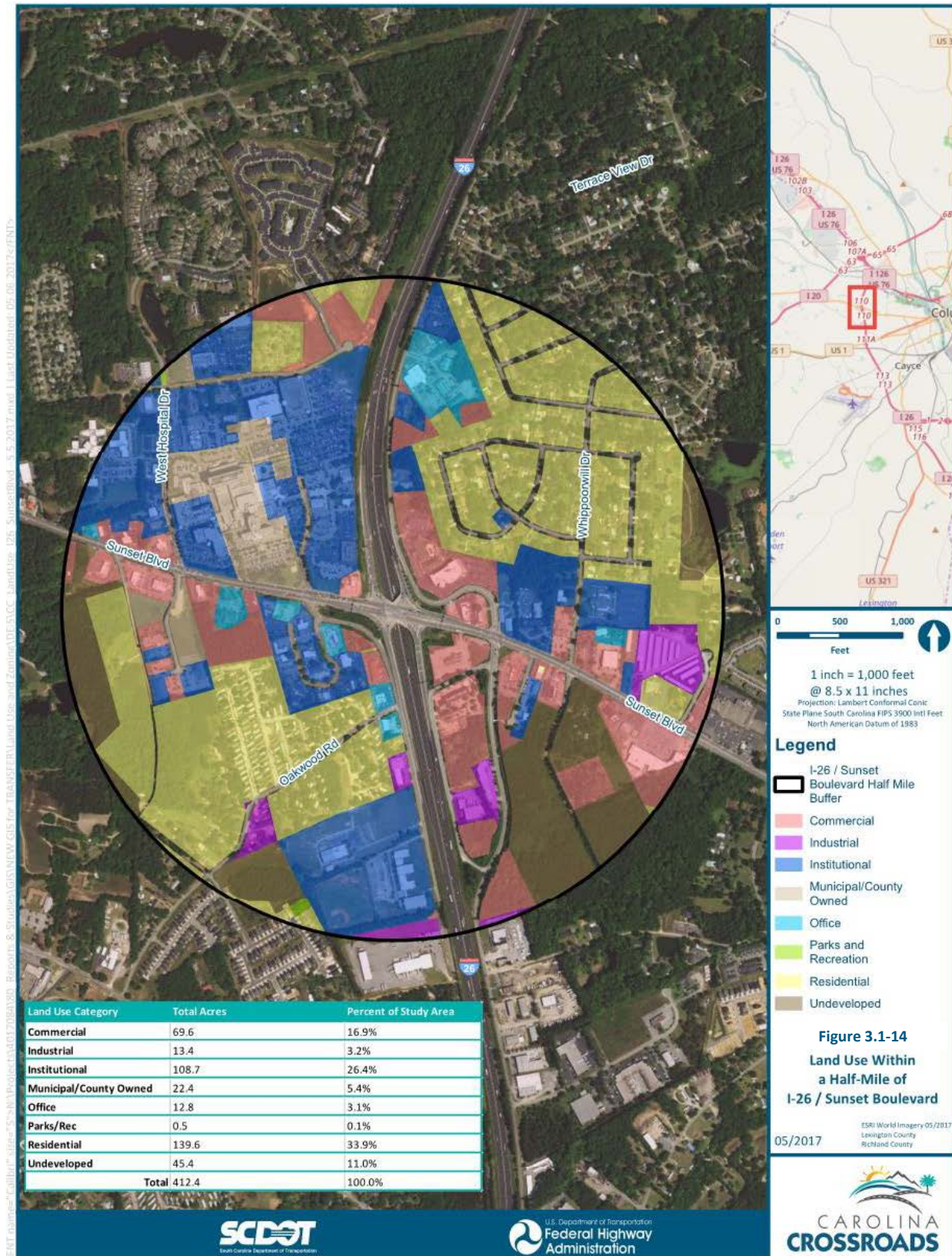
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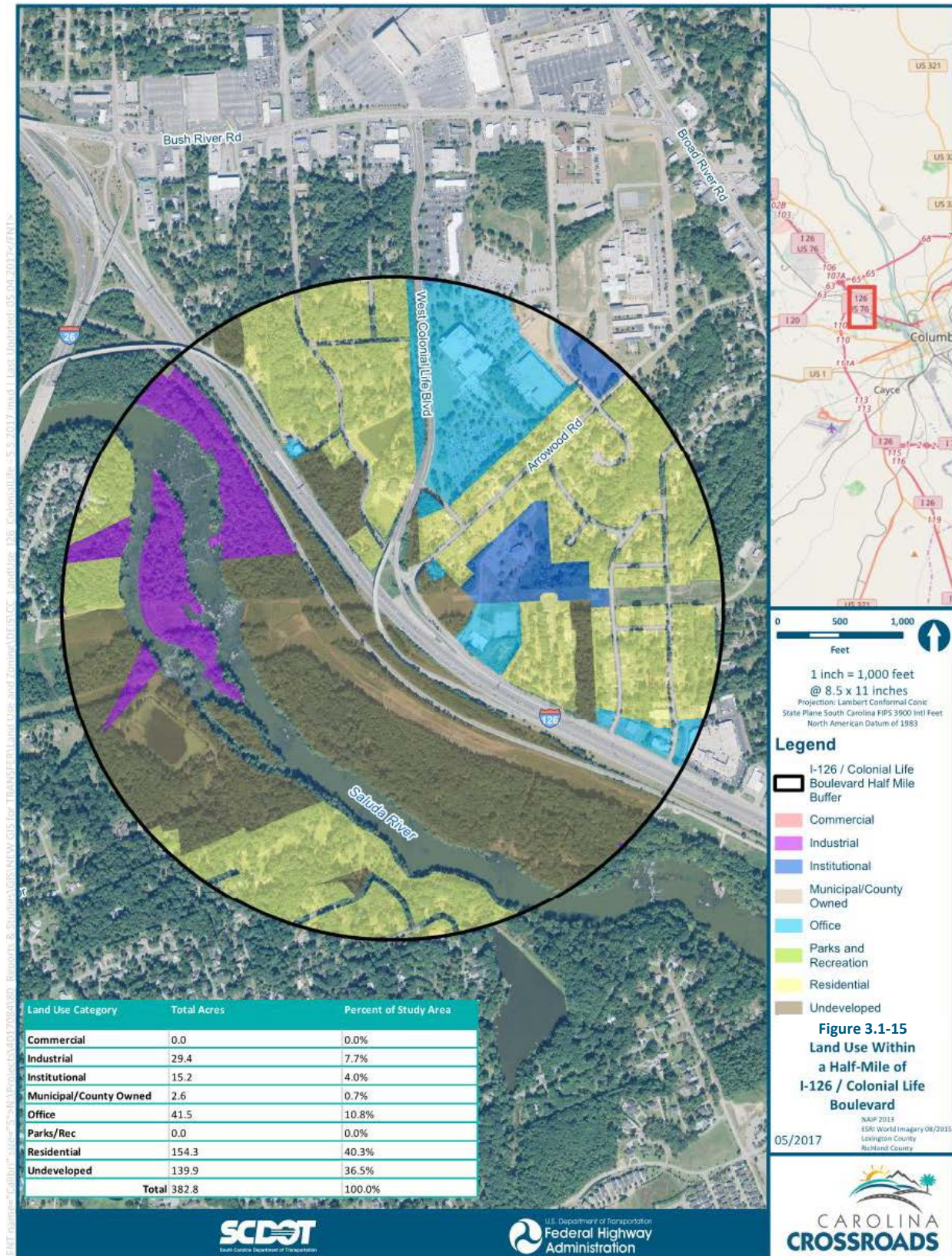
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3.1.5 WHAT ARE AREA PLANS?

Area plans are the roadmaps used by local jurisdictions to guide development, based on a shared local vision and development goals. Regional and local land use and transportation plans were collected and reviewed for information pertaining to land use and zoning and the transportation network. The proposed Carolina Crossroad project's compatibility with area land use plans was evaluated based on the review of the plans listed in Table 3.1-2. Table 3.1-2 also shows the organization of plans by larger entity; for example, the Town of Irmo plan is included in the Lexington County heading because Irmo is located in Lexington County. Summaries of regional transportation plans and local land use plans are detailed in the subsections that follow. The proposed Carolina Crossroads project is in alignment with these area plans.

Since the 2016 Community Characterization Report, two additional land use plans were identified by local planners and are included below.

Table 3.1-2 Area Land Use Plans

Central Midlands Council of Governments
2012-2017 Comprehensive Economic Development Strategy for the Central Midlands Region
Moving the Midlands: 2040 Long Range Transportation Plan
Lexington County
Lexington County Comprehensive Plan
Town of Irmo Comprehensive Plan 2009
West Columbia GOLD Redevelopment Plan
City of West Columbia Comprehensive Plan
Irmo Dutch Fork Sub-Area Transportation Study
Richland County
2015 Richland County Comprehensive Plan
Plan Columbia: Land Use Plan
Broad River Road Corridor and Community Master Plan
Richland Renaissance Plan

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3.1.5.1 Regional Plans

2012-2017 Comprehensive Economic Development Strategy for the Central Midlands Region

The *2012-2017 Comprehensive Economic Development Strategy for the Central Midlands Region*³ was designed to combine the economic vision of the public and private sectors in order to diversify and strengthen the regional economy. It serves as an outline of regional goals and objectives, investment priorities, and funding sources, while also providing a regional plan of action to meet the goals. Lexington and Richland Counties are both members of the CMCOG. Future land use strategies in Lexington County include planning and development of new industrial parks along the I-20 and I-26 Corridors. Future land use in Richland County includes commercial business revitalization efforts and residential/commercial redevelopment within Columbia and adjacent areas. Interstate connectivity improvements from the proposed Carolina Crossroads project would continue to support these development and revitalization projects.

Future land use strategies in Lexington County include planning and development of new industrial parks along the I-20 and I-26 corridors.

Moving the Midlands: 2040 Long Range Transportation Plan

The 2040 Long Range Transportation Plan (LRTP)⁴ serves as an update to the 2035 LRTP. It addresses many of the same transportation challenges as the 2035 LRTP, and expands its scope beyond roadway capacity to also consider investment in transit, bicycle/pedestrian, and preservation of the existing transportation system. It also considers performance-based planning to support project selection and programming decisions.

As with the 2035 LRTP, the 2040 LRTP notes that the interstate system is critical to South Carolina's emergency evacuation, tourist traffic, increasing reliance on motor freight carriers, and to the growth and international freight movements through the Port of Charleston. In the 2040 LRTP, the latest available land use, population, employment, travel and economic assumptions were analyzed for consistency with transportation improvements across the region. The 2040 LRTP specifically lists the proposed Carolina Crossroads project as a needed improvement in order to maintain an acceptable level of service on the interstate network.

The 2040 LRTP specifically lists the proposed Carolina Crossroads project as a needed improvement in order to maintain an acceptable level of service on the interstate network.

³ CMCOG. 2012. 2012-2017 Comprehensive Economic Development Strategy for the Central Midlands Region.

⁴ CMCOG. 2015. Moving the Midlands: 2040 Long Range Transportation Plan. COATS.

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3.1.5.2 Plans Relevant to Lexington County

Lexington County Comprehensive Plan

The *Lexington County Comprehensive Plan*⁵ functions like, and has the same objectives as, the local zoning ordinance. The Lexington County portion of the project study area (between Irmo and West Columbia) was originally zoned in 1980, and zoning gradually extended throughout the county over the years. The County has switched to a performance-based zoning model with more intensive uses along major arterials and less intensive (or restrictive) zoning on other smaller roads. The goals and objectives included in the plan include:

- ensuring the efficient and safe use of existing and proposed transportation facilities;
- promoting the compatibility of different land uses as an alternative to completely segregating residential, commercial, industrial, agricultural and other uses from one another;
- updating the land use plan for the Dutch Fork Planning Area to handle future development;
- encouraging a variety of housing types to meet demand; and,
- working with COATS to assist in reversal of sprawl pattern of development.

The goals and objectives included in the Lexington County Comprehensive Plan include, among others, ensuring the efficient and safe use of existing and proposed transportation facilities.

Town of Irmo Comprehensive Plan

The Town of Irmo *Comprehensive Plan 2009*⁶, which is also relevant to the Columbiana community, indicates that the Town annexed large developed areas as well as developing residential areas in the 1980s. However, there have been fewer annexations and slower population growth more recently. The Town has experienced increasing proportion of elderly residents while the average household size has shrunk. Trends since 1990 indicate that multi-family housing, such as along Columbiana Drive and Columbia Avenue, and manufactured homes may become more prevalent to meet the need for lower cost housing. Historically, Irmo has had a large percentage of single-family housing, and building permit data seem to confirm that this type of housing is still being constructed. Yet, the percentage of single-family housing has decreased in recent years because of the increase in multi-family housing. According to the *Comprehensive Plan 2009*, business development is concentrated along Lake Murray Boulevard and St. Andrews Road. The Town of Irmo lacks a formal town center, but the municipal complex includes the town hall, courthouse, police department, and town park. The Town continues to search for opportunities to annex and expand business development. The future land use map included in the Town of Irmo's

Within the Town of Irmo, business development is concentrated along Lake Murray Boulevard and St. Andrews Road.

⁵ Lexington County. 2015a. Lexington County Comprehensive Plan: Goals and Objectives.

⁶ Town of Irmo. 2009. Town of Irmo Comprehensive Plan 2009. Prepared by the Town of Irmo Planning Commission and CMCOG.

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Comprehensive Plan 2009 shows single-family residential use throughout much of the town, with general commercial uses along major roadways like Lake Murray Boulevard and Dutch Fork Road. Limited commercial uses are shown along Woodrow Street, and farming/forestry uses are shown between Dreher Shoals Road and I-26.

West Columbia GOLD Redevelopment Plan

The *West Columbia GOLD Redevelopment Plan*⁷ includes existing conditions, a needs assessment (in regards to land use, regulatory context and infrastructure), recommendations and implementation strategies. The area studied includes the Sunset Boulevard, Jarvis Klapman Boulevard, Meeting Street and State Street corridors. Limits are 9th Street and the Congaree River, which is near the southern edge of the project study area. The redevelopment plan is relevant to the Riverbanks community.

The *West Columbia GOLD Redevelopment Plan* discusses how Columbia Mills was originally located on the eastern shore of the Congaree River and employees resided in worker housing on the western side. The western side (the location of the GOLD) became a business district but was destroyed by fire in the early 1900s. Presently, there is a variety of land use in this district, including commercial, low- and medium-density residential, public and institutional, light industrial, and recreational. There is also vacant and undeveloped property.

The land use assessment done as part of the *West Columbia GOLD Redevelopment Plan* found scattered vacant parcels with infill opportunities for small development. One key site, a four-acre, City of West Columbia-owned site on Meeting Street between State and Alexander Road, could be a catalyst project for redevelopment. The success of the redevelopment plan is primarily dependent on the promotion of public/private and joint capital initiatives—or catalyst projects—to work in conjunction with the City's redevelopment of the four-acre site on Meeting Street.

The West Columbia GOLD Redevelopment Plan notes a need for additional recreational amenities, stronger connections between the GOLD and other districts, improved bus stop amenities, and increased pedestrian connectivity between stops and transit-oriented residential uses.

⁷ City of West Columbia. 2012. West Columbia Gateway Overlay District Redevelopment Plan. Prepared by URS and Community Design Group

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City of West Columbia Comprehensive Plan

The City of West Columbia *Comprehensive Plan*⁸, which is relevant to the Saluda and Riverbanks communities, is intended to reaffirm guidelines and procedures for implementing development objectives from the City of West Columbia, and to provide guidance for planning decisions within the City. The area discussed in the plan is located between I-20 and I-126 (south of Saluda River and down to Airport Road). Since the mid to late twentieth century, West Columbia has been a bedroom community for Columbia. Recent distribution of single-family permits has been mostly for infill lots or vacant lots in older subdivisions, but some new permits have been obtained near the Congaree River and along Botanical Parkway.

West Columbia houses a mix of land uses currently. The future land use map shows similar land use patterns with commercial nodes concentrated along Sunset Boulevard.

There are three areas identified as priority investment areas in West Columbia. One of these is the Riverfront District, where the City has sponsored improvements to complement the park, including landscaping along Meeting Street, sidewalks, street lighting and new signage. Future plans include a greenway extension to I-26 and development of City-owned property on Meeting Street. Another area, Triangle City, has had some pedestrian and façade improvements, but additional improvements may include landscaping, street furniture and a pedestrian crossing to make the area more pedestrian-friendly. The last priority area is Botanical Parkway, one of the newer residential areas, with direct access from the Botanical Gardens to Sunset Boulevard. The new corridor opened land up for development, but there is a need for sidewalk extensions and bike lanes, with a possible multi-use trail and formal landscaping.

As identified in the West Columbia *Comprehensive Plan*, existing land uses are typical, suburban-type uses with commercial uses along the major roads and residential areas beyond those. There is a mix of uses in places like Center Street, especially in the triangle area between Sunset Boulevard, Meeting Street/Augusta Road and Brown Street. The future land use map included in the West Columbia *Comprehensive Plan* shows similar land use patterns except with a Village District (Triangle City) at Augusta Road and Charleston Highway, the GOLD, commercial nodes concentrated along Sunset Boulevard, and future parks scattered throughout.

The North West and Beltway planning areas are within the densest and most populated areas of Richland County, including several priority investment areas promoting urban and suburban infill development.

Irmo/Dutch Fork Sub-Area Transportation Study

The mission of the *Irmo Dutch Fork Sub-Area Transportation Study*⁹ is to develop a community vision that collaboratively addresses land use and multimodal transportation improvements. The study examines the existing transportation system, relevant land uses, existing transit services, development trends and transportation needs.

This plan is relevant to the Columbiana, Seven Oaks, Harbison and St. Andrews

⁸ City of West Columbia. 2011. City of West Columbia Comprehensive Plan. Prepared by CMCOG.

⁹ Central Midlands Council of Governments. 2010. Irmo/Dutch Fork Sub-Area Transportation Study. Prepared by Wilbur Smith Associates.

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communities. The area discussed in the plan includes portions of Lexington and Richland Counties and contains the town of Irmo, as well as portions of the city of Columbia; this area is described as being one of the fastest growing sections of the Greater Columbia area.

As identified in the *Irmo/Dutch Fork Sub-Area Transportation Study*, existing land uses in the area include suburban and rural land use patterns. In terms of development trends, the plan notes that transportation infrastructure must stay ahead of development or work in unison with growth to decrease congestion related to population increases. The plan states that while a portion of the project study area has already been developed, the northwest Richland County section of the project study area is poised for growth. This northwest section includes the Harbison community.

3.1.5.3 Plans Relevant to Richland County

2015 Richland County Comprehensive Plan

The *2015 Richland County Comprehensive Plan*¹⁰ covers a portion of the project study area. The land use project study area is located in northwest Richland County and encompasses portions of the North West and Beltway planning areas. The North West planning area is one of the most developed planning areas in Richland County, and growth is expected to continue. The Beltway planning area is the most populated and densest of all planning areas. This plan identifies several important features in the county, including three military installations - Fort Jackson, the McCrady Training Center, and the McEntire Joint National Guard Station. Fort Jackson is approximately 52,000 acres and is the training base for approximately 50 percent of all soldiers entering the Army each year. Over 50,000 basic training and advanced soldiers come through the facility every year, with an additional 12,000 attending courses. McCrady Training Center is on Fort Jackson and is a joint use training facility for other branches of military. McEntire Joint National Guard Station is a 2,400-acre base about twelve miles east of Columbia; it is home to 1,200 members. Another key feature of the county is the University of South Carolina in Columbia, with over 1,600 full time faculty members and more than 30,000 students. None of these features are in the project study area, but residents of the project study area may commute for work or study to these facilities.

The ten-year future land use map in the *2015 Richland County Comprehensive Plan*⁹ shows mostly suburban land uses in the North West planning area, with rural uses in the extreme northwest portion and conservation near Harbison State Forest (now Harbison Environmental Education Forest). Priority investment areas, which are areas targeted for development and redevelopment, are located near Irmo (I-26/Broad River Road South interchange) and the southeast quadrant of the I-20/26 interchange. The amount of rural land is expected to decrease, due to an increase in suburban land uses, particularly along Lake Murray Boulevard and along I-26 towards Chapin. Inefficient land use (e.g., sprawl) is a concern due to causing such issues as traffic congestion, crowding in schools, and overextended infrastructure. The County desires to keep suburban uses in the area between the Beltway area and Dutch Fork Road area. Richland County created a priority investment area near the I-26/Broad River Road interchange, and near the I-20/26 interchange to promote urban and suburban infill development.

¹⁰ Richland County. 2015. Richland County Comprehensive Plan.

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Plan Columbia: Land Use Plan

The *Plan Columbia: Land Use Plan*¹¹ is an update to the future land use chapter of the City of Columbia's comprehensive plan, *The Columbia Plan 2008*. The plan is intended as a decision making tool for local officials and a guide for revisions to land development regulations. One of the guiding principles of the plan is to have a community with multimodal mobility choices. The City expects substantial growth, and there is a limited supply of large undeveloped parcels; current development patterns are low-density. Individual lot vacancy is fairly prevalent, so there is opportunity for infill development. This plan is relevant to all three of the Richland County communities of Harbison, St. Andrews, and Broad.

Lake Murray Boulevard and Harbison Boulevard (both at I-26) are identified as community gateways, as are Greystone Boulevard (near the Broad River), Gervais Street, and Blossom Street (both leading to downtown Columbia). The ten-year future land use map shows a large civic/institutional district near Harbison Environmental Education Forest, and an urban edge activity center near Irmo (at the project terminus). There are park uses near the confluence of the Saluda and Broad Rivers and a community activity corridor, or linear extension of an activity center, near I-20/26. Scattered urban edge, mixed residential uses are shown along Broad River Road.

Lake Murray Boulevard and Harbison Boulevard are identified as community gateways; additionally, the future land use map shows a large civic/institutional district near the Harbison Forest and an activity center near Irmo.

Broad River Road Corridor and Community Master Plan

The *Broad River Road Corridor and Community Master Plan*¹² indicates that the Broad River corridor, where the three interstates converge near Columbia, is a key commercial corridor in the St. Andrews community. Partly in unincorporated portions of Richland County and partly in Columbia, the area grew during the 1970s and 1980s with construction of Dutch Square Center and office parks. However, the loss of retail business and changing growth patterns has caused a gradual decline in the economic well-being of the area. This corridor study is one of the first comprehensive planning efforts undertaken as part of the County's Neighborhood Improvement Program.

The Broad River Road corridor study area is bounded by the Broad River to the north and east, Saluda River to the southeast, I-26/126 to the southwest, and Piney Grove/Harbison Environmental Education Forest to the northwest. The Broad River plan includes the desired future land uses for portions of the North West and Beltway planning areas— with suburban uses in the North West and urban uses in the Beltway planning area¹¹. The I-26/Broad River Road and Dutch

The Master Plan indicates that the I-20/26 interchange has been a problem area and explains that the interchange affects the corridor due to spillover traffic.

¹¹ City of Columbia. 2015. *Plan Columbia: Land Use Plan*. Prepared by McBride Dale Clarion and Planning NEXT. Columbia.

¹² CMOG and Richland County. 2010. *Broad River Road Corridor and Community Master Plan*. Prepared with IBI Group, McCreary Snow Architects, PA, Hall Planning & Engineering, Inc., and SPG. Atlanta.

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Square/Broad River Road areas are identified as priority investment areas, which should contain a deliberate mix of residential, commercial and civic uses, with complete streets.

The Broad River plan shows the Piney Grove Village Center at Piney Grove Road and Broad River Road; the St. Andrews Neighborhood Activity Center at St. Andrews Road and Broad River Road; the Dutch Square Mixed-Use Transit Node near Bush River Road and Broad River Road; and the Greystone Boulevard Commercial District at Greystone Boulevard and Broad River Road. A Columbia High School Joint Use Sports Complex (near I-20/Broad River Road interchange) and University Extension Campus Judicial Center (near the Correctional Campus) are also proposed.

Improvements to I-26 would have a positive effect on Broad River Road (which serves as a parallel facility). The plan indicates that the I-20/26 interchange has been a problem area and explains that the interchange affects the corridor due to spillover traffic. Action strategies for economic development include establishment of a Broad River Merchants Association, Tax Increment Financing District, use of grant programs, and development incentives for rehabilitation programs.

Richland Renaissance Plan

The Richland Renaissance Plan¹³ is a comprehensive solution to space issues faced by the government of Richland County. The plan proposes to set a series of transformative initiatives in motion that will be implemented throughout Richland County. Elements of the plan include consolidation of County operations and relocation of their offices to the Columbia Place Mall; construction of a multi-purpose facility in Lower Richland County; the creation of a comprehensive historic trail and a broad community revitalization strategy. The plan also includes the development of a “start center” in the Broad River Road area. This “start center” is located within the Broad community and could be accessed by the I-126/Colonial Life Boulevard and I-20/Broad River Road interchanges. The “start center” would house a multi-modal transit center, business incubator, tourist center and more.

Published on April 30, 2018, a major component of the Richland Renaissance Plan is Revivify Richland,¹⁴ a broad strategy to boost economic development, eliminate blighted areas and enhance the overall livability and image of Richland County. Revivify Richland asserts an overall goal of moving forward toward excellence via the remediation of Quail Atolls in the county. Quail Atolls (QAs) are areas exhibiting signs of decrepitude with the potential of adversely affecting economic viability and/or property values in a locale, especially where posing a possible risk to future development and/or negatively impacts public perception. According to this plan, there are several QAs located throughout the project corridor; these QAs represent sites that contribute to blight in the county and also offer potential opportunity for revitalization. Higher densities of QAs within the study area appear around the I-26/Bush River Road, I-20/Broad River Road and I-26/St. Andrews interchanges. Though comprehensive in its analyses, Revivify Richland is not yet complete, and as of the printing of this document, Revivify Richland has been postponed by the Richland County Council.

¹³ Richland County. 2017. “Richland Renaissance Plan.” Accessed January 31, 2018. <http://rcgov.us/Richland-Nex>

¹⁴ Richland County. 2018. “Richland Renaissance Plan. Revivify Richland.” Accessed May 10, 2018. http://www.richlandcountysc.gov/Portals/0/Departments/PublicInformationOffice/RR/Revivify%20Richland_Web_04_30_2018.pdf

3. Existing Conditions and Environmental Consequences

3.1.6 WHERE IS DEVELOPMENT ACTIVITY EXPECTED TO OCCUR WITHIN THE PROJECT STUDY AREA?

The population of South Carolina is growing, as is the Columbia metropolitan area. Growth-inducing impacts are generally associated with the provision of urban services and the extension of infrastructure to an undeveloped area; however, transportation projects can play a role. The extension of services and facilities to an individual site can reduce development constraints for other nearby areas and can serve to induce further development in the vicinity. Indirect or secondary growth-inducing impacts may include growth in the area due to additional demand for housing, employment, and goods and services associated with population increases caused by, or attached to, new development. The growth and development trends are discussed below in the context of the project study area communities as well as within the project interchange areas.

3.1.6.1 Project Study Area Development Trends

As discussed in the Socioeconomic chapter, between 2010 and 2040 the Harbison area is expected to see the most population and employment growth. The Saluda and Broad communities are expected to grow during the same time period but at a much slower pace. The other project study area communities are expected to see a decline in population.

This population and/or employment growth is likely to occur in key locations, as identified in local plans. One of these locations is in the City of West Columbia. The study area for the *West Columbia GOLD Redevelopment Plan*⁶ includes the Sunset Boulevard, Jarvis Klapman Boulevard, Meeting Street and State Street corridors, which are partially within the Riverbanks community. One key site, a four-acre, City-owned site on Meeting Street between State and Alexander Road, could be a catalyst project for commercial redevelopment and is considered a priority investment area. There are also priority investment areas in the Riverfront District and Botanical Parkway (both in the Riverbanks community).

The ten-year future land use map in the *2015 Richland County Comprehensive Plan*⁹ shows mostly suburban land uses in the North West planning area (which generally includes the Harbison community), with rural uses in the extreme northwest portion and conservation near Harbison Environmental Education Forest. Priority investment areas are located near Irmo (I-26/Broad River Road South interchange). In the Beltway planning area (which generally includes the Broad community), Urban Villages land uses are proposed. Richland County created a priority investment area in the southeast quadrant of the I-20/26 interchange to promote urban and suburban infill development.

Because most of the project study area is already developed, growth is expected to occur in most areas as redevelopment or infill development. The Harbison community appears to have the most undeveloped land,

Population and employment growth is likely to occur in key locations identified in local plans. These key locations are where development is anticipated, and they include:

- West Columbia
- Harbison Area
- Irmo

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which may explain why population and employment is projected to increase the most in this portion of the project study area through 2040.

3.1.6.2 Interchange Area Development Trends

Many areas within the I-20/26/126 Corridor have experienced rapid growth since the development of I-26 and the subsequent development of I-20 and I-126. For example, the I-26/Harbison Boulevard interchange has become a major regional retail center, housing a large shopping mall, other popular retail venues, restaurants, and hotels. There may also be potential for expansion of existing facilities near interchanges, such as the construction of additional buildings at the Lexington Medical Center near the I-26/Sunset Boulevard interchange.

The redevelopment of sites near interchanges may occur; however, this redevelopment is not necessarily occurring as a result of the proposed Carolina Crossroads project. One example is the proposed “start center,” included in the Richland Renaissance Plan; this redevelopment is planned between the I-20/Broad River Road and I-26/Bush River Road interchanges and may include a business incubator and transit hub.

Projections show that these development trends will continue through the foreseeable future. Land uses around the interchanges are already established, with limited opportunities for new unplanned large-scale development. There is a potential for small-scale direct impacts to land use as a result of property acquisition.

The location, timing, and level of future growth occurring at the interchanges would depend on the availability of infrastructure and public services. Plans for critical future infrastructure are addressed by the individual jurisdictions and agencies providing these services to accommodate future development, regardless of the proposed project.

3.1.7 WHAT ARE THE ENVIRONMENTAL CONSEQUENCES?

The proposed Carolina Crossroads project could affect existing and future land use in several ways. These include directly converting the land from its existing use to transportation use, limiting or precluding planned future developments from occurring, or indirectly inducing unplanned development as well as supporting and enhancing or accelerating planned development. This section summarizes the impacts that the no-build and reasonable alternatives would have on existing and future land uses. The reasonable alternatives are very similar in terms of land use impacts. While potential indirect effects related to land use are mentioned in this chapter, indirect and cumulative impacts are discussed in more detail in Chapter 3.15.

3.1.7.1 No-Build Alternative

The no-build alternative would not result in project-generated changes to land use; however, the no-build alternative would not be consistent with regional and local plans, because it would not accommodate projected growth and planned development anticipated in the project study area over the next 20 to 25 years.

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3.1.7.2 Reasonable Alternatives

Construction of RA1 and RA5 Modified would require right-of-way (ROW) acquisition, primarily around existing interchanges. The amount of ROW required for each reasonable alternative would vary slightly depending on the proposed interchange configurations, and would result in conversion of existing land uses to transportation uses, as shown in Table 3.1-3. RA1 and RA5 Modified would have similar direct land use impacts at interchanges. These direct land use impacts are calculated by subtracting the existing ROW (based on parcel data) from the anticipated ROW limits for each reasonable alternative within a half mile of each interchange.

Table 3.1-3 Direct Land Use Impacts at Interchanges

Interchange	Land use	RA1 acres	RA5 modified acres	No-build acres
I-20 / Bush River Road	Parks and recreation	-	-	-
	Residential	2.9	2.9	-
	Office	3	3.7	-
	Institutional	-	-	-
	Municipal	-	-	-
	Commercial	11.48	9.3	-
	Industrial	1.3	1.3	-
	Undeveloped	0.1	0.4	-
	Acres converted	18.6	17.4	0
I-20 / I-26	Parks and recreation	-	-	-
	Residential	6.7	12.7	-
	Office	9.3	10	-
	Institutional	2.2	1.5	-
	Municipal	-	-	-
	Commercial	17	10.6	-
	Industrial	-	-	-
	Undeveloped	0.1	0.4	-
	Acres converted	35.2	35.1	0
I-20 / Broad River Road	Parks and recreation	-	0.2	-
	Residential	1.8	1.9	-
	Office	-	-	-
	Institutional	0.4	0.4	-
	Municipal	-	-	-
	Commercial	1.5	2.3	-
	Industrial	-	-	-
	Undeveloped	1.8	3.9	-
	Acres converted	5.5	8.7	0

3. Existing Conditions and Environmental Consequences

Interchange	Land use	RA1 acres	RA5 modified acres	No-build acres
I-26 / Broad River Road	Parks and recreation	-	-	-
	Residential	-	-	-
	Office	-	-	-
	Institutional	-	-	-
	Municipal	-	-	-
	Commercial	2.4	2.4	-
	Industrial	0.5	0.5	-
	Undeveloped	0.3	0.3	-
	Acres converted	3.2	3.2	0
I-26 / Lake Murray Blvd	Parks and recreation	-	-	-
	Residential	0.1	0.1	-
	Office	-	-	-
	Institutional	-	-	-
	Municipal	-	-	-
	Commercial	0.6	0.6	-
	Industrial	-	-	-
	Undeveloped	0.7	0.7	-
	Acres converted	1.4	1.4	0
I-26 / Harbison Blvd	Parks and recreation	-	-	-
	Residential	0.7	0.7	-
	Office	0.4	0.4	-
	Institutional	-	-	-
	Municipal	-	-	-
	Commercial	10.1	10.1	-
	Industrial	-	-	-
	Undeveloped	0.1	0.1	-
	Acres converted	11.3	11.3	0
I-26 / Piney Grove Road	Parks and recreation	-	-	-
	Residential	1.4	1.3	-
	Office	1.1	1.1	-
	Institutional	-	-	-
	Municipal	0.1	0.1	-
	Commercial	2.5	3.3	-
	Industrial	0.8	0.8	-
	Undeveloped	1.1	0.8	-
	Acres converted	7	7.4	0

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Interchange	Land use	RA1 acres	RA5 modified acres	No-build acres
I-26 / St. Andrews Road	Parks and recreation	-	-	-
	Residential	3.9	6.5	-
	Office	3.7	2.8	-
	Institutional	1.1	0.8	-
	Municipal	-	-	-
	Commercial	6	6.3	-
	Industrial	1	1	-
	Undeveloped	-	-	-
	Acres converted	15.7	17.4	0
I-26 / Bush River Road	Parks and recreation	-	-	-
	Residential	0.9	1.5	-
	Office	3.4	4.6	-
	Institutional	1.8	1.3	-
	Municipal	0.8	0.8	-
	Commercial	6.3	5.2	-
	Industrial	6.7	6.7	-
	Undeveloped	0.8	0.8	-
	Acres converted	20.7	20.9	0
I-26 / I-126	Parks and recreation	-	-	-
	Residential	2.2	2.2	-
	Office	1.3	1.1	-
	Institutional	-	-	-
	Municipal	0.8	0.8	-
	Commercial	2.2	2.1	-
	Industrial	11.7	11.7	-
	Undeveloped	2.6	2.6	-
	Acres converted	20.8	20.5	0
I-26 / Sunset Blvd	Parks and recreation	-	-	-
	Residential	-	-	-
	Office	-	-	-
	Institutional	0.6	0.6	-
	Municipal	-	-	-
	Commercial	0.6	0.6	-
	Industrial	-	-	-
	Undeveloped	-	-	-
	Acres converted	1.2	1.2	0

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Interchange	Land use	RA1 acres	RA5 modified acres	No-build acres
I-126 / Colonial Life Blvd	Parks and recreation	-	-	-
	Residential	3.3	3.3	-
	Office	1	1	-
	Institutional	-	-	-
	Municipal	0.2	0.2	-
	Commercial	-	-	-
	Industrial	6.4	6.4	-
	Undeveloped	4	4	-
	Acres converted	14.9	14.9	0
Total		155	159	0

Source: NAIP 2013, ESRI World Imagery 2015, Lexington County, Richland County

RA1 (Recommended Preferred Alternative)

Would RA1 cause direct land use impacts?

RA1 would include the widening of I-26 with one additional lane in each direction from Broad River Road to St. Andrews Road, proposed collector-distributor (CD) lanes, and interchange improvements from Harbison Boulevard to Sunset Boulevard at I-26, from the Saluda River to the Broad River on I-20, and from I-26 to Colonial Life Boulevard on I-126. The existing partial interchange at I-126 and Colonial Life Boulevard would be converted to a full interchange, and the existing interchange at I-26 and Bush River Road would be eliminated (although roadway improvements are still proposed on Bush River Road in this location). A key feature of this alternative is the proposed turbine interchange at the I-26 and I-20 junction.

As shown in Table 3.1-3, approximately 155 acres of existing land uses at the interchanges would be converted to transportation uses for RA1. Because the areas evaluated around interchanges often overlap, this number is slightly higher than the acreage anticipated to be converted at the corridor level. RA1 is expected to convert approximately 118 acres of existing non-transportation land uses to transportation use at the corridor level. Most of this conversion would occur at the interchanges; however, there would be some minimal conversion along the mainlines of I-20, I-26, and I-126 as well. Generally speaking, commercial, industrial, and office uses would be converted in these areas. Table 3.1-4 provides the total acres of land uses converted for RA1 at the corridor level.

Table 3.1-4 Land Uses Converted by RA1 at the Corridor Level

Land use	Acres to be converted RA1
Parks and recreation	0.1
Residential	18.1

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Land use	Acres to be converted RA1
Office	15.7
Institutional	3.9
Municipal	0.9
Commercial	50.6
Industrial	15.9
Undeveloped	12.8
Total	118

Would Reasonable Alternative 1 be consistent with regional and local plans and policies?

The proposed mainline and interchange improvements for RA1 are consistent with regional and local plans. The proposed improvements would support the goals and policies of the area plans for growth and development as well as the population and employment growth that is already occurring both in the region and locally.

RA5 Modified

Would RA5 Modified cause direct land use impacts?

RA5 Modified includes the widening of I-26 with one additional lane in each direction from Broad River Road to St. Andrews Road, proposed CD lanes, and interchange improvements from Harbison Boulevard to Sunset Boulevard at I-26, from the Saluda River to the Broad River on I-20, and from I-26 to Colonial Life Boulevard on I-126. The existing partial interchange at I-126 and Colonial Life Boulevard would be converted into a full interchange, and the existing interchange at I-26 and Bush River Road would be eliminated (although roadway improvements are still proposed on Bush River Road in this location). A directional interchange is proposed at the I-26 and I-20 junction for RA5 Modified, which would provide I-20 left-turning traffic onto I-26 with loop ramps at the I-20/I-26 interchange. Unlike RA1, RA5 Modified includes proposed construction of a bridge over I-26 to connect Tram Road to Beatty Road. Due to this, approximately 3.2 acres of existing land use would be converted to transportation uses, including 0.9 acres of commercial and 2.3 acres of industrial. This conversion is captured not at an interchange, but on the corridor level for RA5 Modified.

As shown in Table 3.1-3, approximately 159 acres of existing land uses at the interchanges would be converted to transportation uses for RA5 Modified. Because the areas evaluated around interchanges often overlap, this number is slightly higher than the acreage anticipated to be converted at the corridor level. RA5 Modified is expected to convert approximately 123 acres of existing non-transportation land uses to transportation use at the corridor level. Most of this conversion would occur at the interchanges; however, there would be some minimal conversion along the mainlines of I-20, I-26, and I-126 as well. Generally speaking, commercial, industrial and office uses would be converted in these areas. Table 3.1-5 provides the total acres of land uses converted RA5 Modified at the corridor level.

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Table 3.1-5 Land Uses Converted by RA5 Modified at the Corridor Level

Land use	Acres to be converted RA5 Modified
Parks and recreation	0.2
Residential	23.9
Office	16.3
Institutional	3.0
Municipal	1.0
Commercial	46.9
Industrial	15.9
Undeveloped	16.2
Total	123

Would Reasonable Alternative 5A be consistent with regional and local plans and policies?

The proposed mainline and interchange improvements for RA5 Modified are consistent with regional and local plans. The proposed improvements would support the goals and policies of the area plans for growth and development as well as the population and employment growth that is already occurring both in the region and locally.

3.1.8 WHAT CONCLUSIONS CAN BE DRAWN REGARDING DIRECT LAND USE IMPACTS?

Overall, the proposed I-20/26/126 Carolina Crossroads project would directly convert existing non-transportation land uses to transportation uses, and the conversion would be similar between both reasonable alternatives at the corridor level, from 118 acres (RA1) to 123 acres (RA5 Modified), see Table 3.1-6.

Table 3.1-6 Land Uses Converted by Reasonable Alternatives at the Corridor Level

Land use	Acres to be converted	
	RA1	RA5 Modified
Parks and recreation	0.1	0.2
Residential	18.1	23.9
Office	15.7	16.3
Institutional	3.9	3.0
Municipal	0.9	1.0
Commercial	50.6	46.9
Industrial	15.9	15.9
Undeveloped	12.8	16.2
Total	118	123

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Because the half mile interchange areas often overlap, the impacts calculated at interchanges for each reasonable alternative, are slightly higher; from 155 acres (RA1) to 159 acres (RA5 Modified) (refer to Table 3.1-3). Anticipated land use changes would be compatible with existing uses and would be consistent with regional and local land use plans.

3.1.9 HOW WILL LAND USE IMPACTS BE MITIGATED?

The reasonable alternatives are generally consistent with regional and local land use plans. Coordination efforts by SCDOT with local officials is ongoing during the planning process. However, the responsibility for land use planning lies with the local jurisdictions. Land developers would be responsible for obtaining the necessary approvals and permits for developments from local, state, and federal agencies, which may include, but are not limited to Section 401, Section 402, and Section 404 permits/approvals, as well as mitigation for any fill of wetlands or Waters of the U.S.

Anticipated land use changes would be compatible with existing uses and would be consistent with regional and local land use plans.