



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

COMMUNITY IMPACT ASSESSMENT

**Cape Fear Crossing
Brunswick and New Hanover Counties
North Carolina**

STIP Project No. U-4738

Submitted by: URS Corporation, North Carolina

October 2015

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EXECUTIVE SUMMARY

Project Overview

The North Carolina Department of Transportation (NCDOT) proposes to construct a project known as the Cape Fear Crossing, formerly named the Cape Fear Skyway. The proposed project is a roadway extending from the vicinity of US 17 and I-140 in Brunswick County to US 421 in New Hanover County, including a crossing of the Cape Fear River. The proposed action is listed in NCDOT's *2016-2025 State Transportation Improvement Program (STIP)* as Project Number U-4738 (NCDOT 2015). Construct a new facility with a structure over the Cape Fear River." The project is currently funded for planning and environmental studies, and unfunded for right of way acquisition or construction.

The NEPA/Section 404 Merger Team, which consists of local, state and federal agency representatives, has selected 12 Detailed Study Alternatives (Study Alternatives). These include alternatives that would upgrade existing US 17, new location alternatives, and hybrid alternatives that include upgrades of US 17 and new location segments. These alternatives were selected for their potential to fulfill the purpose and need of the project while minimizing impacts to human and natural environmental resources.

For the purposes of discussion in this report, the alternatives will be referred to as "upgrade existing US 17" alternatives, "Northern Alternatives" (those that begin on I-140 or at the I-140/US 17 interchange and bisect the Brunswick Forest development), and the "Southern Alternatives" (those that begin at the I-140/US 17 interchange and travel south of the Brunswick Forest development). The purpose of this report is to identify potential impacts to human environmental resources as a result of the project.

Community Context, Direction, and Notable Features

The Project Study Area (PSA) encompasses two counties, Brunswick and New Hanover. Both counties include distinct characteristics which are vastly different from the other. In Brunswick County, the PSA is mostly a suburban and rural area that includes a large portion of the Town of Leland that has experienced rapid residential and commercial growth over the last two decades. In New Hanover County, the PSA is almost entirely within the City of Wilmington. In Wilmington, the PSA includes a historic residential area, multi-family housing, the Port of Wilmington, and multiple community features. The following are notable features located within the PSA:

- Several residential neighborhoods, shopping centers, and business parks in Brunswick County abut commercial development along US 17; many are annexed by the Town of Leland. Areas within New Hanover County are more urban than in Brunswick County. A majority of the PSA within New Hanover County is within the City of Wilmington's jurisdiction. Wilmington's Central Business District is located in downtown Wilmington, north of the Cape Fear Memorial Bridge. The area is home to an array of small and large companies, banks, the Wilmington Convention Center, local shops, several historic structures, hotels, dining options, parking, and pedestrian accommodations.
- There are 11 parks owned by the municipal and county governments in the PSA. Other recreational facilities include the Wilmington Riverwalk along the Cape Fear River, the Gary Shell Cross City Trail which is primarily an off-road multi-use trail, several designated bicycle routes, and the Cape Fear National Golf Course in Brunswick Forest. There are no state or national parks or forests within the PSA.

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- The City of Wilmington is served by 11 City of Wilmington Fire Stations. Unincorporated areas of New Hanover County are served by the New Hanover County Fire Department. Brunswick County Emergency Services provides fire and EMS services to all of Brunswick County and works in conjunction with municipalities within the county.
 - The Port of Wilmington is situated on the eastern bank of the Cape Fear River with a 42-foot deep navigation channel to provide access from the Atlantic Ocean. The Port is equipped to handle containerized, bulk, break-bulk and specialized cargos.
 - There are four separately owned Voluntary Agricultural Districts (VADs) located within the PSA which account for approximately 850 acres of land, of which 455 acres are within the PSA boundary. The North Carolina Department of Agriculture and Consumer Services has a 'Century Farm' program that recognizes family farms that have been continuously operating for over 100 years. There are 3 Century Farms in Brunswick County within the DCIA.
 - In New Hanover County, pedestrian facilities and designated bicycle routes are abundant throughout the PSA. There are no designated bicycle routes in the PSA in Brunswick County. In Brunswick County, designated bicycle facilities are located within residential developments with no connection between neighborhoods. Several pedestrians were noted during the field visit using sidewalks, worn paths, and the roadway in Brunswick and New Hanover Counties.
 - The municipalities within the PSA are served by the Cape Fear Public Transit Authority which operates as Wave Transit and provides eight different transit alternatives.
 - CSX owns and operates a rail line within the PSA. The Wilmington switching yard, known as Davis Yard, is located in Leland. CSX also has interchanges with the Wilmington Terminal Railroad (with connections to the Port of Wilmington) and short lines to the US Army's Military Ocean Terminal at Sunny Point just south of the PSA.
 - Indicators of community cohesion include residential stability, economic stability, safety/health stability, community perceptions/identification, community connections, and community interactions. Neighborhoods showing signs of all the indicators of community cohesion include Brunswick Forest, Stoney Creek, Snee Farm, and Planters Walk.
 - Brunswick County utilizes several planning documents to guide local area goals including: *Brunswick County Comprehensive Transportation Plan*, *Brunswick County Unified Development Ordinance*, *Brunswick Tomorrow Comprehensive Plan*, *Coastal Area Management Act Land Use Plan*, and *Connecting Northern Brunswick County*. The Town of Leland recently drafted a Flex Code, commonly referred to as a Form Based Code intended to implement the Town of Leland Master Plan in a phased manner over the next 15 to 20 years. The Town of Belville drafted the *Renaissance Plan*, which addresses smart growth principles to develop a mix of retail, office and residential uses. Belville also uses their *Vision 2020 Plan*, which recommends Belville focus on priorities that result in diversifying its tax base to provide a balance between residential needs and commercial services to create a sustainable economy.
 - A majority of the PSA in New Hanover County is incorporated into the City of Wilmington. New Hanover County utilizes the *Plan NHC Future Land Use Plan*, *New Hanover County Comprehensive Plan*, and the *New Hanover County Zoning Ordinance* as guiding documents for current and future development. The City of Wilmington uses the *Land Development Code* and the *Cape Fear*

Commutes 2035 Transportation Plan to address development and transportation needs. The City is currently drafting the *Create Wilmington Comprehensive Plan*, which will be the guiding document to decisions regarding growth and development for the Wilmington Metropolitan Area.

- Overall, Brunswick and New Hanover Counties are aware of the proposed project and it has been included in multiple community and county plans for a number of years.
- There are 20 named streams/stream segments that fall within or partially within the PSA. There are seven stream segments within or partially within the PSA that are on the 2014 NC Water Quality Assessment for 303(d) list. The project lies in the eastern portion of the Cape Fear River Basin within the Coastal Plain.
- According to the U.S. Census, between 2000 and 2010 the population of Brunswick and New Hanover Counties increased notably, with a change of 46.9 and 26.4 percent, respectively. According to projections made by the North Carolina Office of State Budget and Management, this growth trend is expected to continue through 2035 for both counties.
- Census data indicate a notable presence of minority and/or low-income populations meeting the criteria for Environmental Justice populations within the Demographic Study Area (DSA), and minority and/or low-income communities were observed within the Direct Community Impact Area (DCIA) during the field visit and were noted by local planners. The presence of minority populations within the DSA for Brunswick and New Hanover Counties are slightly higher than the county averages. There are 14 Block Groups in Brunswick and New Hanover Counties that exceed the minority population threshold. There are 12 Block Groups in Brunswick and New Hanover Counties that surpass the low-income threshold and are considered “below poverty”, 5 Block Groups that are considered “very poor” and 3 Block Groups that are considered “near poor.”
- Census data indicate Spanish and Asian language-speaking populations that meet or exceed the US Department of Justice Limited English Proficiency (LEP) Safe Harbor threshold within the DSA. Census data also indicate another Spanish and Asian language-speaking population that exceeds 50 persons within the DSA that may require language assistance.
- According to the American Community Survey’s (ACS) 5-year estimates (2009-2013), 6.9 percent of the population in the DSA are under the age of 5 and 14.9 percent is over 65 years of age. There are approximately 14 child care facilities and seven nursing homes within the PSA.
- According to the ACS 5-year estimates (2009-2013), the median household income for the DSA is \$45,265. There are more areas within the DSA in New Hanover County that appeared to have a noticeably lower median household income. Several residential areas in Brunswick County appear to have higher median income values and are relatively newer developments.
- The largest industries in the PSA are ambulatory health care services; specialty trade contractors; professional, scientific and technical services; motor vehicle and parts dealers; and nursing and residential care facilities.
- The historical unemployment trend for the Wilmington Metropolitan Statistical Area (MSA) and North Carolina increased notably from 3.7 and 3.4 to 10.6 and 11.3, respectively, from March 2000 to March 2010.

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- According to the U.S. Census Bureau, the mean commute time in 2000 was 24.6 minutes in Brunswick County and 20.7 minutes in New Hanover County. In 2013, the mean travel time decreased to 23.3 and 20.2 minutes, in Brunswick and New Hanover Counties, respectively (United States Census Bureau 2009-2013).
 - There are an estimated 35,367 housing units in the DSA according to the ACS 5-year estimates (2009-2013). The Town of Leland has experienced a considerable increase in homes built between 2000 and 2009. However, in New Hanover County, fewer homes were built between 2000 and 2009 than were built between 1990 and 1999.

Potential Community Impacts

The following section outlines the community impacts presented in Section 8.0 with the findings displayed in Table S-1. Each impact category was ranked into four general levels of impacts: negligible to low impact, medium or potential impact, high or adverse impact, or positive impact. It is important to note that each of these assessments are based on the level of information available at this stage of the study process, and as more detailed information on the design of alternatives becomes available, further analysis of potential impacts will be made.

Physical Impacts – All project alternatives (Upgrade Existing US 17 Alternatives, Northern Alternatives, and Southern Alternatives) will have a high amount of new right of way impacts and property takings with the number of buildings within each corridor ranging from 80 to 395. The number of acres impacted from each corridor was the lowest for the Upgrade Existing US 17 Alternatives.

Community/Neighborhood Cohesion and Stability – Surrounding the existing interchange at I-140 and US 17, residential areas would be impacted by improvements made to US 17 or the proposed Southern Alternatives. Some interchanges located at the terminus would require the acquisition of residential areas along White Bridge Lane. This would directly impact the community cohesion that exists in the area.

Along the Northern Alternatives, residential areas along Lanvale Road, including Savanna Branch Road and Lansan Lane, and along NC 133 where the alternatives cross would be impacted as well as areas within Brunswick Forest. These alternatives will create a barrier through Brunswick Forest that could negatively impact property values. The loss of residences could impact community cohesion.

New Hanover County would experience greater interruptions in community cohesion. All of the alternatives would affect residential areas that officials from the City of Wilmington expressed concern over; as the alternatives would likely create a barrier in a cohesive area of the community. Alternatives that terminate at Shipyard Boulevard (US 117) and US 421 would impact the Port of Wilmington and displace residences and/or impact several residential areas, some of which contain Environmental Justice populations and potential 4(f) resources. Alternatives that include upgrades to the existing Cape Fear Memorial Bridge and interchange would impact several residential areas and historic homes listed on the National Register of Historic Places. Per City of Wilmington officials, the approach onto the Cape Fear Memorial Bridge is an existing barrier to the population and the project could create an additional barrier that would further segment the neighborhoods, particularly the small residential area west of US 421.

Economic and Business Resources – Highway-oriented businesses dependent on drive-by customers that lose direct access to US 17 could experience a loss of sales; however, this could also be offset by the

growing population and projected increase in the volume of traffic along the corridor. Many businesses would see a positive economic benefit, as the proposed project would improve the local transportation system. This would improve the efficiency of transporting goods/services due to reduced traffic congestion.

Local Land Use, Character, and Development Plans – The portion of the Upgrade Existing US 17 Alternatives within Brunswick County is not likely to change the aesthetics or visual character of the corridor given that it would still be the corridor of a major US Highway; however, as Alternatives F and P enter downtown Wilmington in New Hanover County, they will likely negatively impact the visual character of the historic area along US 421 near Dawson Street and Wooster Street.

The Northern Alternatives will mostly be on new location within Brunswick County and within developed areas in New Hanover County. Thus, potential impacts to the local land use and the character of the subdivisions and business developments in Brunswick County are anticipated.

The Southern Alternatives in Brunswick County are in a less developed area and would not likely have the same level of impact on the built environment as the Northern Alternatives; but they will impact the rural nature of this area and be a visual impact to those that currently live near this corridor. In New Hanover County, the Southern Alternatives are in a built environment and would have the same impacts as the Northern Alternatives.

Multi-modal Concerns and Accommodations – The alternatives that involve the widening of existing US 17 and/or upgrading it to a freeway would further exacerbate the barrier effects along the US 17 corridor and make it more difficult for pedestrians and bicyclists to maneuver along or across this roadway. Bicycle and pedestrian facilities will be prohibited on facilities upgraded to full control of access.

Widening of US 421 along 3rd Street and Carolina Beach Road will likely make pedestrian and bicycle movements more difficult if appropriate accommodations, such as medians, crosswalks, or bicycle lanes are not provided.

Recreation – The Upgrade Existing US 17 Alternatives are expected to impact Greenfield Park, Legion Sports Complex, Dram Tree Park, E.P. Godwin Stadium, and Optimist Park. However, the direct impacts are expected to be limited to the loss of open space and/or parking. Other potential impacts include changes in access and increased noise.

Community Safety and Emergency Response – Impacts to community safety will vary depending on how the project impacts travel times. Travel times will vary dependent on location, how accessibility is altered for that area, and potential improvements in travel time.

Environmental Justice – Impacts to populations identified as minority and/or low-income are anticipated with this project. The severity of effects and potential of those effects to fall disproportionately on the identified communities will be determined through future public involvement. Any identified moderate to severe impacts may then be assessed to determine if avoidance, minimization, or mitigation can be proposed. In New Hanover County, potential barrier effects were noted as being of particular concern for the area surrounding US 421 (3rd Street) and US 76 (Wooster Street and Dawson Street), as well as the area surrounding US 421 (Carolina Beach Road) and North Carolina Avenue and Tennessee Avenue. In Brunswick County, low-income residents along Lansan Lane will likely be relocated from Alternatives B and C.

Recurring Community/Neighborhood Impacts –The NCDOT recently completed a portion of the I-140 Wilmington Bypass that altered access and increased noise for the residents of Spring Hill (identified Environmental Justice community), Snee Farm, and Stoney Creek. These areas will likely incur similar impacts from the proposed project as well.

Farmland Impacts – A preliminary screening of farmland conversion impacts in the DCIA has been completed (NRCS Form CPA-106, Part VI only) for the Upgrade Existing Alternatives, Northern Alternatives, and Southern Alternatives. Total scores of 33 for the Upgrade Existing Alternatives, 41 for the Northern Alternatives, and 51 for the Southern Alternatives out of a possible 160 points were calculated for the project (See Appendix D). Since none of the total site assessment scores exceed the 60-point threshold established by the NRCS, farmland conversion impacts may be anticipated, but are not considered notable.

Section 4(f) and Section 6(f) Resources –Recreational resources located within the DCIA that are subject to Section 4(f) include Greenfield Lake Park, Legion Sports Complex, Dram Tree Park, Optimist Park, E.P. Godwin Stadium, and Westgate Nature Park. Greenfield Lake Park, Legion Sports Complex, and Optimist Park are located within the corridor of the Upgrade Existing Alternatives Group. Greenfield Lake Park and Legion Sports Complex extend outside of the corridor; therefore any impacts to these parks would be contained to the area abutting the highway. Dram Tree Park is located just north of the Cape Fear Memorial Bridge. E.P. Godwin Stadium is located along US 117, just outside of the Port of Wilmington and would likely incur impacts from alternatives in the Northern or Southern Alternatives Groups that connect to US 117. Historical Section 4(f) resources are discussed in the *Historic Architecture Eligibility Evaluation Report* (March 2015). Resources subject to Section 6(f) include Westgate Nature Park, Greenfield Lake Park, Dram Tree Park and Legion Stadium.

Table S-1: Community Impact Summary

Impact Category	Upgrade Existing US 17 Alternatives	Northern Alternatives	Southern Alternatives
Physical	●	●	●
Community/Neighborhood Cohesion and Stability	●	◐	◐
Economic and Business Resources	○	◐	◐
Local Land Use, Character, and Development Plans	◐	○	○
Multi-Modal Concerns and Accommodations	◐	◐	◐
Recreation	◐	○	○
Community Safety and Emergency Response	○	○	○
Environmental Justice	●	●	●
Recurring Community/Neighborhood Impacts	◐	○	◐
Farmland Impacts	○	○	◐

Key: Negligible to Low Impact: ○, Moderate Impact: ◐, High or Adverse Impact: ●

Recommendations/Next Steps

- The project planning engineer should coordinate with NCDOT Public Involvement and Community Studies to evaluate opportunities for continued outreach to the minority and low-income communities/neighborhoods that have the potential to experience high and adverse effects and/or unmitigated recurring impacts from the proposed project. Because LEP populations within the DSA exceed the Department of Justice’s Safe Harbor thresholds, written translations of vital documents should be provided for Spanish-speaking populations, in addition to other measures assuring meaningful language access, as determined by NCDOT Public Involvement to satisfy requirements of Executive Order 13166.
- Because notable Other Indo-European and Asian/Pacific speaking populations requiring language assistance are located within the DCIA, the NCDOT Project Planning Engineer should consult with NCDOT Public Involvement to determine appropriate measures assuring meaningful public involvement to satisfy the requirements of Executive Order 12898.
- It is recommended that the NCDOT Project Planning Engineer coordinate with the NCDOT Public Involvement Group to ensure all public involvement activities and outreach material developed for the project under study appropriately target Title VI populations and meet all other regulatory guidelines.
- Given the high amount of physical impacts, the NCDOT Project Planning Engineer should consider incorporating Context Sensitive Designs, as appropriate, in areas where the project would have substantial visual/aesthetic impacts, which would also help address Environmental Justice concerns.

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- In order to minimize potential impacts to community cohesion, it is recommended that as the project develops the NCDOT Project Planning Engineer coordinate with the NCDOT Public Involvement Group to conduct additional outreach to citizens and groups likely to be impacted, which will also address Environmental Justice concerns.
 - The NCDOT Project Planning Engineer should conduct additional public outreach to affected citizens, property owners, and farm operators related to mobility and access once it is determined where potential road closures and grade separations may occur, which will also address Environmental Justice concerns.
 - The NCDOT Project Planning Engineer should coordinate with the NCDOT Rail Division, CSX, the US Department of Defense, and the North Carolina Ports Authority regarding the railroad crossings.
 - The NCDOT Project Planning Engineer should continue to coordinate with schools and emergency responders in Leland, Wilmington, Brunswick County, and New Hanover County.
 - It is recommended that the NCDOT Project Planning Engineer coordinate with the NCDOT Division of Bicycle and Pedestrian Transportation to evaluate the inclusion of bicycle/pedestrian facilities where the project crosses existing bicycle routes, as well as the necessary level of bicycle/pedestrian access accommodation during construction.
 - It is recommended that the NCDOT Project Planning Engineer should consider measures, as appropriate, that would minimize project impacts to agricultural access and operations during construction.
 - It is recommended that the NCDOT Project Planning Engineer coordinate with FHWA to determine the designation of and potential level of impact to Greenfield Park, Legion Sports Complex, Dram Tree Park, Optimist Park, and E.P. Godwin Stadium.

1.0 PROJECT DESCRIPTION

The North Carolina Department of Transportation (NCDOT) proposes to construct a project known as the Cape Fear Crossing, formerly called the Cape Fear Skyway, which consists of a limited access road extending from the vicinity of US 17 and I-140 in Brunswick County to US 421 in New Hanover County, including a crossing of the Cape Fear River. See Figure 1: Project Study Area for the Project Study Area (PSA). Other highways that are within the PSA include US 17, US 74, US 76, US 421, NC 87, and NC 133.

The proposed action is listed in the 2016-2025 NCDOT *State Transportation Improvement Program* (STIP) as Project Number U-4738 (NCDOT 2015). The STIP defines this project as the “New route (Cape Fear Crossing), Brunswick, New Hanover, US 17 to US 421 (Independence Boulevard-Carolina Beach Road) intersection. Construct a new facility with structure over the Cape Fear River.” The project is currently funded for planning and environmental studies, and unfunded for right of way and construction.

According to the *Final Traffic Forecast for STIP Project U-4738, Cape Fear Skyway*, traffic on US 17 crossing the Cape Fear River (existing Cape Fear Memorial Bridge) had an Annual Average Daily Traffic (AADT) of 49,800 vehicles in 2013 (HNTB 2014). It is projected that this same segment will carry between 79,600 and 91,300 vehicles per day in the year 2040, depending on which alternative is selected.

Build alternatives being proposed for study include: upgrading existing US 17, Northern Alternatives which transect US 17 and Brunswick Forest, and Southern Alternatives which travel south of Brunswick Forest and avoid major impacts to the development (see Figure 2a through 2c).

1.1 ENVIRONMENTAL DOCUMENTATION

In accordance with the National Environmental Policy Act (NEPA) of 1969, as amended, an Environmental Impact Statement (EIS) is being prepared for the proposed Cape Fear Crossing project. The EIS is intended for use as an informational document by the decision-makers and the public. As such, it represents a disclosure of relevant environmental information concerning the proposed action.

The content of this document will conform to the Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508), which provide direction regarding implementation of the procedural provisions of NEPA, and FHWA’s Guidance for Preparing and Processing Environmental and Section 4(f) Documents (Technical Advisory T 6640.8A, 1987).

CAPE FEAR CROSSING

State Transportation Improvement Program
Project No. U-4738

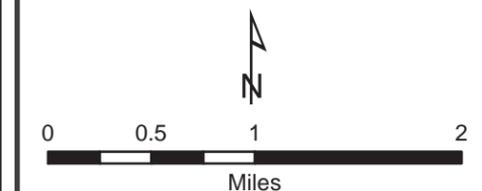
Community Impact Assessment



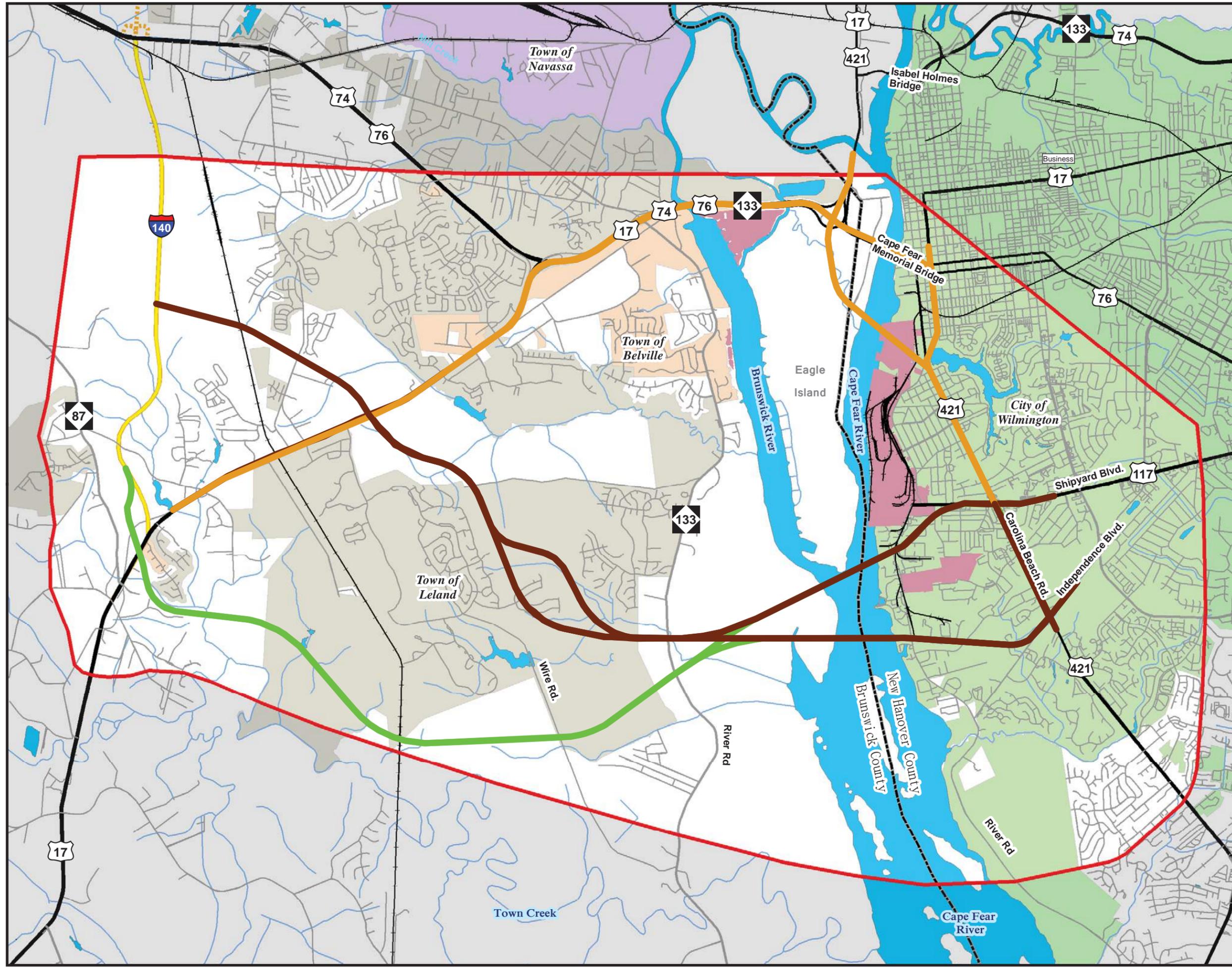
Figure 1: Project Study Area

Legend

- Project Study Area
- Upgrade Existing Alternative Group
- Northern Alternative Group
- Southern Alternative Group
- Interstate
- US Highway
- NC Highway
- Local Road
- Railroad
- Future Wilmington Bypass (I-140)
- Water
- Belville
- Leland
- Navassa
- Wilmington
- County Boundary
- Port of Wilmington



Date: September 2015
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.



CAPE FEAR CROSSING

State Transportation Improvement Program
Project No. U-4738

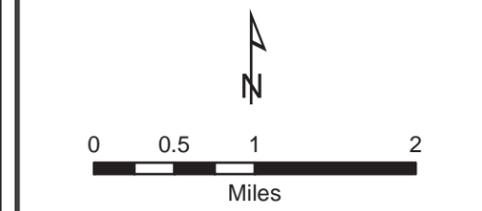
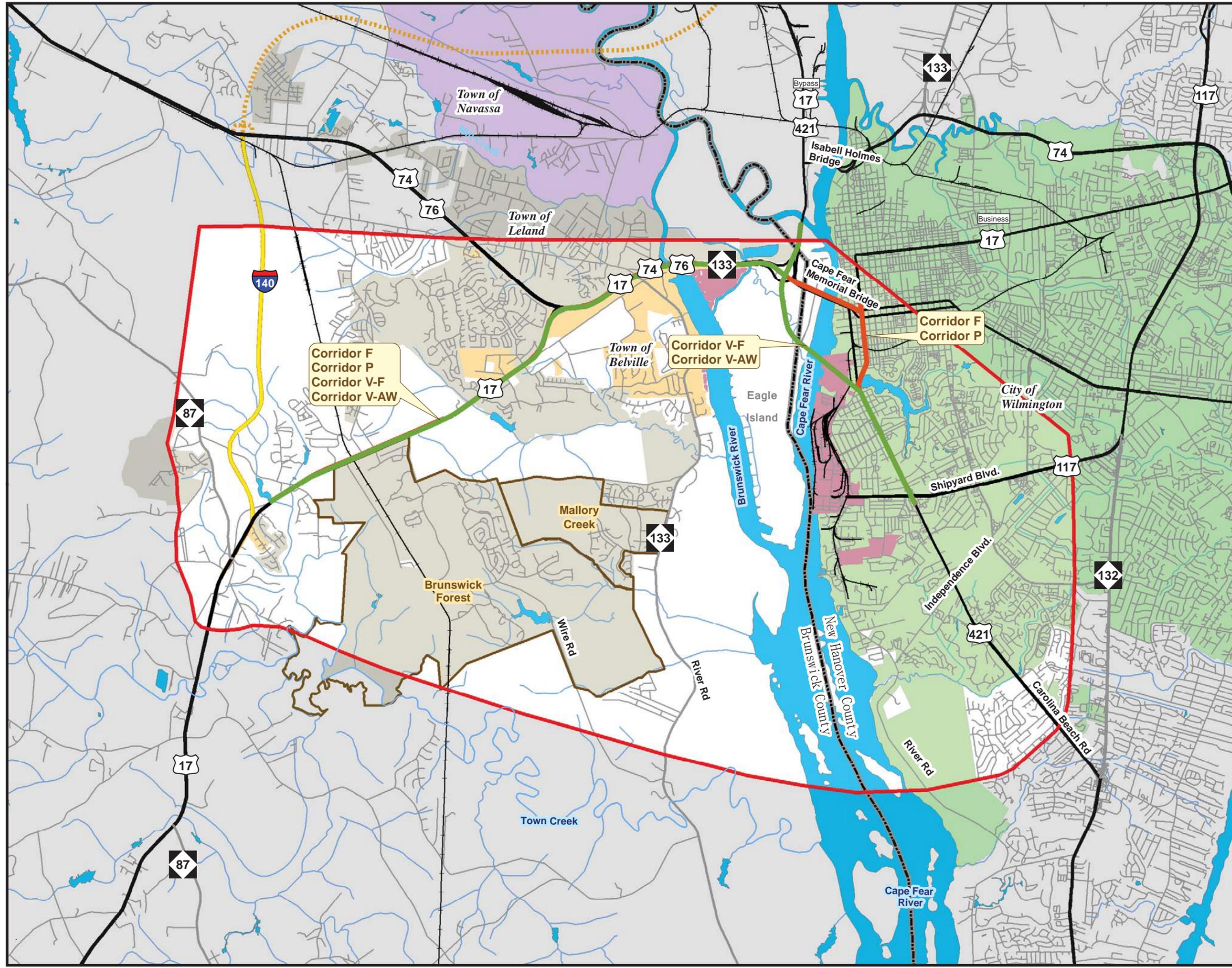
Community Impact Assessment



Figure 2a: Upgrade Existing Alternative Group

Legend

- Project Study
- Interstate
- US Highway
- NC Highway
- Local Road
- Railroad
- Future Wilmington Bypass (I-140)
- Neighborhood Boundary
- Water
- Belville
- Leland
- Navassa
- Wilmington
- County Boundary
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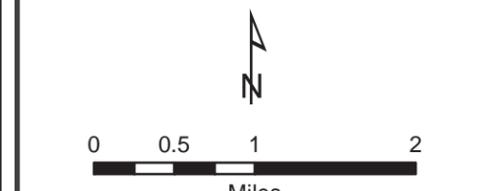
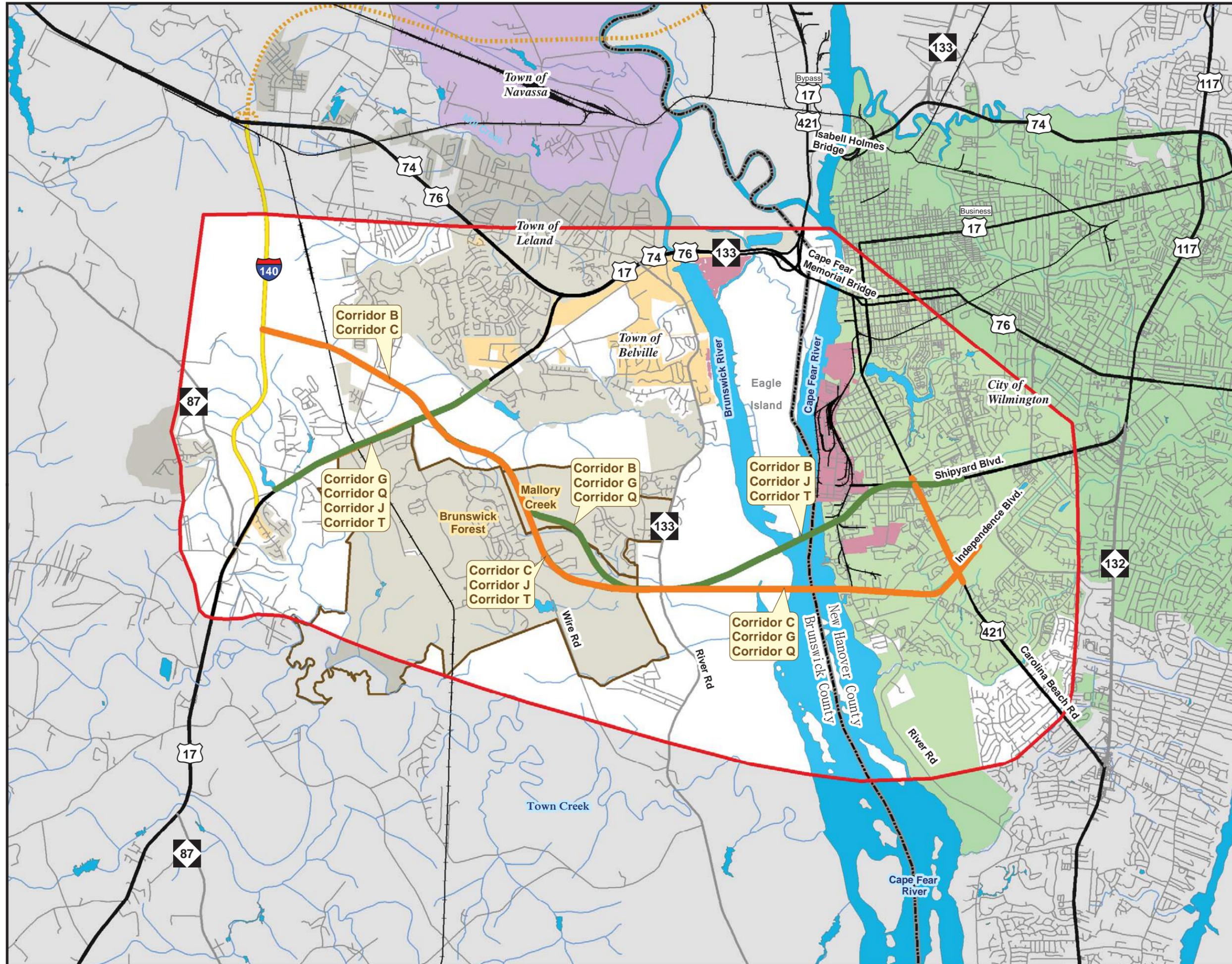
Community Impact Assessment



Figure 2b: Northern Alternative Group

Legend

- Project Study
- Interstate
- US Highway
- NC Highway
- Local Road
- Railroad
- Future Wilmington Bypass (I-140)
- Water
- Neighborhood Boundary
- Belville
- Leland
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State Transportation Improvement Program
Project No. U-4738

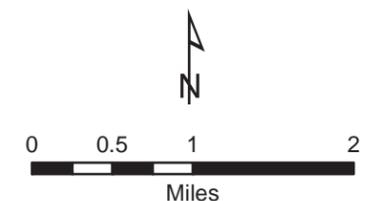
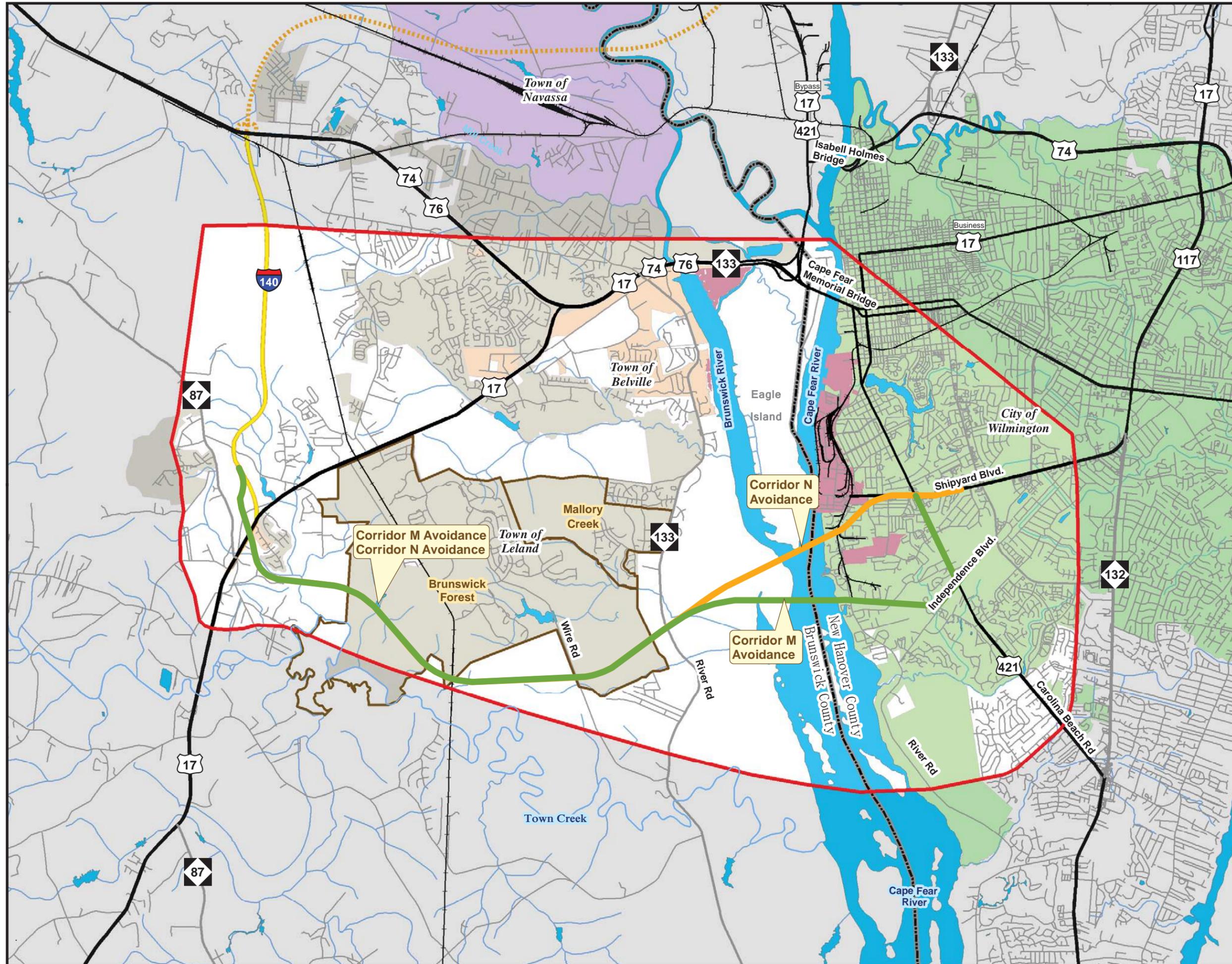
Community Impact Assessment



Figure 2c: Southern Alternative Group

Legend

- Project Study Area
- Interstate
- US Highway
- NC Highway
- Local Road
- Railroad
- Future Wilmington Bypass (I-140)
- Water
- Neighborhood Boundary
- Belville
- Leland
- Navassa
- Wilmington
- County Boundary
- Port of Wilmington



Date: September 2015
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.

1.2 PURPOSE AND NEED

The purpose of the proposed action is to improve traffic flow and enhance freight movements beginning in the vicinity of US 17 and I-140 in Brunswick County across the Cape Fear River to US 421 near the Port of Wilmington in southern New Hanover County. Primary needs for the project include traffic capacity deficiencies and access to the Port of Wilmington.

Traffic Capacity Deficiencies

Without improvements to the existing network, US 17, from south of the I-140/US 17 interchange to Front Street in Wilmington (over a 10-mile long segment), will likely be over capacity and will experience delays in travel times up to 50 percent higher than some of the Study Alternatives. From the west, this roadway, including the Cape Fear Memorial Bridge was not designed to support the area's current and projected future population. Inadequate roadway widths hinder its traffic carrying capacity. From the east, the opening of the lift-span bridge creates additional delay to the Dawson Street and Wooster Street corridors, creating additional, periodic congestion on US 17. It is also likely that future population growth and development in the area will increase travel demand from areas in eastern Brunswick County to southern New Hanover County.

North Carolina Port Access

Port of Wilmington officials state that the proposed action is necessary to accommodate growth, and the Cape Fear Crossing has been identified by the North Carolina State Ports Authority (NCSPA) as a freight corridor priority. Without improvements to the existing transportation and distribution network, the Port of Wilmington may not be able to capitalize on the opportunity for increased shipping and cargo volumes. Goals outlined in the Wilmington Urban Area Metropolitan Planning Organization's (WMPO's) current Long Range Transportation Plan (LRTP), titled *Cape Fear Commutes 2035 Transportation Plan* (WMPO, 2010), support enhanced efficiency of the area's freight movement transportation system.

Secondary Benefits

A secondary benefit of the project would be to meet the goals of the transportation visions in the North Carolina Strategic Transportation Corridors (STC) Policy and the WMPO's LRTP. The proposed Cape Fear Crossing (formerly called the Cape Fear Skyway) was included as a part of the NCDOT's Strategic Highway Corridors (SHC) Vision Plan (2004) for North Carolina. It was included as part of Corridor 06.D, which is one of 55 corridors included in the SHC Vision Plan. In 2013, the SHC was updated and resulted in the creation of the North Carolina Transportation Network (NCTN) and the STC Policy, adopted March 4, 2015. The NCTN maintains a similar structure as the old system, but incorporates the recent prioritization process. In particular, this new policy shall: "Preserve and support prior project development decisions that have been based on identified Strategic Highway Corridors..." (NC Department of Transportation 2015).

The project is also listed as a priority project in the current WMPO LRTP, citing the project as an important intermodal connector to improving freight movements in the Wilmington area and accommodating anticipated growth at the Port of Wilmington. The plan also cites the project as the highest profile project that is not funded through the LRTP, and is anticipated to provide a comprehensive transportation network connection, linking Brunswick County to New Hanover County.

Another benefit of the project would be the reduction in hurricane evacuation clearance time for residents and visitors who use the area thoroughfares during evacuation, as well as aid in emergency evacuation from Duke Energy's Brunswick Nuclear Plant in Southport, North Carolina.

1.3 EXISTING CONDITIONS

US 17

US 17 is a north/south highway, beginning in downtown Winchester, Virginia and ending at Punta Gorda, Florida. Existing US 17 in the PSA begins in the City of Wilmington as Market Street, then continues down 3rd Street, and then merges with US 421/74/76 to cross the Cape Fear River via the Cape Fear Memorial Bridge into Brunswick County and connecting Wilmington to the Town of Leland and the Town of Belville. In Wilmington, US 17 is a four-lane roadway with a concrete/grassed median and sidewalks. Several access points and driveways are located throughout the stretch of US 17 within Wilmington. People use US 17 to access the downtown amenities and businesses and to travel through Wilmington to Wrightsville Beach or Jacksonville.

In Brunswick County, US 17 becomes a superstreet. Several shopping centers and large residential subdivisions are located off US 17.

US 421

US 421 is a north/south route that begins at Fort Fisher in North Carolina and ends at US 20 in Michigan City, Indiana. In the PSA, US 421 traverses through the City of Wilmington downtown district as 3rd Street as a four-lane median-divided facility. It continues south as Burnett Boulevard without a median. Finally, US 421 becomes Carolina Beach Road for the remainder of the PSA and is a five-lane facility (center turn lane). Throughout this area, US 421 has intermittent sidewalks and worn paths on both sides of the road.

People use US 421 for access to the southern areas of New Hanover County, including Carolina Beach and Kure Beach and access to the amenities off the highway. Commercial development directly abuts US 421 with residential areas behind.

US 76

US 76 is an east/west route running from the South Carolina state line to Wrightsville Beach. In New Hanover County, US 76 begins as Wooster Street (westbound) and Dawson Street (eastbound) in the downtown district. Wooster Street is a three-lane facility and Dawson Street is four lanes. Both have sidewalks on both sides of the road. US 76 continues into Brunswick County via the Cape Fear Memorial Bridge and splits from US 17 after Belville.

People use US 76 to commute from/to Brunswick County. This roadway is heavily traveled by daily commuters, residents of New Hanover and Brunswick counties, and truck traffic to the Port of Wilmington.

I-140

I-140 is an east/west interstate bypass, known as the Wilmington Bypass. Two segments are open – one runs from I-40 to US 421 and the other runs from US 74 to US 17. The final segment that will connect

these two from US 421 to US 74 is currently under construction. I-140 is a four-lane median-divided facility with full control of access. Within the PSA, I-140 connects US 17 and US 74.

NC 133

NC 133 starts in downtown Oak Island and ends at NC 210 near Castle Hayne. Throughout the PSA, NC 133 is a two-lane facility that travels south through Leland and Belville along the Cape Fear River. Much of the development along NC 133 is located to the west of the facility. There are no sidewalks along any portion of this corridor.

People use NC 133 to travel to Southport, NC. Much of the surrounding land is residential.

US 117 (Shipyard Boulevard)

US 117 is a north/south route which runs from Wilmington to Wilson. US 117 in the PSA is a four-lane superstreet, which traverses through several commercial and residential areas within the City of Wilmington. Intermittent sidewalks and worn paths are located along both sides of the roadway. US 117 ends at the Port of Wilmington. This roadway has heavy truck traffic to and from the port.

Independence Boulevard (SR 1209)

Independence Boulevard is a four-lane divided facility from US 117 to US 421 and a two-lane facility from US 421 to River Road. It includes light commercial development and residential areas. Halliburton Park and a portion of the Cross City Trail are located off of Independence Boulevard. There are also intermittent worn paths between developments.

River Road (SR 1576)

River Road is a two-lane facility which travels to the east of the Cape Fear River from the Port of Wilmington to Carolina Beach. Several large developments are planned for areas of River Road within the PSA, including the River Lights development. The facility includes intermittent bike lanes. There are no sidewalks. Much of the scattered development along River Road is residential. Light industrial facilities become more abundant closer to the port property.

1.4 PROPOSED MODIFICATIONS

The NEPA/Section 404 Merger Team, which consists of local, state and federal agency representatives, has selected 12 Detailed Study Alternatives (Study Alternatives). These include alternatives that would upgrade existing US 17, new location alternatives, and hybrid alternatives that include upgrades of US 17 and new location segments. These alternatives were selected for their potential to fulfill the purpose and need of the project while minimizing impacts to human and natural environment resources.

For the purposes of discussion in this report, the alternatives are grouped into Study Alternatives and will be referred to as “upgrade existing US 17”, “Northern Alternatives” (those that begin on I-140 or at the I-140/US 17 interchange and bisect Brunswick Forest), and the “Southern Alternatives” (those that begin at the I-140/US 17 interchange and travel south of the Brunswick Forest development). The Study Alternatives are shown on Figure 2a through 2c and described in the following sections.

Functional designs for major project elements, including the location of interchanges with highways and other major roadways, are currently being developed. Design criteria developed for the Study

Alternatives are shown in Table 1. The typical section is proposed as a four-lane, median-divided facility with full control of access.

Table 1: Build Alternative Design Criteria

Factor	Classification
Facility Type/Functional Classification	Freeway
Terrain Type	Level
Design Speed	70 mph
Posted Speed	65 mph
Right of Way Width	Varies 250' – 300'
Control of Access	Full (new location)/ Varies (Upgrade Existing US 17)
Rumble Strips (Y/N)	N
Ultimate Typical Section Type	4-Lane Divided Shoulder
Lane Width	12'
Sidewalks (Y/N)	N
Bicycle Lanes (Y/N)	N
Median Width	46'
Shoulder Width	12'
Horizontal Alignment	8%
Cross Slopes	2.5%

The following subsections provide a more detailed description of each of the Study Alternatives.

1.4.1 UPGRADE EXISTING US 17 ALTERNATIVES

There are four separate alternatives that include extensive modifications to US 17. Alternatives F and P include modifications to US 17, which would begin at the terminus of I-140 on US 17 and continue to US 421 at US 117 in the City of Wilmington. Alternative F would be designed as a freeway and Alternative P would be designed as a standard widening. Both alternatives would include replacement of the existing Cape Fear Memorial Bridge. Alternative V is a hybrid alternative with upgrades to existing US 17 and portions on new location with a new fixed-span bridge. This alternative would begin at the terminus of I-140 on US 17, upgrade US 17 to the US 17/421 interchange, then traverse south along Eagle Island on new location and terminate on US 421 just north of the Port of Wilmington. Alternative V would then either upgrade existing US 17 as a standard widening (Alternative V-Arterial Widening (AW)) or upgrade existing US 17 as a freeway (Alternative V-F). The portion located on Eagle Island would be designed as a freeway for both options. Both options would also include a new bridge crossing over the Cape Fear River.

1.4.2 NORTHERN ALTERNATIVES

There are six alternatives included as the Northern Alternatives, two new location alternatives and four hybrid alternatives. Alternative B would begin at a new interchange on I-140, intersect US 17 and travel between the Brunswick Forest and Mallory Creek developments. This alternative would terminate at US 117. Alternative C would begin at a new interchange at I-140, intersect US 17 and travel parallel to Wire Road. This alternative would connect to Independence Boulevard and upgrade US 421 to US 117. Both alternatives would include a new bridge crossing over the Cape Fear River.

Alternatives G and Q would begin at the terminus of I-140 on US 17, upgrade existing US 17 for approximately two miles, then continue southeast on new location between the Brunswick Forest and Mallory Creek developments. Both alternatives would connect to Independence Boulevard and upgrade US 421 to US 117. Alternative G would be designed as a freeway for the entire length. Alternative Q would be designed as a standard widening along US 17 and a freeway on new location. Both alternatives would include a new bridge crossing over the Cape Fear River.

Alternatives J and T would begin at the terminus of I-140 on US 17, upgrade existing US 17 for approximately two miles, then continue on new location parallel to Wire Road. Both alternatives would terminate at US 117. Alternative J would be designed as a freeway for the entire length, while Alternative T would be designed as a standard widening along US 17 and a freeway on new location. Both alternatives would include a new bridge crossing over the Cape Fear River.

1.4.3 SOUTHERN ALTERNATIVES

There are two alternatives included as the Southern Alternatives, M Avoidance and N Avoidance. Both alternatives would begin at the interchange of I-140 and US 17 and continue on new location just north of Town Creek. Alternative M Avoidance would connect to Independence Boulevard and upgrade US 421 to US 117 and Alternative N Avoidance would terminate at US 117. These alternatives avoid impacts to the Brunswick Forest development. Both would be designed as a freeway for their entire length and include new bridge crossings over the Cape Fear River.

2.0 METHODOLOGY

This report outlines the existing conditions and trends of the area around the proposed Cape Fear Crossing project. It inventories community resources, issues, and concerns that the project may affect or impact. The report includes data gathered from the US Census and American Community Survey merged with data from local plans, policies, maps, and regulations. It further includes observations from field visits and interviews with local planners in an effort to document resources as well as community visions, values, and goals. Wherever possible, this report will map community attributes and areas geographically to assist in project decision-making.

3.0 COMMUNITY STUDY AREAS

3.1 PROJECT STUDY AREA (PSA)

The Project Study Area (PSA) is the overarching boundary that encompasses all of the Study Alternatives under consideration for this project. In this report, the PSA boundary is used in the analysis in Section 6.0 to determine the community context, direction, and notable features.

3.2 DIRECT COMMUNITY IMPACT AREA (DCIA)

The Direct Community Impact Area (DCIA) is the area surrounding the project that is likely to be directly affected by the project in any way during, throughout, and after project completion. The DCIA was created by buffering the slope stakes of the Study Alternatives' current functional designs by 40 feet, as shown on Figure 3. The analysis in this report includes consideration of areas and neighborhoods bisected by the DCIA study area. Information on hydraulic requirements for the current design has not yet been developed; therefore, locations that may be bridged have not been removed from the corridors created for the purposes of determining impacts for each alternative.

3.3 DEMOGRAPHIC STUDY AREA (DSA)

The Demographic Study Area (DSA), as shown on Figure 4, is defined to provide demographic characteristics for the community surrounding the project. It was developed to include all 2010 Census Block Groups that are in or are partially within the PSA. The DSA includes a total of 38 Block Groups of which 27 are in New Hanover County and 11 are in Brunswick County. Some of the Census Block Groups are fairly large and include properties that may be far removed from the project. The information obtained by the Census may not reflect the exact aspects surrounding the project, but should provide accurate information on the area trends.

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State Transportation Improvement Program
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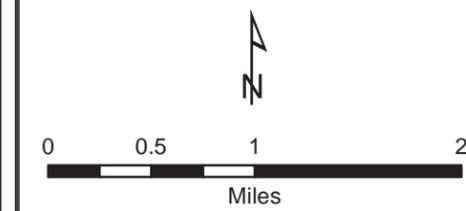
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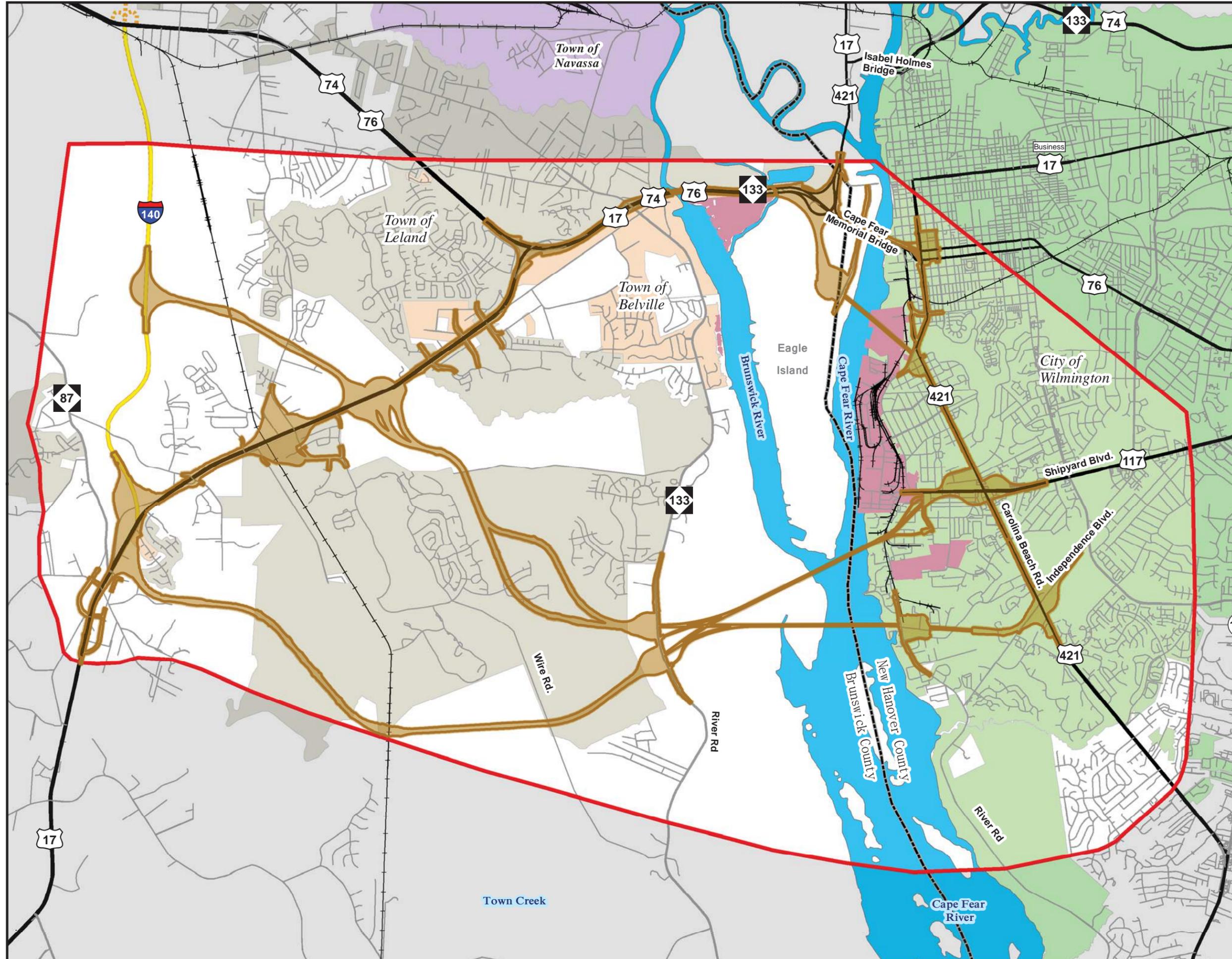
Figure 3: Direct Community Impact Area

Legend

- Project Study Area
- DCIA
- Interstate
- US Highway
- NC Highway
- Local Road
- Railroad
- Future Wilmington Bypass (I-140)
- Water
- Belville
- Leland
- Navassa
- Wilmington
- County Boundary
- Port of Wilmington



Date: September 2015
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.



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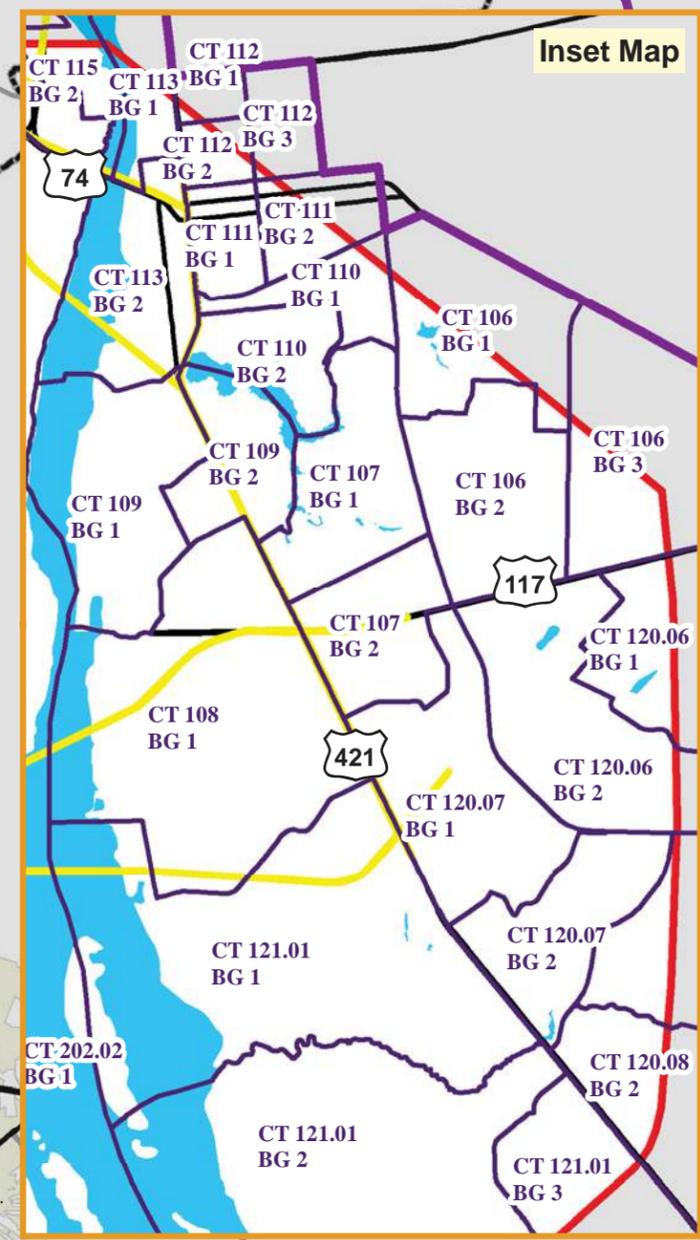
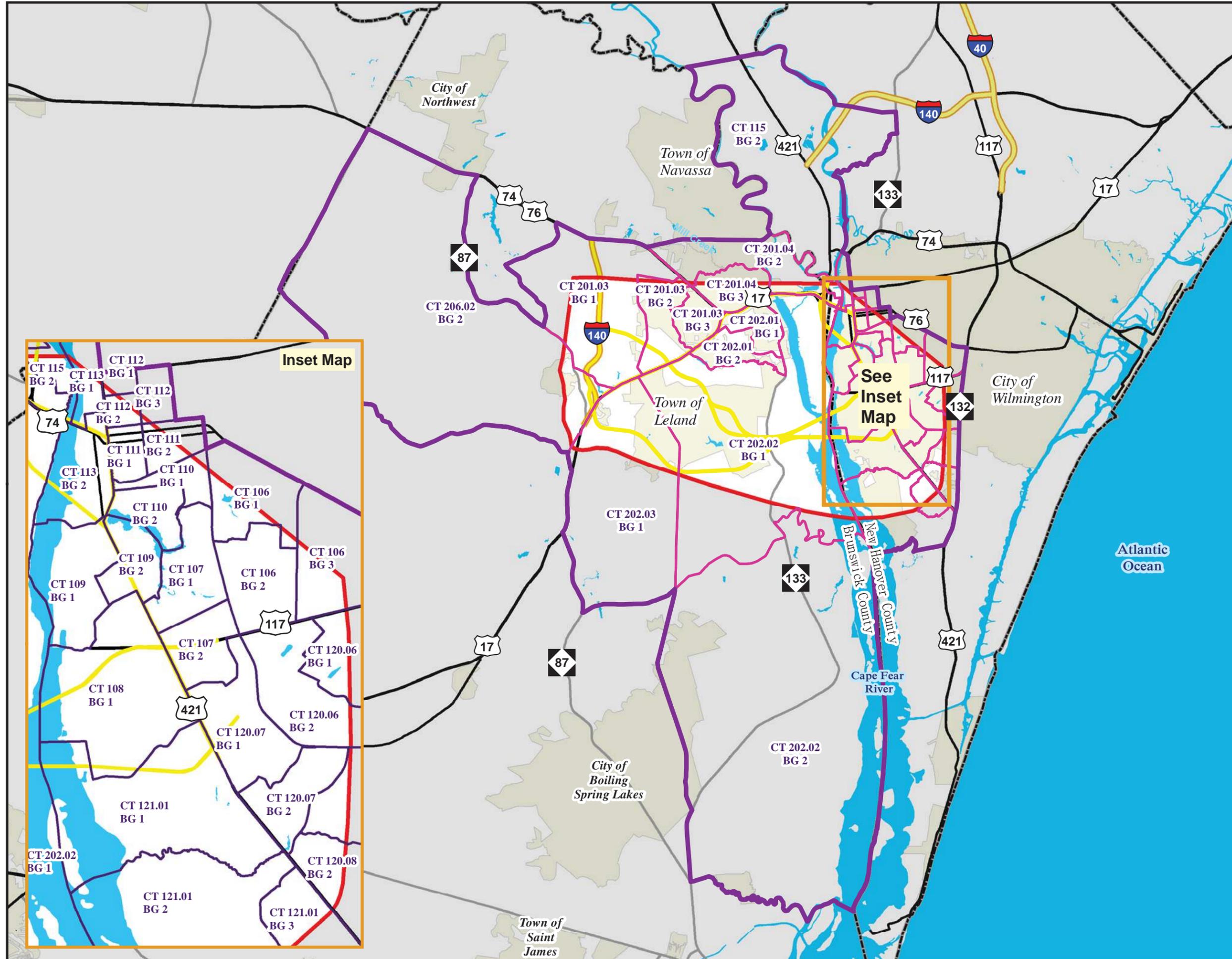
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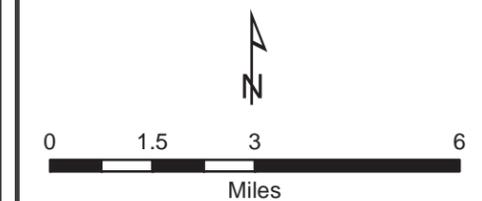


Figure 4: Demographic Study Area

- Legend**
- Project Study Area
 - Demographic Study Area
 - Block Groups within the DSA
 - Project Alternatives
 - Interstate
 - US Highway
 - NC Highway
 - Water
 - Municipal Boundaries
 - County Boundary



See
Inset
Map



Date: September 2015
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.

4.0 REGIONAL/COMMUNITY CONTEXT

The PSA is located in Brunswick and New Hanover Counties and includes portions of the City of Wilmington in New Hanover County and the Towns of Leland and Belville in Brunswick County.

The City of Wilmington and New Hanover County are located in southeastern North Carolina between the Cape Fear River and the Atlantic Ocean. Wilmington is the New Hanover County seat and the eighth most populous city in the state. Wilmington is the eastern terminus for I-40, which runs east to west across the United States terminating in Barstow, California. Several other major regional and state highways traverse through Wilmington including US 17, US 117, US 74, US 76, US 421, and NC 133. Wilmington's proximity and access to a variety of natural systems and the diverse business market make it unique and desirable for commerce and tourism. The part of the PSA that falls within the City is urban. The City of Wilmington strives to incorporate a live/work mentality by focusing on building "Creative Districts" in Downtown. These districts include housing, employment opportunities, and strong ties to local business to facilitate downtown revitalization. The Port of Wilmington is located along the Cape Fear River, south of downtown. Commercial development abuts US 421 with residential zoning located farther out. Some of these areas include low income and minority Census Block Groups. Land use plans for New Hanover County and the City of Wilmington are discussed in more detail in Section 6.7.5 and Section 6.7.6. As a growing community, Wilmington faces the challenges of balancing the needs of jobs, recreation opportunities, infrastructure improvements, and housing, while at the same time preserving the community's history and unique character. New Hanover County's population grew approximately 26 percent from 2000 to 2010 and is expected to grow roughly 1.5 percent per year until 2020.

Brunswick County is located west of New Hanover County with the Cape Fear River to the east, the Atlantic Ocean to the South, and South Carolina to the west. Several major regional and state highways traverse Brunswick County including US 17, US 74, US 76, US 421, and NC 133. US 17 is the major highway within Leland and Belville, which provides access to Wilmington and Brunswick County beaches, making the area a desirable place to live. Leland and Belville are more suburban in nature compared to Wilmington. Leland is known as the bedroom community of Wilmington, creating the opportunity for several large residential developments to emerge in recent years. Larger developments include Brunswick Forest, Mallory Creek, Westgate, Waterford, and Magnolia Greens. Brunswick Forest is a large mixed-use development, which includes approximately 12,000 home sites and 300 acres of commercial land. The Town of Belville is surrounded by Leland and is situated along the Cape Fear River. Belville is working to revitalize their downtown district and include more development along the riverfront to highlight the natural amenities of the area. Over the past 20 years, areas within the PSA in Brunswick County has quickly transformed from a mostly rural area that has sensitive environmental features and agricultural lands to a suburban area. Outside of the PSA, Brunswick County is largely rural. As the community continues to develop, it will face the issues of how to preserve natural open space, protect the sensitive environmental resources, and decrease the loss of agricultural lands. Brunswick County's population grew approximately 47 percent from 2000 to 2010 and is expected to grow roughly 2.4 percent per year until 2020.

5.0 PUBLIC INVOLVEMENT SUMMARY

Public participation has been encouraged and communities have been provided with opportunities to become involved in the project's study decision making process. All comments received are logged into a public involvement database created for this project. Comments originate from hotline phone calls, emails, workshops, group meetings, and comment forms.

The project mailing list includes residents, property owners, neighborhood associations, civic and business groups, government officials, and any other individual or group by request. The project mailing list is continually updated with the names of persons attending meetings and workshops, contacting local agencies, applicable NCDOT staff and board members, consultant project staff, or anyone submitting requests on the project website. The list was compiled by utilizing current tax records and GIS databases listing all property owners within the PSA. A project newsletter was distributed in April 2014 describing the project timeline, project purpose, the alternatives that were selected for further detailed study and their location, the next steps in the NEPA process, and contact information.

The project website includes general project information and documents, as well as notices, comment forms, and handouts from public meetings. The website is generally updated at key project milestones.

Public meetings provide a two-way dialogue between stakeholders and project team members. Information stations featuring presentation boards were prepared to allow review of the boards by attendees in the meeting place. Citizen Informational Workshops (CIW), currently termed Public Meetings, were held in April 2006 in Wilmington and at Belville Elementary School to introduce the project along with the required development, environmental, and design processes. In January 2010, the Town of Leland hosted a public workshop in which citizens of Leland developed an extensive series of questions regarding the project. Another CIW was held in March 2011 to present the project purpose and need and preliminary alternatives and solicit public input.

6.0 COMMUNITY CONTEXT, DIRECTION, AND NOTABLE FEATURES INVENTORY

6.1 COMMUNITY OUTREACH/IDENTIFICATION

The PSA encompasses two counties, Brunswick and New Hanover. Both counties include distinct characteristics that are vastly different from the other. Therefore the discussion of community features in the PSA will be divided between the two counties. Figure 5 depicts the community features within the PSA.

6.1.1 BRUNSWICK COUNTY

Several residential neighborhoods, shopping centers, and business parks in Brunswick County abut commercial development along US 17.

The Willows neighborhood is located north of the interchange at US 17/74/76. Construction began in 2007 and is on-going. Access to the neighborhood is located off Village Road where commercial development precedes the neighborhood. This area contains older strip malls with some vacancies and local restaurants. There is also a Food Lion grocery store, banks, gas stations, a pharmacy, and several fast food restaurants. The Willows includes multi-family dwellings and single-family homes. Sidewalks run along one side of the street. There is also a community center with a pool and tennis court. Several lots have been cleared for new construction in the area. Homes along Willows Creek Lane and Red Maple Creek are located directly behind the existing US 17 South exit ramp.

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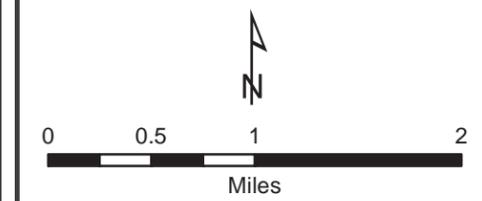
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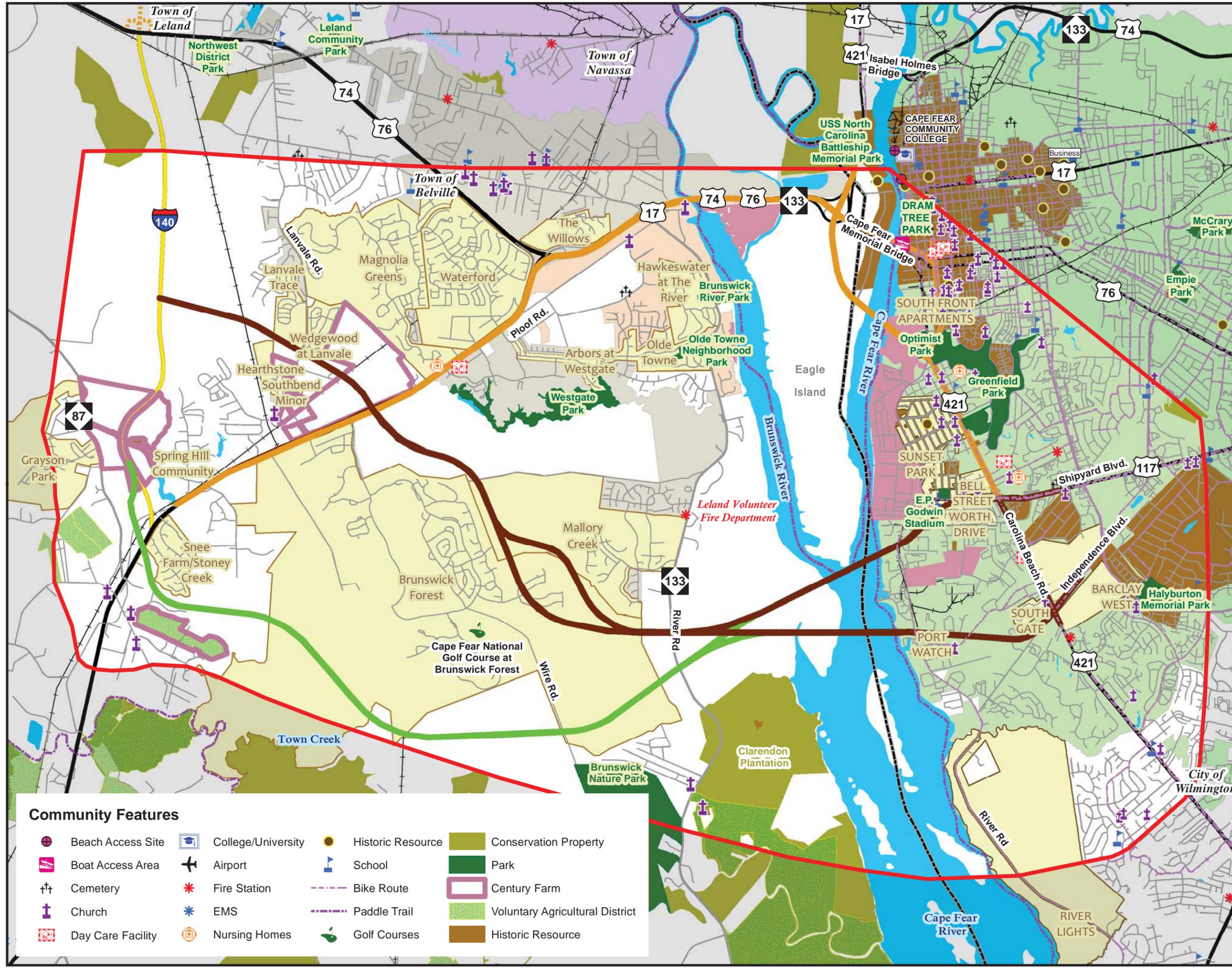
Figure 5: Community Features

Legend

- Upgrade Existing Alternative Group
- Northern Alternative Group
- Southern Alternative Group
- Interstate
- US Highway
- NC Highway
- Local Road
- Railroad
- - - Future Wilmington Bypass (I-140)
- Water
- Neighborhood
- Belville
- Leland
- Navassa
- Wilmington
- County Boundary
- Port of Wilmington



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Community Features

Beach Access Site	College/University	Historic Resource	Conservation Property
Boat Access Area	Airport	School	Park
Cemetery	Fire Station	Bike Route	Century Farm
Church	EMS	Paddle Trail	Voluntary Agricultural District
Day Care Facility	Nursing Homes	Golf Courses	Historic Resource

The Waterford community is located west of the US 17/74/76 interchange. Construction began in 2001 and is still on-going. Commercial development located at the entrance is anchored by Harris Teeter and includes restaurants, a pharmacy, medical offices, and several other chain and local stores. There is also light industrial property south of the commercial development with abandoned shipping containers. The Waterford community includes sidewalks, multi-use paths, and bridges to connect the different neighborhoods within the development. An intricate manmade canal system also allows several properties “waterfront access” for kayaking or canoeing. There is an array of single-family home of different sizes and styles, as well as multi-family dwellings. The community center includes amenities such as bocce ball courts, tennis courts, a playground, and pool. Community watch signs were noted during the site visit and posted throughout the development.

Across US 17, opposite of the Waterford community, is The Arbors neighborhood. Preceding the neighborhood, along Ploof Road, is a light industrial area. The neighborhood includes features such as sidewalks, duplex homes, and small lot single-family homes.

Further south on US 17, adjacent to the Waterford community, is Magnolia Greens, a commercial and residential development abutting US 17. It includes a hotel, restaurants, medical offices, and a pharmacy. The neighborhood includes features such as sidewalks, a community watch program, golf courses, and small to moderate single-family homes. There is also a bowling alley and the newly opened Leland Cultural Arts Center. The neighborhood connects to Waterford to the northeast and to Lanvale Road to the southwest. Across US 17 is commercial development, anchored by Walmart Supercenter. Other businesses in the area include various restaurants and banks.

There are several residential neighborhoods along Lanvale Road. These do not include the commercial development as seen along the neighborhoods connected to US 17. Hearthstone, Southbend Wedgewood at Lanvale, and Lanvale Trace are a few of the neighborhoods that include small to moderate single-family homes. Lanvale Trace has sidewalks throughout the street system; Wedgewood at Lanvale has intermittent sidewalks throughout the development. Scattered single-family homes are located along the remainder of Lanvale Road.

Across US 17, opposite of Lanvale Road, is the entrance to the Brunswick Forest development. The entrance includes commercial development such as restaurants, grocery stores, fitness centers, coffee shops, banks, and information centers for Brunswick Forest. The residential development features various styles and sizes of duplexes and single-family homes. There is an intricate walkway system and sidewalks are located throughout the entire developed street system. The Cape Fear National Golf Course at Brunswick Forest is located south of the residential sites. Several areas of Brunswick Forest are under construction.



An area of the commercial development preceding Brunswick Forest.

The Stoney Creek, Snee Farm, and Planter’s Walk neighborhoods are located southeast of the I-140/US 17 Interchange. These neighborhoods include moderate single-family homes. There are no sidewalks in either development. Stoney Creek is incorporated into the Town of Belville; while Snee

Farm and Planter’s Walk are a part of Leland. The Spring Hill community is between I-140 and US 17. The area includes modular homes and small single-family houses. There is a known strong community presence in this area. South of the Stoney Creek neighborhood is a residential area on White Bridge Lane. The area includes a food pantry, a ball park, scattered modular homes, and a church.

The eastern town limits of Belville extend from US 17/74/76, along NC 133 and end before the Mallory Creek development. Much of the development just south of the highway includes light industrial buildings and approximately three abandoned lots that appear to have been for commercial or industrial use due to the amount of impervious surface still visible. There are a few churches within the area and a NCDOT facility along the Cape Fear River.

6.1.2 NEW HANOVER COUNTY

Areas within New Hanover County are more urban than in Brunswick County. A majority of the PSA within New Hanover County is a part of the City of Wilmington jurisdiction.

Existing neighborhoods in Wilmington vary in size and value. In the northern area of the county, within the historic district of Wilmington, there are no defined neighborhoods; however, the area is residential with scattered commercial development such as grocery stores, flea markets, restaurants, and local stores. The homes are typically one or two-story cottage or bungalow style homes with on-street parking and sidewalks.



Homes north of the Cape Fear Memorial Bridge typically feature one or two story cottage or bungalow style homes as pictured above.

The *Create Wilmington Comprehensive Plan* depicts the downtown area as an area of opportunity for a “high-density transition.” This would be accomplished by creating major destination attractions, a walkable street grid, and increasing densities with infill development, mid-rise buildings, and parking decks. The *Create Wilmington Comprehensive Plan* is described in more detail in Section 6.6.6. The South Front Apartment Complex is an example of the City of Wilmington’s endeavor to revitalize the downtown area. There is minimal vacant land throughout the downtown area. Dram Tree Park is located at the Cape Fear Memorial Bridge and includes a boat ramp.

Along US 421, south of the Cape Fear Memorial Bridge, the area includes scattered light industrial parcels with more commercial development. As described in the *Draft Create Wilmington Comprehensive Plan*, this area is depicted as developing into a “Post-industrial and Inner-city Revitalization” area by increasing mixed-use developments, relocating out-of-place businesses, re using industrial buildings, and using environmental design techniques to enhance crime prevention. The Port of Wilmington is located in this vicinity along the Cape Fear River, west of US 421.

The Sunset Park Historic District is a residential neighborhood with older style homes and sidewalks throughout the district. Sunset Park is listed on the National Register for Historic Places. Further south on US 421, the area becomes more commercialized with restaurants, pharmacies, general businesses, and local destination businesses. Behind the commercial development are single-family residential areas; several areas include low income, minority, and Hispanic populations. This area includes Bell

Street, Cape Fear Boulevard, Worth Drive, and Marion Long Leaf Mobile Home Park. Much of this area is depicted in the *Draft Create Wilmington Comprehensive Plan* as becoming “Post-industrial and Inner-city Revitalization” or “Suburban Commercial Retrofit” areas. Suburban commercial retrofit areas encourage infill development in place of parking lots, improved pedestrian accommodations, and connect existing residential areas. The area south of US 117 between US 421 and River Road is shown as a “Live/Work Innovation Zone.” Currently this area is zoned as industrial and/or light industrial land use. Live/Work innovation zones incorporate residential uses as part of a mixed-use development area and encourage office and academic development. On-street parking, sidewalks, and multimodal transportation choices are available.

Vacant land and residential housing becomes more prominent further south along US 421. Neighborhoods in the area include South Gate and Portwatch. South Gate is solely residential housing. Portwatch includes scattered single-family housing with intermittent sidewalks and industrial marine warehouses. Other industrial facilities in the area include Cape Fear Bonded Warehouse and National Gypsum. The area is currently zoned as residential and planned development. The *Create Wilmington Comprehensive Plan* proposes this area become “Greenfield Sites as Multi-use Places.” This would encourage the development of town centers and suburban mixed-use facilities with multi-modal connections (City of Wilmington 2015).

Wilmington’s Central Business District is located in downtown Wilmington, north of the Cape Fear Memorial Bridge. The area houses an array of small and large companies, banks, the Wilmington Convention Center, local shops, several historic structures, hotels, dining options, parking, and pedestrian accommodations, such as the Riverwalk. The Riverwalk provides scenic views of the Cape Fear River and USS North Carolina Battleship along with pedestrian access to several restaurants, local shops, and historic landmarks. Cape Fear Community College is also located in the Central Business District of Wilmington.



Wilmington’s Central Business District includes historic structures, small and large companies, and scenic views along the Riverwalk.

6.2 OTHER NEARBY FEATURES/INFLUENCES

6.2.1 NEIGHBORHOODS

Much of the area outside of the DCIA in Brunswick County is zoned as rural residential and includes scattered single-family homes of various size and value. The residential within the developments discussed in Section 6.1.1 are located outside of the DCIA limits.

Grayson Park is located off NC 87 (Maco Lane) west of I-140. This development includes single-family and multi-family homes, sidewalks, a community center with a park and tennis courts, and decorative street lighting. The development is relatively new and was under construction at the time of the site visit in March 2015.

The Mallory Creek development is located off NC 133, north of Brunswick Forest. Land owned by Cameron Management at the entrance of the neighborhood is zoned for commercial development; however, it is currently vacant. The development includes multi-family homes and various sized single-family homes. There is a sidewalk system in place throughout the development. There are also paved shoulders dedicated for bikes along the main entrance road.

Within the town limits of Belville, single-family homes are scattered along NC 133. Belville Elementary School, Brunswick Cove Nursing Center and Brunswick Riverwalk Park, which includes a boat ramp are also located along NC 133 within Belville. Neighborhoods in Belville are not as developed as they are in the Town of Leland, where developed commercial areas precede the homes. Neighborhoods within Belville include: Hawkeswater and a portion of Olde Towne. These two neighborhoods include modest single-family homes with no sidewalk facilities. Town limits extend to include parcels north of US 17, south of the Waterford development. The parcels within Belville range from light industrial to commercial.

The Leland Cultural Arts Center is located off US 17 behind the business offices preceding the Magnolia Greens neighborhood. The facility recently opened in the spring of 2015. It provides a variety of art classes including pottery, painting, theater, literary arts and healing arts.

In New Hanover County, neighborhoods that are located outside of the DCIA, but within the PSA include River Lights and Barclay West. River Lights is under construction pending the completion of the River Road Realignment project, which is currently under construction. It will include several single-family home lots, very similar to the residential design of neighborhood developments in Brunswick County. Barclay West is also under construction and located along 17th Street and Independence Boulevard. The community will consist of 133 acres of office and institutional buildings, 84 acres of regional business, 72 acres of multi-family housing, and four acres designated for community business. Barclay West is another example of the City of Wilmington’s endeavor to create live/work spaces.

6.2.2 RECREATION

There are no state or national parks or forests in the PSA. There are several local parks, some designated Section 6(f), within the PSA that are listed in Table 2 and shown on Figure 5. Other recreational facilities in the PSA include the Wilmington River Walk along the Cape Fear River, the Gary Shell Cross City Trail, which is primarily an off-road multi-use trail, several City of Wilmington designated bicycle routes, a paddle trail, and the Cape Fear National Golf Course in Brunswick Forest. Figure 5 depicts the location of the bike routes and paddle trail.

Table 2: Parks within the PSA

Name	General Location	Owner/Operator	Description
Brunswick Nature Park	Off of NC 133, north of Town Creek	Brunswick County Parks and Recreation Department	Kayak/canoe launch, picnic pavilion, hiking/biking trails
Brunswick River Park	Town of Belville, along Brunswick River	Brunswick County Parks and Recreation Department	Picnic shelters, river viewing dock, playground equipment, fishing pier
Dram Tree Park	Surry Street, near US 421 Bridge over the Cape Fear River	City of Wilmington	Boat ramp and kayak launch, parking; Section 6(f) resource

Name	General Location	Owner/Operator	Description
Halyburton Memorial Park	South 17 th Street	City of Wilmington	Nature preserve, walking/biking trails, picnic shelters, playground equipment, community building
Greenfield Park	US 421 and Lake Shore Drive	City of Wilmington	Paved pathway, amphitheater; Section 6(f) resource
Legion Sports Complex	North 3 rd Street	City of Wilmington	6,000 seat stadium, home to the New Hanover High Wildcats, the Wilmington Sharks, the Wilmington Tigers, and Legion Post 10 baseball; Section 6(f) resource
Olde Towne Neighborhood Park	Town of Belville, near NC 133	Olde Town Neighborhood Association	Picnic tables, volleyball courts, playground equipment, grills
Optimist Park	Front Street, near US 421 and Willard Street	New Hanover County	Baseball/softball fields
USS North Carolina Battleship Memorial Park	US 421 on the Cape Fear River	North Carolina Department of Cultural Resources	Battleship, museum/visitors center
Westgate Nature Park	On Westgate Drive, along Jackey's Creek	Town of Leland	Nature Park with paved trails for hiking and biking, an elevated boardwalk, an outdoor classroom, playground, picnic area, and 150 acres of wetlands; Section 6(f) resource
E.P. Godwin Stadium	US 117, east of the Port of Wilmington	City of Wilmington	Baseball Park

6.2.3 EMERGENCY SERVICES

The City of Wilmington is served by 11 City of Wilmington Fire Stations. Unincorporated areas of New Hanover County are served by the New Hanover County Fire Department.

Brunswick County Emergency Services provides fire and EMS service to all of Brunswick County and works with municipalities. Fire and rescue squads which service the PSA include the Leland Volunteer Fire Station and Navassa Volunteer Fire Station. The Navassa Volunteer Fire Station is located outside of the PSA.

The location of fire and emergency service stations are shown on Figure 5. Station 6 in New Hanover County and the Leland Volunteer Fire Station on NC 133 in Brunswick County are located within the DCIA.

6.2.4 PORT OF WILMINGTON

The Port of Wilmington is located within the DCIA along the Cape Fear River. The Port is situated on the eastern bank of the Cape Fear River with a 42-foot deep navigation channel to provide access from the Atlantic Ocean (North Carolina State Ports Authority 2015). The Port of Wilmington is equipped to handle containerized, bulk, break-bulk and specialized cargos. The Port is a Customs-Trade Partnership Against Terrorism (C-TPAT) certified location, designated as a foreign trade zone, and is one of the nation's strategic seaports. The Port of Wilmington is one of the few South Atlantic ports with readily available berths and storage for containers and cargo. CSX Transportation provides daily service for boxcar, tanker, and general cargo services.



Port of Wilmington property along South Front Street.

6.2.5 VOLUNTARY AGRICULTURAL DISTRICTS AND CENTURY FARMS

The Voluntary Agricultural District (VAD) Program encourages the preservation and protection of farmland from non-farm development. There are four separately owned designated VADs located or partially located within the PSA; 455 acres are within the PSA boundary (see Figure 5). Four of the VADs are located near the intersection of I-140 and US 17 and the remaining VAD is near NC 133 and the Cape Fear River.

The North Carolina Department of Agriculture and Consumer Services have a 'Century Farm' program that recognizes family farms that have been continuously operating for over 100 years. There are 39 Century Farms in Brunswick County and one in New Hanover County. While being recognized as a century farm provides no protections to the owners, it is a measure of community stability and shows the longevity and ties to a community that many families have had for more than 100 years. There are three active Century Farms located within the DCIA (See Figure 5). (NC Department of Agriculture and Consumer Services 2012).

6.3 BICYCLE AND PEDESTRIAN ACTIVITY

Designated bicycle facilities and routes are located throughout the entire PSA; however, they are more abundant throughout the street network in New Hanover County. Within the downtown district of Wilmington, there are several pedestrian facilities including sidewalks, pedestrian signals, and crosswalks. Along US 421, sidewalks and worn paths appear sporadically. Portions of the Cross City trail are located within the PSA along Independence Boulevard. Greenfield Lake Park also features a multi-use path encircling the lake. Several pedestrians and bicyclists were noted using the facility during the site visit.

In Brunswick County, bicycle and pedestrian facilities are located within residential developments; however, there are no designated connections between neighborhoods. Through discussions with the Town of Leland (See Appendix A), they expressed interest in developing a multi-use path to connect Mallory Creek and Brunswick Forest. There are no facilities along US 17 in Brunswick County; however,

pedestrians and cyclists were observed during the site visit. In Leland, intermittent sidewalks and worn paths surround the area near Town Hall and are along Old Fayetteville Road, and Village Road. However, past Town Hall Drive there are only worn paths.



Pedestrians in Brunswick Forest utilizing a multi-use path within the development.

Several pedestrians were noted during the field visit using sidewalks, worn paths, and the roadway. Pedestrians observed within Wilmington included Hispanics, Black or African Americans, and young children. Some pedestrians seemed to have a clear destination in mind, i.e. walking to or from the grocery store carrying bags. Pedestrians seen in Brunswick County were mostly confined to residential developments and appeared to be elderly.

Table 3 is an inventory of the existing and observed sidewalk facilities and observed pedestrians and bicyclists seen during the site visit in the neighborhoods described in Section 6.1.

Table 3: Existing Neighborhood Pedestrian Facilities/Observed Bicycle and Pedestrian Activity

Neighborhood	Pedestrians	Sidewalks	Bicyclists
Brunswick County			
The Willows	X	X	--
Waterford	X	X	--
The Arbors	--	X	--
Magnolia Greens	X	X	--
Hearthstone	--	X	--
Southbend	--	--	--
Wedgewood at Lanvale	--	X	--
Lanvale Trace	--	X	--
Brunswick Forest	X	X	X
Stoney Creek	--	--	--
Snee Farm/Planter's Walk	X	--	--
Spring Hill	--	--	--
Grayson Park	X	X	--
Mallory Creek	X	X	X
Hawkeswater	--	--	--
White Bridge Lane	--	--	--
US 17	X	--	X
New Hanover County			
River Lights	N/A	N/A	N/A
Barclay West	N/A	N/A	N/A
South Front Apartments	X	X	--
Sunset Park	N/A	--	N/A
Bell Avenue	X	--	N/A
City of Wilmington Historic District	X	X	X

Neighborhood	Pedestrians	Sidewalks	Bicyclists
Marion Long Leaf Mobile Home Park	X	X	X
Cape Fear Boulevard	X	--	X
South Gate	--	--	--
Portwatch	--	X	--
Worth Drive	X	X	--
Shipyards Boulevard	X	X	--
Independence Boulevard	X	X	--
US 421	X	X	--

Source: Based on observations made during field visit on 3/3/15 through 3/5/15.

There are no existing state-designated bicycle facilities in Brunswick County; however, the *Leland Bicycle Plan* recommends several bicycle routes within the PSA. These include a connection along US 17 from Village Road to Eagle Island, NC 133 south of US 17, and two crossings over US 17 near Jackey’s Creek at West Gate Drive and Ocean Gate Plaza that tie into the West Gate Nature Preserve and the commercial and residential development located on the northwest side of US 17.

6.4 TRANSIT

The municipalities within the PSA are served by the Cape Fear Public Transit Authority, which operates as Wave Transit and provides several different transit alternatives including the downtown free trolley, bus, Wavepool, the Seahawk Shuttle, Dial-a-Ride Transportation (DART), Greyhound, and Amtrak. Wavepool, and DART are on-call services. Fixed route services include the downtown free trolley, bus, Seahawk Shuttle, Greyhound and Amtrak. Greyhound and Amtrak offer services to and through Wilmington, however they do not make frequent stops within the city. The free downtown Trolley Service has ten stops beginning at the Downtown Station and ending at Chestnut Street/2nd Street (New Hanover County Public Library). The time between each stop varies from one to three minutes. The Wave Transit Bus includes 16 routes throughout Wilmington and Brunswick County. Routes located within the major roadways within the PSA include Shipyards Boulevard (Route 106), Carolina Beach Road (Route 201), Brunswick Connector (Route 204), and Longleaf Park (Route 205). The Seahawk Shuttle is associated with UNC- Wilmington and operates three buses; off campus routes, on campus routes, and another route which travels a smaller loop on campus than the on campus shuttle.

6.5 RAIL

CSX owns and operates a rail line within the PSA. The Wilmington switching yard, known as Davis Yard, is located in Leland and processes approximately 90,000 to 98,000 rail cars per year. CSX also has interchanges with the Wilmington Terminal Railroad (with connections to the Port of Wilmington) and short lines to the US Army’s Military Ocean Terminal at Sunny Point just south of the PSA. The short line to the US Army’s Military Ocean Terminal is owned by the US Department of Defense.

6.6 COMMUNITY COHESION

Community cohesion is found where people make connections in settings such as a church, school, or work place. It can also be found in neighborhoods, parks, restaurants, and community stores.

Several neighborhoods and residential areas showed indicators of community cohesion. Indicators include residential stability, economic stability, safety and health stability, community perceptions and identification, community connections, and community interactions. Residential stability involves the length of time residents have lived in the area, any identified neighborhood features, and stability in the

housing values. Economic stability refers to the income levels of the residents, unemployment ration, or local employment centers in the area. Safety and health stability includes crime levels, active neighborhood watch programs, community healthcare facilities, or infrastructure to support community living. Community perceptions and identification are statements regarding the residents' viewpoints of the area, if they identify with the area and know who else lives in the area. Community connections include features such as sidewalks, bicycle lanes, and multi-use paths connecting to community or commercial centers, active homeowners associations, active online community groups, or connections outside of the area, such as children attending the same school. Finally, community interactions are observed during the site visit and include instances of neighbors interacting, pedestrians, or children playing.

Table 4 lists the community cohesion factors noted in the residential areas within the PSA. Using the indicators listed above, three areas displayed all the factors of community cohesion. This included Brunswick Forest, Stoney Creek, and Snee Farm.

Table 4: Community Cohesion

Neighborhood	Residential Stability	Economic Stability	Safety and Health Stability	Community Perception/ Identification (Stated)	Community Connections	Community Interactions (Observed)
Brunswick County						
The Willows	X	X	X	--	X	X
Waterford	X	X	X	--	X	X
The Arbors	X	X	X	--	--	--
Magnolia Greens	X	X	X	--	X	X
Hearthstone	X	X	X	--	X	X
Southbend	X	X	X	--	--	--
Wedgewood at Lanvale	--	--	--	--	--	--
Lanvale Trace	--	--	--	--	--	--
Brunswick Forest	X	X	X	X	X	X
Stoney Creek	X	X	X	X	X	X
Snee Farm/ Planter's Walk	X	X	X	X	X	X
Spring Hill	X	--	--	X	--	X
Grayson Park	X	X	X	--	X	X
Mallory Creek	X	X	X	--	X	X
Hawkeswater	X	X	X	--	X	X
Whitebridge Lane	X	--	--	--	X	--
New Hanover County						
South Front Apartments	--	X	X	X	X	X
Sunset Park	X	--	--	X	--	--
Bell Street	X	--	--	--	--	X
City of	X	--	--	--	X	X

Neighborhood	Residential Stability	Economic Stability	Safety and Health Stability	Community Perception/ Identification (Stated)	Community Connections	Community Interactions (Observed)
Wilmington Historic District						
Marion Long Leaf Mobile Home Park	X	--	--	--	--	X
Cape Fear Boulevard	X	--	--	--	--	X
South Gate	--	--	--	--	--	--
Portwatch	--	--	--	--	--	X
Worth Drive	--	--	--	--	--	X

Note: Residents observed in the area were not interviewed; therefore Community Perceptions/Identification could not be accurately completed. Areas above checked for Community Perceptions/Identification was based upon previous comments regarding the project area.

6.7 LOCAL AREA PLANS/GOALS

6.7.1 STATE TRANSPORTATION IMPROVEMENT PLAN (STIP)

The NCDOT's 2016-2025 State Transportation Improvement Program (STIP) was reviewed to identify other transportation and infrastructure projects within or near the PSA and are listed in Table 5 and shown on Figure 6.

CAPE FEAR CROSSING

State Transportation Improvement Program
Project No. U-4738

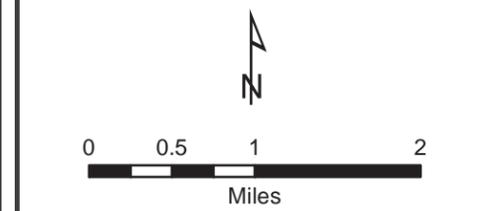
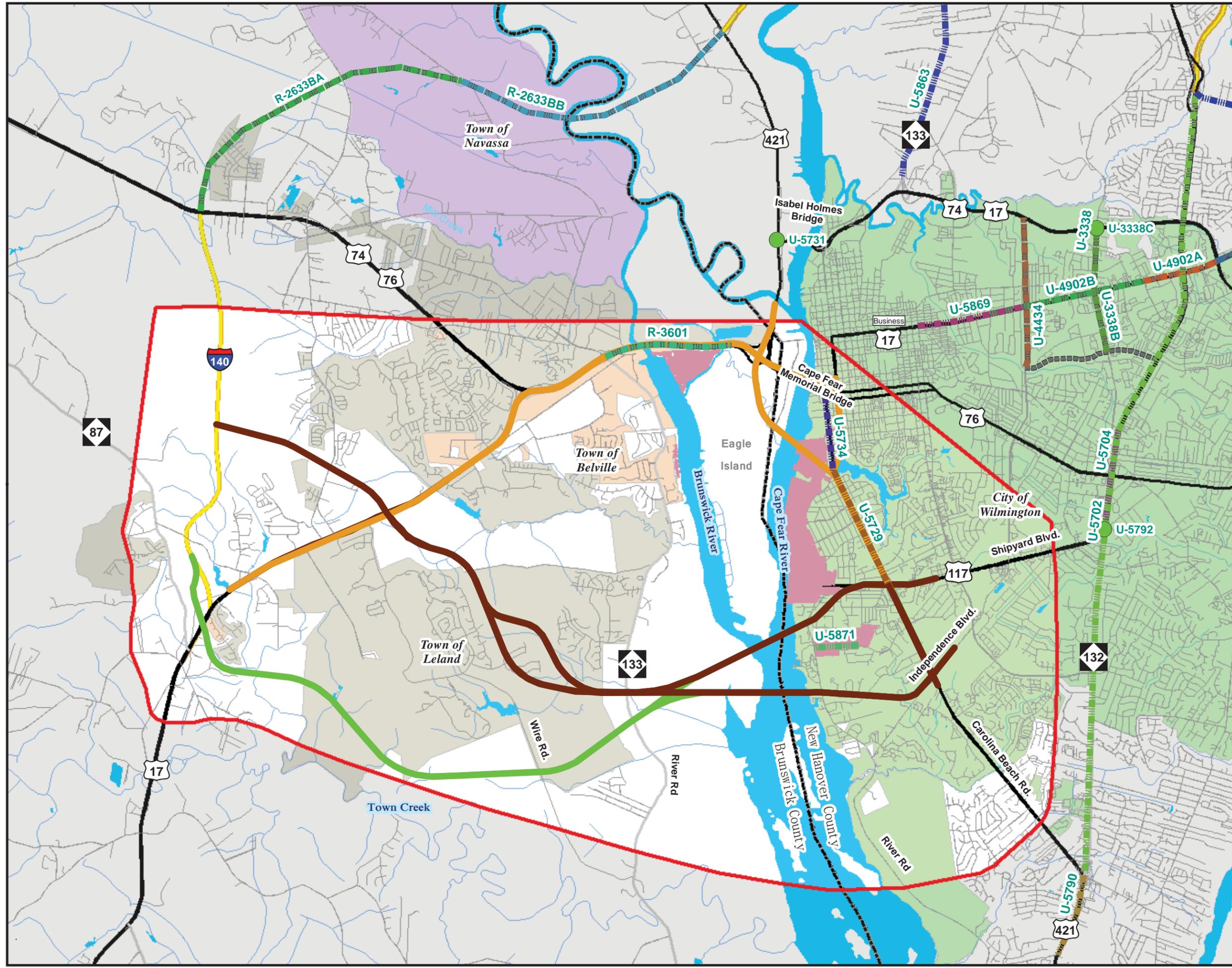
Community Impact Assessment



Figure 6: Project Area
STIP Projects

Legend

- Project Study Area
- Upgrade Existing Alternative Group
- Northern Alternative Group
- Southern Alternative Group
- STIP Interchange Project
- STIP Roadway Project
- Interstate
- US Route
- NC Route
- Local Road
- Water
- Belville
- Leland
- Navassa
- Wilmington
- County Boundary
- Port of Wilmington



Date: September 2015
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.

Table 5: Other Transportation Improvement Projects in the Vicinity of the Study Area

ID No.	County	Description	Schedule (Fiscal Years)
R-2633	Brunswick/New Hanover	I-140/US 17 (Wilmington Bypass), US 17 South of NC 87 in Brunswick County to I-40 in New Hanover County. Four-lane divided freeway on new location. Length: 20.2 miles.	AA: NC 87 South of Bishop to US 74/76 East of Malmo in Brunswick County – Complete AB: NC 87 South of Bishop to US 74/76 East of Malmo in Brunswick County – Complete BA: US 74/76 east of Malmo in Brunswick County to SR 1430 (Cedar Hill Road) – Under construction BB: SR 1430 (Cedar Hill Road) to west of US 421 north of Wilmington – Under construction BC: US 74/76 east of Malmo in Brunswick County to west of US 421 north of Wilmington CA: West of US 421 north of Wilmington to west of NC 133 – complete CB: West of NC 133 to US 117 – complete CC: US 117 to east of I-40 south of Castle Hayne – complete D: Implementation of Intelligent Transportation Systems (ITS) – Construction 2018
R-3601	Brunswick/New Hanover	US 17/US 74/76, NC 133/SR 1472 (Village Road) interchange to the US 421/NC 133 interchange. Add additional lanes on north and southbound lanes and widen bridge 090107 and bridge 090108. Length: 1.5 miles.	Under construction
U-5869	New Hanover	US 17 Business, US 17 (South 17 th Street) to Covil Avenue in Wilmington. Construct a road diet. Length: 1.3 miles.	ROW – 2024 Construction - 2025

ID No.	County	Description	Schedule (Fiscal Years)
U-4902	New Hanover	US 17 Business (Market Street), Colonial Drive to SR 1402 (Porters Neck Road). Access Management Improvements. Length: 8.6 miles.	A: SR 1272 (New Centre Drive) to Martin Luther King, Jr. Parkway – Complete. B: Colonial Drive to Martin Luther King, Jr. Boulevard to Station Road – ROW 2018, Construction 2020 C: Martin Luther King, Jr. Boulevard to Station Road – ROW 2018, Construction 2020 D: Lendire Road to SR 2734 (Marsh Oaks Drive) – ROW 2018, Construction 2020
U-5731	New Hanover	US 74, US 17/US 421 in Wilmington. Construct a fly-over and free flow ramp at interchange.	ROW – 2022 Construction - 2024
U-5710	New Hanover	US 74 (Eastwood Road), SR 1409 (Military Cutoff Road) intersection in Wilmington. Convert at-grade intersection to an interchange. Length: 2.0 miles.	ROW – 2020 Construction - 2022
U-5792	New Hanover	US 74 (Martin Luther King, Jr. Parkway), US 117/NC 132 (College Road) in Wilmington. Convert at-grade intersection to interchange.	ROW – 2020 Construction – 2022
U-5729	New Hanover	US 421 (Carolina Beach Road), US 421 (Burnett Avenue) to US 117 (Shipyard Boulevard) in Wilmington. Upgrade roadway. Length: 1.6 miles.	ROW – 2019 Construction - 2020
U-5734	New Hanover	US 421 (South Front Street), US 17 Business/US 76/US 421 (Cape Fear Memorial Bridge) to US 421 (Burnett Boulevard) in Wilmington. Widen to multi-lanes. Length: 1.0 mile.	ROW – 2021 Construction - 2023
U-5790	New Hanover	US 421 (Carolina Beach Road), NC 132 (South College Road) to Sanders Road in Wilmington. Widen existing roadway and construct flyovers at US 421 and NC 132. Length: 1.1 miles.	ROW – 2020 Construction - 2020
U-5702	New Hanover	NC 132 (College Road), SR 2048 (Gordon Road) to US 421 (Carolina Beach Road) in Wilmington. Access management and travel time improvements. Length: 9.7 miles.	ROW – 2023 Construction - 2025

ID No.	County	Description	Schedule (Fiscal Years)
U-5704	New Hanover	NC 132 (College Road), Wilshire Boulevard to US 117 (Shipyard Boulevard) in Wilmington. Access management and travel time improvements including interchange with US 76 (Oleander Drive).	ROW – 2023 Construction – 2025
U-5863	New Hanover	NC 133 (Castle Hayne Road), I-140/US 17 (Wilmington Bypass) to SR 1310 (Division Drive) in Wilmington. Widen to multi-lanes. Length 3.1 miles.	ROW – 2022 Construction - 2024
U-3338	New Hanover	SR 1175 (Kerr Avenue), Randall Parkway to US 74 (Martin Luther King, Jr. Parkway) in Wilmington. Widen to multi-lanes. Length: 3.2 miles.	B: Randall Parkway to US 74 (Martin Luther King, Jr. Parkway/Eastwood Road) – under construction C: SR 1175 (Kerr Avenue) interchange at US 74 (Martin Luther King, Jr. Parkway) – ROW 2018, Construction 2020
U-4434	New Hanover	SR 1209 (Independence Boulevard Extension), Randall Parkway to US 74 (Martin Luther King, Jr. Parkway). Multi-lanes on new location. Length: 1.7 miles.	Planning/Design – in progress ROW – unfunded Construction – unfunded
U-4751	New Hanover	SR 1409 (Military Cutoff Road Extension), SR 1409 (Military Road) to US 17 in Wilmington. Multi-lanes on new location. Length: 4.0 miles.	ROW – in progress Construction - 2018
U-3831	New Hanover	SR 2048 (Gordon Road), NC 132 interchange ramp to west of US 17 Business (Market Street) in Wilmington. Widen to multi-lanes. Length: 2.4 miles.	ROW – 2022 Construction - 2024
U-5871	New Hanover	New route, SR 2432 (Raleigh Street) to River Road in Wilmington. Construct two-lane road on new location. Length: 0.7 mile.	Under construction

Sources: North Carolina Department of Transportation 2016-2025 State Transportation Improvement Program.

Website: <https://connect.ncdot.gov/projects/planning/STIPDocuments1/2016-2025%20STIP.pdf>.

R – Rural Projects. U – Urban Projects. ROW – Right of Way

6.7.2 BRUNSWICK COUNTY

The *Brunswick County Comprehensive Transportation Plan* was adopted in 2010 and applies to areas of the DCIA within Brunswick County and outside municipal limits. The County's plan is a long range multi-modal transportation plan which covers transportation needs through 2035 (NC Department of Transportation 2010).

The *Brunswick County Unified Development Ordinance* (UDO) (May 2013, revised Feb 2014)) applies to areas of the PSA that are in Brunswick County and outside municipal limits. The UDO implements the policies and goals contained in the *Brunswick Tomorrow Comprehensive Plan*, the *Coastal Area Management Act (CAMA) Land Use Plan*, and other adopted plans.

The primary purpose of the *Brunswick Tomorrow Comprehensive Plan* is to “...create a long term vision for Brunswick County and explore issues that would assist County and community leaders in meeting the needs of its citizens over the next two decades.” The plan developed eight major strategic elements:

- Managed Growth/Planning
- Communication/Relationships/Consensus Building
- Economic Growth
- Development/Education
- Infrastructure
- Services
- Environment
- Quality of Life

A mission statement and set of goals were developed for each strategy. This plan is intended to guide actions, programs, and priorities of the County for the next twenty years (2024) (Brunswick County 2004).

The *Brunswick County CAMA Core Land Use Plan* was certified by the Coastal Resources Commission (CRC) in 2007. Brunswick County has experienced tremendous economic and social growth. This plan is intended to “comprehensively set goals and objectives for the county. It should provide a continuous planning process which is timely and responsive to the needs and desires of Brunswick County. Finally, the plan should provide a legal basis for land use regulations and a guide for capital improvements planning.” (Brunswick County 2011).

Connecting Northern Brunswick County was developed in 2013 through cooperation with the Wilmington MPO, Town of Leland, Town of Belville, Town of Navassa, and Brunswick County. The primary purpose of the plan is to improve and develop connectivity through Brunswick County’s collector street networks in order to relieve traffic congestion on major arterials between areas of interest (i.e. neighborhoods to commercial areas). The plan provides several guiding statements. The plan recommended four types of facility improvements: Category A, focuses more on the alignment of new collector streets based on proposed developments; Category B, focuses more on the connection rather than a specific alignment of collector streets; Potential Facility Upgrades that represent existing roadways that future collector streets will connect to; and Bicycle and Pedestrian Improvements, which included several recommendations to upgrade connectivity across US 17 and to the Brunswick Nature Park. The plan suggests performance measures for five target elements (external road connections, connections to adjoining property, provisions for gated communities, street design, and traffic calming). The performance measures are intended to assist in developing an implementation strategy for the plan (Kimley-Horn and Associates, Inc. 2013).

6.7.3 TOWN OF LELAND

The Town of Leland developed the *Master Plan* (2009), that uses sectors to regulate land use and type of development. There are six sectors: S1 Preserved Open Sector, S2 Reserved Open Sector, S3 Restricted Growth Sector, S4 Controlled Growth Sector, S5 Intended Growth Sector, and S6 Infill Growth Sector.

The *Master Plan* provides the framework for the recently drafted Flex Code. The Flex Code is intended to implement its *Master Plan* in a phased manner over the next 15 to 20 years, according to Robert Waring, Leland Planning Director.

The Flex Code currently applies to a small area of the Town. Developers can apply for a zoning amendment to develop under the provisions of the Flex Code. The Flex Code uses transects and generally regulates building placement and form rather than traditional Euclidean zoning that segregates and regulates land uses. The Flex Code has six transects: T1 Natural, T2 Rural, T3 Suburban, T4 General Urban, T40 General Urban Open, and T5 Urban Center.

The Master Plan indicates a percentage of each transect zone that must be within each sector. Along the US 17 Corridor, the Master Plan delineates the area between Leland town limits, south of US 17, as primarily sector S-5 zones incorporating S-2 zones between areas to interrupt linear strip development. To the north, between Lanvale Road and US 17, the Plan calls for lower density housing combined with large areas of preserved open space. Other general recommendations for US 17 listed in the Master Plan include: develop elevated bike/pedestrian connections across the corridor, establish parallel frontage roads, enhance landscape requirements, and develop design guidelines (Lawrence Group 2009).

6.7.4 TOWN OF BELVILLE

Belville's *Renaissance Plan* (2007) addresses smart growth principles that develop a mix of retail, office and residential uses. The plan focuses around a riverfront village with boardwalks, a new town hall, and public green space with mixed-use buildings. Specific areas of interest included in the plan are: downtown, transportation, aesthetics, parks and open space, civic, public services, and environmental (urbanSMARTgrowth 2007).

The *Vision 2020 Plan* (2007) recommends Belville focus on priorities which result in diversifying its tax base to provide a balance between residential needs and commercial services to create a sustainable economy. These strategies include: recreate a town center tied to the waterfront, diversify the housing stock to include townhomes, condominiums, single-family homes, etc., and develop a mixed-use downtown area (Lawrence Group 2007).

6.7.5 NEW HANOVER COUNTY

A majority of the PSA in New Hanover County is incorporated into the City of Wilmington; however, a portion in the southeast quadrant and the area east of the US 17/421/74/76 interchange are unincorporated areas of New Hanover County. The Draft *Plan NHC Future Land Use Plan* indicates the southeastern area to be zoned mostly residential, with areas abutting Carolina Beach Road (US 421) zoned as community mixed use. The area east of the interchange is zoned to include commerce centers, mixed use areas, and conservation areas (New Hanover County 2015). According to the *New Hanover County Comprehensive Plan*, the entire PSA falls within the Urban Services Boundary (USB). The USB identifies land as either having urban services or land that may receive urban services if developed (New Hanover County 2014).

New Hanover County's Zoning Ordinance applies to unincorporated areas of the County. The ordinance implements the planning policies expressed in the comprehensive plan. The code establishes zoning districts: residential, commercial, industrial, mixed use, and overlay districts. There are multiple subcategories of each category, with standards for the intensity and density of land uses (New Hanover County 2014).

6.7.6 CITY OF WILMINGTON

The City of Wilmington's *Land Development Code* (LDC) (March 2013) applies to areas of the PSA within the City's municipal limits. The ordinance implements the planning policies expressed in the *Wilmington-New Hanover County CAMA Land Use Plan Update*, *New Hanover County's Comprehensive Plan*, the *Future Land Use Plan*, corridor plans, special area plan and other planning documents as adopted by the City Council.

The *Cape Fear Commutes 2035 Transportation Plan* is the long range transportation plan for the urbanized area of Wilmington. It addresses current and future multi-modal transportation needs. The projects fall within three categories: Congestion Mitigation (projects that relieve traffic congestion), Quality of Life (projects that enhance the streetscape and add to the urban fabric), and Safety (projects that promote safe travel for all modes of travel). This report was prepared by the Wilmington Urban Area Metropolitan Planning Organization (WMPO). It will expire in December of 2015 (WMPO 2010). Once the *Cape Fear Commutes 2035 Transportation Plan* expires, the *Cape Fear Transportation 2040 Plan* will be the guiding transportation document used by federal, state, and local governments to steer transportation projects in the area. This plan considers all modes of transportation, including automobiles, trucks, buses, trains, airplanes, ferries, bicycles, and walking and lists goals and objectives for each mode. Within the Draft *Cape Fear Transportation 2040 Plan*, the proposed project study area is shown on several figures and discussed as a proposed toll road.

The Draft *Create Wilmington Comprehensive Plan* will be the guiding document to decisions regarding growth and development for the Wilmington Metropolitan Area upon completion. The plan is broken into five separate reports: Growth Factors, Foundations, Development Policies, Growth Strategies Maps, and Executive Summary. Currently, drafts of the Growth Factors Report and the Foundations Report have been released for public input. The Foundations Report summarizes the public input collected throughout the process of the document and discusses the City of Wilmington's legacy planning documents. The Growth Factors report describes the past changes Wilmington has encountered and describes the current demographic, social, and economic conditions. The *Create Wilmington Comprehensive Plan* is developed around seven themes: creating a place for everyone, getting around, regional collaboration, changing places and revitalized spaces, unique places and captivating spaces, nurturing community, and opportunity and prosperity. The Growth Strategies maps describe the current land use of the city and the way in that it should grow and change in the future. There are six main components to the maps: Mixed-use Centers, Areas of Opportunity, Corridors and Complete Streets, Transit that Works, Open Spaces and Green Connections, and Character and Pattern Areas (City of Wilmington 2015).

The Mixed-Use Centers map denotes mixed-use areas that already exist, are emerging, planned, or newly designated. Neighborhood nodes also appear on the map and are intended to foster neighborhood-scale development activities. Several mixed-use centers and neighborhood nodes appear within the PSA and at major proposed intersections.

The Areas of Opportunity map depicts areas of the city which have the greatest potential to accommodate future growth, infill, and new development. There are eight types of opportunity areas shown on the map: High Density Transitions, River Lights, Intracoastal Tidewater, Post-industrial and Inner-city Revitalization, Live/Work Innovation Zones, Suburban Commercial Retrofit, Greenfield Sites as Multi-use Places, and Neighborhood-scale Infill Development. Within the PSA, downtown Wilmington is displayed as a High-density Transition area. US 421, near the port, is designated as Post-industrial and Inner-city Revitalization. The area surrounding the intersection at US 421 and US 117 is Suburban

Commercial Retrofit and Live/Work Innovation Zones and the area surrounding Independence Boulevard is designated for Greenfield Sites as Multi-use Places.

The Corridors and Complete Streets map distinguishes major roadway corridors and parkways from community connector streets and special character streets. Several special character streets are designated within the Wilmington Historic District and the Sunset Park Historic District. These types of streets will promote bicycle and pedestrian facilities and minimize the exposure of surface parking lots, parking decks, etc.

The Transit Work map distinguishes transit-oriented mixed-use centers, high capacity routes, and transit hubs. The goal of the map is to encourage more transit stations in urban areas that integrate other land uses. Within the PSA, US 421 contains several transit-oriented mixed-use centers.

The Green Connections and Open Spaces map proposes several bicycle and pedestrian accommodations throughout Wilmington. The map depicts a planned greenway along US 421, US 117, and Independence Boulevard that is located within the DCIA (City of Wilmington 2015).

The *Southside Small Area Plan* is bound by the Cape Fear River to the west, 17th Street to the east, Market Street to the north, and Greenfield Lake Park to the south. Seven plan elements were developed from the vision statement and input from the community. Each element includes goals, objectives, and strategies. The plan elements include community character, civic engagement, crime, safety and code enforcement, economic development, land use, infrastructure, and redevelopment opportunities. Within the PSA, the plan identifies redevelopment opportunities at the Cape Fear Memorial Bridge, along Third Street and Second Street between Dawson Street and Greenfield Street, and along Wooster Street and Dawson Street between Third Street and Fifth Street (City of Wilmington 2009).

The WMPO is currently developing *Cape Fear Transportation 2040*, a long-term Metropolitan Transportation Plan (MTP) to be used by federal, state, and local governments to steer transportation projects in the region.

6.8 WATER AND SEWER INFRASTRUCTURE

6.8.1 WATER SERVICE

The entire PSA has water service (Figure 7). The Cape Fear Public Utility Authority (CFPUA) provides water and sewer services for the residents of the City of Wilmington and New Hanover County. Wilmington and New Hanover County residents living within the PSA are served by CFPUA's largest system, the Sweeney Water Treatment Plant. This plant treats surface water from the Cape Fear River and has a capacity of 35 million gallons per day (MGD) (Cape Fear Public Utility Authority n.d.).

The Town of Leland purchases water from Brunswick County to supply water to the Brunswick Forest Subdivision; however, the Town purchases water from H2GO (formerly Brunswick Regional Water and Sewer) to supply water to the rest of the town. The Town of Belville is also served by H2GO. Brunswick County owns the Northwest Water Treatment Plant, located outside of the PSA in the City of Northwest. The Northwest Plant's water supply is the Cape Fear River purchased from the Lower Cape Fear Water and Sewer Authority. It has a treatment capacity of 24 MGD and on-site storage of 9 MGD (H2GO n.d.) (Strickland 2015).

6.8.2 SEWER SERVICE

Sewer service is not available for unincorporated areas within the PSA (Figure 7). In Wilmington and New Hanover County, the Cape Fear Public Utility Authority (CFPUA) operates two main wastewater treatment plants: James A. Loughlin (Northside) Wastewater Treatment Plant (WWTP) and M’Kean Maffitt (Southside) WWTP. The Northside WWTP has capacity to treat 10 MGD. The Southside WWTP has a capacity to treat 12 MGD and currently treats approximately 8.4 MGD. CFPUA also operates the Walnut Hills WWTP, which has a capacity of 100,000 gallons per day (gpd) and currently treats 50,000 gpd (Cape Fear Public Utility Authority n.d.).

The Town of Leland has sewer service through the Northeast Brunswick Regional Wastewater Treatment Plant located in the Town of Navassa, and owned and operated by Brunswick County. The plant began operation in 2003. It is currently treating approximately 2.475 MGD. The Town of Belville’s wastewater is also handled by H2GO and is treated by the Belville WWTP. This plant has a capacity of 400,000 gpd. The unincorporated areas of Brunswick County rely on septic tanks for wastewater treatment (Brunswick County n.d.) (Strickland 2015).

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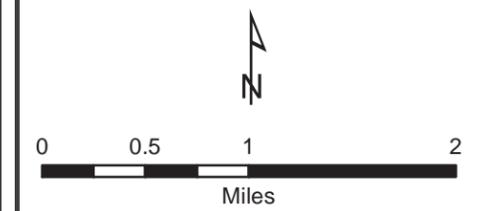
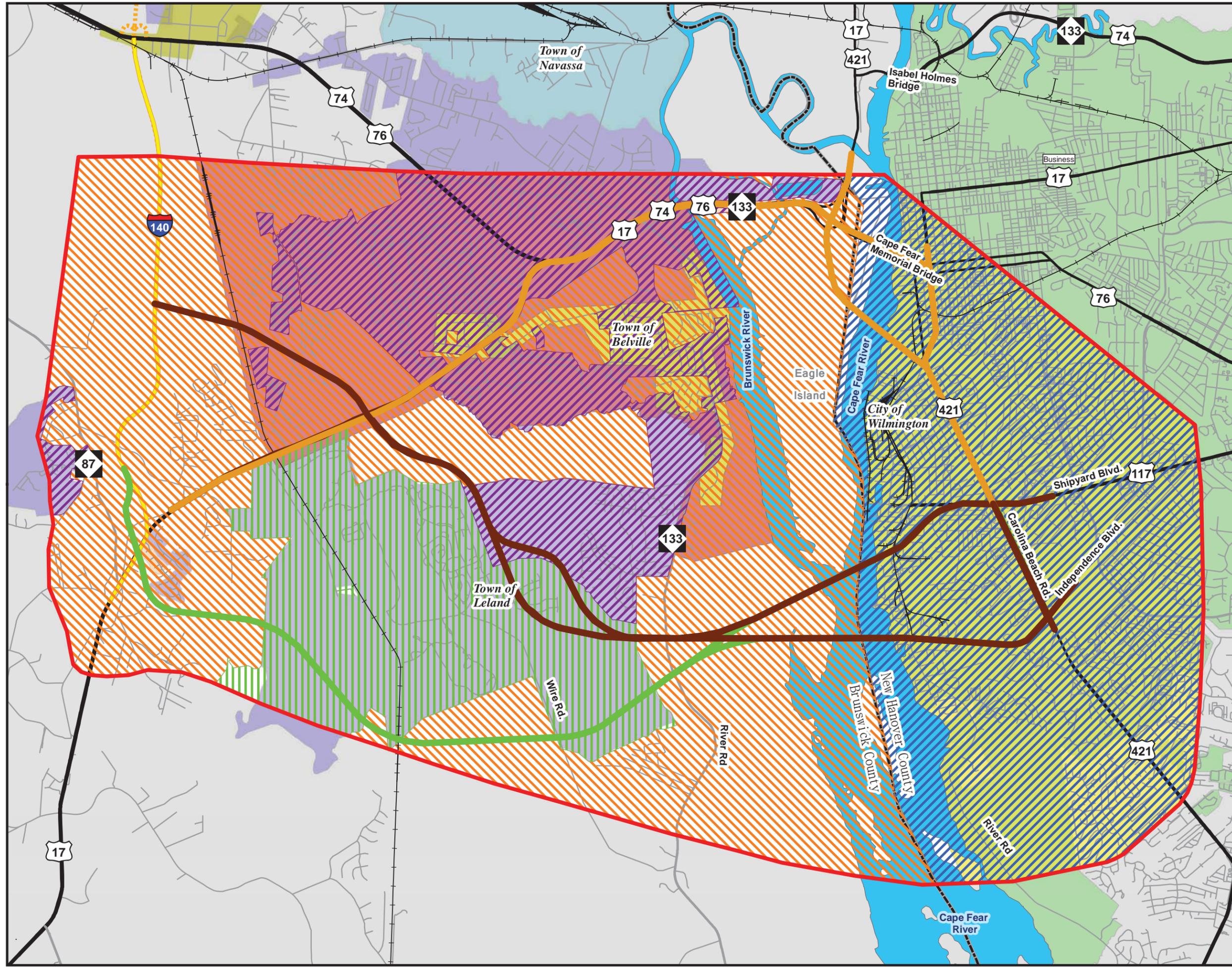
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Figure 7: Water and Sewer Service Areas

Legend

- Project Study Area
- Upgrade Existing Alternative Group
- Northern Alternative Group
- Southern Alternative Group
- CFPWA Water Service Area
- CFPWA Sewer Service Area
- Brunswick County Water Service Area
- Brunswick County Sewer Service Area
- H2Go Water Service Area
- H2GO Sewer Service Area
- Town of Leland Water Service Area
- Interstate
- US Highway
- NC Highway
- Future Wilmington Bypass (I-140)
- Water



Date: September 2015
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.

6.9 AREA/COMMUNITY CONTROVERSY

Citizens of Brunswick and New Hanover Counties are aware of the proposed project and it has been included in multiple community and county plans for a number of years. The following concerns with the project have been expressed to the project team.

- The Snee Farm, Stoney Creek, and Spring Hill communities have shown concern over project alternatives that include a terminus at the I-140/US 17 interchange. Per small group meeting June 26th, 2006
- National Gypsum Company, Inc. has shown concern over alternatives that require acquisition of the plant stating “this would be devastating as the plant would no longer have deep water access, which makes it unique and operational.” Per meeting April 6th, 2011
- The Town of Leland has concern over the potential barrier effects that the project may have on its community. Per meeting with the Town of Leland on March 4th, 2015
- The City of Wilmington is concerned that the project will impact the historic districts near where the existing US 421 bridge crosses the Cape Fear River and potentially disrupt the type of growth they are trying to develop (creative districts) in this same area. Per meeting with City of Wilmington on March 3, 2015

6.10 WATER SUPPLY/WATERSHED

The PSA contains numerous unnamed tributaries (UT) as well as 20 named streams (Figure 8). The Brunswick River (classified as SC) parallels the Cape Fear River before their confluence below Eagle Island. Alligator Creek and Greenfield Creek are classified as SC;Sw. The rest of the streams within the PSA are classified as C;Sw, with the exception of Hewletts Creek and Whisky Creek in the City of Wilmington. These two streams are classified as SA;HQW because they are used for shellfishing. Table 6 defines the stream classifications found within the PSA.

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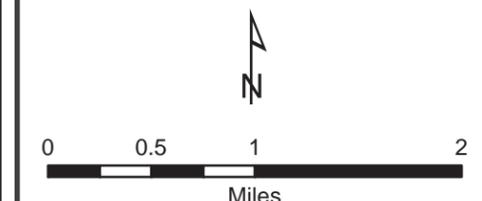


Figure 8: Natural Environmental Features

Legend

-  Project Study Area
-  Upgrade Existing Alternative Group
-  Northern Alternative Group
-  Southern Alternative Group
-  Primary Nursery Area
-  Floodplain
-  303(d) Impaired Stream
-  Wetland
-  Conservation Property
-  Interstate
-  US Highway
-  NC Highway
-  Local Road
-  Railroad
-  Future Wilmington Bypass (I-140)
-  Water
-  County Boundary

Purple areas include Primary Nursery Areas and Wetlands



Date: September 2015
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.

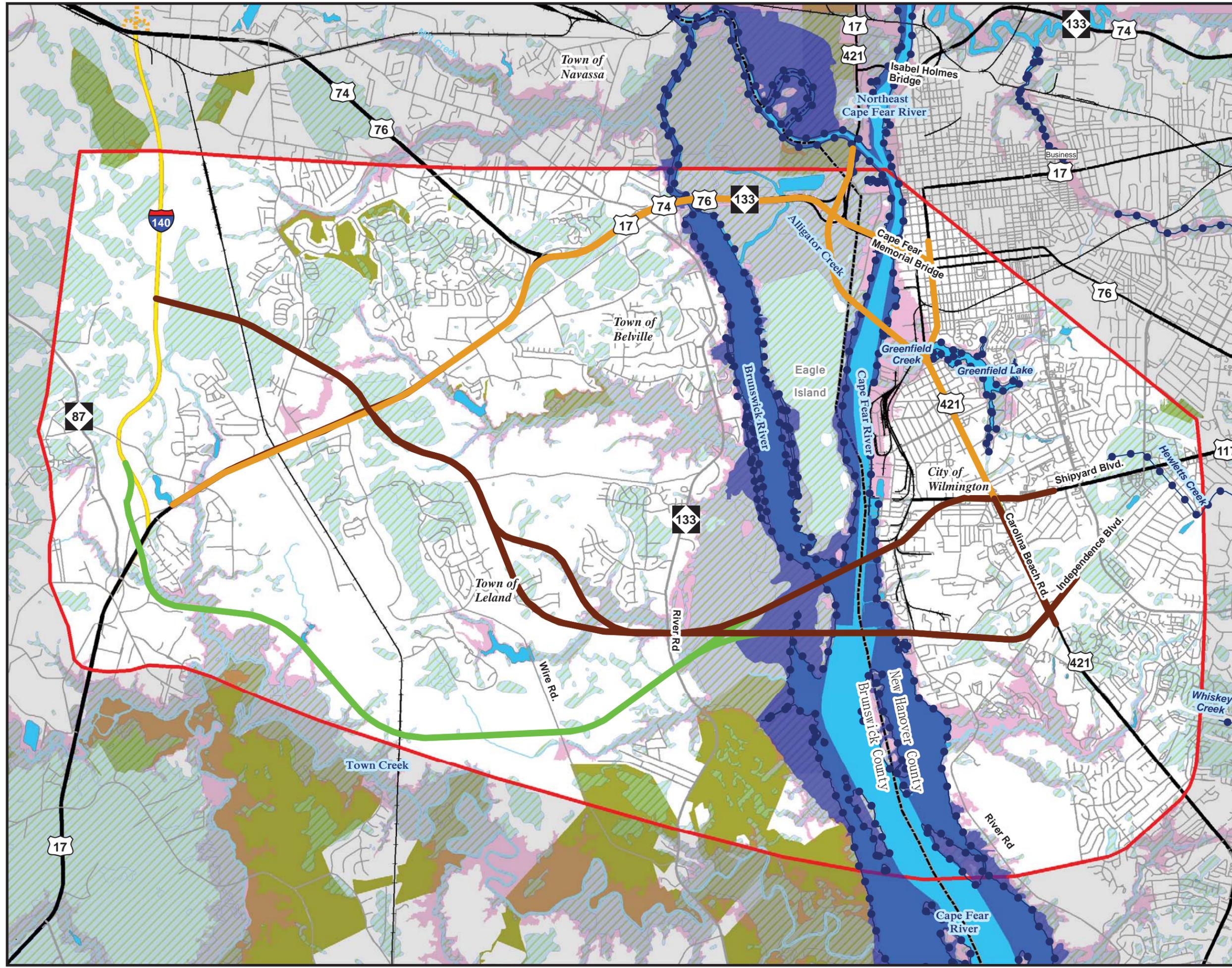


Table 6: Definitions of Stream Classifications

Stream Classification	Definition
Class C	Waters protected for uses such as secondary recreation, fishing, wildlife, fish consumption, aquatic life including propagation, survival and maintenance of biological integrity, and agriculture. Secondary recreation includes wading, boating, and other uses involving human body contact with water where such activities take place in an infrequent, unorganized, or incidental manner.
Class SC	All tidal salt waters protected for secondary recreation such as fishing, boating, and other activities involving minimal skin contact; fish and noncommercial shellfish consumption; aquatic life propagation and survival; and wildlife.
Class SA	Tidal salt waters that are used for commercial shellfishing or marketing purposes and are also protected for all Class SC and Class SB uses. All SA waters are also HQW by supplemental classification.
Sw (Swamp Waters)	Supplemental classification intended to recognize those waters which have low velocities and other natural characteristics which are different from adjacent streams.
High Quality Waters (HQW)	Supplemental classification intended to protect waters which are rated excellent based on biological and physical/chemical characteristics through Division monitoring or special studies, primary nursery areas designated by the Marine Fisheries Commission, and other functional nursery areas designated by the Marine Fisheries Commission.

Source: NCDENR 2015

There are six stream segments within or partially within the PSA that are on the *Final 20014 303(d) List* (NC Department of Natural Resources 2014). The next 303(d) list will be released in April of 2016. The streams and a brief description of the impairment are listed in Table 7 and shown on Figure 8. No Outstanding Resource Waters or Wild and Scenic Rivers exist within or within one mile of the PSA.

Table 7: Streams listed on the 305(b) list

DWQ Stream Index Number	Stream Name	Description	Reason for Rating
18-74-(61)	Northeast Cape Fear River	From mouth of Ness Creek to Cape Fear River	Fish tissue mercury
18-77	Brunswick River	From source to Cape Fear River	Dissolved Oxygen; Fish tissue mercury
18-(71)a2	Cape Fear River	From Railroad bridge at Navassa to Greenfield Creek	Dissolved oxygen; pH; fish tissue mercury
18-(71)a3	Cape Fear River	From Greenfield Creek to Barnards Creek	Copper; Dissolved Oxygen; fish tissue mercury
18-(71)a4	Cape Fear River	From Barnards Creek to 0.6 mile downstream of Barnards Creek	Dissolved Oxygen; pH; fish tissue mercury
18-(71)a5	Cape Fear River	From 0.6 miles downstream of Barnards Creek to 1.9 miles downstream of Mott Creek	Copper; Dissolved Oxygen; fish tissue mercury
18-76-1	Greenfield Lake	Entire Lake	Chlorophyll a; fish tissue mercury
18-87-26a	Hewletts Creek	From source to 0.5 miles inland of Intracoastal Waterway	Shellfish growing area-prohibited; fish tissue mercury
18-87-28	Whiskey Creek	From source to Intracoastal Waterway	Shellfish Growing area-prohibited

Source: NCDENR 2014

The entire lengths of the Cape Fear, Northeast Cape Fear, and Brunswick Rivers within the PSA are designated as Primary (Fishery) Nursery Areas (PNA). The dredged portion of the navigational channel (used for Port of Wilmington access) is not included (NCDENR 2011). These areas represent important areas for numerous species including finfish and crustaceans, which are of commercial and recreational importance. The Cape Fear and Brunswick Rivers are designated Essential Fish Habitat (EFH) for the South Atlantic Fishery Management Council’s Shrimp, Red Drum, Snapper and Grouper, and Coastal Migratory Pelagic Fishery Management Plans (South Atlantic Fishery Management Council 2014).

Major rivers and adjacent tributaries that are tidally influenced and within the PSA are subject to Section 10 of the Rivers and Harbors Act. The entirety of the Cape Fear River, Northeast Cape Fear River, and Brunswick River within the PSA are navigable rivers. Town Creek, Alligator Creek, Barnards Creek, Sturgeon Creek, and Greenfield Creek are tidally influenced and covered under Section 10 as well.

The project lies in the eastern portion of the Cape Fear River Basin within the Coastal Plain. The PSA contains portions of three North Carolina Division of Water Resources (NCDWR) sub-basins. Six watersheds are included in the PSA. Five of the six are designated as “Targeted Local Watersheds” (Hydrologic Unit Codes: 03030005040010, 03030007140010, 03030005050010, 03030001040020, and 03030005060010) by the North Carolina Division of Mitigation Services (NCDMS) (NC Department of Natural Resources 2015). Targeted Local Watersheds are those that have a high need for improvement and a high potential to benefit from restoration efforts, many of which occur in the form of mitigation by the NCDOT. A Targeted Local Watershed plan exists for 03030005050010, which was adopted in 2001 (NC Wetlands Restoration Program 2001). The plan identifies goals to improve and protect the water quality, improve flood protection, address growth and development pressures on the watershed, and preserve wildlife habitat.

6.11 COMMUNITY DEMOGRAPHICS

6.11.1 POPULATION – TRENDS AND COMPOSITION

According to the U.S. Census Bureau, between 2000 and 2010, the population of Brunswick and New Hanover Counties experienced growth by 46.6 and 26.3 percent, respectively. Based on projections made by the North Carolina Office of State Budget and Management (NC OSBM), this growth trend is expected to continue through 2035 for both counties (see Table 8). The projected population growth in the two counties, coupled with physical indicators of recent growth observed within the PSA, indicate notable growth and development in the vicinity of the project.

Table 8: Population Forecasts

Area	Population				Growth		
	2000	2010	2020	2035	Difference (2000 to 2035)	Percent Change	Annualized Growth
Brunswick County	73,732	108,085	137,036	183,410	109,678	148.8	4.3
New Hanover County	160,944	203,325	235,831	283,028	122,084	75.9	2.62
North Carolina	8,081,986	9,574,917	10,573,611	12,119,680	4,037,694	50.0	1.4

Source: NC Office of State Budget and Management 2014

6.11.2 RACIAL MAKEUP

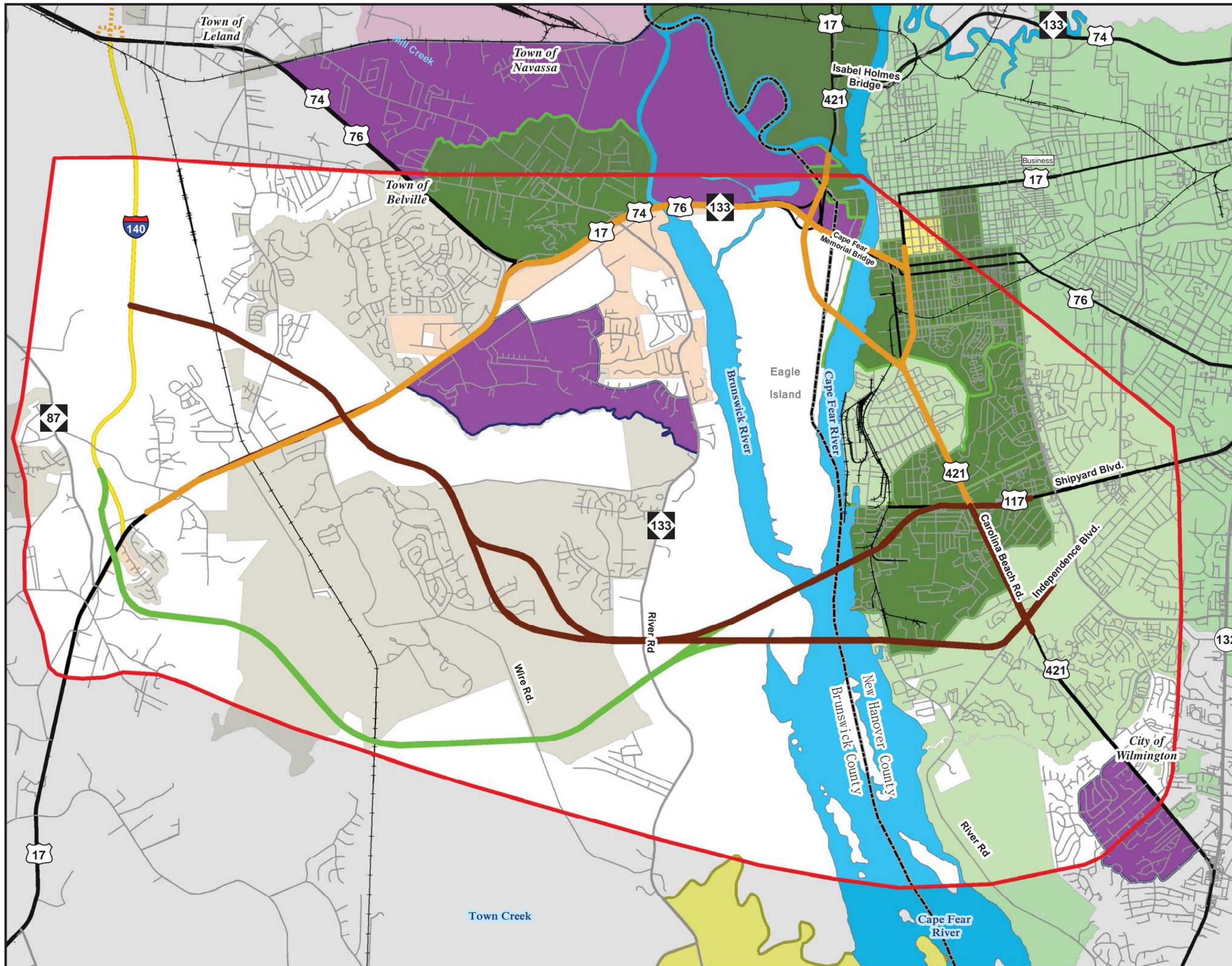
According to the American Community Survey (ACS) 5-year estimates (2009-2013), 74.7 percent of the DSA identified themselves as white, 17.6 percent as black or African American, 1.1 percent as Asian, and less than one percent as American Indian/Alaskan Native or Native Hawaiian/Pacific Islander. The racial makeup for Brunswick and New Hanover Counties is similar to the DSA; 84.0 percent white and 10.9 percent Black or African American in Brunswick County and 80.6 percent white and 14.6 percent black or African American in New Hanover County.

The minority population, which includes both racial and ethnic minorities, is 28.5 percent in the DSA. The minority population in Brunswick and New Hanover Counties is 18.9 percent and 23.3 percent, respectively. The threshold for identifying potential Environmental Justice populations is a DSA Block Group minority population 10 or more percentage points higher than the respective County. In New Hanover County, 11 block groups exceed the minority threshold. Nine of the block groups (Census Tract (CT) 111, Block Group (BG) 1; CT 113, BG 2; CT 107, BG 1; CT 108, BG 1; CT 110, BG 1; CT 112, BG 3; CT 107, BG 2; CT 111, BG 2; CT 110 BG 2) are located in the vicinity of the proposed interchanges at US 421 and US 74/76 and at US 421 and US 117. One block group, CT 121.01, BG 3, is located further south at the existing interchange of US 421 and NC 132 (College Road), and one block group (CT 115, BG 2) is located north of the Cape Fear Memorial Bridge, west of the Cape Fear River. Figure 9 depicts block groups exceeding the minority threshold. Table 9 provides a high level overview of the minority population within the DSA. Detailed data on the minority population can be found in Appendix B.

Table 9: Minority Population

Geography	Total Population	White, Non-Hispanic		Minority Population*	
		#	%	#	%
DSA	70,779	50,638	71.5%	20,141	28.5%
Brunswick County	110,324	89,422	81.1%	20,902	18.9%
New Hanover County	206,403	158,358	76.7%	48,045	23.3%

US Census Bureau, American Community Survey 5-year Estimates (2009-2013), Table B03002, "Hispanic or Latino Origin by Race."



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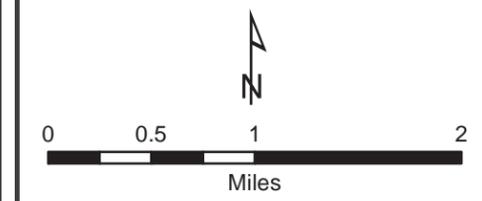
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Figure 9: Block Groups Exceeding Minority and Low Income Thresholds

- Legend**
- Project Study Area
 - Upgrade Existing Alternative
 - Northern Alternative
 - Southern Alternative
 - Block Groups above poverty threshold
 - Block Groups above minority threshold
 - Block Groups above both poverty and minority threshold
 - Interstate
 - US Highway
 - NC Highway
 - Local Road
 - Railroad
 - Future Wilmington Bypass (I-140)
 - Water
 - Belville
 - Leland
 - Navassa
 - Wilmington
 - County Boundary



Date: September 2015
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.

6.11.3 ETHNIC MAKEUP

Within the DSA, 6.8 percent of the population is Hispanic compared to 5.0 percent of Brunswick County and 5.3 percent of New Hanover County. The greatest concentrations of Hispanic populations in Brunswick County were in Census Tract 201.04, Block Group 2 and Census Tract 201.03, Block Group 2 that had 20.1 percent and 10.3 percent, respectively. The first block group spans from the Cape Fear Memorial Bridge to just east of Riverview Drive, north of US 17. The second block group is also north of US 17, mostly including the unincorporated area of Brunswick County north of Brunswick Forest, follows Lanvale Road to Old Fayetteville Road, and extends behind the Magnolia Greens and Waterford residential areas. The largest Hispanic populations in New Hanover County were in four block groups, Census Tract 115, Block Group 2, Census Tract 113, Block Group 2, Census Tract 108, Block Group 1, and Census Tract 121.01, Block Group 3. Census Tract 115, Block Group 2 had a 12.6 percent Hispanic population in 2010. The boundaries of Census Tract 115, Block Group 2 are located north of the Cape Fear Memorial bridge and continue north outside of the PSA. Census Tract 113, Block Group 2 had an 18.5 percent Hispanic population in 2010 and is located south of the Cape Fear Memorial bridge to the west of US 421 and continues south along US 421 to the intersection at Front Street and Burnett Boulevard. Census Tract 108, Block Group 1 had a Hispanic population of 30.2 percent in 2010. The boundaries of Census Tract 108, Block Group 1 begins at Southern Boulevard and extends to Sunnyvale Drive, encompassing the area to the west of US 421. Census Tract 121.01, Block Group 3 had a 25.3 percent Hispanic population in 2010 and is located in the southern area of the DSA beginning at Silva Terra Drive and extending to Antoinette Drive, including the area west of US 421. For more information see Appendix B.

6.11.4 LIMITED ENGLISH PROFICIENCY

For public outreach purposes, it is important to identify populations with limited English proficiency (LEP). According to the U.S. Census Bureau, there are 1,823 Spanish-speaking adults that speak English less than very well in the DSA. This indicates a LEP population that meets the US Department of Justice LEP Safe Harbor Act threshold of 1,000 persons or 5 percent of the DSA. In addition, the data indicates both an Other Indo-European and an Asian/Pacific speaking language groups that exceed 50 persons in the DSA that may require language assistance.

Figure 10 depicts the LEP populations in the area. In New Hanover County, several LEP populations are located along US 421 between Front Street and US 117. In Brunswick County, populations are located north of US 17, between the Cape Fear Memorial Bridge and the Brunswick River, and between Grandiflora Drive and Lanvale Road.

6.11.5 TITLE VI POPULATIONS

Title VI of the Civil Rights Act of 1964, protects individuals from discrimination on the grounds of race, age, color, religion, disability, sex, and national origin. According to the ACS 5-year estimate (2009-2013), 6.9 percent of the population in the DSA is under the age of 5 and 14.9 percent is over 65 years of age. There are approximately six child care facilities and three adult-care facilities within the DCIA in Brunswick and New Hanover Counties. The location of these facilities is shown on Figure 5. It was noted during the site visit that Worth Drive included several homes with handicapped accessible ramps.

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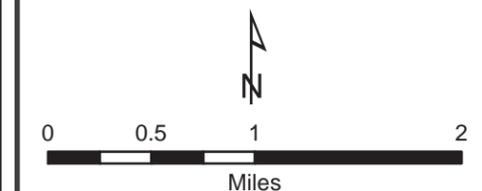
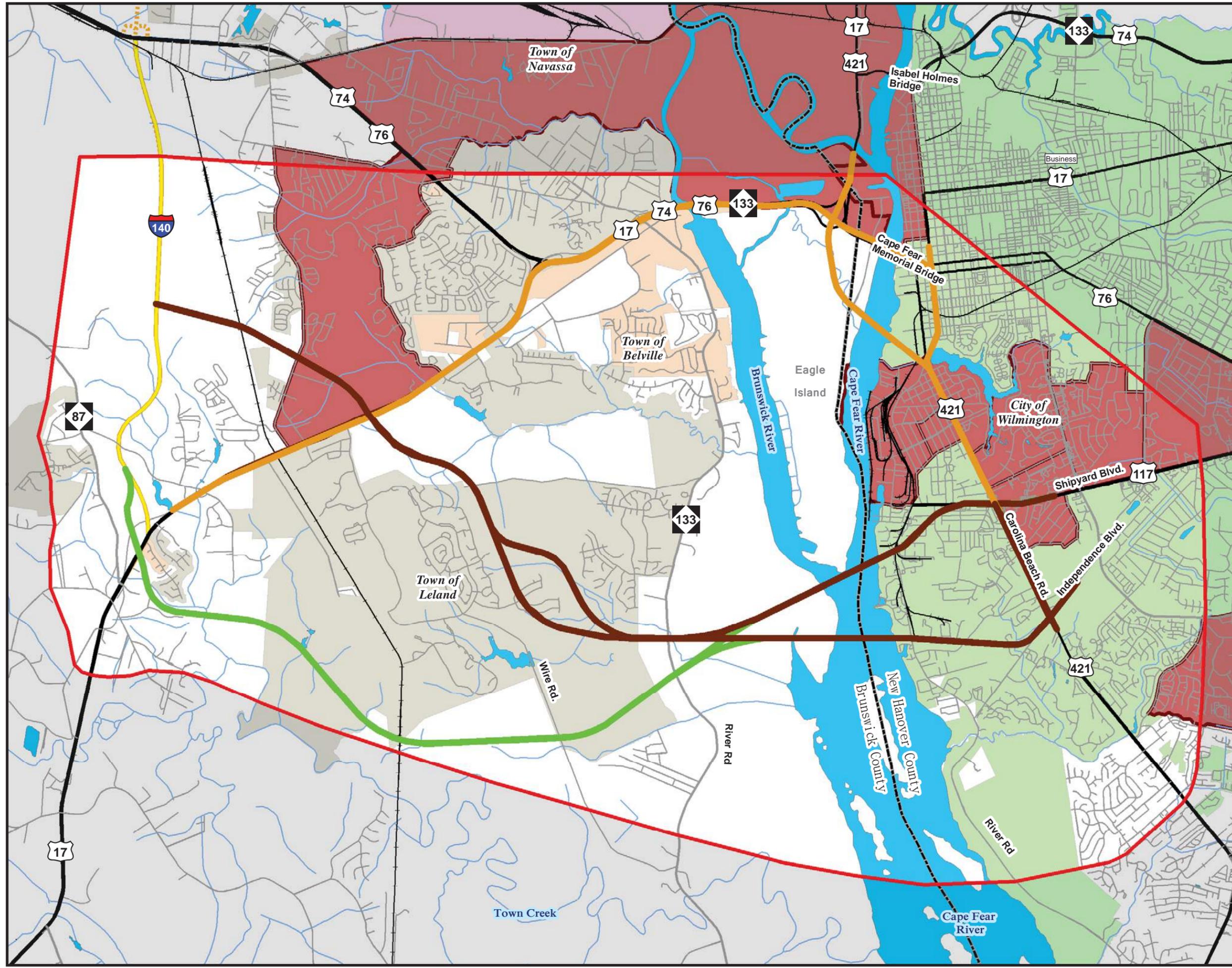
Community Impact Assessment



Figure 10: Limited English Proficiency Populations

Legend

- Project Study
- Upgrade Existing Alternative
- Northern Alternative
- Southern Alternative
- Block Groups above the LEP threshold
- Interstate
- US Highway
- NC Highway
- Local Road
- Railroad
- Future Wilmington Bypass (I-140)
- Water
- Belville
- Leland
- Navassa
- Wilmington
- County Boundary



Date: September 2015
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.

6.12 ECONOMICS

6.12.1 MEDIAN INCOME VALUES



Marion Mobile Home Park

According to the ACS 5-year estimates (2009-2013), the median household income for Brunswick County in 2013 was \$46,438 and for New Hanover County, \$49,835. In Brunswick County, some block groups within the DSA have higher median household incomes than others. The block groups with a higher median income correspond with the location of new residential communities including, Brunswick Forest, Mallory Creek, Waterford, Magnolia Greens, and Grayson Park. In New Hanover County, the proportion of block groups within the DSA that are lower than the county median household income is higher than those in Brunswick County.

6.12.2 BELL STREET LOW-INCOME POPULATIONS

According to the ACS 5-year estimate (2009-2013), 18.1 percent of the DSA lives below the poverty level with 8.1 percent below half the poverty level. Another 9.2 percent live near the poverty level.

Table 10 shows how these percentages compare to Brunswick County and New Hanover County.

The threshold for identifying potential low-income populations for the Environmental Justice analysis is five percent above the county averages, totaling to 21.6 percent in Brunswick County and 21.9 percent in New Hanover County. In New Hanover County, there are 11 block groups that exceed the below poverty threshold (CT 111, BG 1; CT 115, BG 2; CT 113, BG 2; CT 107, BG 1; CT 108, BG 1; CT 110, BG 1; CT 112, BG 3; CT 112, BG 2; CT 107, BG 2; CT 111, BG 2; CT 110, BG 2), five block groups that exceed the very poor and below poverty threshold (CT 111, BG 1; CT 115, BG 2; CT 110, BG 1; CT 111, BG 2; CT 110, BG 2) and two block groups that exceed the near poor, very poor, and below poverty threshold (CT 115, BG 2 located north of the Cape Fear Memorial Bridge west of the Cape Fear River and CT 111, BG 2 located southeast of the intersection at US 74/76 and 8th Street). The Block Groups exceeding the below poverty threshold are located in the vicinity of the proposed interchange at US 421 and US 74/76 and the proposed interchange at US 421 and US 117. In Brunswick County, there is one block group that exceeds the below poverty low-income threshold, located along NC 133 south of the project alternatives, and one block group that exceeds the near poor threshold, located north of the US 17 and US 74/76 interchange. For more information on income levels in the DSA, see Section 8.8. Figure 9 illustrates the block groups exceeding the low-income threshold.

Table 10: Poverty Levels

Poverty	Total Population for whom Poverty Status is Determined	Below Poverty Level		Very Poor: Under 50% of Poverty Level		Near Poor: Between 100% and 150% of Poverty Level	
		#	%	#	%	#	%
DSA	70,209	12,694	18.1%	5,672	8.1%	6,433	9.2%
Brunswick County	109,534	18,191	16.6%	6,965	6.4%	10,806	9.9%
New Hanover County	201,530	34,053	16.9%	17,073	8.5%	17,443	8.7%

US Census Bureau, American Community Survey 5-year Estimates (2009-2013)

6.12.3 MAJOR EMPLOYERS

A breakdown of the largest employers in Brunswick and New Hanover Counties based upon the North Carolina Department of Commerce’s Labor and Economic Analysis Division (LEAD) within the Division of Employment Security (DES) is listed in Table 11. The largest industries are ambulatory health care services; specialty trade contractors; professional, scientific and technical services; motor vehicle and parts dealers; and nursing and residential care facilities.

Table 11: Largest Employers in Brunswick and New Hanover Counties

Company Name	Industry	Employment Range
Brunswick County		
Brunswick County Board of Education	Education & Health Services	1,000+
Progress Energy Service Co.	Trade, Transportation, and Utilities	1,000+
County of Brunswick	Public Administration	1,000+
Wal-Mart Associates, Inc.	Trade, Transportation, and Utilities	500-999
Food Lion	Trade, Transportation, and Utilities	500-999
Brunswick Novant Medical Center	Education & Health Services	250-499
Dosher Memorial Hospital	Education & Health Services	250-499
Liberty Healthcare Group, LLC	Education & Health Services	250-499
Troon Golf, LLC	Leisure & Hospitality	250-499
New Hanover County		
New Hanover Regional Medical Center	Education & Health Services	1,000+
New Hanover County School System	Education & Health Services	1,000+
University of North Carolina – Wilmington	Education & Health Services	1,000+
PPD	Professional & Business Services	1,000+
New Hanover County	Public Administration	1,000+
Cellco Partnership	Professional & Business Services	1,000+
Cape Fear Community College	Education & Health Services	1,000+
Wal-Mart Associates, Inc.	Trade, Transportation, & Utilities	1,000+
City of Wilmington	Public Administration	1,000+
Harris Teeter	Trade, Transportation, & Utilities	1,000+

North Carolina Department of Commerce’s Labor and Economic Analysis Division (LEAD) within the Division of Employment Security (DES). 4th Quarter, 2014. Accessed August 2015.

Tourism in both New Hanover and Brunswick Counties has a large economic impact. More than 5,030 jobs in Brunswick County were directly related to tourism and travel, while 5,460 jobs in New Hanover were in the same category. Domestic tourism generated an economic impact of \$470.58 million in Brunswick County, and \$477.68 million in New Hanover County in 2013, according to the North Carolina Department of Commerce, Tourism Services.

6.12.4 UNEMPLOYMENT TRENDS

The historical unemployment trend for the Wilmington Metropolitan Statistical Area (MSA) and North Carolina are shown in Table 12. The Wilmington MSA encompasses the entire DSA. The unemployment rate of the Wilmington MSA mirrors the unemployment rate of North Carolina.

Table 12: Unemployment Statistics

Date	Wilmington MSA*	North Carolina
March 2000	3.7	3.4
March 2005	4.4	5.4
March 2010	10.6	11.3
March 2015	5.2	5.4

U.S. Department of Labor 2015

*The Wilmington MSA includes the area encompassed by the DSA, including the City of Wilmington and the Town of Leland.

6.13 COMMUTING

According to the U.S. Census Bureau ACS 5-year estimate (2009-2013), in New Hanover County, 43.8 percent of workers leave home to go to work between 7:00 a.m. and 8:30 a.m., in Brunswick County, 38.9 percent. The mean commute time in 2000 was 24.6 minutes in Brunswick County and 20.7 minutes in New Hanover County. The mean time decreased in each county to 23.3 and 20.2 minutes, in 2013 respectively. Table 13 shows the percentage of workers who are employed outside of the community where they reside.

Table 13: Commuting Outside Place of Residence

Area	Percent Working Outside Place of Residence
Leland	69.9%
Belville	90.8%
City of Wilmington	7.8%
Brunswick	30.0%
New Hanover	9.2%

US Census Bureau, American Community Survey 5-year Estimates (2009-2013)

6.14 HOUSING

There are an estimated 35,367 housing units in the DSA according to the ACS 5-year estimates (2009-2013). As seen in Table 14, the total housing units in the municipalities within the counties has risen since the 2000 and 2010 Census. Approximately 56 percent of the housing in the DSA is owner-occupied. This is higher than the owner occupancy rate for New Hanover County (46.7 percent) and lower for Brunswick County (76.4 percent) (United States Census Bureau 2009-2013).

During the site visit, areas such as Bell Street, Cape Fear Avenue, and Marion Mobile Home Park displayed noticeably lower median home income values. Areas in Brunswick County which showed lower values included Spring Hill along Goodman Road, Durant Road, White Bridge Lane, Savannah Branch Road, Lansan Lane, Hunters Ridge Drive, and Central Boulevard. Barclay West and historic neighborhoods north of the Cape Fear Memorial Bridge in New Hanover County appeared to contain higher income values than other areas in the DSA.

Table 14: Total Housing Units

Area	Total Housing Units (2000)	Total Housing Units (2010)	Total Housing Units (2013)
DSA	--	--	35,367
Leland	781	6,583	7,014
Belville	108	787	880
City of Wilmington	34,359	53,400	54,112
Brunswick	51,431	77,482	78,159
New Hanover	68,183	101,436	102,079

US Census Bureau, American Community Survey 5-year Estimates (2009-2013)

Note: Total housing units includes vacant and occupied.

The Town of Leland has experienced a considerable increase in homes built between 2000 and 2009. According to the ACS 5-year estimate (2009-2013), 5,156 homes were constructed; a substantial increase from the previous ten years (1990-1999) in which only 366 homes were constructed. During this span, Brunswick County built approximately 28,000 homes (over 10,000 more than the previous ten years). However, in New Hanover County, fewer homes were built between 2000 and 2009 than were built in 1990 through 1999.

The median home value in the DSA is \$198,457, higher than the Brunswick County average (\$186,600) and lower than the New Hanover County average (\$215,200). According to the 2000 Census, the median home value in Brunswick County was \$127,400 and \$135,600 in New Hanover County.

7.0 COMMUNITY CONTEXT DIAGRAM

The community context diagram has been made into a map book, which allows a zoomed-in view of the entire DCIA through a series of 11 x 17 maps that make up each of the corridors. An overview map of the community context diagram is shown on Figure 11. The community context diagram includes, churches, schools, fire stations, historic resources, and other notable community features that were identified by local officials, observed on project site visits, or were noted by the public at small group meetings. These figures also include locations of where potential Environmental Justice populations were observed on the project site visits, noted by local officials, or where indicated by census data. The community features noted were used in the evaluation and determination of potential community impacts in Section 8.0. The map book is located in Appendix C.

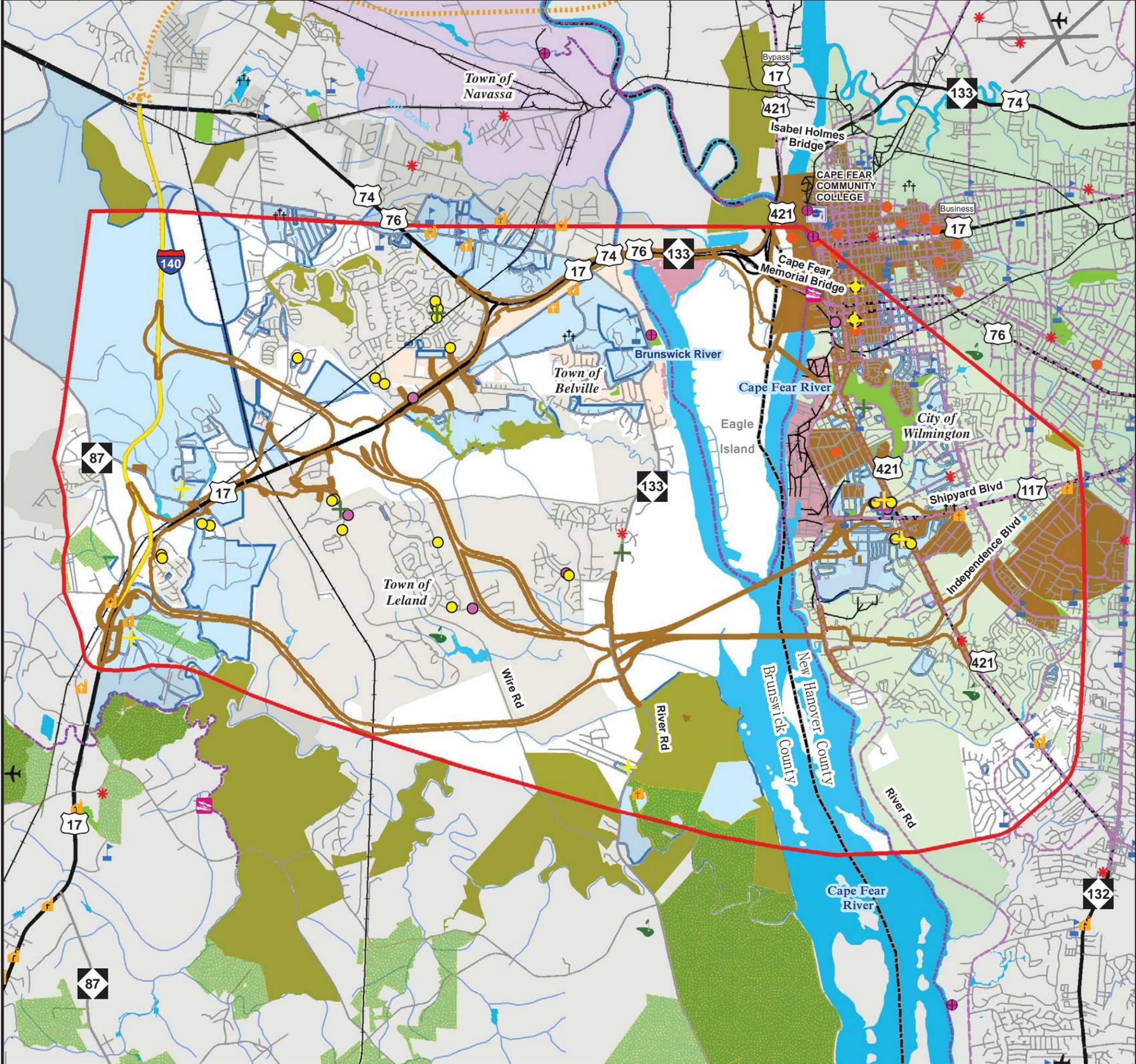
CAPE FEAR CROSSING

State Transportation Improvement Program
Project No. U-4738

Community Impact Assessment

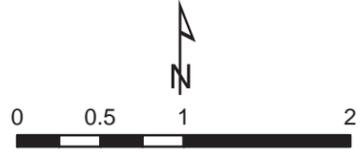
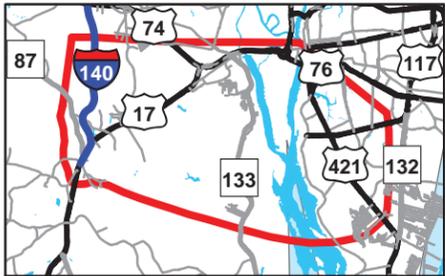


Figure 11: Community Context Diagram



Legend

- Project Study Area
- DCIA
- Interstate
- US Highway
- NC Highway
- Local Road
- Railroad
- Future Wilmington Bypass (I-140)
- Water
- Belville
- Leland
- Navassa
- Wilmington
- County Boundary
- Census Block with high minority rate
- Parks
- Historic Resource
- Conservation Properties
- Voluntary Agricultural District
- Port of Wilmington
- Bicyclist Observed
- Pedestrian Observed
- Beach Access
- Boat Access
- †† Cemetery
- 🎓 College/University
- ✈ Airport
- ★ Fire Station
- ★ EMS
- 🏌 Golf Course
- Historic Resource
- 🏫 School
- 🏠 Churches
- - - Bike Route
- - - Paddle Trail
- + Potential Elderly Populations Observed
- + Potential Minority Populations Observed
- + Potential Hispanic Populations Observed



Date: September 2015
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.

8.0 POTENTIAL COMMUNITY IMPACTS

8.1 PHYSICAL IMPACTS

Acquisition of property due to the right of way encroachment would be required for all study alternatives. The following summarizes the expected direct impacts to residences, businesses, and active farms.

8.1.1 IMPACTS TO RESIDENTIAL PROPERTIES

Table 15 provides a breakdown of the number of residential parcels and buildings, as well as the number of acres that are likely to be impacted by each corridor. This is a preliminary analysis. An official relocation report will be prepared by NCDOT, the results of which will be reported in the Draft Environmental Impact Statement.

Table 15: Impacts to Residential Properties by Alternative

Project Alternative	Total Parcels within Corridor*	Residential Parcels within Corridor			Total Buildings within Corridor	Residential Buildings within Corridor	
		#	%	Acres		#	%
Upgrade Existing US 17 Alternatives							
Alternative F	700	346	49.4%	48.4	395	277	70.1%
Alternative P	629	319	50.7%	30.9	369	256	69.4%
Alternative V Arterial	363	100	27.5%	17.6	169	78	46.2%
Alternative V-F	430	127	29.5%	35.5	196	102	52.0%
Northern Alternatives							
Alternative B	321	165	51.4%	48.9	255	151	59.2%
Alternative C	268	119	44.4%	73.8	135	96	71.1%
Alternative G	236	86	36.4%	76.0	103	64	62.1%
Alternative J	435	220	50.6%	63.3	295	191	64.7%
Alternative Q	189	68	36.0%	59.4	80	41	51.3%
Alternative T	394	204	51.8%	47.3	273	169	61.9%
Southern Alternatives							
Alternative M Avoidance	219	95	43.4%	106.9	102	40	39.2%
Alternative N Avoidance	344	185	53.8%	87.2	256	130	50.8%

Source: URS, 2015.

*Corridor limits are proposed slope stake plus 40 feet

Alternative Q, one of the Northern Alternatives, will impact the fewest residential parcels while Alternative F, one of the Upgrade Existing US 17 Alternatives, is expected to impact the most. Alternative M Avoidance, one of the Southern Alternatives, is expected to impact the fewest residential buildings while Alternative F is projected to impact the most residential buildings. This is due to Alternative F being located along an existing and highly developed corridor, while Alternative Q and Alternative M Avoidance are located in areas not fully developed.

8.1.2 IMPACTS TO BUSINESSES AND COMMERCIAL PROPERTIES

Table 16 provides a breakdown of the number of business parcels and buildings, as well as the number of acres that are likely to be impacted by each corridor. This is a preliminary analysis. An official relocation report will be prepared by NCDOT, the results of which will be reported in the Draft Environmental Impact Statement.

Table 16: Impacts to Business/Commercial Properties by Alternative

Project Alternative	Total Parcels within Corridor*	Business/Commercial Parcels within Corridor			Total Buildings within Corridor	Business/Commercial Buildings within Corridor	
		#	%	Acres		#	%
Upgrade Existing US 17 Alternatives							
Alternative F	700	222	31.7%	113.5	395	109	27.6%
Alternative P	629	209	33.2%	41.4	369	104	28.2%
Alternative V Arterial	363	158	43.5%	40.2	169	84	49.7%
Alternative V-F	430	171	39.8%	112.0	196	87	44.4%
Northern Alternatives							
Alternative B	321	101	31.5%	110.5	255	98	38.4%
Alternative C	268	65	24.3%	105.2	135	34	25.2%
Alternative G	236	68	28.8%	162.3	103	36	35.0%
Alternative J	435	104	23.9%	178.9	295	98	33.2%
Alternative Q	189	65	34.4%	94.0	80	36	45.0%
Alternative T	394	103	26.1%	118.5	273	98	35.9%
Southern Alternatives							
Alternative M Avoidance	219	58	26.5%	147.9	102	36	35.3%
Alternative N Avoidance	344	95	27.6%	158.8	256	97	37.9%

Source: URS, 2015

*Corridor limits are proposed slope stake plus 40 feet

All of the Upgrade Existing US 17 alternatives have the highest number of business or commercial parcels impacted by the project, with Alternative F having the most. Conversely, Alternative M Avoidance had the fewest impacts to business or commercial parcels. Alternative F had the highest number of impacts and Alternative C had the fewest number of impacts to actual buildings that were designated as either business or commercial uses.

8.1.3 IMPACTS TO ACTIVE FARMS

Table 17 provides a breakdown of the number of active farms by each corridor. Note that impacts to prime and unique farmlands are assessed in Section 8.10.

Table 17: Impacts to Active Farms by Alternative

Project Corridor	Total Parcels within Corridor	Active Farm Parcels within Corridor		
		#	Acres	VAD Acres
Upgrade Existing US 17 Alternatives				
Alternative F	700	0	0	0
Alternative P	629	0	0	0
Alternative V Arterial	363	0	0	0
Alternative V-F	430	0	0	0
Northern Alternatives				
Alternative B	321	0	0	0
Alternative C	268	0	0	0
Alternative G	236	0	0	0
Alternative J	435	0	0	0
Alternative Q	189	0	0	0
Alternative T	394	0	0	0
Southern Alternatives				
Alternative M Avoidance	219	5	1.24	0
Alternative N Avoidance	344	5	1.24	0

Source: URS, 2015

Only the Southern Alternatives will impact active farms. Both Alternative M Avoidance and N Avoidance will impact five parcels of approximately 1.24 acres that are in active farming.

Under North Carolina state law, local governments can offer Voluntary Agricultural Districts (VAD), which provide land owners with a voluntary way to support the conservation and preservation of farmland from non-farm development. Although there are VADs in the DSA, none will be directly impacted by the project.

8.1.4 SUMMARY OF PHYSICAL IMPACTS

All project alternatives would have a high amount of new right of way impacts and property takings for both the upgrade existing US 17 alternatives (F, P, V-F, and V-AW), the Northern Alternatives (B, C, G, Q, J, and T), and the Southern Alternatives (M Avoidance and N Avoidance).

Direct impacts would range from reduced property size from right of way acquisition or reduced access due to selection of the freeway option. Minimizing access would impact businesses that are not destination businesses and receive their business from daily travelers, such as gas stations and restaurants.

National Gypsum Company, located at Knight Road and Sunnyvale Drive, has expressed concern regarding alternatives that would require them to relocate, which includes Alternatives C, G, M Avoidance, and Q. National Gypsum utilizes their proximity to the Cape Fear River in daily business; they have stated relocating would devastate their operations. National Gypsum was not in operation in 2011, but hoped to reopen in the near future. Several other marine-type companies are located in the area, as well as the Wilmington Marine Center.

Noise impacts along the sections of roadway being upgraded or expanded will not be as great as segments that are on new location. Therefore, while Alternative F and Alternative P have the highest number of impacted parcels within the corridor, noise impacts to this corridor will likely not be as significant as impacts to areas adjacent to the Northern and Southern Alternatives. Increased noise from any of the Northern Alternatives will likely impact the residential areas along Lanvale Road, Brunswick Forest, US 117, and Independence Boulevard. Homes along Watersfield Road in Wedgewood at Lanvale, Lansan Lane, and Savanna Branch Road will likely incur noise impacts from Alternative B and C.

Farmland operations could be impacted from the project. Depending how the farms are bisected by the alternatives, this could impede farm machinery from reaching certain portions of the farm land.

8.2 COMMUNITY/NEIGHBORHOOD COHESION AND STABILITY

8.2.1 BRUNSWICK COUNTY

Along US 17, residential or commercial developments would likely be impacted by alternatives that include upgrades to the highway; upgrades include standard widening or full control of access freeway. Upgrades to US 17 as a standard widening would affect the property size of the abutting properties. Upgrades to US 17 as a full control of access freeway would affect the property size of the abutting properties, as well as access to the developments and the residential areas located behind. Upgrading to a freeway may also create a barrier in the community if pedestrian or bicycle accommodations are not provided to cross the road.

Surrounding the existing interchange at I-140 and US 17, residential areas would be impacted by improvements made to US 17 or the proposed Southern Alternatives. Some interchanges located at the terminus would require the acquisition of residential areas along White Bridge Lane. This would directly impact the community cohesion which exists in the area. Residential areas along Goodman Road including Spring Hill would likely be impacted from increased noise and also loss of direct access to US 17 from Goodman Road. Instead frontage or service roads will be utilized to access the areas.

Along the Northern Alternatives, residential areas along Lanvale Road and NC 133 where the alternative crosses would be impacted as well as large areas within Brunswick Forest. These alternatives will create a barrier through Brunswick Forest and Leland that could negatively impact property values. The loss of residences could impact community cohesion. Residential areas along Lanvale Road within the direct impact area of Alternatives B and C could potentially interrupt community cohesion and stability in the area along Lansan Lane and within Brunswick Forest. These alternatives would also impact the connectivity of the pedestrian and designated bicycle facilities that currently traverse Brunswick Forest. The greatest potential for community/neighborhood disturbance in Brunswick County exists within Brunswick Forest, along NC 133, or around at the I-140/US 17 Interchange.

8.2.2 NEW HANOVER COUNTY

New Hanover County would experience greater interruptions in community cohesion. All of the alternatives would displace residential areas that officials from the City of Wilmington expressed concern over; because the alternatives would likely create a barrier in a cohesive area of the community. Alternatives that terminate at Independence Boulevard and US 421 would displace more industrial development than residential areas. However, residents located along Bryan Road and in the vicinity of the intersection at US 421 and Independence Boulevard would be displaced. Terminating at this intersection would not create a barrier in the community; however it could affect property values

due to increased noise levels. Alternatives that terminate at US 117 and US 421 would impact the Port of Wilmington and displace or impact several residential areas, some which contain Environmental Justice populations, Section 4(f) resources, and churches. Several residential streets in the area would likely be dead ended, eliminating direct access to US 117 or US 421. Alternatives that include upgrades to the existing Cape Fear Memorial Bridge and interchange would impact several residential areas and historic homes listed on the National Register of Historic Places. Per City of Wilmington officials, the Cape Fear Memorial Bridge is an existing barrier to the population and the project could create an additional barrier that would further segment the neighborhoods, particularly the small residential area west of US 421. Upgrades along US 421 would impact adjacent development owners, which includes mostly commercial and light industrial development.

8.3 ECONOMIC AND BUSINESS RESOURCES

Minimizing access would impact businesses that are not destination businesses and receive their business from daily travelers, such as gas stations and restaurants. Businesses dependent on highway-oriented customers that lose direct access to US 17 could experience a loss of sales; however, this could also be offset by the growing population and projected increase in the volume of traffic along the corridor.

In Wilmington, local planners spoke of emerging art clusters in the downtown area, which has been a grassroots movement for developing neighborhood businesses and community cohesion in this area. They expressed concern that large scale displacements of these types of businesses may be difficult to replicate elsewhere.

The loss of land to right of way could impact the number of parking spaces, driveway access, and a business's ability to expand in the future. These impacts will vary from parcel to parcel and will be dependent on the needs and plans of the individual business.

Many businesses within the DCIA would see a positive economic benefit, as the proposed project would improve the local transportation system. Reduced traffic congestion would improve the efficiency of transporting goods and services.

8.4 LOCAL LAND USE, CHARACTER AND ECONOMIC DEVELOPMENT PLANS

The character of the community facilities may be altered by the project. The visual effects would vary depending on the existing quality of the viewshed and how close the facility is to any raised structures (e.g. overpasses over secondary roads). The community character would also be altered by increases in noise levels from traffic. Induced growth from the project would also indirectly alter the community character surrounding these facilities.

In Brunswick County, the land use, character, and development plans along the Upgrade Existing US 17 alternatives are not likely to change given that it would still be the corridor of a major US Highway. However, the Northern Alternatives will mostly be on new location in Brunswick County and within developed areas of New Hanover County. Thus, local land use and the character of the subdivisions and business development would be impacted. The Southern Alternatives are in a less developed area and would not likely have the same level of impact on the built environment as the Northern Alternatives; however, they will impact the rural nature of this area and be a visual impact to those that would live near this corridor.

In New Hanover County, the Upgrade Existing US 17 alternatives that enter Wilmington on the Cape Fear Memorial Bridge are expected to change the visual character of the historic area along US 421 near Dawson Street and Wooster Street.

8.5 MULTI-MODAL CONCERNS AND ACCOMODATIONS

The proposed project would likely result in direct changes in traffic patterns for those living and traveling within the DCIA and indirect changes in traffic patterns for those outside of the DCIA. Commuting patterns and access to businesses around the interchanges would be particularly affected. The proposed project would meet several important transportation needs for Brunswick and New Hanover Counties, as described in Section 1.0.

Bicyclists and pedestrians would be impacted where the project crosses or intersects with other facilities that are used by bicyclists or pedestrians. There are approximately 21 miles of signed bicycle routes within the DCIA, all of which are located in New Hanover County along the major roadways, including US 421, US 117, and Independence Boulevard, as well as smaller collector streets.

Section 6.3 discusses the existing bike routes in the PSA. All of the study alternatives will encompass two existing bicycle routes located in Wilmington and Alternative V-F includes a third bicycle route.

Local planners indicated that bicycle and pedestrian mobility has been identified as an issue along existing US 17 given the number of lanes and volume of traffic. As previously noted, the community has identified plans for future bicycle and pedestrian crossings to help mitigate the existing barrier. The alternatives that include the widening of existing US 17 and/or upgrading it to a freeway would further exacerbate the barrier effects along this corridor and make it more difficult for pedestrians and bicyclists to travel along or across this roadway.

Widening US 421 will likely make pedestrian and bicycle movement more difficult if appropriate accommodations, such as medians, crosswalks, or bicycle lanes are not provided. Designated

Bicycle and pedestrian accommodations will be determined once a Least Environmentally Damaging Practicable Alternative (LEDPA) has been selected.

All of the project alternatives will involve multiple crossings of the rail lines located in the PSA, including the short line railroad in Brunswick County that is operated by CSX and owned by the US Department of Defense and the short line railroad in New Hanover County that is owned by the North Carolina State Ports Authority and operated by the Wilmington Terminal Railroad. Alternatives F and P also cross over the east-west rail line in New Hanover County that is both owned and operated by CSX.

8.6 RECREATION

As discussed in Section 6.2.2, there are no state or national parks or forests in the PSA. Four local parks fall within the DCIA, as described in Table 18. The western limits of Greenfield Park, which would include a sidewalk, multi-use path, and parts of Greenfield Lake Park, could potentially be impacted by the Upgrade Existing US 17 Alternatives. Parking facilities at the Legion Sports Complex would likely be impacted by the Upgrade Existing US 17 Alternatives, as the stadium facilities are located further from US 421. Dram Tree Park is within the DCIA of Alternatives F and P; however, the park would not likely incur long-term impacts after construction. It is located at the foot of the Cape Fear Memorial Bridge in New Hanover County. The southern portion of Optimist Park, which includes parking areas and a field house, will likely be impacted by Alternatives F, P, and V-AW from widening activities. The park facilities, which includes ball fields and open fields within the park will likely not incur direct physical impacts, but may have noise or visual impacts.



Dram Tree Park below the Cape Fear Memorial Bridge

Table 18: Parks in DCIA by Alternative

Project Alternative	Number of Parks	Park Name
Upgrade Existing US 17 Alternatives		
Alternative F	4	Greenfield Park, Legion Sports Complex, Dram Tree Park, and Optimist Park
Alternative P	4	Greenfield Park, Legion Sports Complex, Dram Tree Park, and Optimist Park
Alternative V Arterial	3	Greenfield Park, Legion Sports Complex, and Optimist Park
Alternative V-F	2	Greenfield Park and Legion Sports Complex
Northern Alternatives		
Alternative B	0	E.P. Godwin Stadium
Alternative C	0	NA
Alternative G	0	NA
Alternative J	0	E.P. Godwin Stadium
Alternative Q	0	NA
Alternative T	0	E.P. Godwin Stadium
Southern Alternatives		
Alternative M Avoidance	0	NA
Alternative N Avoidance	0	E.P. Godwin Stadium

8.7 COMMUNITY SAFETY AND EMERGENCY RESPONSE

The project would likely have an overall positive effect on police, fire, and other safety operations in the area due to increased mobility and reduced congestion on major thoroughfares. As previously discussed in Section 6.2, there are four fire departments within the PSA, two of which include EMS. Wilmington Fire Station 6 is located within the DCIA for three Alternatives M, G, and Q. The Leland Volunteer Fire Station is located just north of the proposed interchange on NC 133 for the Northern Alternatives and the Southern Alternatives. This station would have better access to other areas closer to US 17.

Construction-related closures and detours could temporarily impact emergency response. Coordination with the Town of Belville, the Town of Leland, and the City of Wilmington police and fire departments would be continued to ensure minimal disruption of emergency services.

8.8 ENVIRONMENTAL JUSTICE

Title VI of the Civil Rights Act of 1964, protects individuals from discrimination on the grounds of race, age, color, religion, disability, sex, and national origin. Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations” provides that each Federal agency shall make achieving Environmental Justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects on minority and low-income populations. Special populations may include the elderly, children, the disabled, low-income areas, American Indians and other minority groups. Executive Order 12898 requires that Environmental Justice principles be incorporated into all transportation studies, programs, policies, and activities. The three environmental principles are: 1) to ensure the full and fair participation of all potentially affected communities in the transportation decision-making process. 2) to avoid, minimize or mitigate disproportionately high and adverse human health or environmental effects, including social and economic effects, on minority or low income populations. 3) to fully evaluate the benefits and burdens of transportation programs, policies, and activities, upon low-income and minority populations.

8.8.1 IDENTIFICATION OF ENVIRONMENTAL JUSTICE POPULATIONS

Based on demographic data available from the U.S. Census American Community Survey data from 2009-2013 and NCDOT guidance, thresholds are used to determine the presence of Environmental Justice communities at the block group level. The thresholds are determined based upon the percent of minorities and low-income populations living in the county. The standard of practice used for minority populations is 10 percent above the county average, or 50 percent, whichever is less; for low-income populations it is 5 percent above the county average, or 25 percent, whichever is less. For this project the minority threshold in Brunswick County was determined to be 28.9 percent and 33.3 percent in New Hanover County. The low-income threshold was determined to be 21.6 percent for Brunswick and 21.9 percent for New Hanover Counties. Figure 9 in Section 6.11.2 shows the location of the block groups that surpass the threshold for Environmental Justice communities.

To assess potential impacts to Environmental Justice populations at a more granular level, further analysis to determine the potential locations of minority and low-income populations was performed. This included assessing block-level data from the U.S. Census Bureau (2010), field observations, and interviews with local planners. This data and the observations of the locations and alternatives with potential impacts are summarized in Table 19. These locations are also identified on the Community Context Map (see Figure 11 and Appendix C).

Table 19: Locations of Environmental Justice Populations

Location	Minority Population Indicated by Census Block Data	Minority Presence Noted during Field Work	Minority Presence Noted by Local Planners	Low Income Presence Noted during Field Work	Project Alternative(s) with Potential Impacts
Snowfield Road - East of US 17, South of I-140 Interchange	X			X	Alternative M Avoidance and Alternative N Avoidance
Goodman Road – West of US 17, North of I-140 Interchange (Spring Hill)	X	X	X	X	Alternative F, Alternative G, Alternative P, Alternative Q, Alternative J, Alternative T, Alternative V-AW, and Alternative V-F
Lanvale Road – Northwest of US 17 and Lanvale Road	X			X	Alternative F, Alternative G, Alternative P, Alternative Q, Alternative J, Alternative T, Alternative V-AW, and Alternative V-F
US 421 (3 rd Street) and US 76 (Wooster Street and Dawson Street)	X	X	X	X	Alternative F and Alternative P
US 421 (Carolina Beach Road) and North Carolina Avenue/Tennessee Avenue	X		X		Alternative F, Alternative P, Alternative V-AW, and Alternative V-F
US 421 (Carolina Beach Road) and US 117 (Shipyard Boulevard)	X	X	X	X	All Alternatives

8.8.2 POTENTIAL IMPACTS

Impacts to populations identified as minority and/or low-income are anticipated with this project. The severity of effects and potential of those effects to fall disproportionately on those communities identified in Section 8.1.1 will be determined through future public involvement. Any identified moderate to severe impacts may then be assessed to determine if avoidance, minimization, or mitigation can be proposed.

Changes in Access and Barrier Effects

The following section outlines potential changes in access to the identified Environmental Justice communities.

Snowfield Road

Communities along Snowfield Road would experience access changes from Alternatives M Avoidance and N Avoidance. Hazels Branch Road is proposed to include a cul-de-sac at US 17 and the access would be relocated about 1/3rd of a mile south of the existing tie-in to US 17. In addition, Sloan Road would be realigned further south to connect into Hazel Branch Road. No barrier effects are anticipated.

Goodman Road

Access changes for communities along Goodman Road would occur for alternatives proposed to convert US 17 to a freeway. Direct access to Goodman Road from US 17 would likely be removed by Alternative F, G, V-F, and J. In order for communities along Goodman Road to access US 17, they would travel approximately one-mile north along a new route paralleling US 17 to Lanvale Road. These alternatives will also likely create a barrier effect by limiting access to and out of this community. Direct access to US 17 for communities along Goodman Road would remain from Alternatives P, Q, T, and V-AW.

Lanvale Road

There would likely not be any impacts to access changes for communities along Lanvale Road, nor would there be any barrier effects.

US 421/US 76

Alternatives F and P would create several access changes for communities along US 421 and US 76. Wright Street and Meares Street would include a cul-de-sac at US 421, while Front Street would no longer have direct access to the bridge. These alternatives would also likely create a barrier effect on the local neighborhood by making it more difficult for pedestrians to cross a larger roadway facility.

US 421 (Carolina Beach Road)

Communities surrounding US 421 at South Carolina Avenue, North Carolina Avenue, and Tennessee Avenue would incur access changes from Alternatives V-F and V-AW. South Carolina Avenue would include a cul-de-sac east of US 421 and traffic would be diverted onto Adams Street west of US 421. Also west of US 421, North Carolina Avenue traffic would be diverted onto Washington Street. Alternatives F and P would likely not create access changes in the communities surrounding North Carolina Avenue and Tennessee Avenue. Barrier effects are likely in this area, as the closing of streets will make it harder for local residents to move from place to place.

US 421/US 117

Residential areas surrounding the intersection at US 421 and US 117 would likely incur changes in access from Alternatives B, J, T, and N Avoidance. These impacts would include adding culs-de-sac to several residential streets that connect to US 421 (i.e. Cape Fear Boulevard and Wellington Avenue), which would also create a barrier. Bell Street would also include a cul-de-sac at Adams Street. Residents located along the remainder of Bell Street to US 421 would likely be relocated. Direct access to Rutledge Drive from US 117 would likely be removed and a cul-de-sac would be added at Calhoun Drive. Furthermore, Hulbrook Avenue and Troy Drive would lose access to US 117. Hulbrook Avenue is still

accessible from US 421. The remaining alternatives would not impact accessibility to the surrounding communities within this area.

Table 20: Summary of Changes of Access Impacts and Barrier Effects

Project Alternative	Change of Access Impacts	Barrier Effects
Upgrade Existing US 17 Alternatives		
Alternative F	Goodman Road, US 421/US 76	Goodman Road, US 421/US 76
Alternative P	US 421/US 76	US 421/US 76
Alternative V Arterial	US 421 (Carolina Beach Road)	US 421 (Carolina Beach Road)
Alternative V-F	Goodman Road, US 421 (Carolina Beach Road)	Goodman Road, US 421 (Carolina Beach Road)
Northern Alternatives		
Alternative B	US 421/US 117	US 421/US 117
Alternative C		
Alternative G	Goodman Road	Goodman Road
Alternative J	Goodman Road, US 421/US 117	Goodman Road, US 421/US 117
Alternative Q		
Alternative T	US 421/US 117	US 421/US 117
Southern Alternatives		
Alternative M Avoidance		
Alternative N Avoidance	US 421/US 117	US 421/US 117

In addition, these areas are also expected to experience direct takings and right of way encroachments that could negatively impact community cohesion. Barrier effects are possible, and were noted as being of particular concern for the areas surrounding US 421 (3rd Street) and US 76 (Wooster Street and Dawson Street), as well as for the communities near US 421 (Carolina Beach Road) and North Carolina Avenue and Tennessee Avenue.

Potential Relocations and Impacts to Community Cohesion

Residential properties that are located within the DCIA will likely result in relocations (as identified in Section 8.1.1). These losses of residential properties not only impact the individual property owner(s), but can affect community cohesion and stability. The following section summarizes the potential impacts from residential relocations.

Snowfield Road

Alternative M Avoidance and Alternative N Avoidance are expected to result in scattered residential relocations along Sloan Road and White Bridge Lane. Given the rural context of this area combined with the limited number of relocations, this is not expected to have an impact on community cohesion.

Goodman Road

No residential relocations are expected in the Goodman Road area from any of the project alternatives.

Lanvale Road

Alternatives B and C will likely include the relocation of all residential properties along Lansan Lane. Given the rural nature of this area, interactions between residents on Lansan Lane and other nearby streets are most likely fairly limited. Therefore impacts to community cohesion would likely be limited to the residents of Lansan Lane.

US 421(South 3rd Street)/US 76

Alternatives F and P would likely have direct impacts to an area bounded by 3rd Street on the west side, Castle Street on the north side, 5th Avenue on the east side, and Dawson Street on the south side. Other direct impacts would likely occur along 3rd Street from south of Nun Street through Carolina Beach Road. This widespread level of impacts would have an impact on community cohesion in this largely residential area of Wilmington.

US 421 (Carolina Beach Road)

Alternatives F, P, V-AW, and V-F would have a limited number of direct impacts to residential properties surrounding US 421 (Carolina Beach Road) including properties along the cross streets of Burnett Boulevard, South Carolina Avenue, and North Carolina Avenue. This area also contains several businesses and industries, so the impacts to community cohesion are not as likely.

US 421/US 117

Alternatives B, J, T, and N Avoidance may impact some residential properties located along Worth Drive (south of US 117); along Dare and Williamson Drive before tying into US 117 near Vance Street; along Williamson Drive, Davie Drive, and Rutledge Drive; and along Bell Street, Cape Fear Boulevard, and Dobbon Avenue (west of US 421). Some areas of these impacts may include multiple residential properties along segments of the roads, which could impact community cohesion.

Table 21: Relocation Impacts and Community Cohesion

Project Alternative	Relocation Impacts	Community Cohesion
Upgrade Existing US 17 Alternatives		
Alternative F	US 421/US 76, US 421	US 421/US 76
Alternative P	US 421/US 76, US 421	US 421/US 76
Alternative V Arterial	US 421	
Alternative V-F	US 421	
Northern Alternatives		
Alternative B	Lanvale Road, US 421/US 117	Lanvale Road, US 421/US 117
Alternative C	Lanvale Road	Lanvale Road
Alternative G		
Alternative J	US 421/US 117	US 421/US 117
Alternative Q		

Project Alternative	Relocation Impacts	Community Cohesion
Alternative T	US 421/US 117	US 421/US 117
Southern Alternatives		
Alternative M Avoidance	Snowfield Road	
Alternative N Avoidance	Snowfield Road, US 421/US 117	US 421/US 117

Recurring impacts to Environmental Justice communities are possible. The community located near Goodman Road (Spring Hill) was recently impacted by the construction of I-140 to the immediate west of their community. Alternatives G, J, Q, and T would involve further upgrades to US 17 which would have the recurring temporary impacts from construction, as well as other indirect and cumulative effects from being located adjacent to major roadway construction that include increased development pressure and additional highway induced traffic.

Noise impacts to the Environmental Justice communities are possible, but will need to be assessed upon completion of the noise analysis for this project. Other potential impacts to the Environmental Justice communities could include visual impacts. Visual preferences can be difficult to discern without feedback from the community; therefore, potential visual impacts should be assessed following public outreach to the community.

8.9 RECURRING COMMUNITY/NEIGHBORHOOD IMPACTS

Various neighborhoods within the DCIA have been affected in the past by construction of transportation infrastructure projects. In recent years, NCDOT completed a portion of the I-140 Wilmington Bypass. Through construction of this route, residents of Spring Hill (an identified Environmental Justice community), Snee Farm, Stoney Creek, and Planter’s Walk were impacted by access changes. Previously, residents of Snee Farm, Stoney Creek, and Planter’s Walk had direct access to US 17; now a frontage road (Hazels Branch Road) must be used to access US 17. Residents of Spring Hill, Snee Farm, Stoney Creek, and Planter’s Walk will likely incur impacts from construction of the proposed project. Residents in Shelmore, a sub-neighborhood within Brunswick Forest, will be directly impacted from alternatives within the Northern Alternative Group.

Widening of the causeway along US 17 (STIP project R-3601) is currently under construction which affects commuters to and from Wilmington.

Several private development construction projects have been ongoing in the commercial developments of Brunswick Forest, Waterford, and Westgate.

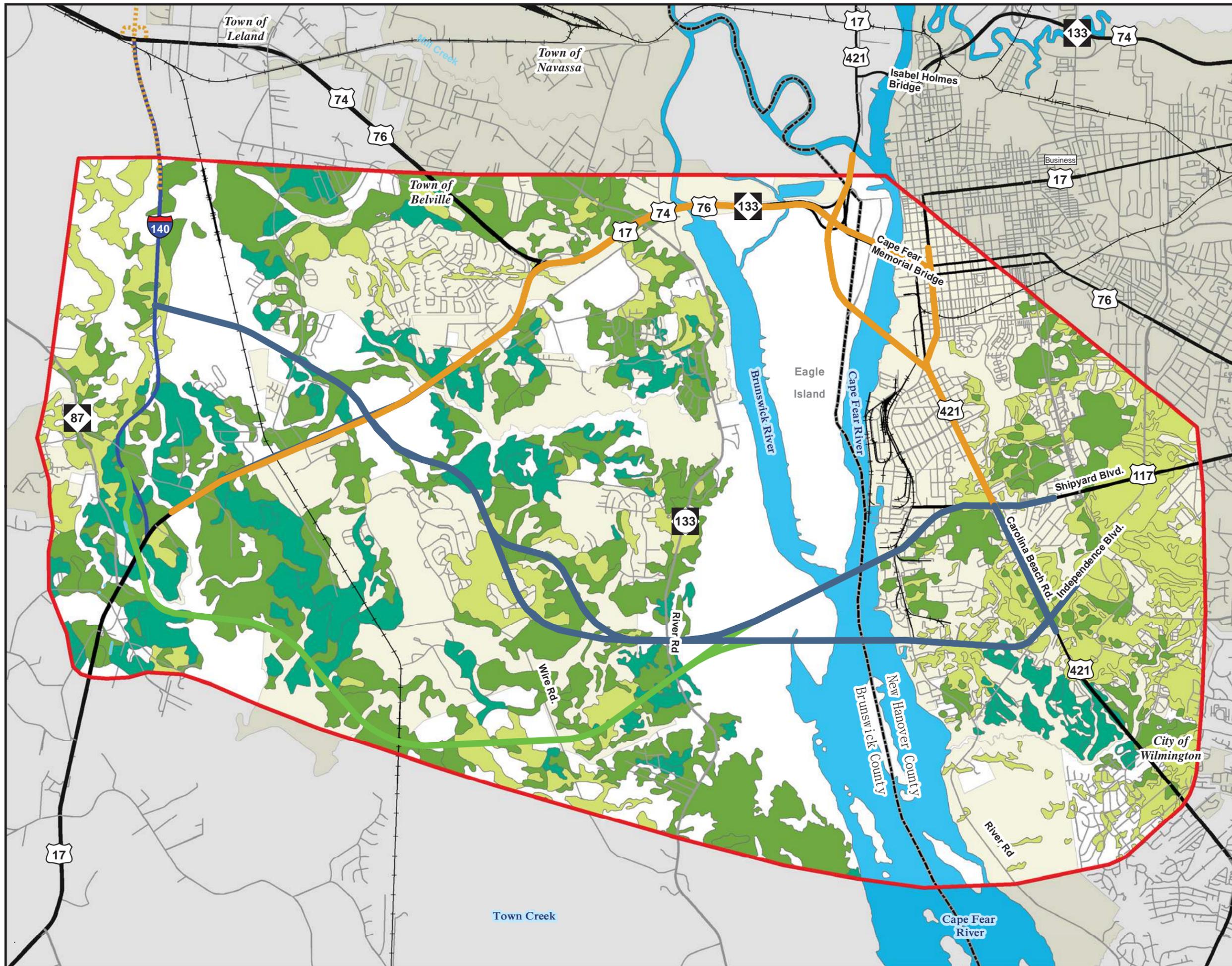
Ongoing maintenance of the Cape Fear Memorial Bridge sporadically impacts commuters.

8.10 FARMLAND IMPACTS

The Farmland Protection Policy Act (FPPA) of 1981 (7 CFR 568), implemented by the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), requires all federal agencies or state agencies that receive federal funding, to consider the impact of land acquisition and construction activities on prime and important farmland soils in an effort to “minimize the extent to which federal

programs contribute to the unnecessary conversion of farmland to non-agricultural uses” (Public Law 97-98, Section 1539-1549, 7 U.S.C. 4201, et seq).

In accordance with the FPPA, the amount of prime and unique farmland soils found within the DCIA was calculated. Table 22 provides a summary of the number of acres of prime and unique farmlands broken out by project alternative and they are shown on Figure 12.



CAPE FEAR CROSSING

State Transportation Improvement Program
Project No. U-4738

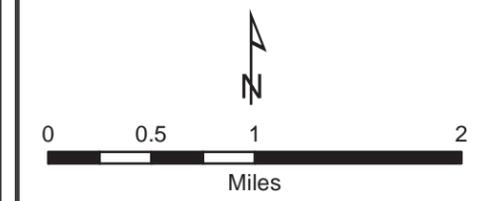
Community Impact Assessment



Figure 12: Prime and Unique Farmland

Legend

- Project Study Area
- Upgrade Existing Alternative Group
- Northern Alternative Group
- Southern Alternative Group
- All areas are prime farmland
- Farmland of statewide importance
- Farmland of unique importance
- Interstate
- US Highway
- NC Highway
- Local Road
- Railroad
- Future Wilmington Bypass (I-140)
- Water
- Municipalities
- County Boundary



Date: September 2015
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.

Table 22: Prime and Unique Farmlands by Corridor (acres)

Corridor	All areas are prime farmland	Farmland of statewide importance	Farmland of unique importance	Not prime farmland	Prime farmland if drained	Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
Upgrade Existing US 17 Alternatives						
Alternative F	6.8	35.6	0.0	63.9	80.7	57.5
Alternative P	5.9	21.0	0.0	23.6	43.4	57.6
Alternative V-F	6.8	35.6	0.0	110.4	80.7	124.8
Alternative V-AW	5.9	21.0	0.0	75.0	43.4	125.5
Northern Alternatives						
Alternative B	22.4	88.0	46.1	99.6	156.1	3.4
Alternative C	22.1	89.6	59.2	104.0	156.1	3.6
Alternative G	27.3	81.8	4.9	147.3	120.3	3.6
Alternative Q	26.1	66.0	4.9	96.0	89.3	3.6
Alternative J	27.1	83.6	18.0	151.8	120.3	3.4
Alternative T	26.2	77.9	18.0	107.8	91.7	3.4
Southern Alternatives						
Alternative M Avoidance	101.0	221.4	37.1	78.5	49.4	3.7
Alternative N Avoidance	125.4	221.5	40.2	88.2	50.6	3.4

Source: U.S. Department of Agriculture 2013

Overall, the Southern Alternatives have the highest acreage of prime and unique farmlands. The Upgrade Existing US 17 Alternatives have a higher number of prime farmland if drained and either protected from flooding or not frequently flooded since they include Eagle Island, which would be bridged (the assessment did not take bridging into account).

When considering the potential impacts to farmland, it is also important to consider what portion of the alternative is in active agricultural uses. Only the Southern Alternatives have any active farmlands within the corridor (1.24 acres) (see Table 17).

A preliminary screening of farmland conversion impacts in the DCIA has been completed (NRCS Form CPA-106, Part VI only) for the Upgrade Existing Alternatives, Northern Alternatives, and Southern Alternatives. Total scores of 33 for the Upgrade Existing Alternatives, 41 for the Northern Alternatives, and 51 for the Southern Alternatives out of a possible 160 points were calculated for the project (See

Appendix D). Since none of the total site assessment scores exceed the 60-point threshold established by the NRCS, farmland conversion impacts may be anticipated, but are not considered notable.

8.11 SECTION 4(F)/6(F) RESOURCES

According to the United States Code Title 23 in Section 138 (Section 4(f)), the United State Department of Transportation (USDOT):

...shall not approve any program or project...which requires the use of any publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, state or local significance as determined by the Federal, State, or local officials having jurisdiction thereof, or any land from a historic site of national, state, or local significance as so determined by such officials unless (1) there is no feasible and prudent alternative to the use of such land, and (2) such program includes all possible planning to minimize harm to such park, recreational area, wildlife and waterfowl refuge, or historic site resulting from such use.

Recreational resources subject to Section 4(f) that are within the DCIA include Greenfield Lake Park, Dram Tree Park, Legion Sports Complex, Optimist Park, and E.P. Godwin Stadium. The City of Wilmington owns and operates Legion Sports Complex, Greenfield Lake Park, Dram Tree Park, and E.P. Godwin Stadium and New Hanover County owns and operates Optimist Park. Dram Tree Park, Legion Sports Complex, and Optimist Park are utilized by the public. Optimist Park includes three baseball fields and four softball fields. Greenfield Lake Park features tennis courts, a skate park, an outdoor amphitheater, boat rentals, and a five mile biking/walking trail. Legion Sports Complex is primarily used for football, soccer, and baseball games and houses the New Hanover High Wildcats, the Wilmington Sharks, The Wilmington Tigers, and Legion Post 10 baseball. Dram Tree Park includes a boat ramp and kayak launch. E.P. Godwin Stadium includes one baseball field and youth baseball teams continue to play at the park. Greenfield Lake Park, Dram Tree Park, Legion Sports Complex, and Optimist Park are located within the corridor of the Upgrade Existing Alternatives. Greenfield Lake Park and Legion Sports Complex stretch outside of the corridor; therefore any impacts to the parks would be contained to the area abutting the highway. Dram Tree Park is located just north of the Cape Fear Memorial Bridge. E.P. Godwin Stadium is located on US 117, west of the Port of Wilmington.

Historic resources that may also be subject to Section 4(f) are not included in this analysis.

Section 6(f) of the Land and Water Conservation Fund (LWCF) Act of 1965 (16 U.S.C. 4601-4 et seq.) states that parks developed or improved using LWCF grant funds cannot be acquired unless no other reasonable and feasible alternative exists, and requires coordination with the National Park Service (NPS). Resources subject to Section 6(f) include Greenfield Lake Park, Dram Tree Park, and Legion Stadium.

The “use” of these Section 4(f) and Section 6(f) properties will need to be assessed in the development of the Draft Environmental Impact Statement.

9.0 SUMMARY OF COMMUNITY IMPACTS

The following section summarizes the community impacts presented in Section 8.0 with the findings displayed in Table 23. Each impact category was ranked into four general levels of impacts: negligible to low impact, medium or potential impact, high or adverse impact, or positive impact. It is important to note that each of these assessments are based on the level of information available at this stage of the

study process, and as more detailed information on the design of alternatives becomes available, further analysis of potential impacts will be made.

Physical Impacts – All project alternatives (Upgrade Existing US 17 Alternatives, Northern Alternatives, and Southern Alternatives) will have a high amount of new right of way and property acquisition impacts with the number of buildings within each corridor ranging from 80 to 395. The number of acres impacted from each corridor was the lowest for the Upgrade Existing US 17 Alternatives. Impacts from noise to properties that are adjacent to the project corridor are also likely.

Community/Neighborhood Cohesion and Stability – Surrounding the existing interchange at I-140 and US 17, residential areas would be impacted by improvements made to US 17 or the proposed Southern Alternatives. Some interchanges located at the terminus would require the acquisition of residential areas along White Bridge Lane. This would directly impact the community cohesion which exists in the area.

Along the Northern Alternatives, residential areas along Lanvale Road, including Savanna Branch Road and Lansan Lane, and along NC 133 where the alternative crosses would be impacted as well as the Shelmore neighborhood located within the northeast area of Brunswick Forest. These alternatives will create a barrier through this portion of Brunswick Forest that could negatively impact property values. The loss of residences could impact community cohesion.

New Hanover County would experience greater interruptions in community cohesion. All of the alternatives would affect residential areas that officials from the City of Wilmington expressed concern over, because the alternatives would likely create a barrier in a cohesive area of the community. Alternatives that terminate at US 117 and US 421 would impact the Port of Wilmington and displace or impact several residential areas, some of which contain Environmental Justice populations and potential 4(f) resources. Alternatives that include upgrades to the existing Cape Fear Memorial Bridge and interchange would impact several residential areas and historic homes listed on the National Register of Historic Places. Per City of Wilmington officials, the approach onto the Cape Fear Memorial Bridge is an existing barrier to the population and the project could create an additional barrier that would further segment the neighborhoods, particularly the small residential area west of US 421.

Economic and Business Resources – Highway-oriented businesses dependent on drive-by customers that lose direct access to US 17 could experience a loss of sales; however, this could also be offset by the growing population and projected increase in the volume of traffic along the corridor. Many businesses within the DCIA would see a positive economic benefit, as the proposed project would improve the local transportation system. This would improve the efficiency of transporting goods/services due to reduced traffic congestions.

Local Land Use, Character, and Development Plans – The portion of the Upgrade Existing US 17 Alternatives within Brunswick County is not likely to change the aesthetics or visual character of the corridor given that it would still be the corridor of a major US Highway; however, as Alternatives F and P enter downtown Wilmington in New Hanover County, they will likely negatively impact the visual character of the historic area along US 421 near Dawson Street and Wooster Street.

The Northern Alternatives will mostly be on new location within Brunswick County and within developed areas in New Hanover County. Thus, potential impacts to the local land use and the character of the subdivisions and business development in Brunswick County are anticipated.

The portions of the Southern Alternatives within in Brunswick County are in a less developed area and would not likely have the same level of impact on the built environment as the Northern Alternatives. However they will impact the rural character of this area and be a visual impact to those that currently live near this corridor. In New Hanover County, the Southern Alternatives are in a built environment and would have the same impacts as the Northern Alternatives.

Multi-modal Concerns and Accommodations – The alternatives that involve the widening of existing US 17 and/or upgrading it to a freeway would further exacerbate the barrier effects along the US 17 corridor and make it more difficult for pedestrians and bicyclists to travel along or across this roadway. Bicycle and pedestrian facilities will be prohibited on facilities upgraded to full control of access.

Widening of US 421 will likely make pedestrian and bicycle movements more difficult if appropriate accommodations, such as medians, crosswalks, or bicycle lanes, are not provided.

Recreation – The Upgrade Existing US 17 Alternatives are expected to impact Greenfield Park, Legion Sports Complex, Dram Tree Park, Optimist Park, and E.P. Godwin Stadium. However, the direct impacts are expected to be limited to the loss of open space and/or parking. Other potential impacts include changes in access and increased noise.

Community Safety and Emergency Response – Impacts to community safety will vary depending on how the project impacts travel times. Travel times will vary dependent on location, how accessibility is altered for that area, and potential improvements in travel time.

Environmental Justice – Impacts to populations identified as minority and/or low-income are anticipated with this project. The severity of effects and potential of those effects to fall disproportionately on the identified communities will be determined through future public involvement. Any identified moderate to severe impacts may then be assessed to determine if avoidance, minimization, or mitigation can be proposed. In New Hanover County, potential barrier effects were noted as being of particular concern for the area surrounding US 421 (3rd Street) and US 76 (Wooster Street and Dawson Street), as well as the area surrounding US 421 (Carolina Beach Road) and North Carolina Avenue and Tennessee Avenue. In Brunswick County, low-income residents along Lansan Lane will likely be relocated from Alternatives B and C.

All of the Upgrade Existing Alternatives are expected to have some impacts to change of access, barrier effects, and relocations. In addition, Alternatives F and P will also likely impact community cohesion. The Northern Alternatives B, G, J, and T will likely have impacts to change of access and barrier effects; while Alternatives B, C, J and T are expected to have relocation impacts and community cohesion. The Southern Alternative N Avoidance is expected to result in change of access, barrier effects, relocation, and community cohesion impacts. The M Avoidance Alternative is only expected to have some relocation impacts.

Recurring Community/Neighborhood Impacts –The NCDOT recently completed a portion of the I-140 (Wilmington Bypass) that altered access and increased noise for the residents of Spring Hill (an identified Environmental Justice community), Snee Farm, and Stoney Creek. These areas will likely incur similar impacts from the proposed project as well.

Farmland Impacts –A preliminary screening of farmland conversion impacts in the project area has been completed (NRCS Form CPA-106, Part VI) and a total score of 28 out of 160 points was calculated for the DCIA. This assessment was completed for the project as a whole and not for each individual study

alternative. Since the total site assessment score does not exceed the 60-point threshold established by NRCS, farmland conversion impacts may be anticipated, but are not considered notable.

Section 4(f) and Section 6(f) Resources –Recreational resources subject to Section 4(f) include Greenfield Lake Park, Optimist Park, and E.P. Godwin Stadium. Both Greenfield Lake Park and Optimist Park are located within the corridor of the Northern Alternatives group. Greenfield Lake Park stretches outside of the corridor; therefore any impacts to the park would be contained to the area abutting the highway. E.P. Godwin Stadium is located along US 117, east of the Port of Wilmington and would likely incur impacts from alternatives in the Northern or Southern Alternatives Groups that connect to US 117. These potential impacts will be further assessed in the Draft Environmental Impact Statement.

Table 23: Community Impact Summary

Impact Category	Upgrade Existing US 17 Alternatives	Northern Alternatives	Southern Alternatives
Physical	●	●	●
Community/Neighborhood Cohesion and Stability	●	○	○
Economic and Business Resources	○	○	○
Local Land Use, Character, and Development Plans	○	○	○
Multi-Modal Concerns and Accommodations	○	○	○
Recreation	○	○	○
Community Safety and Emergency Response	○	○	○
Environmental Justice	●	●	●
Recurring Community/Neighborhood Impacts	○	○	○
Farmland Impacts	○	○	○

Key: Negligible to Low Impact: ○, Moderate Impact: ○, High or Adverse Impact: ●

10.0 RECOMMENDATIONS/NEXT STEPS

Based on the results of the potential community impacts, the following recommendations and next steps have been made that can help avoid and mitigate impacts.

- The project planning engineer should coordinate with NCDOT Public Involvement and Community Studies to evaluate opportunities for continued outreach to the minority and low-income communities/neighborhoods that have the potential to experience high and adverse effects and/or unmitigated recurring impacts from the proposed project. Because LEP populations within the DSA exceed the Department of Justice’s Safe Harbor thresholds, written translations of vital documents should be provided for Spanish-speaking populations, in addition to other measures assuring meaningful language access, as determined by NCDOT Public Involvement to satisfy requirements of Executive Order 13166.

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- Because notable Other Indo-European and Asian/Pacific speaking populations requiring language assistance are located within the DCIA, the NCDOT Project Planning Engineer should consult with NCDOT Public Involvement to determine appropriate measures assuring meaningful public involvement to satisfy the requirements of Executive Order 12898.
 - It is recommended that the NCDOT Project Planning Engineer coordinate with the NCDOT Public Involvement Group to ensure all public involvement activities and outreach material developed for the project under study appropriately target Title VI populations and meet all other regulatory guidelines.
 - Given the high amount of physical impacts, the NCDOT Project Planning Engineer should consider incorporating Context Sensitive Designs, as appropriate, in areas where the project would have substantial visual/aesthetic impacts, which would also help address Environmental Justice concerns.
 - In order to minimize potential impacts to community cohesion, it is recommended that as the project develops the NCDOT Project Planning Engineer coordinate with the NCDOT Public Involvement Group to conduct additional outreach to citizens and groups likely to be impacted, which will also address Environmental Justice concerns.
 - The NCDOT Project Planning Engineer should conduct additional public outreach to affected citizens, property owners, and farm operators related to mobility and access once it is determined where potential road closures and grade separations may occur, which will also address Environmental Justice concerns.
 - The NCDOT Project Planning Engineer should coordinate with the NCDOT Rail Division, CSX, the US Department of Defense, and the North Carolina Ports Authority regarding the railroad crossings.
 - The NCDOT Project Planning Engineer should continue to coordinate with schools and emergency responders in Leland, Wilmington, Brunswick County, and New Hanover County.
 - It is recommended that the NCDOT Project Planning Engineer coordinate with the NCDOT Division of Bicycle and Pedestrian Transportation to evaluate the inclusion of bicycle/pedestrian facilities where the project crosses existing bicycle routes, as well as the necessary level of bicycle/pedestrian access accommodation during construction. The City of Wilmington has asked that bicycle and pedestrian facilities are included in the project.
 - It is recommended that the NCDOT Project Planning Engineer should consider measures, as appropriate, that would minimize project impacts to agricultural access and operations during construction.
 - It is recommended that the NCDOT Project Planning Engineer coordinate with FHWA to determine the designation of and potential level of impact to Greenfield Park, Legion Sports Complex, Dram Tree Park, Optimist Park, and E.P. Godwin Stadium.

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Appendix A
Record of Meetings



31825110

March 6, 2015

MEMORANDUM

TO: Meeting Attendees

FROM: Celia Foushee, AECOM

SUBJECT: Meeting with City of Wilmington to discuss U-4738 (Cape Fear Crossing)

Attendees

Glenn Harbeck, City of Wilmington
Christine Hughes, City of Wilmington
Allen Davis, City of Wilmington
Joanna Rocco, AECOM
Kory Wilmot, AECOM
Celia Foushee, AECOM

Meeting Summary

A meeting was held on March 3, 2015 at 4:00 PM with the City of Wilmington to discuss the Community Impact Assessment (CIA) and the Land Use Scenario Assessment (LUSA) for the proposed Cape Fear Crossing (U-4738) in Brunswick and New Hanover counties, North Carolina.

Joanna Rocco began the meeting by giving a brief overview of the project status and the remaining twelve alternatives which included two upgrade existing, four new location alternatives, and six hybrids of upgrade existing and new location alternatives. She requested any information/knowledge they have of new development or plans for the areas around the corridors to be discussed.

Allen Davis then led a discussion and identified community features and plans within the DCIA. Areas of interest include:

- The southern-most PDA is an employment and academic center. Has freight facilities, pedestrian access, and they want to improve the cohesion between the varying land uses. Mixed use node has been designated in the northern end of the PDA.
- Carolina Beach Road – from Michigan Ave. to Medical Center Drive retrofit corridor with median – Transportation Bond funds. This will create a more urban scenario.
- Develop Emerging Arts Clusters – urban revitalization – create a mixed use area. Mr. Davis described that these areas take time to develop.
- Live Work Innovation Zones – industrial areas adjacent to public housing to build a relationship between work and home
- Barclay West Development – under construction at the Cameron Arts Museum. This area will be mixed use with business and residential (i.e. grocery and townhomes).
- Independence West Apartments at Independence Blvd and US 421 – new apartment complex under development
- River Lights Development is ongoing being with the River Road Realignment project. Richard Collier with McKimmon Creed would be our best contact here.
- There are several vacant lots at Independence which Habitat for Humanity is interested in. The COW is working to rewriting development codes to allow more capacity on these lots. Paul Deangelo??
- Water Street Parking Redevelopment Project
- North Waterfront Park Project is 6.35 acres
- Southern extension of the Riverwalk to Dram Tree Park project
- Multimodal Center – with 11,000 jobs – started demolition on a few buildings downtown for the new fine arts and convention center.

Other points Mr. Davis noted included:

- Cape Fear Memorial Bridge creates a barrier in the population downtown
- There is a growing Latino population @ Bell Street and Cape Fear Blvd. In this area is the Starlight Flea Market and a Latino produce stand in the shipping containers.
- There are several vacant lots at Independence which Habitat for Humanity is interested in. The COW is working to rewriting development codes to allow more capacity on these lots.
- It was pointed out that building third bridge negatively affects traffic conditions for Wilmington because it increases in traffic from the inland community without bringing in residents.

Mr. Davis indicated the Conceptual Land Use Plan will be completed within the month and he will pass along this version. He will also send the current GIS land use layers.



31825110

March 6, 2015

MEMORANDUM

TO: Meeting Attendees

FROM: Celia Foushee, AECOM

SUBJECT: Meeting with Town of Leland to discuss U-4738 (Cape Fear Crossing)

Attendees

Robert Waring, Town of Leland
Joanna Rocco, AECOM
Kory Wilmot, AECOM
Celia Foushee, AECOM

Meeting Summary

A meeting was held on March 4, 2015 at 3:00 PM in the Town of Leland at Town Hall to discuss the Community Impact Assessment (CIA) and the Land Use Scenario Assessment (LUSA) for the proposed Cape Fear Crossing (U-4738) in Brunswick and New Hanover counties, North Carolina.

Joanna Rocco began the meeting by giving a brief overview of the project status and the remaining twelve alternatives which included two upgrade existing, four new location alternatives, and six hybrids of upgrade existing and new location alternatives. She requested any information/knowledge they have of new development or plans for the areas around the corridors to be discussed.

Mr. Waring then led a discussion about his existing knowledge of the Cape Fear Crossing and identified community features and issues in the DCIA. We showed him a vacant area surrounding Zion Church Road and if the Town had any future plans for this area. He said the Town is interested in annexing those properties, especially if the southern route is chosen; however, this would have to be a voluntary annexation. There is also a small area along Blackwell Road (less than one acre) that has been annexed. Other areas of interest include:

- Several bike and pedestrian accommodations
 - Connect Rice Gate Way within the Brunswick Forest development to Mallory Creek Drive with a sidewalk or multi-use path
 - NCDOT has approved initial preliminary engineering and permitting funds for STP-DA funds for a multi-use path behind Walmart at West Gate connected to Rice Gate Way.
 - Interest in connecting Westgate Park to the Brunswick Nature Park with a multi-use path
 - Indicated there has been discussion with the Wilmington MPO to add bike lanes on NC 133
 - The Leland Collector Street Plan identified two locations along US 17 that have been identified as possible locations for pedestrian crossings
- Low income population located on Highway 87 (Maco Road) past Grayson Park.
- There may be an LEP population off of Mt. Misery Road (out of project area), however there has not been a high demand for interpreters. Mr. Waring said he would discuss this with the police chief to see if they know of any LEP populations.
- Several properties are expanding, including but not limited to:
 - Brunswick Forest Medical Park and commercial development.
 - Brunswick Forest near US 17, expanding with multi-family housing
 - North Brunswick High School off of US 74 (outside project limits)
- There could be significant land use changes to the Cameron property south of US 17 if Alternatives B or C are chosen, as it would open up this land to commercial and/or residential development due to a new interchange at US 17.
- There is an age-restricted apartment complex on Westgate Drive.
- The town would like to see the US 17/NC 133 interchange developed into a gateway for the Town with more urban/mixed uses

Mr. Waring indicated discussions with the Town of Belville regarding plans to extend their park system towards Leland. Also that Belville has proposed a resolution to the Wilmington MPO for pedestrian connections to the Battleship (Battleship Connector). No headway has been made on either of these discussions. Mr. Waring also stressed that while he has some knowledge about the plans within the Town of Belville, it would be best to discuss them directly with the town.

Mr. Waring will check with the Police Chief regarding the location of any LEP populations. He will also send their updated GIS files as requested.

xc: Project File

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1600 Perimeter Park Drive, Suite 400
Morrisville, NC 27560
Telephone: (919) 461-1100
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RECORD OF TELEPHONE CONVERSATION

DATE: April 3, 2015		PROJECT NO. 60400312	
RECORDED BY: Celia Foushee		OWNER/CLIENT: NCDOT	
TALKED WITH: Jimmy Strickland		FROM: Town of Leland – Public Utilities Director	
NATURE OF CALL (INCOMING OR OUTGOING); Outgoing			
ROUTE TO:	FOR INFORMATION		FOR ACTION
MAIN SUBJECT OF CONVERSATION:			
<p>Spoke with Jimmy Strickland regarding any changes in the water and sewer service for the Town of Leland. I had previously emailed him the information we had in the ICE and asked if he would verify it is still correct. He responded the information for Leland is correct still and the website should have the latest numbers (if they have changed).</p>			

RECORD OF TELEPHONE CONVERSATION

DATE: April 7, 2015		PROJECT NO. 60400312	
RECORDED BY: Celia Foushee		OWNER/CLIENT: NCDOT	
TALKED WITH: Athena Williams		FROM: Belville Town Administrator	
NATURE OF CALL (INCOMING OR OUTGOING); Outgoing			
ROUTE TO:	FOR INFORMATION		FOR ACTION
MAIN SUBJECT OF CONVERSATION:			
<p>Spoke with Athena Williams regarding any development plans within Belville. She discussed the Riverwalk plans that are also discussed in the Belville Renaissance Plan.</p>			

RECORD OF TELEPHONE CONVERSATION

DATE: April 9, 2015		PROJECT NO. 60400312	
RECORDED BY: Celia Foushee		OWNER/CLIENT: NCDOT	
TALKED WITH: Marc Pages		FROM: Brunswick County Planning	
NATURE OF CALL (INCOMING OR OUTGOING); Outgoing			
ROUTE TO:	FOR INFORMATION		FOR ACTION
MAIN SUBJECT OF CONVERSATION:			
<p>Spoke with Marc Pages regarding any development plans in the project study area; specifically surrounding the intersection at I-140 and US 17 at Zion Church Road and for the unincorporated area north of Brunswick Forest. He responded there are no immediate plans for development in the areas.</p> <p>Requested Marc send AECOM their future land use files so we may incorporate them into the LUSA/CIA. Files received 4/9/15.</p>			

Appendix B
Demographic Data

Population Change - 2000 to 2010

The *decennial* Census data is used to compare population changes between 2000 and 2010. The red cells in the tables are set up to auto-calculate totals, differences, and percents. Note, you should **NOT edit or delete** the content of the **red cells**, as they are formulas and will change as you input your information into the white cells. Once complete, you can copy the table directly into your report.

Geography 2000	Geography 2010	2000	2010	Difference	Percent Change	Annualized Growth Rate
CT 103, BG 1	CT 103, BG 1	1,439	2,401	962	66.9%	5.3%
CT 103, BG 2	CT 103, BG 4	1,517	1,386	(131)	-8.6%	-0.9%
CT 103, BG 4	CT 103, BG 3	766	732	(34)	-4.4%	-0.5%
CT 104, BG 1	CT 104, BG 2 and CT 104, BG 3	1,586	1,892	306	19.3%	1.8%
CT 105.02, BG 1	CT 105.02, BG 1	2,298	3,431	1,133	49.3%	4.1%
CT 105.02, BG 2	CT 105.02, BG 2	1,505	1,565	60	4.0%	0.4%
CT 105.02, BG 3	CT 105.02, BG 3	899	1,101	202	22.5%	2.0%
CT 116.01, BG 3	CT 116.05, BG 2	1,453	2,565	1,112	76.5%	5.8%
DSA Aggregate		11,463	15,073	3,610	31.5%	2.8%
New Hanover County		160,307	202,667	42,360	26.4%	2.4%
North Carolina		8,049,313	9,535,483	1,486,170	18.5%	1.7%

Source: US Census Bureau, Census 2010 and Census 2000, Summary File 1 100% Data, Table P1 and P001 "Total Population."

Data Sources	
2000 Population	Use the field "Total_Population" in the datasets from the decennial 2000 Census for block groups and the corresponding county.
2010 Population	Use the field "Total_Population" in the datasets from the decennial 2010 Census for block groups and the corresponding county.
Difference	This field will auto-calculate based on changes between 2000 and 2010.
Percent Change	This field will auto-calculate based on the changes in population.

Race

The ACS Census data should be used to describe the Racial composition of the DSA. The red cells in the tables are set up to auto-calculate totals, differences, and percents. Note, you should **NOT edit or delete** the content of the red cells, as they are formulas and will change as you input your information into the white cells. Once complete, you can copy the table directly into your report.

County	Geography	Total Population	White		Black or African American		American Indian and Alaska Native Alone		Asian		Native Hawaiian/Pacific Islander		Some Other Race		Two or More Races		Total Non-White	
			#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Brunswick	Block Group 1, Census Tract 202.02	5121	4184	81.7%	535	10.4%	33	0.6%	51	1.0%	0	0.0%	23	0.4%	295	5.8%	937	18.3%
Brunswick	Block Group 2, Census Tract 201.04	2366	1609	68.0%	588	24.9%	2	0.1%	0	0.0%	0	0.0%	130	5.5%	37	1.6%	757	32.0%
Brunswick	Block Group 2, Census Tract 202.02	1728	1445	83.6%	283	16.4%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	283	16.4%
Brunswick	Block Group 2, Census Tract 206.02	1637	1548	94.6%	61	3.7%	13	0.8%	0	0.0%	0	0.0%	10	0.6%	5	0.3%	89	5.4%
Brunswick	Block Group 3, Census Tract 201.03	2540	2358	92.8%	51	2.0%	0	0.0%	63	2.5%	0	0.0%	0	0.0%	68	2.7%	182	7.2%
Brunswick	Block Group 3, Census Tract 201.04	1396	771	55.2%	81	5.8%	0	0.0%	0	0.0%	207	14.8%	281	20.1%	56	4.0%	625	44.8%
Brunswick	Block Group 1, Census Tract 202.01	1548	1213	78.4%	261	16.9%	0	0.0%	4	0.3%	0	0.0%	3	0.2%	67	4.3%	335	21.6%
Brunswick	Block Group 2, Census Tract 202.01	1886	1300	68.9%	389	20.6%	0	0.0%	45	2.4%	0	0.0%	98	5.2%	54	2.9%	586	31.1%
Brunswick	Block Group 1, Census Tract 202.03	1719	1538	89.5%	164	9.5%	4	0.2%	5	0.3%	0	0.0%	8	0.5%	0	0.0%	181	10.5%
Brunswick	Block Group 1, Census Tract 201.03	2547	2162	84.9%	361	14.2%	33	1.3%	0	0.0%	0	0.0%	23	0.9%	21	0.8%	438	17.2%
Brunswick	Block Group 2, Census Tract 201.03	2800	2176	77.7%	378	13.5%	33	1.2%	0	0.0%	0	0.0%	23	0.8%	21	0.8%	455	16.3%
New Hanover	Block Group 1, Census Tract 111	1129	158	14.0%	921	81.6%	2	0.2%	0	0.0%	0	0.0%	130	11.5%	0	0.0%	1,053	93.3%
New Hanover	Block Group 2, Census Tract 115	2609	1142	43.8%	1281	49.1%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	100	3.8%	1,381	52.9%
New Hanover	Block Group 1, Census Tract 120.07	1776	1704	95.9%	53	3.0%	13	0.7%	19	1.1%	0	0.0%	10	0.6%	0	0.0%	95	5.3%
New Hanover	Block Group 1, Census Tract 109	968	837	86.5%	62	6.4%	0	0.0%	23	2.4%	0	0.0%	0	0.0%	34	3.5%	119	12.3%
New Hanover	Block Group 2, Census Tract 113	620	348	56.1%	132	21.3%	0	0.0%	0	0.0%	207	33.4%	281	45.3%	16	2.6%	636	102.6%
New Hanover	Block Group 1, Census Tract 107	1880	1087	57.8%	693	36.9%	0	0.0%	0	0.0%	0	0.0%	3	0.2%	1	0.1%	697	37.1%
New Hanover	Block Group 1, Census Tract 108	2420	1698	70.2%	275	11.4%	0	0.0%	0	0.0%	0	0.0%	98	4.0%	21	0.9%	394	16.3%
New Hanover	Block Group 2, Census Tract 120.07	1938	1768	91.2%	16	0.8%	4	0.2%	81	4.2%	0	0.0%	8	0.4%	45	2.3%	154	7.9%
New Hanover	Block Group 2, Census Tract 120.08	2828	1949	68.9%	463	16.4%	33	1.2%	93	3.3%	0	0.0%	23	0.8%	280	9.9%	892	31.5%
New Hanover	Block Group 2, Census Tract 121.01	3143	3026	96.3%	12	0.4%	2	0.1%	0	0.0%	0	0.0%	130	4.1%	90	2.9%	234	7.4%
New Hanover	Block Group 1, Census Tract 110	313	61	19.5%	240	76.7%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	12	3.8%	252	80.5%
New Hanover	Block Group 3, Census Tract 112	894	178	19.9%	704	78.7%	13	1.5%	0	0.0%	0	0.0%	10	1.1%	12	1.3%	739	82.7%
New Hanover	Block Group 2, Census Tract 112	657	440	67.0%	217	33.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	217	33.0%
New Hanover	Block Group 1, Census Tract 113	1013	822	81.1%	137	13.5%	0	0.0%	54	5.3%	207	20.4%	281	27.7%	0	0.0%	679	67.0%
New Hanover	Block Group 1, Census Tract 120.06	1691	1463	86.5%	208	12.3%	0	0.0%	16	0.9%	0	0.0%	3	0.2%	0	0.0%	227	13.4%
New Hanover	Block Group 3, Census Tract 121.01	2786	1825	65.5%	273	9.8%	0	0.0%	19	0.7%	0	0.0%	98	3.5%	106	3.8%	496	17.8%
New Hanover	Block Group 3, Census Tract 106	1827	1527	83.6%	76	4.2%	4	0.2%	146	8.0%	0	0.0%	8	0.4%	0	0.0%	234	12.8%
New Hanover	Block Group 2, Census Tract 106	1125	1043	92.7%	29	2.6%	0	0.0%	53	4.7%	0	0.0%	98	8.7%	0	0.0%	180	16.0%
New Hanover	Block Group 1, Census Tract 120.08	2825	2405	85.1%	128	4.5%	4	0.1%	60	2.1%	0	0.0%	8	0.3%	80	2.8%	280	9.9%
New Hanover	Block Group 2, Census Tract 120.06	2029	1933	95.3%	72	3.5%	3	0.1%	11	0.5%	0	0.0%	0	0.0%	0	0.0%	86	4.2%
New Hanover	Block Group 2, Census Tract 107	2434	1301	53.5%	938	38.5%	118	4.8%	3	0.1%	0	0.0%	107	4.4%	22	0.9%	1,188	48.8%
New Hanover	Block Group 2, Census Tract 109	1384	1300	93.9%	56	4.0%	0	0.0%	0	0.0%	0	0.0%	98	7.1%	18	1.3%	172	12.4%
New Hanover	Block Group 2, Census Tract 111	1471	12	0.8%	1438	97.8%	4	0.3%	0	0.0%	0	0.0%	8	0.5%	21	1.4%	1,471	100.0%
New Hanover	Block Group 1, Census Tract 106	1045	978	93.6%	53	5.1%	0	0.0%	0	0.0%	0	0.0%	98	9.4%	0	0.0%	151	14.4%
New Hanover	Block Group 1, Census Tract 121.01	2173	1826	84.0%	193	8.9%	4	0.2%	23	1.1%	0	0.0%	8	0.4%	16	0.7%	244	11.2%
New Hanover	Block Group 1, Census Tract 112	629	594	94.4%	24	3.8%	3	0.5%	0	0.0%	0	0.0%	0	0.0%	11	1.7%	38	6.0%
New Hanover	Block Group 2, Census Tract 110	1884	1152	61.1%	620	32.9%	118	6.3%	0	0.0%	0	0.0%	107	5.7%	9	0.5%	854	45.3%
DSA		70,779	52,881	74.7%	12,466	17.6%	271	0.4%	769	1.1%	207	0.3%	932	1.3%	1,518	2.1%	16,163	22.8%
Brunswick County (DSA)		25,288	20,304	80.3%	3,152	12.5%	867	3.4%	168	0.7%	118	0.5%	2,868	11.3%	624	2.5%	7,797	30.8%
Brunswick County		110,324	92,642	84.0%	12,069	10.9%	326	0.3%	625	0.6%	325	0.3%	1,831	1.7%	2,506	2.3%	17,682	16.0%
New Hanover County (DSA)		45,491	32,577	71.6%	9,314	20.5%	867	1.9%	601	1.3%	118	0.3%	2,868	6.3%	894	2.0%	14,662	32.2%
New Hanover County		206,403	166,336	80.6%	30,155	14.6%	867	0.4%	2,875	1.4%	118	0.1%	2,868	1.4%	3,184	1.5%	40,067	19.4%

Source: US Census Bureau, American Community Survey 5-year Estimates (2009-2013), Table B02001, "Race."

Data Sources	
Total Population	Use the field "Total_Population_forRace" in the datasets from the ACS data for block groups and the corresponding county.
White	Use the field "White" in the datasets from the ACS data for block groups and the corresponding county.
Black or African American	Use the field "Black" in the datasets from the ACS data for block groups and the corresponding county.
American Indian or Alaska Native Alone	Use the field "AmIndianAKNative" in the datasets from the ACS data for block groups and the corresponding county.
Asian	Use the field "Asian" in the datasets from the ACS data for block groups and the corresponding county.
Native Hawaiian/ Pacific Islander	Use the field "HawaiianOrPislander" in the datasets from the ACS data for block groups and the corresponding county.
Some Other Race	Use the field "OtherRace" in the datasets from the ACS data for block groups and the corresponding county.
Two or More Races	Use the field "TwoOrMoreRaces" in the datasets from the ACS data for block groups and the corresponding county.
Total Non-White	This field is auto-calculated by adding the total population for each race category, with the exception of the "White" category.

Minority Population

The ACS Census data should be used to calculate the Minority populations. The red cells in the tables are set up to auto-calculate totals, differences, and percents. Note, you should **NOT edit or delete** the content of the **red cells**, as they are formulas and will change as you input your information into the white cells. Once complete, you can copy the table directly into your report.

County	Geography	Total Populaion	White, Non-Hispanic		Minority Population*	
			#	%	#	%
Brunswick	Block Group 1, Census Tract 202.02	5121	4079	79.7%	1,042	20.3%
Brunswick	Block Group 2, Census Tract 201.04	2366	1524	64.4%	842	35.6%
Brunswick	Block Group 2, Census Tract 202.02	1728	1445	83.6%	283	16.4%
Brunswick	Block Group 2, Census Tract 206.02	1637	1483	90.6%	154	9.4%
Brunswick	Block Group 3, Census Tract 201.03	2540	2358	92.8%	182	7.2%
Brunswick	Block Group 3, Census Tract 201.04	1396	771	55.2%	625	44.8%
Brunswick	Block Group 1, Census Tract 202.01	1548	1213	78.4%	335	21.6%
Brunswick	Block Group 2, Census Tract 202.01	1886	1262	66.9%	624	33.1%
Brunswick	Block Group 1, Census Tract 202.03	1719	1535	89.3%	184	10.7%
Brunswick	Block Group 1, Census Tract 201.03	2547	1909	75.0%	638	25.0%
Brunswick	Block Group 2, Census Tract 201.03	2800	2112	75.4%	688	24.6%
New Hanover	Block Group 1, Census Tract 111	1129	158	14.0%	971	86.0%
New Hanover	Block Group 2, Census Tract 115	2609	812	31.1%	1,797	68.9%
New Hanover	Block Group 1, Census Tract 120.07	1776	1620	91.2%	156	8.8%
New Hanover	Block Group 1, Census Tract 109	968	837	86.5%	131	13.5%
New Hanover	Block Group 2, Census Tract 113	620	337	54.4%	283	45.6%
New Hanover	Block Group 1, Census Tract 107	1880	1053	56.0%	827	44.0%
New Hanover	Block Group 1, Census Tract 108	2420	1381	57.1%	1,039	42.9%
New Hanover	Block Group 2, Census Tract 120.07	1938	1741	89.8%	197	10.2%
New Hanover	Block Group 2, Census Tract 120.08	2828	1920	67.9%	908	32.1%
New Hanover	Block Group 2, Census Tract 121.01	3143	3026	96.3%	117	3.7%
New Hanover	Block Group 1, Census Tract 110	313	61	19.5%	252	80.5%
New Hanover	Block Group 3, Census Tract 112	894	147	16.4%	747	83.6%
New Hanover	Block Group 2, Census Tract 112	657	440	67.0%	217	33.0%
New Hanover	Block Group 1, Census Tract 113	1013	815	80.5%	198	19.5%
New Hanover	Block Group 1, Census Tract 120.06	1691	1451	85.8%	240	14.2%
New Hanover	Block Group 3, Census Tract 121.01	2786	1614	57.9%	1,172	42.1%
New Hanover	Block Group 3, Census Tract 106	1827	1527	83.6%	300	16.4%
New Hanover	Block Group 2, Census Tract 106	1125	1043	92.7%	82	7.3%
New Hanover	Block Group 1, Census Tract 120.08	2825	2370	83.9%	455	16.1%
New Hanover	Block Group 2, Census Tract 120.06	2029	1838	90.6%	191	9.4%
New Hanover	Block Group 2, Census Tract 107	2434	1208	49.6%	1,226	50.4%
New Hanover	Block Group 2, Census Tract 109	1384	1163	84.0%	221	16.0%
New Hanover	Block Group 2, Census Tract 111	1471	12	0.8%	1,459	99.2%
New Hanover	Block Group 1, Census Tract 106	1045	961	92.0%	84	8.0%
New Hanover	Block Group 1, Census Tract 121.01	2173	1794	82.6%	379	17.4%
New Hanover	Block Group 1, Census Tract 112	629	559	88.9%	70	11.1%
New Hanover	Block Group 2, Census Tract 110	1884	1059	56.2%	825	43.8%
	DSA	70,779	50,638	71.5%	20,141	28.5%
	Brunswick County (DSA)	25,288	19,691	77.9%	5,597	22.1%
	Brunswick County	110,324	89,422	81.1%	20,902	18.9%
	New Hanover County (DSA)	45,491	30,947	68.0%	14,544	32.0%
	New Hanover County	206,403	158,358	76.7%	48,045	23.3%

* Minority population includes all races that are non-white and Hispanic populations that are also White.

Source: US Census Bureau, American Community Survey 5-year Estimates (2009-2013), Table B03002, "Hispanic or Latino Origin by Race."

Data Sources	
Total Population	Total Population is determined by using "Total_Population_forHisp" field in the datasets from the ACS data for block groups and the corresponding county.
White, Non-Hispanic	Total White Non-Hispanic is determined by using the "WhiteNotHisLat" field in the datasets from the ACS data for block groups and the corresponding county.
Minority Population	This field is auto-calculated by subtracting White, Non-Hispanic from the Total Population.

Hispanic or Latino Population

The ACS Census data should be used to calculate the Hispanic or Latino populations. The red cells in the tables are set up to auto-calculate totals, differences, and percents. Note, you should **NOT edit or delete** the content of the **red cells**, as they are formulas and will change as you input your information into the white cells. Once complete, you can copy the table directly into your report.

County	Hispanic or Latino Origin	Total Population	Hispanic		Not Hispanic	
			#	%	#	%
Brunswick	Block Group 1, Census Tract 202.02	5121	128	2.5%	4993	97.5%
Brunswick	Block Group 2, Census Tract 201.04	2366	215	9.1%	2151	90.9%
Brunswick	Block Group 2, Census Tract 202.02	1728	-	0.0%	1728	100.0%
Brunswick	Block Group 2, Census Tract 206.02	1637	77	4.7%	1560	95.3%
Brunswick	Block Group 3, Census Tract 201.03	2540	-	0.0%	2540	100.0%
Brunswick	Block Group 3, Census Tract 201.04	1396	281	20.1%	1115	79.9%
Brunswick	Block Group 1, Census Tract 202.01	1548	20	1.3%	1528	98.7%
Brunswick	Block Group 2, Census Tract 202.01	1886	143	7.6%	1743	92.4%
Brunswick	Block Group 1, Census Tract 202.03	1719	50	2.9%	1669	97.1%
Brunswick	Block Group 1, Census Tract 201.03	2547	253	9.9%	2294	90.1%
Brunswick	Block Group 2, Census Tract 201.03	2800	289	10.3%	2511	89.7%
New Hanover	Block Group 1, Census Tract 111	1129	9	0.8%	1120	99.2%
New Hanover	Block Group 2, Census Tract 115	2609	330	12.6%	2279	87.4%
New Hanover	Block Group 1, Census Tract 120.07	1776	84	4.7%	1692	95.3%
New Hanover	Block Group 1, Census Tract 109	968	-	0.0%	968	100.0%
New Hanover	Block Group 2, Census Tract 113	620	115	18.5%	505	81.5%
New Hanover	Block Group 1, Census Tract 107	1880	35	1.9%	1845	98.1%
New Hanover	Block Group 1, Census Tract 108	2420	732	30.2%	1688	69.8%
New Hanover	Block Group 2, Census Tract 120.07	1938	37	1.9%	1901	98.1%
New Hanover	Block Group 2, Census Tract 120.08	2828	205	7.2%	2623	92.8%
New Hanover	Block Group 2, Census Tract 121.01	3143	-	0.0%	3143	100.0%
New Hanover	Block Group 1, Census Tract 110	313	12	3.8%	301	96.2%
New Hanover	Block Group 3, Census Tract 112	894	31	3.5%	863	96.5%
New Hanover	Block Group 2, Census Tract 112	657	-	0.0%	657	100.0%
New Hanover	Block Group 1, Census Tract 113	1013	7	0.7%	1006	99.3%
New Hanover	Block Group 1, Census Tract 120.06	1691	16	0.9%	1675	99.1%
New Hanover	Block Group 3, Census Tract 121.01	2786	706	25.3%	2080	74.7%
New Hanover	Block Group 3, Census Tract 106	1827	68	3.7%	1759	96.3%
New Hanover	Block Group 2, Census Tract 106	1125	-	0.0%	1125	100.0%
New Hanover	Block Group 1, Census Tract 120.08	2825	187	6.6%	2638	93.4%
New Hanover	Block Group 2, Census Tract 120.06	2029	108	5.3%	1921	94.7%
New Hanover	Block Group 2, Census Tract 107	2434	196	8.1%	2238	91.9%
New Hanover	Block Group 2, Census Tract 109	1384	137	9.9%	1247	90.1%
New Hanover	Block Group 2, Census Tract 111	1471	-	0.0%	1471	100.0%
New Hanover	Block Group 1, Census Tract 106	1045	17	1.6%	1028	98.4%
New Hanover	Block Group 1, Census Tract 121.01	2173	163	7.5%	2010	92.5%
New Hanover	Block Group 1, Census Tract 112	629	35	5.6%	594	94.4%
New Hanover	Block Group 2, Census Tract 110	1884	102	5.4%	1782	94.6%
	DSA	70,779	4,788	6.8%	65,991	93.2%
	Brunswick County (DSA)	25,288	1,456	5.8%	23,832	94.2%
	Brunswick County	110,324	5,497	5.0%	104,827	95.0%
	New Hanover County (DSA)	45,491	3,332	7.3%	42,159	92.7%
	New Hanover County	206,403	10,944	5.3%	195,459	94.7%

Source: US Census Bureau, American Community Survey 5-year Estimates (2009-2013), Table B03002, "Hispanic or Latino Origin by Race."

Data Sources	
Total Population	Total Population is determined using the "Total_Population_forHisp" in the datasets from the ACS data for block groups and the corresponding county.
Hispanic	This field is auto-calculated by subtracting Not Hispanic from Total Population.
Not Hispanic	Use the field "TotNotHisOrLatino" in the datasets from the ACS data for block groups and the corresponding county.

Limited English Proficiency (LEP)

The ACS Census data should be used to calculate the LEP populations. The red cells in the tables are set up to auto-calculate totals, differences, and percents. Note, you should **NOT edit or delete** the content of the red cells, as they are formulas and will change as you input your information into the white cells. Once complete, you can copy the table directly into your report.

County	Geography	Total Adult Population, 18 years and older	Primary Language Group of Persons Who Speak English Less than Very Well							
			Spanish		Other Indo-Euro		Asian/Pacific		Other	
			#	%	#	%	#	%	#	%
Brunswick	Block Group 1, Census Tract 202.02	4022	13	0.3%	12	0.3%	15	0.4%	0	0.0%
Brunswick	Block Group 2, Census Tract 201.04	1769	62	3.5%	0	0.0%	0	0.0%	0	0.0%
Brunswick	Block Group 2, Census Tract 202.02	1366	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Brunswick	Block Group 2, Census Tract 206.02	1268	5	0.4%	3	0.2%	0	0.0%	0	0.0%
Brunswick	Block Group 3, Census Tract 201.03	855	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Brunswick	Block Group 3, Census Tract 201.04	1856	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Brunswick	Block Group 1, Census Tract 202.01	1571	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Brunswick	Block Group 2, Census Tract 202.01	905	0	0.0%	37	4.1%	23	2.5%	0	0.0%
Brunswick	Block Group 1, Census Tract 202.03	518	36	6.9%	0	0.0%	0	0.0%	0	0.0%
Brunswick	Block Group 1, Census Tract 201.03	1701	0	0.0%	10	0.6%	0	0.0%	0	0.0%
Brunswick	Block Group 2, Census Tract 201.03	1794	366	20.4%	19	1.1%	0	0.0%	0	0.0%
New Hanover	Block Group 1, Census Tract 111	1617	0	0.0%	0	0.0%	0	0.0%	0	0.0%
New Hanover	Block Group 2, Census Tract 115	2018	13	0.6%	38	1.9%	93	4.6%	0	0.0%
New Hanover	Block Group 1, Census Tract 120.07	2174	0	0.0%	47	2.2%	0	0.0%	5	0.2%
New Hanover	Block Group 1, Census Tract 109	1060	191	18.0%	0	0.0%	87	8.2%	0	0.0%
New Hanover	Block Group 2, Census Tract 113	1044	3	0.3%	0	0.0%	0	0.0%	0	0.0%
New Hanover	Block Group 1, Census Tract 107	1503	52	3.5%	48	3.2%	0	0.0%	0	0.0%
New Hanover	Block Group 1, Census Tract 108	1318	7	0.5%	0	0.0%	0	0.0%	0	0.0%
New Hanover	Block Group 2, Census Tract 120.07	2322	0	0.0%	0	0.0%	0	0.0%	0	0.0%
New Hanover	Block Group 2, Census Tract 120.08	248	0	0.0%	0	0.0%	0	0.0%	0	0.0%
New Hanover	Block Group 2, Census Tract 121.01	711	0	0.0%	0	0.0%	0	0.0%	0	0.0%
New Hanover	Block Group 1, Census Tract 110	629	0	0.0%	0	0.0%	0	0.0%	0	0.0%
New Hanover	Block Group 3, Census Tract 112	861	0	0.0%	0	0.0%	0	0.0%	0	0.0%
New Hanover	Block Group 2, Census Tract 112	1501	4	0.3%	0	0.0%	0	0.0%	0	0.0%
New Hanover	Block Group 1, Census Tract 113	2271	380	16.7%	0	0.0%	0	0.0%	0	0.0%
New Hanover	Block Group 1, Census Tract 120.06	1601	15	0.9%	0	0.0%	0	0.0%	0	0.0%
New Hanover	Block Group 3, Census Tract 121.01	828	0	0.0%	0	0.0%	0	0.0%	0	0.0%
New Hanover	Block Group 3, Census Tract 106	1958	141	7.2%	15	0.8%	0	0.0%	0	0.0%
New Hanover	Block Group 2, Census Tract 106	2300	160	7.0%	19	0.8%	0	0.0%	0	0.0%
New Hanover	Block Group 1, Census Tract 120.08	2353	89	3.8%	12	0.5%	0	0.0%	0	0.0%
New Hanover	Block Group 2, Census Tract 120.06	1657	0	0.0%	0	0.0%	0	0.0%	0	0.0%
New Hanover	Block Group 2, Census Tract 107	1753	117	6.7%	4	0.2%	3	0.2%	0	0.0%
New Hanover	Block Group 2, Census Tract 109	1230	110	8.9%	0	0.0%	0	0.0%	0	0.0%
New Hanover	Block Group 2, Census Tract 111	1125	0	0.0%	0	0.0%	0	0.0%	0	0.0%
New Hanover	Block Group 1, Census Tract 106	891	0	0.0%	0	0.0%	0	0.0%	0	0.0%
New Hanover	Block Group 1, Census Tract 121.01	1823	39	2.1%	19	1.0%	4	0.2%	0	0.0%
New Hanover	Block Group 1, Census Tract 112	521	6	1.2%	0	0.0%	0	0.0%	0	0.0%
New Hanover	Block Group 2, Census Tract 110	1325	14	1.1%	0	0.0%	0	0.0%	0	0.0%
DSA Aggregate		56,267	1,823	3.2%	283	0.5%	225	0.4%	5	0.0%

Source: US Census Bureau, American Community Survey 5-year Estimates (2009-2013), Table B16004, "Age by Language Spoken at Home by Ability to Speak English for the Population 5 Years and Over."

Data Sources	
Total Population, 18 years and older	Total Adult Population, 18 years and older is determined by using "PopADULT18YrsPlus" field in the datasets from the ACS data for block groups.
Primary Language of Persons Who Speak English Less than Very Well - Spanish	Spanish-speaking population that speaks English Less than Very Well is determined by using "SpkSpanADULTSpkEngLessThVerWell" field in the datasets from the ACS data for block groups.
Primary Language of Persons Who Speak English Less than Very Well - Other Indo-Euro	Other Indo-Euro-speaking population that speaks English Less than Very Well is determined by using "SpkIndoADULTSpkEngLessThVerWell" field in the datasets from the ACS data for block groups.
Primary Language of Persons Who Speak English Less than Very Well - Asian/Pacific	Asian/Pacific-speaking population that speaks English Less than Very Well is determined by using "SpkAsiaADULTSpkEngLessThVerWell" field in the datasets from the ACS data for block groups.
Primary Language of Persons Who Speak English Less than Very Well - Other	Other Language-speaking population that speaks English Less than Very Well is determined by using "SpkOthrADULTSpkEngLessThVerWell" field in the datasets from the ACS data for block groups.

Poverty

The ACS Census data should be used to calculate the Poverty status. The red cells in the tables are set up to auto-calculate totals, differences, and percents. Note, you should **NOT edit or delete** the content of the red cells, as they are formulas and will change as you input your information into the white cells. Once complete, you can copy the table directly into your report.

County	Poverty	Total Population for whom Poverty Status is Determined	Below Poverty Level		Very Poor: Under 50% of Poverty Level		Near Poor: Between 100% and 149% of Poverty Level	
			#	%	#	%	#	%
Brunswick	Block Group 1, Census Tract 202.02	4954	542	10.9%	102	2.1%	16	0.3%
Brunswick	Block Group 2, Census Tract 201.04	2366	407	17.2%	166	7.0%	325	13.7%
Brunswick	Block Group 2, Census Tract 202.02	1728	463	26.8%	354	20.5%	39	2.3%
Brunswick	Block Group 2, Census Tract 206.02	1635	227	13.9%	81	5.0%	196	12.0%
Brunswick	Block Group 3, Census Tract 201.03	2540	441	17.4%	62	2.4%	10	0.4%
Brunswick	Block Group 3, Census Tract 201.04	1396	255	18.3%	243	17.4%	341	24.4%
Brunswick	Block Group 1, Census Tract 202.01	1548	53	3.4%	38	2.5%	221	14.3%
Brunswick	Block Group 2, Census Tract 202.01	1886	138	7.3%	3	0.2%	183	9.7%
Brunswick	Block Group 1, Census Tract 202.03	1719	189	11.0%	0	0.0%	307	17.9%
Brunswick	Block Group 1, Census Tract 201.03	2547	303	11.9%	53	2.1%	191	7.5%
Brunswick	Block Group 2, Census Tract 201.03	2800	250	8.9%	154	5.5%	224	8.0%
New Hanover	Block Group 1, Census Tract 111	1129	461	40.8%	252	22.3%	114	10.1%
New Hanover	Block Group 2, Census Tract 115	2606	790	30.3%	649	24.9%	588	22.6%
New Hanover	Block Group 1, Census Tract 120.07	1776	256	14.4%	67	3.8%	81	4.6%
New Hanover	Block Group 1, Census Tract 109	968	183	18.9%	122	12.6%	75	7.7%
New Hanover	Block Group 2, Census Tract 113	620	296	47.7%	26	4.2%	57	9.2%
New Hanover	Block Group 1, Census Tract 107	1642	412	25.1%	142	8.6%	189	11.5%
New Hanover	Block Group 1, Census Tract 108	2420	733	30.3%	257	10.6%	318	13.1%
New Hanover	Block Group 2, Census Tract 120.07	1927	97	5.0%	36	1.9%	128	6.6%
New Hanover	Block Group 2, Census Tract 120.08	2802	452	16.1%	158	5.6%	76	2.7%
New Hanover	Block Group 2, Census Tract 121.01	3143	438	13.9%	165	5.2%	62	2.0%
New Hanover	Block Group 1, Census Tract 110	313	234	74.8%	108	34.5%	45	14.4%
New Hanover	Block Group 3, Census Tract 112	894	234	26.2%	181	20.2%	72	8.1%
New Hanover	Block Group 2, Census Tract 112	657	237	36.1%	108	16.4%	64	9.7%
New Hanover	Block Group 1, Census Tract 113	1005	182	18.1%	92	9.2%	44	4.4%
New Hanover	Block Group 1, Census Tract 120.06	1691	163	9.6%	43	2.5%	170	10.1%
New Hanover	Block Group 3, Census Tract 121.01	2786	596	21.4%	160	5.7%	372	13.4%
New Hanover	Block Group 3, Census Tract 106	1827	107	5.9%	44	2.4%	79	4.3%
New Hanover	Block Group 2, Census Tract 106	1123	0	0.0%	0	0.0%	0	0.0%
New Hanover	Block Group 1, Census Tract 120.08	2825	514	18.2%	268	9.5%	151	5.3%
New Hanover	Block Group 2, Census Tract 120.06	2006	228	11.4%	7	0.3%	186	9.3%
New Hanover	Block Group 2, Census Tract 107	2358	729	30.9%	304	12.9%	293	12.4%
New Hanover	Block Group 2, Census Tract 109	1384	178	12.9%	45	3.3%	235	17.0%
New Hanover	Block Group 2, Census Tract 111	1471	741	50.4%	501	34.1%	331	22.5%
New Hanover	Block Group 1, Census Tract 106	1045	93	8.9%	34	3.3%	31	3.0%
New Hanover	Block Group 1, Census Tract 121.01	2173	169	7.8%	140	6.4%	183	8.4%
New Hanover	Block Group 1, Census Tract 112	615	42	6.8%	26	4.2%	80	13.0%
New Hanover	Block Group 2, Census Tract 110	1884	861	45.7%	481	25.5%	356	18.9%
	DSA	70,209	12,694	18.1%	5,672	8.1%	6,433	9.2%
	Brunswick County (DSA)	25,119	3,268	13.0%	1,256	5.0%	2,053	8.2%
	Brunswick County	109,534	18,191	16.6%	6,965	6.4%	10,806	9.9%
	New Hanover County (DSA)	45,090	9,426	20.9%	4,416	9.8%	4,380	9.7%
	New Hanover County	201,530	34,053	16.9%	17,073	8.5%	17,443	8.7%

Source: US Census Bureau, American Community Survey 5-year Estimates (2009-2013), Table C17002, "Ratio of Income to Poverty Level in the Past 12 Months."

Data Sources	
Total Population for whom Poverty Status is Determined	Total Population is determined by using "Total_Population_forPov" field in the datasets from the ACS data for block groups and the corresponding
Below Poverty	Population Below Poverty Level is determined by using "IndBelowPoverty" field in the datasets from the ACS data for block groups and the corresponding county.
Very Poor: Under 50% of Poverty Level	Very Poor is determined by using "RatIncToPov_Under50" field in the datasets from the ACS data for block groups and the corresponding county.
Near Poor: Between 100% and 149% of Poverty Level	Near Poor is determined by using "RatIncToPov100to149" field in the datasets from the ACS data for block groups and the corresponding county.

Zero Car Households

The ACS Census data should be used to calculate Zero Car Households. The red cells in the tables are set up to auto-calculate totals, differences, and percents. Note, you should **NOT edit or delete** the content of the **red cells**, as they are formulas and will change as you input your information into the white cells. Once complete, you can copy the table directly into your report.

County	Geography	Total Households	No Vehicle Available		One Vehicle Available		Two or More Vehicles Available	
			#	%	#	%	#	%
Brunswick	Block Group 1, Census Tract 202.02	1906	0	0.0%	395	20.7%	1,511	79.3%
Brunswick	Block Group 2, Census Tract 201.04	886	57	6.4%	239	27.0%	590	66.6%
Brunswick	Block Group 2, Census Tract 202.02	777	0	0.0%	406	52.3%	371	47.7%
Brunswick	Block Group 2, Census Tract 206.02	661	67	10.1%	200	30.3%	394	59.6%
Brunswick	Block Group 3, Census Tract 201.03	615	154	25.0%	403	65.5%	58	9.4%
Brunswick	Block Group 3, Census Tract 201.04	930	95	10.2%	341	36.7%	494	53.1%
Brunswick	Block Group 1, Census Tract 202.01	1074	69	6.4%	634	59.0%	371	34.5%
Brunswick	Block Group 2, Census Tract 202.01	479	57	11.9%	216	45.1%	206	43.0%
Brunswick	Block Group 1, Census Tract 202.03	375	88	23.5%	171	45.6%	116	30.9%
Brunswick	Block Group 1, Census Tract 201.03	955	150	15.7%	598	62.6%	207	21.7%
Brunswick	Block Group 2, Census Tract 201.03	894	114	12.8%	323	36.1%	457	51.1%
New Hanover	Block Group 1, Census Tract 111	1119	52	4.6%	580	51.8%	487	43.5%
New Hanover	Block Group 2, Census Tract 115	1153	28	2.4%	663	57.5%	462	40.1%
New Hanover	Block Group 1, Census Tract 120.07	1147	25	2.2%	208	18.1%	914	79.7%
New Hanover	Block Group 1, Census Tract 109	566	28	4.9%	302	53.4%	236	41.7%
New Hanover	Block Group 2, Census Tract 113	523	13	2.5%	125	23.9%	385	73.6%
New Hanover	Block Group 1, Census Tract 107	881	23	2.6%	426	48.4%	432	49.0%
New Hanover	Block Group 1, Census Tract 108	697	12	1.7%	138	19.8%	547	78.5%
New Hanover	Block Group 2, Census Tract 120.07	1163	0	0.0%	350	30.1%	813	69.9%
New Hanover	Block Group 2, Census Tract 120.08	169	84	49.7%	57	33.7%	28	16.6%
New Hanover	Block Group 2, Census Tract 121.01	405	72	17.8%	202	49.9%	131	32.3%
New Hanover	Block Group 1, Census Tract 110	403	62	15.4%	231	57.3%	110	27.3%
New Hanover	Block Group 3, Census Tract 112	513	65	12.7%	251	48.9%	197	38.4%
New Hanover	Block Group 2, Census Tract 112	919	27	2.9%	432	47.0%	460	50.1%
New Hanover	Block Group 1, Census Tract 113	1041	79	7.6%	309	29.7%	653	62.7%

New Hanover	Block Group 1, Census Tract 120.06	1018	298	29.3%	392	38.5%	328	32.2%
New Hanover	Block Group 3, Census Tract 121.01	366	0	0.0%	45	12.3%	321	87.7%
New Hanover	Block Group 3, Census Tract 106	1104	88	8.0%	192	17.4%	824	74.6%
New Hanover	Block Group 2, Census Tract 106	1243	86	6.9%	379	30.5%	778	62.6%
New Hanover	Block Group 1, Census Tract 120.08	1409	15	1.1%	706	50.1%	688	48.8%
New Hanover	Block Group 2, Census Tract 120.06	857	16	1.9%	289	33.7%	552	64.4%
New Hanover	Block Group 2, Census Tract 107	990	198	20.0%	509	51.4%	283	28.6%
New Hanover	Block Group 2, Census Tract 109	641	78	12.2%	211	32.9%	352	54.9%
New Hanover	Block Group 2, Census Tract 111	704	307	43.6%	306	43.5%	91	12.9%
New Hanover	Block Group 1, Census Tract 106	583	14	2.4%	334	57.3%	235	40.3%
New Hanover	Block Group 1, Census Tract 121.01	1071	51	4.8%	421	39.3%	599	55.9%
New Hanover	Block Group 1, Census Tract 112	228	18	7.9%	76	33.3%	134	58.8%
New Hanover	Block Group 2, Census Tract 110	924	256	27.7%	434	47.0%	234	25.3%
DSA		31,389	2,846	9.1%	12,494	39.8%	16,049	51.1%
Brunswick County (DSA)		9,552	851	8.9%	3,926	41.1%	4,775	50.0%
Brunswick County		47,600	2,247	4.7%	15,288	32.1%	30,065	63.2%
New Hanover County (DSA)		21,837	1,995	9.1%	4,111	18.8%	15,731	72.0%
New Hanover County		86,010	5,599	6.5%	31,472	36.6%	48,939	56.9%

Source: US Census Bureau, American Community Survey 5-year Estimates (2009-2013), Table B25044, "Household Size by Vehicles Available."

Data Sources

Total Households	Total Households is determined by using "Total_HU_Vehicles" field in the datasets from the ACS data for block groups and the corresponding county.
No Vehicle Available	No Vehicle Available is determined by using the "HU_NoVehiclesAvailable" field in the datasets from the ACS data for block groups and the corresponding county.
One Vehicle Available	One Vehicle Available is determined by using the "HU_OneVehicleAvailable" field in the datasets from the ACS data for block groups and the corresponding county.
Two or More Vehicles Available	This field is auto-calculated by subtracting the total of "No Vehicle

Appendix C

Community Context Diagram Map Book

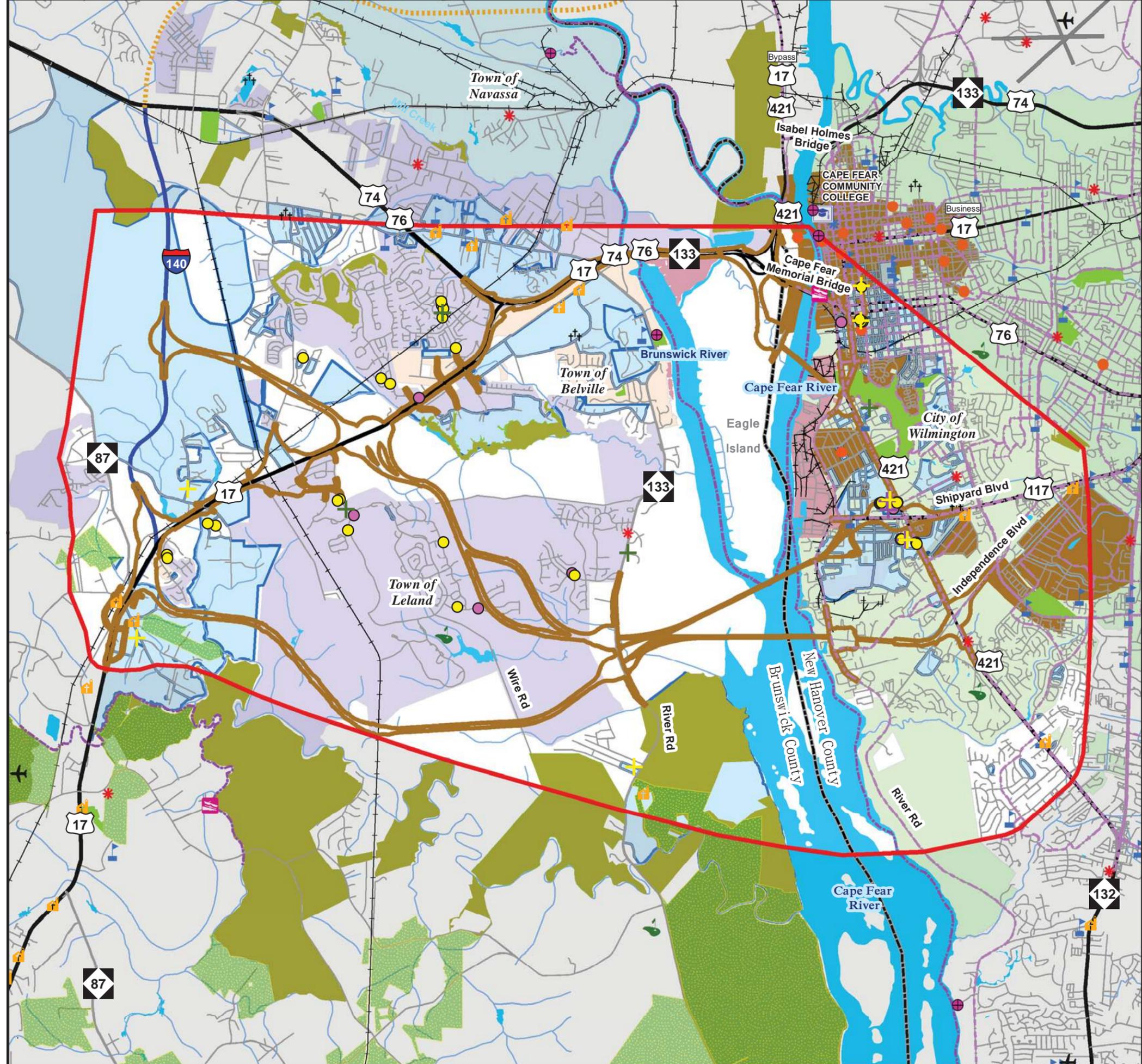
CAPE FEAR CROSSING

State Transportation Improvement Program
Project No. U-4738

Community Impact Assessment

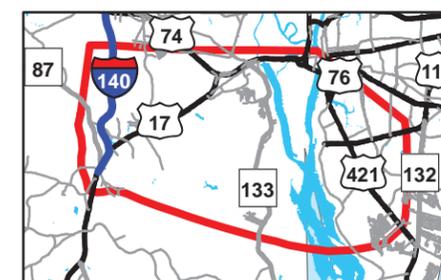


Figure 11: Community Context Diagram



Legend

- | | |
|--------------------------------------|---|
| Project Study | Bicyclist Observed |
| DCIA | Pedestrian Observed |
| Interstate | Beach Access |
| US Highway | Boat Access |
| NC Highway | Cemetery |
| Local Road | College/University |
| Railroad | Airport |
| Future Wilmington Bypass (I-140) | Fire Station |
| Water | EMS |
| Belville | Golf Course |
| Leland | Historic Resource |
| Navassa | School |
| Wilmington | Churches |
| County Boundary | Bike Route |
| Census Block with high minority rate | Paddle Trail |
| Parks | Potential Elderly Populations Observed |
| Conservation Properties | Potential Minority Populations Observed |
| Voluntary Agricultural | Potential Hispanic Populations Observed |
| National Register Historic District | |
| Port of Wilmington | |



Date: July 2015
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.

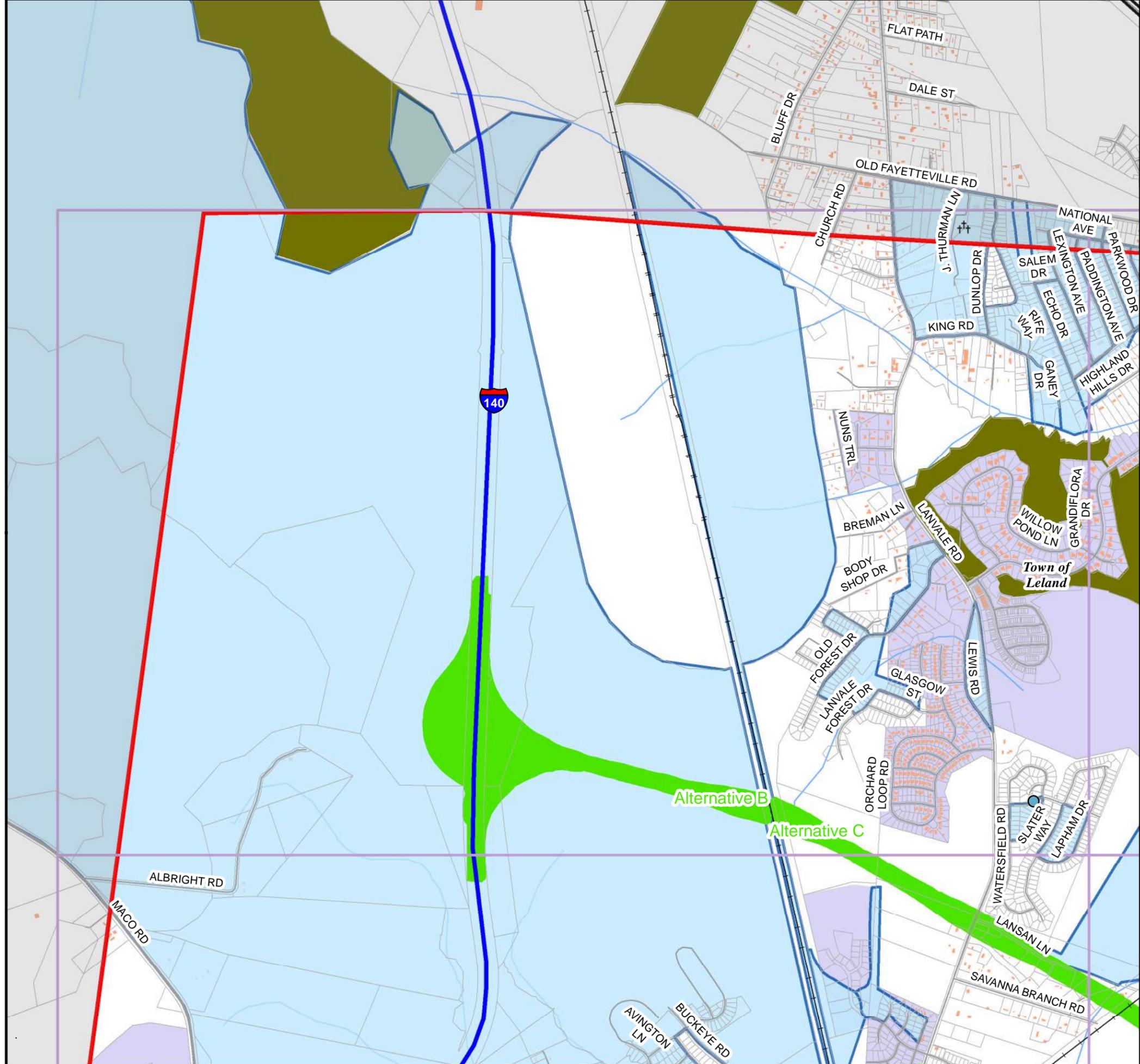
CAPE FEAR CROSSING

State Transportation Improvement Program
Project No. U-4738

Community Impact Assessment

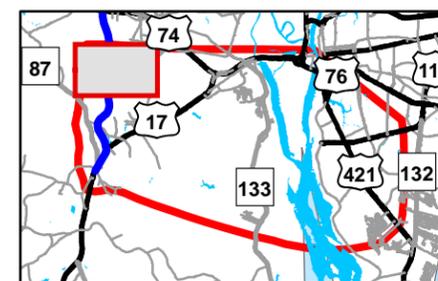


Figure 12: Community Context Diagram



Legend

- Project Study
- Interstate
- US Highway
- NC Highway
- Local Road
- Railroad
- Parcels
- Leland
- County Boundary
- Census Block with high minority rate
- Building Footprint
- Pedestrian Observed
- ⛶ Cemeteries



0 0.125 0.25 0.5

Miles

Date: July 2015

This map is for reference only.

Sources: ESRI Inc., CGIA, NCDOT, and URS.

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Project No. U-4738

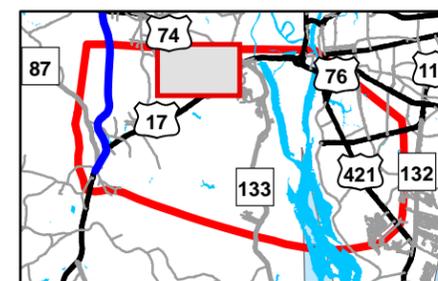
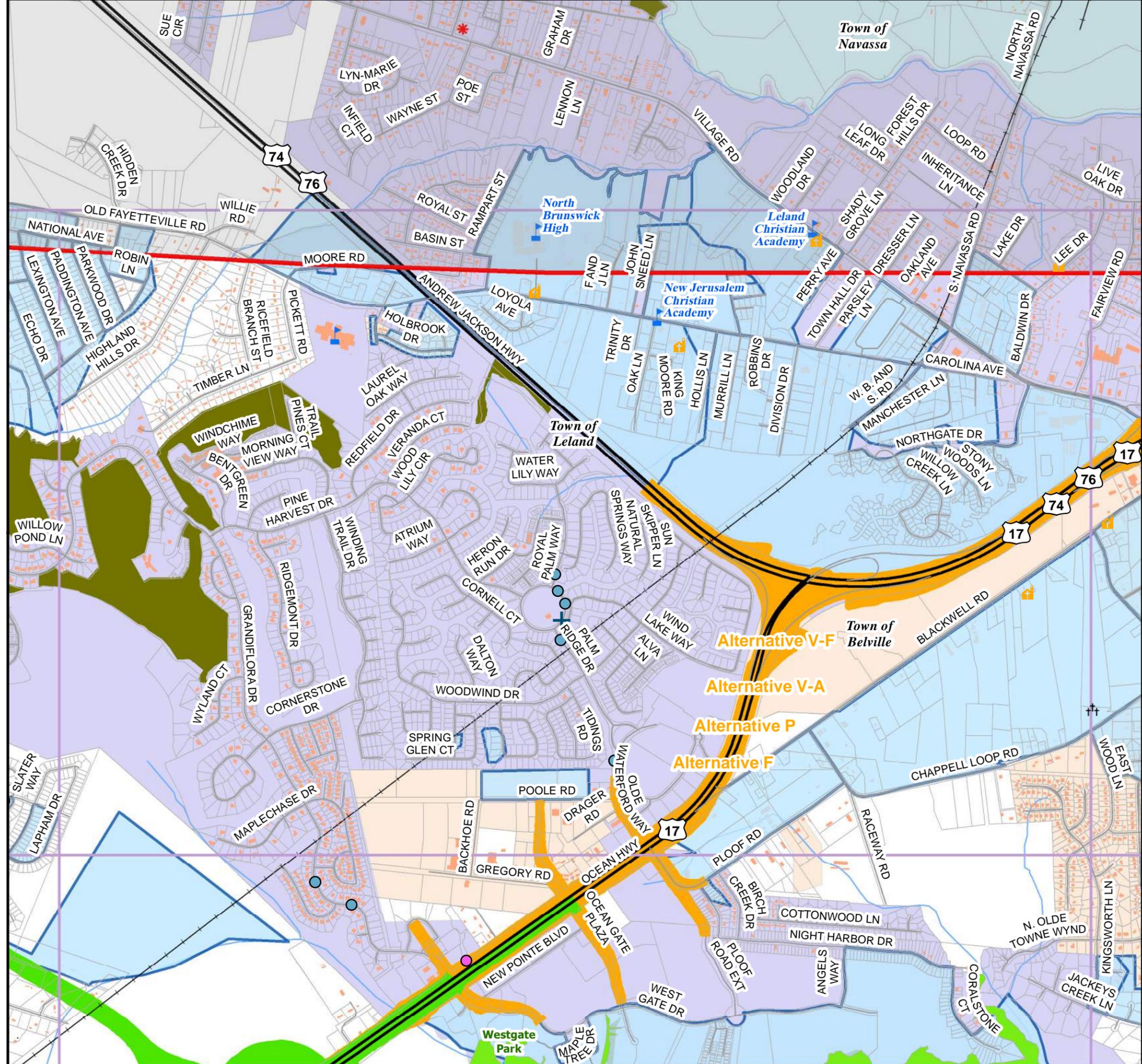
Community Impact Assessment



Figure 12: Community Context Diagram

Legend

- Project Study
- US Highway
- Local Road
- Railroad
- Parcels
- Belville
- Leland
- Navassa
- County Boundary
- Census Block with high minority rate
- Parks
- Building Footprint
- Bicyclist Observed
- Pedestrian Observed
- †† Cemeteries
- ✱ Fire Stations
- ✱ EMS
- ▶ School
- ✱ Churches
- + Potential Elderly Populations Observed



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Miles

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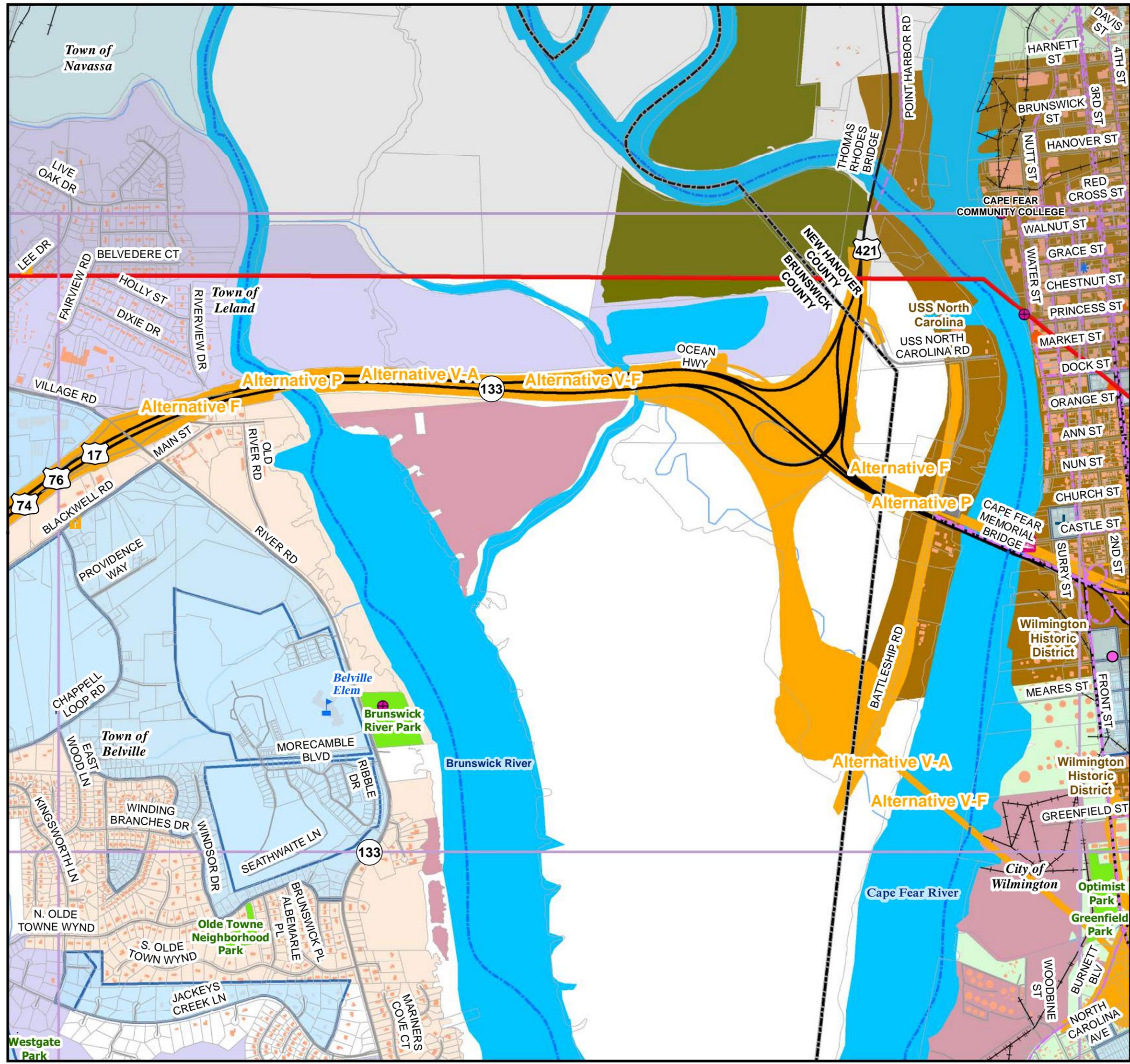
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Community Impact Assessment

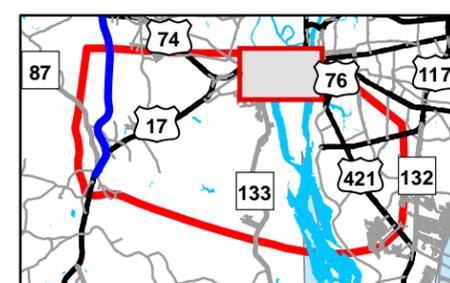


Figure 12: Community Context Diagram



Legend

- Project Study
- US Highway
- NC Highway
- Local Road
- Railroad
- Water
- Parcels
- Belville
- Leland
- Navassa
- Wilmington
- County Boundary
- Census Block with high minority rate
- Parks
- Conservation Properties
- Port of Wilmington
- Building Footprint
- Bicyclist Observed
- ⊕ Beach Access
- ⚓ Boat Access
- ⚰ Cemeteries
- 🎓 College Universities
- ⚡ EMS
- 🏠 Historic Resource
- 🏫 School
- 🏛️ Churches
- - - Bike Route
- - - Paddle Trail
- + Potential Elderly Populations Observed



Miles
Date: July 2015
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Sources: ESRI Inc., CGIA, NCDOT, and URS.

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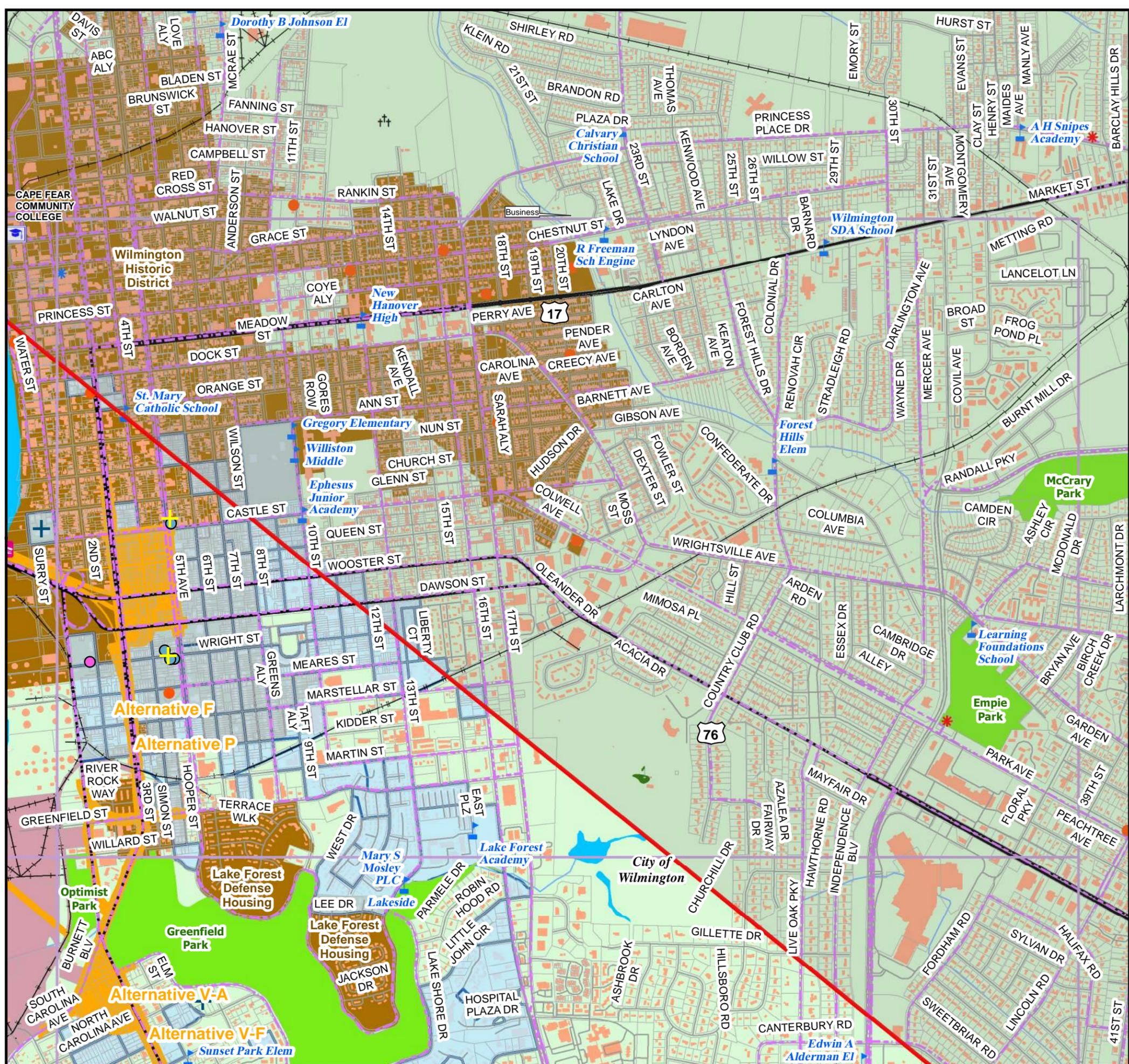
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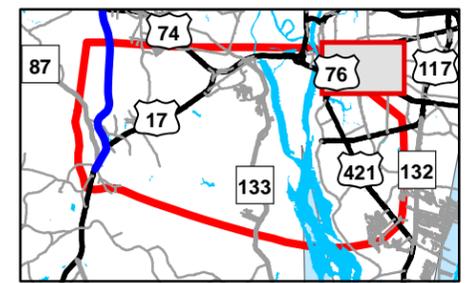


Figure 12: Community Context Diagram



Legend

- Project Study
- US Highway
- Local Road
- Railroad
- Water
- Parcels
- Wilmington
- County Boundary
- Census Block with high minority rate
- Parks
- Port of Wilmington
- Building Footprint
- Bicyclist Observed
- Pedestrian Observed
- Beach Access
- Boat Access
- Cemeteries
- College Universities
- * Fire Stations
- * EMS
- * Golf Courses
- * Historic Resource
- * School
- Bike Route
- + Potential Elderly Populations Observed
- + Potential Minority Populations Observed



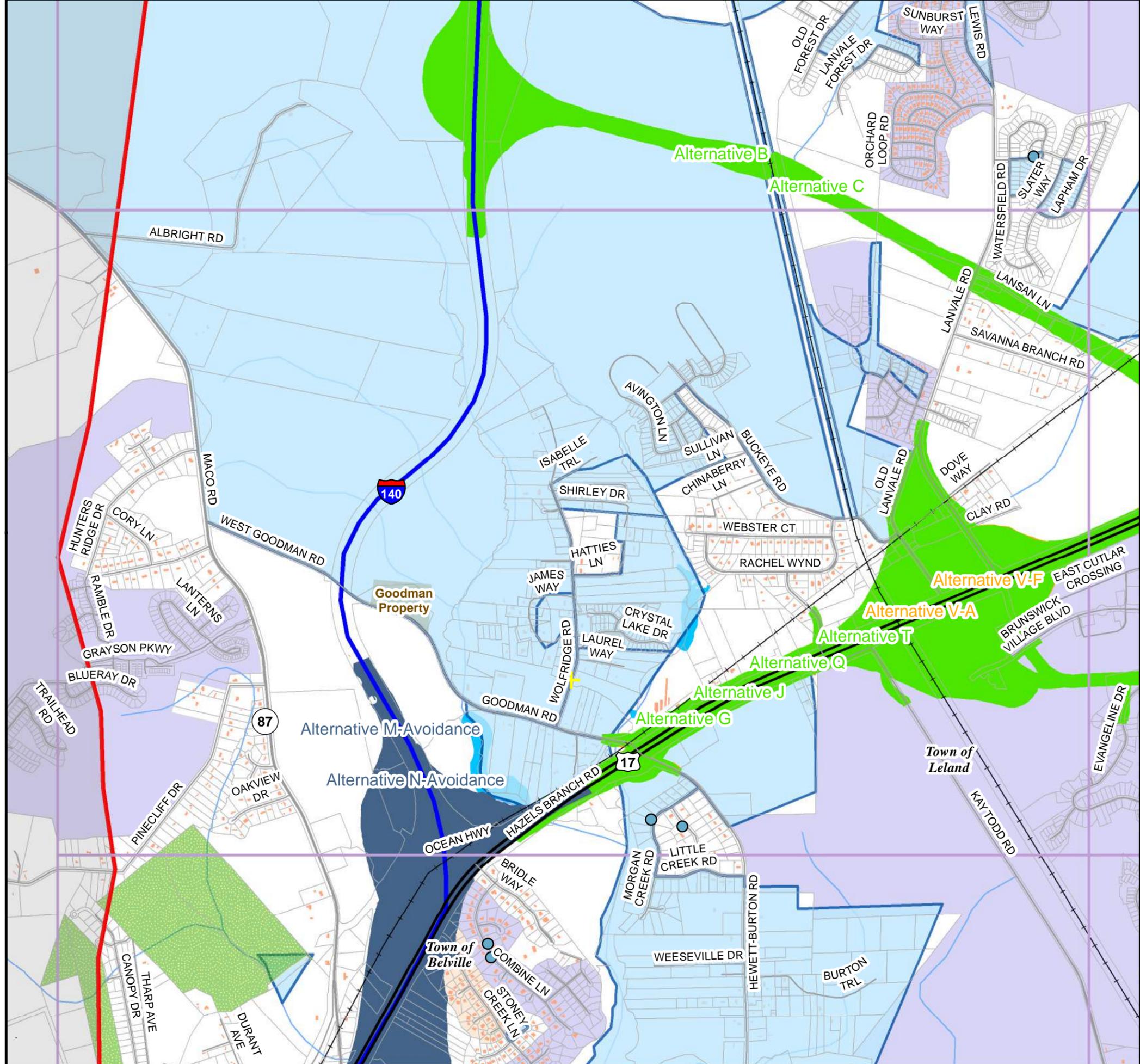
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Community Impact Assessment

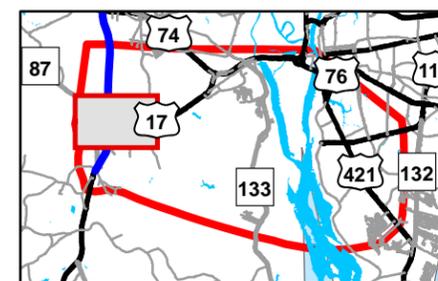


Figure 12: Community Context Diagram



Legend

- Project Study
- Interstate
- US Highway
- NC Highway
- Local Road
- Railroad
- Parcels
- Belville
- Leland
- County Boundary
- Census Block with high minority rate
- Voluntary Agricultural
- Building Footprint
- Pedestrian Observed
- + Potential Minority Populations Observed



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Miles

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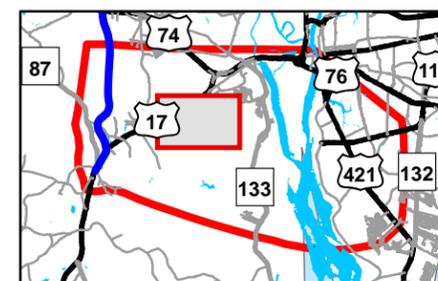
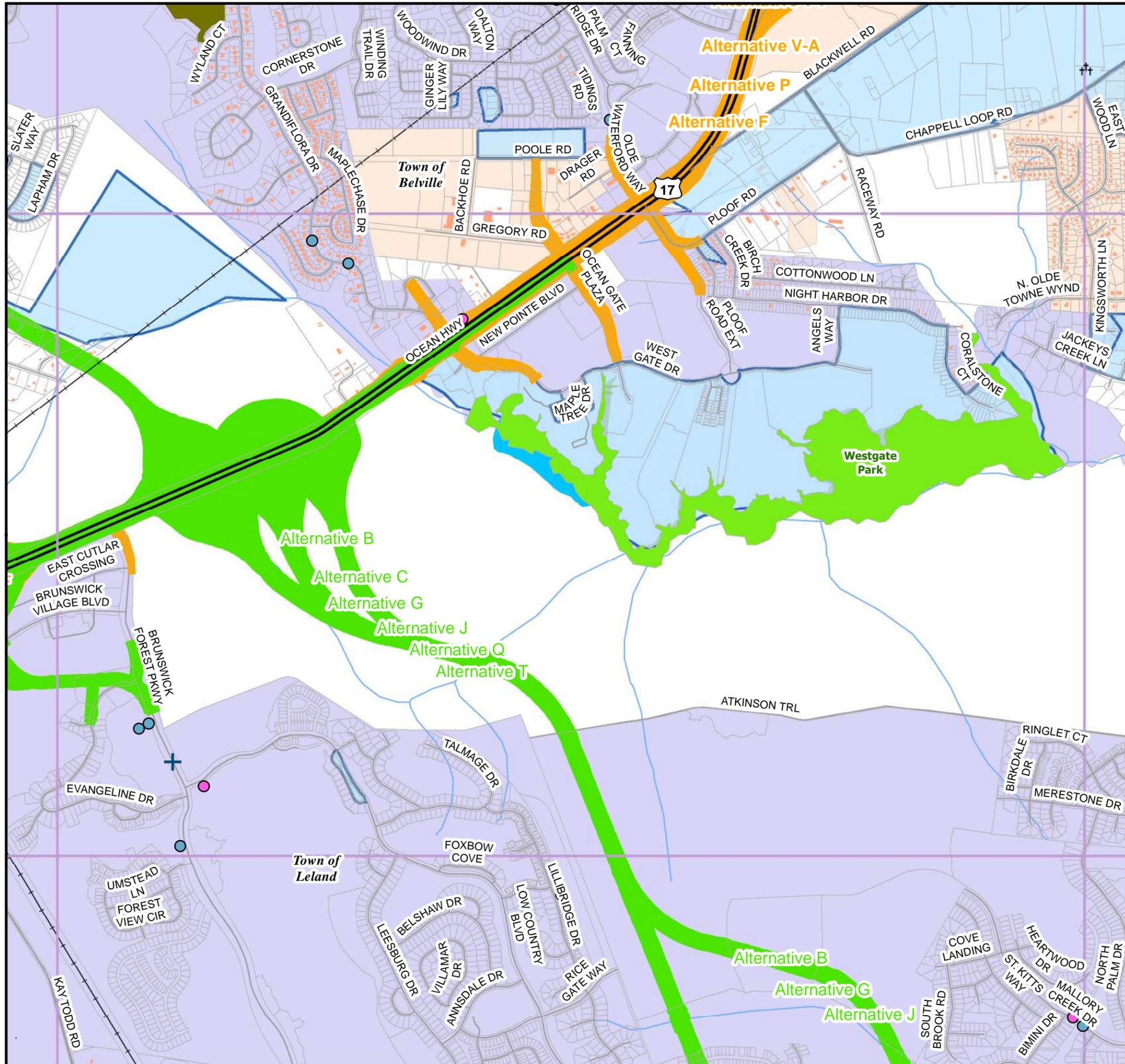
Community Impact Assessment



Figure 12: Community Context Diagram

Legend

- Project Study Area
- US Highway
- Local Road
- Railroad
- Parcels
- Belville
- Leland
- County Boundary
- Census Block with high minority rate
- Parks
- Building Footprint
- Bicyclist Observed
- Pedestrian Observed
- †† Cemeteries
- + Potential Elderly Populations Observed



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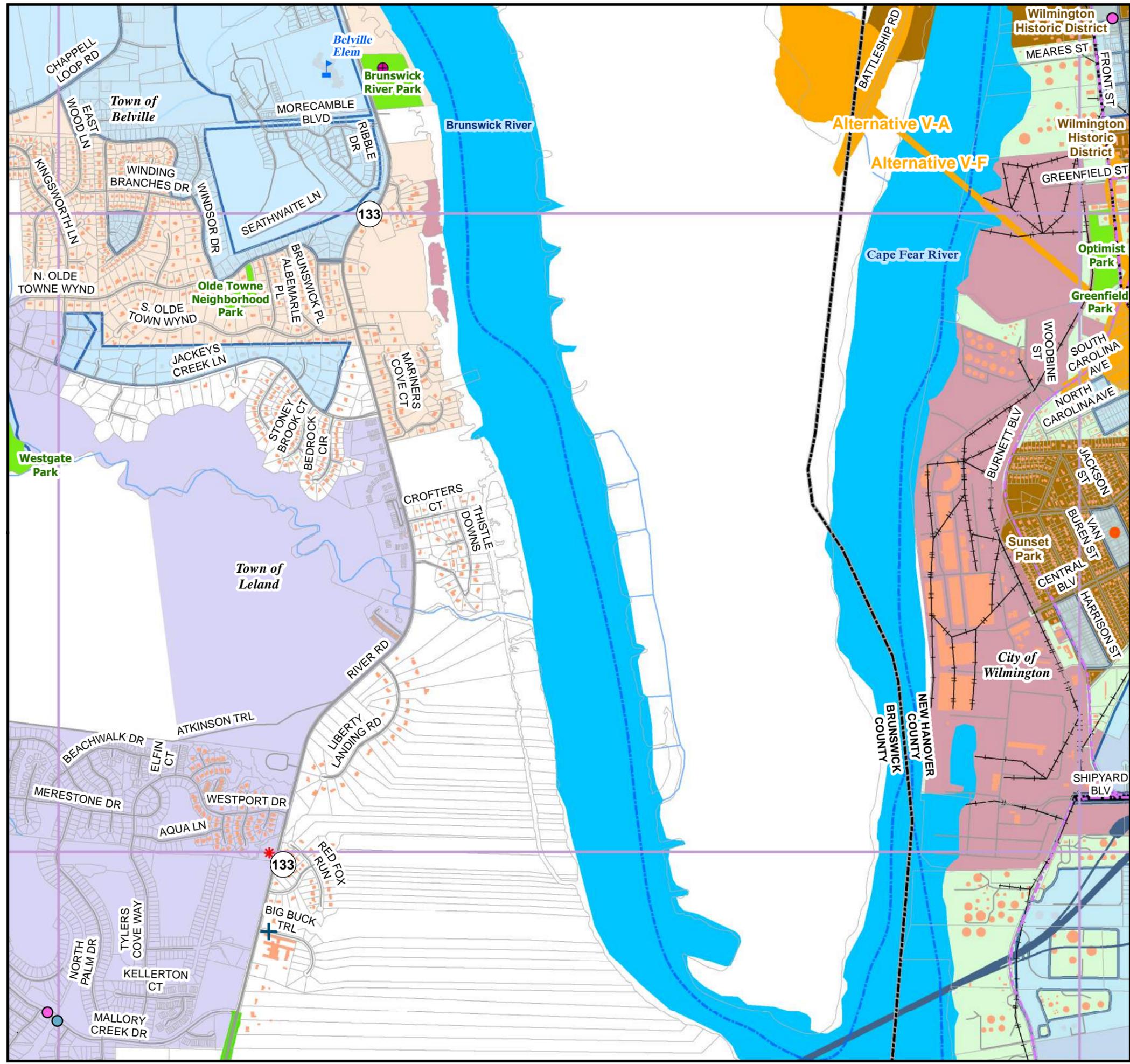
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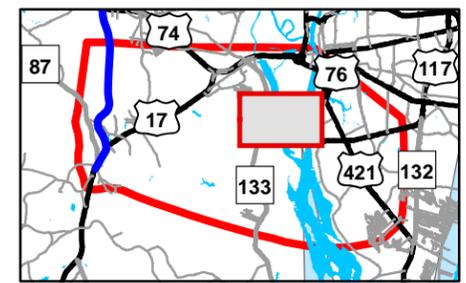


Figure 12: Community Context Diagram



Legend

- Project Study
- US Highway
- NC Highway
- Local Road
- Railroad
- Water
- Parcels
- Belville
- Leland
- Wilmington
- County Boundary
- Census Block with high minority rate
- Parks
- Port of Wilmington
- Building Footprint
- Bicyclist Observed
- Pedestrian Observed
- + Beach Access
- ++ Cemeteries
- Historic Resource
- + School
- - - Bike Route
- - - Paddle Trail
- + Potential Elderly Populations Observed



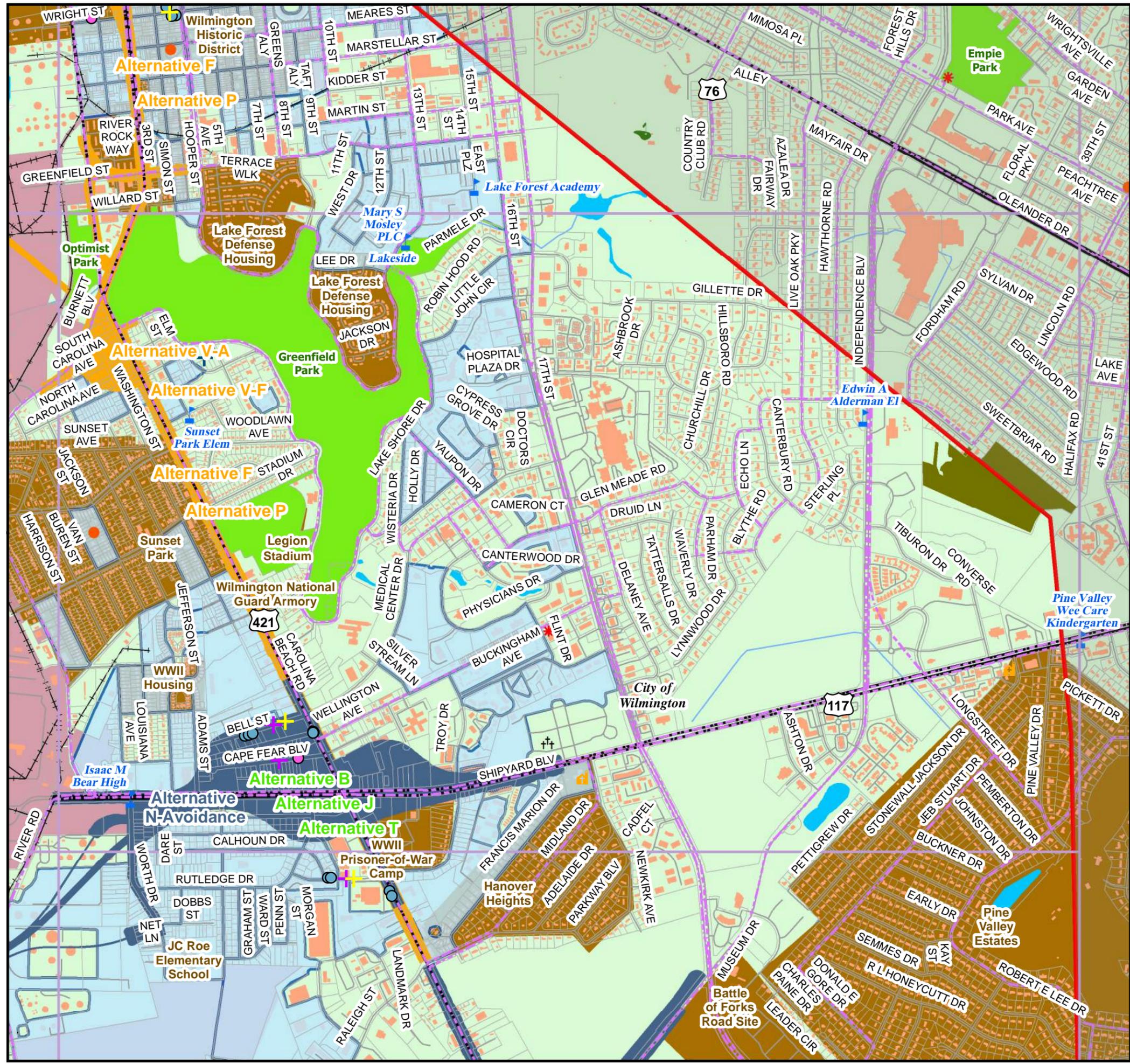
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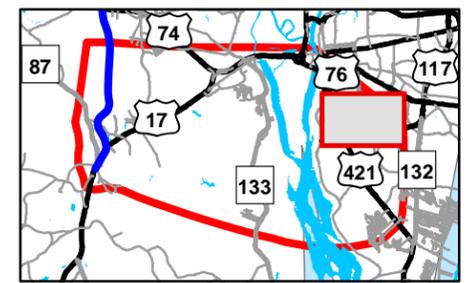


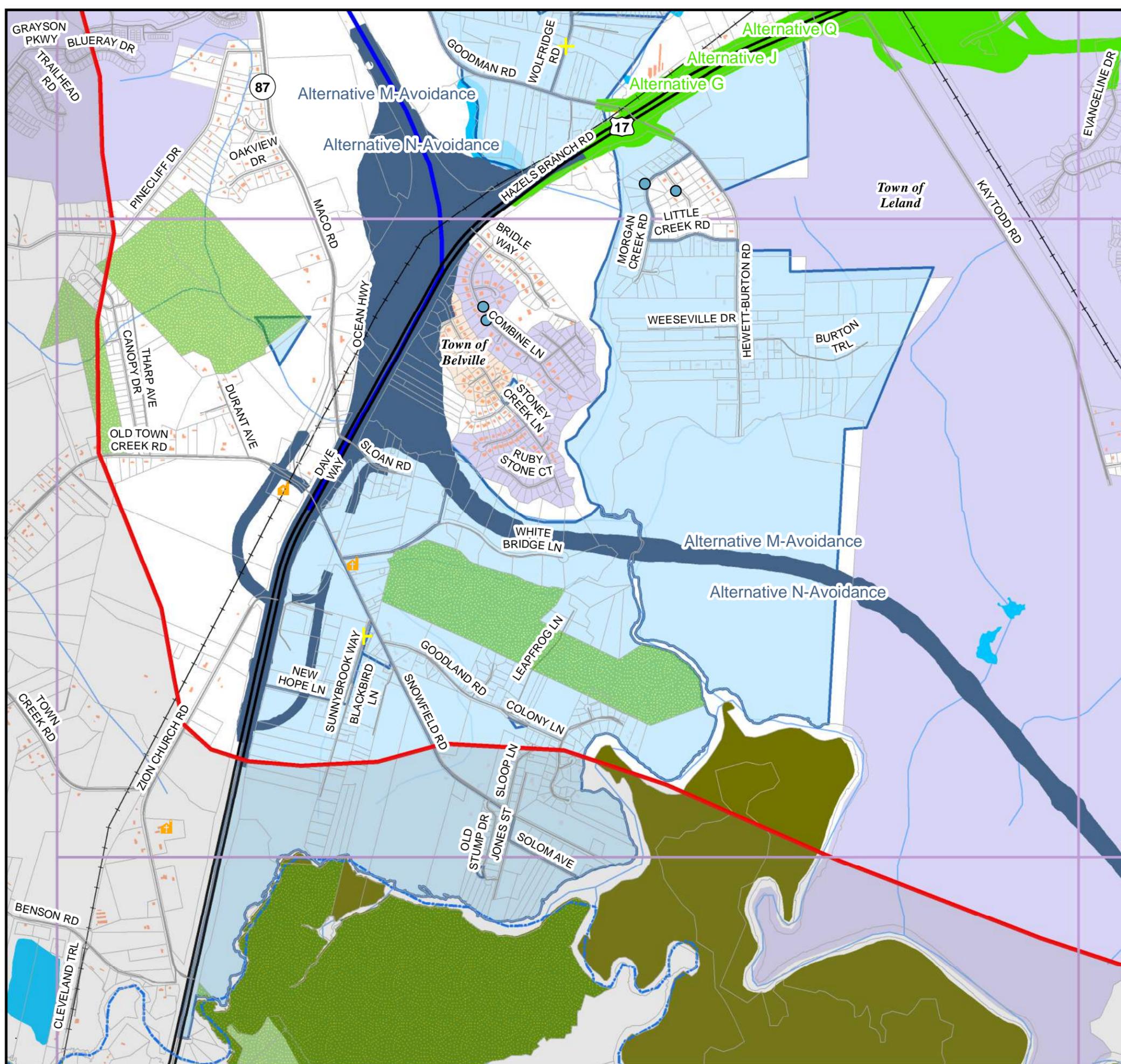
Figure 12: Community Context Diagram



Legend

- | | |
|--------------------------------------|---|
| Project Study Area | Bicyclist Observed |
| US Highway | Pedestrian Observed |
| Local Road | Cemeteries |
| Railroad | Fire Stations |
| Water | EMS |
| Parcels | Golf Courses |
| Wilmington | Historic Resource |
| County Boundary | School |
| Census Block with high minority rate | Churches |
| Parks | Bike Route |
| Conservation Properties | Potential Elderly Populations Observed |
| Port of Wilmington | Potential Minority Populations Observed |
| Building Footprint | Potential Hispanic Populations Observed |





CAPE FEAR CROSSING

State Transportation Improvement Program
Project No. U-4738

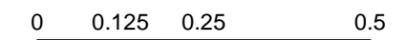
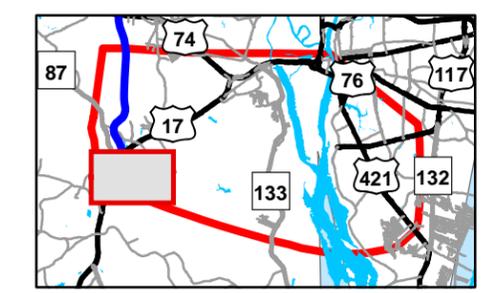
Community Impact Assessment



Figure 12: Community Context Diagram

Legend

- Project Study
- Interstate
- US Highway
- NC Highway
- Local Road
- Railroad
- Parcels
- Belville
- Leland
- County Boundary
- Census Block with high minority rate
- Conservation Properties
- Voluntary Agricultural
- Building Footprint
- Pedestrian Observed
- Churches
- Paddle Trail
- Potential Minority Populations Observed



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Project No. U-4738

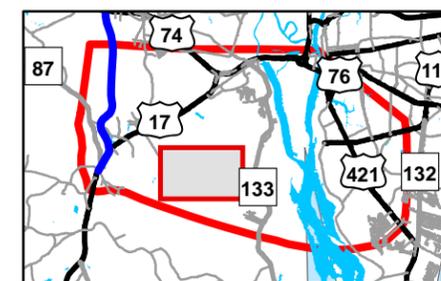
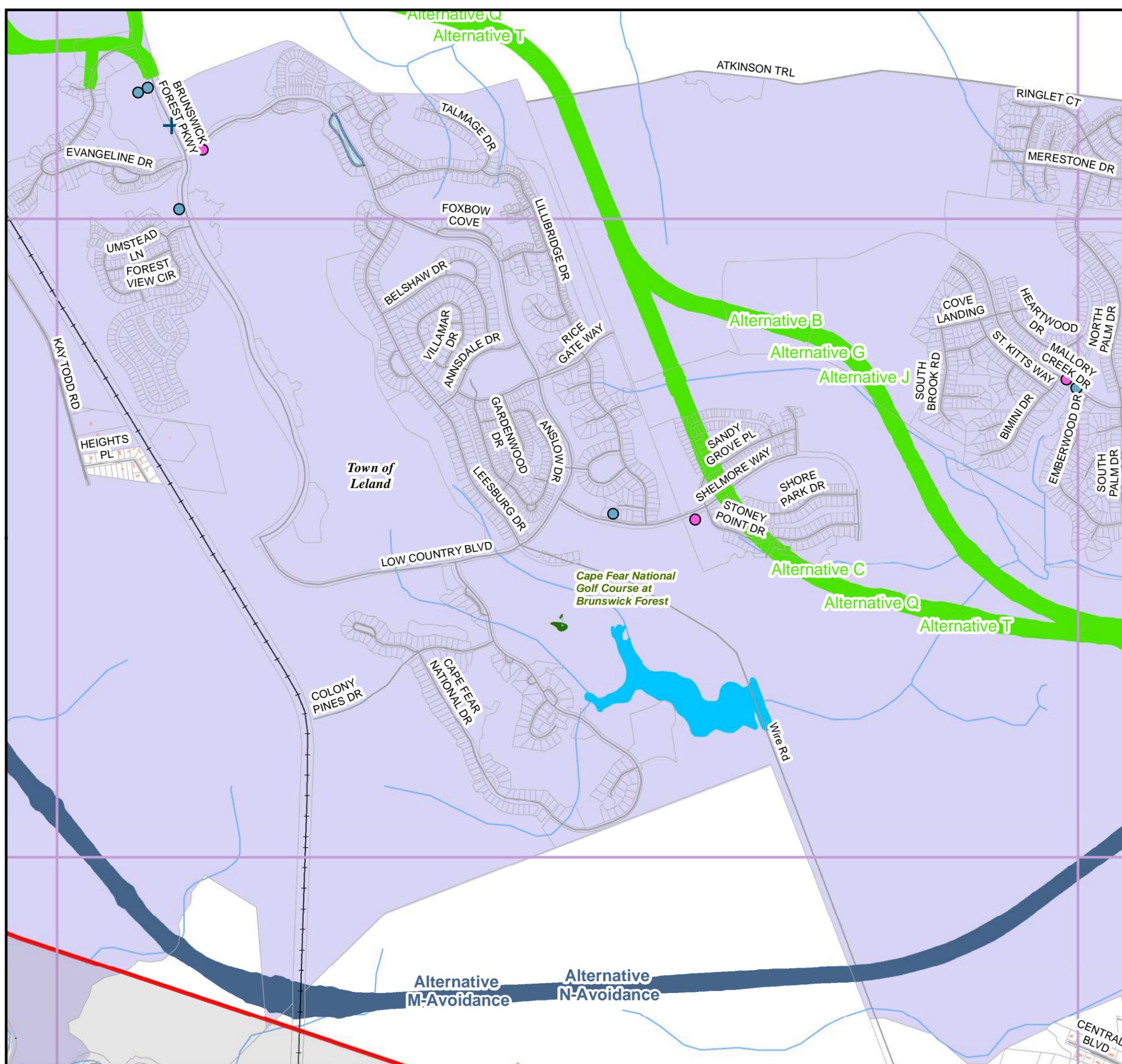
Community Impact Assessment



Figure 12: Community Context Diagram

Legend

- Project Study
- Local Road
- Railroad
- Parcels
- Leland
- County Boundary
- Census Block with high minority rate
- Conservation Properties
- Building Footprint
- Bicyclist Observed
- Pedestrian Observed
- Golf Courses
- + Potential Elderly Populations Observed



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Miles

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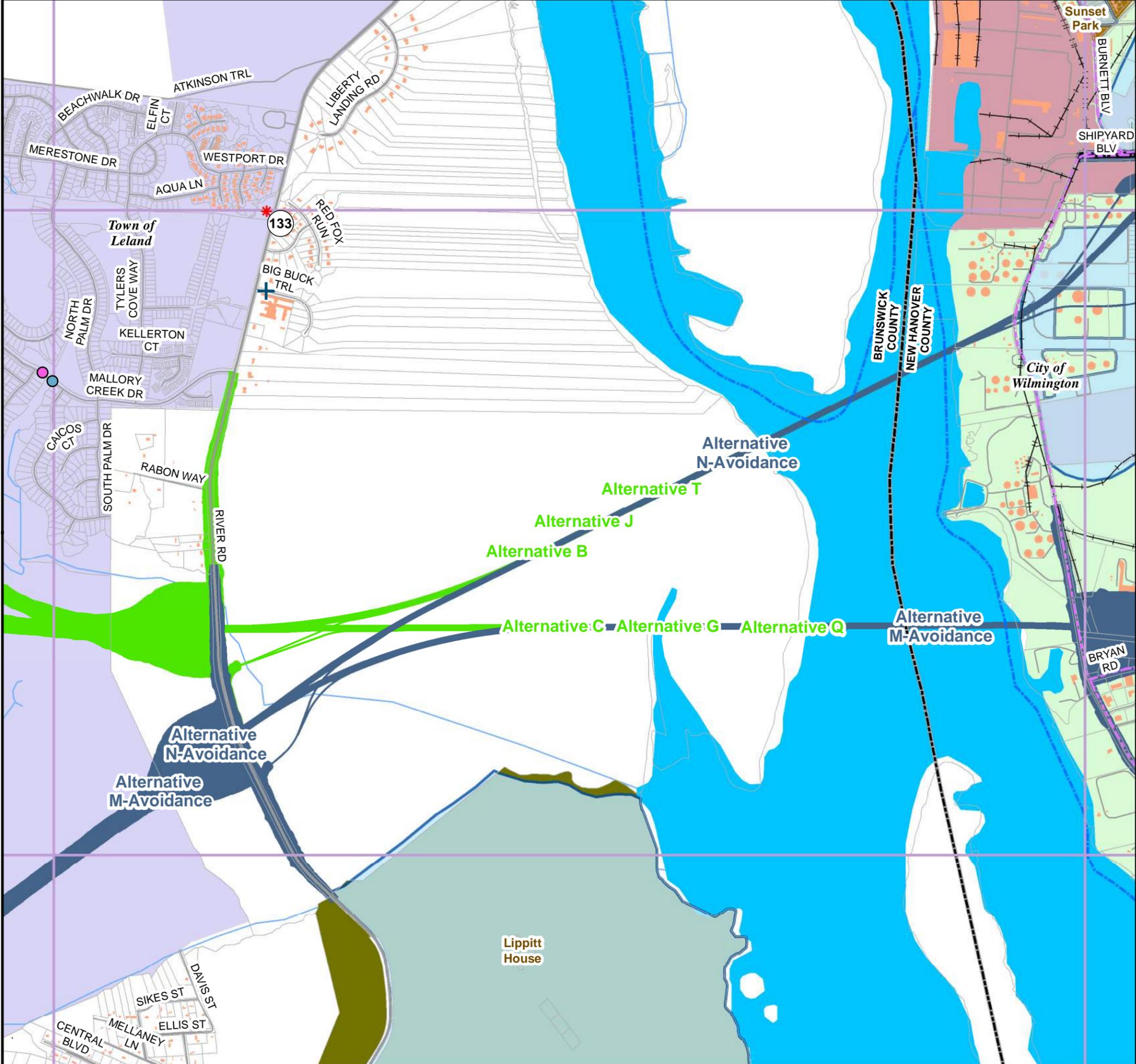
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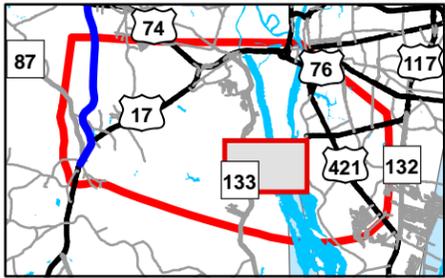


Figure 12: Community Context Diagram



Legend

- Project Study
- US Highway
- NC Highway
- Local Road
- Railroad
- Water
- Parcels
- Leland
- Wilmington
- County Boundary
- Census Block with high minority rate
- Port of Wilmington
- Building Footprint
- Bicyclist Observed
- Pedestrian Observed
- Bike Route
- Paddle Trail
- + Potential Elderly Populations Observed



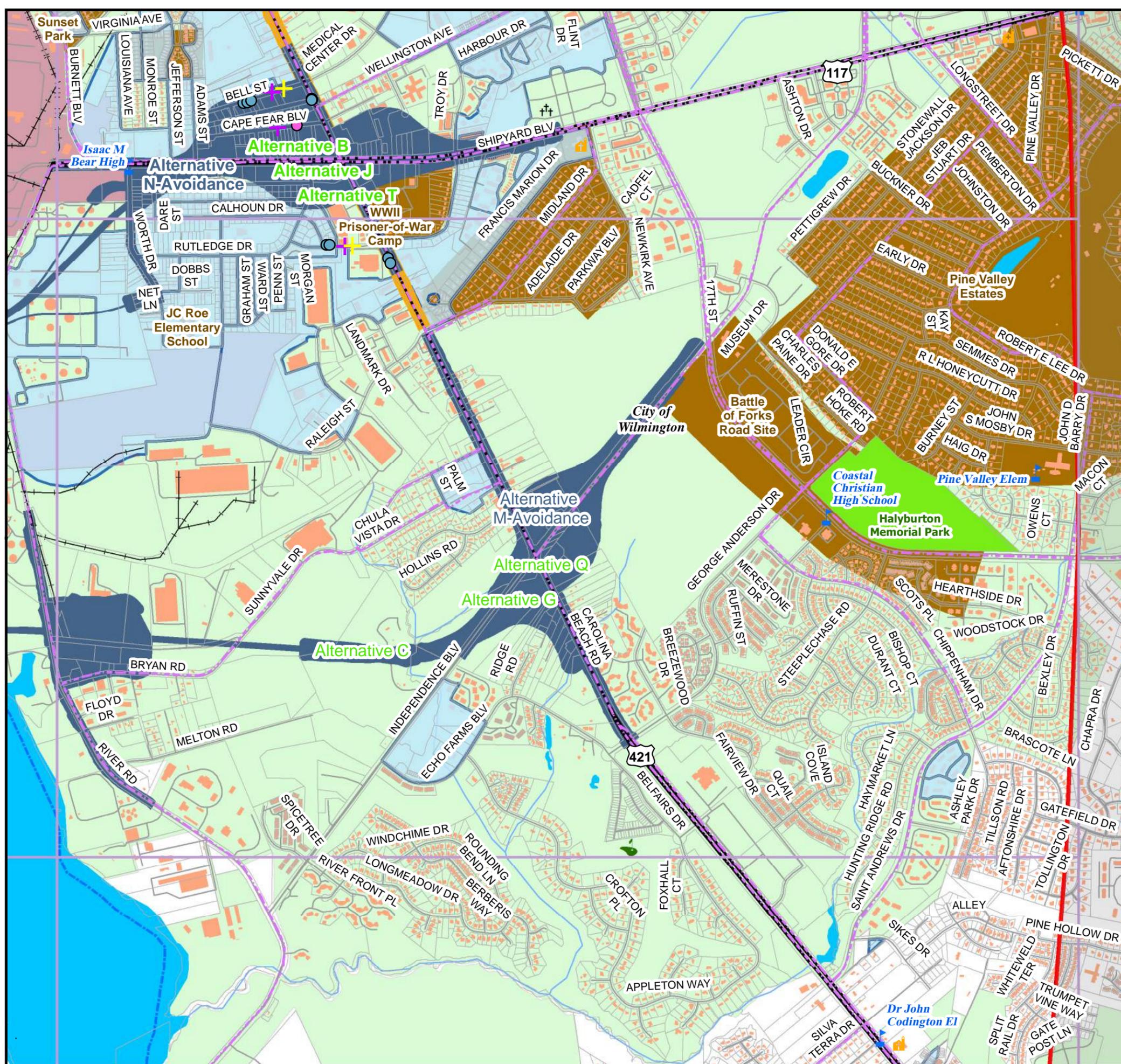
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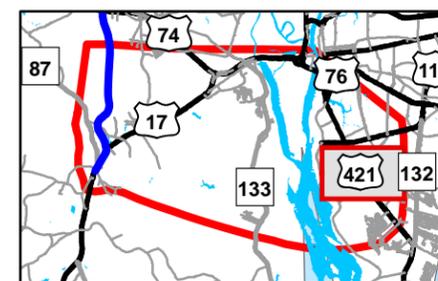


Figure 12: Community Context Diagram



Legend

- | | |
|--------------------------------------|---|
| Project Study Area | Bicyclist Observed |
| US Highway | Pedestrian Observed |
| Local Road | Cemeteries |
| Railroad | Fire Stations |
| Water | EMS |
| Parcels | Golf Courses |
| Wilmington | School |
| County Boundary | Churches |
| Census Block with high minority rate | Bike Route |
| Parks | Paddle Trail |
| Port of Wilmington | Potential Minority Populations Observed |
| Building Footprint | Potential Hispanic Populations Observed |



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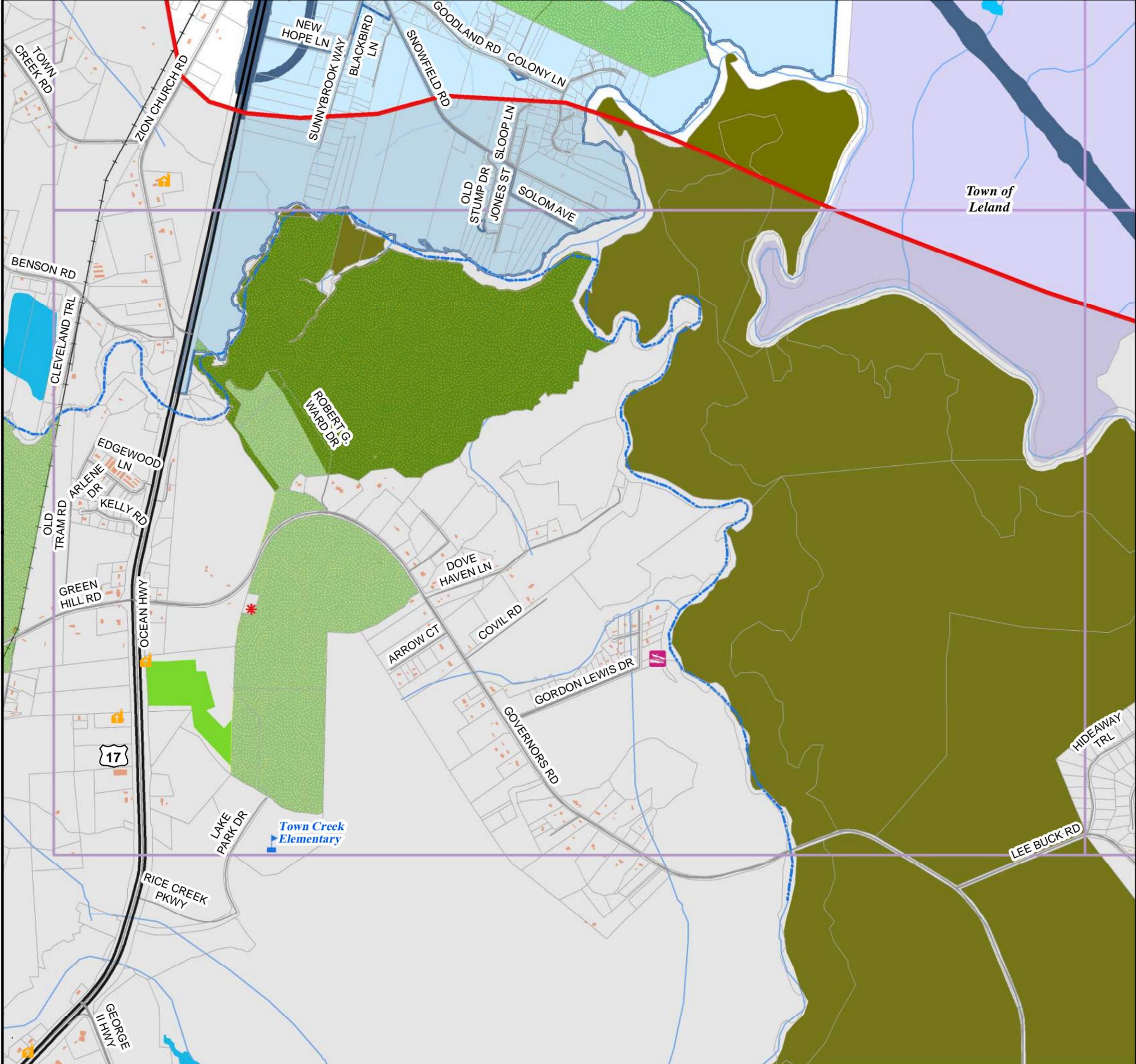
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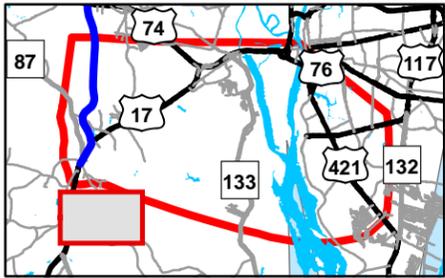


Figure 12: Community Context Diagram



Legend

- Project Study
- US Highway
- NC Highway
- Local Road
- Railroad
- Parcels
- Leland
- County Boundary
- Census Block with high minority rate
- Parks
- Conservation Properties
- Voluntary Agricultural
- Building Footprint
- ↖ Boat Access
- * Fire Stations
- * EMS
- ▲ School
- ✎ Churches
- Paddle Trail



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Project No. U-4738

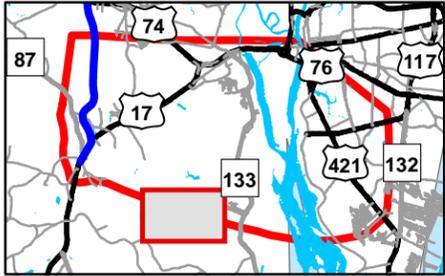
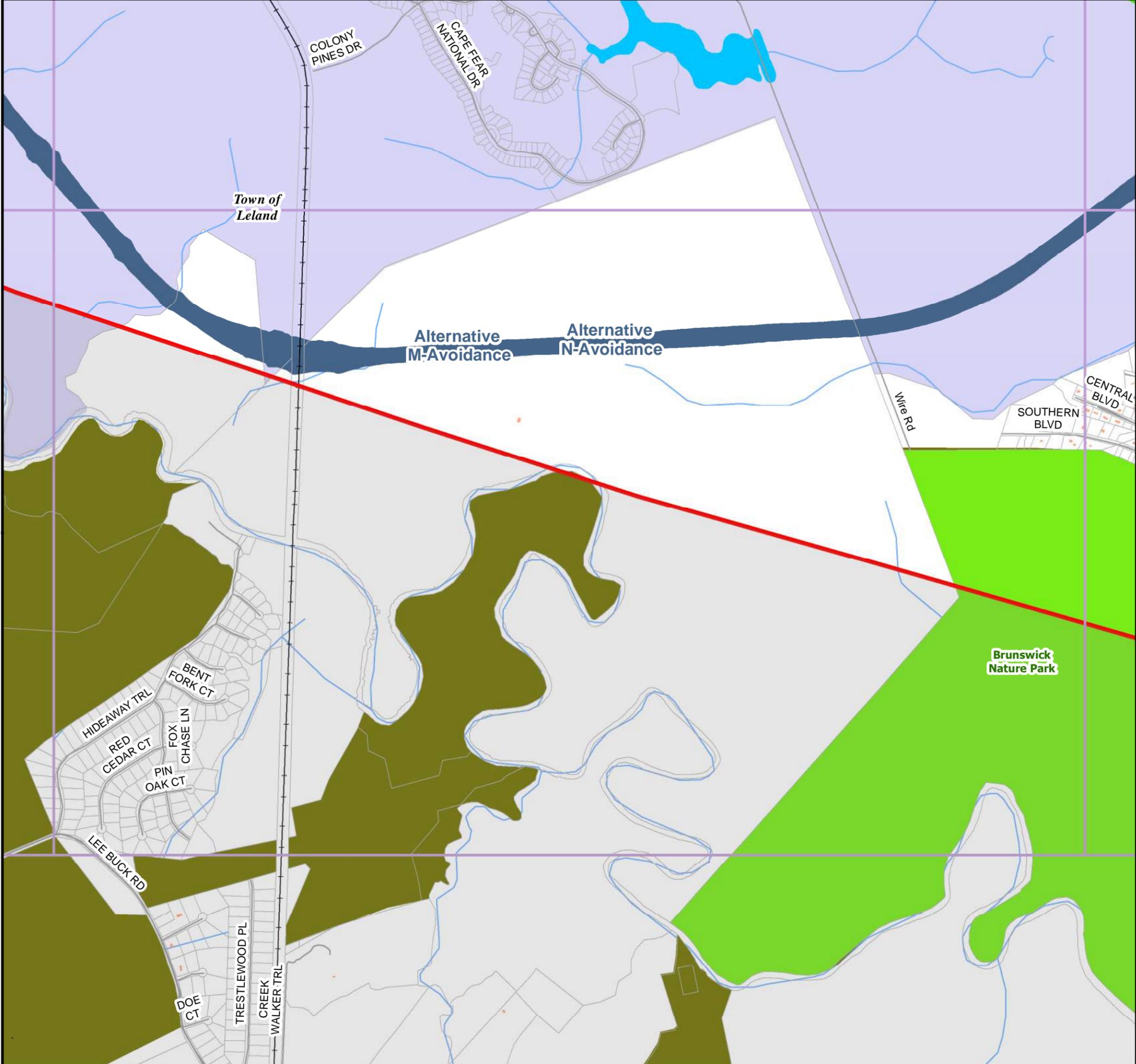
Community Impact Assessment



Figure 12: Community Context Diagram

Legend

- Project Study
- Local Road
- Railroad
- Parcels
- Leland
- County Boundary
- Census Block with high minority rate
- Parks
- Conservation Properties
- Building Footprint



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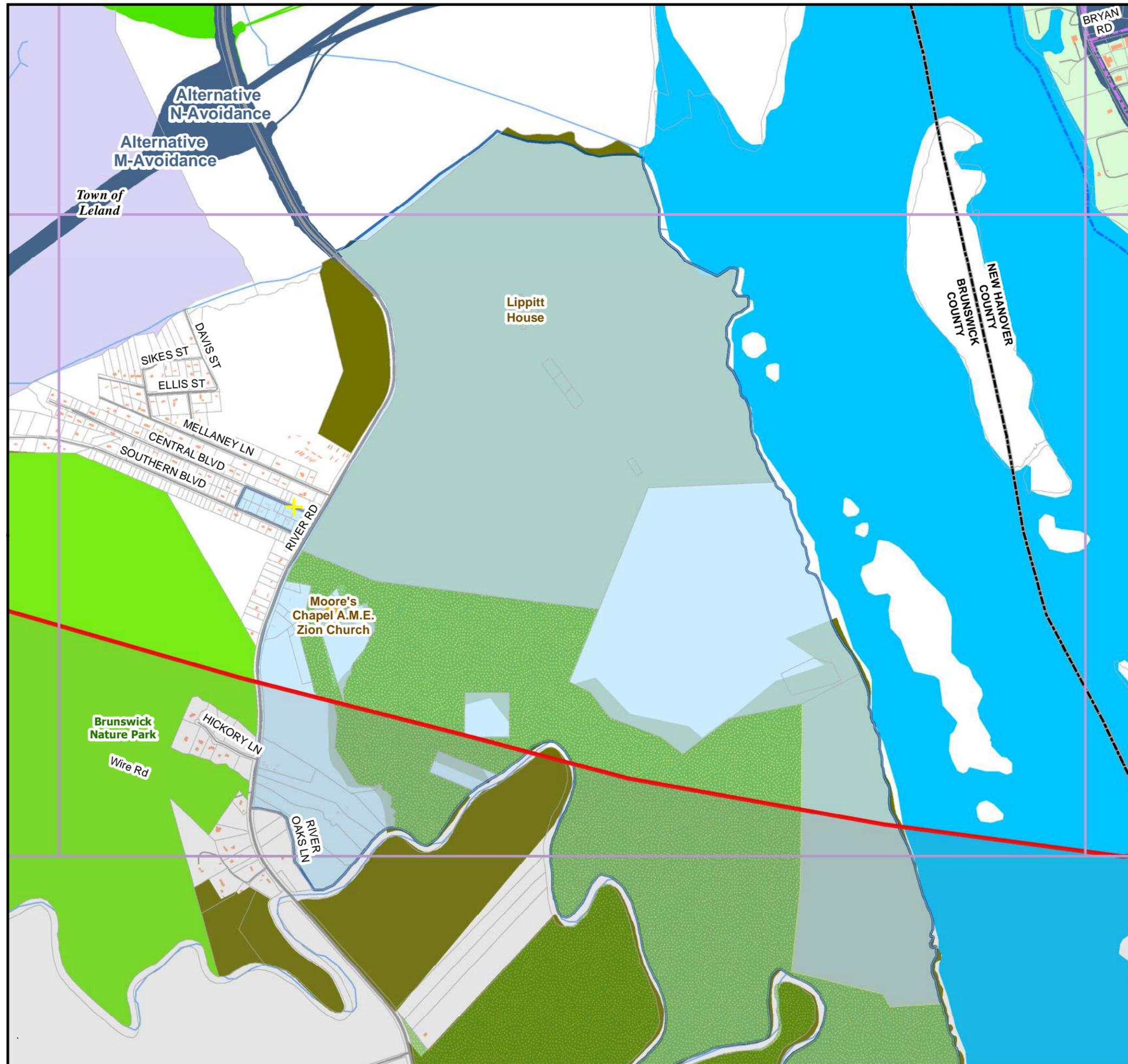
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Project No. U-4738

Community Impact Assessment



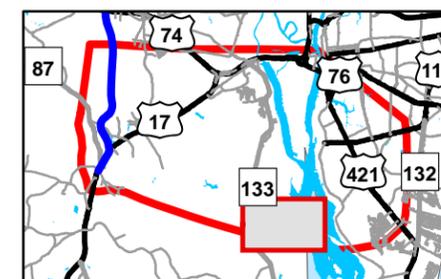
Figure 12: Community Context Diagram



Legend

- Project Study Area
- NC Highway
- Local Road
- Water
- Parcels
- Leland
- Wilmington
- County Boundary
- Census Block with high minority rate
- Parks
- Conservation Properties
- Voluntary Agricultural District
- Building Footprint
- ✎ Churches
- Bike Route
- Paddle Trail
- + Potential Minority Populations Observed

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Project No. U-4738

Community Impact Assessment

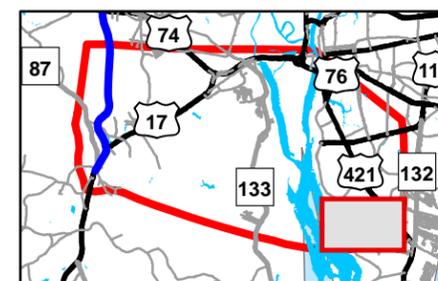


Figure 12: Community Context Diagram



Legend

- Project Study
- US Highway
- Local Road
- Water
- Parcels
- Wilmington
- County Boundary
- Census Block with high minority rate
- Building Footprint
- * Fire Stations
- * EMS
- * Golf Courses
- * School
- * Churches
- Bike Route
- Paddle Trail



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Miles

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Appendix D

Natural Resource Conservation Service Farmland Impact Form

PRELIMINARY SCREENING OF FARMLAND CONVERSION IMPACTS

- 1. Area in non-urban use. Points awarded = 3 out of 15**
On average, 34 percent of the upgrade existing alternatives are within non-urban areas.
- 2. Perimeter in non-urban use. Points awarded = 5 out of 10**
Approximately 50 percent of the perimeter of the upgrade existing alternatives is within non-urban areas.
- 3. Percent of site being farmed. Points awarded = 0 out of 20**
There are no current farms within the DCIA's of any of the upgrade existing alternatives.
- 4. Protection provided by state and local government. Points awarded = 20 out of 20**
A large portion of the upgrade existing alternatives are within Brunswick County which offers a Voluntary Agricultural Ordinance.
- 5. Distance from urban built-up area. Points awarded = 0 out of 15**
All of the upgrade existing alternatives are directly adjacent to urban built-up areas.
- 6. Distance to urban support services. Points awarded = 0 out of 15**
All of the urban support services are located within a mile of the upgrade existing DCIA's.
- 7. Size of present farm unit compared to average. Points awarded = 0 out of 10**
There are no farms within any of the DCIA's of the upgrade existing alternatives.
- 8. Creation of non-farmable farmland. Points awarded = 0 out of 10**
No non-farmable farmland would be created with the construction of any of the upgrade existing alternatives.
- 9. Availability of farm support services. Points awarded = 5 out of 5**
All services are available.
- 10. On-farm investments. Points awarded = 0 out of 20**
There are no farms within any of the DCIA's of the upgrade existing alternatives.
- 11. Effects of conversion on farm support services. Points awarded = 0 out of 10**
There would be no significant reduction in on farm support services.
- 12. Compatibility with existing agricultural use. Points awarded = 0 out of 10**
The project is fully compatible with existing agricultural use of surrounding farmland.

Conclusion: Total Points = 33 out of 160

NCDOT has completed a screening of farmland in the project area and calculated the total number of points for the site per Part VI of the NRCS AD-1006 Farmland Conversion Impact Rating Form.

PRELIMINARY SCREENING OF FARMLAND CONVERSION IMPACTS

- 1. Area in non-urban use. Points awarded = 8 out of 15**
On average, 56 percent of the northern alternatives are within non-urban areas.
- 2. Perimeter in non-urban use. Points awarded = 8 out of 10**
Approximately 80 percent of the perimeter of the northern alternatives is within non-urban areas.
- 3. Percent of site being farmed. Points awarded = 0 out of 20**
There are no current farms within the DCIA's of any of the northern alternatives.
- 4. Protection provided by state and local government. Points awarded = 20 out of 20**
A large portion of the northern alternatives are within Brunswick County which offers a Voluntary Agricultural Ordinance.
- 5. Distance from urban built-up area. Points awarded = 0 out of 15**
All of the northern alternatives are directly adjacent to urban built-up areas.
- 6. Distance to urban support services. Points awarded = 0 out of 15**
All of the urban support services are located within a mile of the northern alternatives.
- 7. Size of present farm unit compared to average. Points awarded = 0 out of 10**
There are no farms within any of the DCIA's of the northern alternatives.
- 8. Creation of non-farmable farmland. Points awarded = 0 out of 10**
No non-farmable farmland would be created with the construction of any of the northern alternatives.
- 9. Availability of farm support services. Points awarded = 5 out of 5**
All services are available.
- 10. On-farm investments. Points awarded = 0 out of 20**
There are no farms within any of the DCIA's of the northern alternatives.
- 11. Effects of conversion on farm support services. Points awarded = 0 out of 10**
There would be no significant reduction in on farm support services.
- 12. Compatibility with existing agricultural use. Points awarded = 0 out of 10**
The project is fully compatible with existing agricultural use of surrounding farmland.

Conclusion: Total Points = 41 out of 160

NCDOT has completed a screening of farmland in the project area and calculated the total number of points for the site per Part VI of the NRCS AD-1006 Farmland Conversion Impact Rating Form.

PRELIMINARY SCREENING OF FARMLAND CONVERSION IMPACTS

- 1. Area in non-urban use. Points awarded = 11 out of 15**
On average, 70 percent of the southern alternatives are within non-urban areas.
- 2. Perimeter in non-urban use. Points awarded = 15 out of 10**
Approximately 90 percent of the perimeter of the southern alternatives is within non-urban areas.
- 3. Percent of site being farmed. Points awarded = 0 out of 20**
There are no current farms within the DCIA's of any of the southern alternatives.
- 4. Protection provided by state and local government. Points awarded = 20 out of 20**
A large portion of the southern alternatives are within Brunswick County which offers a Voluntary Agricultural Ordinance.
- 5. Distance from urban built-up area. Points awarded = 0 out of 15**
All of the southern alternatives are directly adjacent to urban built-up areas.
- 6. Distance to urban support services. Points awarded = 0 out of 15**
All of the urban support services are located within a mile of the southern alternatives.
- 7. Size of present farm unit compared to average. Points awarded = 0 out of 10**
There are no farms within any of the southern alternatives.
- 8. Creation of non-farmable farmland. Points awarded = 0 out of 10**
No non-farmable farmland would be created with the construction of any of the southern alternatives.
- 9. Availability of farm support services. Points awarded = 5 out of 5**
All services are available.
- 10. On-farm investments. Points awarded = 0 out of 20**
There are no farms within any of the DCIA's of the southern alternatives.
- 11. Effects of conversion on farm support services. Points awarded = 0 out of 10**
There would be no significant reduction in on farm support services.
- 12. Compatibility with existing agricultural use. Points awarded = 0 out of 10**
The project is fully compatible with existing agricultural use of surrounding farmland.

Conclusion: Total Points = 51 out of 160

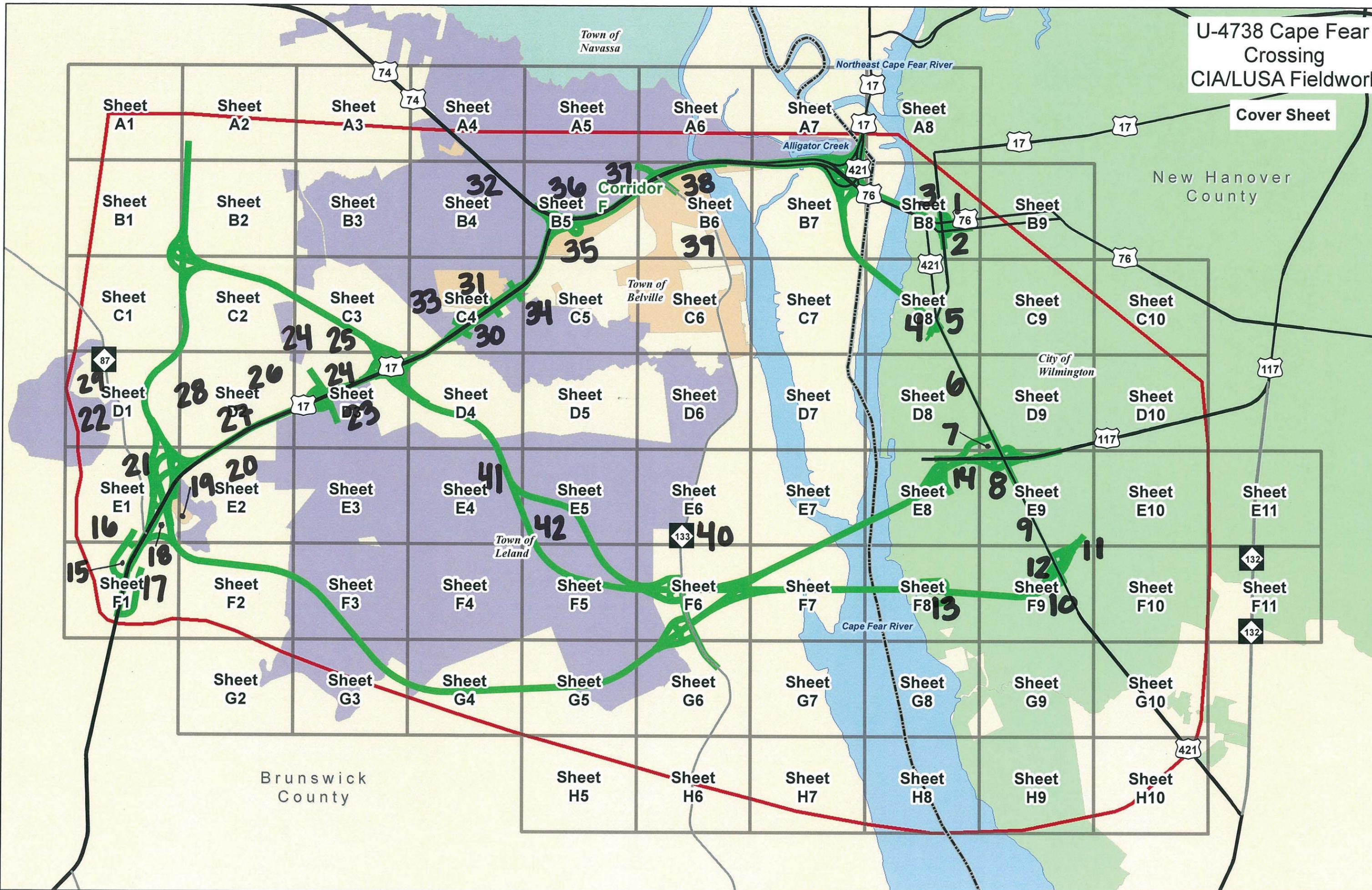
NCDOT has completed a screening of farmland in the project area and calculated the total number of points for the site per Part VI of the NRCS AD-1006 Farmland Conversion Impact Rating Form.

Appendix E

Field Notes and Field Map Book Cover

U-4738 Cape Fear Crossing
CIA/LUSA Fieldwork

Cover Sheet



U-4738 - Cape Fear Crossing Field Notes

03/03/2015 – New Hanover County

Note: Numbers correspond to map book. See cover page of map book for location of numbers.

1. 5th & Queen-Castle – minority pedestrians, saw bike and pedestrian facilities, one story cottage style homes (P), on street parking
 - a. Strong community cohesion at 5th and Castle: second hand store, church, Hall's Drugstore/Restaurant, Howard's Seafood Restaurant/convenient store (takes EBT – indicates poverty), and antique store. (Took several photos here).
 - b. Some vacant parcels at 4th and Castle (P) – opportunity for infill development
 - c. Cobblestone roads on streets (not through intersection).
 - d. School bus noted
2. More pedestrians, lots of conversation in the area, sidewalks, bicyclist spotted, cobblestone roads, several minorities
3. Pedestrian facilities, transit facilities, more commercial areas closer to the river, senior housing (Solomon Towers) with Wave Transit. Dram Tree Park with boat launch and small park at Surry & Castle
 - a. Habitat Restore at Marstellar & 3rd
 - b. Housing at Martin & 3rd (nice gated community) – South Front Apartments *This is a part of the "Emerging Art Clusters" COW is working to create in the downtown area. Allen Davis indicated this area used to be HUD housing.
 - c. Optimus Park at Front/Carolina Beach/Burnett – 4(f) park
 - d. Greenfield Park (P)
4. Industrial area, no pedestrian facilities (Burnett & Oak), no community destination businesses – car repair shop. Mostly commercial property, close to port property, lots of heavy truck traffic
5. Sunset Park Elementary @ Alabama/Elm St.
 - a. Crosswalks in front of the school but not on the other side of the street. Sidewalk in front of the school. Lots of missing links in the sidewalk. Some fencing on properties prohibiting passage.
 - b. Elderhaus Adult Day Services Center
 - c. Hugh Morton Amphitheater @ Greenfield Lake
 - d. Cape Fear Historic Byway
6. Bus route, sidewalks both sides of the road, produce market (Morningside Center), Armory, lots of sidewalks and worn paths
7. Cape Fear Blvd. – no sidewalks, residential area, saw an ethnic flag (orange, white and green – Italy), saw a bicyclist.
 - a. Bell Ave – modular homes (Roseman Park), several Hispanic pedestrians
8. Marion Long Leaf Mobile Home Park, sidewalks, transportation service, minorities (Hispanic and black), lots of conversations in the area, Boys & Girls Club, bicyclists. Property for sale by Cameron Management

9. (Between Shipyard and Independence) Wave Transit, sidewalks on one side, intermittent sidewalks on the other side. JC Row Elementary, daycare facility (A Child's World), empty lots by Cameron Management (north of Solid Hollow Lane), vacant property at intersection with Independence but has crosswalks and pedestrian heads.
10. Crab Apple Ln – scattered mixed housing, dirt road, some empty lots (P)
Azalea Assisted Living at Independence with Bike/pedestrian accommodations at 421 & Independence Blvd.
11. Lots of vacant land lots of construction near the Cameron art Museum (P) – found out later this area is Barclay West. Cross city trail runs through this area. Saw a runner on a worn path (P), Barclay Center at intersection
12. South Gate (P): residential, no sidewalks, small homes, no pedestrians,
13. Portwatch – some sidewalks; marine type industrial warehouse businesses, Church of Good Samaritan; some residential; some vacant land; lots of port equipment
 - a. Sunnyvale: wooded, Cape Fear Bonded Warehouse, National Gypsum, Wilmington Marine Center (across the street)
14. Worth Drive: intermediate sidewalk; residential; handicapped ramps for some homes; seemed anti-community cohesion because there were signs and fences for several yards, signs said "Keep Out" "Beware of Dog", etc.; Access Academy Family Services Inc.

U-4738 - Cape Fear Crossing Field Notes

03/04/2015 – Brunswick County

Note: Numbers correspond to map book. See cover page of map book for location of numbers.

15. Zion Church Road: Rural single family home, no sidewalk, no shoulder, lots of open land; church with basketball court and cemetery, agriculture fields, wooded undeveloped land, some for sale, vacant land where ramps would be. Large for sale sign (1.8 corner lot) (P) Project would probably induce development in this area. When speaking with Robert Waring, he said if this route is selected, the Town of Leland would want to annex everything north of the interchange.

Town Creek Road: rural residential, ag/pasture land

16. Old Town Creek Road: rural residential, ag lands, lots of wooded undeveloped land, no bike/pedestrian facilities, some modular homes, VAD lands. There is an abandoned subdivision in this area, includes sidewalk and looks like some type of underground pipe system (P)

Durant Road: dirt, ag fields, few houses, low income

17. Sunnyfield: Food Pantry (P), Town Creek Vision; some residential, Ball Park (P) → Charles and Lizzie James Memorial Ball Park. Some modular homes in the area. No sidewalk facilities, church at the corner (P) – lots of community cohesion features. Some land for sale

Sloan Road: dead end; for sale signs, residential no sidewalks, poor road quality, mixed housing (minorities noted), abandoned gas station structure.

18. Hazels Branch: scattered single family homes, power line runs parallel, also paralleling US 17 (Just south of Stoney Creek and Snee Farm) this is a new road for the Wilmington Bypass so this area has already been impacted once from that project.

19. Stoney Creek: “Slow Children playing” sign, no sidewalks, single family residential (technically a part of Belville)

Snee Farm: Single family residential; pedestrians noted, no sidewalks. Past Snee Farm: vacant land, worn road paths

20. Morgan Creek: white pedestrians, single family homes, no sidewalks,

Hewett Road: some vacant land for sale homes, modular homes, power distribution center

21. Maco Lane (NC 87): scattered residential, lots of vacant land; church and cemetery, no pedestrian facilities, school bus route, some modular homes, Grayson Park Development (P)

22. Grayson Park Development (P): manicure lawns, cookie cutter homes, sidewalks, curb and gutter at beginning of neighborhood, park, community center with tennis court, street lights (lamps)

23. Brunswick Forest Commercial Area: new/active construction; landscaped; grocery stores, coffee shops, banks, etc. older white population; sidewalks, golf cart paths, pedestrians (P), tennis courts, new construction within the development, walking trail signs (P)
24. Lanvale: mini storage facility, scattered single family housing; Hearthstone & Southbend Neighborhoods: new construction (P) sidewalks, several empty lots. Southbend did not have sidewalks, just a cul-de-sac road. Some new construction. Alignment would be right behind the homes here.
25. Savanna Branch: unpaved, scattered housing, modular homes; right where alignment is; some undeveloped/wooded property; minority residents. Crosswinds Church area at corner → just a platform and benches but did have a sign with a website (P) vacant land located behind the church area
Wedgewood at Lanvale – just north of alignment (alignment would run behind the homes; curb and gutter at the beginning of neighborhood; scattered sidewalks; single family homes; pedestrians seen (P)
Lanvale Trace – sidewalks; community watch program; small single family homes
26. Carolynn – some land for sale – new church coming (P) some single family homes, no sidewalks, mostly older homes;
Seabrooke – some new construction; at Old Lanvale – railroad crossing (P); utility structures (Brunswick water and sewer facility (P); God’s House of Church
27. Area between Carolynn and Goodman Rd (off 17) – some single family homes, vacant land, self-storage facility, swamps.
28. Goodman Road – modular homes; many falling in and older; some for sale land; no sidewalks; no pedestrians seen
Wolfridge – “Coming Soon Spring Hill” sign (P); this area is a known minority community (had issues with this area during Wilmington Bypass); modular homes; strong community cohesion; some vacant land
Goodmans Branch Estates (P) – mobile home lots for sale
29. Hunters Ridge – no sidewalks; single family modular homes at the beginning then connects to Grayson Park at the end of the road; car junk yard (Cadillac Heaven Auto Salvage) at Albright with 3 homes
30. Westgate: commercial development anchored by Walmart; US 17 superstreet section; gas stations, banks, restaurants/fast food; dollar tree, office complex, etc.
31. Gregory Lane: Commercial property, restaurants, shopping, Rite aid; Waterford Medical Center offices, Harris Teeter, abandoned port containers, auto repair center, light industrial

32. Waterford development – sidewalks, curb and gutter at the entrance; little floating docks behind some homes on the man-made “canals”; neighborhood watch program, park, lots of pedestrians; bocce ball court, several elderly white pedestrians (P).
33. Magnolia Greens development – Medical offices up front, some commercial, residential homes behind the offices, community watch program, sidewalks, single family homes, pedestrians. Leland Cultural Arts Center (new opening Spring 2015); Bowling Alley – behind the commercial centers
34. Ploof Road – gas station at US 17; undeveloped; industrial/commercial; The Arbors @ Westgate development: sidewalks, residential single family homes (P), some duplexes; Birch Creek Development; more light industrial property, concrete plant (Ready Mix)
35. Blackwell Road – some vacant land (parallels US 17); goes into Belville; daycare facility; asset storage company; more light industrial; FedEx; some land for sale. Blackwell Road Realignment project is ongoing.
36. The Willows development – new development, sidewalks, some multifamily homes, tennis courts, transmission lines run through, Flea Market at the intersection
37. Old commercial strip malls (Leland side of the interchange); fast food; grocery stores; sidewalks with curb and gutter (P)
38. Old River Rd/Main Street – church, plans for redevelopment on the waterfront here, some NCDOT property
39. Off NC 133 Hawkeswater development – no sidewalks, cookie cutter single family homes, some new construction
Miscellaneous subdivisions with vacant land between Hawkswater and Belville Elementary School; park across the street (Brunswick Riverwalk with boat launch. Scattered neighborhood developments along NC 133 (Jackeys Creek, Highland Shores, Charleston Commons, River Croft, Liberty Landing, Westport) Town of Leland Fire station
40. Lots of vacant land (riverside) (P) just north of the proposed interchange. Brunswick Cove Nursing Center, Mallory Creek Development, scattered single family homes, some modular homes, vacant land on both sides, utility line on the west then switches, Cape Fear Indians Land Trust (east of NC 133)
Mallory Creek Development – (P) Cameron management parcels at the entrance; pedestrians at the cross walk; some multi-family homes; sidewalks at the single family lots; home sizes vary; bicyclists; paved shoulder for bikes; end of Mallory Creek is vacant land (P), some lots are still for sale, Forest Legacy Conservation Program.
Melonie Lane – single family, no sidewalks, some modular homes (P) – down NC 133; low income area, could be considered underutilized



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Central Blvd – scattered single family homes and trailers, minority group, no sidewalks, some land for sale

Brunswick Nature Park (P) – Wire Rd – huge utility line goes through the end of the nature Park. Lots of bike trails throughout park.

41. Lilly Bridge (P) – sidewalks, brick homes, some duplexes (parallel to Wire Rd)
42. Shelmore Way – sidewalks, pedestrians and bicyclists, large single family homes, vacant land/new construction where alternative would be coming in. Transmission line runs through (P); some cottage style homes, end of Shelmore is undeveloped but cleared;
Rice Gate: Leland said they want to connect Rice Gate to Mallory Creek Drive with MUP; single family homes with sidewalk.