Concurrence Point 1
Purpose and Need and Study Area Defined

Proposed Spring Lake Bypass, NC 24-87-210 (Murchison Road) to NC 24-87 (N. Bragg Boulevard) in Spring Lake
Cumberland County

State Project No. 44374.1.1
NCDOT STIP Project No. U-5802

April 17, 2019

North Carolina Department of Transportation

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1.0 INTRODUCTION AND PROJECT OVERVIEW

1.1 Proposed Action

The North Carolina Department of Transportation (NCDOT) proposes to construct the Spring Lake Bypass as a multi-lane facility, part on new location, in Cumberland County. The proposed project is included in NCDOT's current *2018-2027 State Transportation Improvement Program* (STIP) (February 2019) as Project Number U-5802. The proposed action would build the Bypass from NC 24-87-210 (Murchison Road) to the south of Spring Lake to NC 24-87 (N. Bragg Boulevard) to the north. The proposed STIP alignment also uses portions of several existing roads, including Chapel Hill Road, Hinkle Street, and McCormick Road (see Figure 1). The project is proposed to have partial control of access for the new location portions of the project.

The 2018-2027 STIP includes the proposed project construction phasing and schedule as follows:

- **U-5802A** – NC 24-87-210 (Murchison Road) to NC 210 (Lillington Highway). Construct multi-lane facility, part on new location; Design-Build Project. Right-of-way acquisition and construction are scheduled to begin in Fiscal Year (FY) 2023.

- **U-5802B** – NC 210 (Lillington Highway) to NC 24-87 (N. Bragg Boulevard). Construct multi-lane facility, part on new location; Design-Build Project. Right-of-way acquisition and construction are scheduled to begin in FY 2023.

NCDOT's *Draft 2020-2029 State Transportation Improvement Program* updated the schedule for Sections A and B of the proposed project as follows:

- **U-5802A** – Design-Build Project. Right-of-way acquisition is scheduled to begin in FY 2026, with construction schedule to begin in FY 2028.

- **U-5802B** – Design-Build Project. Right-of-way acquisition is scheduled to begin in FY 2026, with construction schedule to begin in FY 2028.

As indicated in the 2018-2027 STIP, the proposed Spring Lake Bypass will be funded with State Highway Trust Funds, and a State Environmental Assessment will be prepared for the project. The currently anticipated date for completion of the environmental document is early 2021.

1.2 Meeting Purpose

The purpose of today's meeting is to reach concurrence on Purpose and Need and Study Area (Concurrence Point 1) for the proposed Spring Lake Bypass. Formal concurrence on Purpose and Need and the proposed Study Area will be requested during the meeting.

NCDOT has completed the traffic analysis for existing (2017) and future (2040) No-Build conditions, as well as a crash analysis for existing roadway corridors in the proposed study area. NCDOT has also conducted extensive coordination with federal and state resource and regulatory agencies during the early stages of project development. This coordination will continue throughout

project development. The coordination meetings that have taken place to date are listed in Section 1.5. At today's meeting, NCDOT will:

- Present a project purpose and need; and
- Present a proposed study area.

1.3 Study Area Description

The proposed project study area is shown on Figure 1 and Figure 2. The project is located in Cumberland County; part within the Town of Spring Lake and part in the City of Fayetteville. A portion of the study area is also within Fort Bragg. The proposed study area was identified to include the proposed 2018-2027 STIP alignment for the Spring Lake Bypass, as well as potential alternative corridors for the Bypass. It also includes the section of NC 24-87 (N. Bragg Boulevard) that would likely need to be improved under the Improve Existing Roads alternative.

The project area is primarily known for its proximity to Fort Bragg, one of the largest military bases in the world. Fort Bragg is home to the U.S. Army Airborne and Special Operations Forces, with approximately 53,700 military personnel and 14,000 civilian employees occupying approximately 500 square miles (163,000 acres) in Cumberland, Harnett, Moore, and Hoke counties. Because of this inherent relationship with the military installation, land use and transportation planning in the surrounding municipalities of Spring Lake and Fayetteville (and Cumberland County as a whole) are largely intertwined with the objectives of Fort Bragg. Additional major military resources in the vicinity of the proposed project include Pope Air Force Base, Simmons Army Airfield, and Womack Army Medical Center.

Notable natural and human environment resources in the project area are shown on Figure 2. The natural environment resources include the Little River and its tributaries, a large area of habitat for the federally-protected red-cockaded woodpecker (RCW), and a number of conservation easements and natural areas. The human environment resources in addition to Fort Bragg include Carver's Creek State Park, Spring Lake Municipal Park, Sandhills State Veterans Cemetery, and the Fort Bragg Clay Target Center.

1.4 Existing Roadway Network Description

NC 24-87 (N. Bragg Boulevard), NC 210 (Lillington Highway), and NC 24-87-210 (Murchison Road) in the project area are classified as Other Principal Arterials in the Statewide Functional Classification System and serve as the primary north-south routes for traffic through Spring Lake. NC 24-87 and NC 210 merge in southern Spring Lake and follow the section of Murchison Road that was recently improved to an expressway to the recently completed section of NC 295 (future I-295). To the south of NC 295, NC 24, NC 87, and NC 210 all serve as principal arterials through the City of Fayetteville and provide connections to I-95. NC 87 eventually merges with the Martin Luther King, Jr. Freeway and continues to I-95.

To the north of the NC 210 (Lillington Highway) intersection, the existing typical section of NC 24-87 (N. Bragg Boulevard) in the project area is a four- to six-lane median divided roadway. The section of NC 24-87-210 (Murchison Road) in the project study area south of Lillington Highway was recently widened to a six- to eight-lane, median-divided expressway. As a part of the Murchison

Road improvements project, an interchange was also constructed at Randolph Street (near the southern end of the project study area). To the north of the NC 24-87 (N. Bragg Boulevard) intersection, the existing typical section on NC 210 (Lillington Highway) is four lanes with a two-way-center-turn-lane.

NC 210 (Lillington Highway) and NC 24-87 (N. Bragg Boulevard) to the north of their intersection have no control of access, and both routes are lined with intense commercial development for most of their respective lengths within the study area. To the south of their intersection, NC 24-87-210 (Murchison Road) is lined with commercial development as well, but there is a raised median and partial control of access. To the south of Olive Street, the facility has full control of access for the rest of the length within the study area, continuing to the NC 295 (Future I-295) interchange.

NC 87 through the project study area is part of Corridor K (US 421/NC 87) of North Carolina's Strategic Transportation Corridor (STC) System. Corridor K extends from US 117 in New Hanover County to I-40 in Guilford County, a distance of 175 miles. Corridor K is described in the *North Carolina Transportation Network and Strategic Transportation Corridors Framework* (August 2015) as an important regional connector serving the Piedmont and Coastal Plains regions from I-40 in Guilford County through Sanford in Lee County to US 117 in Wilmington and New Hanover County, linking the manufacturing centers of the Piedmont Triad region to export opportunities at the port in Wilmington. The corridor also provides a crucial link between the Fort Bragg Army Base and the port at Wilmington and the Sunny Point Military Ocean Terminal. Key functions and expectations of Corridor K in the context of STC goals and criteria are identified as:

- Connectivity: Corridor K provides an important route for freight movement between Wilmington port and central North Carolina manufacturing and distribution; NC 87 from Fayetteville to Brunswick County is a part of the U.S. Department of Defense's Strategic Highway Network (STRAHNET) system.
- Mobility: US 421 serves as a principal truck route from the central Piedmont region to the Port at Morehead City, with highest truck volumes between Greensboro and Sanford.
- Expectation: As an important military corridor and freight access corridor to the Wilmington port, Corridor K must serve as a safe, reliable corridor. Measures to ensure safety and reliability should outweigh speed in considering future improvements.

The STRAHNET is a 62,791-mile system of roads throughout the country which is critical to the Department of Defense's domestic operations. It is deemed necessary for emergency mobilization and peacetime movement of heavy armor, fuel, ammunition, repair parts, food, and other commodities to support U.S. military operations.

NC 24-87 through the project area is also identified as an "Unrestricted Truck Route" within the NCDOT Truck Network. NC 24-87 and NC 210 are the primary routes providing access to Fort Bragg and regional mobility. It is reasonable to assume that the movement of goods into, out of, and through the project area occurs via these routes.

Within the project area, Manchester Road (SR 1451) and Butner Road are classified as minor arterials and Chapel Hill Road (SR 1601) is a major collector. Higher volume local streets in the project study area include McCormick Road, Grogg Street, and Odell Road.

1.5 Agency Coordination Meetings to Date

The following agency coordination meetings have taken place prior to today's Concurrence Point 1 meeting:

- US Fish and Wildlife Service and NC Wildlife Resources Commission coordination meeting to discuss red-cockaded woodpecker (RCW) – February 23, 2016
- Fort Bragg Officials coordination meeting to discuss RCW – April 12, 2016
- External Scoping Meeting – June 15, 2016
- Town of Spring Lake and Fort Bragg Officials coordination meeting – August 30, 2016
- Fayetteville Area Metropolitan Planning Organization (FAMPO) coordination meeting – February 27, 2017
- FAMPO and Fort Bragg coordination meeting to discuss Small Area Study – March 12, 2018
- FAMPO and Fort Bragg coordination meeting to discuss Small Area Study – June 21, 2018
- FAMPO and Fort Bragg coordination meeting to discuss Small Area Study – January 15, 2019

1.6 Background Transportation and Land Use Plans

1.6.1 Spring Lake Area Detailed Land Use plan

The *Spring Lake Area Detailed Land Use Plan* (February 2002) takes a critical look at the Spring Lake area in terms of existing conditions and develops recommendations to enhance the positives, as well as creating an action plan to address the negatives with the resources available to the Town. The recommendations contained in the land use plan are for addressing issues that can be dealt with through comprehensive planning. The primary recommendation with respect to addressing vehicular circulation issues in the Spring Lake area is identified as creating a loop around the NC 24-87 (N. Bragg Boulevard) and NC 210 (Lillington Highway) intersection bottleneck. The land use plan indicates that this issue was first addressed by the proposed Spring Lake Loop in the adopted *Fayetteville Metropolitan Area Thoroughfare Plan.* The land use plan's recommended transportation plan includes the Spring Lake Bypass as a proposed thoroughfare around the east side of the Town from NC 24-87 (N. Bragg Boulevard) to NC 24-87-210 (Murchison Road) on an alignment similar to the 2018-2027 STIP alignment for the proposed project.

1.6.2 FAMPO Multi-Modal Congestion Management Plan for the Town of Spring Lake

The *FAMPO Multi-Modal Congestion Management Plan* (December 2009) for the Town of Spring Lake was developed to ensure that the community character of Spring Lake was protected through critical land use and transportation decisions. The Congestion Management Plan (CMP) includes transportation recommendations for the Spring Lake area that were developed based on public and advisory committee input, as well as analysis of existing transportation conditions, review of planned transportation projects, future land use considerations, and the application of engineering principles. The proposed Spring Lake Loop is included in "Phase II: Enhancing Circulation" of the plan, which focuses on creating a circulatory route around the Town's core to more effectively connect activity

centers in the Spring Lake area to each other, as well as to Fort Bragg and Fayetteville. The CMP includes the proposed loop as a recommended four-lane divided boulevard on an alignment similar to the 2018-2027 STIP alignment for the proposed project. The CMP also includes recommended improvements along NC 24-87 (N. Bragg Boulevard) and NC 24-87-210 (Murchison Road) to allow access to properties while minimizing disruptions to traffic flow, including the addition of dedicated turning-lanes and access management improvements such as driveway consolidation, back door access points, left-turn prohibitions, and cross parcel access. In addition, along NC 24-87 (N. Bragg Boulevard) from Chapel Hill Road to McKenzie Road, the CMP recommends that the currently undivided facility be divided by a low four-foot concrete median to control left-turns in the heavily-developed section of the corridor.

1.6.3 FAMPO Comprehensive Transportation Plan

The *FAMPO Comprehensive Transportation Plan* (Draft April 2013) was developed to ensure that the road system in the Fayetteville area will be progressively developed to serve future travel demands. The draft Comprehensive Transportation Plan's (CTP's) Highway Map includes the Spring Lake Bypass on an alignment similar to the 2018-2027 STIP alignment for the proposed project. The Bypass's recommended alignment includes improvements to existing roads, including Chapel Road, Hinkle Street, and McCormick Road, as well as a recommended boulevard on new location from the southern end of McCormick Road to the recently constructed interchange between NC 24-87-210 (Murchison Road) and Randolph Street. The CTP also recommends improvements to the entire NC 24-87 (N. Bragg Boulevard) and NC 210 (Lillington Highway) corridors within the Spring Lake Bypass project study area.

1.6.4 FAMPO 2040 Metropolitan Transportation Plan

The *FAMPO 2040 Metropolitan Transportation Plan* (April 2014) is a federally-mandated, multi-modal plan that is developed to ensure that all modes of transportation within the MPO's planning boundary, which includes Cumberland County, as well as portions of Harnett, Hoke, and Robeson counties, will be progressively developed to serve future travel demands. The Metropolitan Transportation Plan's (MTP's) Highway Element plans for and prioritizes future roadway improvements so that, when the need arises, feasible opportunities to make improvements exist. The MTP's Highway Element includes the Spring Lake Bypass as a needed highway project in the Fiscal Year (FY) 2019-2025 period. It identifies the Bypass as a proposed multi-lane facility, partially on new location, from NC 24-87 (N. Bragg Boulevard) north of Spring Lake to NC 24-87-210 (Murchison Road) south of Spring Lake. The 2040 MTP Highway Map shows the proposed Bypass as a recommended boulevard on an alignment similar to the 2018-2027 STIP alignment.

2.0 MERGER CONCURRENCE POINT 1 – PURPOSE AND NEED AND STUDY AREA

2.1 Traffic Data

2.1.1 No-Build Traffic Forecast

Due to there being multiple STIP projects in proximity to one another in the project study area, it was determined that performing a Small Area Study for the Spring Lake area would be most beneficial. An updated traffic forecast (January 2019) was performed for the proposed project as part of the Small Area Study (see Figure 3). The current year (2017) and Design Year (2040) No-Build average annual weekday traffic (AAWT) volume ranges in vehicles per day (vpd) on NC 24-87 (N. Bragg Boulevard), NC 210 (Lillington Highway), and NC 24-87-210 (Murchison Road) are shown in Table 1 below.

Table 1. Current Year (2017) and Design Year (2040) No-Build Traffic Volumes

Roadway	Current Year (2017) AAWT (vpd)	Design Year (2040) AAWT (vpd)
NC 24-87 (N. Bragg Boulevard)	38,000 – 44,500	46,800 – 73,500
NC 210 (Lillington Highway)	19,500 – 26,400	35,700 – 45,000
NC 24-87-210 (Murchison Road)	54,400 – 65,000	76,600 – 88,200

Source of Traffic Data: *Spring Lake Small Area Study* (Patriot Transportation Engineering, January 2019)

The 2017 AAWT along NC 24-87 (N. Bragg Boulevard) ranged from a high of approximately 44,500 vehicles per day (vpd) north of Manchester Road to a low of approximately 38,000 vpd north of NC 210 (Lillington Highway). The 2017 AAWT along NC 210 (Lillington Highway) ranged from a high of approximately 26,400 vpd north of 4th Street to a low of approximately 19,500 vpd north of Chapel Hill Road. The 2017 AAWT along NC 24-87-210 (Murchison Road) ranged from a high of approximately 65,000 vpd south of Randolph Street to a low of approximately 54,400 vpd south of NC 210 (Lillington Highway).

As shown in Table 1, traffic volumes are forecast to increase substantially by 2040 in the project study area. The approximate range of the percent increases in traffic volumes between 2017 and 2040 for No-Build conditions for each roadway listed in the table is:

- NC 24-87 (N. Bragg Boulevard): 23 percent to 65 percent
- NC 210 (Lillington Highway): 70 percent to 83 percent
- NC 24-87-210 (Murchison Road): 36 percent to 41 percent

2.1.2 Traffic Operations Analysis

A traffic operations analysis was performed in the project area as part of the Small Area Study to determine if there is sufficient intersection capacity to meet the travel demand for existing (2017) and future (2040) No-Build conditions.

Existing (2017) Intersection Level of Service

Table 2 below summarizes the results of the capacity analysis for existing (2017) conditions for the signalized intersections in the project study area. The results indicate that two intersections are operating at a failing LOS E or F during either the AM or PM peak period under existing conditions.

Table 2. Existing (2017) and Future (2040) No-Build Peak Hour Signalized Intersection Level-of-Service[1]

Intersection	Existing (2017)		Future (2040)	
	AM Peak	PM Peak	AM Peak	PM Peak
NC 24-87 (N. Bragg Boulevard)/NC 210 (Lillington Highway)/Spring Avenue	D	C	E	F
NC 24-87 (N. Bragg Boulevard)/North Main Street/Driveway	A	A	D	E
NC 24-87 (N. Bragg Boulevard)/McKenzie Road/New Street	A	B	D	E
NC 24-87 (N. Bragg Boulevard)/Odell Road	A	C	E	E
NC 24-87 (N. Bragg Boulevard)/Manchester Road[2]	D	F	E[2]	C[2]
NC 24-87 (N. Bragg Boulevard)/Vass Road/ Driveway	E	B	C	B
NC 210 (Lillington Highway)/5th Street/ Driveway	A	A	E	E
NC 210 (Lillington Highway)/Walmart Driveway/Driveway	B	C	D	E
NC 210 (Lillington Highway)/Chapel Hill Road/Driveway	A	B	F	F

[1]Traffic volumes used in the signalized intersection LOS analysis are from the Small Area Study.
[2]The N. Bragg Boulevard/Manchester Road interchange (STIP No. U-5930) will be constructed in the 2040 design year. The 2040 LOS shown in Table 2 is for the NC 24-87 (N. Bragg Boulevard) Southbound Ramps/Manchester Road signalized intersection.

Table 3 below summarizes the results of the capacity analysis for existing (2017) conditions for the unsignalized intersections in the project study area. The LOS reported in Table 3 for unsignalized intersections is for the worst movement at the intersection. The results indicate that four intersections have at least one movement operating at a failing LOS E or F during either the AM or PM peak period, or both, under existing conditions.

Table 3. Existing (2017) and Future (2040) No-Build Peak Hour Unsignalized Intersection Level-of-Service[1]

Intersection	Existing (2017)[2]		Future (2040)[2]	
	AM Peak	PM Peak	AM Peak	PM Peak
NC 24-87-210 (Murchison Road) Southbound Ramps/Randolph Street	SB Left (D)	SB Left (B)	SB Left (F)	SB Left (F)
NC 24-87-210 (Murchison Road)/ Olive Street	WB Right (D)	WB Right (A)	WB Right (F)	WB Right (F)
NC 24-87-210 (Murchison Road)/ S. Main Street/Wilson Avenue	WB Right (C)	WB Right (F)	WB Right/ EB Right (F)	WB Right/ EB Right (F)
NC 24-87-210 (Murchison Road)/Lake Avenue	EB Right (E)	WB Right (F)	WB Right/ EB Right (F)	WB Right (F)
NC 24-87 (N. Bragg Boulevard)/Rose Street	WB Right/ SB Left (F)	WB Right/ SB Left (F)	WB Right (F)	WB Right/ SB Left (F)
NC 24-87 (N. Bragg Boulevard/Chapel Hill Road	WB Right (C)	WB Right/ SB Left (F)	WB Right/ SB Left (F)	WB Right/ SB Left (F)
NC 24-87 (N. Bragg Boulevard) Northbound Ramps/Manchester Road	N/A	N/A	NB L/R[3] (F)	NB L/R[3] (D)
NC 210 (Lillington Highway)/ 4th Street/Driveway	EB Right (C)	SB Left (D)	EB Right (F)	EB/WB Right & SB Left (F)
NC 210 (Lillington Highway)/Pinetree Lane/Samuel Street	EB/WB L/T/R[4] (D)	WB L/T/R[4] (D)	EB/WB L/T/R[4] & NB Left (F)	EB/WB L/T/R[4] & NB Left (F)

[1]Traffic volumes used in the unsignalized intersection LOS analysis are from the Small Area Study.
[2]LOS for unsignalized intersections is for worst movement(s).
[3]L/R = left/right shared lane.
[4]L/T/R = left/through/right shared lane.

Future (2040) No-Build Intersection Level of Service

Table 2 also summarizes the results of the capacity analysis for future (2040) No-Build conditions for the signalized intersections in the project study area. The results indicate that the number of signalized intersections operating at a failing LOS E or F during either the AM or PM peak period, or both, under future conditions is expected to increase to eight. This includes all the signalized intersections analyzed except for the NC 24-87 (N. Bragg Boulevard)/Vass Road/Driveway intersection.

Table 3 also summarizes the results of the capacity analysis for future (2040) No-Build conditions for the unsignalized intersections in the project study area. Once again, the LOS reported in Table 3 for unsignalized intersections is for the worst movement at the intersection. The results indicate that all nine of the unsignalized intersections analyzed have at least one movement operating at a failing LOS E or F during either the AM or PM peak period, or both, under future conditions.

2.2 Crash Data Analysis

A crash data analysis was conducted for the following existing roadway segments within the project study area. (Note that an analysis was not conducted for NC 24-87-210 (Murchison Road) to the south of the NC 210 [Lillington Highway]/NC 24-87 [N. Bragg Boulevard] intersection because this section of roadway was recently widened to a six- to eight-lane, median-divided expressway.):

- NC 24-87 (N. Bragg Boulevard) – from NC 24-87-210 (Murchison Road) to Manchester Road;
- NC 210 (Lillington Highway) – from NC 24-87 (N. Bragg Boulevard) to Chapel Hill Road; and
- Chapel Hill Road – from NC 210 (Lillington Highway) to NC 24-87 (N. Bragg Boulevard).

The crash data analyzed for NC 24-87 (N. Bragg Boulevard) and NC 210 (Lillington Highway) is for the five-year period between June 1, 2011 and May 31, 2016. The crash data analyzed for Chapel Hill Road is for the five-year period between February 1, 2011 and January 31, 2016. As shown in Table 4, during the time periods analyzed, there were 1,149 total reported crashes, including two fatal and 241 injury crashes on the analyzed segments of these roads, with the majority of these crashes occurring on NC 24-87 (N. Bragg Boulevard) (856 total crashes and 186 injury crashes).

Table 4 compares the current crash rates on the analyzed segments of these roads to the 2012 to 2014 North Carolina statewide average and critical crash rates for similar facility types. As shown in Table 4, the current crash rates for all crash types on the analyzed segments of these roads exceed the statewide average crash rates for similar facilities. The total crash rates on the segments analyzed for NC 24-87, NC 210, and Chapel Hill Road are more than double the statewide total crash rates for similar facilities.

In addition, the current crash rates for all crash types except fatal on the analyzed segments of these roads exceed the critical crash rates for similar facilities. The critical crash rate is a statistically derived number greater than the average rate that serves as a screening measure to identify locations where the collision occurrence is higher than should be expected for a given facility type.

Table 4. Crash Rate Comparison by Roadway Segment Analyzed

Crash Type	Crashes	Crash Rate[1]	Statewide Rate[2]	Critical Rate[3]
NC 24-87 (N. Bragg Blvd) (from NC 24-87-210 [Murchison Rd] to Manchester Rd)				
Total	856	532.86	264.81	286.24
Fatal	0	0.00	0.75	2.19
Non-Fatal Injury	186	115.78	83.15	95.30
Night	137	85.28	59.66	70.00
Wet	145	90.26	46.86	56.06
NC 210 (Lillington Hwy) (from NC 24-87 [N. Bragg Blvd] to Chapel Hill Rd)				
Total	250	607.08	262.59	305.34
Fatal	1	2.43	0.99	4.75
Non-Fatal Injury	44	106.85	77.54	101.33
Night	48	116.56	52.26	72.01
Wet	36	87.42	41.30	58.99
SR 1601 (Chapel Hill Rd) (from NC 210 [Lillington Hwy] to NC 24-87 [N. Bragg Blvd])				
Total	43	675.23	233.15	340.54
Fatal	1	15.70	1.18	16.11
Non-Fatal Injury	11	172.73	72.80	136.27
Night	10	157.03	62.56	121.97
Wet	9	141.33	39.36	88.11

[1]Crashes per 100 million vehicle miles driven.
[2]2012-2014 statewide crash rates shown for all routes analyzed, as follows: NC 24-87 (N. Bragg Boulevard) – four or more lanes divided with no control of access, urban NC routes; NC 210 (Lillington Highway) – four lanes plus continuous left turn lane, urban NC routes; Chapel Hill Road – two lanes undivided, urban secondary routes.
[3]Based on the statewide crash rate (95 percent level of confidence). The critical crash rate is used to denote statistical significance. It is a statistically derived value against which a calculated rate can be compared to see if the rate is above an average far enough so that something besides chance must be the cause.

2.3 Proposed Study Area

The proposed project study area is shown on Figure 1 and Figure 2. The proposed study area was identified to include the proposed 2018-2027 STIP alignment for the Spring Lake Bypass, as well as potential alternative corridors for the Bypass. It also includes the section of NC 24-87 (N. Bragg Boulevard) that would likely need to be improved under the Improve Existing Roads alternative.

2.4 Summary of Need for the Proposed Action

The identified needs of the proposed action are to:

- ***Address Capacity Deficiencies***

As discussed in Section 2.1.1, the 2019 No-Build conditions traffic forecast for the proposed project indicated that AAWT traffic volumes on NC 24-87 (N. Bragg Boulevard), NC 210 (Lillington Highway) and NC 24-87-210 (Murchison Road) are supposed to increase substantially by the 2040 Design Year. As discussed in Section 2.1.2, under current 2017 conditions, two of the nine signalized intersections analyzed in the project study area are operating at a failing LOS E or F during either the AM or PM peak period (see Table 2). As a result of the forecast increase in traffic volumes by 2040, the number of signalized intersections operating at a failing LOS E or F during either the AM or PM peak period, or both, under future No-Build conditions is expected to increase to eight. This includes all of the signalized intersections analyzed along the NC 24-87 (N. Bragg Boulevard) and NC 210 (Lillington Highway) corridors, with the exception of the NC 24-87 (N. Bragg Boulevard)/Vass Road/ Driveway intersection.

For the unsignalized intersections analyzed in the project area, the results of the capacity analysis for existing (2017) conditions indicate that four intersections have at least one movement operating at a failing LOS E or F during either the AM or PM peak period, or both (see Table 3). The results of the future (2040) No-Build unsignalized intersections analysis indicated that all nine of the intersections analyzed on the NC 24-87 (N. Bragg Boulevard), NC 210 (Lillington Highway), and NC 24-87-210 (Murchison Road) corridors have at least one movement operating at a failing LOS E or F during either the AM or PM peak period, or both.

- ***Improve System Linkage and Roadway Connectivity***

As discussed in Section 1.6, transportation and land use plans for the project study area identify the proposed Spring Lake Bypass as a needed future component of the area's planned roadway network. The 2002 *Spring Lake Area Detailed Land Use Plan* identifies the need for the Bypass to address vehicular circulation issues in the Spring Lake area, including creating a bypass around the NC 24-87 (N. Bragg Boulevard) and NC 210 (Lillington Highway) intersection bottleneck. The land use plan's recommended transportation plan includes the Spring Lake Bypass as a proposed thoroughfare around the east side of the Town from NC 24-87 (N. Bragg Boulevard) to NC 24-87-210 (Murchison Road).

The 2009 *FAMPO Multi-Modal Congestion Management Plan* for the Town of Spring Lake identifies the need for the proposed Spring Lake Loop in "Phase II: Enhancing Circulation" of the plan, which focuses on creating a circulatory route around the Town's core to more effectively connect activity centers in the Spring Lake area to each other, as well as to Fort Bragg and Fayetteville.

The Draft 2013 *FAMPO Comprehensive Transportation Plan* includes the proposed Spring Lake Bypass on approximately the 2018-2027 STIP alignment as a needed project to ensure that the Fayetteville area road system will serve the future travel demands in the area. The CTP also recommends improvements to the entire NC 24-87 (N. Bragg Boulevard) and NC 210 (Lillington Highway) corridors within the Spring Lake Bypass project study area.

The Highway Element of the 2014 *FAMPO 2040 Metropolitan Transportation Plan* includes the Spring Lake Bypass as a needed highway project in the FY 2019-2025 period to meet the future travel demands within the MPO's planning boundary

- ***Provide Improved Functionality of NC 87 as a Component of North Carolina STC System and U.S. Department of Defense STRAHNET System***

As discussed in Section 1.4, NC 87 through the project study area is part of Corridor K (US 421/ NC 87) of North Carolina's STC System. Corridor K is described in the 2015 *North Carolina Transportation Network and Strategic Transportation Corridors Framework* as an important regional connector serving the Piedmont and Coastal Plains regions from I-40 in Guilford County through Sanford in Lee County to US 117 in Wilmington and New Hanover County, linking the manufacturing centers of the Piedmont Triad region to export opportunities at the port in Wilmington. The corridor also provides a crucial link between the Fort Bragg Army Base and the port at Wilmington and the Sunny Point Military Ocean Terminal. Key functions and expectations of Corridor K in the context of STC goals and criteria include connectivity, mobility, safety, and reliability. NC 87 from Fayetteville to Brunswick County is also part of the U.S. Department of Defense's STRAHNET system, a nation-wide system of roads critical to the Department of Defense's domestic operations.

2.5 Purpose of the Proposed Action

The purposes for the proposed project are to:

- **Improve traffic flow and level of service on existing roadway facilities within the Town of Spring Lake.**

  The proposed project will improve traffic flow and level of service on NC 24-87 (N. Bragg Boulevard), NC 210 (Lillington Highway), and NC 24-87-210 (Murchison Road), and other existing roadway facilities within the Town of Spring Lake so that an improved LOS can be achieved by the design year 2040.

- **Improve roadway system connectivity in the project area as called for in local and regional planning documents.**

  Transportation and land use plans for both the Spring Lake and FAMPO areas identify the proposed project as an important link in the area's planned roadway network. The completion of this missing link will further improve roadway system connectivity for through traffic by creating a bypass around the Town's core. The anticipated reduction in traffic volumes on NC 24-87 (N. Bragg Boulevard) within the Town will improve conditions for local traffic. The resulting improvements to the roadway network will more effectively connect activity centers in the Town to each other, as well as to the surrounding area. The addition of the proposed project will also help to ensure that the regional roadway system will serve the future travel demands of the area.

- **Improve traffic operations on NC 87 through the project study area so it can better serve its functions as part of North Carolina's STC System (Corridor K) and the U.S. Department of Defense's STRAHNET system.**

The proposed project will improve traffic flow and level of service on the N. Bragg Boulevard portion of NC 87 through the project study area, which will help to achieve the State of North Carolina's STC System goals of connectivity, mobility, safety, and reliability for Corridor K (i.e., US 421/NC 87 between US 117 in New Hanover County and I-40 in Guilford County). Improved traffic operations on NC 87 will also allow the corridor to better serve its function as part of the U.S. Department of Defense's STRAHNET system.

Appendix

Section 404/NEPA Interagency Agreement

Concurrence Point No. 1

Project Purpose and Need and Study Area Defined

Project Title: Proposed Spring Lake Bypass from NC 210 (Murchison Road) to NC 24-87 (Bragg Boulevard in Spring Lake, Cumberland County

STIP Project No.: U-5802

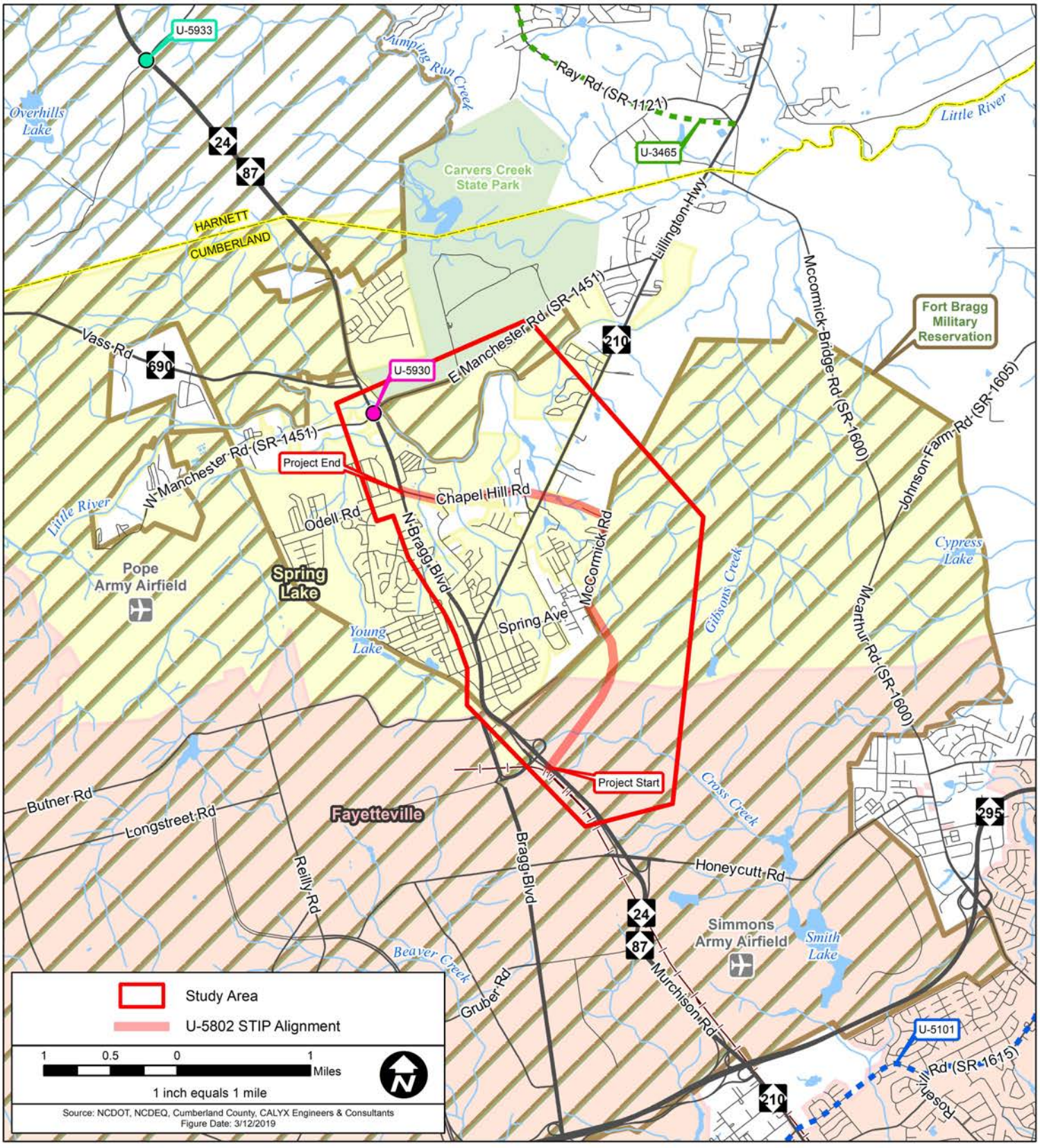
WBS No.: 44374.1.1

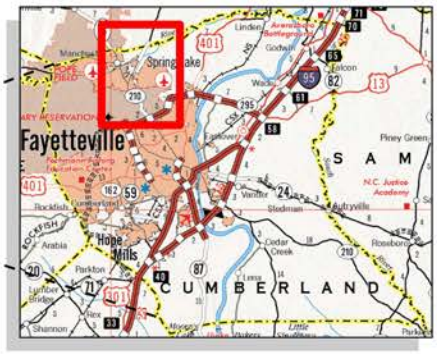
Project Study Area: The project study area is shown on Figure 1 of the meeting handout. The study area was identified to include the proposed 2018-2027 STIP alignment for the Spring Lake Bypass, as well as potential alternative corridors for the Bypass. It also includes the section of NC 24-87 (N. Bragg Boulevard) that would likely need to be improved under the Improve Existing Roads alternative.

Project Purpose: The purposes of the proposed project are to: improve traffic flow and level of service on existing roadway facilities within the Town of Spring Lake; improve roadway system connectivity in the project study area as called for in local and regional planning documents; and improve traffic operations on NC 87 through the project study area so it can better serve its functions as part of North Carolina's Strategic Transportation Corridor (STC) System (Corridor K) and the U.S. Department of Defense's STRAHNET system.

The Project Team has concurred on the above-mentioned Project Study Area and Project Purpose for U-5802.

Signature	Agency	Date
	USACE	
	USEPA	
	USFWS	
	NCDOT	
	NCWRC	
	NCDWR	
	NCSHPO	
	FAMPO	





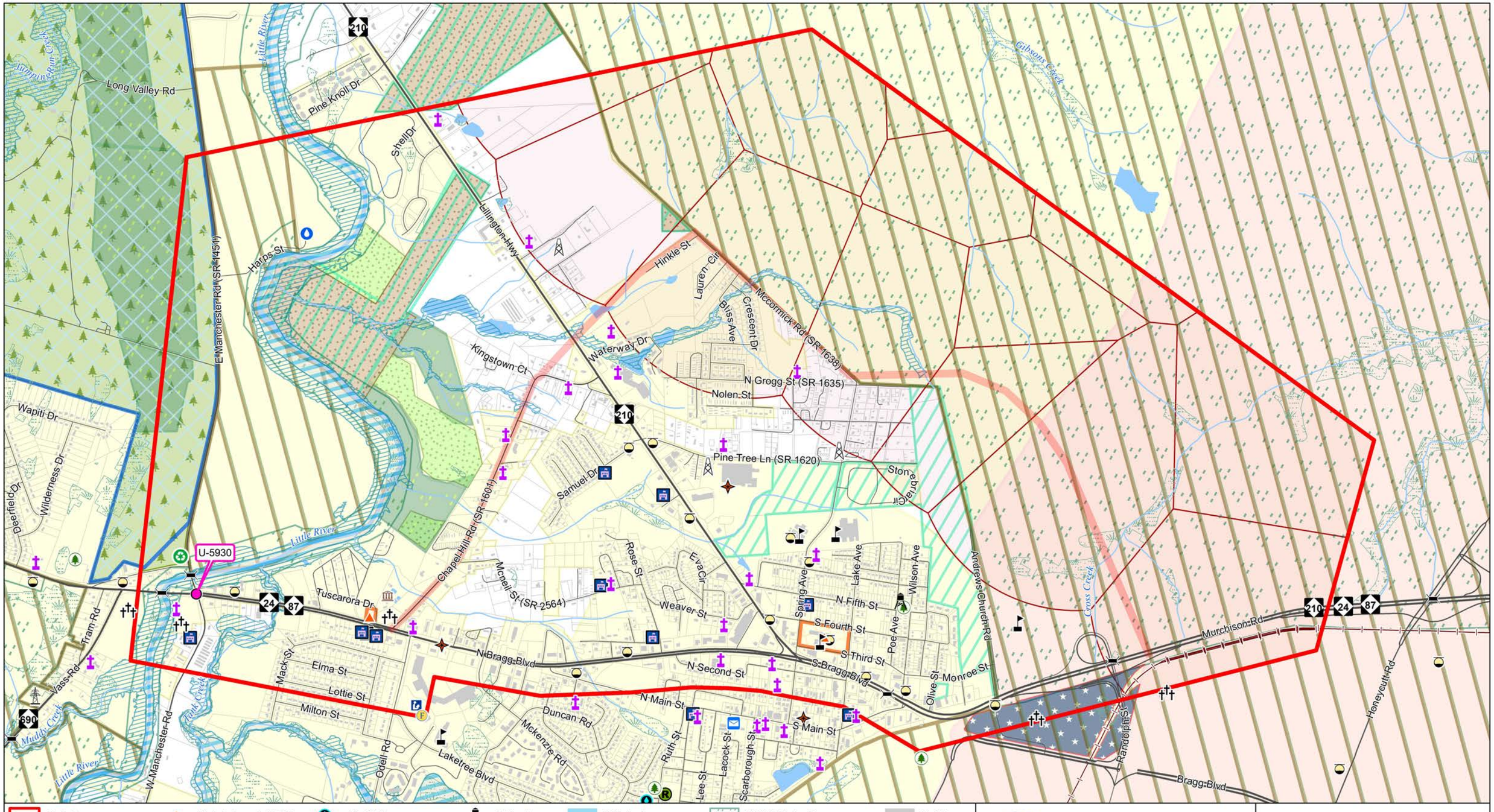
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
PROJECT MANAGEMENT UNIT

Proposed Spring Lake Bypass
From NC 210 (Murchison Rd)
to NC 24-87 (Bragg Blvd)

STIP Project U-5802

Cumberland County

Figure 1 - Project Vicinity



Study Area
U-5802 STIP Alignment
U-5930 (Nearby STIP)
Cemetery
Church
Family Resource Center
Daycare
Historic Property (DOE)
Library
Municipal Facility
Park
Post Office
Recreation Facility
Recycling Center
Fire Station
School
Hazardous Waste Site
Registered UST
Wastewater Treatment
Communication Tower
Electric Substation
Water Tower
Bridge
NC Route
Major Road
Local Road
Railroad
Stream
Waterbody
DCM Wetland
Floodway
100-Year Floodplain
RCW Partition
NCNHP Safe Harbor
NCNHP Easement
NCNHP Natural Area
NCNHP Nature Preserve
VAD Parcel
Carvers Creek State Park
Historic Boundary (NR)
Historic Boundary (DOE)
Sandhills Veterans Cemetery
Building
Parcel
Fort Bragg
Fayetteville
Spring Lake

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PROJECT MANAGEMENT UNIT

1,500 750 0 1,500 Feet
1 in = 1,500 ft

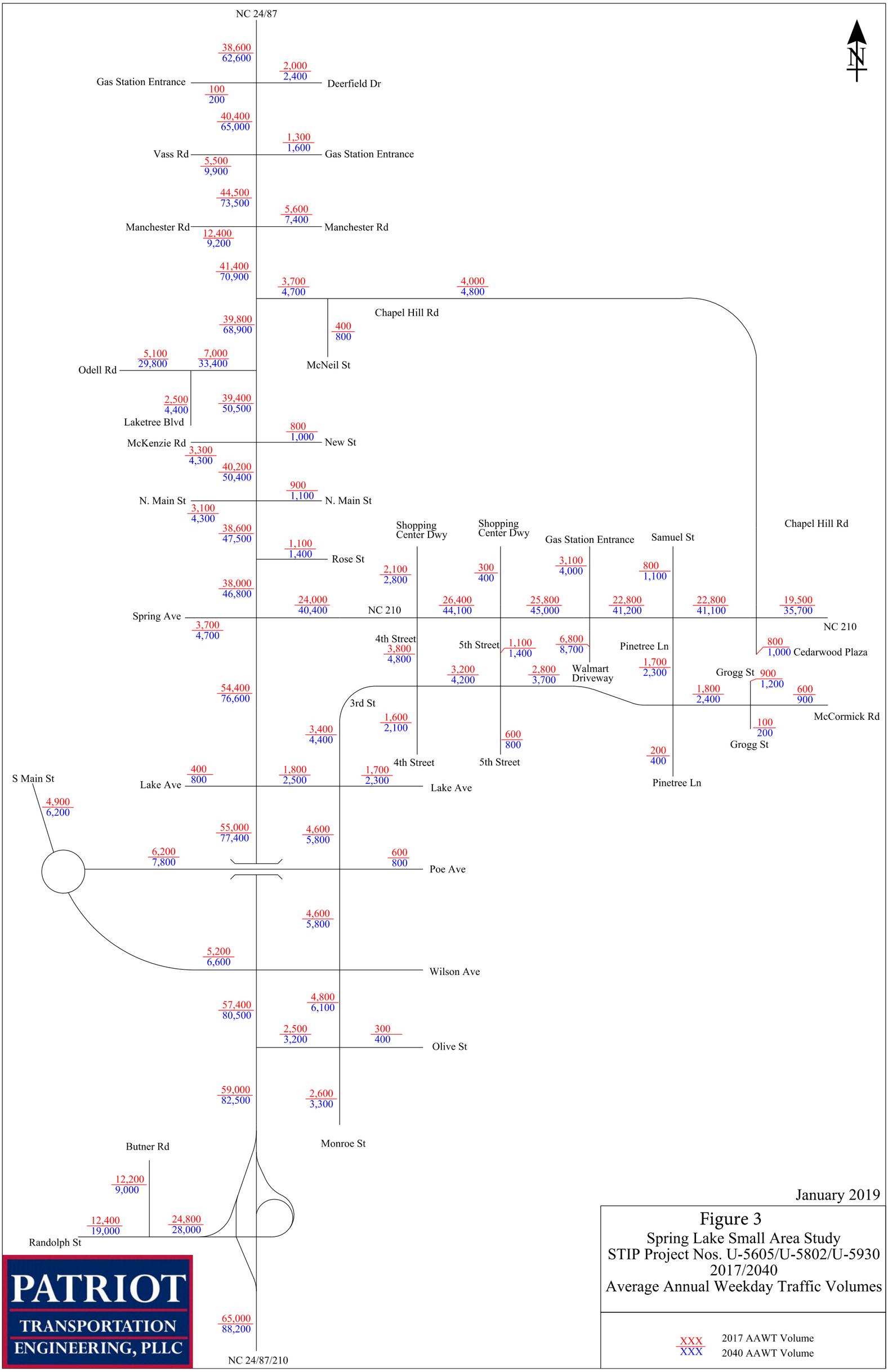
Source: NCDEQ, NCDOT, NCFMP, NCNHP, NCOneMap, Cumberland County, Google, CALYX Engineers and Consultants Figure Date: 3/12/2019

Proposed Spring Lake Bypass
From NC 210 (Murchison Rd)
to NC 24-87 (Bragg Blvd)

STIP Project U-5802

Cumberland County

Figure 2 - Environmental Features



January 2019

Figure 3
Spring Lake Small Area Study
STIP Project Nos. U-5605/U-5802/U-5930
2017/2040
Average Annual Weekday Traffic Volumes

XXX / XXX — 2017 AAWT Volume / 2040 AAWT Volume

PATRIOT TRANSPORTATION ENGINEERING, PLLC