ENVIRONMENTAL ASSESSMENT
Bishopville Bypass
Lee County, South Carolina

PIN: 0330 (009)
Road PCN: 33261X
File No. 31.128B

Submitted Pursuant to 42 U.S.C. 4332 (2)(c)
by the
U.S. Department of Transportation,
Federal Highway Administration
and
S.C. Department of Transportation,
Environmental Management Office

AUGUST 31, 2012
Date of Approval

S.C. Department of Transportation

SEPTEMBER 10, 2012
Date of Approval

Federal Highway Administration

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Environmental Commitments

- Although no relocations are anticipated, any relocation would be conducted in accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. Relocation resources will be available to all relocates without discrimination. (Page 71)

- To minimize future traffic noise impacts on currently undeveloped lands of Type I projects, a highway agency shall inform local officials of:
  i. Noise compatible planning concepts;
  ii. Best estimations of the future design year noise levels at various distances from the edge of the nearest travel lane of the highway improvement; and
  iii. Non-eligibility for Federal-aid for a Type II project.[1] (Page 63)

- One archaeological site (38LE1037) was recommended for further testing to determine its eligibility. The site is located in an active agricultural field and Phase II testing is being coordinated with the planting seasons. Therefore, Phase II testing will be conducted and final SHPO coordination will occur before FHWA makes a final decision. (Page 67)

- Best Management Practices (BMPs) in accordance with local, state, and federal guidelines will be incorporated during the design and construction of the project to minimize impacts to water quality. (Page 44/79)

- An erosion control plan will be developed and implemented prior to construction using BMPs. The plan will reflect policies contained in 23 CFR 650 B and SCDOT's Supplemental Specifications on Seeding and Erosion Control Measures (August 15, 2001). The plan will incorporate measures to control non-point source impacts. These practices include, but are not limited to: using berms, dikes, silt barriers, and catch basins; vegetating or covering disturbed areas as soon as possible; and conforming to proper clean-up practices. (Page 79)

- Stormwater control measures, both during construction and post-construction, are required for SCDOT projects constructed in the vicinity of 303(d), TMDL, ORW, tidal, and other sensitive waters in accordance with the SCDOT's MS4 permit. (Page 44)

- Dust control will be the responsibility of the contractor and may include the following (Page 78):
  - Minimizing exposed earth surface
  - Temporary and permanent seeding and mulching
  - Watering work and haul areas during dry periods
  - Covering, shielding, or stabilizing material stockpiles
  - Using covered haul trucks

[1] 23 CFR 772.117

- Contractors will be required to comply with Occupational Safety and Health Administration (OSHA) regulations concerning noise attenuation devices on construction equipment. Construction activities could be limited during the evening, weekends, and holidays. Storage and staging areas would be located as far from noise sensitive areas as practicable. (Page 78)

- Construction will be performed to comply with all federal, state, and local laws governing safety, health, and sanitation. Procedures would apply all safeguards, safety devices, protective equipment, and any other action reasonably necessary to protect the life and health of employees on the job, the safety of the public, and the property in connection with the performance of the work. The following items would be utilized, where necessary, to maintain public safety and the flow of traffic (Page 79):
  - Constructing and maintaining temporary detours, temporary structures, temporary approaches, crossings, and intersections with streets and roads, as well as using aggregates for the maintenance of traffic and water for use as a dust palliative.
  - Furnishing flaggers, pilot trucks, and drivers.
  - Furnishing, erecting, and maintaining warning devices such as signs, auxiliary barriers, channelizing devices, hazard warning lights, barricades, flares, and reflective markers. If a street must be closed to traffic, traffic control devices would be illuminated during hours of darkness.

- All construction waste material generated during clearing, grubbing, and other construction phases will be removed from the project site and burned or disposed of by the contractor in accordance with state and local regulations. (Page 80)

- It is SCDOT's policy to avoid the acquisition of underground storage tanks and other hazardous materials, if possible. If avoidance is not a viable alternative, tanks and other hazardous materials will be tested and removed and/or treated in accordance with the USEPA and SCDHEC requirements. Cost of necessary remedial actions would be considered during the right of way appraisal and acquisition process. (Page 64)

EXECUTIVE SUMMARY

ES.1 Description of the Project

The South Carolina Department of Transportation (SCDOT) has prepared an Environmental Assessment (EA) for the proposed construction of a new location bypass of the City of Bishopville, Lee County, from US 15 near I-20 south of the city, circling the city to the southeast, and connecting to the junction of US 15 and SC 341 north of the city. The typical cross section will consist of an arterial two-lane roadway with turning lanes at intersections and a general right of way width of 100 feet. The speed limit would be posted at 45 to 55 miles per hour.

ES.2 History of the Project and Project Setting

The City of Bishopville is located in Lee County in the northeast portion of the state and is served by I-20, US 15, SC 341, and SC 34. US 15 is a north-south highway that becomes Main Street as it travels through downtown Bishopville between I-20 to the south and Hartsville to the northeast.

Currently, the City of Bishopville continues to have a large amount of commercial truck traffic in the downtown core, resulting in traffic noise and congestion along Main Street (US 15). Transportation goals identified in the Lee County Comprehensive Plan include "…creating safer routes of travel, decrease congestion as necessary, as well as improve air quality and reduce the noise along the downtown Bishopville corridor by reducing or restricting hours of truck operation…."[2]

ES.3 Purpose and Need

The purpose of this project is to:

- Provide an alternate route for through trucks traveling through downtown Bishopville and encourage revitalization of businesses along Main Street (US 15).
- Support the economic development plans for two areas within Bishopville and Lee County: first, encouraging economic development along Main Street (US 15) within downtown Bishopville by alleviating the high percentage of through truck traffic in downtown and second, by providing access to areas zoned as the Proposed Development District for the County, as shown in Figure ES.1.

ES.4 Needs for the Project

Truck Traffic:

Traffic-related issues in the project area include heavy truck movements through the downtown on Main Street (US 15), along with the regular daily traffic. The focus of enhancements and improvements within downtown has been the Main Street corridor. Currently, Main Street (US 15) continues to serve as the primary corridor through the downtown area, connecting I-20 to Bishopville, Hartsville, Bennettsville and other towns in the northeastern portion of South Carolina. SCDOT traffic counts indicate that over 1,000 trucks pass through this Main Street corridor daily. By 2035, the number of through trucks in downtown is expected to grow from 915 trucks to almost 1,500 trucks per day, an increase of almost 62 percent (see Table ES.1). Traffic studies showed that 90 percent of these trucks are "through" trucks, those trucks with origins and destinations outside of project area. Truck traffic in downtown Bishopville continues to hinder the revitalization efforts and is perceived by residents and business owners as unsafe for pedestrians and cyclists.

[2] Lee County Comprehensive Plan, June 23, 2011, page 61

Table ES.1
Through and Local Truck Percentages (2010 – 2035)

	2010 Traffic						2035 Traffic			
Segment	2010 AADT	2010 Percent Truck	2010 Truck Volume	Percent "through" Trucks	2010 "through" Trucks	2010 "local" Trucks	2035 AADT **	2035 "through" Trucks	2035 "local" Trucks	Percent "through "Truck Growth (2010 - 2035)*
A	10,900	11%	1,199	90%	1,079	120	16,070	1,747	177	61.9%
B	12,000	18%	2,160	90%	1,944	216	15,867	3,147	286	61.9%
C	11,300	9%	1,017	90%	915	102	14,566	1,482	131	61.9%
D	7,100	11%	781	90%	703	78	11,481	1,184	126	68.5%

** Derived from TRANSEARCH forecast freight movements*
*** Derived from Updated SLRCOG Travel Demand Model*

Table ES.1 shows a comparison of the number of through trucks and their overall percentage of the AADT for each segment along Main Street (US 15), as shown in Figure ES.1. The segments along Main Street (US 15) are defined as:

- Segment A - US 15, from northeast of the I-20 interchange to SC 154.
- Segment B – US 15, between SC 154 to SC 341.
- Segment C – US 15, from SC 341 on the southeast side of the city to SC 341 (Bethune Highway) on the northwest side of the city.
- Segment D – US 15, from SC 341 on the northwest side of the city, extending to the northeast.

Economic Development:
Alleviating the high percentage of through truck traffic in downtown Bishopville would support local investments in the revitalization of the city and encourage economic development along the Main Street corridor.

In addition, the Lee County Comprehensive Plan is a local basis for guiding development and growth in the county; the plan identified "the Bishopville area between Interstate 20, SC 341 and US 15 and the City is projected to experience the greatest amount of growth over the next five to twenty years. Factors influencing this development are: (1) the availability of water and sewer systems in the area, (2) the excellent transportation access provided by Interstate 20, US 15 and SC 341, (3) the availability of developable sites, (4) the amenities offered by living near or in an urban area."[3] This area is identified as a Proposed Development District in the Comprehensive Plan, see Figure ES.2.

The proposed roadway would support the economic development goals of both the City of Bishopville and Lee County.

ES.5 Alternatives Considered

Throughout the project, alternatives are developed, considered and evaluated and sometimes eliminated at various stages of the project development process. Some alternatives developed for the project were eliminated early in the project based on the traffic analysis and others were compared to

[3] Ibid, page 79

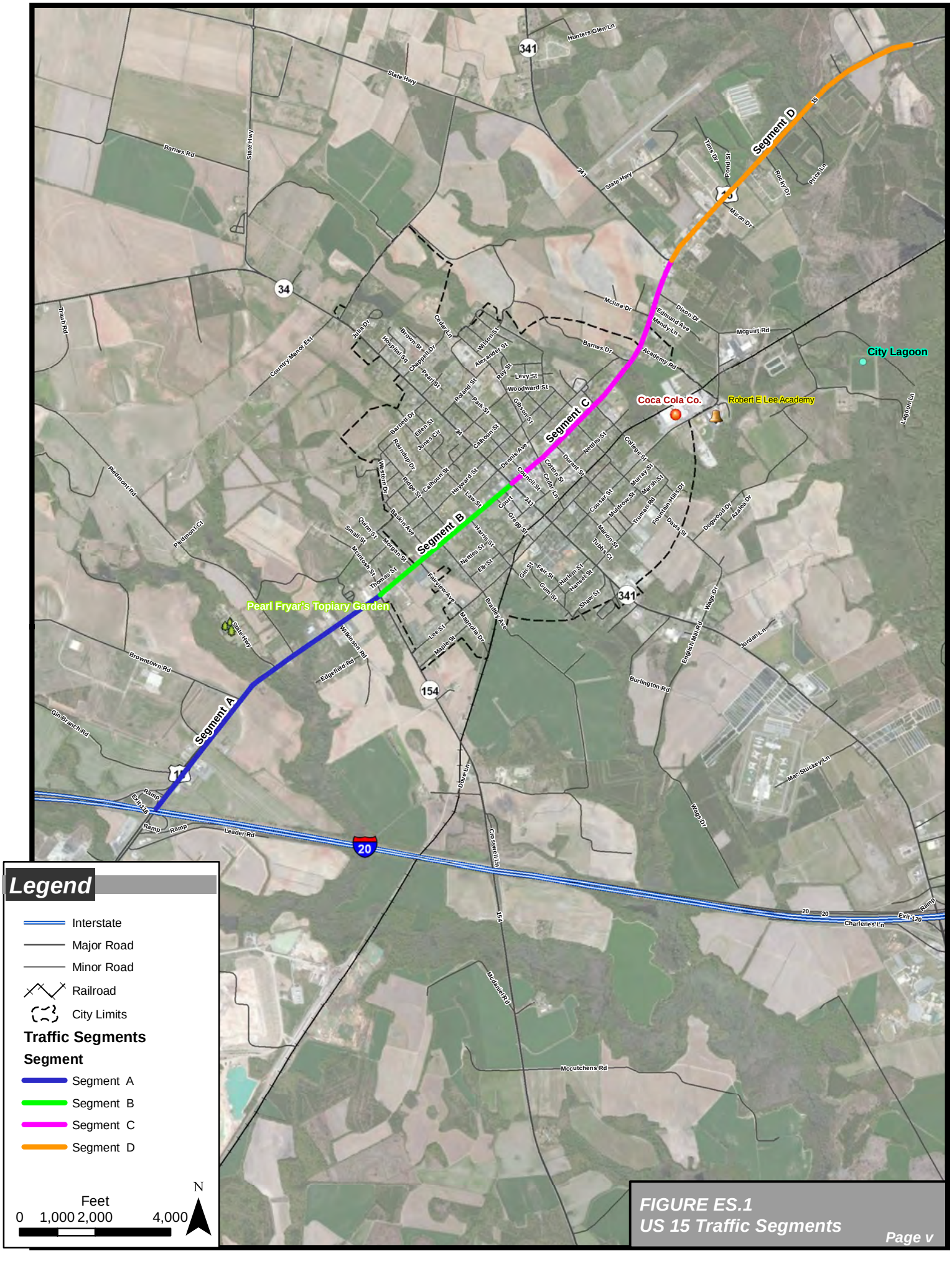


FIGURE ES.1
US 15 Traffic Segments

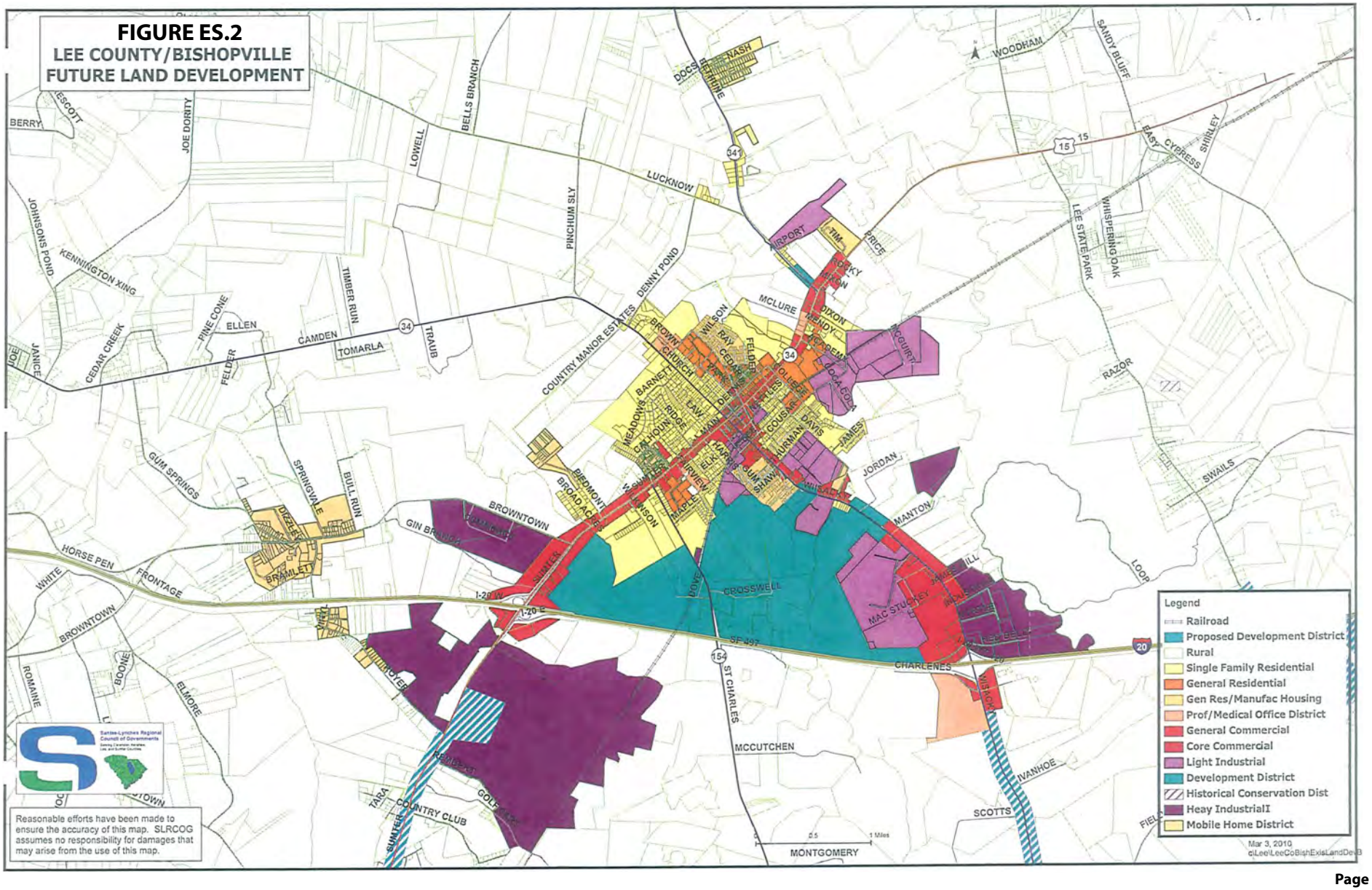


FIGURE ES.2
LEE COUNTY/BISHOPVILLE
FUTURE LAND DEVELOPMENT
Legend
Railroad
Proposed Development District
Rural
Single Family Residential
General Residential
Gen Res/Manufac Housing
Prof/Medical Office District
General Commercial
Core Commercial
Light Industrial
Development District
Historical Conservation Dist
Heay IndustrialI
Mobile Home District
Reasonable efforts have been made to ensure the accuracy of this map. SLRCOG assumes no responsibility for damages that may arise from the use of this map.
Mar 3, 2010
MONTGOMERY
MCCUTCHEN
CROSSWELL
CHARLENES
BROWNTOWN
MANTON
JORDAN
LUCKNOW
WOODHAM
SANDY BLUFF
CAMDEN
TOMARLA
ELLEN
PINE CONE
TIMBER RUN
DENNY POND
COUNTRY MANOR ESTATES
MCLURE
PRICE
AIRPORT
LEE STATE PARK
WHISPERING OAK
RAZOR
SWAILS
SPRINGVALE
BULL RUN
GUM SPRINGS
HORSE PEN
FRONTAGE
WHITE
ROMAINE
BOONE
ELMORE
TARA
COUNTRY CLUB
GOLF COURSE
SUMTER
IVANHOE
SCOTTS
ST CHARLES
I-20 W
I-20 E
SF 497
BELLS BRANCH
LOWELL
JOE DORITY
JOHNSONS POND
KENNINGTON XING
CEDAR CREEK
JANICE
BERRY
ESCOTT
DOCSEY
NASH
EASY
CYPRESS
SHIRLEY
BROWN
CHURCH
WILSON
RAY
CEDAR
FELDER
BARNETT
MEADOWS
CALHOUN
RIDGE
LAW
DAVIS
JAMES
PIEDMONT
BROADACRES
SUMTER
JOHNSON
MAPLE
SHAW
MAC STUCKEY
JAMES
BELL
DIXON
MENDY
MAGEE
LOCK-COTT
MCGUIRT
YORKY
BROWN
TIM
BRAMLETT
DIZZLEY
GIN BRANCH
HOWE
HUTTER
REGENCY
LOOP

other alternatives and eliminated based on the severity of their impacts or fatal flaws. These alternatives are shown in Figure ES.3.

Alternatives Considered but Eliminated:

- New Location Alternatives – SCDOT and the project team developed five new location alignments for the proposed bypass. Three alternatives bypassed the City of Bishopville to the southeast and two bypassed the city to the northwest. Based on the location of available utilities and local zoning and development plan for the county, it was determined that the two alternatives to the northwest of the project would not meet the purpose and need for the project of promoting economic development and were eliminated. The two alternatives to the southeast of the project were found to meet the needs of the project however; a comparison of impacts showed these two alternatives had more impacts than the Preferred Alternative, including relocations, noise impacts and impacts on low-income and/or minority communities. Therefore, these two alternatives were eliminated from further consideration.

- Truck Routes using Existing Roads – Because the purpose of the project is to remove truck traffic from the downtown area, the project team also considered two truck routes that utilized existing routes around the exterior of the city. Truck routes were developed to primarily use existing roadways, which may need some reconstruction. The east/southeast side of Bishopville was chosen because of the location of commercial and industrial areas in Bishopville. These alternatives did not support opportunities for economic development. In addition, the social/community impacts, such as relocations and noise, to these urban alternatives were much higher than the new location alternatives, although impacts to natural resources, such as wetlands, were generally lower. These two alternatives also impacted a potential historic district within the city. Because of these impacts, these two alternatives were eliminated.

- TSM and Mass Transit Transportation Systems Management (TSM) can include intersection improvements, traffic signal coordination, access management, and turn restrictions. TSM strategies would not be effective in removing trucks from Main Street (US 15) in downtown Bishopville or in enhancing economic development activities in the area and therefore, would not meet the purpose and need for the project. Mass transit in Bishopville is currently limited to "demand" and establishing service would not serve the purpose of removing trucks from the Main Street (US 15) or enhancing economic development in the area. Therefore, a mass transit alternative would not meet the purpose and need for the project.

ES.6 Preferred Alternative

The Preferred Alternative is approximately 5.7 miles long and it bypasses Bishopville to the southeast. This alternative would leave US 15 approximately 0.7 miles from the interchange at Interstate 20 (I-20), across from Browntown Road and cross eastward south of the city. The alternative crosses the South Carolina Central Railroad (SCRF) railroad line, near Road SC 154. Continuing east, it would cross SC 341 between Wags Drive and the Lee County Correction Institute. The alternative would then turn northward through farmland. The alternative crosses through the Bishopville Wastewater Treatment Facility, and crosses the railroad line a second time. The bypass turns northwestward, crossing US 15,

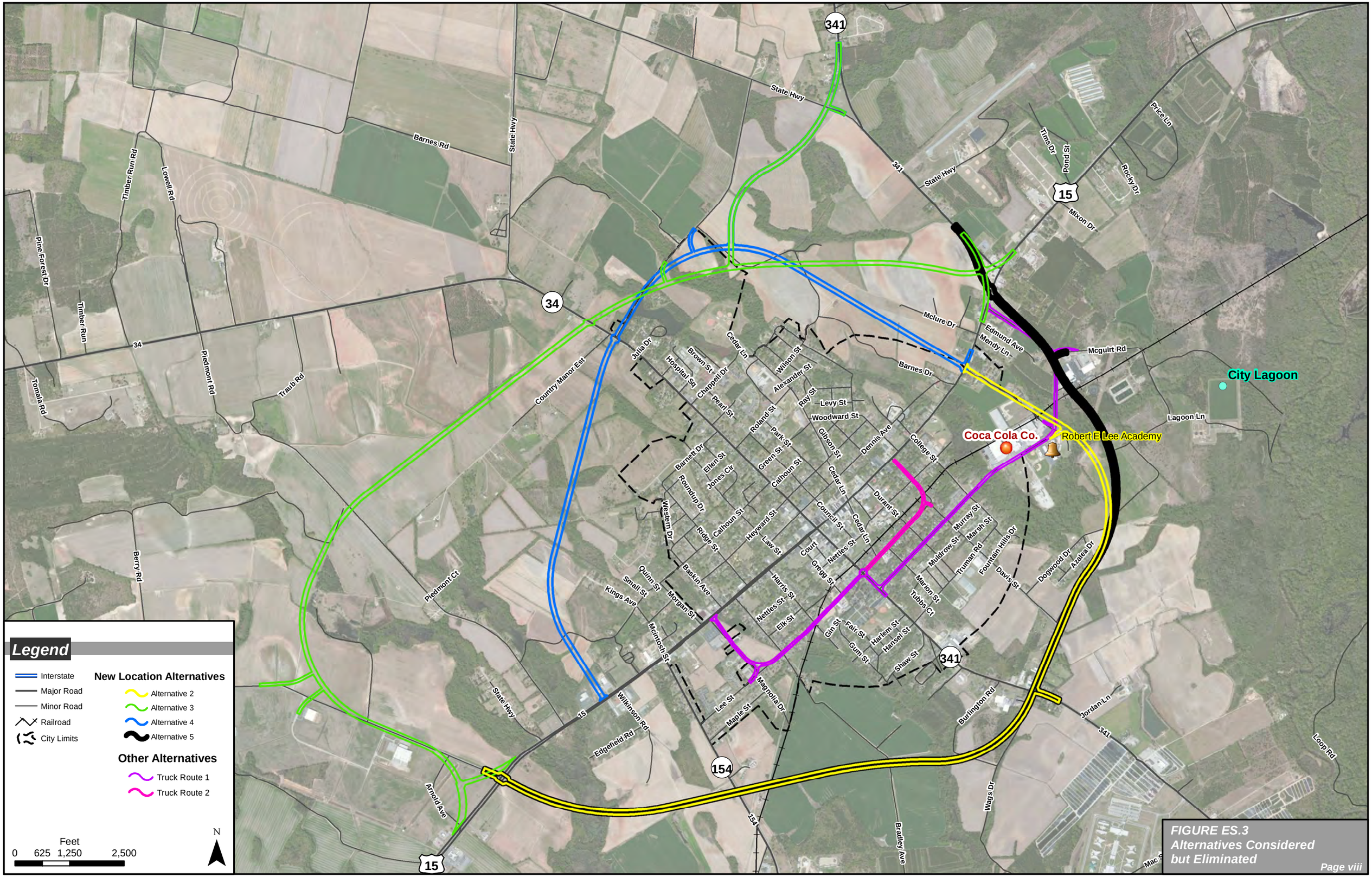


FIGURE ES.3
Alternatives Considered but Eliminated

just north of Dixon Drive and tying into SC 341. See Figure ES.4. The Preferred Alternative is expected to cost approximately $19 million.

The Preferred Alternative meets the purpose and need for the project by removing truck traffic from downtown Bishopville and supporting revitalization and economic development efforts within the City of Bishopville. In addition, the Preferred Alternative would provide improved roadway access to Lee County's Proposed Development District (see Figure ES.2). Access, in addition to the available utilities, would support economic opportunities in the area and encourage commercial and industrial businesses to locate in the area.

ES.7 Impacts of the Preferred Alternative on the Environment

The table below summarizes the impacts of the Preferred Alternative on both the human and natural environments.

Table ES.2
Environmental Impact Summary of the Preferred Alternative

Category	Impacts
Cost in $ millions	$19
Total Length (miles)	5.70
Relocations	1 (vacant)
Archaeological Sites (NRHP eligible or listed)	0
Historic Sites (NRHP eligible or listed)	0
Hazardous Materials Sites	1
Noise-Impacted Receptors	0
Floodplains (acres)	3.8
Wetlands (acres)	2.87*
Stream Crossings	3
Threatened & Endangered Species	0
Linear Drainage Features	1
Farmland (acres, prime)	45.8

*Wetland acreage based on the delineation of the Preferred Alternative.

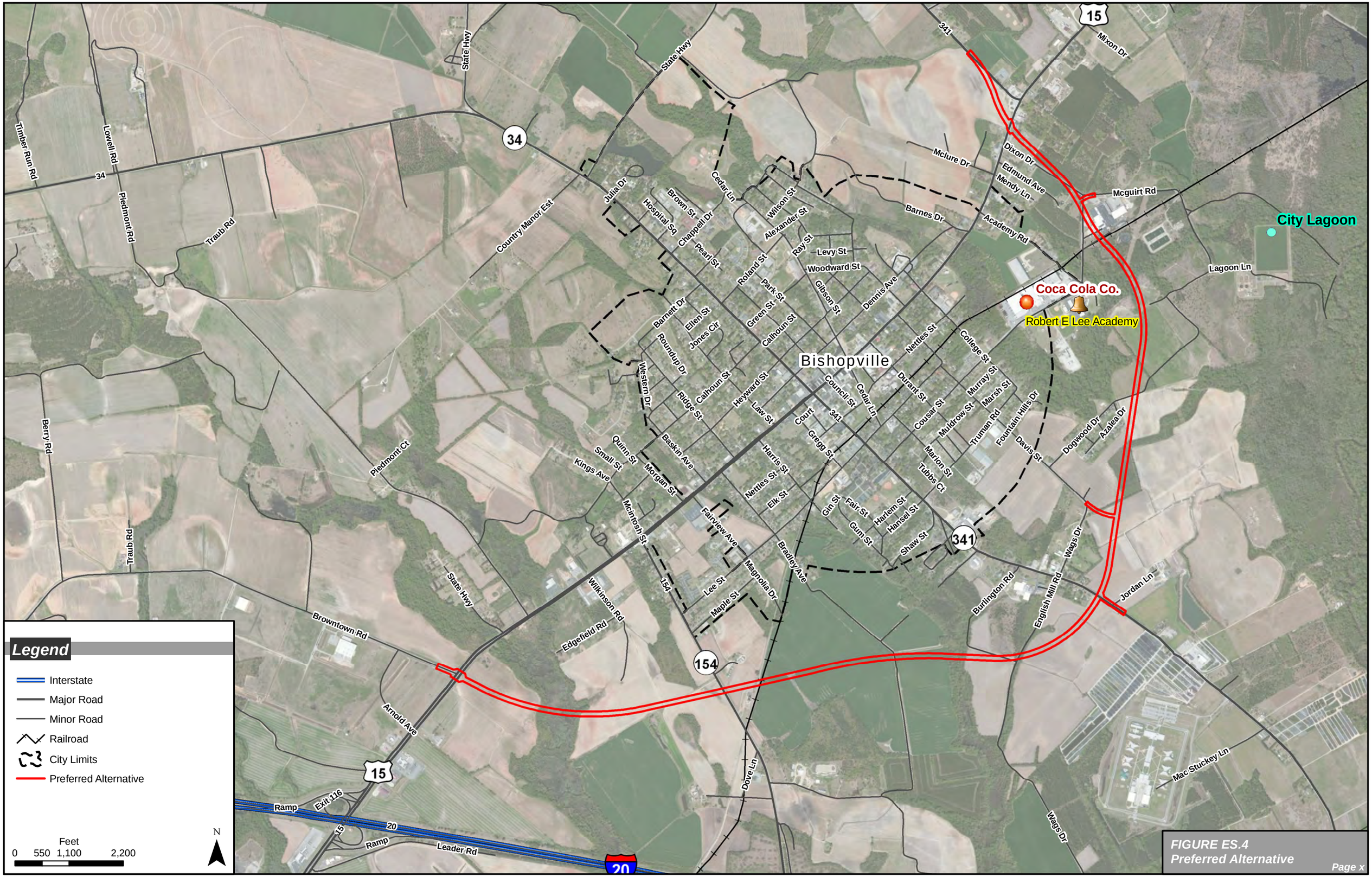


FIGURE ES.4
Preferred Alternative

TABLE OF CONTENTS

FIGURES AND TABLES

APPENDICES

1. INTRODUCTION

The South Carolina Department of Transportation (SCDOT) has prepared an Environmental Assessment (EA) for the proposed construction of a new location bypass of the City of Bishopville, Lee County, from US 15 near I-20 south of the city, circling to either the east or west side of the city, and connecting to the junction of US 15 and SC 341 north of the city. The typical cross section will consist of a two-lane arterial roadway with a right of way width of 100 feet.

This document, together with its appendices and technical reports, constitutes an Environmental Assessment (EA) and is prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 as amended; the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 CFR 1500-1508); the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU); and, the Federal Highway Administration (FHWA) environmental impact and related procedures (23 CFR 771). Separate technical reports addressing traffic, noise, hazardous materials and cultural resources have been prepared and are appended to this document.

The project, as proposed, would result in certain modifications to the human and natural environment. However, SCDOT has not identified any significant impacts that would occur and therefore, the project meets the criteria under 23 CFR 771.115(c) for processing as an Environmental Assessment. Specific preliminary environmental studies conducted in the early stages of project development and understandings of the scope of work to be performed were considered in this decision.

1.1 Where is the project located?

The City of Bishopville is located in Lee County in the northeast portion of the state and served by I-20, US 15, SC 341, and SC 34. US 15 is a north-south highway that becomes Main Street as it travels through downtown Bishopville. SC 341 travels northwest to southeast through Bishopville and has a connection with I-20 south of the city and US 15 on the north side of the city. SC 34 enters Bishopville from Camden to the west and joins SC 341 as it intersects US 15 and continues east.

The City of Bishopville is 2.4 square miles, with high-density residential areas surrounding a commercial district. Industrial areas are on the outskirts with agricultural land and low-density housing surrounding the city (see Figure 1.1 Location Map).

1.2 What existing roads are in the project area?

Currently, there is no roadway that functions as a bypass around the city. Main Street (US 15) continues to serve as the primary corridor through the downtown area, connecting I-20 to Bishopville, Hartsville, Bennettsville and other towns in the northeastern portion of South Carolina. Additional routes, SC 341 and SC 34, connect to Camden, Bethune, and Sumter. SC 341 is locally known as Bethune Highway as it travels northwest out of the city and Wisacky Highway as it travels southeast to intersect with I-20. These routes service local traffic accessing downtown Bishopville as well as regional truck traffic passing through. The posted speed limits for these routes vary from 25 to 45 miles per hour (mph) as they travel through downtown. On the outskirts of the city, the posted speed limits increase to 55-60 mph.

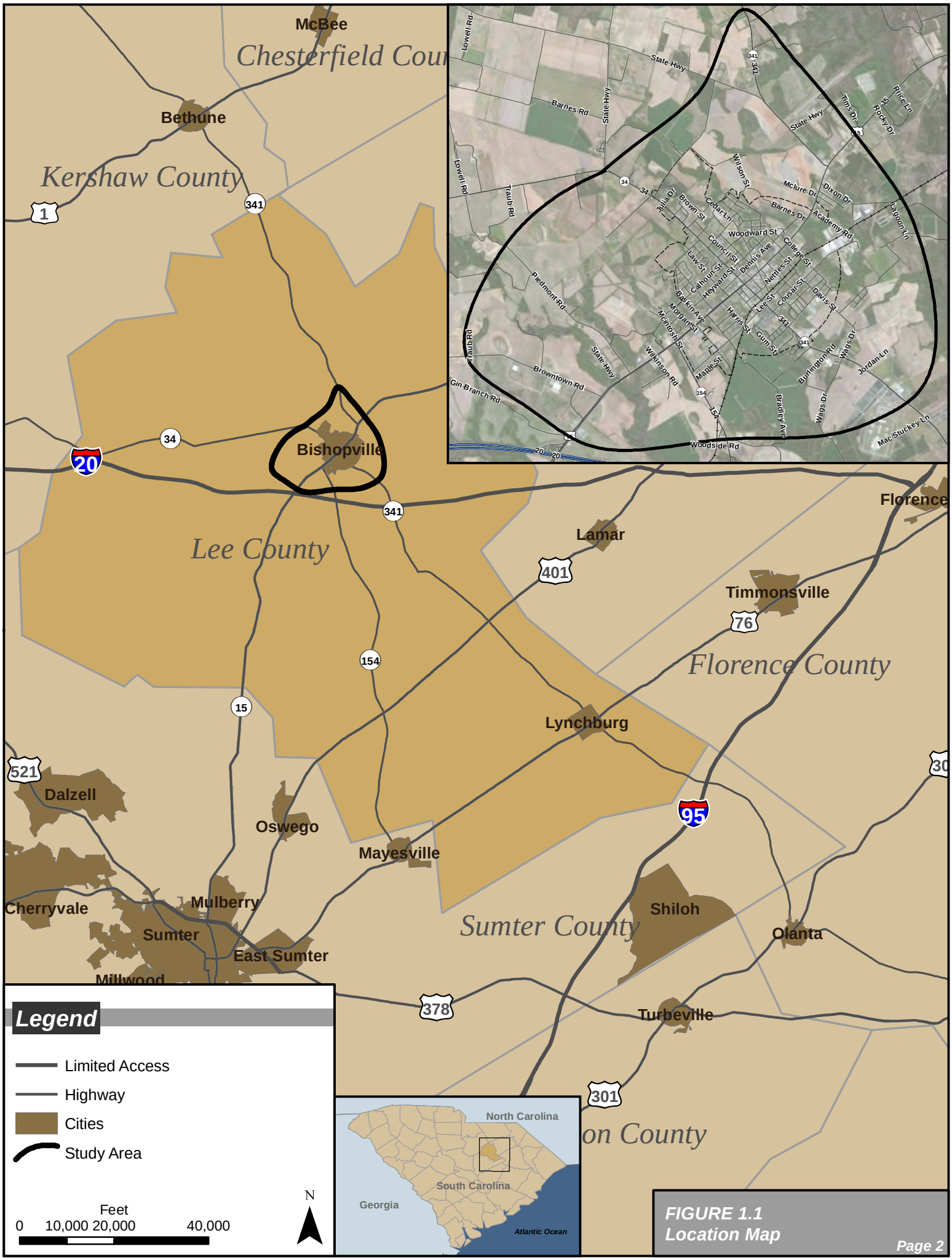


FIGURE 1.1
Location Map

2. PURPOSE AND NEED

SCDOT proposes to provide a new location roadway for the City of Bishopville located in Lee County, South Carolina from US 15, near I-20, to the junction of US 15 and SC 341. The proposed project would result in certain modifications to the human and natural environment. However, the Department has not identified any significant impacts that would occur based on the preliminary data collected and reviewed, and therefore the project meets the criteria under 23 CFR 771.115(c) for processing as an Environmental Assessment.

2.1 What is the history of the project?

Currently, the City of Bishopville continues to have a large amount of commercial truck traffic in the downtown core, causing noise and congestion along Main Street (US 15) in downtown Bishopville. Transportation goals identified in the Lee County Comprehensive Plan include "…creating safer routes of travel, decrease congestion as necessary, as well as improve air quality and reduce the noise along the downtown Bishopville corridor by reducing or restricting hours of truck operation…."[4]

2.2 What is the Purpose for the Project?

The purpose of this project is to:

- Provide an alternate route for through trucks traveling through downtown Bishopville and encourage revitalization of businesses along Main Street (US 15).

- Support the economic development plans for two areas within Bishopville and Lee County: first, encouraging economic development along Main Street (US 15) within downtown Bishopville by alleviating the high percentage of through truck traffic in downtown and second, by providing access to areas zoned as the proposed development district for the County.

2.3 What are the needs for the proposed project?

Environmental documents prepared under NEPA begin with a discussion of the "purpose and need" of a proposed action. This provides the context and criteria for the development and screening of alternatives to the proposed action. The purpose (solutions) and need (problems) presents a statement explaining why the proposed action is being considered and influences the rest of the project development process, including the range of alternatives studied and the selected alternative. All reasonable alternatives examined in detail must meet the defined project need and purpose.

[4] Lee County Comprehensive Plan, June 23, 2011, page 61

2.3.1 Truck Traffic

What are the current traffic conditions along Main Street (US 15)

Traffic-related issues in the project area are heavy truck movements through the downtown on Main Street (US 15), along with the regular daily traffic. Reducing the number of lanes on Main Street (US 15) from four to two was intended to discourage trucks from traveling through downtown. However, truck traffic in downtown Bishopville continues to hinder the revitalization efforts and is perceived by residents and business owners as unsafe for pedestrians and cyclists.

Currently, Main Street (US 15) continues to serve as the primary corridor through the downtown area, connecting I-20 to Bishopville, Hartsville, Bennettsville and other towns in the northeastern portion of South Carolina. SCDOT traffic counts indicate that over 1,000 trucks pass through this Main Street (US 15) corridor (see Table 2.1) daily. Local businesses in and around Bishopville also generate some amount of commercial traffic on the area's road network, including the Coca-Cola Consolidated South Atlantic Canners (estimated 75 truck trips, 150 round trips daily)and the Lee County Landfill (estimated 90 truck trips, or 180 round trips daily). While these businesses do contribute to commercial truck traffic, trips originating and terminating within the project area only account for approximately 10 percent of total truck traffic traveling through the downtown area. Currently (2010), the percent of through-truck trips, those trucks with origins and destinations outside of project area, is estimated to be between 8 percent and 16 percent of the total AADT at varying locations along US 15.[5]

Based on the freight and truck model analysis (see Appendix B, Average Daily Traffic and Truck Traffic Technical Memorandum), this trend is expected to continue to increase through 2035. By 2035, the number of through trucks in downtown is expected to grow from 915 trucks to almost 1,500 trucks per day, an increase of almost 62 percent (see Table 2.1).

[5] Bishopville Bypass Environmental Assessment: Average Daily Traffic and Truck Traffic Technical Memorandum

Table 2.1
Through and Local Truck Percentages (2010 – 2035)

	2010 Traffic						2035 Traffic			
Segment	2010 AADT	2010 Percent Truck	2010 Truck Volume	Percent "through" Trucks	2010 "through" Trucks	2010 "local" Trucks	2035 AADT **	2035 "through" Trucks	2035 "local" Trucks	Percent "through "Truck Growth (2010 - 2035)*
A	10,900	11%	1,199	90%	1,079	120	16,070	1,747	177	61.9%
B	12,000	18%	2,160	90%	1,944	216	15,867	3,147	286	61.9%
C	11,300	9%	1,017	90%	915	102	14,566	1,482	131	61.9%
D	7,100	11%	781	90%	703	78	11,481	1,184	126	68.5%

** Derived from TRANSEARCH forecast freight movements*
*** Derived from Updated SLRCOG Travel Demand Model*

Table 2.1 shows a comparison of the number of through trucks and their overall percentage of the AADT for each segment along Main Street (US 15), as shown in Figure 2.1. The segments along Main Street (US 15) are defined as:

- Segment A - US 15, from northeast of the I-20 interchange to SC 154.
- Segment B – US 15, between SC 154 to SC 341.
- Segment C – US 15, from SC 341 on the southeast side of the city to SC 341 (Bethune Highway) on the northwest side of the city.
- Segment D – US 15, from SC 341 on the northwest side of the city, extending to the northeast.

Through evaluation of observed traffic behavior, observed truck percentage counts, and available freight data forecasts, it can be concluded that Main Street (US 15) through Bishopville does experience a high percentage of through truck trips on an average daily basis. The overall estimated traffic volume and the percentage of commercial vehicles on roadways within the project area are expected to consistently increase over the next 25 years with development in the region. As traffic continues to increase in Bishopville, the historic downtown area would continue to experience considerable through truck traffic, which contributes to negative impacts on the aesthetics of the downtown environment for the community.

Providing an alternative road designated as a truck route could remove a significant portion of through trucks from Main Street (US 15) within downtown Bishopville. Based on the freight and truck model analysis, a truck route would reduce through trucks on Segment B of US 15 by 3,147 trucks per day and on Segment C of US 15 by 1,482 trucks per day. Figure 2.2 shows a comparison of the existing (2010) truck traffic on these segments of Main Street (US 15) and the predicted future truck traffic (2035) that would be removed from these segments.

Removing through truck traffic from Main Street (US 15) and the center of town could help make Bishopville more attractive to businesses, investors and shoppers. Reductions in traffic volumes of through traffic could improve pedestrian comfort and allow residents to utilize improvements that have already been made to the downtown core, increasing the level of activity for local downtown businesses.

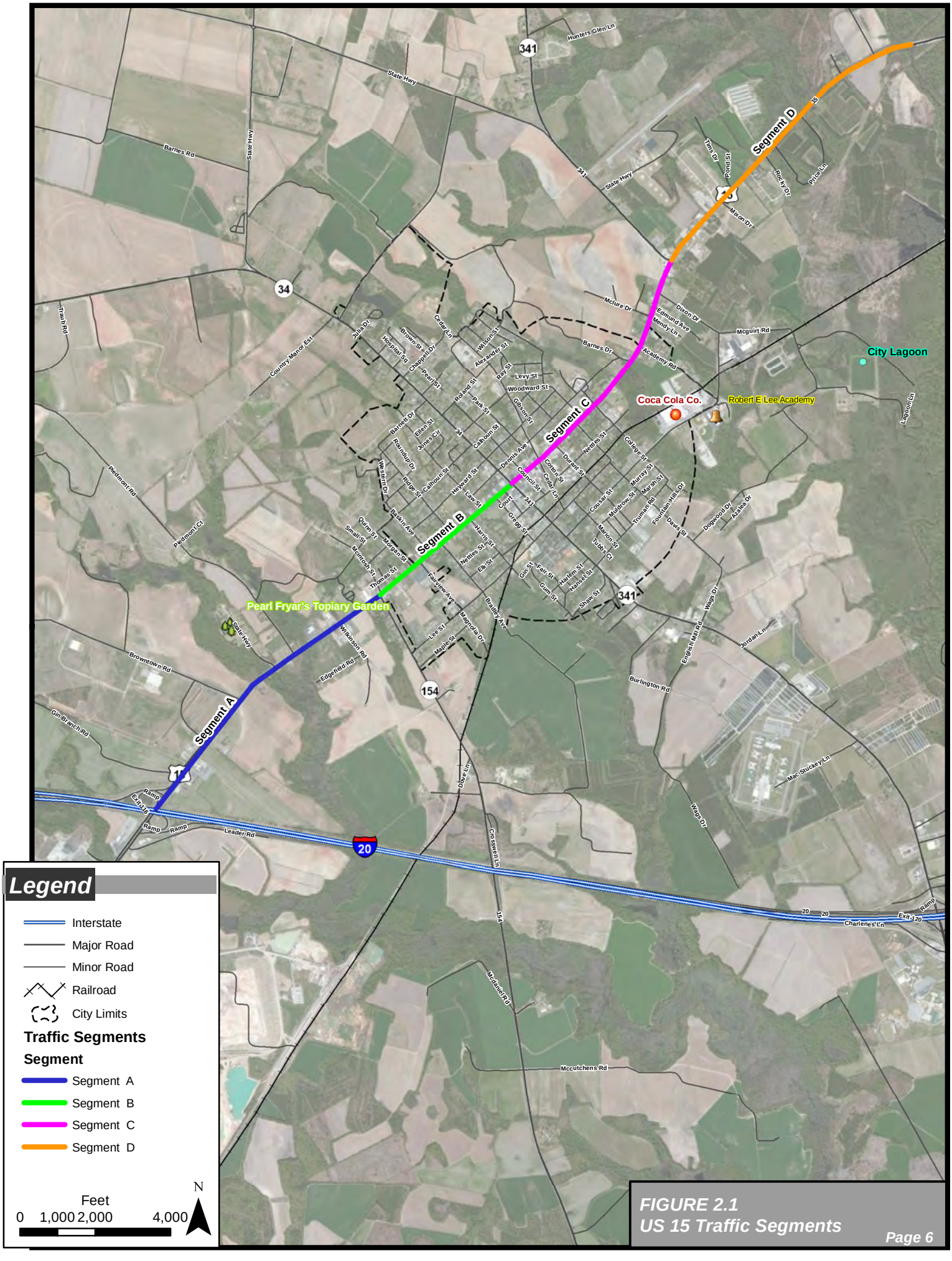
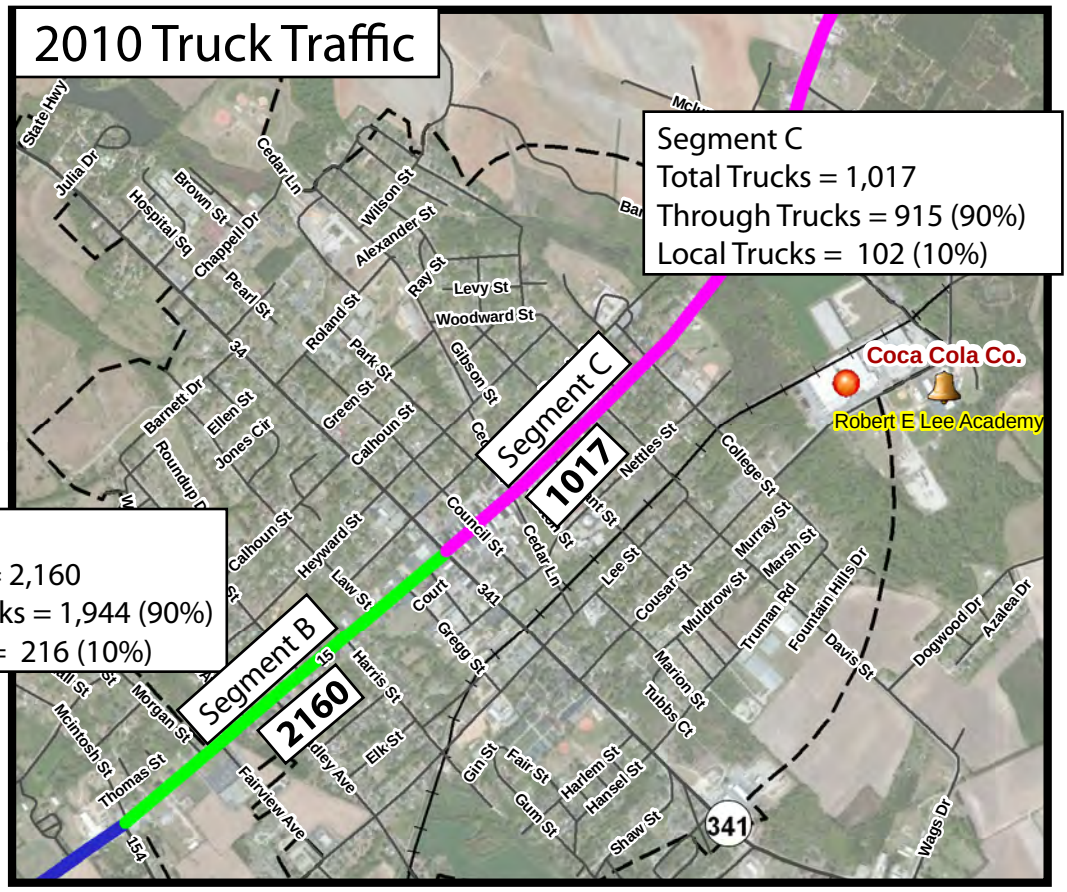
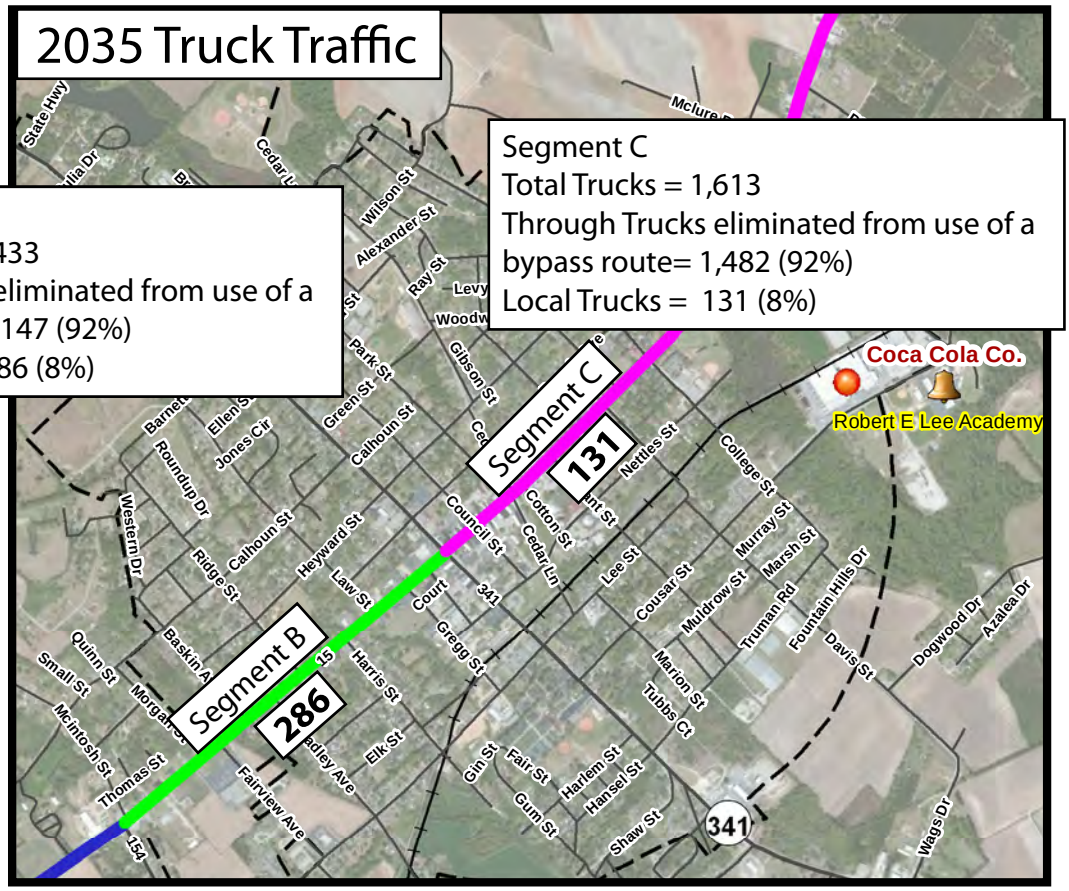


FIGURE 2.1
US 15 Traffic Segments





Legend

- Interstate
- Major Road
- Minor Road
- Railroad
- City Limits

Traffic Segments

Segment

- Segment A
- Segment B
- Segment C

Feet
0 470 940 1,880

N

FIGURE 2.2
Existing (2010) vs. Future (2035) Truck Traffic

2.3.2 Economic Development

The project is intended to support the economic development plans for two areas within Bishopville and Lee County: first, encouraging economic development along Main Street (US 15) within downtown Bishopville by alleviating the high percentage of through truck traffic in downtown and second, by providing access to areas zoned as the proposed development district for the County.

What local efforts have been made to revitalize downtown Bishopville to promote economic development?

Since 2000, the City of Bishopville, along with Lee County Economic Development Alliance, Lee County Chamber of Commerce, and other partners, has sought to reverse years of decline in downtown and improve the social, physical and economic value of Bishopville. "The poor condition of downtown Bishopville, the county seat, has been a major detriment to the process of recruiting new business to the City and the County." One of the major goals for the city was to revitalize downtown Bishopville, in order to promote economic development and attract new business and industries to the area.

Through the Santee Lynches Regional Council of Government (SLRCOG), Lee County has been involved in a variety of economic and community development activities to promote the revitalization of downtown Bishopville and support economic development in the area overall. The City of Bishopville received several grants, totaling $4.5 million, to improve the downtown core. Projects within downtown include streetscape improvements, parking improvements, the reconfiguration Main Street (US 15) from four lanes to two lanes with a landscaped median, renovation of buildings and widening sidewalks. The goals for these improvement projects were to improve the appearance of downtown and to create "a more marketable downtown to attract private investors and prospective industries."[6]

Grant money was used to provide improvements that would serve as traffic calming measures to discourage through truck traffic in downtown Bishopville; however, a significant reduction has not been realized to date.

"The City of Bishopville has taken a strong and proactive initiative to revitalize its downtown area."[7] This continues to be a primary goal and an ongoing effort for the City of Bishopville, Lee County Chamber of Commerce and Lee County and demonstrates the commitment to the revitalization of downtown and economic development for the area.

How will the project support the local goals for economic development in the proposed development district?

In June 2011, Lee County updated its Comprehensive Plan, which analyzes current statistical data and trends taking place in the county, assesses the current level of county services and plans for

[6] Opportunity Grant II Application, page 2
[7] Opportunity Grant I Application, page 4

improvements. The Comprehensive Plan and Land Development Plan has become the basis for guiding development and growth in the county.

Background information in the Comprehensive Plan identified local economic characteristics and trends in the area:

1. Agricultural sector of the economy is declining;
2. Industrial sector of the economy is holding, with two expansions planned;
3. Business sector is relatively strong and growing.[8]

The SLRCOG and Lee County have identified that "a major portion of Lee County's employment and economic base is from industrial and related activities."[9] Based on the economic trends and the need for economic growth and development in the Lee County and Bishopville areas, the SLRCOG and Lee County included the following economic goals in their plan:

1. Enlarge the county's economic base by attracting new industries and businesses;
2. Promote the development of the I-20 corridor businesses at Exits 116 and 118.[10]

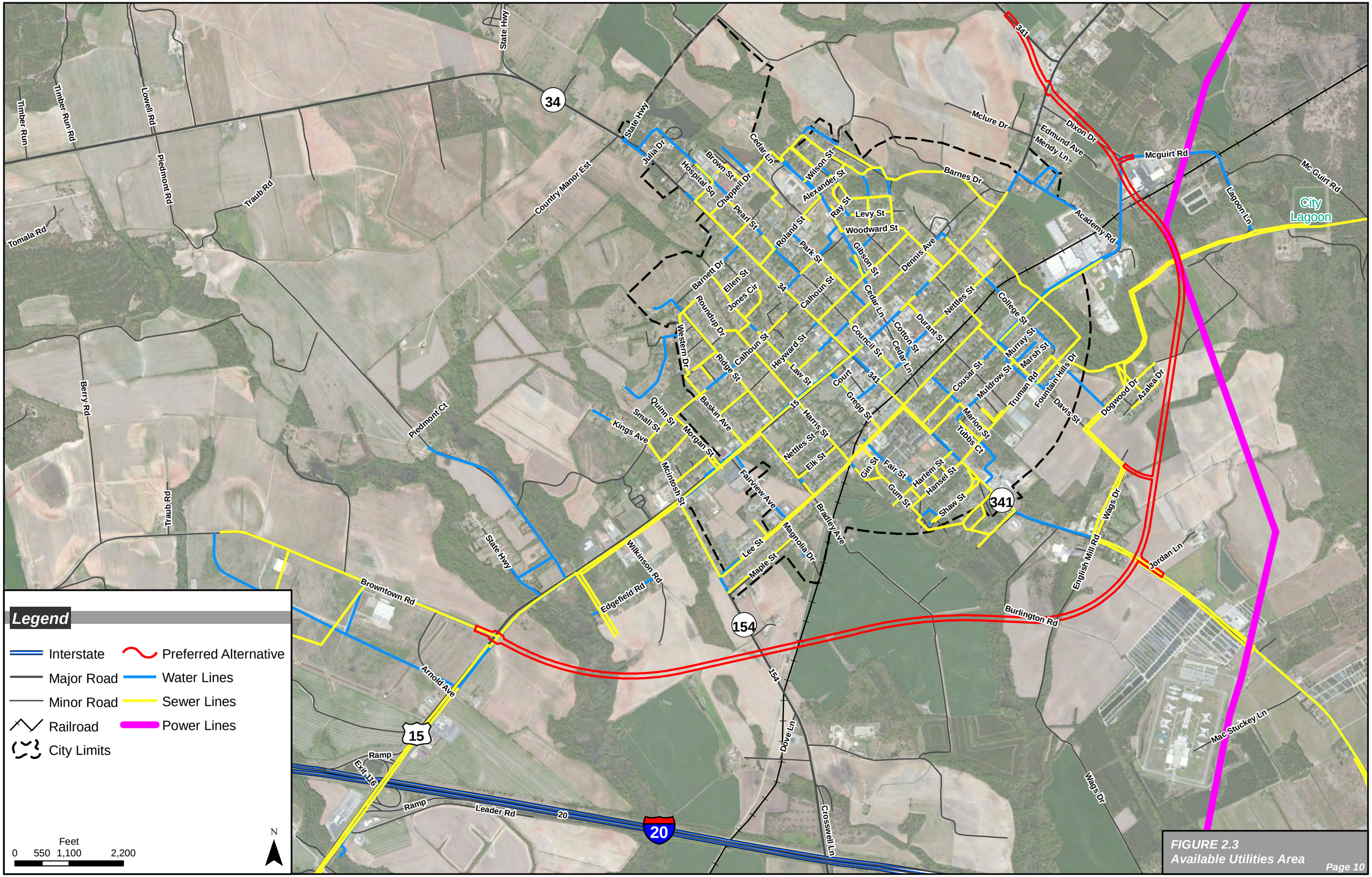
To encourage new industries and businesses to come to the area, the Plan proposed providing better transportation and public services to future industrial sites and encouraging new industry to locate near population centers and public utilities. The plan identified "the Bishopville area between Interstate 20, SC 341 and US 15 and the City is projected to experience the greatest amount of growth over the next five to twenty years. Factors influencing this development are: (1) the availability of water and sewer systems in the area, (2) the excellent transportation access provided by Interstate 20, US 15 and SC 341, (3) the availability of developable sites, (4) the amenities offered by living near or in an urban area."[11]

The location of existing and planned utilities also supports the land use plan and helps bring in new economic opportunities. As noted by local officials, "the availability of support services has a profound effect on the development of any area."[12] "Bishopville, through an agreement with Lee County, has extended not only its sewer lines but also its water lines outside the City to encourage commercial and industrial development along US 15 and SC 341 and the two major interchanges [with I-20]."[13] The available utilities in the area are shown on Figure 2.3.

Based on these factors, local officials developed the land use and zoning plan, which will guide development for the area (see Figure 2.4). Land use along US 15 and SC 341 is generally zoned as general and core commercial, with some areas along SC 341 zoned as light industrial. As shown in blue-green on the figure, a large area bounded by US 15 to the west and SC 341 to the east and by I-20 to the south and the city limits to the north are defined as the Proposed Development District.

"One of the key issues that needed to be addressed was the amount of traffic on Main Street…. At issue are the 600 logging trucks and other 18-wheeled vehicles, which are literally destroying the retail environment of Bishopville,"[14] where improvements and enhancements have been focused.

[8] Lee County Comprehensive Plan, June 23, 2011, page 20
[9] Ibid, page 74
[10] Ibid, page 72
[11] Ibid, page 79
[12] Ibid, page 82
[13] Ibid, page 50
[14] Opportunity Grant II Application, page 7



Legend

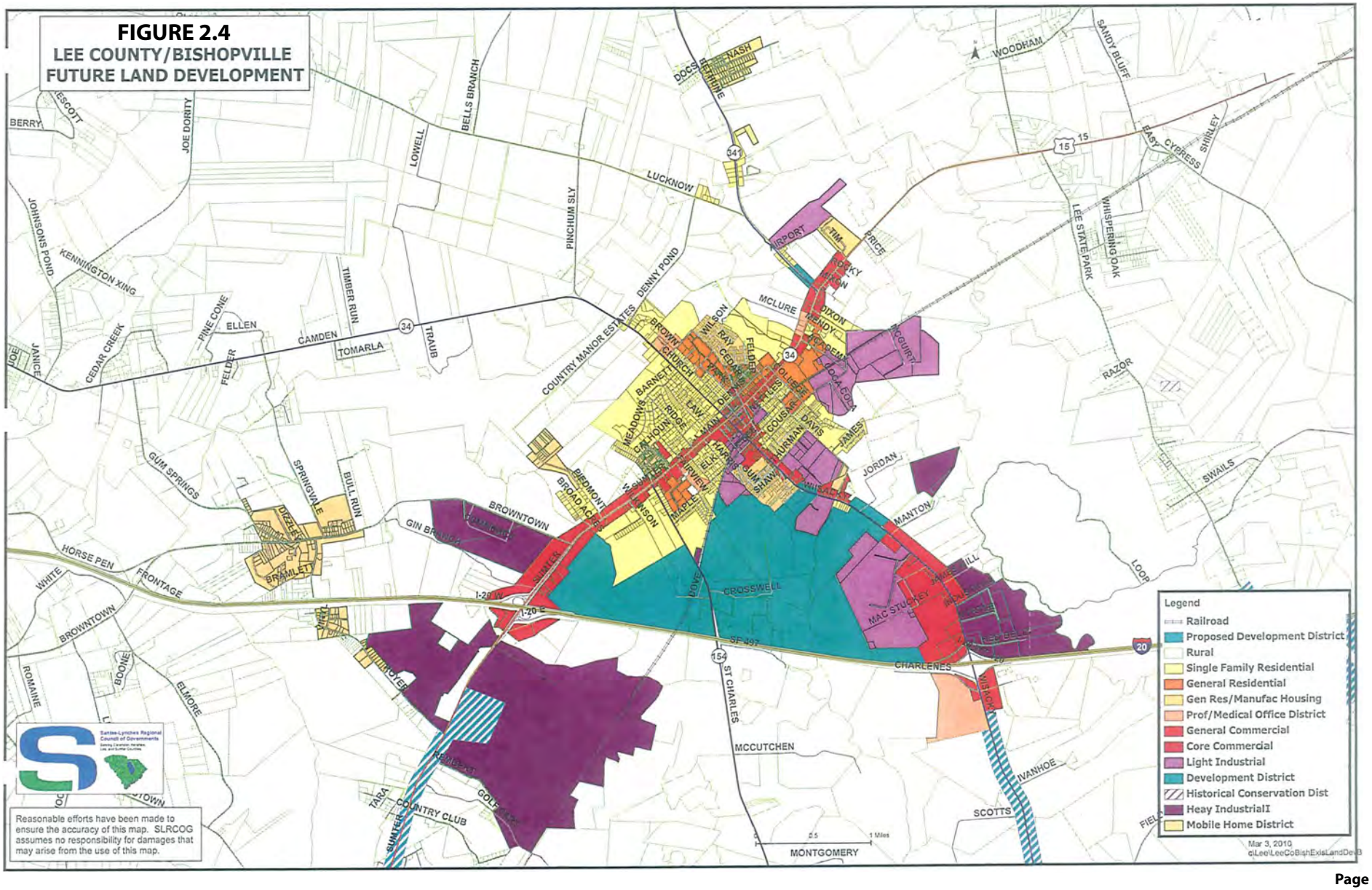
- Interstate
- Major Road
- Minor Road
- Railroad
- City Limits
- Preferred Alternative
- Water Lines
- Sewer Lines
- Power Lines

Feet
0 550 1,100 2,200

N

FIGURE 2.3
Available Utilities Area

FIGURE 2.4
LEE COUNTY/BISHOPVILLE
FUTURE LAND DEVELOPMENT



2.4 What are the funding sources for the project?

Various funding sources and earmarks have been identified to assist in paying for the construction costs of the proposed project, including $5 million in earmarks and local matching funds. The remaining $14 million in funding comes from the STIP, through the SLRCOG. The project is fully funded through construction.

3.0 ALTERNATIVES

3.1 What alternatives have been considered but eliminated?

Throughout the project, alternatives are developed, considered and evaluated and sometimes eliminated at various stages of the project development process. Some alternatives developed for the project were eliminated early in the project based on the traffic analysis and others were compared to other alternatives and eliminated based on the severity of their impacts or fatal flaws. A summary of each of the alternatives that were considered for the project but eliminated are described in this section.

3.1.1 Bishopville Frontage Road Project Planning Report (December 2006)

Advanced Project Planning Report (APPR) - A report prepared by SCDOT during the planning phase of a project that summarizes the needs for a project, funding sources, and provides an overview of potential benefits, impacts and areas of concern to the human and natural environment and solicits input from state and federal resource and regulatory agencies.

The first iteration of the project was an Advanced Project Planning Report (APPR) that was prepared by SCDOT for the Bishopville frontage road in 2006. This proposal involved a new road from US 15 to SC 341, which would be approximately three to four miles long. See Figure 3.1. Given its proximity to I-20, it was believed that this area would be a prime growth zone for Lee County. The purpose of the project was to enhance the marketability of the existing industrial parks and to attract businesses that could address the economic needs and high unemployment of the area.[15] Based primarily on the lack of funding for the project, this alternative/project was eliminated from further consideration.

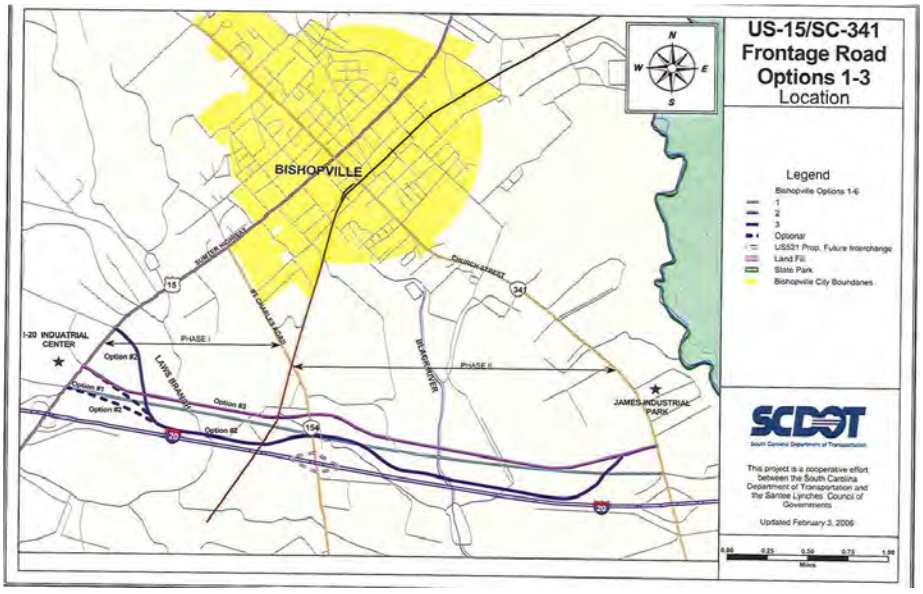


Figure 3.1

[15] SCDOT APPR for Bishopville Frontage Road, 2006, page 4

3.1.2 Alternative from Project Planning Report (March 2009)

In March 2009, a SCDOT planning report proposed that the roadway would run from I-20 along SC 341 and then circle the outer sections of Bishopville to the north to S-29 (Browntown Road) in Lee County, for approximately 6.16 miles. This potential alignment was provided by the SLRCOG as an option to consider for the bypass project. An additional alignment was suggested by state and federal resource and regulatory agencies which used more existing paved and dirt roads. See Figure 3.2.

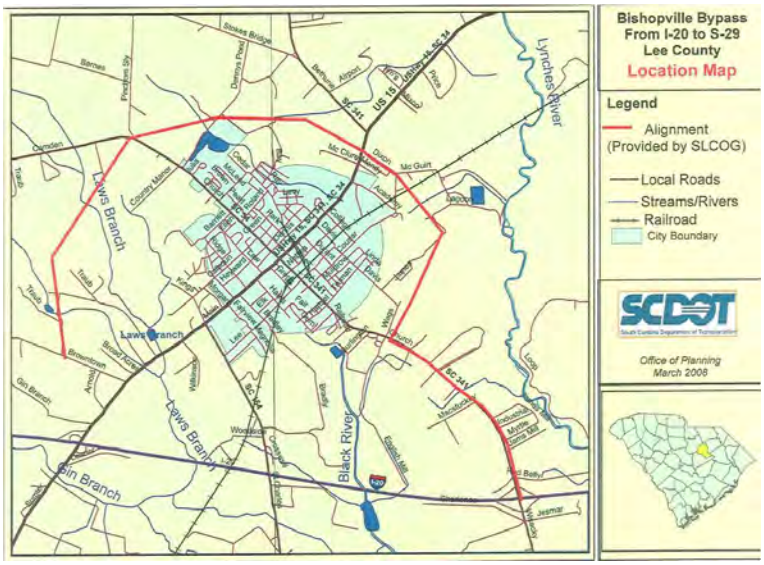


Figure 3.2

Based on the traffic study completed for the project, data showed that most truck traffic was traveling through Bishopville on US 15 from I-20 to destinations north of the city. The second most heavily traveled route was from SC 341 to US 15 to the north. Only minor amounts of truck traffic were using routes on the western side of the city, including SC 34 and Browntown Road. For these reasons, the plan for the bypass was changed to route traffic from US 15 south of the city and reconnecting with US 15 north of the city, bypassing the downtown Bishopville. This alternative was eliminated.

3.1.3 New Location Alternatives

How were the new location alternatives developed?

Based on the results of the initial traffic analysis, showing that trucks were primarily traveling through downtown Bishopville along Main Street (US 15), SCDOT and the project team developed several new location alignments for the proposed bypass. In conjunction with the Federal Highway Administration (FHWA), and Lee County, the study team used engineering design criteria to develop the new location alternatives for the proposed Bishopville bypass project. For the purpose of developing the new location alternatives, it was assumed that the bypass would be a two-lane roadway with grass shoulders and turning lanes at intersections, where appropriate. During the development of the alternatives, a 100-foot right of way corridor was assumed for the comparison of impacts.

Based on aerial photography, engineers tried to avoid features within the project area to the greatest extent possible when developing the new location alignments. Generally, this was because of the unique or sensitive nature of a feature or site. The following features were considered in developing the preliminary alignments: National Wetland Inventory (NWI) maps, known historic and/or archaeological sites and community features, such as schools and churches.

Once the alignments were developed, a comparative traffic analysis was performed to determine how each proposed alternative would function. For each of the transportation alternatives, the resulting vehicle miles of travel (VMT), vehicle hours of travel (VHT), and system delay was reported. A subset of

public roads was selected from the SLRCOG travel demand model network. This, along with the resulting VMT, VHT, and delay on the alternative roadway itself are then used to compare the traffic performance of the alternatives. The roads selected for the subset and the average daily traffic (ADT), truck traffic and LOS for the No-build Alternative in the design year of 2035 are illustrated in Figure 3.3. These roads include Main Street (US 15), Browntown Road, SC 154 (St. Charles Highway), Church Street (SC 341), Davis Street, Dixon Drive, and Bethune Highway (SC 341). At the onset of the environmental review process, traffic counts and truck percentage counts were collected to use as inputs to this analysis. Figure 3.3 shows LOS F along Main Street (US 15) within downtown Bishopville by the design year of 2035.

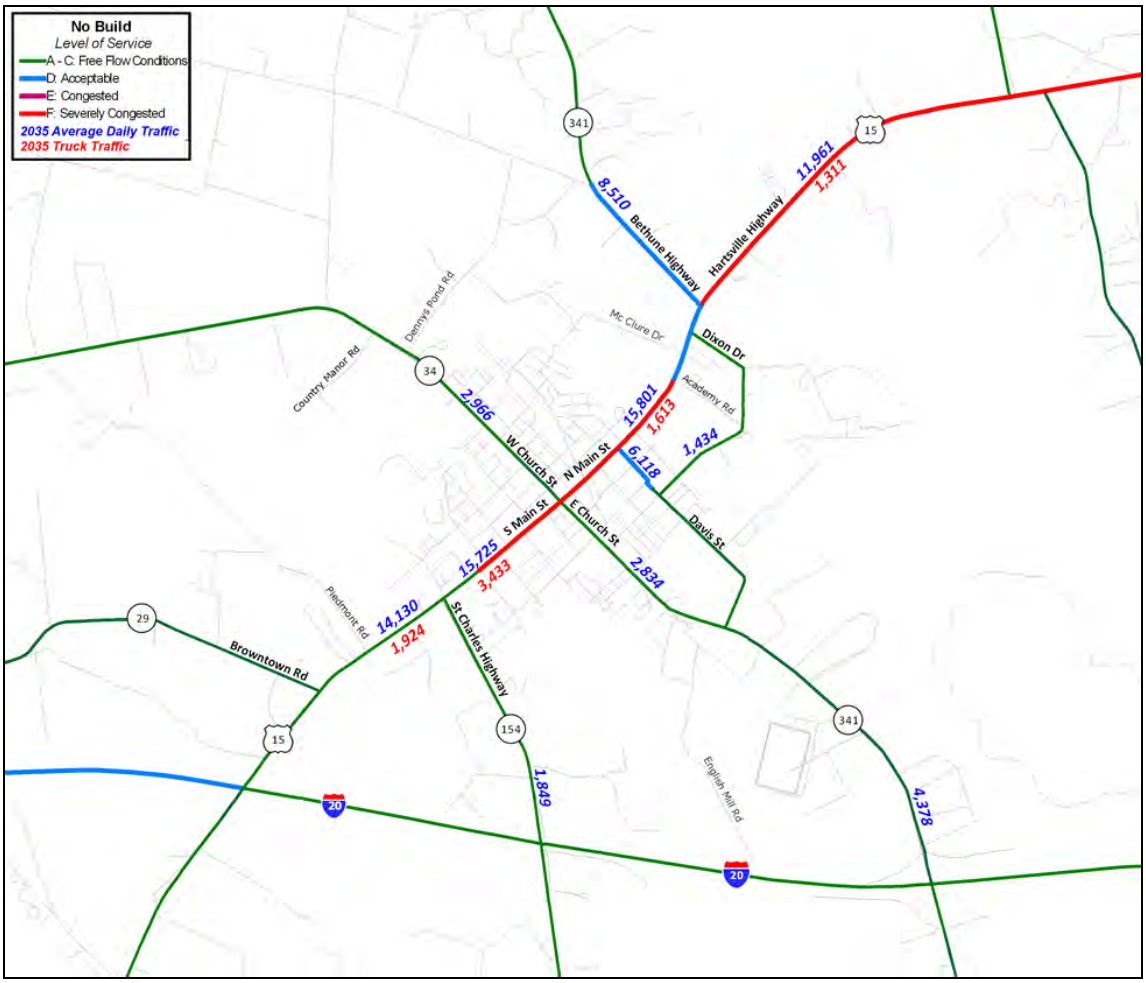


Figure 3.3
2035 LOS for No-build Alternative

Based on the comparative traffic analysis and initial comparison of social, economic and environmental impacts, several alternatives were eliminated from further consideration during the project development process. The following sections describe each alternative and include a brief description of the results of the comparative traffic analysis and summary of its environmental and social impacts.

3.1.3.1 Alternative 2

Alternative 2 bypasses Bishopville to the southeast. This alternative would leave US 15 on the same alignment as Alternative 1, approximately 0.7 mile from the interchange at I-20 and cross eastward south of the city. The alternative crosses the South Carolina Central Railroad (SCRF) railroad line, near Road SC 154. Continuing east, it would cross SC 341 at the existing English Mill Road /Wags Drive intersection. The bypass would follow Wags Drive and then continue north through farmland. The alternative would turn westward, just north of the Coca-Cola plant and would cross the railroad line at Academy Road. The alternative would follow Academy Road to an intersection with US 15. Alternative 2 is approximately 4.92 miles long and would cost approximately $18.0 million. See Figure 3.4.

Based on a comparison of Alternative 2 to the No-build condition, one can quickly conclude that the alignment eliminates the failing conditions on Main Street (US 15) within downtown Bishopville, illustrated in the 2035 No-build map in Figure 3.3. However, the alternative does not result in completely free-flowing traffic through downtown Bishopville and US 15 to the north of the city continues to show congestion.

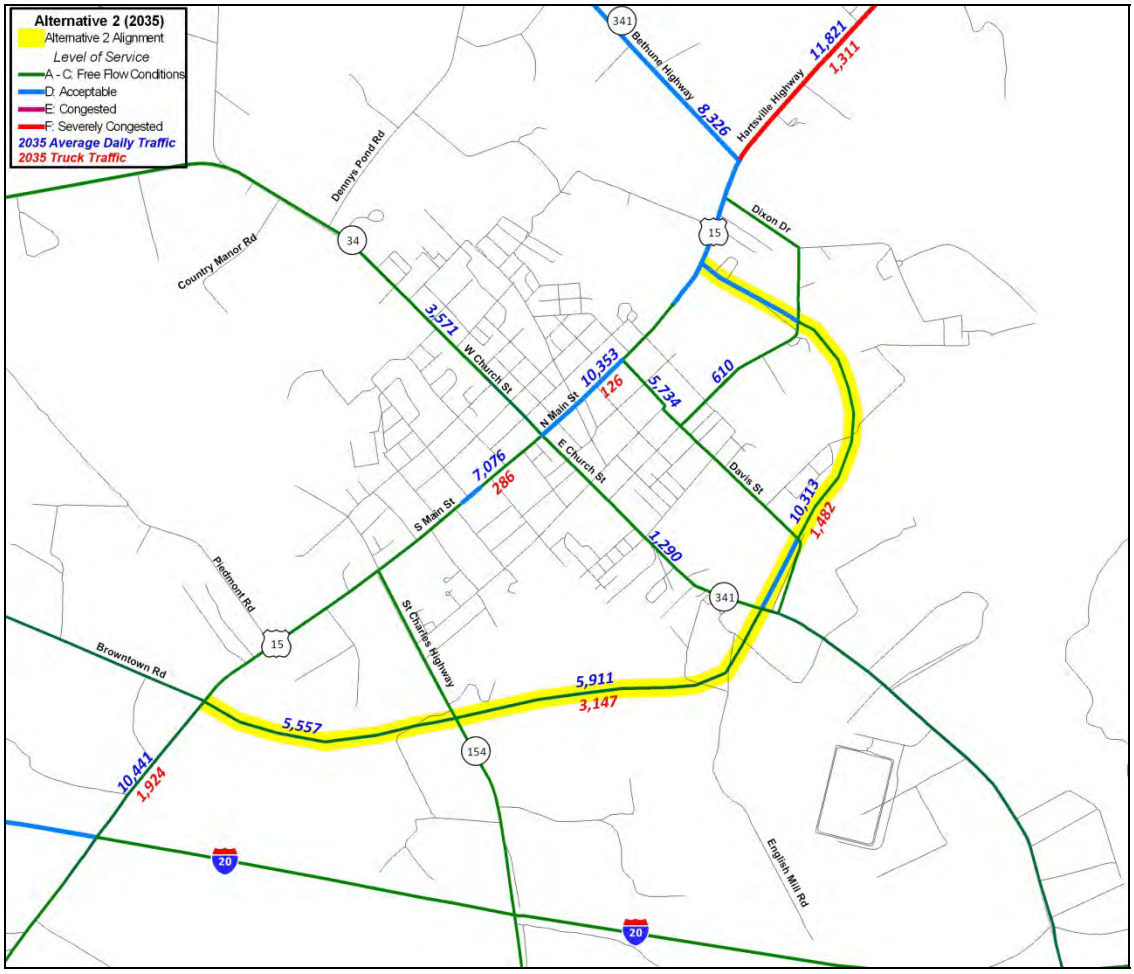


Figure 3.4
2035 LOS for Alternative 2

Like most traditional bypass projects, Alternatives 2 produces an increase in vehicle miles of travel (VMTs) and mostly reduces vehicle hours of travel (VHTs). This results from vehicles traveling longer distances to move at higher speeds and higher efficiency, resulting in a high reduction in system delay.

As shown in Comparative Impacts Table 3.1 on page 28, Alternative 2 was found to:

- Impact 47.4 total acres of farmland of which 36 acres is prime and unique farmland and 11.4 acres is statewide and local importance farmland;
- Impact 6.67 acres of wetlands with 1 crossing of a jurisdictional ditch;
- Impact 4.9 acres of floodplains in three locations;
- Increase noise levels above the NAC at 15 residences and 2 apartment buildings (at Lynches River Apartments);
- Relocate one active commercial property (Huggy Bear Restaurant), two abandoned commercial buildings, six residential properties and a four-unit apartment building;
- Impact one community facility, Robert E. Lee Academy, by taking part of the playground and parking lot;
- Visually impact one historic resource, the Spencer House, which is listed on the National Register of Historic Places (NRHP).

Alternative 2 would not impact any 4(f) resources.

Primary reasons for elimination were higher impacts associated with relocations, wetlands, floodplains, noise, when compared to other alternatives. In addition, it impacted Robert E. Lee Academy.

3.1.3.2 Alternative 3

Alternative 3 bypasses Bishopville to the northwest. This alternative would become the through route of US 15 along Browntown Road. The existing US 15 would be realigned to tie into the bypass at an intersection between Browntown Road and Arnold Avenue. The alignment would follow Browntown Road for approximately 0.5 mile and then turn northeastward, crossing Piedmont Road. Continuing northeastward, the bypass would parallel Country Manor Estates Road, approximately 0.15 mile to the west. The bypass would then cross SC 34, just outside of the city limits and then turn eastward, crossing through farmland to US 15. The alignment would tie back into US 15 near SC 341. In addition, SC 341 would be realigned to tie into the bypass at an intersection near State Road and Wilson Street. Alternative 3 is approximately 7.82 miles long and would cost approximately $19.8 million. See Figure 3.5.

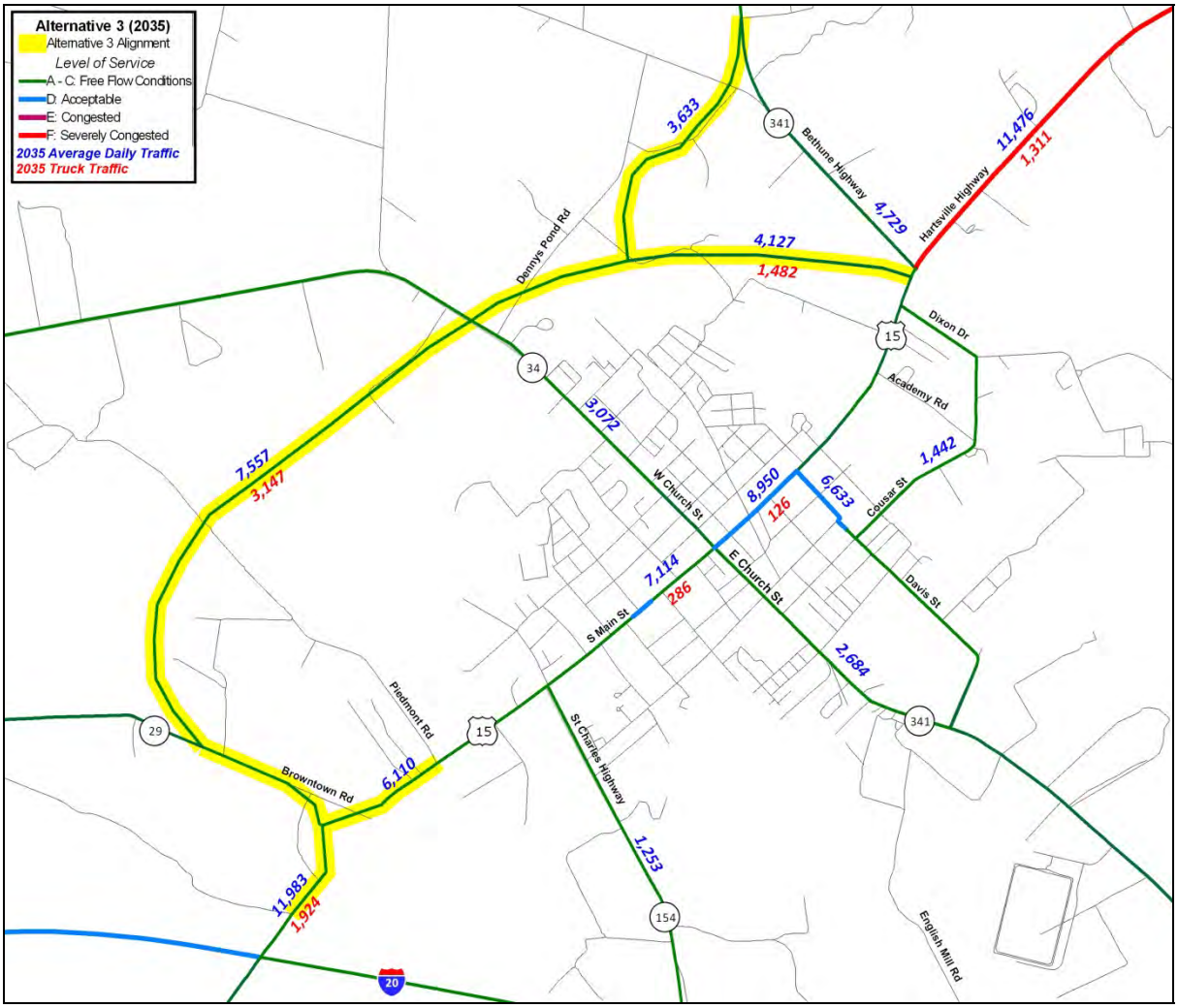


Figure 3.5
2035 LOS for Alternative 3

Based on a comparison of Alternative 3 to the No-build condition, one can quickly conclude that the alignment eliminates the failing conditions on Main Street (US 15) within downtown, illustrated in the 2035 No-build map in Figure 3.3. However, the alternative does not result in completely free-flowing traffic through downtown Bishopville and US 15 to the north of the city continues to show congestion.

Like most traditional bypass projects, Alternatives 3 produces an increase in vehicle miles of travel (VMTs) and mostly reduces vehicle hours of travel (VHTs). This results from vehicles traveling longer distances to move at higher speeds and higher efficiency, resulting in a high reduction in system delay.

As shown in Comparative Impacts Table 3.1 on page 28, Alternative 3 was found to:

- Impact 79.7 total acres of farmland of which 57.7 acres is prime and unique farmland and 22 acres is statewide and local importance farmland;
- Impact 1.63 acres of wetlands with 1 crossing of a jurisdictional ditch;
- Impact 2.7 acres of floodplains at two locations;

- Increase noise levels above the NAC at 3 residences;
- Impacts one community facility, Bishopville Head Start, by taking bus parking;
- Relocate one commercial property (Corner Grill Restaurant) and relocate one residential property.

Alternative 3 would not impact any historic resources or 4(f) resources.

Primary reasons for elimination were not meeting the needs of the project. On the northwestern side of Bishopville, no utilities exist to support economic development in that area. Also, zoning for that area is agricultural and residential.

3.1.3.3 Alternative 4

Alternative 4 bypasses Bishopville to the northwest. This alignment would intersect with US 15 approximately 0.2 mile northeast of Piedmont Road and continue northward across farmland. This alternative would cross SC 34 near the existing intersection of Country Manor Estates Road and continue northward along the existing Denny Pond Road. Approximately 0.3 mile along Denny Pond Road, the alignment turns east and then southeast, crossing through farmland to intersect with US 15 north of the city across from Academy Road. Alternative 4 is approximately 5.06 miles long and would cost approximately $13.9 million. See Figure 3.6.

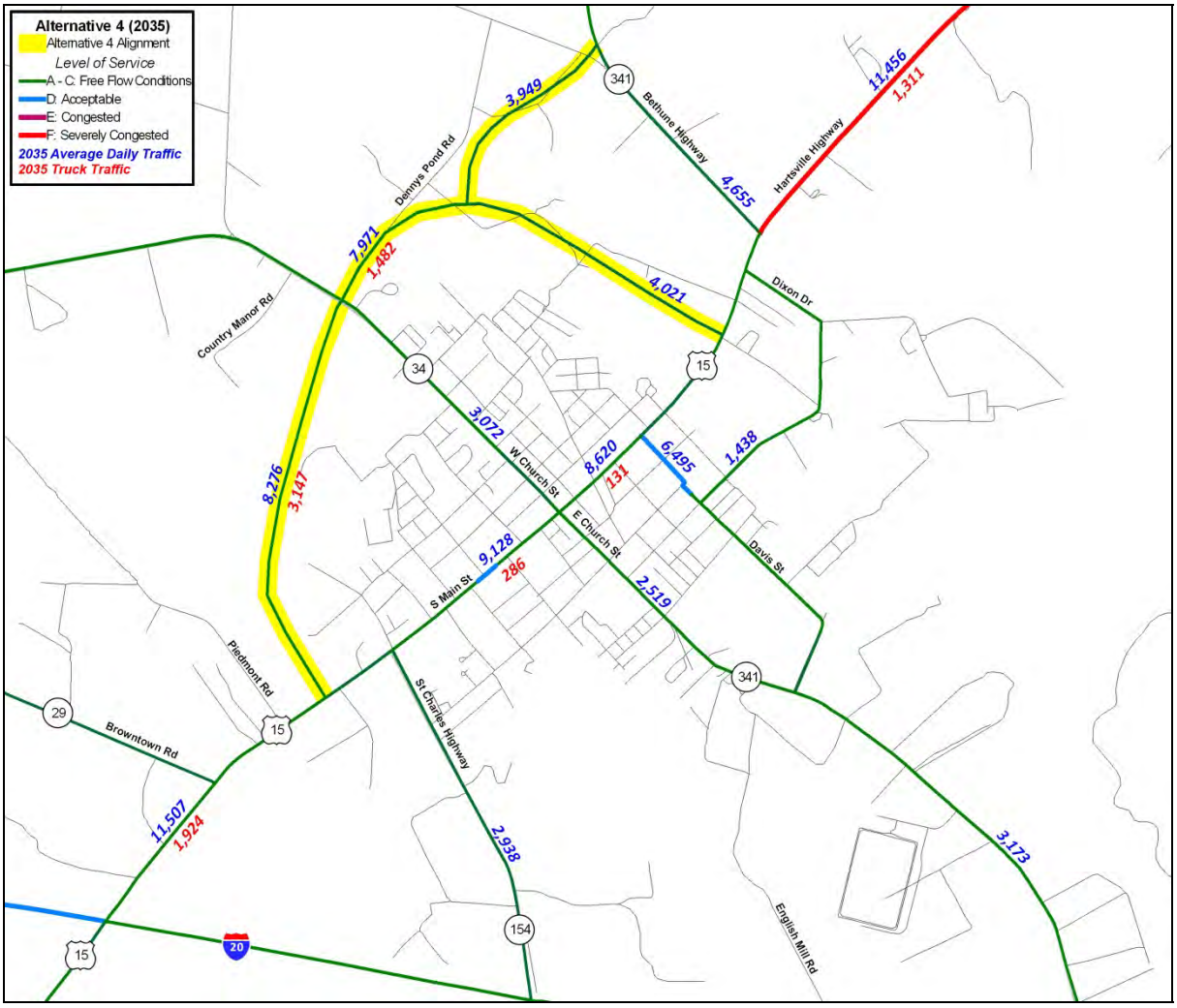


Figure 3.6
2035 LOS for Alternative 4

Based on a comparison of Alternative 4 to the No-build condition, one can quickly conclude that the alignment eliminates the failing conditions on Main Street (US 15) within downtown Bishopville, illustrated in the 2035 No-build map in Figure 3.3. However, the alternative does not result in completely free-flowing traffic through downtown Bishopville and US 15 to the north of the city continues to show congestion.

Like most traditional bypass projects, Alternatives 4 produces an increase in vehicle miles of travel (VMTs) and mostly reduces vehicle hours of travel (VHTs). This results from vehicles traveling longer distances to move at higher speeds and higher efficiency, resulting in a high reduction in system delay.

As shown in Comparative Impacts Table 3.1 on page 28, Alternative 4 was found to:

- Impact 46.7 total acres of farmland of which 31.6 acres is prime and unique farmland and 15.1 acres is statewide and local importance farmland;
- Impact 1.15 acres of wetlands with 4 crossings of jurisdictional ditches;

- Impact 0.4 acre of floodplains at one location;
- Increase noise levels above the NAC at 6 residences;
- Relocate one commercial property, Safe Federal Credit Union, and relocate one residential property;

Alternative 4 would not affect any Section 4(f) properties.

Primary reasons for elimination were not meeting the needs of the project. On the northwestern side of Bishopville, no utilities exist to support economic development in that area. Also, zoning for that area is agricultural and residential. Also, Alternative 4 has higher impacts associated with noise.

3.1.3.4 Alternative 5

Alternative 5 bypasses Bishopville to the southeast. This alternative would leave US 15 on the same alignment as Alternative 1, approximately 0.7 mile from the interchange at I-20 and cross eastward south of the city. The alternative crosses the SCRF railroad line, near Road SC 154. Continuing east, it would cross SC 341 at the existing English Mill Road /Wags Drive intersection. The bypass would follow Wags Drive and then continue north through farmland. The alternative crosses through the Bishopville Wastewater Treatment Facility, and crosses the railroad line a second time. The bypass turns northwestward, crossing US 15, just north of Dixon Drive and tying into SC 341. Alternative 5 is approximately 5.4 miles long and would cost approximately $18.7 million. See Figure 3.7.

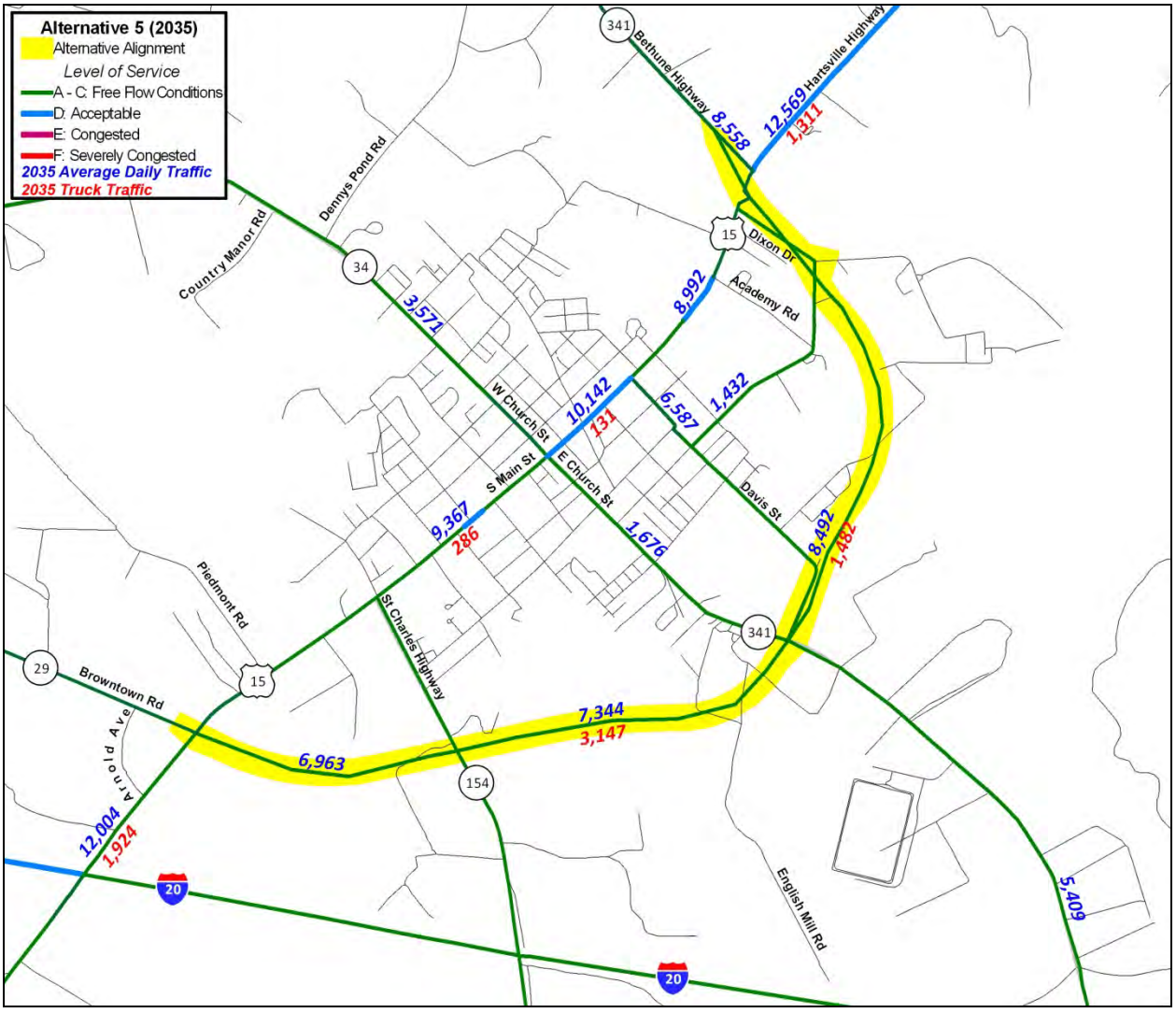


Figure 3.7
2035 LOS for Alternative 5

Alternative 5 was developed as an alteration of Alternative 1. Because this alternative has the same termini and intersecting street, the traffic analysis results for Alternative 1 were applied to Alternative 5.

Based on a comparison of Alternative 5 to the No-build condition, one can quickly conclude that the alignment eliminates the failing conditions on US 15 within downtown Bishopville, illustrated in the 2035 No-build map in Figure 3.3. However, the alternative does not result in completely free-flowing traffic through downtown Bishopville and US 15 to the north of the city continues to show congestion.

Like most traditional bypass projects, Alternative 5 produces an increase in vehicle miles of travel (VMTs) and mostly reduces vehicle hours of travel (VHTs). This results from vehicles traveling longer distances to move at higher speeds and higher efficiency, resulting in a high reduction in system delay.

As shown in Comparative Impacts Table 3.1 on page 28, Alternative 5 was found to:

- Impact 47.4 total acres of farmland of which 36 acres is prime and unique farmland and 11.4 acres is statewide and local importance farmland;
- Impact 4.9 acres of wetlands with 1 crossing of a jurisdictional ditch;
- Impact 3.8 acres of floodplains at three locations;
- Increase noise levels above the NAC at 14 residences;
- Relocate one abandoned property and six residential properties.

Alternative 5 would not impact any historic resources or 4(f) properties.

Primary reasons for elimination were higher impacts associated with relocations and noise. In addition, Alternative 5 would impact the neighborhood along Wags Drive, which was identified as a low-income community.

3.1.4 Truck Routes Using Existing Roads

How were truck routes that used existing roads developed?
Because the purpose of the project is to remove truck traffic from the downtown area, the project team also considered two truck routes that utilized existing routes around the exterior of the city. Truck routes were developed to primarily use existing roadways, which may need some reconstruction. The east/southeast side of Bishopville was chosen because of the location of commercial and industrial areas in Bishopville as compared to the more residential areas of Bishopville to the west and northwest. The routes selected also have limited turns and may already be used by commercial vehicles to travel to some local businesses.

Davis Street

3.1.4.1 Truck Route 1

Truck Route 1 uses the existing Fairview Avenue and then turns northeast onto Lee Street. The route would cross the SCRF rail line near the Harris Street intersection and continue along Lee Street to SC 341. The truck route would use SC 341 for one block and then follow Cousar Street through the Coca-Cola plant and then turn northward to Dixon Drive, where it would tie back into US 15. Alternative Truck Route 1 is approximately 2.71 miles long and would cost approximately $17.8 million. See Figure 3.8.

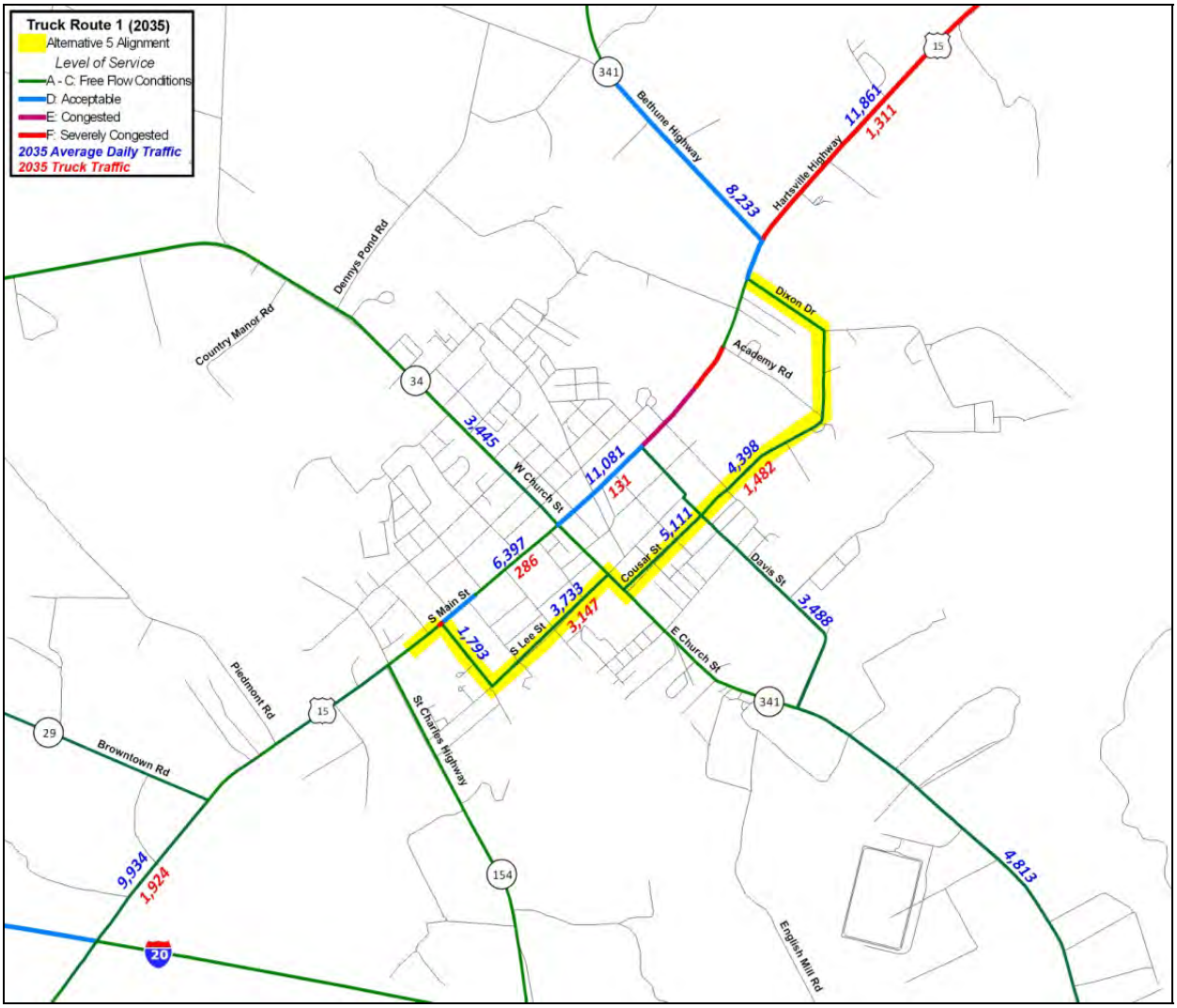


Figure 3.8
2035 LOS for Truck Route 1

Based on a comparison of Truck Route 1 to the No-build condition, one can quickly conclude that the alignment improves some areas of the failing conditions on US 15 within downtown Bishopville, illustrated in the 2035 No-build map in Figure 3.3. However, some sections of US 15, between Davis Street and Academy Road, would still experience LOS E and LOS F.

For Truck Route 1, there is a reduction in overall VMT, VHT and system delay.

As shown in Comparative Impacts Table 3.1 on page 28, Truck Route 1 was found to:

- Impact 7.4 total acres of farmland of which 6.9 acres is prime and unique farmland and 0.5 acre is statewide and local importance farmland;
- Impact no wetlands or streams;
- Impact 1.0 acre of floodplains at one location;
- Increase noise levels above the NAC at 30 residences;
- Affect 3 hazardous materials sites;

- Relocate three commercial properties (a car wash, buildings used as Bishopville Flea and Farmers Market, one building associated with cotton mill) and two residential properties;
- Directly impacts a historic district proposed for eligibility for the NRHP;
- Impact a 4(f) resource, the proposed historic district.

Alternative Truck Route 1 would also impact Robert E. Lee Academy, taking part of the ballfield at the school.

Primary reasons for elimination were not meeting the needs of the project. Routing trucks through areas that are already developed (i.e. built out) would not provide new opportunities for economic development in the downtown area nor would the truck route provide access to the proposed development district defined in the Comprehensive Plan. Two ninety degree turns along this alternative would not be beneficial features for a route primarily used by trucks. Truck Route 1 has higher impacts associated with relocations of businesses and residences and traffic noise. This alternative would also impact a potential historic district within the city and there would have to be no prudent or feasible alternatives for the route to do so.

3.1.4.2 Truck Route 2

Truck Route 2 uses the existing Fairview Avenue and then turns northeast onto Lee Street. The route would cross the SCRF rail line near the Harris Street intersection and continue along Lee Street to Davis Street, where it would tie back into US 15. Alternative Truck Route 2 is approximately 1.54 miles long and would cost approximately $11.8 million. See Figure 3.9.

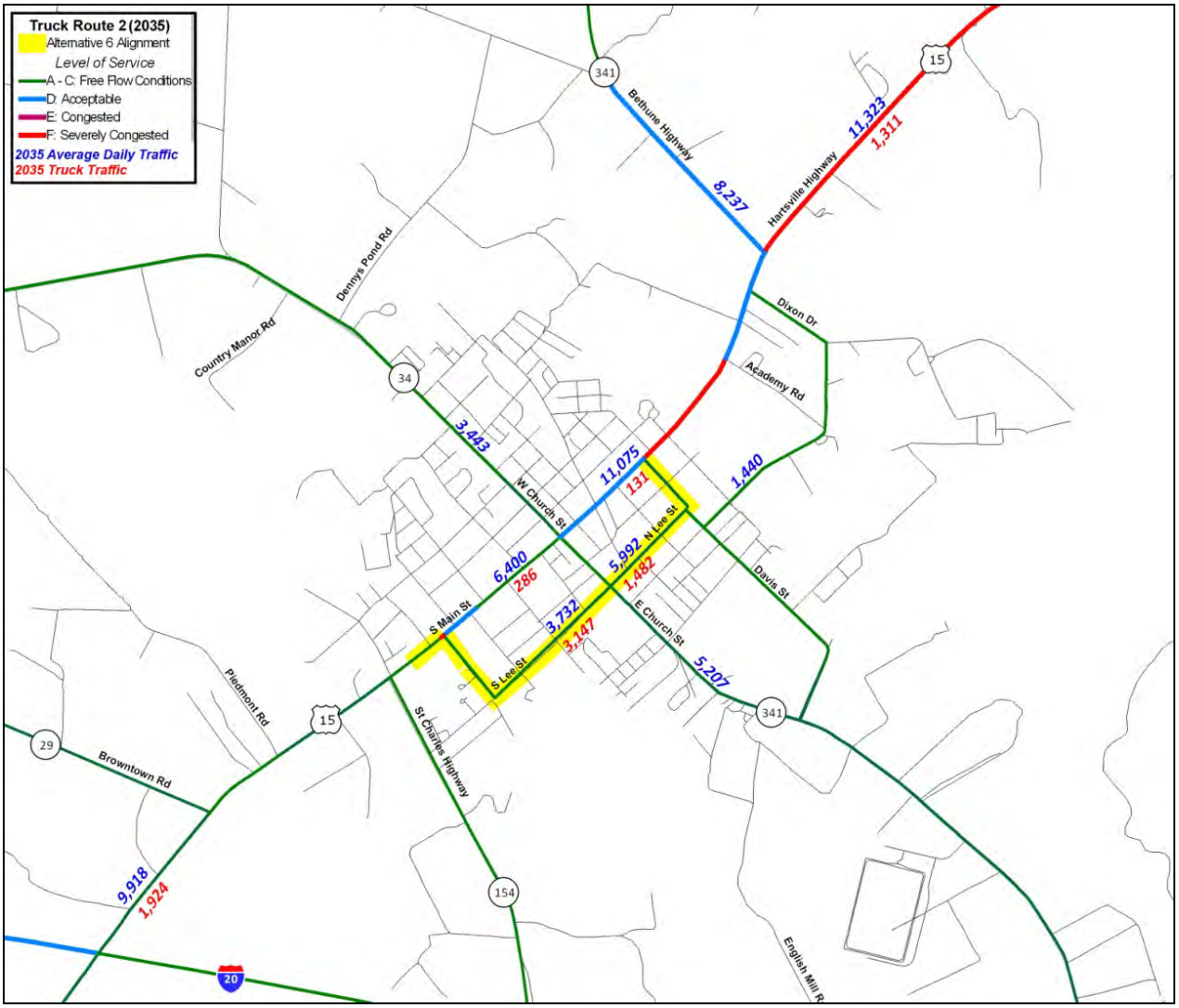


Figure 3.9
2035 LOS for Truck Route 2

Based on a comparison of Truck Route 2 to the No-build condition, one can quickly conclude that the alignment improves some areas of the failing conditions on US 15 within downtown Bishopville, illustrated in the 2035 No-build map in Figure 3.3. However, some sections of US 15, between Davis Street and Academy Road, would still experience LOS F.

For Truck Route 2, there is a reduction in overall VMT, VHT and system delay.

As shown in Comparative Impacts Table 3.1 on page 28, Truck Route 2 was found to:

- Not impact any farmlands;
- Impact no wetlands or streams;
- Impact no floodplains;
- Increase noise levels above the NAC at 33 residences;
- Affect 1 hazardous materials site;

- Relocate three commercial properties (a car wash, buildings used as Bishopville Flea and Farmers Market, one building associated with cotton mill) and three residential properties;
- Directly impacts a historic district proposed for eligibility for the NRHP;
- Impact one 4(f) resource, the proposed historic district.

Primary reasons for elimination were not meeting the needs of the project. Routing trucks through areas that are already developed (built out) would not provide new opportunities for economic development in the downtown area nor would the truck route provide access to the proposed development district defined in the Comprehensive Plan. Two ninety degree turns along this alternative would not be beneficial features for a route primarily used by trucks. Also, Truck Route 2 has higher impacts associated with relocations of businesses and residences and traffic noise. This alternative would also impact a potential historic district within the city and there would have to be no prudent or feasible alternatives for the route to do so.

For a side-by-side comparison of the alternatives considered but eliminated, please see the Comparative Impacts **Table 3.1**.

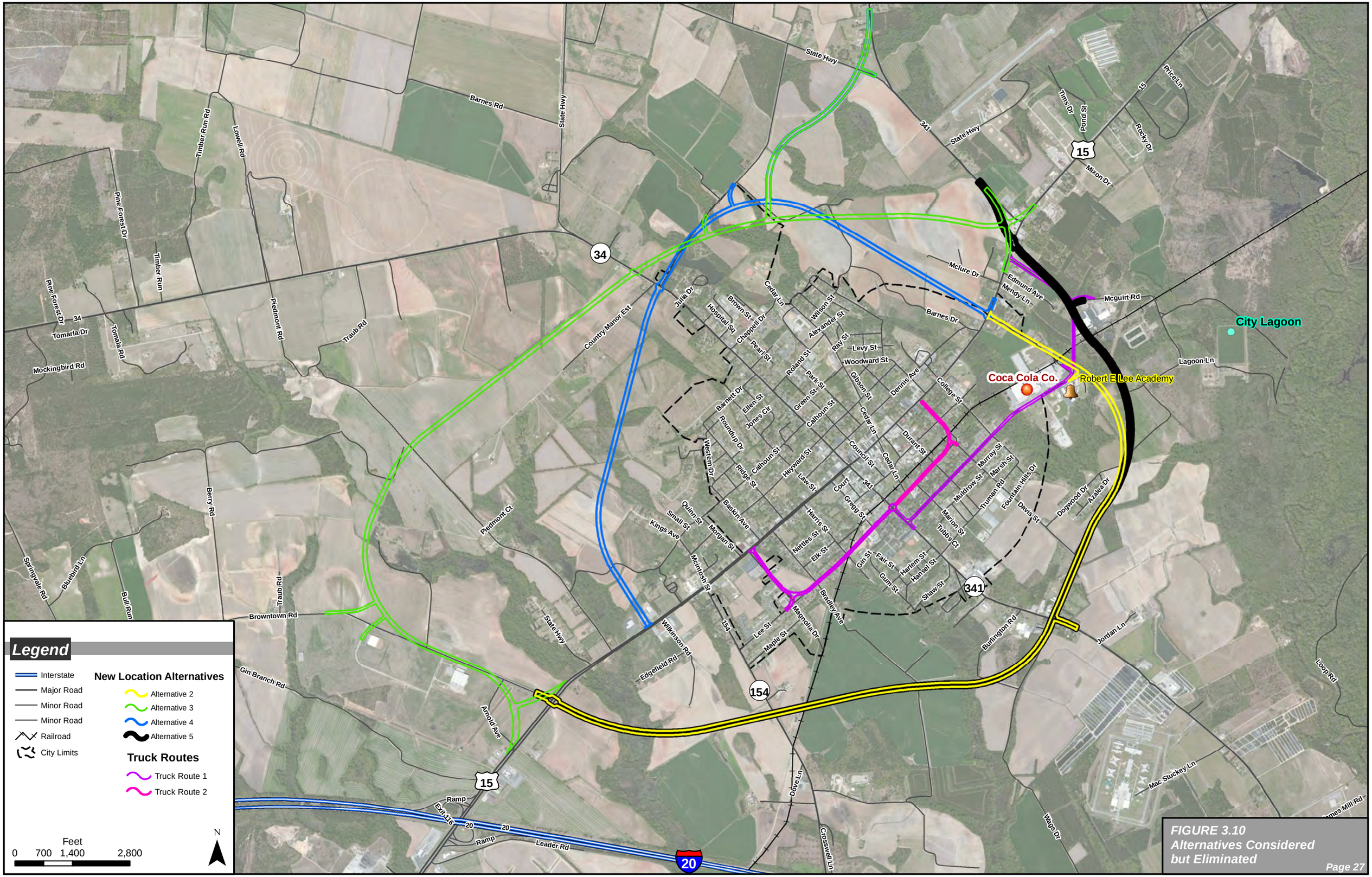


FIGURE 3.10
Alternatives Considered but Eliminated

Table 3.1 Comparative Impacts Table

Potential Impacts		Preferred Alternative	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Truck Route 1	Truck Route 2
Purpose and Need		Meets	Meets	Does not Meet	Does not Meet	Meets	Does not Meet	Does not Meet
Social	**Neighborhood/Subdivision impacts**	1 (visual- Dogwood Drive Neighborhood)	3 (1 visual - Dogwood Drive Neighborhood, 1 direct – Wags Drive Neighborhood 1 direct – Lynches River Apartments)	1 (visual - Country Manor Road Neighborhood)	1 (visual - Country Manor Road Neighborhood)	2 (1 visual - Dogwood Drive Neighborhood, 1 direct – Wags Drive Neighborhood)	4 (1 direct – downtown Bishopville, 1 direct – Lynches River Apartments, 1 visual – Cloverleaf Apartments, 1 visual at Fieldale Apartments)	2 (1 direct – downtown Bishopville, 1 visual – Cloverleaf Apartments)
	Community Facilities (Churches, Schools etc #)	0	1 (Robert E. Lee Academy)	0	0	0	1 (Robert E. Lee Academy)	0
	Railroad Crossings and Utilities	2	2	0	0	2 1 power line tower	2	2
Relocations	**Estimated Commercial Relocations (#)**	(1 vacant)	1 (2 vacant)	1	1	(1 vacant)	3	3
	Estimated Residential Relocations (#)	0	6 and 4-unit apartment building	1	1	6	2	3
Environmental Justice	**# of EJ block Groups impacted**	2	1	1	1	2	1	1
Ecological Resources	**Total Wetland Impacts (acres)**	3.97*	6.67	1.63	1.15	4.9	0	0
	Jurisdictional Crossings	1	1	1	4	1	0	0
	Critical Habitat for Threatened and Endangered Species (Y/N)	No	No	No	No	No	No	No
	Floodplains	3 locations; 3.8 acres	3 locations; 4.9 acres	2 locations; 2.7 acres	1 location; 0.4 acres	3 locations; 3.8 acres	1 location; 1.0 acre	None
Cultural Resources	**Historic buildings/Site Impacts (#/type)**	0	1 (visual)	0	1(visual)	0	Historic district (Direct)	Historic district (Direct)
	4 f impacts (Y/N)	N	N	N	N	N	Y (1 – Historic District)	Y (1 – Historic District)
Noise	**Residential impacts (#)**	0	15 and 2 apartment buildings	3	6	14	30	33
	Commercial impacts (#)	0	0	0	0	0	0	0
	Churches and schools	0	0	0	0	0	0	0
Hazardous Materials Sites		1	1	0	0	1	3	1
Farmlands	**Prime Farmland (acres)**	45.8	36	57.7	31.6	36	6.9	0
	Farmland of statewide importance (acres)	8.1	11.4	22	15.1	11.4	0.5	0
Total Length		5.70 miles	4.92 miles	7.82 miles	5.06 miles	5.40 miles	2.71 miles	1.54 miles
Cost ($2011)	**Total Construction and Right-of-Way Cost**	**$19.0**	**$18.0**	**$19.8**	**$13.9**	**$18.7**	**$17.8**	**$11.8**

*Based on the comparative analysis of NWI maps for all alternatives.

3.1.5 Transportation System Management (TSM) and Mass Transit Alternative

Transportation System Management (TSM) can include intersection improvements, traffic signal coordination, access management, and turn restrictions. These improvements typically improve safety by not allowing turns during peak hours or limiting the number of driveways, which reduces the number of turning movements on a roadway. The improvements can also improve safety and reduce congestion by coordinating traffic signals to allow vehicles to proceed through several intersections without stopping the flow of traffic, which reduces travel times.

TSM strategies would not be effective in removing trucks from Main Street (US 15) or in enhancing economic development activities in the area and therefore, would not meet the purpose and need for the project.

Mass transit is currently very limited in both Bishopville and Lee County. The only type of public transportation is "demand response" service, which is limited to space available, and employment transportation express shuttles to Camden and Myrtle Beach. Based on the Comprehensive Plan, the county has a goal of establishing a public transit vision to determine the level of public transit services that will be needed and how to provide funding for those services. Due to the lack of existing service, mass transit is not a viable alternative for the project and establishing service would not serve the purpose of removing trucks from the Main Street (US 15) in downtown Bishopville or enhancing economic development in the area. Therefore, a mass transit alternative would not meet the purpose and need for the project.

3.2 Preferred Alternative

Which alternative was chosen as the Preferred Alternative?
The Preferred Alternative was originally called Alternative 1 and it bypasses Bishopville to the southeast. This alternative would leave US 15 approximately 0.7 miles from the interchange at Interstate 20 (I-20), across from Browntown Road and cross eastward south of the city. The alternative bridges over the SCRF railroad line, near Road SC 154. Continuing east, it would cross SC 341 between Wags Drive and the Lee County Correction Institute. The alternative would then turn northward through farmland. The alternative crosses through the Bishopville Wastewater Treatment Facility, and bridges over the railroad line a second time. The bypass turns northwestward, crossing US 15, just north of Dixon Drive and tying into SC 341. See Figure 3.14.

The typical cross section will consist of a two-lane arterial roadway with grassed shoulders and ditches. The right of way width for the corridor is 100 feet. Main Street (US 15) will be signed to restrict through trucks and the proposed bypass will be signed as the US 15 Truck Route. The speed limit would be posted at 45 to 55 miles per hour (mph).

The intersections of US 15/Browntown Road and the truck bypass would be signalized and the bypass would include a left turn lane for traffic turning onto US 15. The intersection of SC 154 and the bypass would include left turn lanes for all approaches. The intersection of SC 341 and the bypass would be signalized and would include left turn lanes for all approaches and a right turn lane for northbound bypass traffic. The intersection at Dixon Drive would include a left turn lane on the bypass. The

intersection at US 15 and Bethune Highway would be signalized and would include left turn lanes for all approaches and right turn lanes along the bypass.

A comparison of the No-build traffic conditions (Figure 3.11) to the Preferred Alternative (Figures 3.12 and 3.13), shows that the alignment eliminates the failing conditions on Main Street (US 15) and provides acceptable LOS in downtown Bishopville in opening year 2015, through 2035. However, US 15 to the north of the city continues to show congestion in the design year.

On Figures 3.3 through 3.13, LOS volumes are shown by link. Links are typically a block in length. In Figure 2.1 and Table 2.1, traffic volumes are shown by segment. Segments contain multiple links. In this traffic study, multiple links within a segment exist because the truck volume/count were obtained for longer segments, but traffic data and LOS are shown on smaller links within those segments.

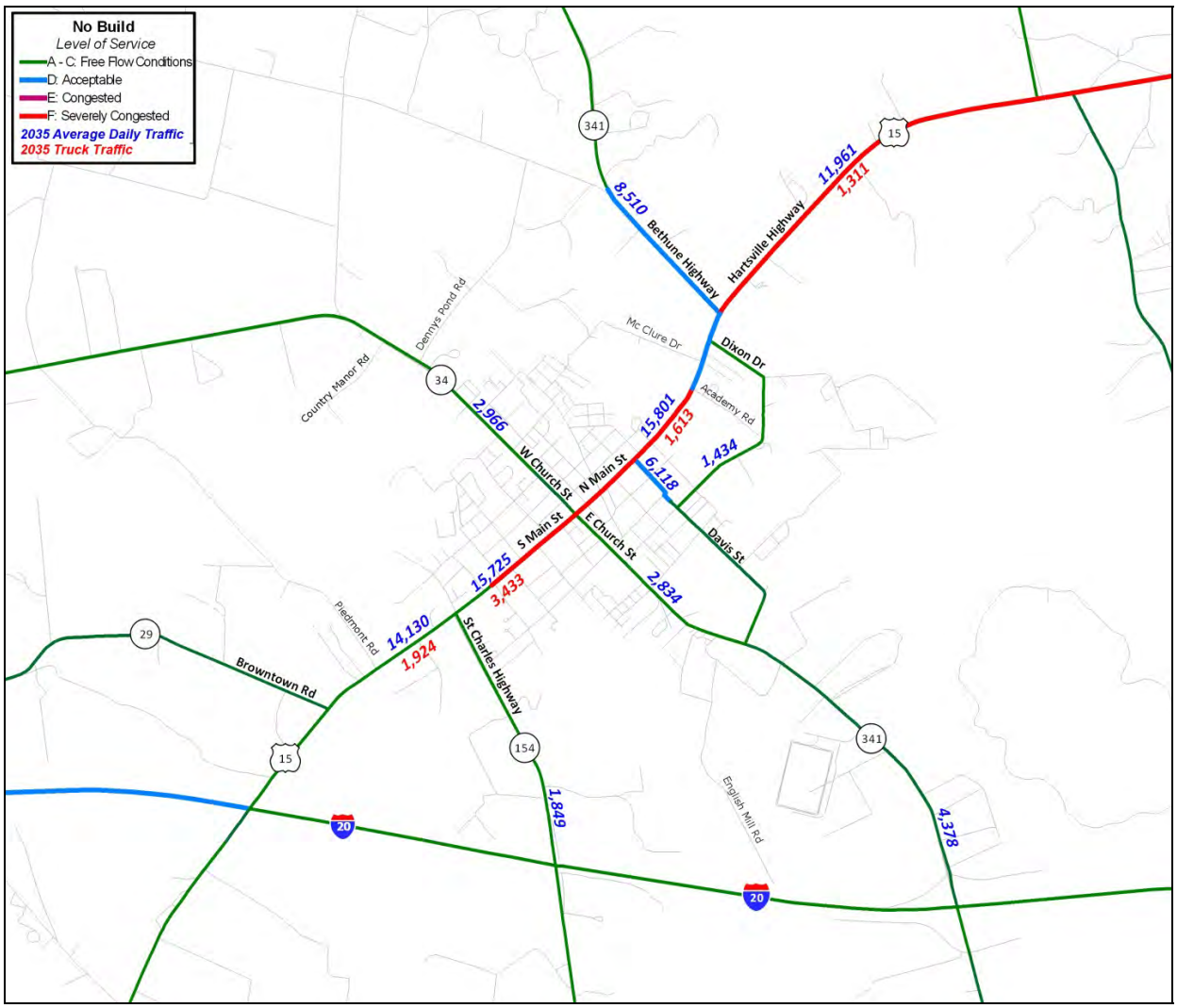


Figure 3.11
2035 LOS for the No-Build Conditions

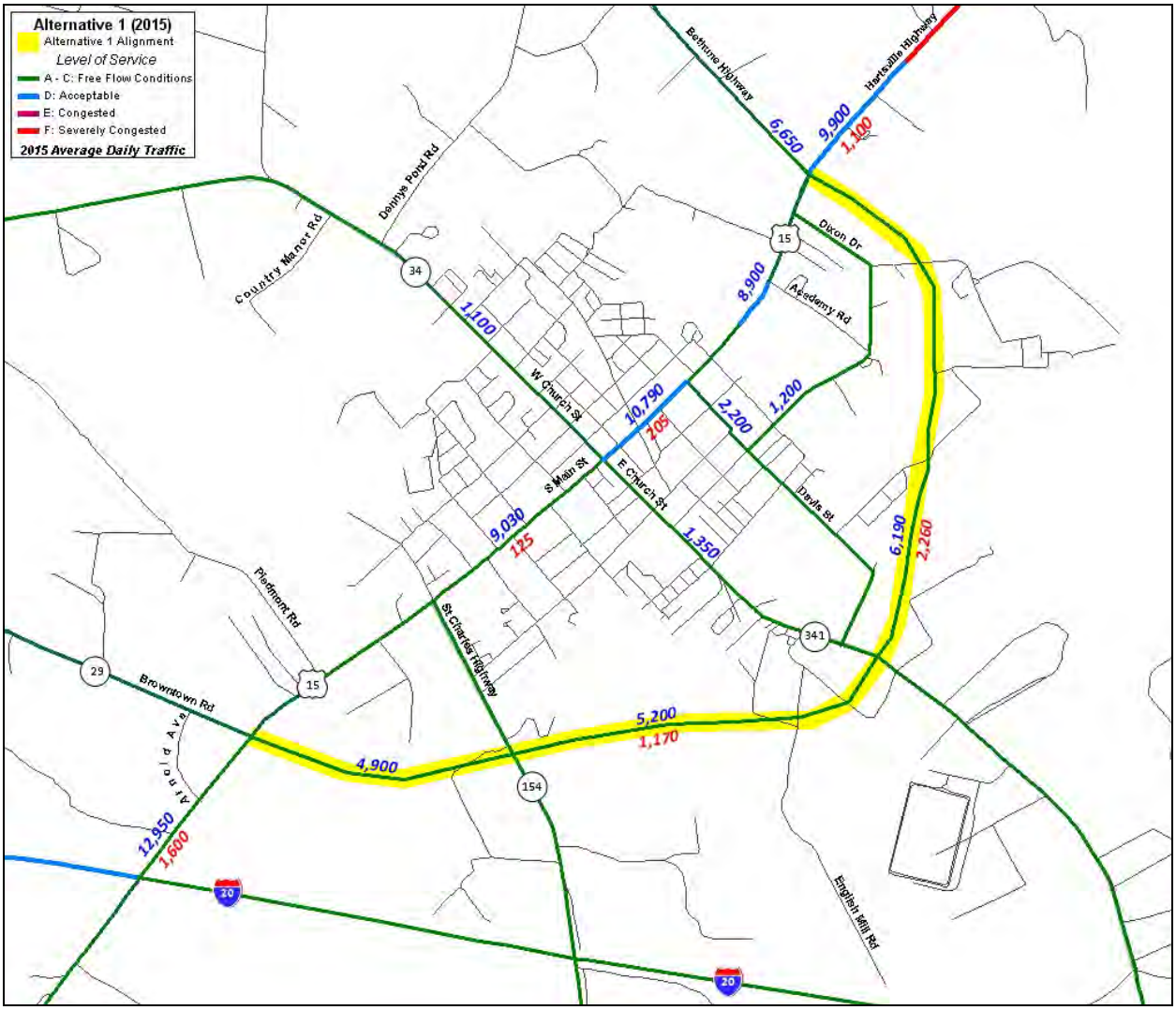


Figure 3.12
2015 LOS for the Preferred Alternative

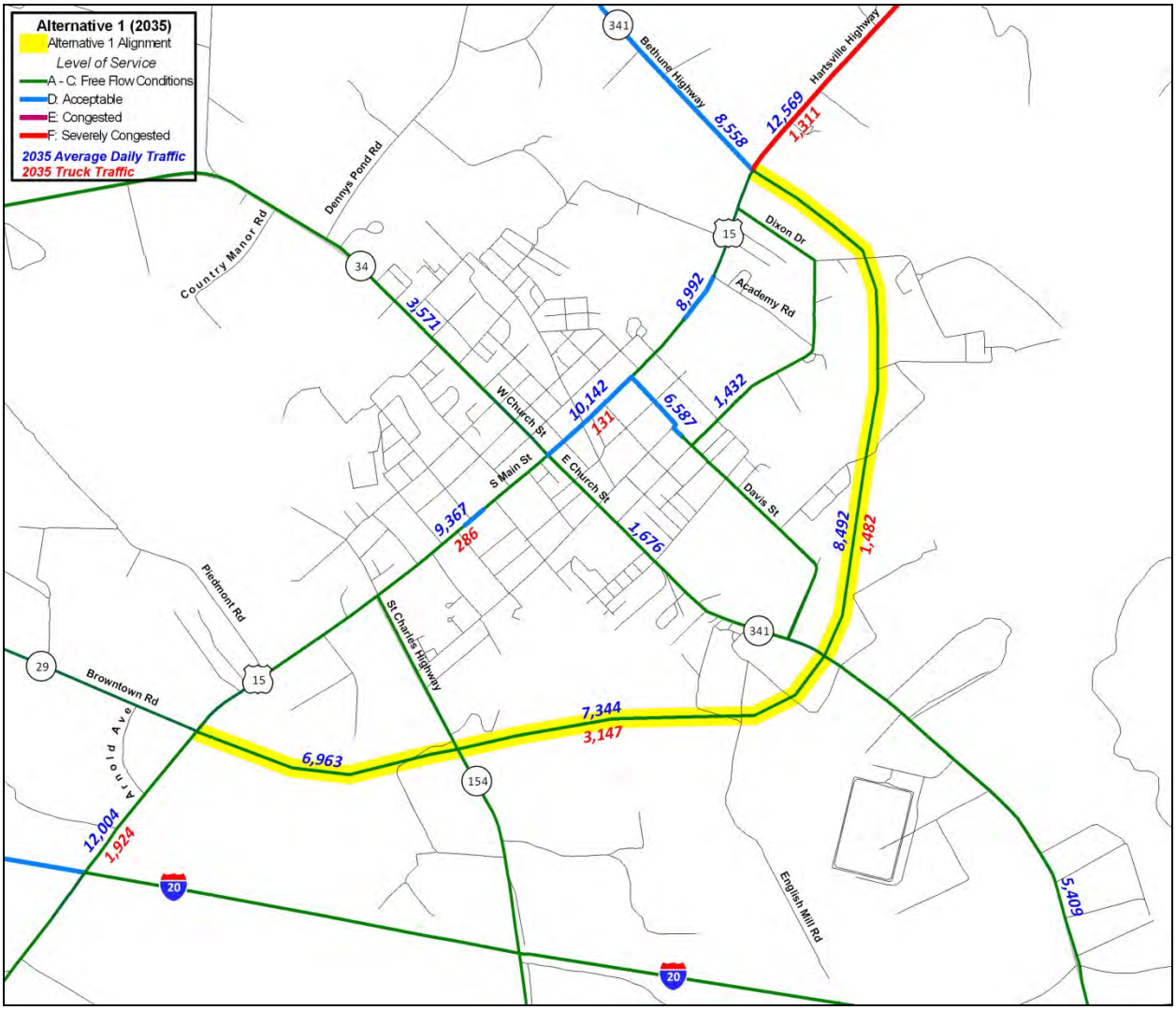


Figure 3.13
2035 LOS for the Preferred Alternative

Like most traditional bypass projects, the Preferred Alternative produces an increase in vehicle miles of travel (VMTs) and mostly reduces vehicle hours of travel (VHTs). This results from vehicles traveling longer distances to move at higher speeds and higher efficiency, resulting in a high reduction in system delay.

Based on the comparative traffic analysis, the Preferred Alternative is predicted to remove approximately 92 percent of truck traffic from Main Street (US 15), which would support the city's goals to support their efforts for revitalization and economic development in downtown Bishopville. As shown in the LOS comparison, the bypass is successful at removing trucks from Main Street (US 15) in downtown Bishopville and improving traffic flow within that area.

Removing truck traffic from the downtown area would support the City of Bishopville's goals for the revitalization of downtown and support economic development in that area. Reductions in traffic

volumes of through traffic could improve pedestrian comfort and allow residents to utilize improvements that have already been made to the downtown core, increasing the level of activity for local downtown businesses.

In addition, the Preferred Alternative circles the City of Bishopville on the southeastern side, which is where the Comprehensive Plan has shown that utilities are located and vacant land is zoned as a Proposed Development District. Providing improved roadway access to this area, in addition to the available utilities, would support economic opportunities and encourage commercial and industrial businesses to locate in the area.

In addition to meeting the needs of the project, the Preferred Alternative had minimal impacts including no residential relocations or active commercial relocations, no noise impacts, no impacts to Section 4(f) resources and no impacts to community facilities. See Comparative Impacts Table 3.1.

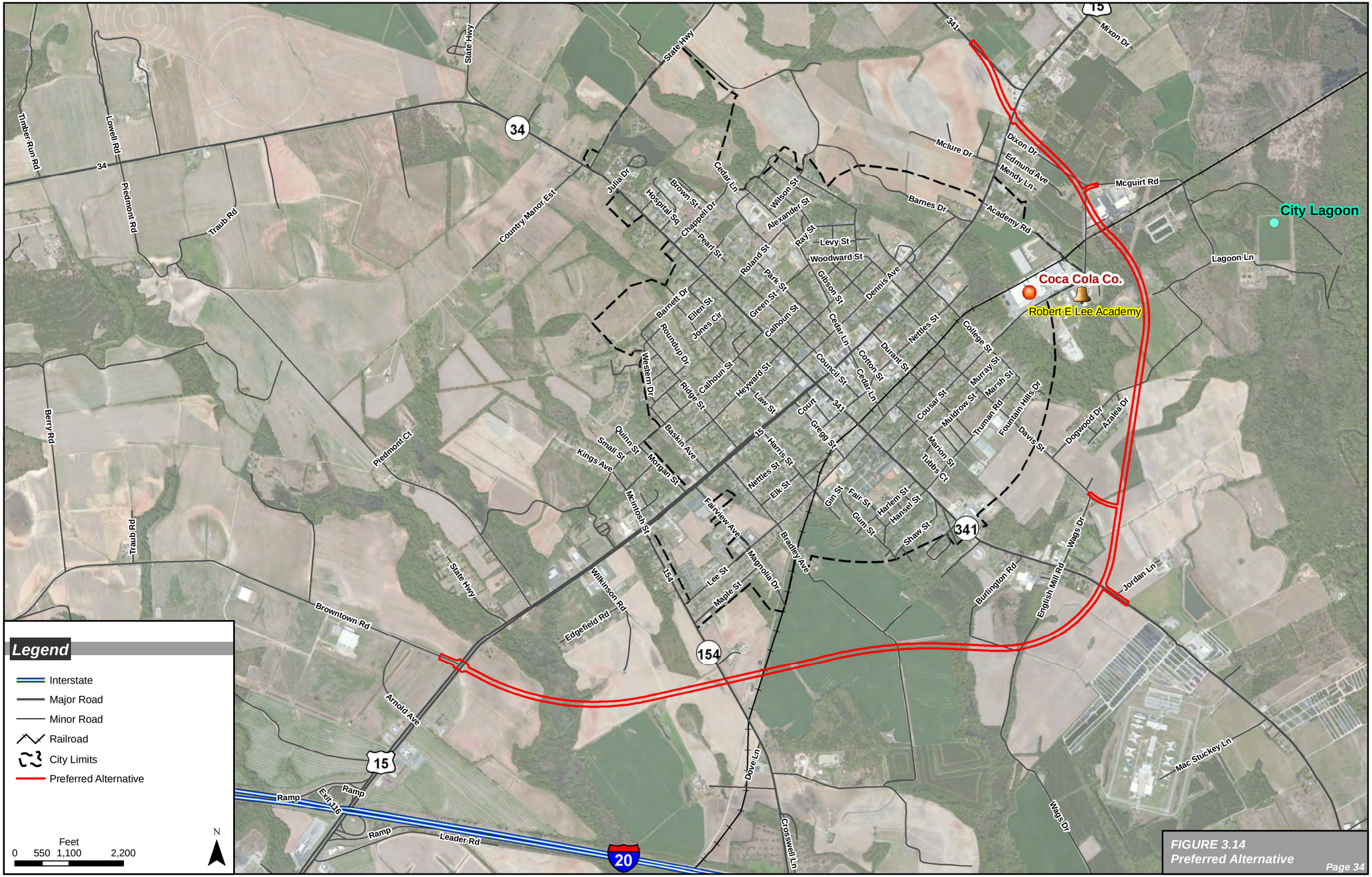
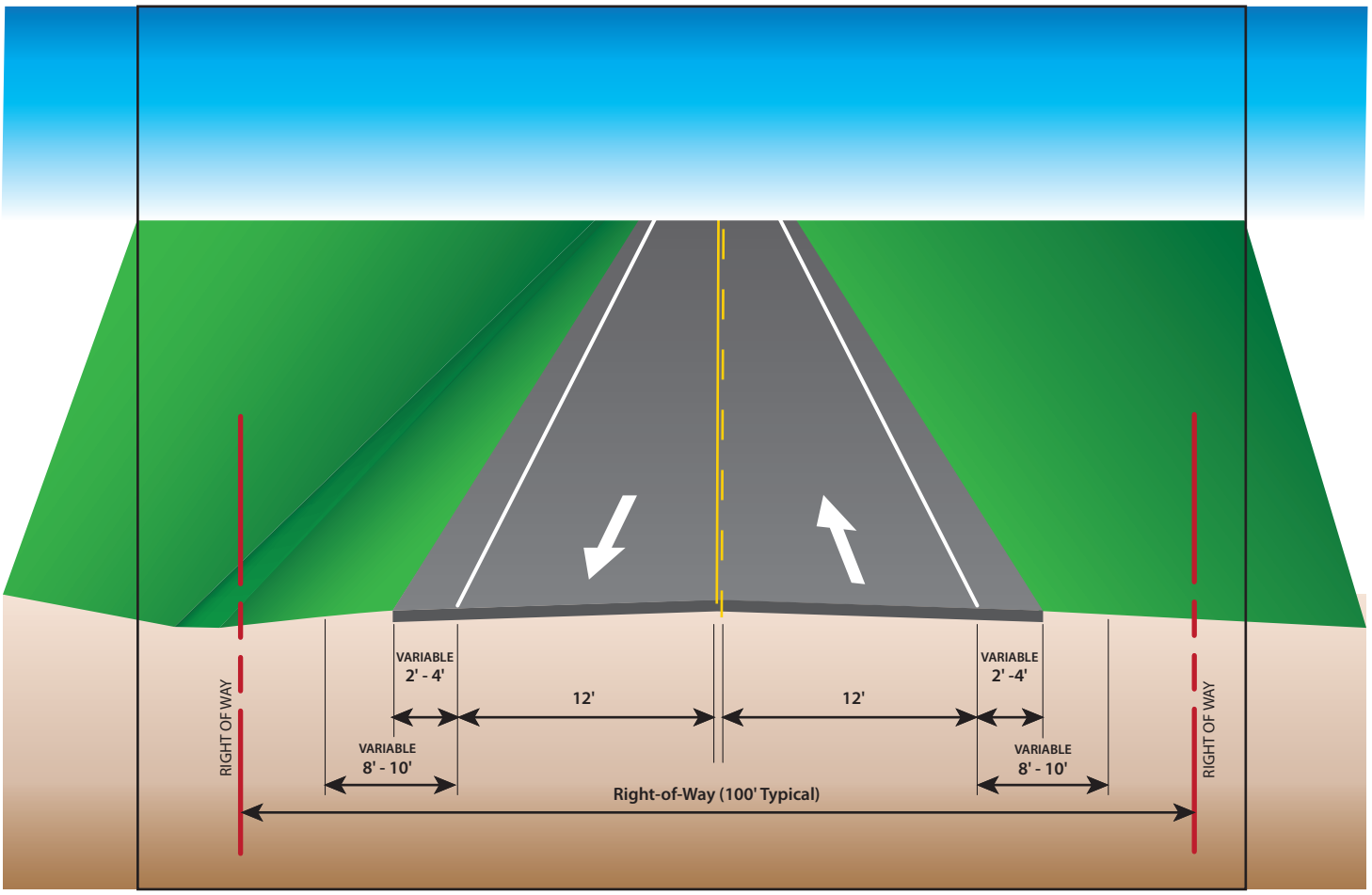


FIGURE 3.14
Preferred Alternative

Figure 3.15
Typical Section



4. PROBABLE IMPACTS OF THE PROJECT ON THE ENVIRONMENT

This section includes a discussion on the probable beneficial and adverse social, economic, and environmental effects of the preferred alternative under consideration and describes the measures proposed to mitigate any adverse impacts. This information has sufficient scientific and analytical substance to provide a basis for evaluating the merits of the project. The following paragraphs provide a brief overview of the environmental findings. See Table 4.1 Environmental Impact Summary of the Preferred Alternative.

4.0.1 No-Build Alternative

With the No-build alternative, no roadway improvements or new roads would be constructed within the project area. With no improvements or new roads, existing and future traffic will continue to use existing roads. The No-build alternative was eliminated because it does not satisfy the purpose and need for this project, which is to provide an alternate route for through trucks and other traffic traveling through the area and to discourage truck traffic along Main Street (US 15). It also would not support the economic development plan of Bishopville and Lee County and the recruitment of new businesses, because it would not alleviate the high percentage of through truck traffic in downtown. Additionally, the No-build alternative would not help encourage economic development or pedestrian movements in the downtown Bishopville.

The No-build alternative does, however, provide a basis for comparing the benefits and adverse impacts of the alternatives.

4.0.2 The Preferred Alternative

The Preferred Alternative bypasses Bishopville to the southeast. This alternative would leave US 15 approximately 0.7 mile from the interchange at I-20, across from Browntown Road and cross eastward south of the city. The alternative would bridge the South Carolina Central Railroad (SCRF) railroad line, near Road SC 154. Continuing east, it would cross SC 341 between Wags Drive and the Lee County Correction Institute. The alternative would then turn northward through farmland. The alternative crosses through the Bishopville Wastewater Treatment Facility, and bridges over the railroad line a second time. The bypass turns northwestward, crossing US 15, just north of Dixon Drive and tying into SC 341.

The Preferred Alternative is approximately 5.70 miles long and would cost approximately $19 million. See Figure 3.12. The typical cross section will consist of a two-lane, arterial roadway with grassed shoulders and ditches. Turning lanes would be included at intersections, where appropriate. The roadway would have a design speed of 60 miles per hour (mph) and the posted speed limit at 45 to 55 mph. The right of way width for the corridor is 100 feet. See Figure 3.13.

Table 4.1 Environmental Impact Summary of the Preferred Alternative	
Category	**Impacts**
Cost in $ millions	$19
Total Length (miles)	5.70
Relocations	1 (vacant)
Archaeological Sites (NRHP eligible or listed)	0
Historic Sites (NRHP eligible or listed)	0
Hazardous Materials Sites	1
Noise-Impacted Receptors	0
Floodplains (acres)	3.8
Wetlands (acres)	2.87*
Stream Crossings	3
Threatened & Endangered Species	0
Linear Drainage Features	1
Farmland (acres, prime)	45.8

*Wetland acreage based on delineation of the Preferred Alternative.

4.1 Land Use

The City of Bishopville has a strong urban area with a mix of both commercial and residential districts with a distinct Main Street (US 15) feel. Immediately outside of Bishopville, land use within the project area is a mixture of open lands with some wooded areas, agriculture, and low density housing (see Figure 4.1). US 15 runs north to south and goes through surrounding farmland and the main commercial area for Bishopville. SC 341 also runs through the center of the city.

Industrial use within the study corridor

Additionally, Bishopville has industrial land uses nearby with two industrial parks. James Industrial Park is located on Wisacky Highway (SC 341) approximately 0.25 mile north of I-20. The I-20 Industrial Center is a 241-acre industrial park located on Browntown Road south of the city with easy access to both US 15 and I-20. Other notable land uses in the project area include the nationally renowned Pearl Fryar Topiary Garden and the South Carolina Cotton Museum in downtown Bishopville.

No land use changes would occur as a result of the No-build Alternative.

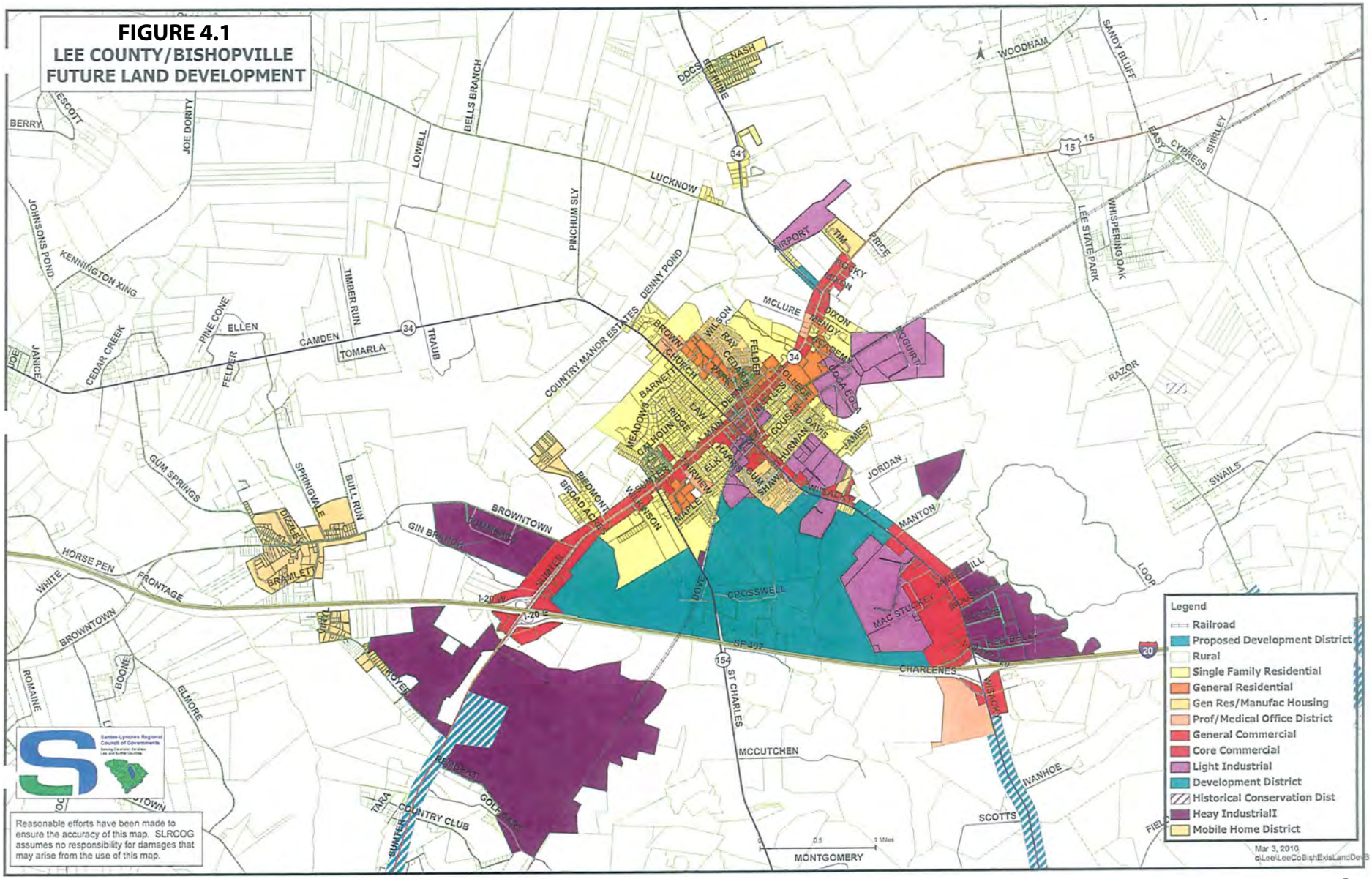


FIGURE 4.1
LEE COUNTY/BISHOPVILLE
FUTURE LAND DEVELOPMENT
Legend
Railroad
Proposed Development District
Rural
Single Family Residential
General Residential
Gen Res/Manufac Housing
Prof/Medical Office District
General Commercial
Core Commercial
Light Industrial
Development District
Historical Conservation Dist
Heay IndustrialI
Mobile Home District
Reasonable efforts have been made to ensure the accuracy of this map. SLRCOG assumes no responsibility for damages that may arise from the use of this map.
Mar 3, 2010
0.5
1 Miles
MONTGOMERY
LUCKNOW
CAMDEN
TOMARLA
BROWNTOWN
CROSSWELL
CHARLENES
MANTON
JORDAN
MCCUTCHEN
ST CHARLES
IVANHOE
SCOTTS
WOODHAM
SANDY BLUFF
EASY CYPRESS
SHIRLEY
LEE STATE PARK
WHISPERING OAK
RAZOR
SWAILS
HORSE PEN
FRONTAGE
WHITE
BERRY
ESCOTT
JOE DORITY
BELLS BRANCH
LOWELL
PINCHUM SLY
DENNY POND
COUNTRY MANOR ESTATES
TIMBER RUN
KENNINGTON XING
JOHNSONS POND
CEDAR CREEK
PINE CONE
ELLEN
FELDER
TRAUB
GUM SPRINGS
SPRINGVALE
BULL RUN
DIEZLER
BRAMLETT
GIN BRANCH
PIEDMONT
BROADACRES
SUMTER
HOWE
MAC STUCKEY
RED BELL
ROMAINE
BOONE
ELMORE
TARA
COUNTRY CLUB
GOLF COURSE
MCLURE
DIXON
MENDY
AIRPORT
PRICE
NASH
DOCS BETHUNE
SF 497
I-20 W
I-20 E
I-20 BY
34
15
20
154

The Preferred Alternative corridor traverses several land use types including a Development District on the southern side of the city, Single Family Residential, Rural, Light Industrial, and General Commercial.

According to the Lee County Comprehensive Plan, the Bishopville area is targeted as an area within the county that will experience the greatest growth within the next twenty years due to infrastructure, transportation, amenities of an urban area, and available developable sites. [16]

The project is consistent with land use plans for Lee County and is expected to positively impact land use in the area by providing efficient access for motorists to reach downtown commercial establishments.

4.2 Threatened or Endangered Species

The Endangered Species Act of 1973, as amended, requires federal agencies, in consultation with, and assisted by, the U.S. Fish and Wildlife Service (USFWS), to ensure that their actions are not likely to jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of critical habitat of such species.

Pursuant to Section 7 of the Endangered Species Act of 1973, a field survey of the proposed new right of way was conducted. Three (3) documented federally endangered species are known to occur within Lee County and are presented in Table 4.2. The endangered (E) and threatened (T) species for Lee County was obtained from the U.S. Fish and Wildlife Service (USFWS) and state endangered (SE) and threatened (ST) species obtained from the South Carolina Department of Natural Resources (SCDNR).

Table 4.2 Federally Endangered Species known to Occur within Lee County

Common Name	Scientific Name	Federal Status	State Status
Red-cockaded woodpecker	*Picoides borealis*	Endangered	Endangered
Canby's dropwort	*Oxypolis canbyi*	Endangered	
American chaffseed	*Schwalbea americana*	Endangered	

The habitat assessment of the project area did not reveal any critical habitat for the documented protected species for Lee County. The survey was conducted for listed species and their habitat requirements as described below.

Red-cockaded woodpecker (Picoides borealis)

The red-cockaded woodpecker is found in the southeastern United States from Florida to Virginia and west to southeast Oklahoma and eastern Texas. It is about the size of the common cardinal, about 8.7 inches long and with a wingspan of about 13.8 inches. Its feathers are black and white with white bars on the back. Its underside is white to gray with notable black spots along the sides of the breast. Males have red spots on each side of the nape, but they are rarely exposed. Females are larger than males and lack the red spots. The most distinguishing feature of this species is its black cap which is called a "cockade."

[16] *Lee County Comprehensive Plan, Land Use Element*. June 23, 2011, page 79.

The red-cockaded woodpecker prefers mature, open pine stands for its nesting habitat. Loblolly and longleaf pines that are 60-plus years old are generally selected for nesting sites. However, other species of southern pines are sometimes used for nesting. As referenced above, the preferred nesting sites for this species generally include relatively open, mature pine stands with an undeveloped or low understory layer. Management of understory growth, such as prescribed fire or use of silvicultural herbicides contributes to the habitat structure preferred by this species. Foraging habitat is frequently limited to pine or pine-hardwood stands that are 30 years or older, with a preference for pine trees with a diameter of 10 inches or larger. Generally, the maximum foraging range for the red-cockaded woodpecker is approximately one-half mile. **DETERMINATION OF EFFECT: No Effect.**

Canby's dropwort (Oxypolis canbyi)

Canby's dropwort belongs to the mint family (Apiaceae). It is a perennial herb which grows from 80 to 120 cm (30 to 50 in) tall. The "quill-like" hollow leaves and the thick, corky wings that extend out from the margins of the fruit are the most distinctive features of the plant. The stems are erect or ascending, round, and slender with arching/ascending or forking branches above the mid-stem. The flowers are monoecious or dioecious (flowers have either male or female parts or both) and small and white, sometimes tinged with red or pink. The flowers are borne on compound umbrella-like structures that extend from the base of the leaves, and the fruit is a schizocarp (fruit splits into one-seeded segments) about 4-6 mm long.

The primary habitats of Canby's dropwort are pineland ponds and savannas, wet meadows, and around the edges of open cypress ponds. This species prefers open habitat with little to no canopy closure of tree species. The habitat types preferred by Canby's dropwort generally consist of hydric soils with a seasonal high water table. **DETERMINATION OF EFFECT: No Effect.**

American chaffseed (Schwalbea americana)

The American Chaffseed is a perennial herb with large purplish-yellow, tubular flowers. The leaves are alternate, lance-shaped to elliptic, and attach directly to the stalk without a leaf stem. Leaves are 2 to 5 centimeters (1 to 2 inches) long, and herb can be 30-60 centimeters(one to two feet) tall. The entire plant is densely hairy throughout, including the flowers. Flowering occurs from April to June in the South.

American chaffseed prefers fire-maintained areas such as wet savannas and open, moist pine flatwoods. American chaffseed is found in moist to dry, sandy soils of the coastal plain. This species is also documented to occur within open, grass and sedge systems. American chaffseed depends on a fluctuating water table and frequent fire to maintain the open habitat that it requires. **DETERMINATION OF EFFECT: No Effect.**

The review of the project area did not reveal the preferred habitats required by the documented federally endangered species described above. The occurrence of mature, open pine stands with low understory coverage preferred by the red-cockaded woodpecker was not encountered during the preliminary review. No pineland ponds or open cypress ponds preferred by Canby's dropwort were identified within the project area. In addition, the review of the project area did not reveal the presence of any wet meadows, savannas or open moist pine flatwoods preferred by both Canby's dropwort and American chaffseed. The open grass areas within the project area are not fire maintained, but are for agricultural land uses only; limiting their suitability as habitat for American chaffseed.

Based on the lack of suitable habitat and/or no observations of the listed species during field surveys, results of the biological assessment indicate that the proposed action will not affect any threatened or endangered species or critical habitats currently listed for Lee County. See Natural Resources Technical Memorandum in Appendix C.

Bishopville Bypass General Project Area Habitat Description

The proposed Bishopville Bypass project area is located within the inner coastal plain province of the state and is dominated by agricultural land uses. Review of the S.C. Department of Natural Resources (SCDNR) Heritage Trust Database has indicated that three documented Federally endangered species are known to occur within Lee County. These species include the red-cockaded woodpecker (*Picoides borealis*), Canby's dropwort (*Oxypolis canbyi*) and American chaffseed (*Schwalbea americana*). Review of SCDNR occurrence data for the *Bishopville East, SC* and *Bishopville West, SC* U.S. Geological Survey 7.5-minute topographic quadrangle maps indicated that there are no documented occurrences of the listed species within the immediate vicinity of the project area.

As referenced above, the project area is situated within an area that is dominated by agricultural land uses and contains a limited amount of urban residential and commercial/industrial uses within the immediate vicinity of Bishopville. The agricultural uses in the vicinity of the project area range from row crop operations to nursery production. Active pasture/grazing lands as well as a limited amount of silvicultural production is also located in the vicinity of the project area. Very few areas of agricultural land uses within the vicinity of the project area are currently fallow.

Surface water features, including wetlands are located within the vicinity of the project area. The majority of these features are mixed hardwood and mixed pine-hardwood drainageways that drain to either the Lynches River to the east and southeast, or to the Black River to the south. These features are typical of the inner coastal plain and are of common distribution throughout the region. The vast majority of those encountered during the preliminary review of the project area have been manipulated and channelized by past land management practices to facilitate improved drainage for adjacent agricultural and urban land uses. These past drainage improvements have had a direct effect on the natural near-surface hydrology of these drainageways and have eliminated or reduced the amount of adjacent wetland area.

The review of the project area did not reveal the preferred habitats required by the documented federally endangered species described above. The occurrence of mature, open pine stands with low understory coverage preferred by the red-cockaded woodpecker was not encountered during the preliminary review. No pineland ponds or open cypress ponds preferred by Canby's dropwort were identified within the project area. In addition, the preliminary review of the project area did not reveal the presence of any wet meadows, savannas or open moist pine flatwoods preferred by both Canby's dropwort and American chaffseed. The open grass areas within the project area are not fire maintained, but are for agricultural land uses only; limiting their suitability as habitat for American chaffseed.

The habitat assessment of the project area did not reveal any critical habitat for the documented protected species for Lee County.

4.3 Farmland

The Farmland Protection Policy Act (FPPA) of 1981 is intended to reduce and minimize impacts that federal programs may have on area farmlands and protect farmlands from conversion to non-agricultural uses. Prior to farmlands being used for a federal project, an assessment must be completed to determine if prime, unique, statewide or locally important farmlands would be converted to non-agricultural uses.

Prime farmland soils are those that have characteristics favorable for economic production of sustained high yields of crops. These soils may or may not be presently used as cropland. Conversely, land that is presently used as cropland may or may not be prime farmland. Unique farmland is land other than prime farmland that is used for production of specific high-value food and fiber crops. Statewide or locally important farmland is land that has been designated of state or local importance as determined by state or local government agencies, but is not of national significance.

The No-build Alternative would not impact any farmlands.

The Preferred Alternative would impact 53.9 total acres of farmland of which 45.8 acres is prime and unique farmland and 8.1 acres is statewide and local importance farmland.

A Farmland Impact Conversion Rating form for Corridor Type Projects (NRCS-CPA-106) has been completed for the project alternatives (see CPA-106 completed by NRCS in Appendix A). The form, provided by the Natural Resources Conservation Service (NRCS), an agency of the U.S. Department of Agriculture (USDA), provides a corridor assessment scoring system with criteria for evaluating adverse effects of projects on the protection of farmland. Corridors receiving scores up to a maximum of 260 are considered most suitable for protection while those with lower scores are considered least suitable. Corridors receiving scores less than the allowable score of 160 are to be given minimal consideration for protection. The Preferred Alternative was assessed and for this proposed action was scored at 137.2. Therefore, no mitigation is required.

4.4 Streams

The 1988 USGS *Bishopville West* and the 1969 *Bishopville East* quadrangle topography maps shows three (3) blueline streams that the preferred alternative would cross: Black River, Robert E. Lee Branch, and Laws Branch. Laws Branch drains into Gin Branch which drains into Black River. The Robert E. Lee Branch drains into the Lynches River. Black River and Lynches River are part of the Pee Dee River Basin and are classified as Freshwaters (FW) meaning they are suitable for recreation, fishing, drinking water supplies with treatment, and agricultural or industrial uses. There are no outstanding resource waters (ORW) in the project area.

At the location where the Preferred Alternative crosses Laws Branch, the natural drainageway function has been impacted by the persistent beaver activity and the limits of waters extended by the subsequent impoundment. During the design phase, hydraulic studies will determine the use of bridges, pipes, or culverts at this crossing. Placement of piers and abutments would be evaluated during the design stage of project development to determine potential surface water impacts and efforts would be made to minimize these stream impacts to the greatest extent practicable. However, the project is not

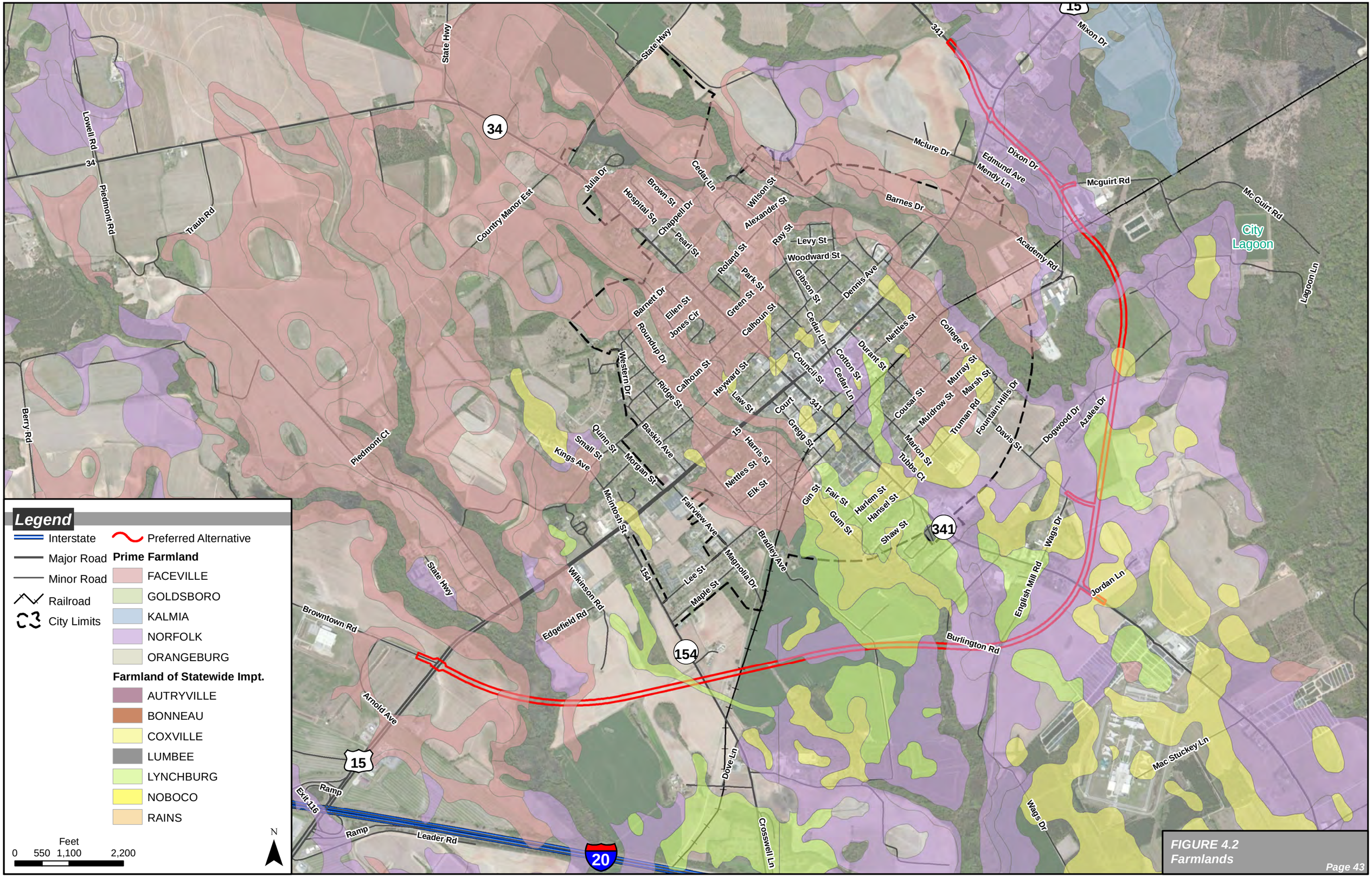


FIGURE 4.2
Farmlands

expected to be a significant or longitudinal encroachment as defined under 23 CFR 650A, nor is it expected to have an appreciable environmental impact on this stream.

At the location where the Preferred Alternative crosses Black River, the site is an excavated drainage channel that may have potentially been utilized in the past for irrigation water for adjacent agricultural production. During the design phase, hydraulic studies will determine the use of bridges, pipes, or culverts at this crossing. Placement of piers and abutments would be evaluated during the design stage of project development to determine potential surface water impacts and efforts would be made to minimize these stream impacts to the greatest extent practicable. However, the project is not expected to be a significant or longitudinal encroachment as defined under 23 CFR 650A, nor is it expected to have an appreciable environmental impact on this stream.

At the location where the Preferred Alternative crosses Robert E. Lee Branch, the stream is a channelized wetland drainageway located within a maintained, cleared overhead electric transmission right-of-way. This area has been excavated to improve adjacent agricultural production as well as improve municipal drainage for nearby developed areas associated with the town of Bishopville. This area is adjacent to a railroad crossing that will be bridged. The bridging should incorporate the stream crossing, which will have a minimal effect on the current drainage function provided by this system.

Best Management Practices would be implemented as engineering controls on the roadway for storm water runoff collection and treatment. BMPs that are installed correctly along the roadway would help to minimize water quality impacts resulting from pollutants carried by roadway storm water runoff. Continued maintenance of these storm water BMPs would ensure that these controls are functioning properly for the protection of area waters.

During construction activities, temporary siltation may occur in the creek beds and erosion will be of a greater degree than presently occurring on existing terrain. The contractor would be required to minimize this impact through implementation of construction best management practices, reflecting policies contained in 23 CFR 650 B and SCDOT's Supplemental Specifications on Seeding and Erosion Control Measures (August 15, 2001).

Stormwater control measures, both during construction and post-construction, are required for SCDOT projects constructed in the vicinity of 303(d), TMDL, ORW, tidal, and other sensitive waters in accordance with the SCDOT's MS4 permit.

4.5 Water Quality

Groundwater

The project area is serviced by the City of Bishopville for its drinking water. The project area is within the Middendorf Aquifer which supplies the majority of the Pee Dee region. Because of the depth of the aquifer, it is not anticipated it would be contaminated by the proposed project. Should a petroleum product or other soluble material be leaked or spilled during construction, Best Management Practices would be in place to manage the spill or leak.

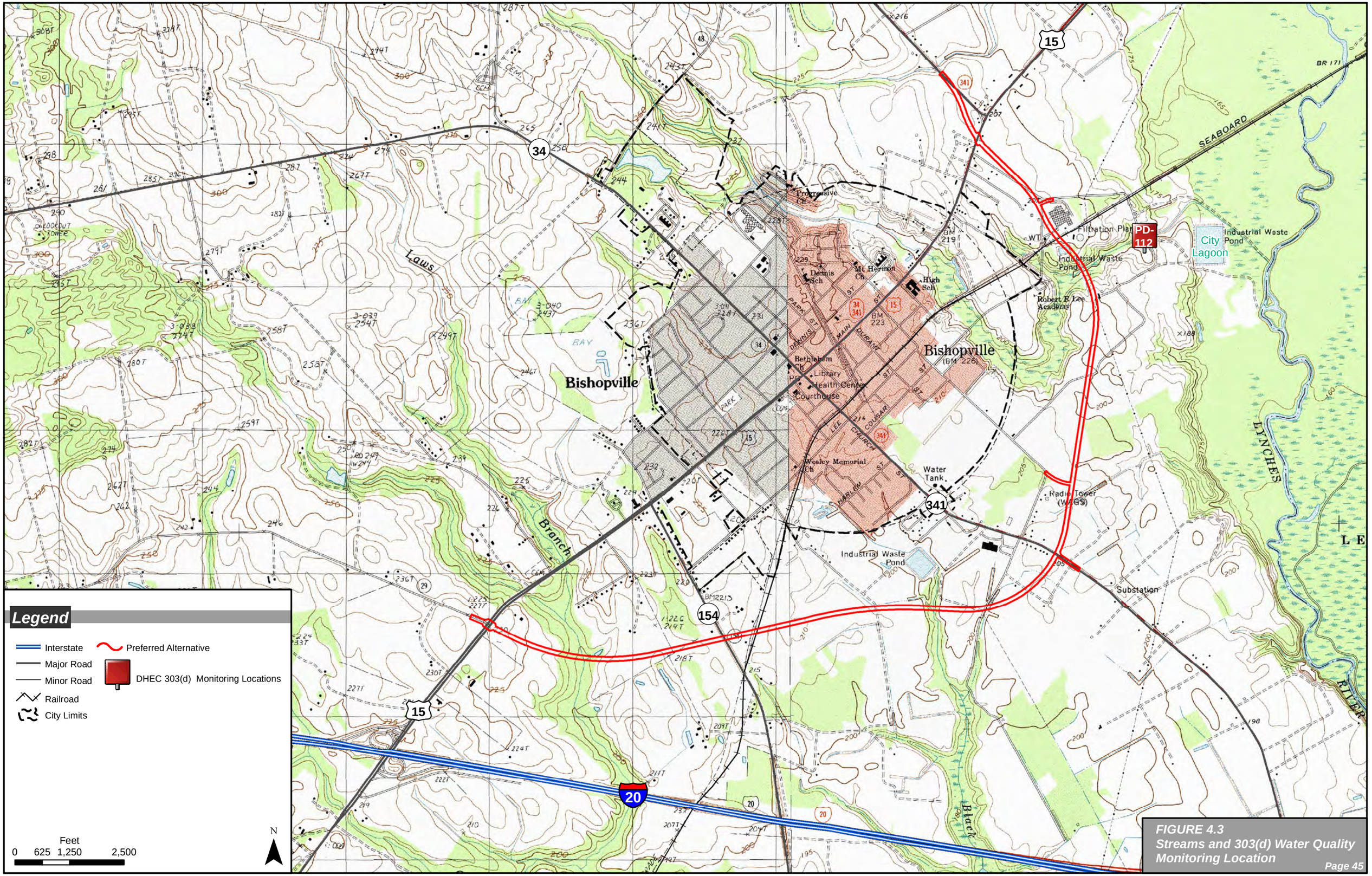


FIGURE 4.3
Streams and 303(d) Water Quality Monitoring Location

Surface Waters

Pursuant to Section 303(d) of the Federal Clean Water Act (CWA) and Federal Regulation 40 CFR 130.7, the Section 303(d) list for the State of South Carolina (2010) was reviewed for waterbodies within the project area that do not meet State water quality standards. The Robert E. Lee Branch (Cousar Branch) of the Lynches River is listed on SCDHEC's Section 303(d) impaired waters list. The water quality monitoring station (PD-112) on Robert E. Lee Branch at McGuirt Road determined that the stream exceeds allowable limits for pH (hydrogen iron) and Fecal coliform. The allowable limit for pH is between 6.0 and 8.5. The allowable limit for Fecal coliform is a geometric mean of 200/100 ml for five consecutive samples in a 30 day period of 400/100 ml for 10 percent of total samples in a 30 day period. According to SCDHEC's Watershed Water Quality Assessment: Pee Dee River Basin, aquatic life uses are not supported due to pH excursions. Recreational uses are fully supported and there is a decreasing trend in fecal coliform concentrations. The Total Maximum Daily Load (TMDL) for this stream has not yet been established.

The SCDHEC Bureau of Water is responsible for the National Pollutant Discharge Elimination System (NPDES) Permit Program for South Carolina. There are two (2) facilities in the project area in the Pee Dee River basin watershed that have a NPDES permit for point source discharge. The Bishopville Waste Water Treatment Facility, located on McGuirt Road less than one mile from the project area, has a major sewerage systems discharge NPDES permit for discharge into the Robert E. Lee Branch. South Atlantic Canners, Inc. (Coca-Cola), located on Cousar Street within the project area, has a non-major discharge NPDES permit for discharge into the Robert E. Lee Branch.[17]

The Preferred Alternative would cross Robert E. Lee Branch between one-quarter and one-half mile upstream of the water quality monitoring station. Water quality impacts could result due to pollutant build-up in new areas of the project area from the increase in traffic volumes. Inorganic materials, volatile compounds (from petroleum products), dust from vehicle brakes and exhaust, and heavy metals can build-up on roadways and runoff into streams and wetlands due to rain. Grassed shoulders are proposed for the project, which serve as a vegetated filter strip to filter pollutants from run-off as the leave the roadway. Grassed ditches will also provide opportunity for pollutants to settle out before reaching streams or other waterbodies. Any additional water quality treatments would be addressed during the NPDES permitting phase.

Stormwater control measures, both during construction and post-construction, are required for SCDOT projects constructed in the vicinity of 303(d), TMDL, ORW, tidal, and other sensitive waters in accordance with the SCDOT's MS4 permit.

4.6 Wetlands

Wetlands, as currently defined by the United States Army Corps of Engineers (USACE, 33 CFR 328.3[b]) and United States Environmental Protection Agency (USEPA, 40 CFR 230.3[t]) are:

> Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life

[17] EPA's Enviromapper, http://www.epa.gov/enviro/index.html

in saturated soil conditions. Wetlands typically include swamps, marshes, bogs, and similar areas.[18]

The USACE utilizes specific hydrologic, soil, and vegetation criteria in establishing the boundary of wetlands within their jurisdiction.

One method of assessing the value and function of wetlands is in terms of wildlife habitat. The US Fish and Wildlife Service (USFWS) Resource Category criteria are outlined in the USFWS Mitigation Policy, 46 CFR 7644-7663. Resource categories and mitigation planning techniques are assigned based on the following criteria:

- Category 1 - Communities of one-of-a-kind high value to wildlife, unique and irreplaceable on a national or eco-regional basis, habitat is not replaceable in kind based on present-day scientific and engineering skills within a reasonable time frame.

- Category 2 - Communities of high value to wildlife, which are relatively scarce or are becoming scarce on a national, or eco-regional basis, habitat can be replaced in kind within a reasonable time frame based on present-day scientific and engineering skills.

- Category 3 - Community types of high to medium wildlife value which are relatively abundant on a national basis, out-of-kind replacement is allowable if a tradeoff analysis demonstrates equivalency of substituted habitat type and/or habitat values. These sites are often in conjunction with a replenishing source.

- Category 4 - Community types of low to medium wildlife value, generally losses will not have a substantial adverse effect on important fish and wildlife resources. These sites have often been affected by the present roadway or human disturbances and are usually isolated.

The No-build alternative would not impact any wetlands and/or jurisdictional ditches within the project area.

A wetland assessment along with geographic information systems (GIS) determined that the Preferred Alternative would impact approximately 2.87 acres of wetlands. Additionally, the Preferred Alternative would cross one jurisdictional ditch (See Figure 4.4).

The field delineation of the project area has indicated that there are four areas of wetlands/waters of the United States located within the boundaries of the project area; all four areas fall into Category 4 because they have been affected by human disturbances. Of the four areas identified, one is a jurisdictional linear drainage feature (excavated drainage ditch) that was constructed to facilitate surface drainage for agricultural production. The remaining three areas identified have been impacted by past excavation activities for agricultural production and/or municipal drainage improvements. The following descriptions of these areas coincide with Figure 4.4.

[18] U.S. Army Waterways Experimental Station Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Washington, D.C.: Department of the Army - U.S. Army Corps of Engineers.

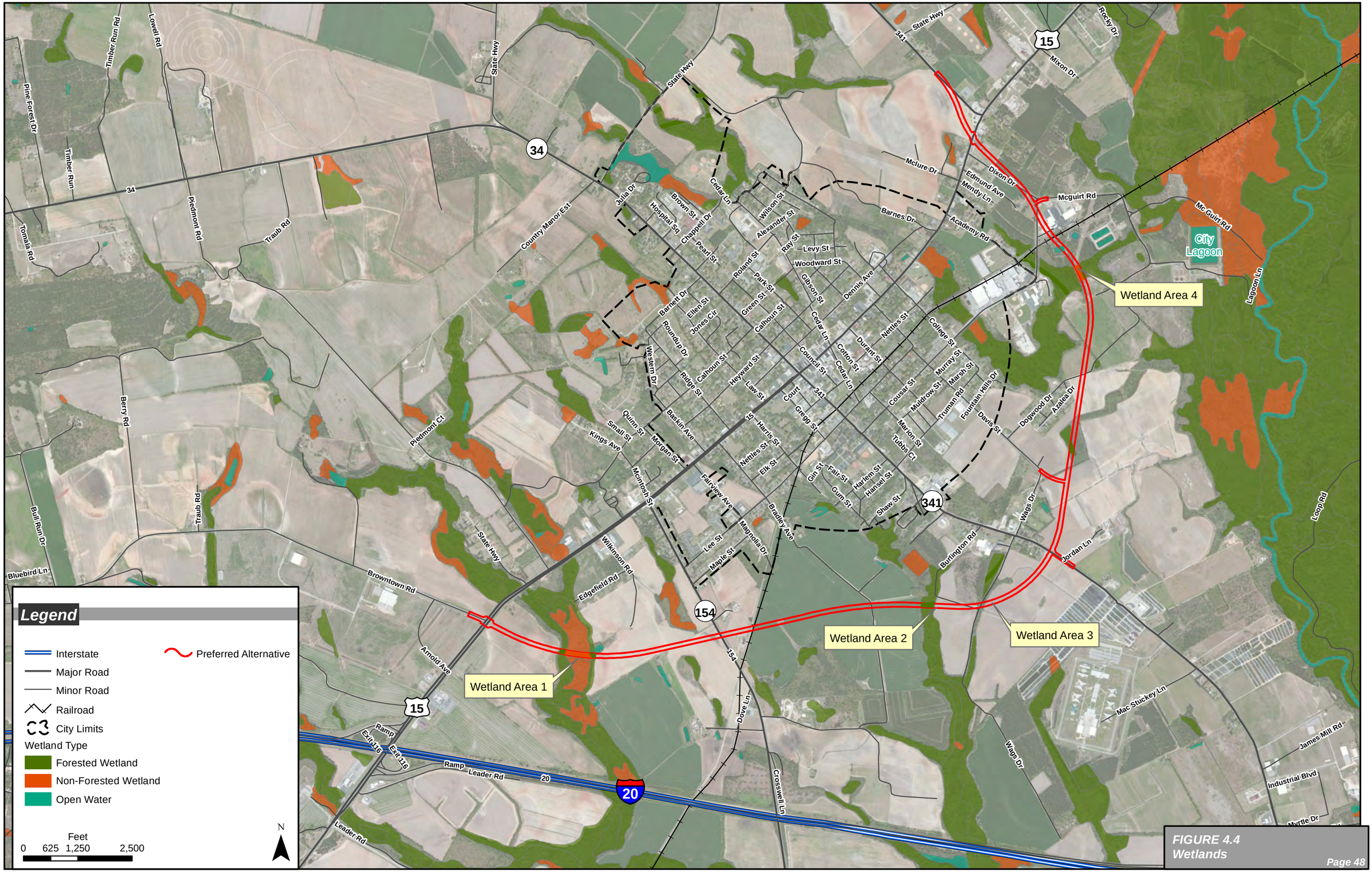


FIGURE 4.4
Wetlands

Wetland area 1 depicted on Figure 4.4 consists of an existing wetland drainageway that has been impounded by beaver activity. The defined limits of jurisdiction include a narrow zone of forested wetlands bordering an open water/emergent herbaceous zone occupying the lower elevation portions of the drainageway that have been impounded. The US Fish and Wildlife Service National Wetland Indicator mapping identify this area as PEM1Fb & PFO1/SS3B. The natural drainageway function of this area has been impacted by the persistent beaver activity and the limits of waters extended by the subsequent impoundment. Areas of this type are of common distribution throughout the physiographic province where the project area is located. Due to the linear nature of the proposed project and the existing degraded condition of the area, the proposed project is not a significant impact on wetland functions and values at this location. In addition, based on preliminary analysis, the lower elevation portion of this area is expected to be bridged, which will significantly reduce the associated wetland/Waters of the United States impacts for the proposed crossing.

Wetland area 2 depicted on Figure 4.4 currently consists of mixed hardwood forested wetlands that contain both and excavated drainage channel and an excavated open water area that may have potentially been utilized in the past for irrigation water for adjacent agricultural production. The US Fish and Wildlife Service National Wetland Indicator mapping identify this area as PFO1/SS3Bd. The natural wetland function of the area has been heavily impacted by the past excavation activities which have channelized sheet flow from adjacent upland areas as well as having degraded the near soil surface wetland hydrologic characteristics of the area. This type of area is of common distribution throughout the physiographic province where the project area is located. The limited impact to this area as a result of construction of the proposed project would not represent a major loss of preferred habitat or significant wetland function within the region.

Wetland area 3 depicted on Figure 4.4 consists entirely of a well-incised, excavated drainage feature that was constructed to improve drainage for adjacent agricultural production. This feature is jurisdictional due to its function as a conveyance of surface waters. There are no wetlands adjacent to this feature within the project area. The limits of jurisdiction consist of the ordinary high water mark on the toe of the banks. This type of feature is of common distribution throughout the physiographic province where the project area is located and is not considered a significant habitat feature. Accordingly, the impact by the proposed project to this feature is not considered significant. In addition, the proposed project will maintain the drainage function that this feature currently serves.

Wetland area 4 depicted on Figure 4.4 consists of a channelized wetland drainageway that is only partially forested within the boundaries of the project area. The project area is predominantly located within a maintained, cleared overhead electric transmission right-of-way that crosses the area of wetlands/waters of the United States. As with the other potentially jurisdictional areas identified with the project area, this area has been excavated to improve adjacent agricultural production as well as improve municipal drainage for nearby developed areas associated with the town of Bishopville. Similar to that of the area depicted on Figure #4, this area is proposed for bridging for the proposed project which will have a minimal effect on the current drainage function provided by this system. This area is of common distribution throughout the physiographic province where the project area is located and does not represent a significant impact to the area. In addition, this particular system has secondary roadway crossings located upstream and downstream of the proposed project area which further reduce the overall impact the proposed project will have on this area.

Executive Order 11990, Protection of Wetlands, requires federally supported projects to preserve wetlands and to avoid and minimize wetland impacts to the maximum extent practicable. Mitigation has been defined in NEPA regulations to include efforts which: a) avoid; b) minimize; c) rectify; d) reduce or eliminate; or e) compensate for adverse impacts to the environment (40 CFR 1508.20 [a-e]). Section 404(b) (1) Guidelines of the Clean Water Act and Executive Order 11990 stress avoidance and minimization as primary considerations for protection of wetlands. SCDOT will comply with Executive Order 11990 regarding protection of wetlands.

As evidenced by the preferred routing for the project, multiple alternative routes were considered and reviewed in an attempt to reduce wetland/waters of the United States impacts required by the proposed project to the maximum extent practicable. The preferred route for the project has also been aligned to cross narrower areas of potentially jurisdictional areas, as well as the inclusion of bridging of larger areas to reduce and minimize the overall wetland/waters of the United States impacts required for construction of the project. In addition, the areas proposed for impact are of wide distribution and have been significantly impacted by past drainage practices.

The project area is located within the upper regions of the drainage area for the Black River. As such, mitigation for the project is currently proposed to deduct compensatory mitigation credits for the project from the established Black River Mitigation Bank that is operated and maintained by the SC Department of Transportation. The fieldwork for wetland delineations is underway and a jurisdictional determination will be submitted to the USACE.

4.7 Permits

Due to impacts to wetlands and streams, an Individual Permit under Section 401 of the Clean Water Act is anticipated for the project for the placement of dredged or fill materials in waters of the United States, including jurisdictional wetlands.

A Section 401 Water Quality Certification permit for discharges into wetlands and waters of the United States is required from SCDHEC. Certification ensures that discharges are in accordance with state water quality standards.

In order to reduce stormwater runoff and minimize sediment erosion, a NPDES permit from SCDHEC under Section 402 of the Clean Waters Act is required.

Stormwater control measures, both during construction and post-construction, are required for SCDOT projects constructed in the vicinity of 303(d), TMDL, ORW, tidal, and other sensitive waters in accordance with the SCDOT's MS4 permit.

4.8 Wild/Scenic Rivers

Based on the list of Wild and Scenic Rivers maintained by the National Park Service (NPS), no rivers or streams in the project area are designated as Wild or Scenic Rivers.

4.9 Floodplains

Flood Insurance Rate Maps (FIRM) published by the Federal Emergency Management Administration (FEMA) were reviewed to identify 100-year floodplains in order to avoid floodplain impacts to the greatest extent possible, as required by Executive Order 11988. The project area falls within Community Panel Numbers 45061C0153C, 45061C0151C, and 45061C0135C (see Appendix A for these maps). Based on this review, the proposed project would involve construction within the 100-year flood limits of numerous creeks and rivers surrounding the project area. Development is permitted in a 100-year floodplain by federal regulations if hydrologic and hydraulic analyses demonstrate that it would not result in an increase of more than one foot in the base flood elevation. FEMA requires that floodways retain the ability to convey the 100-year flood by remaining unobstructed.

The No-build Alternative would not impact any floodplains within the project area.

FEMA Zone A crossings are expected at the creeks and streams with the Preferred Alternative. Zone A areas have a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage. Because detailed analyses are not performed for such areas; no data on the depths or base flood elevations are collected within these zones. In areas designated Zone AE, base flood elevations have been established within these zones based on detailed hydrologic and hydraulic study (the Preferred Alternative crosses a FEMA Zone AE at Robert E. Lee Branch).

All crossings would attempt to maintain a perpendicular crossing in order to minimize potential impacts to the greatest extent practicable. Hydraulic and hydrologic studies will determine the use of culverts or bridges at crossings. Bridge structures would be designed in accordance with FEMA standards in Zone AE. In the crossing with a designation of Zone AE with Floodway is established (Robert E. Lee Branch), a No-Rise Certification shall be prepared and submitted in accordance with National Flood Insurance Program (NFIP) requirements outlined in NFIP Regulations Section 60.3 (d) (3) Flood Plain Management Criteria for Flood-prone Areas by showing that there is no rise in the designated regulatory floodway. All other crossings will be designed to limit any rise in flood elevations for the 100-year flood profile to less than 1.0 feet in in accordance with National Flood Insurance Program (NFIP) requirements outlined in NFIP Regulations Section 60.3 (c) (10) Flood Plain Management Criteria for Flood-prone Areas.

During final design of the project, a complete study will be conducted to more precisely determine the effects of the project on the base floodplain. However, the project is not expected to be a significant or longitudinal encroachment as defined under 23 CFR 650A, nor is it expected to have an appreciable environmental impact on this base floodplain. Also, the project is not expected to have any increased potential for impact on those critical elements that would constitute a significant risk under 23 CFR 650A.

4.10 Air Quality

The proposed project would be consistent with the South Carolina State Air Quality Implementation Plan (SIP) regarding the attainment of the National Ambient Air Quality Standards (NAAQS). Presently, Lee County meets all air quality standards for automobile related pollutants. The State Bureau of Air Quality at the South Carolina Department of Health and Environmental Control (SCDHEC) has determined that transportation control measures (TCMs) are not required to maintain the area's air quality.

Mobile Source Air Toxics (MSATs)

In addition to the criteria air pollutants for which there are National Ambient Air Quality Standards (NAAQS), the EPA is the lead Federal Agency for administering the Clean Air Act and has certain responsibilities regarding the health effects of Mobile Source Air Toxics (MSATs). MSATs are a subset of the 188 air toxics defined by the Clean Air Act. The MSATs are compounds emitted from highway vehicles and non-road equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as secondary combustion products. Metal air toxics also result from engine wear or from impurities in oil or gasoline.

The amount of MSAT emitted for each of the build alternatives considered for the Bishopville Bypass would be proportional to the amount of vehicle miles traveled, or VMT, assuming that other variables such as fleet mix are the same for each alternative. The amount of VMT for a bypass facility on new alignment such as the Bishopville By-pass would be anticipated to increase over an existing or no-build scenario because of its longer route. However, since the majority of the existing land use surrounding the bypass facility is rural in nature and represents areas with low frequent human activity, a comparison was made between the estimated VMT for the No-Build Alternative and the VMT estimated for the Preferred Alternative in downtown Bishopville and along existing US 15 (see Table 4.3).

Table 4.3
VMT Comparisons

Alternative	VMT (vehicle miles traveled)
2035 No-build	57,711.95
2035 Preferred	35,419.53

Regardless of the alternative chosen, emissions will likely be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce annual MSAT emissions by 72 percent between 1999 and 2050. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the project area are likely to be lower in the future in nearly all cases.

In summary, for the Preferred Alternative in the design year it is expected there would be reduced MSAT emissions in the immediate area of the Bishopville downtown, relative to the No-build Alternative, due

to the reduced VMT associated with less vehicles traveling through downtown and due to EPA's MSAT reduction programs.

Fo the Preferred Alternative there may be localized areas where ambient concentrations of MSAT could be higher than the No-build Alternative. The localized increases in MSAT concentrations would likely be most pronounced in the areas of US 15 and SC 341. However, the magnitude and the duration of these potential increases compared to the No-build alternative cannot be reliably quantified due to incomplete or unavailable information in forecasting project-specific MSAT health impacts. In sum, with new roadway, the localized level of MSAT emissions for the Preferred Alternative could be higher relative to the No-build Alternative, but this could be offset due to increases in speeds and reductions in congestion (which are associated with lower MSAT emissions). Also, MSATs will be lower in other locations when traffic shifts away from them. However, on a regional basis, EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be significantly lower than today.

INCOMPLETE OR UNAVAILABLE INFORMATION FOR PROJECT-SPECIFIC MSAT HEALTH IMPACTS ANALYSIS

In FHWA's view, information is incomplete or unavailable to credibly predict the project-specific health impacts due to changes in MSAT emissions associated with a proposed set of highway alternatives. The outcome of such an assessment, adverse or not, would be influenced more by the uncertainty introduced into the process through assumption and speculation rather than any genuine insight into the actual health impacts directly attributable to MSAT exposure associated with a proposed action.

The U.S. Environmental Protection Agency (EPA) is responsible for protecting the public health and welfare from any known or anticipated effect of an air pollutant. They are the lead authority for administering the Clean Air Act and its amendments and have specific statutory obligations with respect to hazardous air pollutants and MSAT. The EPA is in the continual process of assessing human health effects, exposures, and risks posed by air pollutants. They maintain the Integrated Risk Information System (IRIS), which is "a compilation of electronic reports on specific substances found in the environment and their potential to cause human health effects" (EPA, http://www.epa.gov/ncea/iris/index.html). Each report contains assessments of non-cancerous and cancerous effects for individual compounds and quantitative estimates of risk levels from lifetime oral and inhalation exposures with uncertainty spanning perhaps an order of magnitude.

Other organizations are also active in the research and analyses of the human health effects of MSAT, including the Health Effects Institute (HEI). Two HEI studies are summarized in Appendix D of FHWA's Interim Guidance Update on Mobile source Air Toxic Analysis in NEPA Documents. Among the adverse health effects linked to MSAT compounds at high exposures are cancer in humans in occupational settings; cancer in animals; and irritation to the respiratory tract, including the exacerbation of asthma. Less obvious is the adverse human health effects of MSAT compounds at current environmental concentrations (HEI, http://pubs.healtheffects.org/view.php?id=282) or in the future as vehicle emissions substantially decrease (HEI, http://pubs.healtheffects.org/view.php?id=306).

The methodologies for forecasting health impacts include emissions modeling; dispersion modeling; exposure modeling; and then final determination of health impacts - each step in the process building on the model predictions obtained in the previous step. All are encumbered by technical shortcomings or uncertain science that prevents a more complete differentiation of the MSAT health impacts among a set of project alternatives. These difficulties are magnified for lifetime (i.e., 70 year) assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over that time frame, since such information is unavailable. The results produced by the EPA's MOBILE6.2 model, the California EPA's Emfac2007 model, and the EPA's DraftMOVES2009 model in forecasting MSAT emissions are highly inconsistent. Indications from the development of the MOVES model are that MOBILE6.2 significantly underestimates diesel particulate matter (PM) emissions and significantly overestimates benzene emissions.

Regarding air dispersion modeling, an extensive evaluation of EPA's guideline CAL3QHC model was conducted in an NCHRP study (http://www.epa.gov/scram001/dispersion_alt.htm#hyroad), which documents poor model performance at ten sites across the country - three where intensive monitoring was conducted plus an additional seven with less intensive monitoring. The study indicates a bias of the CAL3QHC model to overestimate concentrations near highly congested intersections and underestimate concentrations near uncongested intersections. The consequence of this is a tendency to overstate the air quality benefits of mitigating congestion at intersections. Such poor model performance is less difficult to manage for demonstrating compliance with National Ambient Air Quality Standards for relatively short time frames than it is for forecasting individual exposure over an entire lifetime, especially given that some information needed for estimating 70-year lifetime exposure is unavailable. It is particularly difficult to reliably forecast MSAT exposure near roadways, and to determine the portion of time that people are actually exposed at a specific location.

There are considerable uncertainties associated with the existing estimates of toxicity of the various MSAT, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population, a concern expressed by HEI (http://pubs.healtheffects.org/view.php?id=282). As a result, there is no national consensus on air dose-response values assumed to protect the public health and welfare for MSAT compounds, and in particular for diesel PM. The EPA (http://www.epa.gov/risk/basicinformation.htm#g) and the HEI (http://pubs.healtheffects.org/getfile.php?u=395) have not established a basis for quantitative risk assessment of diesel PM in ambient settings.

There is also the lack of a national consensus on an acceptable level of risk. The current context is the process used by the EPA as provided by the Clean Air Act to determine whether more stringent controls are required in order to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect for industrial sources subject to the maximum achievable control technology standards, such as benzene emissions from refineries. The decision framework is a two-step process. The first step requires EPA to determine a "safe" or "acceptable" level of risk due to emissions from a source, which is generally no greater than approximately 100 in a million. Additional factors are considered in the second step, the goal of which is to maximize the number of people with risks less than 1 in a million due to emissions from a source. The results of this statutory two-step process do not guarantee that cancer risks from exposure to air toxics are less

than 1 in a million; in some cases, the residual risk determination could result in maximum individual cancer risks that are as high as approximately 100 in a million. In a June 2008 decision, the U.S. Court of Appeals for the District of Columbia Circuit upheld EPA's approach to addressing risk in its two step decision framework. Information is incomplete or unavailable to establish that even the largest of highway projects would result in levels of risk greater than safe or acceptable.

Because of the limitations in the methodologies for forecasting health impacts described, any predicted difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with predicting the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against project benefits, such as reducing traffic congestion, accident rates, and fatalities plus improved access for emergency response, that are better suited for quantitative analysis.

4.11 Noise

A traffic noise analysis was performed to determine the highway-generated noise impacts associated with the proposed construction of the Preferred Alternative. The traffic noise analysis was analyzed in accordance with the procedures established for the abatement of highway traffic noise and construction noise as outlined in Part 772 of Title 23 of the Code of Federal Regulations (CFR) and the *South Carolina Department of Transportation Traffic Noise Abatement Policy, July 1, 2011.*

Land use in the project area consists primarily of rural agriculture, industrial and residential uses. Based on available local research and field reviews, there are no permitted lands for development within the project study corridors. Based on FHWA's Noise Abatement Criteria (NAC) and the overall rural nature of the Bishopville Bypass project area, nine (9) locations were selected as representative noise sensitive sites that were either located adjacent to the existing road (Main Street/US 15) or those locations that would be potentially affected by the proposed project.

In order to determine if highway noise levels were compatible with various activities, FHWA developed NAC and procedures to be used in the planning and design of highways. Based on a field review, all of the identified noise sensitive sites for the Bishopville Bypass were determined to represent either NAC category B (residential) or category C (parks, schools and churches). Although Sites 4 (St. Johns AME Church) and Site 5 (Bishopville Presbyterian Church) are existing places of worship, these sites were also used to model adjacent residential uses and in the case of site 5, an exterior recreational playground and basketball court. Table 4.4 contains the various NAC categories and a description of each.

Table 4.4. FHWA Noise Abatement Criteria (NAC)
Hourly A-Weighted Sound Level – Decibels (dBA)*

Activity	Leq(h)†	L10(h) †	Evaluation Location	Description of Activity Category
A	57	60	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B‡	67	70	Exterior	Residential
C‡	67	70	Exterior	Active sports areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52	55	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	72	75	Interior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F.
F	--	--	--	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	--	--	--	Undeveloped lands that are not permitted.

*Either Leq(h) or L10(h) (but not both) may be used on a project.
†The Leq(h) and L10(h) Activity Criteria values are for impact determination only and are not design standards for noise abatement measures.
‡Includes undeveloped lands permitted for this activity category.

The procedures set forth by the Federal Highway Administration (FHWA) recommend noise analyses to be performed in terms of either L10(h) or Leq(h). L10 is the sound level exceeded 10 percent of the time. Leq(h) is defined as the equivalent, steady-state sound level that in a given period contains the same acoustical energy as the time-varying sound level during the same period. The Leq(h) noise descriptor was used in this study, because of its relative ease to monitor and compare with FHWA's noise abatement criteria (NAC).

Table 4.5 Existing Noise Levels (dBA Leq)			
Site #	**Name**	**Time Period**	**Measured Leq**
1	Country Manor Estates	2:30 pm - 2:45 pm	45.9
		2:47 pm - 3:02 pm	46.1
2	Chappell Park	3:12 pm - 3:27 pm	47.4
3	Ezzell parking lot	9:47 am - 10:02 am	48.9
		11:12 am - 11:28 am	48.6
		11:28 am - 11:43 am	47.7
4	St. Johns AME Church	8:05 am - 8:20 am	68.3
		8:21 am - 8:36 am	67.5
		11:55 am - 12:10 pm	67.4
		12:14 pm - 12:29 pm	68.4
		5:05 pm - 5:20 pm	66.5
5	Bishopville Presbyterian Church	8:49 am - 9:04 am	67.5
		9:04 am - 9:20 am	66.9
		12:41pm - 12:56 pm	66.6
		12:57pm - 1:12 pm	66.5
		4:25 pm - 4:40 pm	66.3
		4:45 pm - 5:00 pm	65.5
6	Site adjacent to Post Office	9:25 am - 9:40 am	60.6
		11:09 am - 11:25 am	58.5
		11:25 am - 11:40 am	58.3
		11:20 am - 11:35 am	60.7
		3:45 pm - 4:00 pm	61.1
		4:00 pm - 4:15 pm	60.3
7	Site adjacent to Historic Home	9:45 am - 10:00 am	58.8
8	Site adjacent to Alt. 1/Alt. 2	10:23 am - 10:38 am	53.4
		2:40 pm - 3:00 pm	54.9
9	Lee Street - residences	12:45 pm - 1:00 pm	59.2

Existing noise levels were measured on March 23, 24, and 29, 2011 using a QUEST SoundPro-DL-2-10 Type 2 sound level meter. As seen in Table 4.5, the existing noise levels for these nine receptors ranged from 46 dBA Leq to 68 dBA Leq. For two of the nine sites (Sites 4 and 5), existing noise levels currently exceed the NAC of 67 dBA Leq for Activity Category B.

Existing noise levels were validated using the Traffic Noise Model (TNM) Version 2.5 and the TNM model was used to predict future noise levels. Traffic noise levels were predicted for the representative noise sensitive receiver sites along the No-build Alternative and the Preferred Alternative for the future design year (2035) conditions. (See the Noise Technical Memorandum in Appendix D)

In order to simulate a worst case scenario, TNM uses traffic volumes that will produce the noisiest traffic condition likely to occur for the design year. The “worst hourly traffic noise impact” has been

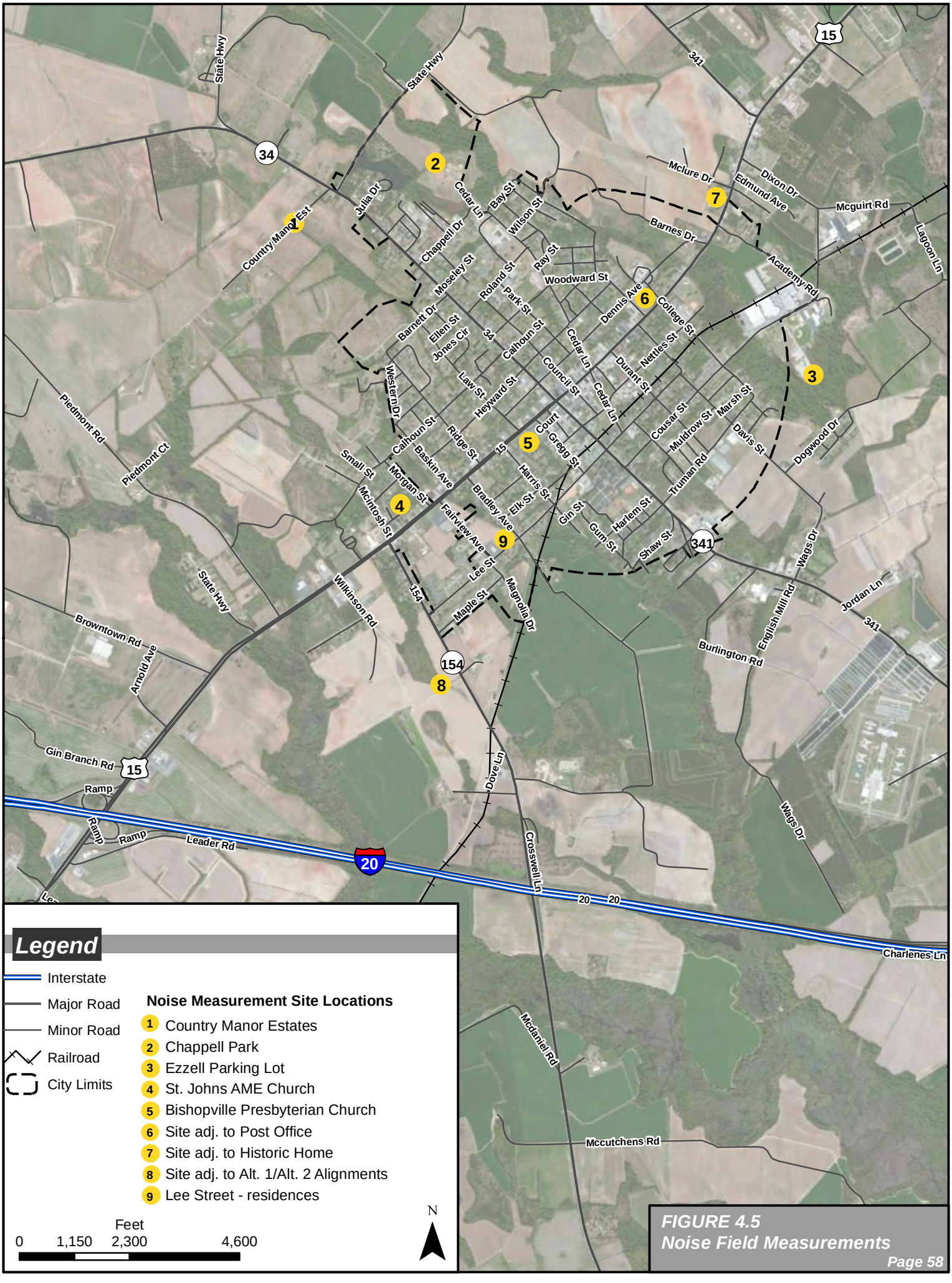


FIGURE 4.5
Noise Field Measurements

determined to occur when truck volumes and vehicles speeds are the greatest, typically when traffic flow is free flowing and at or near level of service (LOS) C conditions.

Design year 2035 Average Daily Traffic (ADT) volumes for the Preferred Alternative were based on the *Bishopville Bypass Environmental Assessment: Average Daily Traffic and Truck Traffic Technical Memorandum* prepared for the development of the Bishopville Bypass Purpose and Need Statement. Based on the preliminary traffic data developed for the project's purpose and need, the proposed project will operate at LOS C or better during the design year 2035. Therefore, for purposes of the preliminary noise analysis, hourly traffic volumes developed from the traffic memorandum were used in the TNM modeling. Other traffic assumptions included a 9 percent peak hour factor, a 55/45 directional split percentage percent, a 70/30 heavy truck/medium truck factor and a design speed of 60 miles per hour (mph). Peak one-hour traffic volumes for the design year for the Preferred Alternative are shown in Table 4.6.

Table 4.6. Summary of Traffic Data

Facility	From	To	Speed Limit	Average Daily Traffic (ADT)*	Peak Hour Demand Volume (VPH)†
Existing Conditions					
US 15	McIntosh St.	Fairview Ave.	45 mph	10,900	748
US 15	Harris St.	SC 34/SC 341	25 mph	12,000	832
US 15	Cedar Ln.	Davis St.	35 mph	11,300	540
2035 – No-build Alternative					
US 15	McIntosh St.	Fairview Ave.	45 mph	14,389	1,295
US 15	Harris St.	SC 34/SC 341	25 mph	14,389	1,295
US 15	Cedar Ln.	Davis St.	35 mph	14,566	1,311
2035 – Preferred Alternative					
US 15	McIntosh St.	Fairview Ave.	45 mph	9,367	843
US 15	Harris St.	SC 34/SC 341	25 mph	9,367	843
US 15	Cedar Ln.	Davis St.	35 mph	6,320	569
Preferred Alternative	SC 34/SC 341	US 15 North	60 mph	8,493	765

4.11.2 Noise Analysis Findings

As defined by the *SCDOT Traffic Noise Abatement Policy,* a traffic noise impact occurs when either of the following is determined:

> 1) The predicted highway traffic noise levels approach or exceed the noise abatement criteria as established in 23 CFR 772. **"Approach" is defined as within 1 dBA of the FHWA noise abatement criteria for the applicable land use category.**
>
> 2) The predicted traffic noise levels substantially exceed existing traffic noise levels in an area. **"Substantially exceed" is defined as an increase in noise levels of 15 dBA or more in the design year over the existing noise level.**

Based on the TNM modeling and future traffic conditions, noise impacts are predicted to occur for the No-build Alternative. Noise impacts were based on 2035 traffic conditions and are summarized in Table 4.7 and described as follows:

No-build - The results of the noise analysis conducted for the No-build Alternative indicate that predicted noise levels for Site 4 (St. Johns AME Church) and Site 5 (Bishopville Presbyterian Church) would exceed the NAC of 67 dBA Leq.

Preferred Alternative - Approximately 14 receivers were modeled to represent the closest residences to the proposed alignment. These receivers are represented in Table 4.7 as Site 3 (Ezzell parking lot). Predicted noise levels for the Preferred Alternative ranged from 49.6 to 62.9 dBA Leq. None of the modeled receivers were determined to have predicted noise levels that would approach or exceed the 67 dBA Leq NAC or substantially exceed existing noise levels. Sites 4 and 5 represent locations along existing US 15 and are not located along the Preferred Alternative.

Table 4.7.
Summary of Predicted Noise Levels (dBA Leq)

					Design Year 2035	
Site No.	**Receptor**	**No. of Sites Represented**	**Noise Abatement Criteria**	**Existing Noise Levels**	**No-Build**	**Preferred Alt.**
Site 1	Country Manor Estates	10 single-family units	67	46	46	46
Site 2	Chappell Park	3 single-family units, 1 ballpark & playground	67	47	47	47
Site 3	Ezzell parking lot	14 single-family units	67	49	49	63
Site 4	St. Johns AME Church	3 sf units, 1 church, 2 businesses	67	68	71	69
Site 5	Bishopville Presbyterian Church	5 single-family units, 1 church	67	68	70	68
Site 6	Site adj to Post Office	6 single-family units, 1 hotel, 1 post office, 3 businesses	67	61	63	59
Site 7	Site adj to Historic Home	3 single-family units	67	59	59	59
Site 8	Site adj to Alt. 1/Alt. 2	25 single-family units	67	55	55	55
Site 9	Lee Street - residences	34 residences, 2 churches	67	59	59	59

Two sites along existing US 15, Site 4 (St. Johns AME Church) and Site 5 (Bishopville Presbyterian Church) approach or exceed the 67 dBA Leq NAC under existing conditions and future (2035) conditions. Under future build conditions, predicted noise levels for Site 4 (St. Johns AME Church) would increase 1 dBA

over its existing level of 68 dBA Leq and would be 2 dBA Leq lower than noise levels predicted for the No-build Alternative. Predicted noise levels for Site 5 (Bishopville Presbyterian Church) would remain at its existing level of 68 dBA under future build conditions but would be 2 dBA lower than No-build conditions. Although future noise levels at these sites are predicted to be above the NAC, by removing truck traffic from US 15, the Preferred Alternative would have lower noise levels at these sites than the No-build Alternative.

4.11.3 Noise Abatement Measures

When traffic noise impacts are identified, noise abatement must be considered and evaluated for feasibility and reasonableness. In abating noise impacts, primary consideration is given to exterior areas where frequent human use occurs. Planting of vegetation or landscaping is not considered an acceptable Federal-aid noise abatement measure because only dense stands of evergreen vegetation at least 100 feet deep will reduce noise levels.

In accordance with 23 CFR 772.13(c), the following noise abatement measures were considered as a means to reduce or eliminate traffic noise impacts.

4.11.3.1 Traffic Management Measures

Traffic management measures that limit vehicle type, speed, volume and time of operations are often ineffective noise abatement measures. The proposed speed limit for the bypass facility is designed for 60 mph. Any further reduction in the speed limit or use of other traffic management measures would be adversely detrimental to the project's ability to function as a bypass. Restricting truck traffic would be difficult to enforce and would severely conflict with the project's purpose and need to eliminate truck traffic and traffic congestion in the downtown area. Therefore, traffic management measures were not considered as a viable alternative.

4.11.3.2 Alignment Modification

The selection of a preferred highway alignment typically involves the horizontal or vertical orientation of the proposed project, wherever feasible, in such a way as to minimize impacts and costs. The selection of any of the proposed alternatives for noise abatement purposes must consider the balance between noise impacts and other engineering and environmental parameters. This method was used during the development of the preliminary build alternatives and was implemented throughout the entire process.

4.11.3.3 Property Acquisition

The acquisition of right of way is generally not considered a reasonable alternative for noise abatement. The acquisition of property from the noise sensitive properties impacted by the project would be more expensive and disruptive than other noise abatement measures. Therefore, this abatement measure was not considered reasonable and was dropped from further consideration.

4.11.3.4 Noise Barriers

This type of mitigation involves construction of solid mass barriers to effectively diffract, absorb and reflect highway traffic noise. These may include earth berms and/or noise walls.

The evaluation of the reasonableness and feasibility of noise wall construction is based on many factors, some of which include constructability, cost, height, anticipated noise increase, noise reduction obtained, number of receptors benefited, residents' views, land use type and whether land use changes are expected.

The SCDOT Traffic Noise Abatement Policy has established criteria for determining the feasibility and reasonableness of noise barriers.

Feasibility - Feasibility is primarily concerned with the engineering aspects of a noise abatement measure, including:

- ***Acoustic Feasibility.*** It is SCDOT's policy that a noise reduction of at least 5 dBA be achieved for 75 percent of those receivers determined to be impacted for the noise abatement measure to be acoustically feasible.
- ***Engineering Feasibility***. Feasibility deals with engineering considerations. The ability to achieve noise reduction may be limited by:
  1) Topography – Determine if the abatement measure could be constructed given the topography of the location.
  2) Safety - Maintain a clear recovery zone, sight distance and the accommodation of disabled vehicles.
  3) Drainage - Issues created by directing water along, under, or away from an abatement measures.
  4) Utilities - Large overhead power lines, underground water, sewer, gas, oil, etc., can have a significant impact on costs and design options.
  5) Maintenance - Potential issues from location of abatement measure and construction materials.
  6) Access - Refers to the ingress and egress to properties that would be affected by the noise abatement measure.
  7) The exposed height of the noise abatement measure cannot exceed 25 feet based on constructability constraints.

Reasonableness - There are Three Mandatory Reasonable Factors that must be met for a noise abatement measure to be considered reasonable. The Three Mandatory Reasonable Factors must collectively be achieved in order for a noise abatement measure to be deemed reasonable. Failure to achieve any one of the reasonable factors will result in the noise abatement measure being deemed not reasonable.

1. *Viewpoints of the property owners and residents of the benefited receptors*.
The viewpoints of all of the benefited receptors will be solicited and documented as to a decision on either desiring or not desiring the noise abatement measure.

2. *Cost effectiveness*.
The allowable cost of the abatement will be based on $35.00 per square foot. This allowable cost is based on actual construction costs on recent SCDOT projects. This construction cost will be divided by the number of benefited receptors. If the cost per benefited receptor is less than **$30,000** then the barrier is determined to be cost effective. This allowable cost will be reanalyzed every 5 years.

3. *Noise reduction design goal*.
It is SCDOT's policy that a noise reduction of at least 8 dBA must be achieved for 80 percent of those receivers determined to be benefited.

The feasibility and reasonableness of constructing noise barriers as a means for noise abatement was investigated for those sites whose predicted noise levels would approach or exceed their respective NAC or whose noise levels would substantially exceed their existing levels. Consideration for constructing noise barriers was evaluated for those locations meeting the SCDOT policy for noise abatement.

Predicted noise levels for the Preferred Alternative ranged from 49.6 to 62.9 dBA. None of the modeled receivers were predicted to have noise levels that approach or exceed the NAC or substantially exceed the existing noise levels. Therefore, noise abatement measures were not deemed necessary or proposed along the Preferred Alternative. Two sites along US 15, Site 4 (St. Johns AME Church) and Site 5 (Bishopville Presbyterian Church) approach or exceed the 67 dBA Leq NAC under existing conditions and future (2035) conditions. Under future build conditions, predicted noise levels for Site 4 (St. Johns AME Church) would increase 1 dBA over its existing level of 68 dBA Leq and would be 2 dBA Leq lower than noise levels predicted for the No-build Alternative. Predicted noise level for Site 5 (Bishopville Presbyterian Church) would remain at it existing level of 68 dBA under future build conditions but would be 2 dBA lower than No-build conditions. Although future noise levels at these sites are predicted to be above the NAC, by removing truck traffic from US 15, the Preferred Alternative would have lower noise levels at these sites than the No-build Alternative.

Sites 4 and 5 represent locations along existing US 15 and are not located along the Preferred Alternative. Consideration for constructing noise barriers was investigated for these areas but due to these sites being located along an existing uncontrolled facility, it would be impractical to consider constructing a noise wall or walls in these areas. Access or driveway openings would severely compromise the overall effectiveness of the barrier and would create a safety concern due to restricted sight distances at these openings if a barrier were constructed. Therefore, constructing noise barriers for these existing noise sensitive areas were not considered feasible or reasonable and none were proposed.

4.11.4 Noise Compatible Planning

To minimize future traffic noise impacts on currently undeveloped lands of Type I projects, a highway agency shall inform local officials of:

i. Noise compatible planning concepts;

ii. Best estimations of the future design year noise levels at various distances from the edge of the nearest travel lane of the highway improvement; and

iii. Non-eligibility for Federal-aid for a Type II project.[19]

Highway traffic noise is a program of shared responsibility. Local governments may use their power to regulate land development to prohibit noise-sensitive land uses adjacent to a highway, or require developers to plan, design, and construct projects that minimize highway traffic noise impacts on adjacent developments.[20]

Local government officials need to know what highway traffic noise levels to expect from a highway and what techniques they can use to prevent future impacts. The project team will inform local officials of noise levels in the project area by letter, including a table of future noise levels at specific locations.

[19] 23 CFR 772.117

[20] SCDOT Traffic Noise Abatement Policy, July 1, 2011

4.12 Hazardous Materials

Hazardous materials are generally 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 and can be in the form of a solid, sludge, liquid, or gas.[21] 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).

An assessment of the project area was performed in order to identify the presence of potentially hazardous materials or waste sites. A site is defined as having hazardous materials, generating hazardous waste, possessing aboveground or underground storage tanks (ASTs and USTs), leaking USTs (LUST), contaminating groundwater, releasing oil or a hazardous substance, or any facility that is proposed to or listed on the National Priorities List. Potential hazardous materials facilities include gas stations, landfills, salvage yards, industrial sites, as well as any site containing ASTs or USTs. These sites may presently use or have a past history of use of a hazardous material(s).

No hazardous material sites would be impacted as a result of the No-build Alternative.

Federal and state databases were reviewed for an inventory of known sites located within these buffers. An initial search for National Priority List (Superfund) facilities and hazardous waste treatment, storage and disposal facilities located within one mile of the project revealed no sites. The American Society for Testing and Materials Standards for Environmental Site Assessment's minimum search distance of a half-mile (0.5 mile) from the project area was then reviewed through a windshield survey and field verification for all other types of hazardous materials sites (40 CFR 312.26). This review revealed a total of 27 sites that were within one-half mile of the project area. (See Hazardous Materials Technical Memorandum in Appendix E) Of the 27 sites, none with active hazardous materials or activity was impacted by the Preferred Alternative. Sites were considered potentially impacted by the alternative if the property was within the right of way of the alignment.

Additionally, a parcel located at 552 St. Charles Highway (SC 154) next to the SCRF rail line was identified through a windshield survey as having above-ground storage tanks (ASTs). This parcel contains 10 small storage tanks and two large tanks that are used by South Carolina Central Railroad (SCRF) for storage of farm chemicals. The Preferred Alternative would require minor amounts of right of way from the site at the northwest corner but it would not require the removal of the storage tanks.

It is SCDOT's practice to avoid the acquisition of underground storage tanks and other hazardous materials, if possible. If avoidance is not a viable alternative, tanks and other hazardous materials will 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.

[21] RCRA Subtitle C, 40 CFR Part 251.

FIGURE 4.6
Potentially Impacted Hazardous Materials Sites

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 removed and properly disposed of prior to the initiation of construction activities at that site.

4.13 Cultural Resources

Section 106 of the National Historic Preservation Act of 1966 as amended requires federal agencies to consider the effects of their actions on historic properties. In accordance with 36 CFR 800.4, archival research and coordination with the State Historic Preservation Officer (SHPO) was performed to identify and help predict the locations of significant cultural resources in the vicinity of the proposed action. A cultural resources survey was conducted to provide the necessary management data to allow for the sites and properties to be evaluated for recommendations of eligibility to the National Register of Historic Places (NRHP). See Appendix F for Cultural Resources Technical Memorandum.

Agency coordination started with sending a letter of intent (LOI) to the SHPO and the Catawba Indian Nation Tribal Historic Preservation Office (THPO) on August 30, 2010. Both agencies responded that they would be interested in the cultural resource investigations for this project (see Appendix H). Coordination with SHPO is ongoing.

The architectural portion of the survey was conducted in February 2011 to identify historic resources (defined as fifty years or older), determine eligibility for listing on the NRHP, and assess the project's potential effect on eligible properties within the designated project Area of Potential Effect (APE). The APE for each alternative, including the Preferred Alternative, was defined as the right of way of the alignment for direct impacts to historic properties or archaeological sites and up to 300 feet to either side to assess for visual impacts to historic properties. Historic resources within the project area consisted of residential housing and industrial facilities related to the region's cotton manufacturing. None of the 8 newly-identified resources along the Preferred Alternative were found to be eligible for the NRHP and no properties listed in the NRHP were within the APE for the Preferred Alternative. SHPO concurred with the findings of the historic properties (structures) survey on May 15, 2012. See SHPO letter in the Appendix.

A literature review on previous archaeological research in the area was conducted in January 2011. It was found that there are no previously recorded archaeological sites within the project APE. The archaeological portion of the survey was conducted in January 2012. Of the eleven (11) newly-recorded archaeological sites, one site, 38LE1037, was recommended for additional testing to determine if it is eligible for the NRHP and the remaining sites were determined not eligible. Excluding the one site recommended for testing, SHPO concurred that other archaeological sites were not eligible on May 15, 2012. See SHPO letter in the Appendix.

The eleven archaeological sites contained two (2) historic sites with prehistoric lithic isolated finds, one (1) prehistoric and historic site, seven (7) historic sites, and one (1) prehistoric site. Additionally, there were two (2) historic isolated finds.

Table 4.8
Archaeological Sites

Site Number	Site Type	Cultural Period	NRHP Eligibility
38LE1027	Historic Scatter & Prehistoric Isolate	Late 19th to Mid 20th C./Unknown Prehistoric	Not Eligible
38LE1028	Historic Scatter	20th C.	Not Eligible
38LE1029	Historic Scatter	20th C.	Not Eligible
38LE1030	Historic Scatter	Late 19th to 20th C.	Not Eligible
38LE1031	Historic Scatter	Late 19th to 20th C.	Not Eligible
38LE1032	Historic Scatter & Prehistoric Isolate	20th C./Unknown Prehistoric	Not Eligible
38LE1033	Historic & Prehistoric Scatter	Late 19th to 20th C./Unknown Prehistoric	Not Eligible
38LE1034	Historic Scatter	20th C.	Not Eligible
38LE1035	Prehistoric Scatter	Unknown Prehistoric	Not Eligible
38LE1036	Historic Scatter	20th C.	Not Eligible
38LE1037	Historic Scatter	Mid 19th to Mid 20th C.	Unassessed
Isolate 1	Historic	20th C.	Not Eligible
Isolate 2	Historic	Mid 19th to 20th C.	Not Eligible

The No-build Alternative would not result in any impacts to historic resources.

The Preferred Alternative would have no impact to historic properties (structures). One archaeological site, 38LE1037, is recommended for further testing to determine its eligibility status. If there is an adverse effect finding at this site, shifts in the alignment will need to be evaluated to avoid and minimize impacts to the site. The process of notifying the Advisory Council on Historic Preservation (ACHP) would then be initiated. Coordination with SHPO is ongoing and will be concluded before FHWA makes a final decision.

4.14 Section 4(f)

Section 4(f) of the Department of Transportation Act of 1966 regulates how publicly-owned properties, such as parks, recreational lands and wildlife and waterfowl refuges, and historic sites (that are on or eligible for inclusion in the National Register of Historic Places) are used for transportation projects. Section 4(f) applies to archaeological sites that are on or eligible to the NRHP only if they warrant preservation in place. Section 4(f) takes into account impacts that are a use of the resource, whether it is of a direct, temporary, or constructive nature, defined as following:

- A direct use permanently incorporates property into the transportation project;
- A temporary use occupies property temporarily but is adverse to the property's purpose; and
- A constructive use's proximity impacts severe enough to impair the property's features or activities.

This does not always include visual intrusion impacts or impacts that are not of an adverse nature.[22]

Each Section 4(f) resource is evaluated for how a transportation project may impact the resource. Under SAFETEA-LU, the USDOT takes into account any avoidance or minimization of impacts along with any mitigation or enhancement measures to determine the extent of the impact to the resource. If the USDOT determines that a transportation project will have a de minimis –"minimal" - impact on a Section 4(f) resource, the Section 4(f) evaluation process is complete. The managing agency for a park, recreational land or wildlife and waterfowl refuges would need to state, in writing, that the project is not likely to "adversely affect the activities, features and attributes" of the Section 4(f) resource. For historic resources, the SHPO would need to state in writing that the project would have "no historic properties affected" or "no adverse effect" to historic properties.[23]

If the impact to a resource is not determined de minimis, then it must be demonstrated that no prudent or feasible alternative exists to avoid the resource, provided there is a plan to minimize harm to the resource, as documented in a Section 4(f) evaluation.

The No-build Alternative would not result in any impacts to 4(f) properties.

4.14.1 Parks, Recreational Facilities, and Wildlife/Waterfowl Refuges

There are five (5) public parks and recreational facilities that are publicly-owned in or near the project area and no wildlife/waterfowl refuges. (See Figure 4.7 for locations of these resources) Additional public recreational facilities such as picnic areas, ball fields, tennis courts, boat docks, school playing fields and playgrounds are located in Lee County but are not in close proximity to the Preferred Alternative.

Lee State Park, also known as Lee State Natural Area, is the largest recreational facility near the project area. It is managed by the South Carolina State Parks and is located just over one mile east of Bishopville, accessible via Lees State Park Road from I-20 or US 15. Developed by the Civilian Conservation Corps in the 1930s, Lee State Park offers fishing and boating on the Lynches River, hiking and horseback riding, picnic and camping facilities, and an education center.

M.M. Levy Park and Garrett Field is located on East Church Street between Lee and Harlem Streets. This facility contains two baseball fields, playground, basketball courts, and picnic shelter.

Old Grammar School Park is located at the corner of Ridge Street and South Heyward Street and offers playground facilities.

School playing fields including playground and tennis courts are located at Bishopville Primary, 603 North Dennis Avenue, and Dennis Intermediate, 321 Roland Street. These are publicly accessible facilities, typically after school hours.

Additional recreational facilities in Bishopville that are not publicly-owned include:

[22] http://www.fhwa.dot.gov/hep/qasdeminimus.htm last accessed 9/8/09.
[23] Center for Environmental Excellence by AASHTO;
http://www.environment.transportation.org/environmental_issues/section_4f/

- The South Carolina Cotton Museum, located at 121 West Cedar Lane, presents the history and culture of cotton production in the region;
- Pearl Fryar Topiary Garden, located at 145 Broad Acres Road, is a three-acre residential garden that was chosen as a preservation project of The Garden Conservancy;
- Chappell Field, located on Chappell Drive, offers three baseball fields and a concession stand.

Neither the No-build nor the Preferred Alternative is anticipated to directly use any of the public parks and recreational facilities located in or near Bishopville. There also would not be a temporary use or a constructive use caused by proximity impacts to the parks and recreational facilities.

4.14.2 Historic Resources

At this point in project development, there are no historic properties eligible for or listed on the NRHP or archaeological sites requiring preservation in place within or adjacent to the corridor of the Preferred Alternative; therefore, there are no direct, temporary, or constructive uses to historic properties. One archaeological site, 38LE1037, is recommended for further testing to determine its eligibility status. If there is an adverse effect finding at this site, shifts in the alignment will need to be evaluated to avoid and minimize impacts to the site. The process of notifying the Advisory Council on Historic Preservation (ACHP) would then be initiated. Coordination with SHPO is ongoing and will be concluded before FHWA makes a final decision.

Chappell Field
Primary School Playing Field
Spencer House
Intermediate School Playing Field
S.C. Cotton Museum
Old Grammar School Park
Pearl Fryar Topiary Garden
M.M. Levy Park
Lee State Park
Barnes Rd
State Hwy
Timber Run Rd
Lowell Rd
Timber Run
Piedmont Rd
Traub Rd
Tomala Rd
Berry Rd
Country Manor Est
Julia Dr
Brown St
Hospital Sq
Ray St
Levy St
Woodward St
Roland St
Park St
Gibson St
Dennis Ave
Ridge St
Calhoun St
Heyward St
Council St
Cotton St
Durant St
Nettles St
College St
Murray St
Marsh St
Law St
Court
Gregg St
Cousar St
Muldrow St
Truman Rd
Fountain Hills Dr
Davis St
Dogwood Dr
Azalea Dr
Quinn St
Small St
Kings Ave
Morgan St
Baskin Ave
McIntosh St
Harris St
Nettles St
Elk St
Gin St
Tubbs Ct
Marion St
Hansel St
Shaw St
Fairview Ave
Bradley Ave
Magnolia Dr
Lee St
Maple St
Wilkinson Rd
Edgefield Rd
Browntown Rd
Arnold Ave
Ramp
Exit 116
Leader Rd
Dove Ln
Crosswell Ln
Wags Dr
English Mill Rd
Burlington Rd
Jordan Ln
Mac Stuckey Ln
James Mill Rd
Loop Rd
Lagoon Ln
Mc Guirt Rd
Mcguirt Rd
Academy Rd
Barnes Dr
Mclure Dr
Dixon Dr
Mixon Dr
Rocky Dr
Pond St
Trms Dr
Price Ln
15
34
341
154
20

Legend

- Interstate
- Major Road
- Minor Road
- Railroad
- Listed on the NRHP
- Parks
- Lee State Park
- Preferred Alternative

Feet
0 625 1,250 2,500

N

FIGURE 4.7
Parks, Historic Areas and Recreational Areas

4.15 Section 6(f) Resources

The Land and Water Conservation Fund (LWCF) Act of 1965 established funding to provide matching grant assistance to states and local governments for the planning, acquisition and development of outdoor public recreation sites and facilities. Section 6(f) of the Act requires that properties using LWCF grants must be maintained as a public recreational facility in perpetuity. Section 6(f) prohibits the conversion of property acquired or developed with these grants to a non-recreational purpose without the approval of the Department of Interior's National Park Service (NPS). Replacement lands of equal fair market value, location and usefulness must be provided for the facility if land is converted. If LWCF grants were used for a portion of a Section 6(f) property, then replacement applies only to that portion using LWCF grants.

Two Section 6(f) resources are located in or near the project area, the M. M. Levy Park and Lee State Park. The Preferred Alternative avoids use of these properties; therefore, no impacts are anticipated by the project.

4.16 Relocations

No relocations would occur as a result of the No-build Alternative.

Aerial photography and field reconnaissance were used in conjunction with the design of the Preferred Alternative to determine relocations within the project corridor. Based on the study, the proposed project would require the relocation of one vacant building that was formerly used as a business. The project would also take park of a truck parking and loading area at the Park at the Bay warehouse. Impacts to the business associated with the loss of parking would be assessed during the right of way acquisition phase. The project would not impact any residences.

If required, relocations would be conducted in accordance with the *Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970*, as amended (Public Law 91-646, as amended by 100-17; 49 CFR Part 24). This program is designed to assist displaced persons in finding replacement property in which to live or to do business. Relocation of displaced persons would be offered in areas at least as desirable in regard to public utilities and commercial facilities. Rent and sale prices of replacement housing offered would be within the financial means of the families and individuals displaced and be reasonably accessible to their places of employment. Relocation is not expected to disrupt or remove the displacees from their churches, schools and other community activities.

If any relocations are identified at a later date for the Preferred Alternative, the necessary acquisition and relocation would be accomplished in accordance with *Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act*. This would include fair market value for the acquired property in addition to equitable compensation normally associated with relocation. Ample lead time would be given to the individuals to allow for any planning contingencies that may arise. All other benefits available under the act would be carefully explained to the individual.

As is the policy of SCDOT, in response to the non-discrimination requirements in Title VI of the Civil Rights Act of 1964, the relocation advisory assistance shall be provided to all eligible persons without discrimination.

4.17 Social and Economic Impacts

4.17.1 Community Characteristics and Services

This section provides a demographic overview for Lee County, the City of Bishopville, and the two Census Tracts in which the Preferred Alternative is located, as defined by the United States Bureau of the Census. The proposed project is located within Census Tract 9202 (Census Tract 9802 in 2000 Census) Block Group 4 and Census Tract 9203.02 (Census Tract 9803.02 in 2000 Census) Block Groups 3 and 4.

Population data was collected for Lee County, the City of Bishopville, Census Tracts 9203.02 and 9202, Block Groups 3 and 4 within Census Tracts 9203.02 and Block Groups 4 within Census Tracts 9202 for the years 2000 and 2010. Table 4.9 shows the population data for the project area. As shown in the table, many census blocks, the City of Bishopville, and Lee County have seen minor decreases in population over the last 10 years, reinforcing the need for economic opportunities in the area.

Table 4.9. Population Change 2000-2010

	2000	2010	Numeric Change	Percent Change
Census Tract 9202	5,137	4,922	(215)	-4%
Census Tract 9202 Block Group 4	1,174	1,356	182	16%
Census Tract 9203.01*	1,458	0*	-	-
Census Tract 9203.02*	4,293	6,052*	-	-
Total of Census Tracts 9203.01 & 9203.02*	*5,751*	*6,052*	*301*	*5%*
Census Tract 9203.02 Block Group 2	961	1,364	403	30%
Census Tract 9203.02 Block Group 3	975	2,906	1,931	66%
Census Tract 9203.02 Block Group 4	1,133	896	237	-21%
City of Bishopville	3,670	3,555	(115)	-3%
Lee County	20,119	19,615	(504)	-3%
South Carolina	4,012,012	4,511,428	499,416	12%

Lee County Census Tracts formerly started with "98" prefix; now start with "92" prefix
**In Census 2000, these tracts were counted as separate.*

The Preferred Alternative circles the City of Bishopville on the southeastern side, which is where the Comprehensive Plan has shown that utilities are located and vacant land is zoned as a Proposed Development District. Providing improved roadway access to this area, in addition to the available utilities, could help to bring economic opportunities to the area and encourage commercial and industrial businesses to locate in the area. Induced commercial or industrial development spurred by the new roadway could provide additional employment opportunities for communities in the area. This area is currently designated as a Proposed Development District. Induced development resulting from the roadway is consistent with the city and county's plans for this area.

An evaluation of the social and economic impacts of the proposed bypass facility assessed the projects effects on the accessibility to community facilities, services, local business and employers and the effects on communities adjacent to the project corridor. The project area is primarily open, agricultural land with a mixture of business and residential development in pockets throughout the corridor.

Community Facilities and Accessibility

Within the city limits there are four (4) public schools: Bishopville Primary (K-3 grades), Dennis Intermediate (4-9 grades), Lee County Adult Education (9-12 grades) and Lee County Area Vocational (9-12 grades). Within the city limits there is also one private school, the Robert E. Lee Academy (Pre K-12 grades). Outside of the city limits, just south of the SC 341/I-20 interchange, are Lee Central Middle School and Lee Central High School. Lee County Library is located in downtown Bishopville at the intersection of SC 34/SC 341.

There are nine (9) churches within the project area: First Baptist Church, Bishopville Tabernacle Church, Bishopville Presbyterian Church, Bethlehem United Methodist Church, Church of Christ Bishopville, Jerusalem Stuckey Baptist Church, Mt. Hermon Baptist Church, St. John AME Church, and the First Church of The Nazarene.

The Lee County Rural Fire Department Headquarters and the Lee County EMS are both located in downtown Bishopville. The Department of Motor Vehicles is located in downtown Bishopville on South State Street. Just north of the City of Bishopville along Bethune Highway is the air strip at Lee County-Butters Field. Outside of the city limits to the southeast is the Lee County Correctional Facility. Pearl Fryar's Topiary Garden and the South Carolina Cotton Museum are located in Bishopville.

The following are the top employers in Lee County:[24]

- Lee County Dept. of Education
- Lee County Government
- Coca-Cola Bottling
- Rexam Beverage Can Americas
- Quick Mart
- SC Dept of Corrections
- Cooke Associates
- Lee Co. Disabilities & Special Needs
- Republic Services
- Robert E. Lee Academy

[24] Lee County Comprehensive Plan, April 2010, p. 17.

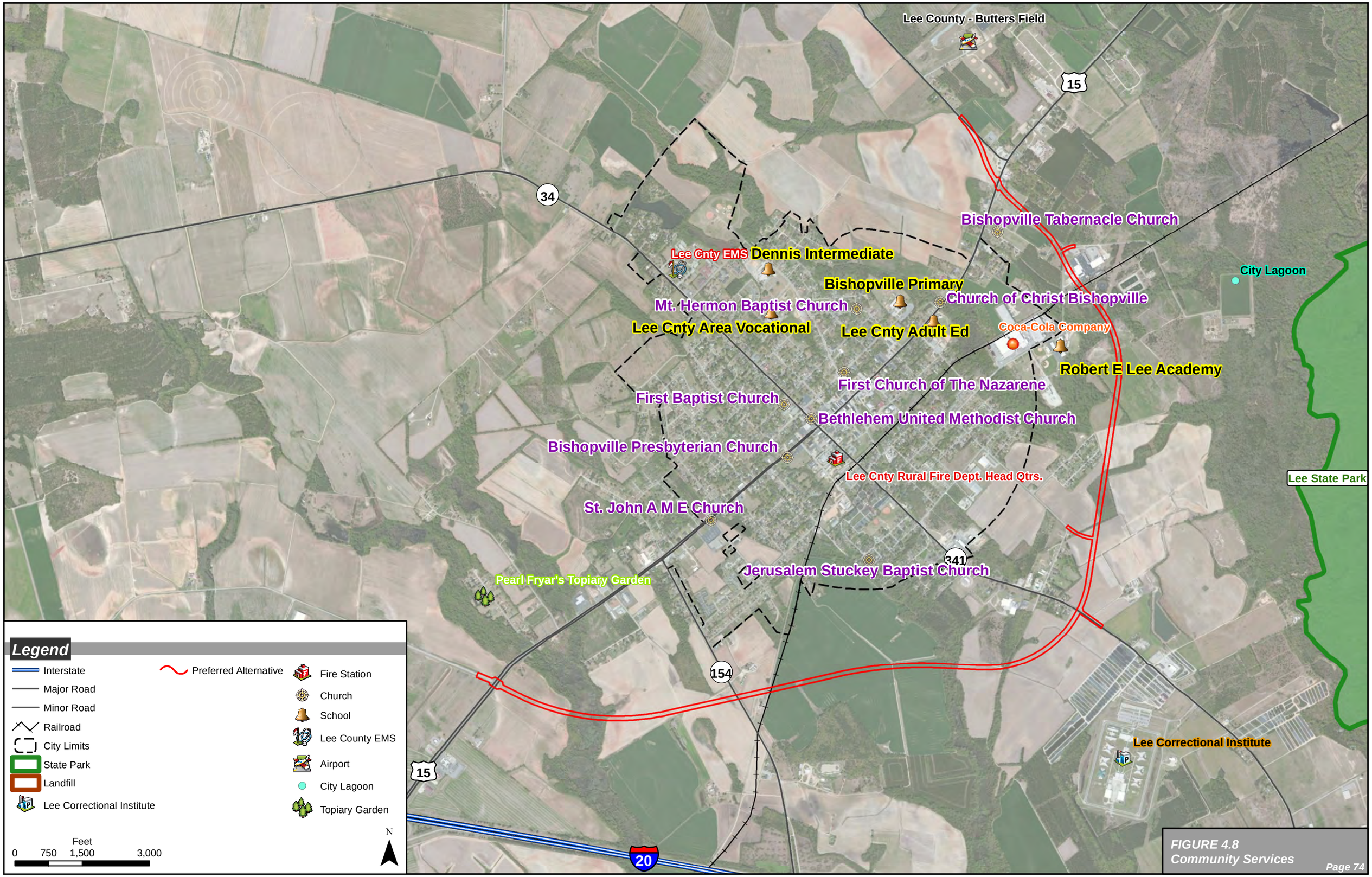


FIGURE 4.8
Community Services

Another major employer, South Atlantic Canners, has been located in the City of Bishopville and in operation for more than 25 years. The company has expanded several times since then, and has partnered with Coca-Cola Bottling Co. Consolidated. In 2010, it was announced that South Atlantic Canners would invest $4.5 million into operations and a warehouse expansion, increasing the square footage of the factory to 300,000 and the warehouse capacity by 50 percent.

It is not anticipated that the proposed action would directly result in any appreciable change in local traffic patterns or employment patterns in the area. Traffic services would be maintained throughout project construction with no anticipated adverse effects on emergency services in the area. After the proposed project's completion, improved accessibility and traffic flow along the bypass and within downtown Bishopville would be realized.

Social impacts identified in this assessment are effects of the project on the nearby residences and businesses adjacent to the corridor. It is not anticipated that the proposed action would directly result in any appreciable change in local population or communities in the area. No communities are directly impacted by the Preferred Alternative, although the alignment crosses behind the Dogwood Drive neighborhood. No relocations are anticipated with the Preferred Alternative and based on FHWA NAC, no noise impacts are expected to occur.

Right of way acquisitions are not expected to cause a change in existing land uses beyond conversion of land to roadway use. Property owners would be compensated for the right of way takings and any damages to remaining property, in accordance with SCDOT policy and the Uniform Relocation Assistance and Real Property Acquisition Policies Act, as amended. The additional right of way required for the road would not result in a significant reduction of property tax assessments. Economic benefits to the Bishopville downtown commercial district should result from the project because of the efficient movement of tourists, local motorists and goods in the area.

Currently, rural residents and businesses along most of the corridor view open agricultural lands and rural residential housing. Some communities may have a view of the new roadway but overall views would not significantly change as the area would continue to be surrounded by open agricultural lands. The Robert E. Lee Academy would not have a view of the proposed project due to forested areas to the rear of the school property.

4.18 Environmental Justice

The proposed project was evaluated in accordance with Executive Order 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations) which requires proposed federally funded projects to consider adverse effects on minority and low-income communities.

The Preferred Alternative is located within Block Group 4 of Census Tract 9202 and Block Groups 2, 3 and 4 of Census Tract 9203.02. (See Figure 4.9 for a map of the Census Block Groups). According to 2010 U.S. Census, American Community Survey Data, Census Tract 9202 has a total population of 4,922, and Block Group 4 has a total populations of 1,364 respectively while Census Tract 9203.02 has a total population of 4,131 and Block Groups 2, 3 and 4 have populations of 1,364, 2,906, and 896 respectively, as shown in Table 4.10.

Table 4.10 Socio-economic Census Data for the Project Area

	Census Tract 9202	Census Tract 9202 Block Group 4	Census Tract 9803.02	Census Tract 9203.02 Block Group 2	Census Tract 9203.02 Block Group 3	Census Tract 9203.02 Block Group 4	City of Bishopville	Lee County	South Carolina
Total Population	4,922	1,364	4,131	1,364	2,906	896	3,555	19,615	4,625,364
Median Household Income	$25,027	$12,868	$19,777	$14,948	$19,762	$33,083	$14,562	$23,378	$43,939
Minority Population	56%	88%	76%	86%	64%	86%	77%	67%	32%
Poverty Level	39%	80%	28%	35%	19%	21%	51%	30%	16%

Lee County as a whole has a minority population and a population living below the poverty level that are both higher (approximately double) than the state of South Carolina. In comparison to Lee County as a whole, the block groups that the Preferred Alternative travels through are comparative.

Census Tract 9203.02, Block Group 4 has a median household income of $33,083, which is approximately $10,000 more than the median household income of Lee County ($23,378) and double that of the City of Bishopville ($14,562). Census Tract 9202, Block Group 4, and Census Tract 9203.02, Block Groups 2 and 3 all have a median house hold income ($12,868, $14,948 and $19,762 respectively) lower than Lee County. All of the Block Groups in the study area except Census Tract 9203.02, Block Group 3 (64 percent minority), have a minority population higher than Lee County as a whole at 67 percent minority. The Council on Environmental Quality (CEQ) guidelines defines a minority concentration as having an overall minority population per block of 50 percent or more. Lee County, the City of Bishopville and all Block Groups within the project area meet the CEQ guidelines for minority concentrations.

Census Tract 9202, Block Group 4 and Census Tract 9203.02, Block Group 2 and 4 have the highest number of individuals below the poverty level block groups that the Preferred Alternative travels through (88 percent, 86 percent and 86 percent respectively); these three Block Groups are higher than Lee County (30 percent) and the City of Bishopville (51 percent).

In general, it has been determined that the study area contains environmental justice populations, but no environmental justice population would bear a disproportionate impact from the Preferred Alternative. The Preferred Alternative is expected to benefit Bishopville and Lee County by supporting opportunities for economic development. In addition, the project would alleviate congestion from truck traffic on streets in downtown Bishopville. Based on public input, the goal of improving traffic within downtown Bishopville would enhance the ongoing revitalization efforts of the city and facilitate

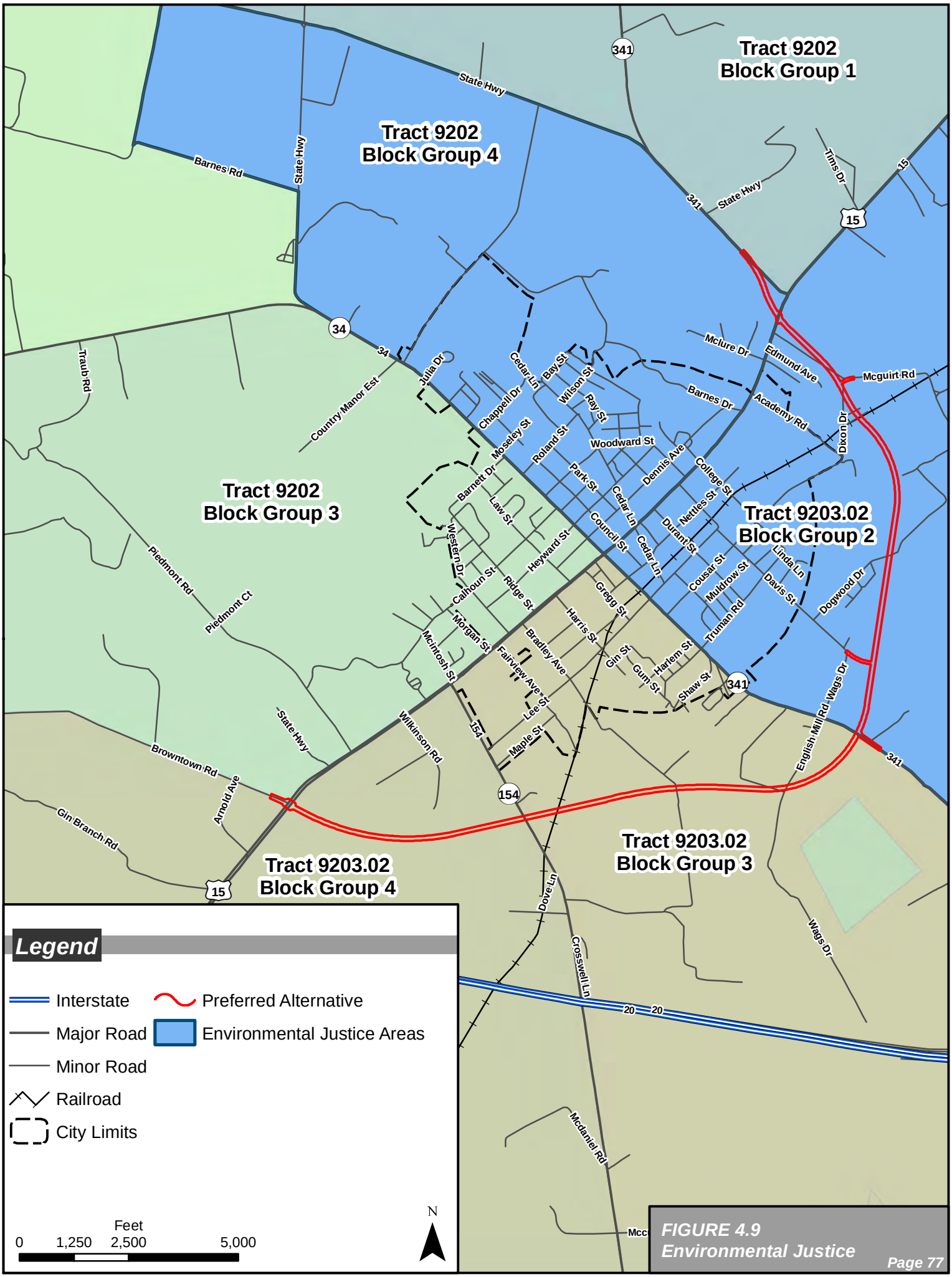


FIGURE 4.9
Environmental Justice

pedestrian movements and shopping. The Preferred Alternative will present neither an additional barrier to social or commercial interaction, nor negatively change local traffic patterns and community accessibility. The proposed project is not expected to specifically benefit, harm, or disproportionately impact any social group, including elderly, handicapped, non-drivers, minority, or ethnic groups.

Providing improved roadway access to this area, in addition to the available utilities, could help to bring economic opportunities to the area and encourage commercial and industrial businesses to locate in the area. Induced commercial or industrial development spurred by the new roadway could provide additional employment opportunities for communities in the area.

The proposed project will not disproportionately impact minority or low-income communities as per Executive Order 12898 regarding environmental justice.

4.19 Considerations to Pedestrians and Bicyclists

The project area currently has sidewalks only in the downtown business and residential district. The outlying areas do not have sidewalks or bicycle paths. The inclusion of bike and pedestrian facilities is being considered for the proposed bypass. Public input will be taken into consideration prior to FHWA making a final decision.

The Lee County comprehensive Plan (2010) recommends safe bike routes linking schools or recreational areas.[25] The Preferred Alternative would not link area schools or recreational areas as the corridor is not within city limits and therefore would not fulfill the purpose of safe bike routes to these institutions or facilities.

4.20 Construction Impacts

The construction activities associated with improving and/or constructing a roadway could create environmental impacts that are temporary in nature and limited to a short-term duration. During construction, short-term air quality, noise increases, water quality, traffic disruption and solid waste generation will likely occur. These impacts would be minimized through the incorporation of best management practices in accordance with the SCDOT Standard Specifications for Highway Construction (2004).

Contractors will be required to comply with Occupational Safety and Health Administration (OSHA) regulations concerning noise attenuation devices on construction equipment. Construction activities could be limited during the evening, weekends, and holidays. Storage and staging areas would be located as far from noise sensitive areas as practicable.

4.20.1 Air Quality

Construction activities could have a short-term impact on air quality, primarily during site preparation. Particulate matter (dust) is the pollutant of primary concern during the construction period. Dust would be generated during earth moving activities, handling of cement, asphalt, or aggregate, and equipment

[25] Lee County Comprehensive Plan, April 2010, p. 66.

travel over unpaved haul roads. Wind erosion of exposed areas and material stockpiles would also generate particulate matter.

The amount of dust generated would vary, depending on the construction activity and local weather conditions. Where excess dust is anticipated to be a problem, effective dust control measures would be implemented. Dust control would be the responsibility of the contractor and may include the following:

- Minimizing exposed earth surface
- Temporary and permanent seeding and mulching
- Watering work and haul areas during dry periods
- Covering, shielding, or stabilizing material stockpiles
- Using covered haul trucks

Emissions from construction equipment are regulated by federal standards. Any burning of cleared materials would be conducted in accordance with applicable state and local laws, regulations, and ordinances.

4.20.2 Noise

Although temporary in nature, construction noise, at times, can interfere with day-to-day activities. Areas adjacent to the roadway will temporarily experience increased noise. Vehicles and other equipment associated with construction would generate intermittent noise throughout the vicinity of the proposed action. Vehicle noise would occur sporadically during weekdays and daytime hours. The project noise would not represent a significant increase in noise.

During construction activities, some animals may avoid habitats in the vicinity of the proposed project due to the increased noise levels, particularly if a species is sensitive to a frequency range that the construction activities would generate. Any avoidance of habitats in the vicinity of the proposed project by wildlife species during construction would be temporary and not significant.

A variety of equipment and operational modes, and the unpredictable location of on-site activities combine to make an estimate of composite noise levels impractical. The most prevalent construction noise source is equipment powered by internal combustion engines (usually diesel). Construction equipment would be required to have factory-installed mufflers or their equivalents in good working order during the life of the construction contracts. Storage and staging areas would be located as far from noise sensitive areas as practicable.

4.20.3 Water Quality

Erosion and sedimentation caused by construction activities could affect drainage patterns and water quality. An erosion control plan will be developed and implemented prior to construction. The plan will incorporate measures to control non-point source impacts. These practices include, but are not limited to: using berms, dikes, silt barriers, and catch basins; vegetating or covering disturbed areas as soon as possible; and conforming to proper clean-up practices.

4.20.4 Maintenance of Traffic

During construction, all local and through traffic would be adequately and safely accommodated. All construction operations would be scheduled to keep traffic delays minimized, and the contractor should conform to the standards of the Manual of Uniform Traffic Control Devices for Streets and Highways

(MUTCD). Construction would be performed to comply with all federal, state, and local laws governing safety, health, and sanitation. Procedures would apply all safeguards, safety devices, protective equipment, and any other action reasonably necessary to protect the life and health of employees on the job, the safety of the public, and the property in connection with the performance of the work. The following items would be utilized, where necessary, to maintain public safety and the flow of traffic:

- Constructing and maintaining temporary detours, temporary structures, temporary approaches, crossings, and intersections with streets and roads, as well as using aggregates for the maintenance of traffic and water for use as a dust palliative.
- Furnishing flaggers, pilot trucks, and drivers.
- Furnishing, erecting, and maintaining warning devices such as signs, auxiliary barriers, channelizing devices, hazard warning lights, barricades, flares, and reflective markers. If a street must be closed to traffic, traffic control devices would be illuminated during hours of darkness.

4.20.5 Construction Materials and Waste

All construction waste material generated during clearing, grubbing, and other construction phases would be removed from the project site and burned or disposed of by the contractor in accordance with state and local regulations. Such disposal operations will not be expected to either affect the solid waste services of privately-owned haulers or decrease landfill capacity. Solid waste generated during construction will be utilized on-site, if possible, or disposed of only at sites designated and permitted for this purpose. The quantity of disposed waste will represent a negligible proportion of the total load directed toward local landfills.

4.21 Indirect and Cumulative Impacts on Resources in the Project Area

Indirect and cumulative impact analyses:

An essential element of NEPA decision-making for transportation projects is the consideration and analysis of the potential environmental impacts or effects (ecological, aesthetic, historic, cultural, economic, social, or health) of our projects and actions. This includes not only the direct impacts, but also indirect effects and cumulative impacts.[26]

4.21.1 Indirect impacts:

According to the CEQ definition, indirect impacts are caused by the action/project and occur later or farther away (off -site) but are still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems (40 CFR 1508.8).

The CEQ definitions and a review of the literature suggest three (3) broad categories of indirect effects:

1. Alteration of the behavior and functioning of the affected environment caused by project encroachment (physical, chemical, biological) on the environment;
2. Project-influenced development effects (i.e., the land use effect); and

[26] FHWA Environmental Review Toolkit
http://nepa.fhwa.dot.gov/ReNEPA/ReNepa.nsf/home?openform&Group=Cumulative%20and%20Indirect%20Impacts
(Accessed 9/23/11).

3. Effects related to project-influenced development effects (i.e., effects of the change in land use on the human and natural environment).

The National Cooperative Highway Research Program (NCHRP) produced a report titled *A Desk Reference for Estimating the Indirect Effects of Proposed Transportation Projects*. This manual is designed to provide step-by-step guidance on indirect effects analysis to practitioners in agencies responsible for the evaluation of environmental impacts of transportation projects. Indirect effects of the Bishopville bypass were evaluated based on this eight-step process, outlined below:

Step 1 – Scoping

Meetings were held with the Santee-Lynches Regional Council of Governments (SLRCOG), Bishopville City Council, and Lee County Council to discuss the background of the project, purpose and need for the project, schedule, and proposed alternatives. In addition, meetings were held with Bishopville community leaders in order to obtain their support and encourage citizens to participate in the survey process. For more information about agency and public involvement, please see section 5.0 Coordination.

The study area was determined through meetings with SCDOT and FHWA. The study area is depicted in Figure 1.1.

Step 2 – Directions and Goals of the Study Area

The study area is comprised of residential, commercial, industrial, agricultural and open land. The City of Bishopville has a strong urban area with a mix of both commercial and residential districts with a distinct Main Street feel. Immediately outside of Bishopville, land use within the project area is a mixture of open lands with some wooded areas, agriculture, and low density housing. Additionally, Bishopville has industrial land uses nearby with two industrial parks. Other notable land uses in the project area include the nationally renowned Pearl Fryar Topiary Garden and the South Carolina Cotton Museum in downtown Bishopville.

"The City of Bishopville has taken a strong and proactive initiative to revitalize its downtown area."[27] This continues to be a primary goal and an ongoing effort for the City of Bishopville, Lee County Chamber of Commerce and Lee County and demonstrates the commitment to the revitalization of downtown and economic development for the area.

According to the *Lee County Comprehensive Plan*, the Bishopville area is targeted as an area within the county that will experience the greatest growth within the next twenty years due to infrastructure, transportation, amenities of an urban area, and available developable sites. [28] Therefore, the overall goal and direction of the study area is continued economic and residential development.

[27] Opportunity Grant I Application, page 4
[28] *Lee County Comprehensive Plan, Land Use Element*. June 23, 2011, page 79.

Step 3 – Inventory of Notable Features of the Study Area

Notable features in the study area are the City of Bishopville, a downtown area where local officials have taken a proactive initiative for revitalization. Outside of the city, additional features of the study area include farmlands and agricultural areas, wetlands and streams, and Section 4(f) resources including five public parks and recreational facilities, historic sites, and minority, low-income and other communities. There is also the potential for additional cultural resource sites and wetlands outside of surveyed areas.

Step 4 – Identify Impact Causing Activities of the Proposed Action

The proposed project will consist of the construction of a new location roadway. It was assumed that the bypass would be a two-lane roadway with grass shoulders and turning lanes at intersections, where appropriate. During the development of the alternatives, a 100-foot right of way corridor was assumed. Right-of-way will need to be acquired. Bridges will be required over two railroad crossings. Additional bridges or culverts will need to be identified with hydraulic studies.

Steps 5 & 6 – Identify and Analyze Potential Impacts

Potential indirect effects are expected to be related to growth shifted to the location of the new roadway and corresponding decrease in through truck traffic on Main Street (US 15). The following is the identification and analysis of potential indirect impacts.

Land Use

The area surrounding the Preferred Alternative is comprised of primarily agricultural and undeveloped parcels just outside of the City of Bishopville. It is anticipated that improved access created by the new roadway would encourage the conversion of the undeveloped areas between US 15, I-20, SC 341 and the city limits to commercial and industrial uses, as noted in the Lee County Comprehensive Plan. This area is currently designated as a Proposed Development District. Induced development resulting from the roadway is consistent with the city and county's plans for this area.

In addition to road access, the availability of utilities, such as water and sewer services, would also encourage development of this area. Utilities are currently available along US 15 and SC 341. Therefore, the first locations that new development would likely locate would be the intersections of the bypass and US 15 and SC 341. The first types of businesses generally expected at these intersections would be gas stations/convenience stores and restaurants. Local city and county governments are likely to focus on enhancing opportunities for additional development of new businesses and industries in the Proposed Development District.

These impacts would be moderated by local, state, and federal regulations. Control of the conversion of land to other uses resides with Lee County and/or the City of Bishopville through local planning and zoning.

Threatened and Endangered Species

Ongoing development is likely to impact currently undeveloped lands in the project area. However, the biological assessment (see Appendix C) found no critical habitat for threatened and endangered species listed for Lee County within the immediate area. Therefore, no indirect impacts on threatened or endangered species are anticipated.

Wetlands

The project area has undeveloped parcels and development adjacent to the project corridor is likely. This development may result in wetland and/or stream impacts.

This development would occur independently of the proposed project and all activities within waters of the US would be subject to USACE Section 404 permit approval and mitigation. It is anticipated that analysis for the permitting process would require avoidance and minimization of impacts to wetlands and streams and mitigation of unavoidable impacts.

Water Quality

Indirect impacts associated with induced development in the project area could contribute to an overall increase in impervious surfaces of future developments and associated parking lots. Stormwater runoff and impacts to water quality would be regulated by SC Department of Health and Environmental Control's (SCDHEC) Stormwater Permitting Section, which issues permit coverage for any construction site of one acre or more and many industrial sites through the NPDES Permitting Program. Stormwater management focuses on the control of stormwater runoff that is generated when precipitation from rain and snowmelt events flows over land or impervious surfaces and does not percolate into the ground. This is accomplished through the use of Best Management Practices (BMPs) and the proper implementation of a site specific Stormwater Pollution Prevention Plan**.**

Farmlands

Although anticipated indirect impacts, in the form of induced development in the project area, could further convert prime farmland and farmland of statewide importance to non-agricultural uses. Many agricultural areas that are likely to be developed are currently designated as a Proposed Development District. Conversion of farmland to other uses is regulated by Lee County and/or the City of Bishopville through local planning and zoning ordinances.

Cultural Resources

Indirect impacts from induced development near historical resources may occur with the proposed project. Development in the areas of the historic resources could change the setting associated with each structure, which may diminish the historical significance of the properties. There may also be potentially eligible archaeological resources currently unknown along the alternative, which could be affected by future private development.

Parks and Recreational Facilities

Indirect impacts to Section 4(f) resources could include changes to accessibility, increased noise or air quality impacts. There are no changes in accessibility anticipated for any of the parks located in the project area.

Minority or Low-income Populations

The proposed action is not anticipated to cause appreciable changes in residential areas within the project area; no residential relocations or noise impacts are expected from the project. Any development facilitated by the project is likely to occur in open, undeveloped areas, not within neighborhoods. Therefore, no indirect impacts on minority, low-income or other communities within the project area are anticipated. Induced commercial or industrial development spurred by the new roadway could provide additional employment opportunities for communities in the area.

Supporting economic development is a desired effect of the project in the downtown area. Reductions in traffic volumes of through traffic could improve pedestrian comfort and allow residents to utilize

improvements that have already been made to the downtown core, increasing the level of activity for local downtown businesses.

Step 7 – Evaluate Analysis Results

Quantitative and qualitative methods were used to identify and analyze the potential indirect impacts of the proposed project on various resources wit in the study area. Methods and resources used include:

- Public and agency involvement information
- Community Support Survey Analysis
- Aerial photographs and USGS maps
- Field research and surveys
- Lee County Comprehensive Plan

It is anticipated that improved access created by the new roadway would encourage the conversion of the undeveloped areas between US 15, I-20, SC 341 and the city limits to commercial and industrial uses, as noted in the Lee County Comprehensive Plan. This area is currently designated as a Proposed Development District. Induced development resulting from the roadway is consistent with the city and county's plans for this area. Local city and county governments are likely to focus on enhancing opportunities for additional development of new businesses and industries in the Proposed Development District. These impacts would be moderated by local, state, and federal regulations. Control of the conversion of land to other uses resides with Lee County and/or the City of Bishopville through local planning and zoning.

Step 8 – Assess Consequences and Develop Mitigation

The proposed project will support Lee County and the City of Bishopville economic development plans for the future. These impacts would be moderated by local, state, and federal regulations. Control of the conversion of land to other uses resides with Lee County and/or the City of Bishopville through local planning and zoning.

Mitigation of impacts to wetlands caused from future development would be required. This development would occur independently of the proposed project and all activities within waters of the US would be subject to USACE Section 404 permit approval and mitigation. It is anticipated that analysis for the permitting process would require avoidance and minimization of impacts to wetlands and streams and mitigation of unavoidable impacts.

4.21.2 Cumulative impacts:

CEQ's regulations define cumulative impacts as impacts on the environment that result from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such actions (40 CFR 1508.7). Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Cumulative impacts were analyzed in general accordance with the CEQ guidance document *Considering Cumulative Effects Under the National Environmental Policy Act, dated* January 1997.

Step 1 – Identification of Resources

Resources that must be evaluated include elements of both the physical and human environment:

Land Use – Cumulative impacts will be evaluated.

Threatened and Endangered Species **-** No critical habitat for threatened and endangered species listed for Lee County within the immediate area and the project will have a no effect on these resources. Therefore, the project will not contribute to cumulative impacts on these resources.

Wetlands – The project includes construction within wetland areas. Cumulative impacts to wetlands will be evaluated.

Water Quality – The proposed project is located within the Pee Dee Watershed Basin. Cumulative impacts to water quality will be evaluated.

Farmlands – The project vicinity contains prime farmland and farmland of statewide. Cumulative impacts to the availability of prime farmland will be evaluated.

Cultural Resources – The study area for cultural resources consists of historic resources within the project area consisting of: residential housing, industrial facilities related to the region's cotton manufacturing, a cemetery, one historic resource, The Spencer House, and two historic districts, The South Main and the Bishopville Commercial Historic Districts. There may also be potentially eligible archaeological resources currently unknown within the study area. Cumulative Impacts to cultural resources will be evaluated.

Parks and Recreational Facilities– Cumulative impacts will be evaluated for Parks and Recreational Facilities.

Minority or Low-income Populations – Cumulative impacts to social and economic resources will be evaluated.

Step 2 and 3– Study Areas and Time Frame

Cumulative impacts are analyzed for resources within a specific study area. These resource specific study area boundaries have been created with consideration of participation received during agency coordination and public involvement.

In order to evaluate cumulative impacts of the proposed project, other past, present and reasonably foreseeable future actions must be considered.

Land Use – The cumulative impacts study area for land use consists of the area covered by the Lee County Comprehensive Plan, Section IX, Land Use Elements, as shown in Figure 4.1 on page 38.

The cumulative impacts study time frame for land use covers the period addressed in the Lee County Comprehensive Plan, from 2010 – 2035.

Wetlands – The cumulative impacts study area for wetlands consists of the wetland system associated with the three drainageways within the project area including: Laws Branch, upper reaches of the Black River, and an unnamed tributary to the Lynches River, as shown on Figure 4.10.

The cumulative impacts study time frame for wetlands covers the period through the design year 2035.

FIGURE 4.0
Cumulative Impact Study Area
for Wetlands, Farmlands and Parks

Water Quality – The cumulative impacts study area for water quality consists of the Black River Watershed (HUC 03040205-02) and the Lynches River Watershed (HUC 03040202-05) as shown in Figure 4.11.

The cumulative impacts study time frame for water quality covers the period through the design year 2035.

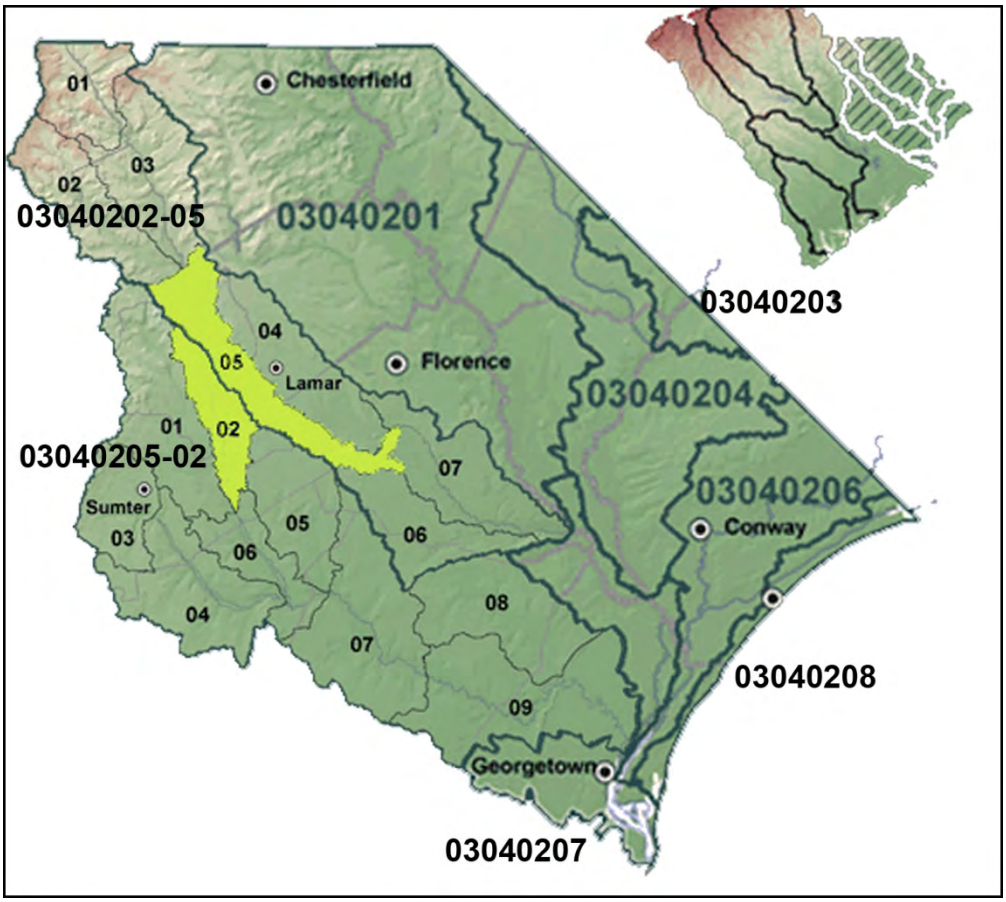


Figure 4.11 – Cumulative Impact Study Area for Water Quality

Farmlands – The cumulative impacts study area for farmlands consists of an area encompassing all alternatives considered, as shown on Figure 4.10.

The cumulative impacts study time frame for farmlands covers the period through the design year 2035.

Cultural Resources –The cumulative impacts study area for cultural resources is limited to the area of potential effects for all sites not within a historic district as shown on Figure 4.10. The APE was defined as existing and new right-of-way for direct impacts to historic properties and up to 300 feet to either side to assess for visual impacts.

The cumulative impacts study time frame for farmlands covers the period through the design year 2035.

Parks and Recreational Facilities – The cumulative impacts study area for parks and recreational facilities, consists of an area encompassing all alternatives considered as shown on Figure 4.10.

The cumulative impacts study time frame for parks, recreational facilities, and wildlife/waterfowl refuges covers the period through the design year 2035.

Minority or Low-income Populations – The cumulative impacts study area for minority, low-income and other communities consists of the 2010 US Census tracts adjacent to the proposed roadway on Figure 4.9 on page 77.

The cumulative impacts study time frame for minority and low-income populations covers the period through the design year 2035.

Step 4 – Other Actions Affecting Resources, Ecosystems and Human Communities

Other past, ongoing or future actions which may impact the resources of concern may contribute to cumulative impacts within the study area and must be identified. Based on discussions with SCDOT and review of the STIP, there are two minor intersection improvement projects within the City of Bishopville. There are no other known past, ongoing or future projects being undertaken by SCDOT in the Bishopville area.

Land Use – Past actions affecting land use have been controlled primarily by zoning ordinances and have led the study area to be developed as it is today. Past development activities include construction of two industrial parks, Lee Central High School, Lee County Correctional Facility and commercial buildings.

Since 2000, the City of Bishopville, along with Lee County Economic Development Alliance, Lee County Chamber of Commerce, and other partners, has sought to reverse years of decline in downtown and improve the social, physical and economic value of Bishopville. The Lee County Comprehensive Plan is a local basis for guiding development and growth in the county; the plan identified "the Bishopville area between Interstate 20, SC 341 and US 15 and the City is projected to experience the greatest amount of growth over the next five to twenty years. Factors influencing this development are: (1) the availability of water and sewer systems in the area, (2) the excellent transportation access provided by Interstate 20, US 15 and SC 341, (3) the availability of developable sites, (4) the amenities offered by living near or in an urban area."[29] This area is identified as a Proposed Development District in the Lee County Comprehensive Plan.

Wetlands – Past actions that may have had an effect on wetlands include construction of two industrial parks, Lee Central High School, Lee County Correctional Facility and commercial buildings. In addition past agricultural development, including excavation activities for agricultural production and/or municipal drainage improvements were constructed to facilitate surface drainage for agricultural production. Many wetland sites within the study area have been affected by agricultural activities and development activities. Future development activities may impact wetlands.

[29] Ibid, page 79

Water Quality – Past development activities, including construction of two industrial parks, Lee Central High School, Lee County Correctional Facility and commercial buildings, in addition to agricultural activities could affect water quality. Past agricultural development, including excavation activities for agricultural production and/or municipal drainage improvements were constructed to facilitate surface drainage for agricultural production. Past development has generally increased impervious surface areas in the study area and increased sediment loading and runoff quantities.

There are two (2) facilities in the project area in the Pee Dee River basin watershed that have a NPDES permit for point source discharge. The Bishopville Waste Water Treatment Facility, located on McGuirt Road less than one mile from the project area, has a major sewerage systems discharge NPDES permit for discharge into the Robert E. Lee Branch. South Atlantic Canners, Inc. (Coca-Cola), located on Cousar Street within the project area, has a non-major discharge NPDES permit for discharge into the Robert E. Lee Branch.[30]

In addition to development and impervious surfaces, past, current and future agricultural practices may impact surface waters in the study area.

According to SCDHEC "There is a low to moderate potential for growth in the Black River Watershed (HUC 03040205-02), which contains a portion of the City of Bishopville and the Town of Mayesville, together with portions of I-20, U.S. Hwy. 15,and U.S. Hwy. 76. Residential, commercial, and industrial growth is expected surrounding the municipal areas and major road corridors. The remainder of the watershed is rural with agricultural and timberland uses."

According to SCDHEC "There is a low to moderate potential for growth in the Lynches River Watershed (HUC 03040202-05), which contains the Town of Lynchburg and portions of the City of Bishopville and the Town of Cartersville. U.S. Hwy. 76 and a rail line cross the watershed south of Lynchburg connecting the Cities of Sumter and Florence. Interstates I-20 and I-95 also cross the watershed and some growth may be seen around the interchanges. An additional source of future growth is the Lee Correctional Institution. The Darlington County Water and Sewer Authority may extend water lines into the area east of the Lynches River, which could precipitate residential growth, but no significant commercial or industrial growth. The remainder of the watershed is rural with agricultural and timberland uses."

Farmlands – Past development activities, including construction of two industrial parks, Lee Central High School, Lee County Correctional Facility and commercial buildings, in addition to agricultural activities could affect farmlands. Agricultural uses adjacent to the project corridor and within the identified Proposed Development District in the Lee County Comprehensive Plan could potentially be affected by development in the future.

Cultural Resources – Past development activities, including construction of two industrial parks, Lee Central High School, Lee County Correctional Facility and commercial buildings could affect cultural resources. The creation of two historic districts, the South Main and the Bishopville Commercial Historic Districts, in downtown Bishopville protect those cultural resources. Current and future efforts for the revitalization of downtown Bishopville is unlikely to affect cultural resources downtown that are protected by the two historic districts.

[30] EPA's Enviromapper, http://www.epa.gov/enviro/index.html

Parks and Recreational Facilities – Past actions affecting parks, recreational facilities within the study area include the creation of five public parks and recreation facilities including: Lee State Park developed by the Civilian Conservation Corps in the 1930s; M.M. Levy Park and Garrett Field; Old Grammar School Park; and school playing fields. Currently there are no actions proposed to affect any park or recreational facilities. In the future, the number of parks and recreational spaces will likely increase as the Lee County Comprehensive Plan identifies the need for parks and recreational space to increase as the County becomes more developed.

Minority or Low-income Populations – Past, current and future plans for revitalization of downtown and development within the proposed development district could affect communities.

Step 5-7 – Describe the Affected Environment

Detailed descriptions of the resources in the project area are included in their respective sections elsewhere in this document. A brief summary is provided below:

Land Use – The City of Bishopville has a strong urban area with a mix of both commercial and residential districts with a distinct Main Street feel. Immediately outside of Bishopville, land use within the project area is a mixture of open lands with some wooded areas, agriculture, and low density housing (see Figure 4.1). Additionally, Bishopville has industrial land uses nearby with two industrial parks, the James Industrial Park and The I-20 Industrial Center.

Wetlands – Wetlands directly impacted by the project are forested or non-forested wetlands associated with three wetland systems: Laws Branch, the upper reaches of the Black River, and an unnamed tributary to the Lynches River.

Water Quality – The Robert E. Lee Branch (Cousar Branch) of the Lynches River is listed on SCDHEC's Section 303(d) impaired waters list. The water quality monitoring station (PD-112) on Robert E. Lee Branch at McGuirt Road determined that the stream exceeds allowable limits for pH (hydrogen iron) and Fecal coliform.[31] The Total Maximum Daily Load (TMDL) for this stream has not yet been established.

Farmlands – Extensive agricultural activities are prevalent outside of the city limits of Bishopville, throughout the study area.

Cultural Resources – Cultural resources studies have been completed within the project area to identify historic resources (defined as fifty years or older), determine eligibility for listing on the NRHP, and assess the project's potential effect on eligible properties within the designated project Area of Potential Effect (APE). Historic resources within the project area consisted of residential housing, industrial facilities related to the region's cotton manufacturing, and a cemetery. One historic resource, The Spencer House, and two historic districts, The South Main and the Bishopville Commercial Historic Districts, are listed on the NRHP and are located within or near the APE of the project area. None of the 18 resources newly identified in the survey within the APE were found to be eligible for the NRHP.

[31] 303(d) and Total Maximum Daily Loads, http://www.scdhec.gov/environment/water/tmdl/

Parks and Recreational Facilities – Five public parks and recreation facilities including: Lee State Park developed by the Civilian Conservation Corps in the 1930s; M.M. Levy Park and Garrett Field; Old Grammar School Park; and school playing fields are located within the study area. Additional recreational facilities in Bishopville that are not publicly-owned include:

- The South Carolina Cotton Museum, located at 121 West Cedar Lane, presents the history and culture of cotton production in the region;
- Pearl Fryar Topiary Garden, located at 145 Broad Acres Road, is a three acre residential garden that was chosen as a preservation project of The Garden Conservancy;
- and Chappell Field, located on Chappell Drive, offers three baseball fields and a concession stand.

Minority or Low-income Populations – The project is located within Census Tract 9203.02 Block Groups 2, 3 and 4 and Census Tract 9202 Block Groups 1, 3 and 4. According to 2010 U.S. Census, American Community Survey Data, minority and low-income populations reside throughout the study area. Minority populations of the block groups range from 55 percent to 88 percent, while the City of Bishopville is 77 percent. Low-income populations within the block groups range from 18 percent to 81 percent of the population living below the poverty level, while the City of Bishopville has 51 percent of its population living below the poverty level.

Steps 8-9 – Identify and Evaluate Cumulative Impacts

Land Use – Past development, including two industrial parks have contributed to changes in land use over time. It is anticipated that improved access created by the new roadway would encourage the conversion of the undeveloped areas between US 15, I-20, SC 341 and the city limits to commercial and industrial uses, as noted in the Lee County Comprehensive Plan. This area is currently designated as a Proposed Development District. Development resulting from the roadway in the future is consistent with the city and county's plans for this area. These impacts would be moderated by local, state, and federal regulations. Control of the conversion of land to other uses resides with Lee County and/or the City of Bishopville through local planning and zoning.

Wetlands – Past agricultural activities have impacted wetlands in the study area through draining areas for cultivation and channelizing streams. It is anticipated that the proposed project would impact approximately 3.97 acres of wetlands, in addition to crossing one jurisdictional ditch. The overall wetland system within the study area is very large in comparison to the proposed impacts and therefore, losses generally will not have an adverse effect on the function wetland system. Future development planned in the proposed development district may result in wetlands.

This development would occur independently of the proposed project and all activities within waters of the US would be subject to USACE Section 404 permit approval and mitigation. It is anticipated that analysis for the permitting process would require avoidance and minimization of impacts to wetlands and streams and mitigation of unavoidable impacts.

Water Quality – Past development activities, including construction of two industrial parks, Lee Central High School, Lee County Correctional Facility and commercial buildings, in addition to agricultural activities could affect water quality. Water quality impacts could result due to pollutant build-up in new areas of the project area from the increase in traffic volumes. The project may also impact surface

waters in the area that have been previously been impacted by agricultural practices. Current and future developments are or will be required to meet erosion control and stormwater detention requirements. Overall, these activities are not expected to be collectively significant or expected to have long-term impacts to water quality within the Black River Watershed (HUC 03040205-02) and the Lynches River Watershed (HUC 03040202-05).

Farmlands – Past development activities, including construction of two industrial parks, Lee Central High School, Lee County Correctional Facility and commercial buildings are likely to have converted farmlands in the study area to other uses. The project will convert approximately 53.9 acres of farmland, of which 45.8 acres are prime and unique farmland and 8.1 acres are statewide and local important farmland, to a transportation use. Many agricultural areas that are likely to be developed are currently designated as a Proposed Development District. Conversion of farmland to other uses is regulated by Lee County and/or the City of Bishopville through local planning and zoning ordinances. However, the loss of farmland to development is not expected to be collectively significant.

Cultural Resources – Potential future development is not expected to occur in the vicinity of the historic districts in Bishopville because the area is largely built out. Future Development in the areas of the historic resources could change the setting associated with each structure, which may diminish the historical significance of the properties. There may also be potentially eligible archaeological resources currently unknown along the alternative, which could be affected by future private development. However, these are not expected to result in significant cumulative impacts on cultural resources in the study area.

Parks and Recreational Facilities – The project is not expected to have adverse effects on any of the parks and recreational facilities identified in the study area. There are no parks or recreational facilities located in areas that are anticipated to experience future development. No cumulative impacts on parks and recreational facilities are anticipated.

Minority or Low-income Populations –It is not anticipated that the proposed action would directly result in any appreciable change in local population or communities in the area. No communities are directly impacted by the proposed roadway, although the alignment crosses behind the Dogwood Drive neighborhood. No relocations are anticipated with the Preferred Alternative and based on FHWA NAC, no noise impacts are expected to occur.

The Preferred Alternative is expected to benefit Bishopville and Lee County by supporting opportunities for economic development. The project is expected to alleviate congestion from truck traffic on streets in downtown Bishopville. Based on public input, the goal of improving traffic within downtown Bishopville would enhance the ongoing revitalization efforts of the city and facilitate pedestrian movements and shopping. Providing improved roadway access to this area would encourage commercial and industrial businesses to locate in the area. In addition, induced commercial or industrial development spurred by the new roadway could provide additional employment opportunities for communities in the area.

When evaluated in the context of other past, current, and future actions the contributions of the project to cumulative impacts in their respective study areas will not affect the potential of the affected resources to sustain themselves. No consideration of additional alternatives or mitigation will be required.

5.0 COORDINATION

5.1 Public Coordination

A Community Support Survey Analysis was designed and distributed to provide an assessment of City of Bishopville community support for the Purpose and Need Study (see Appendix G). The survey questions addressed issues such as travel, traffic downtown, and the potential concerns and benefits of a bypass. A blank comment sheet was also included for respondents to provide any comments and/or suggestions concerning the proposed project. Of the 280 survey forms distributed, 236 responses were received.

Meetings were held with Bishopville community leaders on September 9, 2010 in order to obtain their support and encourage citizens to participate in the survey process. Strategies were discussed to determine the best way to include all of Bishopville citizens, particularly those to which the project might have disproportionate impacts on vulnerable sections of the population such as racial/ethnic minorities, the elderly, or persons in economically disadvantaged households. Similar meetings were held with local church groups, citizen groups and community organizations on August 25 and September 15, 2010 to identify demographics where potential vulnerable populations exist in Bishopville and to explore how to encourage participation in the survey process. From September 20 through September 24, 2010, the study team conducted interviews and collected survey information from individuals at commercial establishments and public service centers.

A Community Information Meeting was held on Tuesday October 5, 2010 between 5:00 and 7:00 PM at the Lee Central High School located at 1800 Wisacky Highway in Bishopville. Surveys were also collected at this meeting. The purpose of the meeting was to gather input from the public on the purpose and need for the project. The format was a formal presentation that provided community members with a general background of the project followed by an informal session with several displays. The displays provided information on the environmental review process, project status, project area, and purpose and need examples. The public was encouraged to discuss the project with SCDOT and other members of the project team and an aerial map was available for attendees to locate potential concerns. Attendees were provided an information sheet and comment form to provide written comments regarding the needs for the project to study team members.

There were 130 attendees at the public meeting and 100 comments were received either at the meeting or through the mail during the 30-day comment period. (See Appendix G) Additionally, three (3) phone calls were received.

Community concerns identified in the public meeting and through surveys and comment forms focused on the following areas:

- safety
- pedestrian safety
- speed of trucks
- enforcement of speed limits
- widening of roadway lanes
- installation of sidewalks
- cost of a bypass

- economic impacts of a project on the community
- impacts to farmlands, particularly on the western side of Bishopville

Several did not want a bypass to use SC 341 (Wisacky Highway) near I-20 because this was a school bus route to area schools and the addition of trucks would cause safety issues. Rexam Beverage and South Atlantic Canners-Coca-Cola expressed support for the bypass; especially since South Atlantic would soon be expanding and have more trucks in and out of their facility. A petition was received with 91 signatures opposing a bypass route west of Bishopville from US 15 (north) to S-29 (Browntown Road) due to impacts to residences in the area.

Two-hundred and eighty (280) survey forms were distributed by the study team and 236 responses were received. More than half (54.2 percent) of the respondents travel through downtown Bishopville six to seven days a week and 27.1 percent of respondents travel through downtown Bishopville three to five days a week. Of the respondents, 71.6 percent reported that they avoid traveling through downtown Bishopville. The top three reasons identified for avoiding travel through downtown were:

- safety and speed of trucks (56.4 percent)
- traffic/inconvenience (34.3 percent)
- traffic lights (4.2 percent)

Additionally, 80 percent of survey respondents believe that there are traffic flow problems in Bishopville. Downtown/Main Street was identified by 75 percent of respondents as the area with the most traffic congestion. In the downtown area, motorists have stated that they often have difficulty getting out of their parked vehicles because the trucks are too close. Downtown area residents of Bishopville have identified not feeling safe with the number of vehicles driving through the downtown area as a primary concern and as a result try to avoid driving or shopping downtown.

Negative impacts of commercial vehicles traveling through downtown Bishopville that have been identified by residents and businesses in the study corridor include traffic congestion, noise impacts, premature pavement deterioration, and overall reduction in the enjoyment of the historic downtown business district. Various ways to improve traffic in Bishopville were suggested by the public. These included:

- a bypass
- rerouting traffic out of downtown
- adding another lane downtown
- not allowing trucks to drive downtown
- having more traffic lights
- enforcing the speed limit
- removing the median and plants

Survey responses showed that 43.2% percent of respondents thought traffic could be improved in Bishopville specifically through the construction of a bypass. Similarly, 26.3% percent of survey respondents suggested rerouting traffic out of downtown would improve traffic in Bishopville.

5.2 Local Government Coordination

Meetings were held with the Santee-Lynches Regional Council of Governments (SLRCOG) on August 3, 2010, September 13, 2010, and July 29, 2011. The purpose of these meetings was to discuss the background of the project, purpose and need for the project, schedule, and proposed alternatives.

A presentation was made September 7, 2010 to the Bishopville City Council which presented an overview of the project. A discussion of the purpose and need for the project was held July 15, 2010 with the Lee County Council.

A letter was received by the SLRCOG Transportation Committee from a member of the Board of Directors for SLRCOG and Lee County Council on October 31, 2011 expressing concerns for the African American neighborhood on the eastern side of Bishopville in conjunction with proposed bypass alternatives. Concerns over the eastern bypass alternatives also addressed cost, social concerns, and past development projects that have impacted residents on the eastern side of Bishopville.

5.3 Agency Coordination

A Letter of Intent (LOI) was sent on August 30, 2010 to Federal and State Resource and Regulatory Agencies. Two comment letters were received, from SCDAH and Catawba Indian Nation, both expressing interest in cultural resource investigations for this project (See agency letters in Appendix H).

On August 25, 2011, project team members, SCDOT representatives, and a representative from SCDAH reviewed above-ground historic sites and a proposed historic district in the project area.

The Bishopville Bypass project was presented to the Agency Coordination Effort (ACE) meeting on July 12, 2012. At the meeting, comments from agencies included:

- Ensuring that details regarding why alternatives were eliminated from further consideration were included in the EA;
- Concerns about impacts of roadway runoff on the 303(d) stream that will be crossed by the Preferred Alternative;
- Concerns about bridging and/or minimizing wetland impacts of the Preferred Alternative.

Agencies will be given the opportunity to review and comment on the Environmental Assessment. Feedback from these agencies will help identify issues from a wide variety of perspectives and will be taken into consideration in the decision-making process for this project. The Environmental Assessment will be available for review at the public hearing, which will be held upon release of the Environmental Assessment, and available at SCDOT's Central and District offices.