CHAPTER 2

2.0 EXISTING CONDITIONS

The Phase II study area extends along US 1 from US 1A (Park Avenue) to the north and ends at the Vance County line (See Figures 2-2A, 2-2B, and 2-2C). To focus on areas with different needs and characteristics, this corridor has been divided out into three sections: south, central, and north.

- **South Section:** The South Section starts at the transition point from the US 1 Phase I study area to the US 1 Phase II study area and runs from US 1A (Park Avenue) to the US 1A (South Main Street) junction south of Franklinton.
- **Central Section:** The Central Section extends from the US 1A (South Main Street) junction south of Franklinton to the US 1A (North Main Street) junction north of Franklinton.
- **North Section:** The North Section extends from the US 1A (North Main Street) junction north of Franklinton to the Vance County line.

For this study, inventories of existing land uses, environmental, and transportation data have been obtained and summarized below.

2.1 Land Use Data Inventory

Land use context was analyzed as part of the existing conditions inventory and includes the assessment of all the parcels within the study boundary. The analysis evaluated current land use, existing zoning, regional development trends and opportunities for future development. Land use and zoning data was compiled through GIS information and zoning maps received from jurisdictions within the study area; including Franklin County, the Town of Youngsville and the Town of Franklinton. The land use examination covered an area extending approximately one mile on either side of US 1.

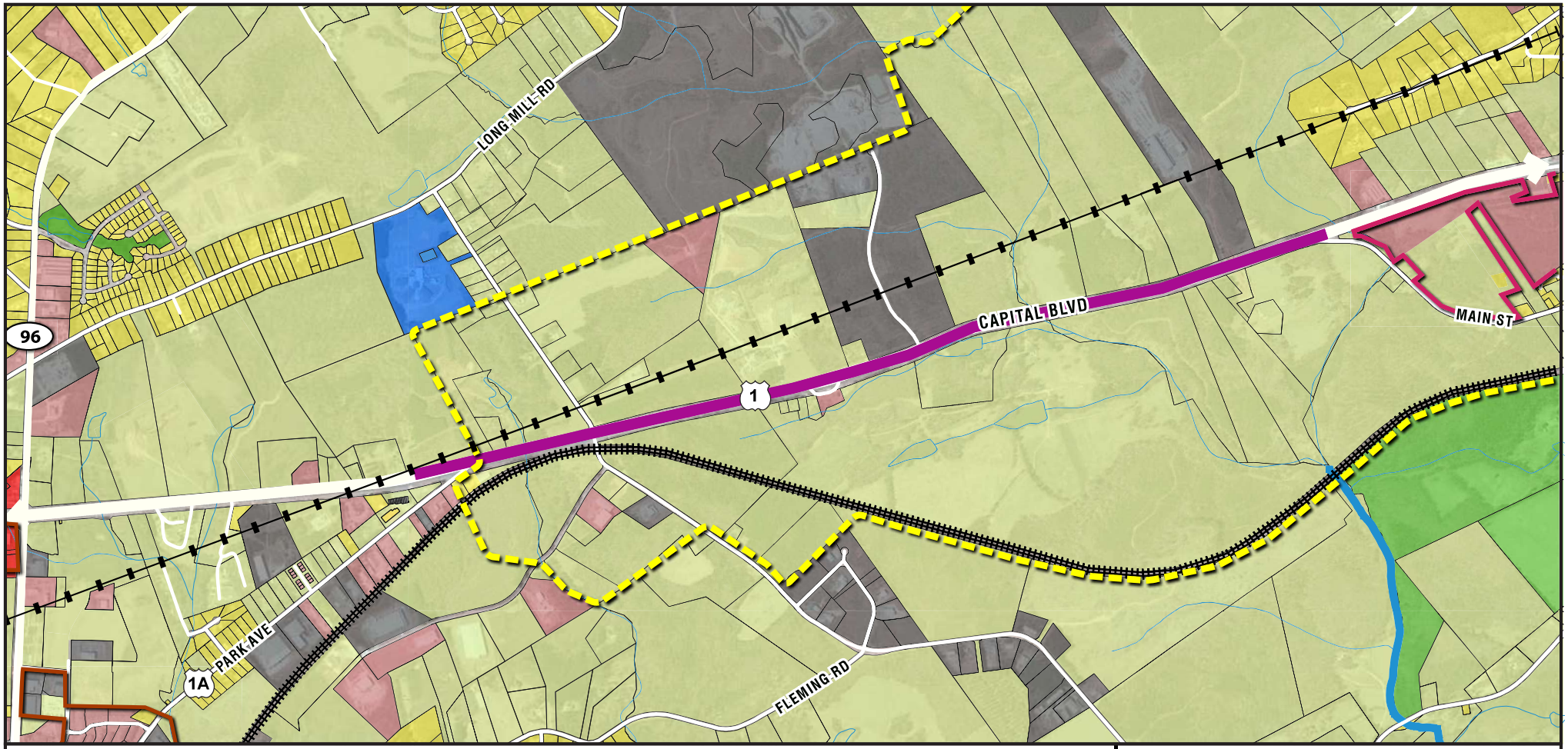
2.1.1 Existing Land Use Patterns

Overall, the US 1 Corridor land use development pattern displays a rural character, with most of the commercial and industrial developments concentrated at major intersections and interchanges. It transitions to residential and agricultural uses as one travels north from the Town of Franklinton. US 1 and NC 56 are the key corridors serving the Town of Franklinton. The existing land use patterns are illustrated in Figures 2-1A, 2-1B, and 2-1C for the south, central, and north sections, respectively.

US1 North Corridor Study Phase II

0 0.125 0.25 0.375 0.5 0.75

Scale in miles

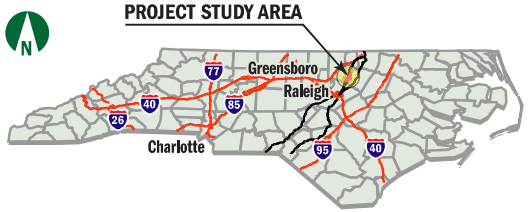


LEGEND

- Primary Study Area
- Major Roads
- CSX Railroad
- High Tension Line
- Franklinton Town Boundary

LAND USE CATEGORIES

- Agricultural Land
- Agricultural/Residential
- Suburban Residential
- Open Space
- Commercial
- Rural Commercial Area
- Industrial
- Institutional



US 1 Phase II Study - Franklin County

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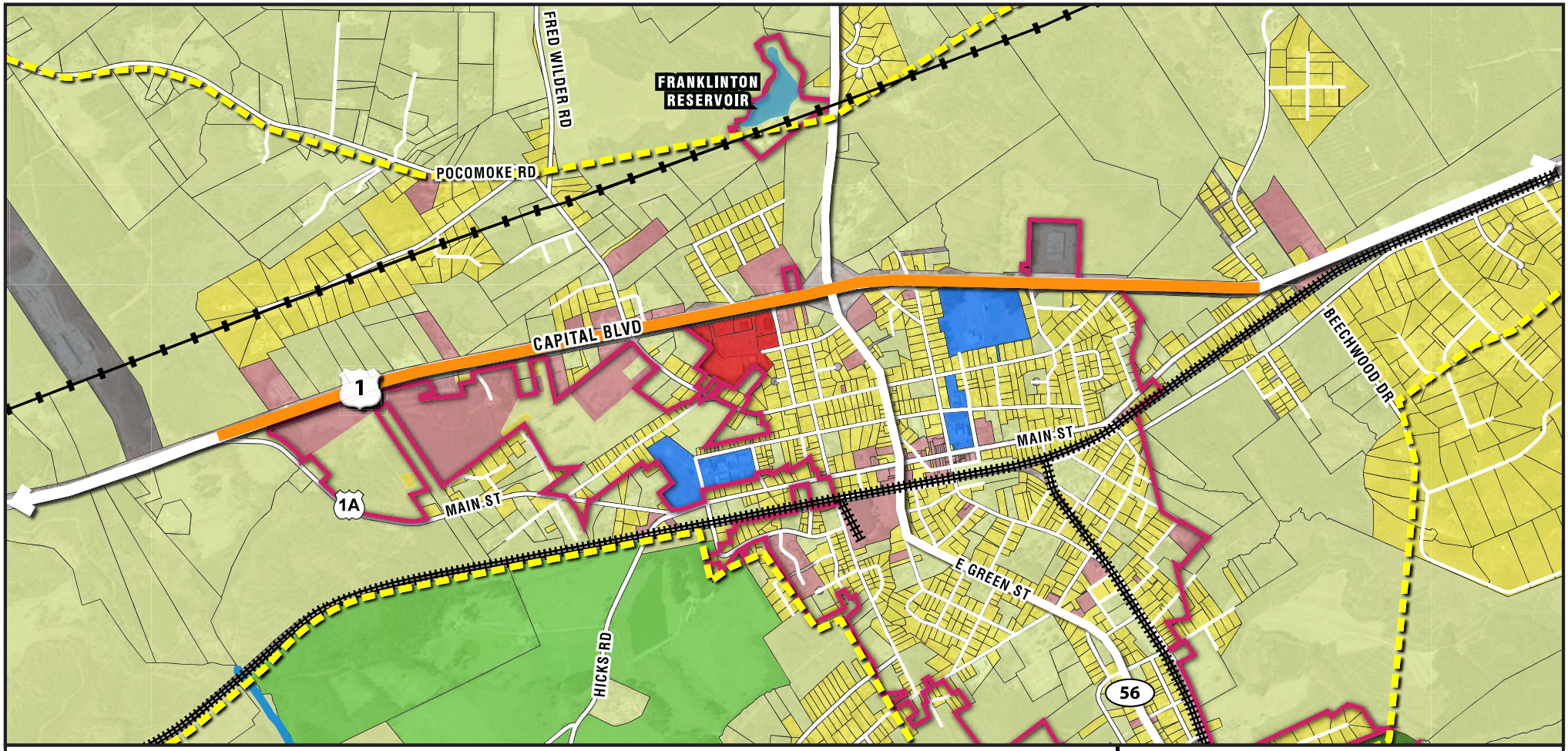
URBAN Collage

Existing Land Use in South Section

Figure 2-1A

US1 North Corridor Study Phase II



0 0.125 0.25 0.375 0.5 0.75

Scale in miles

LEGEND

- Primary Study Area
- Major Roads
- CSX Railroad
- High Tension Line
- Franklinton Town Boundary

LAND USE CATEGORIES

- Agricultural Land
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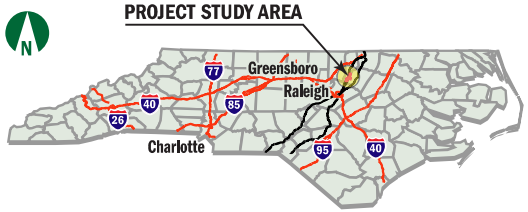

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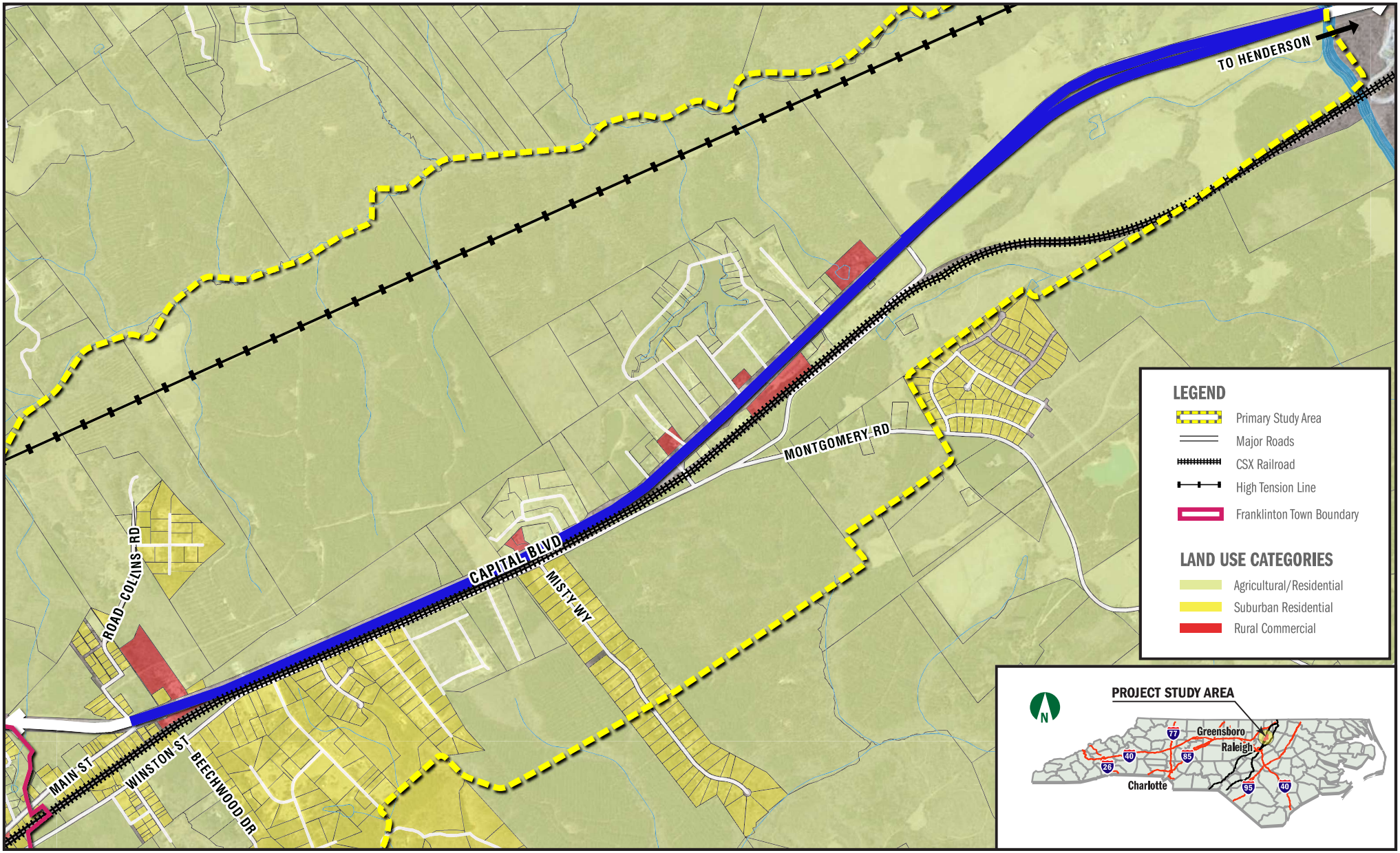
Existing Land Use in Central Section

Figure 2-1B

US1 North Corridor Study Phase II



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Existing Land Use in North Section

Figure 2-1C

- **South Section:** Existing development consists of low density residential neighborhoods, secluded homes on agricultural lands, and light industrial facilities as shown in Figure 2-1A.

  The residential uses are mostly suburban style single-family detached. There are an additional 600 lots approved by Olde Liberty Road, and another 1,000 lots approved south of the study area, in between Youngsville and Franklinton, near the New Franklinton High School.

  Smaller industrial parcels are mostly located along or in close proximity to the CSX railroad and US 1 forming small industrial parks. Bigger industrial parcels are located mostly west of the US 1 corridor and have anchors including Martin Marietta and Stay Right Concrete.

The Long Mill Elementary School is the only institutional use parcel within this section and is one of the most important traffic drivers.

There are no public open spaces within the study area. The horse farm located just east of the CSX Railroad is categorized as agricultural and adds to the beautiful context of this study area.

Much of the land in this section is undeveloped and provides opportunity for future growth.

- **Central Section:** This section covers the Town of Franklinton portion of the US 1 corridor and clearly reflects a development pattern of commercial along US 1 and Main Street. The pattern transitions to residential uses further from US 1 as shown in Figure 2-1B.

  Commercial out-parcels and strip malls in this section are located along US 1. Neighborhood-style commercial establishments are located along Main Street and around the Main Street/NC 56 intersection. There are unoccupied buildings and vacant properties along Main Street, which have the potential to be redeveloped in the future.

The dominant land use within the town of Franklinton is residential. Franklinton has a great resource of historic neighborhoods exhibiting significant architectural character, which should be preserved and enhanced.

Institutional uses includes the educational campuses within the study area, including Franklinton Elementary School, the old Franklinton High School (which is being renovated into a middle school), as well as the athletic fields and gymnasium for the high school. No office developments are located within this section.

There are very few parcels with industrial uses observed within the Central section. The two exceptions are Griffin Trucks west of US 1 and a vacant parcel of about 11 acres towards the east of the town along NC 56. It should be noted that Novozymes, although not located within the project study area, is a key industrial development located east of Franklinton on NC 56. Access to US 1 from this site is focused on using NC 56 through downtown Franklinton.

Aside from the 25 acres of open space, located at the east end of the town, there are no other major public open spaces in the area. The Triple R Ranch farm is an operating farm located south of Franklinton and adds to the unique character of the town.

- **North Section:** This section is largely dominated by agricultural and residential land uses, with some scattered rural commercial parcels along the US 1 corridor, as shown in Figure 2-1C. Though the majority of the area is categorized as agricultural or residential, most of it is undeveloped woodlands or farmlands. These parcels could be seen as potential opportunity for development in the future.

The Person-McGhee Farm is a key feature located on the northern-most mile of US 1 in Franklin County. The farm is split by US 1, with property both west and east of US 1. As documented in the historic resources section, the Person-McGhee Farm is listed on the National Register of Historic Places (NRHP). In addition, the

owners of the Person-McGhee Farm are supportive of long-term conservation which will help preserve the rural character of the area.

The land use patterns on US 1 in this section have been influenced by the CSX rail line that runs immediately adjacent to US 1. As a result, direct access from the east side of US 1 is limited since businesses and residences have not yet been developed.

Overall, the US 1 Corridor land use development pattern displays a rural character that appears to be transitioning into a more suburban development pattern, particularly south of Franklinton. Most of the commercial and industrial developments are concentrated at major intersections.

2.1.2 Future Land Use Policies and Trends

Franklin County and the towns of Franklinton and Youngsville provide services to only the properties within their limits. In addition, they are responsible for the land use and zoning policies for the properties within their extra-territorial jurisdiction (ETJ). Zoning is assumed to be indicative of future land use patterns and to convey clear policy goals by the demarcation of future land uses.

A review of the Franklin County, Town of Franklinton and Town of Youngsville zoning maps indicates that the overall development pattern will continue to be more intense in the southern section of the Phase II study area. These zoning maps also indicate that the land use pattern along US 1 will be industrial in the south section, retail in the central section, and residential and agriculture in the north section. This change in zoning reflects the trend that development is occurring more rapidly and intensely in the south and central sections. The northern area, in contrast, is anticipated to continue to have low density residential development combined with farmland preservation and conservation areas.

Most of the land located off the immediate corridor is zoned residential. The zoning patterns indicate a strong economic agenda to allow for future industrial growth along the US 1 corridor as well as on NC 56 between Franklinton and Louisburg.

The current zoning for the corridor is illustrated in Figures 2-2A, 2-2B, and 2-2C for the south, central, and north sections, respectively.

- **South Section:** The southern portion is predominantly zoned industrial – heavy and light, along both sides of the US 1 Corridor, while the remaining areas are mostly zoned commercial or mixed use. This area has the maximum potential for development and makes a potentially considerable economic impact for the county. This area is the only

US1 North Corridor Study Phase II

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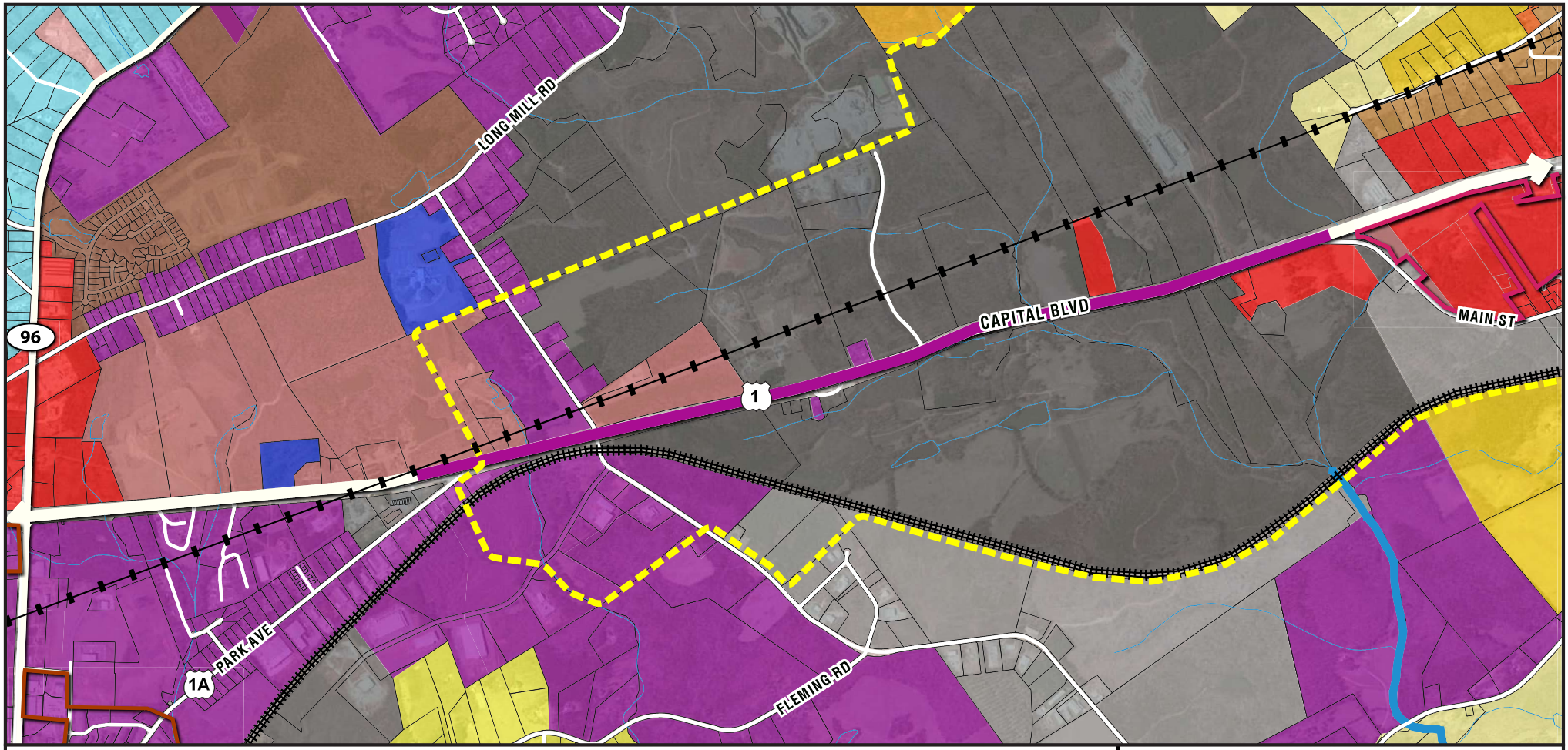
Scale in miles

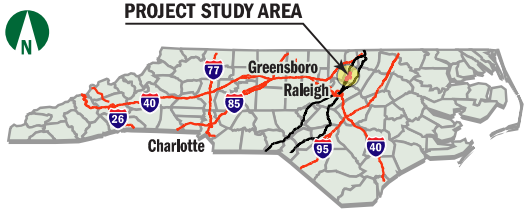


LEGEND

- Primary Study Area
- Major Roads
- CSX Railroad
- High Tension Line
- Franklinton Town Boundary

ZONING DISTRICTS

- GB: General Business District
- HB: Highway Business District
- NB: Neighborhood Business District
- O/I: Office/Institutional District
- R-1: Residential - Low Density
- R-8: Residential - High Density
- R-15: Residential - Medium Density
- R-15 PUD: Residential - Planned Unit Development
- R-40: Water Supply Watershed District I
- MU: Mixed-Use District
- HI: Heavy Industrial District
- LI: Light Industrial District



US 1 Phase II Study - Franklin County

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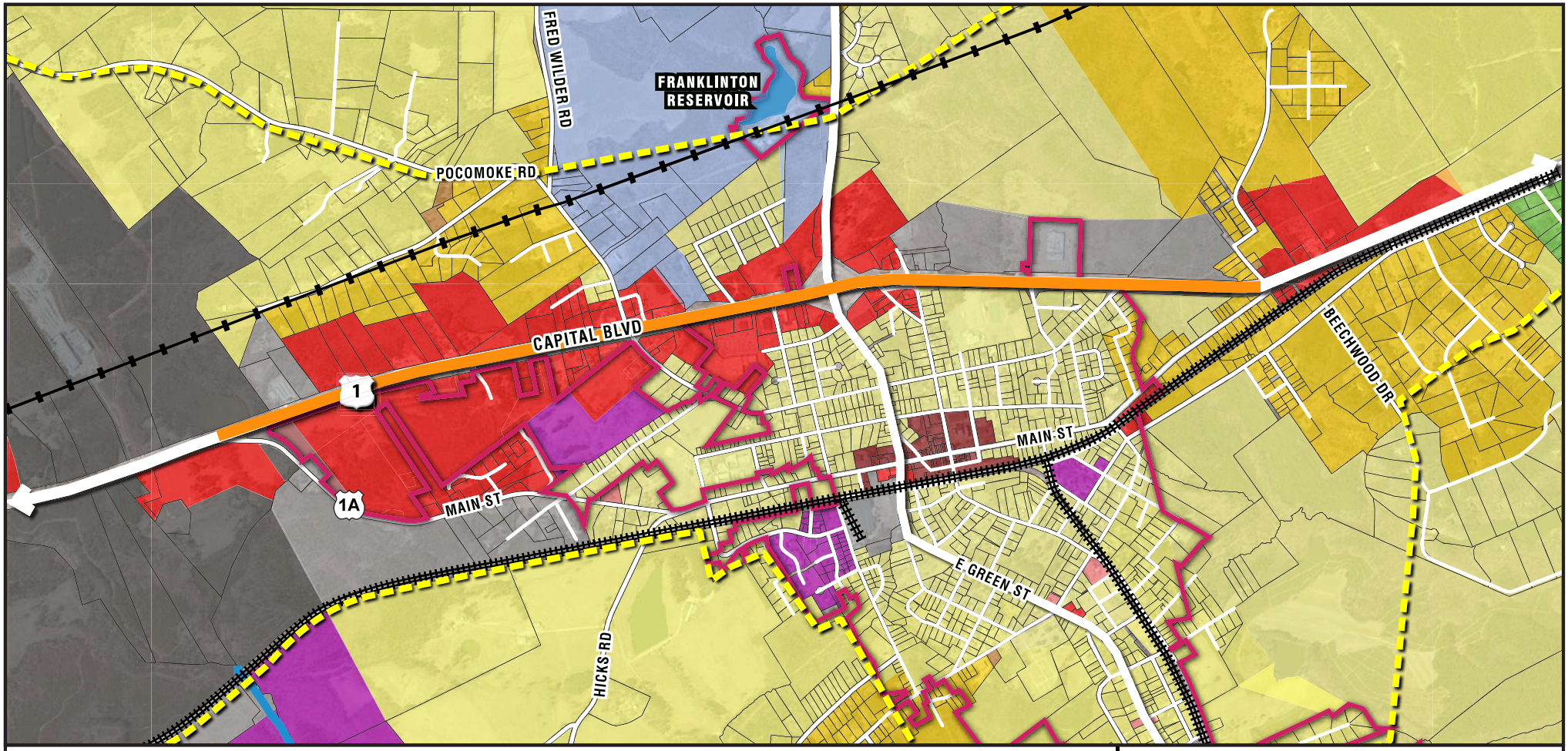
URBAN Collage

Zoning in South Section

Figure 2-2A

US1 North Corridor Study Phase II



0 0.125 0.25 0.375 0.5 0.75

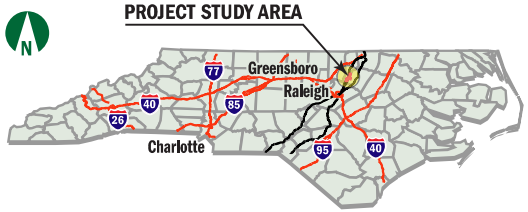
Scale in miles

LEGEND

- Primary Study Area
- Major Roads
- CSX Railroad
- High Tension Line
- Franklinton Town Boundary

ZONING DISTRICTS

- AR: Agricultural-Residential
- R-1/R-1A: Residential District
- R-MH: Medium Density Residential District
- HB/C-3H: Highway Business District
- C-1N: Neighborhood Commercial District
- C-2D: Downtown Commercial District
- R-80: Water Supply Watershed District II
- C-R1: Conservation District
- MU: Mixed-Use District
- HI: Heavy Industrial District
- LI: Light Industrial District



US 1 Phase II Study - Franklin County

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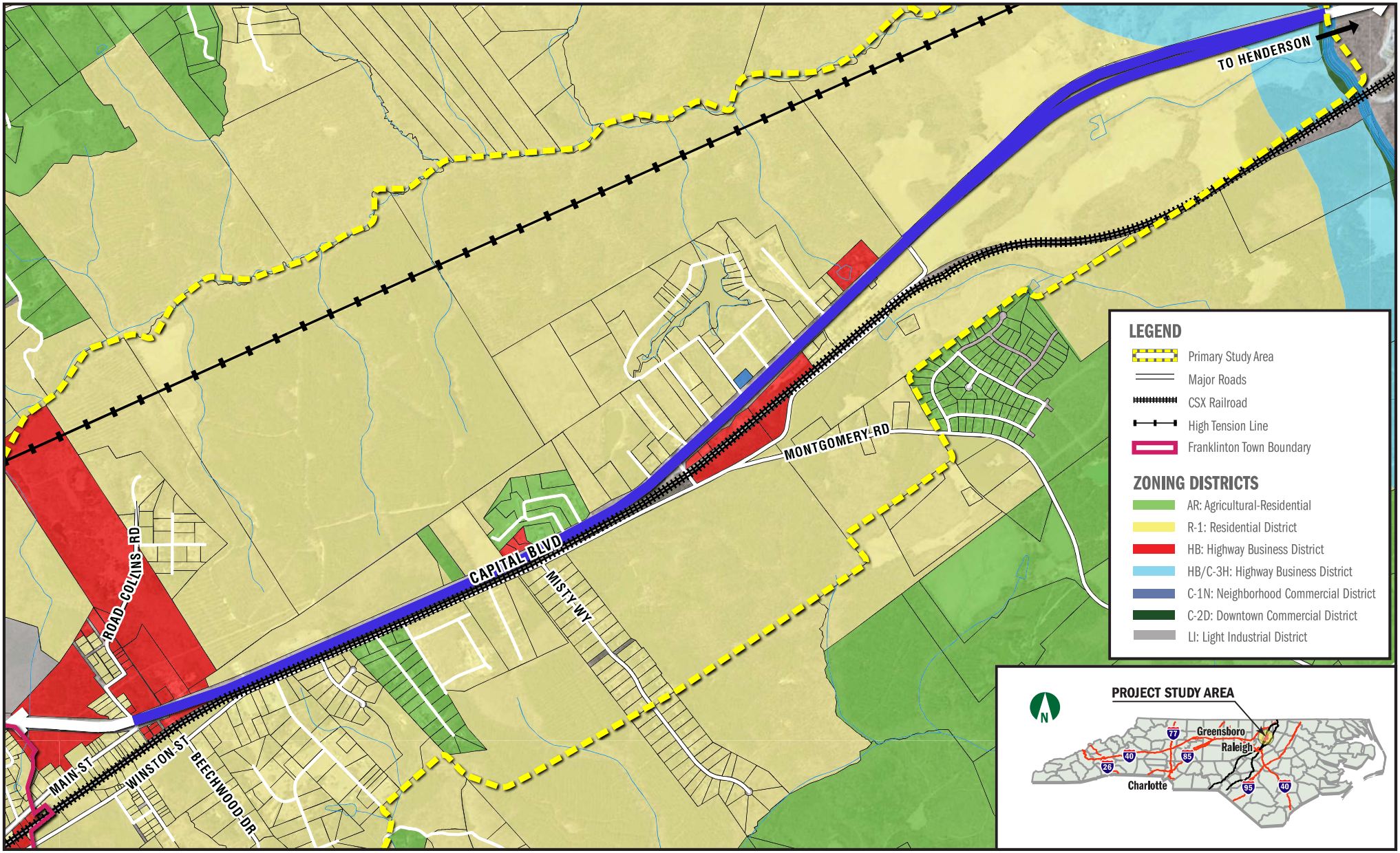
URBAN Collage

Zoning in Central Section

Figure 2-2B

US1 North Corridor Study Phase II



US 1 Phase II Study - Franklin County

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URBAN Collage

Zoning in North Section

Figure 2-2C

area zoned Heavy Industrial. The other industrial area is located to the east, between the Towns of Franklinton and Louisburg.

With respect to the industrial zones in the south, it appears that Franklin County's general intent is to focus industrial growth along the US 1 corridor in order to take advantage of highway access. The heavy industrial zoning along US 1 is focused in the southern segment, adjacent to the existing Martin Marietta and Stay Right Concrete facilities.

The concentration of industrial zoning in the south section also introduces potential issues with the interaction of industrial and residential zoning. East of US 1, the industrial area is buffered from residential land uses by mixed-use zoning on the undeveloped land adjacent to the CSX railroad and the Triple Ranch Farm. West of US 1, there is no such buffer zone indicating that this area may be considered a transitional development area between Youngsville and Franklinton in the future.

- **Central Section:** The central portion, as indicated in the map, is mostly zoned highway commercial along the US 1 corridor, neighborhood commercial along US 1A (Main Street) in the Town of Franklinton, and low-to-medium density residential moving away from the US 1 corridor.
- **North Section:** The northern portion is largely zoned low density residential. Most of the land in this section is undeveloped, presenting long-term opportunities for development. The Taylor Tree Farm located west of US 1 has the potential to be developed as a large residential subdivision in the future.

  The remaining area is zoned as a conservation district and consists mainly of the farmlands along Tar River. A key reason for this zoning is density restrictions due to run-off issues related to the Tar River basin. The McGhee Farm property is located on both sides of US 1 near the Vance County line, and is consistent with an agricultural open space vision.

2.1.3 Land Use and Zoning Constraints

Constraints to future development, land use, and zoning are discussed by corridor section in Table 2-1 below.

Table 2-1. Land Use and Zoning Constraints

	South	Central	North
Constraints	• Flood plain & stream on both sides of US 1 • Power line easement on west side of US 1	• Franklinton Reservoir	• US 1 parallels CSX railroad tracks which restricts access to US 1 from the east • Tar River at north terminus
Existing Land Use	• Low Density Residential • Industrial Sites • Undeveloped Land	• Downtown Franklinton • Retail and industrial on US 1 focused south of NC 56 • North of NC 56: isolated streets and driveways serving businesses and residential • Residential in town	• Agriculture/undeveloped land • Isolated industrial • Mixed low and medium density residential along US 1
Zoning	• Industrial focus along US 1 • Mixed Use & Residential • Business District closer to Youngsville	• Heavy industrial south of US 1A • Residential to the northwest • Mixed-use to the southeast • Highway Business District	• Residential on both sides of US 1 • Highway Business District
Key Features	• Martin Marietta • Stay Right Concrete • Light industrial development on Park Ave. • Long Mill Elementary	• Downtown Franklinton • Food Lion Shopping Center • Triple Ranch Farm	• CSX rail line next to US 1 • Person-McGhee Farm

2.2 Environmental Data Inventory

An inventory of both the human environment and natural environment was conducted for this study using site visits, GIS data, and the SEHSR DEIS document as primary resources. Detailed field studies were not included as part of this effort.

2.2.1 Human Environment

The human environment consists of man-made features, cultural resources, social conditions and economic resources important to those living in an area. Examining the existing human environment conditions allows planners the knowledge of how to better incorporate context sensitive solutions into the planning process. The assessment of the human environment in the Phase II study corridor was made using census data, GIS, aerial photography, and review of previous plans and studies. A summary of this inventory is presented below. Maps of the

human environmental features are presented as Figures 2-3A, 2-3B, and 2-3C for the South, Central, and Northern sections, respectively.

2.2.1.1 *Demographics*

The study area includes part of two towns in Franklin County – Franklinton and part of Youngsville. Demographics for the area were compiled using 2010 Census information and the North Carolina State Data Center population projections for each of the three jurisdictions.

Franklin County - (2010 population 60,619)

Franklin County lies just north of Wake County and is an outlying portion of the suburbanizing Triangle area. Municipalities within the county and their 2010 population numbers include:

- Bunn (344)
- Youngsville (1,157)
- Franklinton (2,023)
- Louisburg (3,359)
- Centerville (89)
- Franklin County portion of Wake Forest (899)

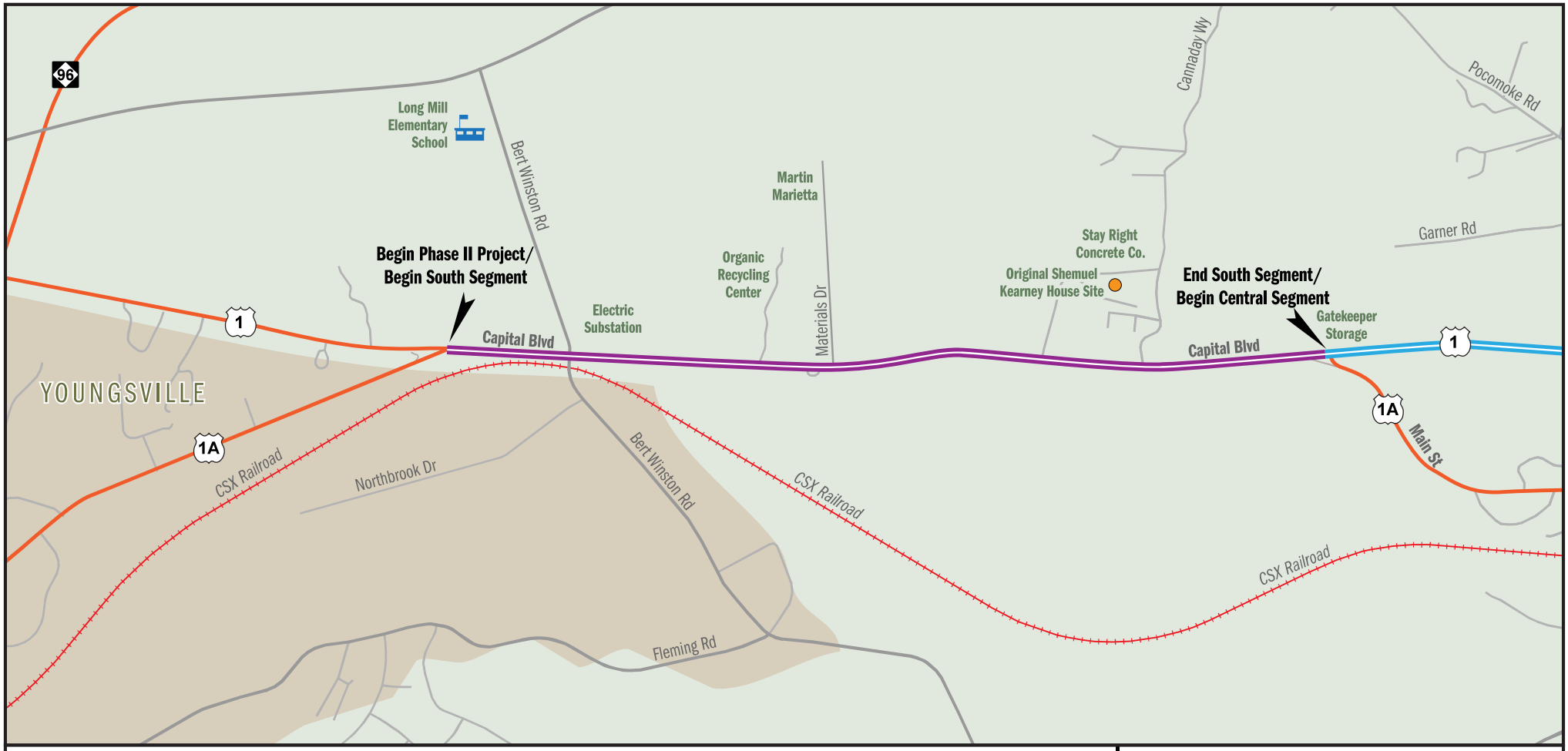
The remaining 54,771 persons (approximately 90 percent of the population) live in rural unincorporated areas of Franklin County. Franklin County has an anticipated average annual growth rate of 2.8 percent and the population is expected to rise to 84,586 by 2030 based on North Carolina State Data Center projections.

The median age in Franklin County is 38. Racially, the county is approximately 72 percent White, 22 percent African American, and approximately six percent classified as "Other" races. Approximately eight percent the county's population identifies as Hispanic or Latino.

Town of Franklinton- (2010 population 2,023)

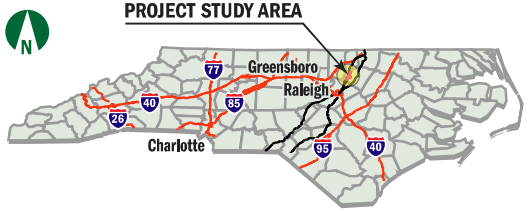
Franklinton is an old railroad town that straddles the active CSX rail corridor and the old alignment for US 1 (now US 1A [Main Street]). The street grid reflects a north-south orientation. The primary north-south road is US 1. The primary east-west road is NC 56, although Mason Street historically provided the main east-west route through town.

US1 North Corridor Study Phase II



LEGEND

- South Segment
- National Registry Historic Structures
- Cemeteries
- Churches
- Schools
- Potential HazMat Sites
- Youngsville Corporate Limits



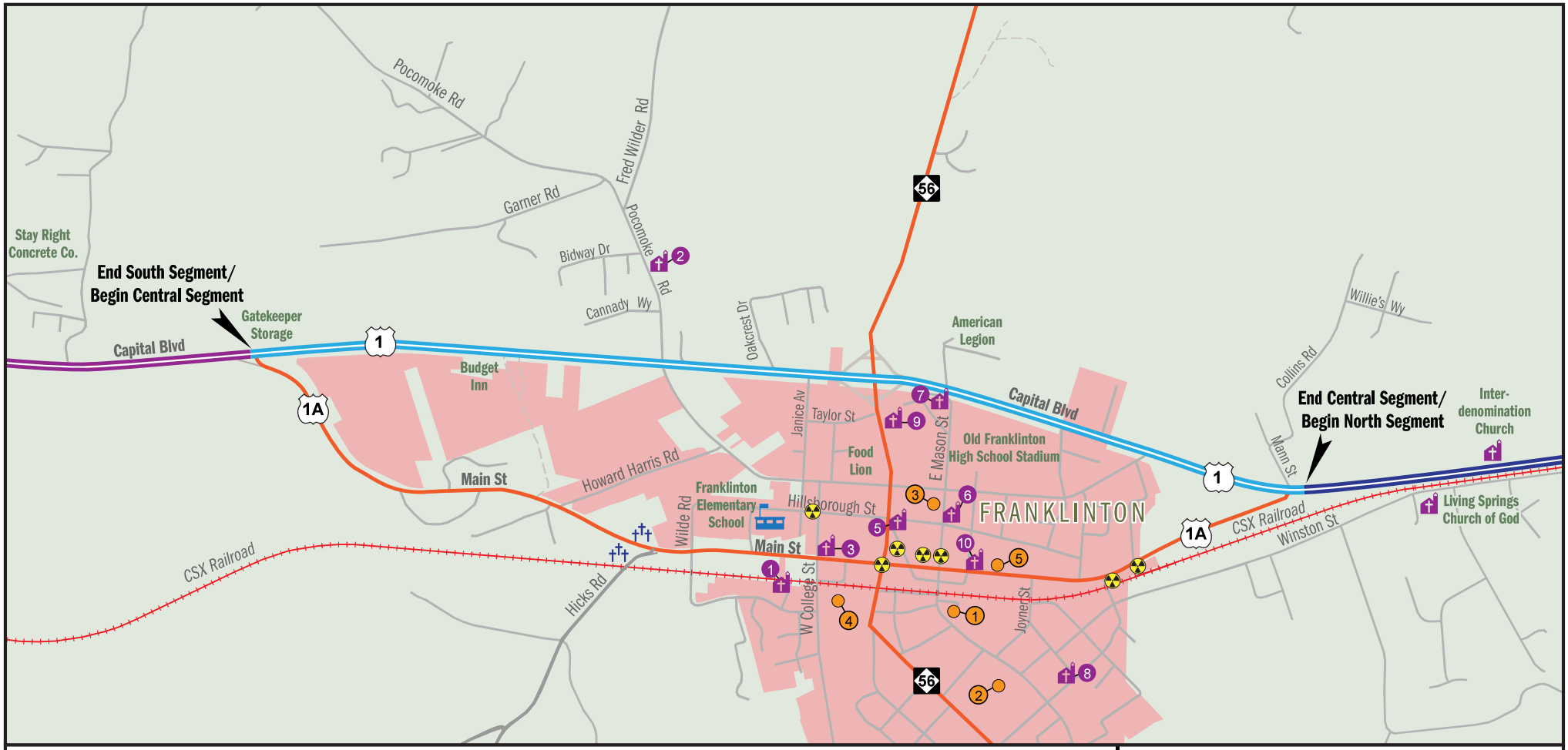
US 1 Phase II Study - Franklin County

PARSONS BRINCKERHOFF

Human Environment Features in South Section

Figure 2-3A

US1 North Corridor Study Phase II



LEGEND

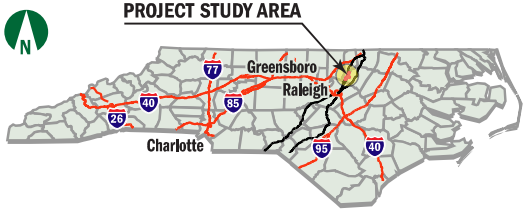
- Central Segment
- National Registry Historic Structures
- Cemeteries
- Churches
- Schools
- Potential HazMat Sites
- Franklinton Corporate Limits

CHURCHES

1. New Life Outreach Ministry
2. Greater New Life Church of Christ
3. Mount Pleasant Presbyterian Church
4. First Baptist Church
5. First United Church of Christ
6. Franklinton Baptist Church
7. Hands of Hope Ministry
8. Union View Baptist Church
9. Allen Metropolitan A.M.E. Zion Church
10. Franklinton United Methodist Church

NATIONAL REGISTER HISTORIC STRUCTURES

1. Franklinton Depot
2. Dr. J. H. Harris House
3. C.L. and Bessie G. McGhee House
4. Sterling Cotton Mill
5. Aldridge H. Vann House



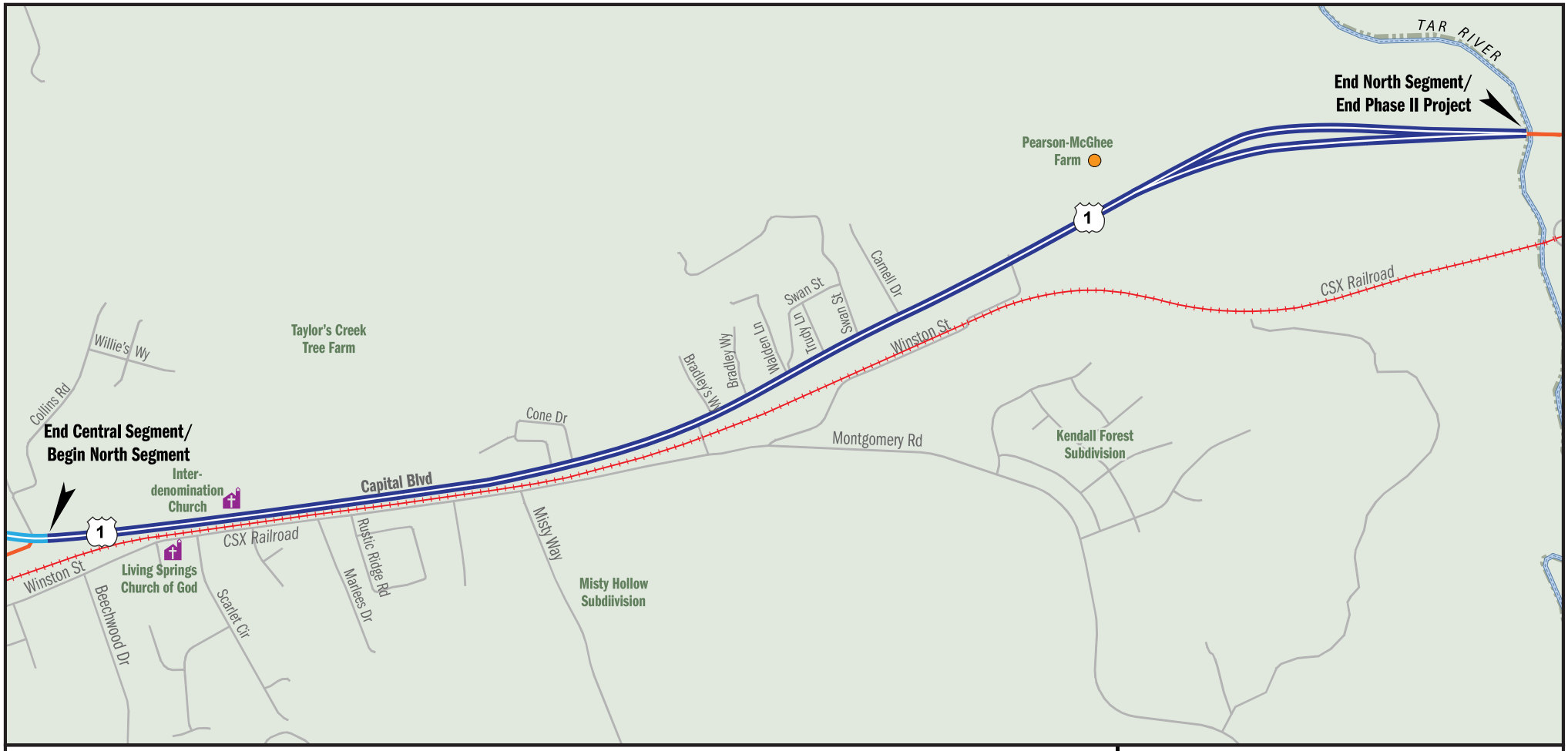
US 1 Phase II Study - Franklin County

PARSONS BRINCKERHOFF

Human Environment Features in Central Section

Figure 2-3B

US1 North Corridor Study Phase II

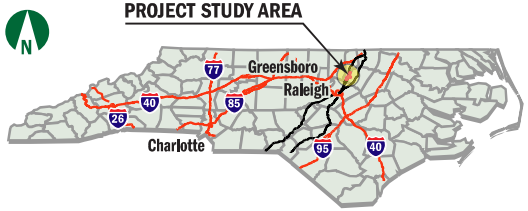


0 0.5 1

Scale in miles

LEGEND

- North Segment
- National Registry Historic Structures
- Cemeteries
- Churches
- Schools
- Potential HazMat Sites



US 1 Phase II Study - Franklin County

PARSONS BRINCKERHOFF

Human Environment Features in North Section

Figure 2-3C

The area is mostly residential and institutional, with a commercial core centered on US 1A (Main Street). Recent development includes retail focused development including the Food Lion shopping center on US 1 near the NC 56 interchange.

Town of Youngsville – (2010 population 1,157)

Youngsville was incorporated in 1875 and is smaller than Franklinton. It developed along the railroad and became a center for tobacco shipping within the state. In more modern times, Youngsville has experienced suburban growth both within and outside its town limits. Development in Youngsville along US 1 is denser than in Franklinton, driven primarily by Youngsville's closer proximity to Raleigh and Wake Forest. In the Phase II study area, the key roadway is US 1A (Park Avenue), which provides access to multiple light industrial developments and has direct access to US 1. Within Youngsville, the US 1 Corridor Study Phase I proposed an interchange at NC 96 with US 1.

2.2.1.2 *Economy*

Much of the development in Franklin County over the past several decades has been a result of the booming Triangle region in Wake County. It is estimated that of the 21,000 person workforce living in Franklin County, approximately 60 percent travel outside the county for work. Employment data for 2010 within Franklin County shows that the largest employment sectors in the county are:

- Manufacturing (16 percent)
- Health Care and Social Assistance (12.3 percent)
- Educational Services (12 percent)
- Retail Trade (9.8 percent)
- Public Administration (9.7 percent)

The average 2010 household income in Franklin County was $54,898, which is higher than average 2010 annual wage of $34,060. The labor force reduced from 27,660 to 25,373 in the period between December 2011 and June 2012. The 2010 unemployment rate was 10.0 percent, which reduced to 9 percent in 2012.

2.2.1.3 *Housing*

According to 2012 census data, approximately 8,890 housing units are located within the entire US 1 study area, out of which 91 percent are occupied. Franklin County's total housing is 23,023 with an occupancy rate of 84.6 percent. The 2016 projected total housing for the County is estimated to be 29,510, an increase of 9.1 percent in 4 years.

2.2.1.4 *Commute*

Commuting patterns are oriented to the automobile with 82 percent commuting to work using a personal vehicle. Only 0.3 percent use public transportation and 3 percent work from home. The average travel time for commuting to work is 32 minutes with 13.2 percent of workers driving more than 60 minutes to work each day.

2.2.1.5 *Schools*

Schools within the study area were identified through GIS, field review and review of available plans and reports. The schools in the study area include:

- Cedar Creek Middle School, located at 2228 Cedar Creek Road north of Youngsville.
- Long Mill Elementary School, located at 1753 Long Mill Road in Youngsville
- New Franklinton High School, located at 910 Cedar Creek Road.
- Franklinton Elementary, located at 431 South Hillsborough Street in Franklinton, west of the existing rail line. This school is located near the Franklinton town core.
- Old Franklinton High School, located at 3 North Main Street in Franklinton, west of the existing rail line. The school is located within the town core. It is being converted to a Middle School.

2.2.1.6 *Cemeteries*

Cemeteries in the project study area include the Fairview Cemetery, located at Green Street and Chavis Street in Franklinton, and the Evergreen Cemetery, located at US 1A (Main Street) at Cedar Creek Road in Franklinton.

2.2.1.7 *Churches*

Churches within the study limits included those shown below. It is possible that these churches may have private cemeteries on-site that were not included in the Cemeteries inventory above.

- New Life Outreach Ministry located in Franklinton at 131 Church Street
- Greater New Life Church-Christ located in Franklinton at 86 Pocomoke Road
- Mount Pleasant Presbyterian Church located in Franklinton on College Street
- First Baptist Church located in Franklinton at 304 South Main Street
- First United Church of Christ located at 20 West Green Street.
- Franklinton Baptist Church located at 102 West Mason Street
- Hands of Hope Ministry located in Franklinton at 229 West Mason Street.

- Franklinton United Methodist Church located at 109 North Main Street.
- Union View Baptist Church located in Franklinton at 13 Chavis Street.
- Living Springs Church of God located in Franklinton at 708 Winston Street.
- Inter-Denominational Church located in Franklinton at 4441 US 1.
- Allen Metropolitan A.M.E. Zion Church located at 210 West Green Street in Franklinton.

2.2.1.8 *Hazardous Materials*

Potential hazardous material sites within the study limits were found through a review of available plans and reports. These are shown below.

- Brodie, Howard/First Flight Way of The Cross 402 is located in Franklinton at North Main Street
- H & R Grocery located in Franklinton at 302 North Main Street.
- Franklinton High School located in Franklinton at 3 North Main Street.
- House Texaco Service located in Franklinton at 1 South Main Street.
- City Service Station located in Franklinton at 27 South Main Street.
- AR Snack Shack #245 located in Franklinton at 108 S. Main Street/Highway 56
- Ken's Quickie Mart located in Franklinton at 101 East Green Street.
- Bondsman located in Franklinton at 402 South Main Street.

2.2.1.9 *Historic Resources*

Historic resources in the study area were identified through GIS and review of available plans and reports, such the Southeast High Speed Rail DEIS. These include the following.

- **Sterling Cotton Mill:** The Sterling Cotton Mill, located within downtown Franklinton, is listed in the National Register of Historic Places (NRHP) under Criterion A for industry and under Criterion C for architecture. The two-story, simplified Italianate mill opened along the Raleigh and Gaston Railroad at the south end of town in 1895. Owned by Franklinton merchant, S.C. Vann, this yarn mill was the largest textile operation in Franklin County.

  By the early twentieth century, the mill included a complex network of spinning, looming, and carding rooms and adjacent cotton warehouses surrounded by worker housing for some 400 operatives. The mill village was constructed trackside beside the

mill and extended northward to form a cluster of worker housing on the east side of the tracks near the business district.

- **Franklinton Historic District (Includes Sterling Mill Historic District):** The SEHSR identified sections of downtown Franklinton as being eligible under Criterion A of the NRHP for community development, planning, industry, education, and commerce, and under Criterion C for architecture. The area, defined as the Franklinton Historic District in the SEHSR DEIS, includes structures listed in the NRHP, including the Sterling Cotton Mill (discussed above), the Dr. J. H. Harris House, the Dr. J. A. Savage House, the C.L. and Bessie G. McGhee House, and the Aldridge H. Vann House.

  The DEIS identifies the downtown historic district as notable for its range of residential, religious, commercial, civic, and industrial architecture epitomizing the development of a Piedmont railroad town and remaining one of the most intact, small railroad towns in the Piedmont. The Franklinton Historic District identified in the DEIS is loosely bounded by College Street, Cheatham Street, N. Hillsborough Street, Pearce Street, Chavis Street, Mason Street, Tanyard Street, and Green Street. However, it should be noted that the Town of Franklinton is not in agreement with the designation of the area as a historic district.

- **Person-McGhee Farm:** The Person-McGhee Farm is listed in the NRHP under Criterion A for agriculture and Criterion C for architecture. The Person-McGhee Farm is an especially expansive and well-preserved farmstead established in a valley of the Tar River beginning in the 1830s. The centerpiece of the farm is a large and unusually elaborate Queen Anne dwelling surrounded by an array of outbuildings. This house includes a Federal-style rear section built for the Person family.

  The present 500-acre working farm tract is both historically and visually significant with clearly defined natural boundaries of streams and hills, and manmade boundaries of farm roads and railroad tracks. The Person-McGhee Farm is located just south of the study corridor's northern terminus with property both west and east of US 1.

- **Shemuel Kearney House Property:** The Shemuel Kearney House, built in 1759 by town founder Shemuel Kearney, was originally located south of Franklinton on the west side of US 1. Currently the oldest residence in Franklin County, the house was recently purchased and has been moved to Louisburg for restoration.
- **Franklinton Depot:** The Franklinton Depot, located at 201 East Mason Street in Franklinton, functioned as the Seaboard Coastal Railroad Line station. The building was built in 1840 and was placed on the National Register of Historic Places in 1973.

2.2.2 Natural Environment

A review of natural environmental features in the project corridor was conducted. The evaluation was primarily based on available GIS information and a review of the SEHSR analysis within Franklin County. The inventory of natural environmental data focused on hydrology, including surface water, lakes and ponds, and wetlands as well as air quality. A map of the natural environmental features in the corridor is summarized in Figure 2-4.

2.2.2.1 *Hydrology*

Surface Water

The surface water, river basins and watersheds identified within the project study area are listed below.

- **Tar River/Tar-Pamlico River Basin:** The entire Phase II Study Corridor is contained within the Upper Tar River subsection of the Tar-Pamlico River Basin. All waters within this river basin are classified as Nutrient Sensitive Waters (NSW) (NCDWQ, 2000), which require certain management techniques to prevent excessive growth of macroscopic or microscopic vegetation. The watershed is classified WS-IV (water supplies that are generally in moderately to highly developed watersheds).
- **Cedar Creek:** Cedar Creek crosses US 1 south of the Town of Franklinton in the South Section of the study corridor and is a major tributary to the Tar River. The Cedar Creek watershed is classified WS-II (generally in predominantly undeveloped watersheds).
- **Unnamed tributary of Cedar Creek:** An unnamed tributary of Cedar Creek crosses US 1 south of Cedar Creek in the South Section of the study corridor.

Lakes and Ponds

- Lakes and ponds identified within the project study area include Franklinton Reservoir, which is located east of US 1 at NC 56, and Gupton's Lake, which is located along Swan Street.

Wetlands

Wetlands within the project study area were identified through GIS and review of available plans and reports. The wetlands found include the following:

- Along Cedar creek south of Franklinton – Classified as Freshwater Forested/Shrub Wetland
- Along unnamed tributary of Cedar Creek – Classified as Freshwater Forested/Shrub Wetland
- Along Tar River at north terminus – Classified as Freshwater Emergent Wetland/ Freshwater Forested/Shrub Wetland

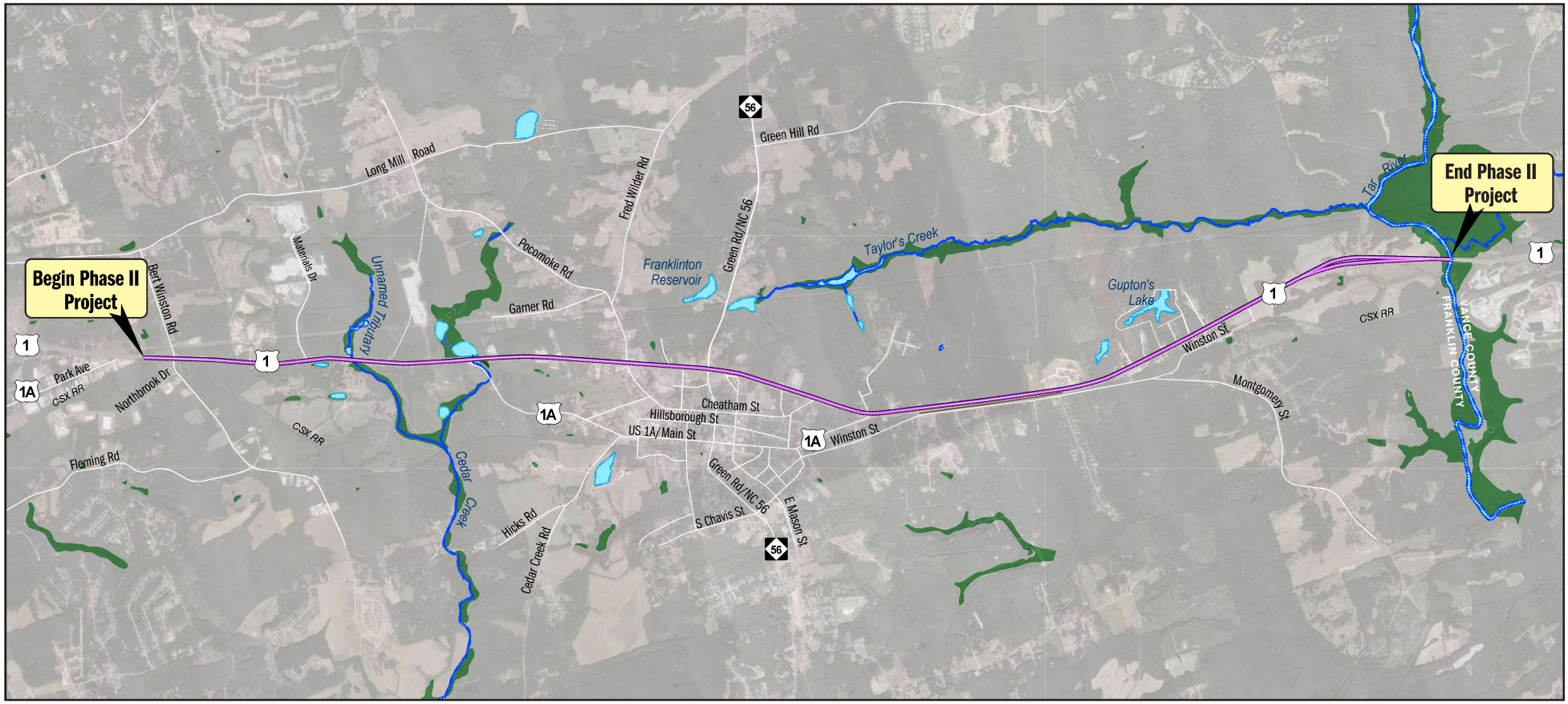
2.2.2.2 *Air Quality*

In 1997 the National Ambient Air Quality Standards (NAAQS) for ozone were revised by the US Environmental Protection Agency based on improved scientific understanding of health impacts of ozone. An eight-hour ozone standard was established and took in effect June 15, 2004.

Franklin County, as part of the Triangle Area (consisting of NC Capital Area MPO, Durham-Chapel Hill-Carrboro MPO, and Burlington-Graham MPO), was designated non-attainment for 8-hour ozone. The *State Implementation Plan* has been prepared to provide implementation and enforcement of emission control measures, and outline how the Triangle Area (and Franklin County) will meet the current NAAQS.

As part of the *State Implementation Plan*, transportation plans, transportation improvement programs, and federally funded or approved transportation projects within the non-attainment area must undergo transportation conformity. The conformity determination would demonstrate that the total emissions projects for a plan or program are within emission limits established by the State Implementation Plan, and that transportation control measures are implemented in a timely fashion.

US1 North Corridor Study Phase II



LEGEND

- Streams
- Water Bodies
- Wetlands

US 1 Phase II Study - Franklin County

PARSONS BRINCKERHOFF

Natural Environmental Features in Study Area

Figure 2-4

Backside of Figure 2-4 (11x17 figure)

2.3 Transportation Data Inventory

2.3.1 Roadways

A review of the existing roadway system on US 1 and the other major and local roadways was conducted for the study area. This included an evaluation of physical features, traffic volumes, and right of way. Project area roadways are shown in Figures 2-3A, 2-3B, and 2-3C for the south, central, and north sections, respectively.

2.3.1.1 *US 1*

US 1 is a four-lane, divided, rural highway that runs through Franklin County. It has paved shoulders that are 2 feet wide along the grass center median, and 6 feet wide along the outside of the highway. Left turn lanes are cut through the center median at intersections and grade crossings, and the center median varies in width throughout the corridor. The locations where the median widths vary are shown in Table 2-2.

Table 2-2. Locations of Varying Median Width

Location		Notes	Median Width (in feet)	Approx. Distance (in miles)
From	To			
Southern project limit at US 1A Park Avenue	1,000 feet north of US 1A (Main St.) S. of Franklinton	None	32'	2.4
1,000 feet north of US 1A (Main St.) S. of Franklinton	2200 feet N. of Winston Street	None	46'	5.1
2200 feet N. of Winston Street	1000 feet S. of the Tar River	Northbound/southbound alignments diverge at this point.	46' (south) 154' (middle) 58' (north)	0.7
1000 feet S. of the Tar River	Franklin/Vance County line at Tar River Bridge	None	58'	0.2

Note: Compass directions are abbreviated (N., S., E., and W. are north, south, east and west.)

The roadway right-of-way (ROW) also varies along the corridor to accommodate various roadway elements, intersections, and construction limits. The locations where the ROW widths vary are shown in Table 2-3.

Table 2-3. Right of Way Widths on US 1

Location		Notes	ROW Width (in feet)	Approx. Distance (in miles)
From	To			
Southern project limit at US 1A Park Avenue	1,000 feet north of US 1A (Main St.) S. of Franklinton	None	200'	2.4
1,000 feet north of US 1A (Main St.) S. of Franklinton	500 feet north of US 1A (Main St) N of Franklinton	Includes widened areas for intersections and the NC 56 interchange.	200' to 220'	2.4
500 feet north of US 1A (Main St) N of Franklinton	Eric Medlin Road	US 1 is immediately adjacent to and parallels the CSX railroad	180'	1.5
Eric Medlin Rd.	Swan St.	None	210'	0.4
Swan St.	Franklinton/Vance County line	None	200'	1.7

Note: Compass directions are abbreviated (N., S., E., and W. are north, south, east and west.)

There is one existing interchange at NC 56. The NC 56 interchange provides a two-lane bridge over US 1. However, its geometric design does not meet the current NCDOT standards for new design with short approach ramps and stop signs controlling flow from the ramps onto US 1. In addition, there are currently two signalized intersections on US 1 at Bert Winston Road and Pocomoke Road/Cheatham Street. The posted speed limit for US 1 is 55 mph.

2.3.1.2 *Other Roadways*

Cross Streets

There are a number of cross streets that intersect US 1 in the study area. The cross streets include, from south to north:

- **US 1A (Park Avenue)**: This roadway is a two-lane undivided roadway that also serves as the northern leg of US 1A that goes through Youngsville. Park Avenue (US 1A) is a non-signalized T- intersection with a full median opening. The existing average annual daily traffic (AADT) is 3,200 vehicles per day (vpd).
- **Bert Winston Road:** This roadway is a two-lane undivided east-west roadway, with a signalized intersection at US 1. It is a preferred truck route for transporting goods and materials between Youngsville and Louisburg. It also crosses the CSX railroad east of US 1.

- **US 1A South Main Street:** This roadway is the southern end of the US 1A leg that goes through the downtown Franklinton. It is a two-lane undivided roadway with an unsignalized T- intersection at US 1 and a full median opening. The existing AADT is 2,200 vpd near US 1 and 4,600 vpd near NC 56.
- **Pocomoke Road/Cheatham Street:** This roadway is a two-lane undivided roadway, with a signalized intersection at US 1 and a full median opening. It serves as a connector between NC 96 and US 1, and as a thoroughfare for the residents of southwest Franklinton to get to downtown Franklinton. The existing AADT is 2,600 vpd on Pocomoke Road.
- **Janice Street:** This roadway is a two-lane undivided roadway, with a non-signalized T-intersection at US 1 and restricted median. It is a connector between US 1 and Cheatham Street and serves as an access to retail establishments and the Food Lion store on US 1.
- **NC 56 Green Street:** This roadway is a two-lane undivided roadway with a substandard conventional diamond interchange at US 1. It connects Franklinton with Creedmoor to the west and Louisburg to the east. The interchange has inadequate ramp lengths and merge areas. Stop signs are utilized at the merge connections with US 1, and would require improvements as part of the freeway upgrades to US 1. NC 56 also crosses the CSX railroad east of US 1 with an existing underpass. The existing AADT is 6,000 vpd near

US 1 and 7,900 vpd near US 1A.

- **Mason Street:** This roadway is a two-lane undivided roadway with a non-signalized T-intersection at US 1 and full median opening. It is an east-west roadway that serves established residential neighborhoods in the northern part of downtown Franklinton, and it crosses the CSX railroad east of US 1. Historically it was the main east west connection through Franklinton before NC 56.
- **Cheatham Street:** This roadway is a two-lane undivided roadway with a non-signalized T- intersection at US 1 and full median opening. A portion of Cheatham Street is a north-south roadway that serves established residential neighborhoods in the northern part of downtown Franklinton.

- **US 1A North Main Street:** This roadway is the northern end of the US 1A leg that goes through the downtown Franklinton. It is north of Franklinton and is a two-lane undivided roadway with a four-leg, non-signalized intersection at US 1 and a full median opening. It connects with Mann Street west of US 1. The existing AADT is 950 vpd near US 1.
- **Mann Street:** This roadway is a two-lane undivided roadway that provides a connection between US 1 and Collins Road. It primarily provides access to residential areas, and connects to the US 1A/ North Main Street with a 4-leg intersection.
- **Cone Drive:** This roadway is a two-lane undivided roadway with a non-signalized T-intersection at US 1 and a full median opening. It serves single-family (mobile home) residences west of US 1 and north of Franklinton.
- **Eric Medlin Road:** This roadway is a two-lane undivided roadway with a non-signalized T- intersection at US 1 and full median opening. It is a local connector between US 1 and Winston Street, and it crosses the CSX railroad east of US 1.
- **Winston Street:** This roadway is a two-lane undivided roadway with a non-signalized T- intersection at US 1 and full median opening. It is a local connector between US 1 and Montgomery Road, and is currently closed at the CSX railroad crossing.

Parallel Streets

Roadways west of US 1

- **Long Mill Road:** This roadway is a two-lane undivided roadway that connects Long Mill Elementary School in the South section of the US 1 corridor to residential neighborhoods in the vicinity of NC 56. It also connects the Long Mill Elementary School to Youngsville.

- **Green Hill Road:** This roadway is a two-lane undivided roadway that connects to NC 56 to residential neighborhoods north of NC 56. The existing AADT is 1,200 vpd.

Roadways east of US 1

- **Fleming Road:** This roadway is a two-lane undivided roadway that connects NC **96 (eastern You**ngsville) to Bert Winston Road and serves residential neighborhoods east of US 1.

- **Hicks Road:** This roadway is a two-lane undivided roadway that connects Cedar Creek Road and forms a loop. It serves residential neighborhoods between US 1 and Cedar Creek Road.

- **Cedar Creek Road:** This roadway is a two-lane undivided north-south roadway that connects NC 96 (eastern Youngsville) to US 1A in downtown Franklinton. It serves as a thoroughfare between the towns of Youngsville and Franklinton, and also serves residential neighborhoods and the new Franklinton High School.

- **Lane Store Road:** This roadway is a two-lane undivided north-south roadway that connects Cedar Creek Road and NC 56 east of Franklinton. Lane Store Road serves residential neighborhoods on the east side of downtown Franklinton.

- **Winston Street:** This roadway is a two-lane undivided roadway that parallels US 1 from downtown Franklinton to Montgomery Road, and serves low density residential neighborhoods adjacent to the east of US 1.

- **Montgomery Road:** This roadway is a two-lane undivided roadway that connects Winston Street (and US 1) to residential neighborhoods and new subdivisions at the northeastern portion of the project study area. The existing AADT is 560 vpd.

2.3.1.3 *Roadway Conditions*

Geometric Design Issues

The existing US 1 corridor was investigated to identify roadway characteristics that would require improvements to provide a 60 mph design speed. The following observations were noted:

Horizontal Alignment: Approximately 2,000 feet south of the Tar River Bridge, US 1 follows separate horizontal alignments in the northbound and southbound directions. The northbound movement is on a newer alignment with a longer radius and higher design speed. Regardless, both directions meet the horizontal requirements for a 60 mph design speed. All remaining horizontal curves on the project segment of US 1 also meet the requirements for a 60 mph design speed.

Vertical Alignment: Final Construction plans and LIDAR elevation data were used to determine the project segment vertical alignment attributes. All together, more than 65 vertical curves (and associated grades) were reviewed along existing US 1. These attributes are presented in Table 2-4 and are discussed below.

For a rural and urban freeway with a design speed of 60 MPH, the American Association of State Highway and Transportation Officials (AASHTO) recommends a maximum grade of 4 percent and a minimum grade of 0.3 percent. Nine grade discrepancies were noted. Of the nine grade discrepancies, three did not meet a minimum grade of 0.3 percent. Six grades were greater than the recommended 4 percent maximum.

However all grades were less than 5 percent which is acceptable for a freeway with a design speed of 55 mph. NCDOT generally allows use of the posted speed in design assumptions. Since the existing US 1 is posted at 55 mph, maintaining existing conditions of a 55 mph design speed could be acceptable, although a design exception would need to be granted. Grades exceeding the maximum 4 percent are highlighted in blue in Table 2-4.

AASHTO also recommends that all vertical curves meet at least the stopping sight distance based on design speed. A total of 19 vertical curves (30 percent of total) do not meet a 60 mph design speed. Of those 19 discrepancies, 13 (20 percent) met a design speed equal to the posted speed of 55 mph, however, and could potentially be acceptable with a design exception.

Table 2-4. Vertical Alignment Deficiencies

Direction	Location of Curve VPI or Begin Grade	Type of Discrepancy	Design Speed Met	Remarks	Recommendations
Both	Intersection of US 1/US 1A Park Ave	Grade (max)	55	Existing grade exceeds maximum grade of 4% for 60 MPH Freeway	Grade meets requirements for posted speed of 55 MPH, therefore no corrective action required.
Both	800' south of Bert Winston	Sag Vertical Curve	30	Existing vertical curve does not meet required K values for 60 MPH	Use longer vertical curve to meet 60 MPH design speed. Approximately 1200' of reconstruction.
Both	500' north of Bert Winston	Split Grades		Approximately 2000' of split grade between NB and SB lanes	May require raising the grade or corrective action in the median.
Both	800' north of Materials Drive	Grade (max)	55	Existing grade exceeds maximum grade of 4% for 60 MPH Freeway	Grade meets requirements for posted speed of 55 MPH, therefore no corrective action required.
Both	1600' north of Materials Drive	Sag Vertical Curve	55	Existing vertical curve does not meet required K values for 60 MPH	Sag vertical curve meets 55 MPH posted speed, therefore no corrective action required.
Both	1600' north of Materials Drive	Grade (max)	55	Existing grade exceeds maximum grade of 4% for 60 MPH Freeway	Grade meets requirements for posted speed of 55 MPH, therefore no corrective action required.
Both	2600' north of Materials Drive	Crest Vertical Curve	50	Existing vertical curve does not meet required K values for 60 MPH	Use longer vertical curve to meet 60 MPH design speed. Approximately 600' of reconstruction.
SB	500' north of US 1/US 1A (South Main Street)	Sag Vertical Curve	55	Existing vertical curve does not meet required K values for 60 MPH	Sag vertical curve meets 55 MPH posted speed, therefore no corrective action required.
SB	500' north of US 1/US 1A (South Main Street)	Grade (max)	55	Existing grade exceeds maximum grade of 4% for 60 MPH Freeway	Grade meets requirements for posted speed of 55 MPH, therefore no corrective action required.
SB	1700' north of NC-56	Sag Vertical Curve	55	Existing vertical curve does not meet required K values for 60 MPH	Sag vertical curve meets 55 MPH posted speed, therefore no corrective action required.
SB	500' north of Cheatham Street	Sag Vertical Curve	55	Existing vertical curve does not meet required K values for 60 MPH	Sag vertical curve meets 55 MPH posted speed, therefore no corrective action required.

Table 2-4. Vertical Alignment Deficiencies (continued)

Direction	Location of Curve VPI or Begin Grade	Type of Discrepancy	Design Speed Met	Remarks	Recommendations
Both	US-1A/US-1 (Main Street - north)	Split Grades		Approximately 2000' of split grade between NB and SB lanes	May require raising the grade or corrective action in the median.
NB	1500' north of US-1A/US-1 (Main Street -north)	Sag Vertical Curve	40	Existing vertical curve does not meet required K values for 60 MPH	Vertical curves are located relatively close to one another. Adjusting any of the vertical curves would likely require adjusting all vertical curves in this area. Approximately 2000' of reconstruction.
NB	1800' north of US-1A/US-1 (Main Street -north)	Crest Vertical Curve	45	Existing vertical curve does not meet required K values for 60 MPH	
NB	2200' north of US-1A/US-1 (Main Street -north)	Sag Vertical Curve	55	Existing vertical curve does not meet required K values for 60 MPH	
NB	2200' north of US-1A/US-1 (Main Street -north)	Grade (min)		Existing grade does not meet required 0.3% minimum	
NB	4000' north of US-1A/US-1 (Main Street -north)	Sag Vertical Curve	55	Existing vertical curve does not meet required K values for 60 MPH	Sag vertical curve meets 55 MPH posted speed, therefore no corrective action required.
NB	2000' south of Eric Medlin Road	Crest Vertical Curve	50	Existing vertical curve does not meet required K values for 60 MPH	Use longer vertical curve to meet 60 MPH design speed. Approximately 300' of reconstruction.
NB	1250' south of Eric Medlin Road	Sag Vertical Curve	40	Existing vertical curve does not meet required K values for 60 MPH	Use longer vertical curve to meet 60 MPH design speed. Approximately 700' of reconstruction.
SB	1250' south of Eric Medlin Road	Sag Vertical Curve	55	Existing vertical curve does not meet required K values for 60 MPH	Sag vertical curve meets 55 MPH posted speed, therefore no corrective action required.
NB	300' north of Eric Medlin Road	Grade (max)	55	Existing grade exceeds maximum grade of 4% for 60 MPH Freeway	Grade meets requirements for posted speed of 55 MPH, therefore no corrective action required.

Table 2-4. Vertical Alignment Deficiencies (concluded)

Direction	Location of Curve VPI or Begin Grade	Type of Discrepancy	Design Speed Met	Remarks	Recommendations
NB	1100' north of Eric Medlin Road	Sag Vertical Curve	55	Existing vertical curve does not meet required K values for 60 MPH	Sag vertical curve meets 55 MPH posted speed, therefore no corrective action required.
NB	1100' north of Eric Medlin Road	Grade (min)		Existing grade does not meet required 0.3% minimum	If existing cross slope is sufficient enough to allow for drainage then no action required.
SB	900' south of Winston Street	Sag Vertical Curve	55	Existing vertical curve does not meet required K values for 60 MPH	Sag vertical curve meets 55 MPH posted speed, therefore no corrective action required.
NB	900' south of Winston Street	Sag Vertical Curve	55	Existing vertical curve does not meet required K values for 60 MPH	Sag vertical curve meets 55 MPH posted speed, therefore no corrective action required.
SB	900' north of Winston Street	Sag Vertical Curve	55	Existing vertical curve does not meet required K values for 60 MPH	Sag vertical curve meets 55 MPH posted speed, therefore no corrective action required.
NB	900' north of Winston Street	Sag Vertical Curve	55	Existing vertical curve does not meet required K values for 60 MPH	Sag vertical curve meets 55 MPH posted speed, therefore no corrective action required.
NB	1500' south of Tar River Bridge	Grade (max)	55	Existing grade exceeds maximum grade of 4% for 60 MPH Freeway	Grade meets requirements for posted speed of 55 MPH, therefore no corrective action required.
NB	700' south of Tar River Bridge	Sag Vertical Curve	55	Existing vertical curve does not meet required K values for 60 MPH	Sag vertical curve meets 55 MPH posted speed, therefore no corrective action required.
NB	700' south of Tar River Bridge	Grade (min)		Existing grade does not meet required 0.3% minimum	If existing cross slope is sufficient enough to allow for drainage then no action required.

Color Legend:

Green: Vertical curves meeting 55 mph design speed.

Yellow: Vertical curves meeting 50 mph design speed.

Red: Vertical curves with lower than 50 mph design speed.

Orange: Split grades with different NB and SB profiles.

Blue: Grades either exceeding 4% or less than 0.3%.

Notes:

1. The data above does not include vertical curves providing a design speed of 60 mph or greater.
2. Design exceptions may be applicable, particularly if the posted 55 mph speed limit is not exceeded.

In addition, all of these 13 curves are sags which are less critical than crest curves. Of the remaining vertical curves, 2 vertical curves met a design speed of 50 mph (highlighted yellow in Table 2-4) and 4 vertical curves failed to meet a design speed of 50 mph (highlighted red). These six curves will need improvements as part of the ultimate freeway upgrade on the US 1.

Upon review of the final construction plans, there are some segments along US 1 where the original two-lane US 1 (now southbound lanes) follow a different vertical profile than the newer northbound lanes. Field review has identified two areas where the difference in elevation is significant as shown in orange in Table 2-4. This is not desirable for a freeway without proper median treatments. As part of a freeway upgrade, these segments of US 1 would need reconstruction.

Access Issues

Existing access was reviewed for the US 1 corridor. The results of the review are presented below in Table 2-5. The review determined that most of the median openings along the corridor are at least 1,200 feet apart. However, three median openings were found to be approximately 1,000 feet apart. In addition the Janis Street and Mason Street crossovers are both located less than 400 feet from the NC 56 interchange ramp connections to US 1.

Although 400 feet spacing can be allowed for an intersection without full access, the NCDOT standard for spacing between median breaks allowing all movements is 1,200 feet. With turn restrictions this can be reduced to 400 feet. A separate criterion is the need to have adequate distance for merging on either side of an interchange (typically 1,200 feet). Using this criterion, the following recommendations are made:

- **Janice Street:** At Janice Street, close the existing median crossing in the short term. This is recommended due to the crash history and potential for weaving of traffic from the NC 96 interchange southbound ramp to a left turn at Janice Street.
- **Mason Street:** At Mason Street, conversion to a leftover is recommended in the short term. Although this intersection is also 400 feet from the interchange, southbound traffic using Mason Street of the NC 96 ramp make their maneuvers approaching the

Table 2-5. Median Openings and Access on US 1

Type of Intersection/ Access Point	South Sect. 1 Park Avenue to US 1A south	Central Sect. 2A and 2B US 1A south to US 1A north	North Sect. 3 US 1A north to Vance County	Adjusted Total for Study Area
Miles	1.81	2.80	3.58	8.19
Interchange	0	1	0	1
Traffic Signal	1 (4-leg)	1 (4-leg)	0	2
4-leg median opening	0	3	2	5
3-leg (T) median opening	2	6	5	13
U-turn only median opening	0	0	3	3
Total Median Openings	3	10	10	23
Right In-Right Out Access Points	11	22	16	49

Note: Computation of Total Median Openings does not include the NC 56 interchange.

interchange instead of departing the interchange. This allows more decision time and less conflict. The elimination of the left turn from Mason Street to US 1 southbound would eliminate potential conflict of Mason Street traffic exiting immediately at NC 96.

2.3.2 Traffic Analysis

One of the key purposes of this study is to identify possible capacity constraints on US 1 and along major connections to US 1. Using this information, proposed improvements will be investigated to provide adequate capacity through the 2040 design year. Evaluations of congestion thresholds are examined as part of this study to identify the need for interim improvements to maintain acceptable operations prior to 2040.

2.3.2.1 *Capacity Analysis Thresholds*

Level of service (LOS) thresholds are used to characterize traffic capacity on highways and roadways. The LOS approach uses a standardized technique that results in categorizing a roadway or highway from LOS A to LOS F. LOS A represents uncongested flow. LOS F represents extreme congestion and high levels of delay. In general, LOS D is used as the desired threshold when examining urban facilities and LOS C is preferred for rural facilities. LOS for various types of highways and roadways is presented below in Table 2-6.

To provide an initial capacity analysis of the corridor, LOS thresholds for average daily traffic were determined for the existing 4-lane rural highway as well as potential for future typical

Table 2-6. Level of Service Thresholds for 4 typical sections

Facility Type	Level of Service Thresholds (vehicles per day)				
	A	B	C	D	E
4–lane section					
Rural Highway	16,400	26,800	38,700	52,000	55,200
Principal Arterial	16,000	29,800	31,700	34,200	37,700
Superstreet	36,400	39,600	41,900	45,200	49,700
Freeway	18,100	29,600	42,700	53,800	60,800

Notes:

1. ADT lookup table developed using NCLOS software.
2. Daily volumes based on assumption of 10% peak hour percentage and 60-40 directional split.
3. Principal arterial analysis assumes 50% green time for US 1 throughs. Superstreet analysis assumes 65% green time for US 1 throughs.

sections that are considered for US 1 improvements. NCLOS planning level capacity software was used to estimate the daily LOS thresholds. The LOS thresholds are shown in Table 2-6.

It needs to be noted that LOS for freeways and arterials cannot be directly compared. In some cases, a freeway may operate at a worse LOS than an arterial with similar volumes. This apparent discrepancy is because the LOS ratings are based on a driver's perception of the quality of flow. On a freeway even small reductions in speed are perceived negatively although the drivers can continue to flow at a relatively high speed without stops. With an arterial or superstreet, however, the average driver is conditioned to accept a certain amount of delay including, by necessity, stopping at red lights. In general, a freeway will almost always provide relatively continuous flow with no stops except at very high levels of congestion and breakdown conditions.

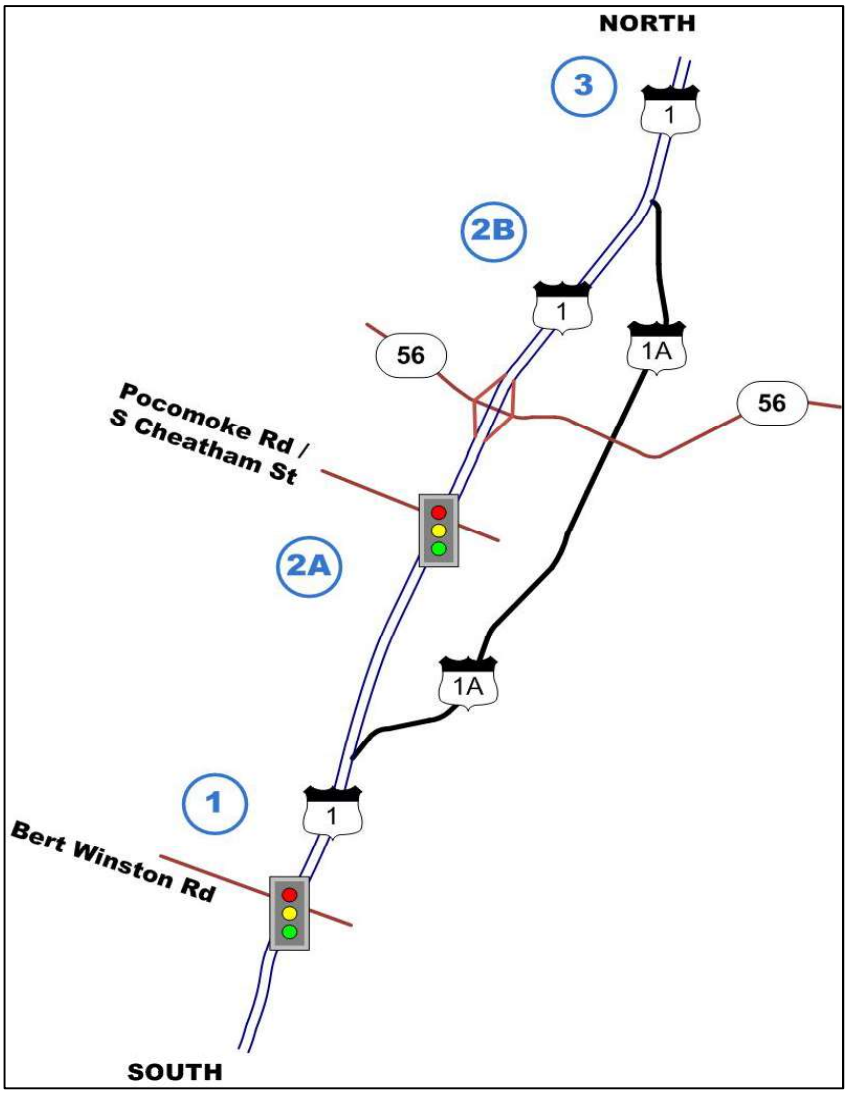
2.3.2.2 *Existing US 1 Traffic Volumes & Capacity Analysis*

Daily traffic volumes were examined to estimate existing Level of Service (LOS) on the corridor. The Rural Highway category was used to characterize the northern portion of US 1 because it is consistent with the present roadway. The Principal Arterial category was used to characterize the US 1 portion south of NC 56 because of the presence of two signals in this location. Table 2-7 presents the existing LOS for the project sections. The sections in the table below are shown in Figure 2-5.

Table 2-7. Existing Volumes and Capacity Analysis

Section	Roadway Description	Existing 2010 Vehicles per Day (VPD)	LOS
North	Northern Limit - Vance County	12,000	A
3	North of Franklinton - north of US 1A	12,000	A
2B	Franklinton - north of NC 56	12,000	A
2A	Franklinton south of NC 56	16,000	B
1	South of Franklinton - south of US 1A	18,000	B
South	Southern Limit to Youngsville	17,000	B

Figure 2-5. Roadway Sections for Capacity Analysis



In general, existing traffic volumes on US 1 in the study area are relatively low for a four-lane roadway, ranging from 18,000 vpd on the southern section of the corridor to 12,000 vpd near the corridor's northern limits. Traffic volumes are higher south of the existing NC 56 interchange in Franklinton with a higher volume of vehicles traveling to and from the south. Based on the results of the volumes and capacity analysis, it can be concluded that the existing US 1 corridor as sufficient capacity to serve the existing traffic volumes.

2.3.2.3 *Crash Analysis*

A crash analysis was also conducted for 8.2 miles of US 1 within the study area. This included an examination of crash rates, crash types and identification of high crash locations on the corridor.

Crash Rate Analysis

The crash rate analysis was conducted using data provided by the NCDOT Traffic Engineering Accident Analysis System (TEAAS) crash records database for the three year period between December 2008 and November 2011. The total, fatal, and injury-only crash rates were calculated for four sections along the corridor and for the entire corridor. The analysis is summarized in Table 2-8.

Table 2-8. Crash Rate Analysis for US 1

	South Sect. 1 Park Avenue to US 1A south	Central Sect. 2A US 1A south to NC 56	Central Sect. 2B NC 56 to US 1A north	North Sect. 3 US 1A north to Vance County	Adjusted Total for Study Area	Statewide Average
Miles	2.09	1.54	1.02	3.75	8.40	N/A
Total Crash Rate	**122.35**	61.00	35.81	45.92	66.47	84.06
Fatal Crash Rate	0.00	0.00	0.00	**2.78**	**1.24**	0.72
Injury Crash Rate	**42.45**	13.55	10.23	8.35	18.02	26.65

Notes:

1. Crash rates summarized in crashes per 100 million vehicle miles (100 MVM).
2. Rates shown in bold exceed the statewide average for rural 4-lane divided US highways.

From Table 2-8 it is observed that:

- Overall the total crash rate on US 1 is slightly lower than similar rural 4-lane divided US highways in North Carolina.

- The South Section 1 has the highest total and injury crash rate. The rates in this section exceed the statewide average for both crash classifications.
- North Section 3 had two fatal crashes. Of these, one occurred near the intersection of Cone Drive. The second fatality occurred approximately 0.5 miles south of Cone Drive. One of the crashes involved a head-on truck-car collision with alcohol involved. The other involved a single vehicle entering a ditch and overturning at 4:30 AM. Both crashes occurred on a straight section of roadway. The combination of these two crashes resulted in a fatal crash rate on US 1 exceeding the state average.

Type of Crashes

In addition to the crash rate analysis, a review of the types of crashes occurring on the corridor was conducted. This analysis is summarized in Table 2-9.

Table 2-9. Types of Crashes on US 1

Type of Crash	South Sect. 1 Park Avenue to US 1A south		Central Sect. 2A US 1A south to NC 56		Central Sect. 2B NC 56 to US 1A north		North Sect. 3 US 1A north to Vance County		Adjusted Total for Study Area	
Miles	**2.09**		**1.54**		**1.02**		**3.75**		**8.40**	
Angle	5	10.2%	2	11.1%	0	0.0%	1	3.0%	8	7.5%
Animal	10	20.4%	6	33.3%	4	57.1%	16	48.5%	36	33.6%
Fixed Object	17	34.7%	2	11.1%	1	14.3%	5	15.2%	25	23.4%
Head On	0	0.0%	0	0.0%	0	0.0%	1	3.0%	1	0.9%
Left Turn – Different Roadways	0	0.0%	4	22.2%	0	0.0%	0	0.0%	4	3.7%
Left Turn – Same Roadway	2	4.1%	0	0.0%	0	0.0%	0	0.0%	2	1.9%
Movable Object	2	4.1%	0	0.0%	0	0.0%	2	6.1%	4	3.7%
Other Non-Collision	1	2.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%
Overturn/Rollover	3	6.1%	0	0.0%	1	14.3%	2	6.1%	6	5.6%
Ran Off Road – Left	0	0.0%	0	0.0%	0	0.0%	1	3.0%	1	0.9%
Rear End – Slow or Stop	3	6.1%	1	5.6%	0	0.0%	4	12.1%	8	7.5%
Rear End – Turn	1	2.0%	0	0.0%	0	0.0%	0	0.0%	1	0.9%
Sideswipe, Same Direction	5	10.2%	3	16.7%	1	14.3%	1	3.0%	10	9.3%
Total	**49**	**100%**	**18**	**100%**	**7**	**100%**	**33**	**100%**	**107**	**100%**
Single Vehicle Crashes		65%		42%		86%		79%		67%

From the analysis in Table 2-9 it is observed that:

- Overall 67 percent of crashes involved a single vehicle. The only section of the corridor with more than 50 percent of crashes involving two vehicles was the Central section between US 1A and NC 56.This data is indicative of crashes related to access patterns.
- The second most common type of crash (23.4 percent) is "Fixed Object" type.
- The southern section had more than double the percentage of fixed object crashes (34.7 percent) than any other segment. A review of the data indicated that 4 of the 6 crashes related to catch basins in the US 1 study area occurred in this section (2 in the median, 2 on the shoulder). In addition, 50 percent of the fixed object crashes in the South Section were with the shoulder, embankment, or trees.
- The most common type of crash (33.6 percent) involved an animal being hit by a vehicle. These crashes occurred throughout the corridor.
- There was only one head-on collision. It resulted in a fatality. The crash was alcohol related.
- The percent of crashes involving more than one vehicle was highest (58 percent) in the central section. This observation confirms a higher level of intersection and access related crashes related to the higher levels of retail development.

High Frequency Crash Locations

The following locations were identified as part of NCDOT's high frequency crash location review of Franklin County (locations are identified from south to north):

- US 1 at US 1A (Park Avenue)
- US 1 at US 1A (South Main Street)
- US 1 at US 1A (North Main Street)
- US 1 between Bert Winston Road and US 1A (South Main Street)
- US 1 just south of the Tar River Bridge

Using this data as a starting point and the NCDOT TEAAS crash data to identify the locations of specific crashes, additional analysis was performed. Table 2-10 identifies the high frequency crash locations identified along the corridor.

Table 2-10. High Frequency Crash Locations

Location	Number of Crashes	Comments
US 1 at US 1A Park Avenue	6	Highest intersection crash rate on the corridor (42.15).
US 1 at Bert Winston	7	Third highest intersection crash rate (30.44) in corridor, but signal recently installed.
US 1 north of Bert Winston	9	Dual vertical alignments with multiple vertical curves and graded median.
US 1 at US 1A South Main Street	6	Increasing volumes may warrant signal in short term.
US 1 at Cheatham/Pocomoke	7	Second highest intersection crash rate on the corridor (30.96).
US 1 at Janis Street	4	Janis Street is a low volume road with a median opening located less than 400 feet from the NC 56 interchange.
US 1 south of Tar River Bridge	7	Roadway geometry has separate horizontal alignments, but even distribution of crashes north and south bound.

Notes:

1. Intersection crash rate shown in crashes per 100 million vehicles entering the intersection.

2. Crash locations are identified from south to north.

2.3.3 Transit and Paratransit

Within the US 1 Phase II study corridor, transit does not provide substantial congestion relief due to low-density rural land uses in the corridor, sparse industrial developments, and limited transit investments. However, there are several transit projects in adopted local and regional plans which will change the transit travel markets and enhance transit mobility and connectivity in the future. These planned transit improvements are listed in Table 4-1.

Cumulatively, these transit projects define the No-Build or "Baseline" transit conditions for the US 1 Phase II study corridor. These transit projects will primarily cover areas south of the US 1 Phase II corridor. The region's 2035 Long-Range Transportation Plan (2035 LRTP), however, does call for Express Bus to be extended to Franklinton by 2035.

The transit alternatives investigated in the US 1 Phase II corridor study would provide enhanced connectivity with such destinations as Town of Wake Forest, Capital Plaza Shopping Center located along US 1 south of NC 98, and the Triangle Town Center Shopping Mall located along US 1 just south of I-540.

2.3.3.1 *Paratransit Services*

The Kerr Area Rural Transit System (KARTS) is a public transportation system operation under the Kerr Area Transportation Authority that is located in Henderson, NC. KARTS is a regional community system that serves human service agencies and the public through subscription, deviated fixed and dial-a-ride routes.

The Kerr-Tar Council of Government website indicates that KARTS serves Franklin, Granville, Vance, and Warren counties with out-of-area destinations to Durham, Chapel Hill, and Raleigh. Within the Franklin County area, the major destination points are the Food Lion in Franklinton and the Wal-Mart near Louisburg. Longer distance destinations include the Triangle Town Center Mall, Wake Forest, and other Durham and Raleigh destinations. In the future these paratransit services will continue to serve an important role for transit-dependent populations in the region.

According to the Executive Director of the Kerr Area Transportation Authority, KARTS provided a fixed-route service between the towns of Louisburg, Franklinton, and Youngsville in 2007. This service was discontinued due to low ridership. The Executive Director also indicated that most of KARTS demand response trips originated in Franklinton for service to areas in Louisburg. There are very few trips that would originate from outlying areas to Franklinton.

2.3.4 Rail

A CSX railroad runs through the towns of Youngsville and Franklinton and continues past the Vance County line north of Franklinton. This rail line is the CSX "S" line, which runs from Hamlet, North Carolina to Henderson, North Carolina. This portion of the "S" line from the Edgeton Station north of Raleigh extends through the study area and on to the end of the main track in Henderson that is called the Norlina Subdivision.

2.3.4.1 *CSX Rail Line in the Study Area*

The CSX railroad provides for freight service using CSX trains with a frequency of two trains per day (one northbound and one southbound) through the study area. Neither Amtrak nor Norfolk Southern trains utilize the Norlina Subdivision. Information regarding the "S" line and Norlina Subdivision was obtained from the report *CSX Transportation Florence Division Timetable No. 7* (CSX, May 2012).

The CSX railroad runs along the east side of US 1. This railroad alignment is a single track system throughout the study limits and a double track system outside of the study limits south of the US 1A Park Avenue junction with US 1. There are private railroad spurs serving small industrial or commercial areas north of Youngsville and in downtown Franklinton. There are no railroad sidings or railyards within the project study area. The closest railroad sidings and railyards are in Henderson to the north and in downtown Youngsville to the south.

Within the study area limits, the railroad right-of-way varies from 94 feet between US 1 A and downtown Franklinton, to a 100-foot wide section north of downtown Franklinton, and 80 foot section from north of Franklinton to the Vance County line. The CSX railroad right-of-way is adjacent to the US 1 right-of-way on a short segment just south of Bert Winston Road and starting from north of US 1A (north of Franklinton) to south of Eric Medlin Road. The railroad right-of-way in these areas is approximately 94 feet and 80 feet, respectively.

In addition to the main CSX line running north-south along US 1, there is an abandoned rail line currently in place between Franklinton and Louisburg. This line connects with the main line just north of Mason Street. The rail has been removed from this section of rail right of way. The corridor has been identified as a future rails to trails project linking Franklinton and Louisburg.

2.3.4.2 *Rail – Roadway Crossings in the Study Area*

The CSX railroad is typically at grade with adjacent roadways, except for areas where the railroad section is generally higher than the topography (and nearby or crossing roadways) in the vicinity of Bert Winston Road east of US 1, in areas of downtown Franklinton (NC 56), and in areas adjacent to US 1 from US 1A (north of Franklinton) to south of Eric Medlin Road.

There are a total of 11 at-grade private and public crossings within the project study area. Of the 11 at-grade crossings, six are within the Franklinton town limits. All of the at-grade roadway railroad crossings are protected by crossbucks, signals, and automatic gates to stop the flow of traffic, with the exception of the Joyner Street crossing, which is protected by crossbucks and signals only.

Automatic warning devices are also provided to detect the presence (and speed) of trains as they approach the railroad crossing to signal lights and the gates to either close or open. Typical electronic sensing devices are grade crossing predictors (stand-alone circuit sensors that identify an incoming train, evaluate its speed, and continually sends information to protection facilities at the railroad crossing), style "C" predictors (direct current track circuit at a fixed distance from the railroad crossing that triggers protection facilities at the railroad crossing), and relays which utilize overhead electric wires to relay information between railroad crossings.

The only grade separated crossing in the study area is the NC 56 Green Street underpass. This underpass has restricted width with structure walls immediately adjacent to the travelway.

The at-grade railroad crossings within the project study area and the crossing safety/protection facility and automatic warning devices (if applicable) that are associated with them are presented below:

- **Bert Winston Road:** This crossing includes signals and gates for each roadway direction and automatic warning via grade crossing predictors
- **Cedar Creek Road:** This crossing includes signals and gates for each roadway direction and automatic warning via relay
- **Hawkins Road**: This crossing includes signals and gates for each roadway direction and automatic warning via relay
- **College Street:** This crossing includes signals and gates for each roadway direction and automatic warning via relay
- **Mason Street:** This crossing includes signals and gates for each roadway direction and automatic warning via relay
- **Joyner Street:** This crossing includes crossbucks and flashing lights only and automatic warning via relay
- **Pearce Street:** This crossing includes signals and gates for each roadway direction and automatic warning via relay
- **Private Road north of US 1A:** This crossing includes crossbucks only (residential property access to US 1)

- **Eric Medlin Road:** This crossing includes This crossing includes signals and gates for each roadway direction and automatic warning via relay
- **Winston Street:** This crossing was recently closed and will not be reopened.
- **Private Road north of Winston Street:** This crossing includes crossbucks only (agricultural/residential property access to US 1)

There are no designated railroad horn quiet zones within the study limits. The speed limit for trains throughout the study area is 25 mph.

2.3.5 Bicycle

Currently there are no designated or dedicated bicycle facilities with the project study area. The existing local street network within the project limits typically includes rural two-lane undivided and rural four-lane divided roadways that do not have separated accommodations for bicyclists.

A rails to trails corridor has been identified linking Franklinton and Louisburg. Within Louisburg, the trail has been constructed for bicycle and pedestrian access, but no work has been done in Franklinton or the connector.

2.3.6 Pedestrian

Currently there are sidewalks that are limited to a few streets within the Town of Franklinton. The existing local street network within the project limits typically includes rural two-lane undivided and rural four-lane divided roadways that do not have accommodations for sidewalks. Below is a list of streets with existing sidewalks within the study area

2.3.6.1 *Youngsville*

The Oak Park Subdivision has sidewalks on Oak Park Boulevard, Glen Loft Drive, Shore Pine Drive, Ambergate Drive and Leaf Spring Way.

2.3.6.2 *Franklinton*

Sidewalks existing in the Town of Franklinton include those found at the following locations:

- **US 1A Main Street:** On both sides of US 1A Main Street from College Street to Peace Street
- **College Street:** On the north side of College Street from Hillsborough Street to Main Street/US 1A

- **Green Street:** On the south side of Green Street/NC 56 from Hillsborough Street to Main Street/US 1A, and both Sides of Green Street/NC 56 from Clegg Street to Chavis Street.
- **Water Street:** On the north Side of Water Street from US 1A (South Main Street) to W. Green Street.
- **Chavis Street:** On both sides of Chavis Stree**t** from US 1A Main Street to Mason Street, and the west side of Chavis Street south of Joyner Street.
- **Mason Street:** On both sides of Mason Street from Cheatham Street to Billy Goat Street, and the north side of Mason Street from Billy Goat Street to Korea Street.
- **Cheatham Street:** On the west side of Cheatham Street from Mason Street to north of Williams Street.
- **Hillsborough Street:** On the west side of Hillsborough Street from Mason Street to Lee Street.
- **Vine Street:** On the south side of Vine Street from Rams Way to Cheatham Street, and both sides of Vine Street from Hillsborough Street to US 1A Main Street.
- **Winston Street:** On the east side of Winston Street north of Joyner Street.
- **Joyner Street:** On the south side of Joyner Street from Winston Street to Chavis Street.
- **Williams Street:** On the north side of Williams Street from N. Hillsborough Street to Cheatham Street.
- **Lee Street:** On the south side of Lee Street from Hillsborough Street to US 1A Main Street

Town of Franklinton officials stated that the primary destinations for walking and bicycling are the Food Lion, Franklinton Elementary and Franklinton High School, and the Wal-Mart in Louisburg. According to town officials, pedestrians typically use College Street (partial sidewalk) to walk to the Food Lion and Main Street (no sidewalk) to walk to Franklinton Elementary.