PURPOSE AND NEED AND STUDY AREA DEFINED

ALTERNATIVE CARRIED FORWARD

BRIDGING

NC 42 (now Veteran's Parkway - NC 36) - NC 50 to US 70 Business.
Widen to multi-lanes.

Johnston County

STIP Project R-3410

North Carolina Department of Transportation

Division 4

Introduction

Lead federal agency: Federal Highway Administration
Primary points of contact for the subject project are:

Agency	Name
Federal Highway Administration (FHWA)	Seth Wilcher
U.S. Army Corps of Engineers (USACE)	Matt Martin and Kyle Barnes
North Carolina Department of Water Resources (NCDWR)	Rob Ridings
North Carolina Department of Transportation (NCDOT)	Chad Coggins and Russell Broadwill
WGI	Martha Register

The purpose of this meeting is to reach concurrence on CP 1, Purpose and Need and Study Area defined; CP 2, Detailed Study Alternatives carried Forward; and CP 2A Bridging Decisions and Alignment Review.

1.1 Project Description

The North Carolina Department of Transportation (NCDOT) proposes to improve two-lane NC 42 (Lombard Street), now Veteran's Parkway – NC 36, to a multi-lane, median-divided roadway from NC 50 (Benson Road) in unincorporated Johnston County to US 70 Business in the Town of Clayton, North Carolina. The project is approximately eight miles in length. The project location is shown in Figure 1.

The proposed project is included in NCDOT's current 2026-2035 State Transportation Improvement Program (STIP) as Project No. R-3410, WBS No. 38857.1, Federal Aid No. STBG-0042(073) and (074).

1.2 Project History and Schedule

The proposed widening of Veteran's Parkway was analyzed with a Type III Categorical Exclusion that was signed on July 2, 2018 (Categorical Exclusion). The project is being added to the merger process at this time to document project decisions to minimize risk during permitting. Additionally, we will evaluate the validity of the current CE throughout the process. Changes to the project from the merger process will be documented and analyzed for significance in ROW consultation which is planned to be completed in July 2026.

The Capitol Area Metropolitan Planning Organization (CAMPO) is responsible for regional transportation planning in the Raleigh metropolitan area, including northern Johnston County. Their Metropolitan Transportation Plan functionally classifies NC 36 as a minor thoroughfare, designated as a boulevard, with widening improvements from two to four lanes. (CAMPO 2055 MTP). The MTP also addresses bike and pedestrian mobility. It's Bicycle and Pedestrian Map includes NC 36 from Clayton to Fuquay-Varina, which it proposes as a regional, on-road bicycling facility.

The *Johnston County Comprehensive Transportation Plan* (2011, updated 2013) identifies NC 36 as a boulevard in need of improvement. It also identifies a need for bicycle facilities between US 70 Business and US 70 Bypass (now I-42). (Johnston Co CTP Highway Map, and Johnston County CTP BikePed Map)

Three Public Workshops have been held for the project in May 2018, February 2023 and March 2025. All workshops were held at the Clayton Center, 111 East 2nd Street, Clayton. The first meeting was associated with completing the NEPA process (R-3410 Public Meeting 2018), the 2nd workshop focused on alternative intersection designs at Cornwallis Road (R-33410 Public Meeting 2023), and the final

workshop focused on converting the corridor to primarily RCI movements (R-3410 Public Meeting 2025). However, it should be noted, the commercially developed section just east of the I-40 interchange will continue to have traditional signalized intersections.

Right-of-way acquisition and construction are scheduled to begin in 2026 and 2031, respectively. The current costs for the project as estimated in the current STIP are shown in Table 1. The proposed project schedule is included in Table 2 and is based on the Merger Plan. The schedule and cost estimates are draft and subject to change.

Table 1. 2025 Cost Estimate

Phase	Estimated Costs
Right of Way	$61,895,000
Utilities	$10,500,000
Construction Total	$156,500,000
Total	**$229,295,000**

The following schedule (Table 2) incorporates information included in the draft Merger Plan for R-3410 (v2) (R-3410 Merger Plan v2).,

Table 2. Draft R-3410 Project Schedule*

Milestone	**Format**	**Anticipated Date**
Categorical Exclusion (CE)	Electronic Distribution	July 2, 2018
Combined CP 1 / CP 2/ CP 2A meeting	In-person	April 2026
Combined CP 3 /CP 4A	Packet Concurrence	July 2026
ROW Consultation	Electronic Distribution	Jully 2026
Begin ROW Acquisition		July 2026
CP 4B		TBD
CP 4C		TBD
Begin Construction		January 2031

*Draft, subject to change

1.3 Other STIP Projects Nearby

The following is a list of other NCDOT State Transportation Improvement Program (STIP) within the vicinity of R-3410 and they are illustrated in Figure 2.

- STIP Project I-4739 – I-40/Veteran's Parkway Intersection Improvements (under construction)
- STIP Project I-5111 – I-40 Add 2 Lanes in Each Direction (under construction)
- STIP Project U-6208 – Cleveland Road (SR 1010), Construct Roadway on New Location (planning and design)
- STIP Project U-6216 - Cleveland Road (SR 1010) Widening, from I-40 to Barbara Mill Road (SR 1555) (planning and design)

- STIP Project U-5943 – Upgrade Signal System in Clayton
- STIP Project BL-0050 – Complete Sidewalks along US 70 Business in Clayton
- STIP Project TO-6166 – Construction infrastructure for BRT along US 70 Business in Clayton

2 Existing Conditions

2.1 Transportation Features

The existing roadway typical section generally consists of two travel lanes with shoulders, though portions were previously widened to four lanes around the I-42 (US 70 Bypass) and the I-40 interchanges. The area around the I-40 interchange is excluded from this project, as interchange improvements there are proposed in STIP Project No. I-4739. Along the Veteran's Parkway Corridor project corridor, existing right-of-way width is variable, between 60 and 120 feet. The road is designated as a Minor Arterial with posted speed limit of 45 mph.

NC 50, the western project terminus, is also a Minor Arterial consisting of two travel lanes with shoulders. NC 50 has a posted speed of 50 mph. US 70 Business is the eastern project terminus. It is a four-lane divided US Highway with controlled access. Its posted speed limit where Veteran's Parkway merges with US 70 Bus. is 45 mph.

The R-3410 project has three discrete areas that are separated by the I-40 and I-42 interchanges.

- West Area is from NC 50 to Old Drug Store Road,
- Central Area is from Son-Lan Parkway to I-42, and
- East Area is from I-42 to US 70 Business.

Each area is in a different stage of design and is being worked on by different engineering firms. The West Area is nearing 25% design or the Design Recommendation Plan Set (DRPS) and is being designed by '*to be determined*'. The Central Area is approaching Right-of-Plans and is being designed by Mott MacDonald. Lastly, the East Area is moving forward from preliminary designs and is also being designed by Mott MacDonald

The projected **2050 No Build Traffic** (NCDOT Traffic Forecast, June 2023, R-3410 Traffic Forecast 2023; and KH Traffic Forecast, June 2024, R-3410 Traffic Forecast 2024) for each area is as follows:

- West Area – 16,700 to 17,700 veh/day,
- Central Area – 28,600 to 29,400 veh/day, and
- East Area – 16,300 to 26,800 veh/day.

2.2 Environmental Features

Environmental resources in the project area are shown in the Environmental Features Map (Figure 3A to 3E). Community Resources were analyzed in a Community Impact Assessment (CIA) dated May 2018 (R-3410 CIA), and an Indirect Land Use Report as also completed in May 2018 (R-3410 Land Use). The following summary is taken from these reports with changes, as needed, to reflect the current conditions in the project corridor.

The project is located in the lower Piedmont physiographic region to the west of the Town of Clayton. Land use immediately adjacent to the NC 36 corridor is comprised of a mix of commercial, residential, and institutional development, with some farm and undeveloped lands in the vicinity of the I-42

interchange and near NC 50, the project's western terminus. The project vicinity is predominantly comprised of suburban residential developments, mostly single-family homes. "For sale" signs are common on vacant land in the area. Commercial clusters exist around the I-40 interchange, Cleveland Road, and NC 50. Institutional uses are scattered throughout the project corridor, and include West Clayton Elementary School, Johnston County UNC Health Care Hospital, and several churches. The area is experiencing rapid development with the expansion of the Hospital and surrounding medical offices and with proposed large scale residential and mixed-use development. One such development, the Copper District, is a large, proposed mix-use development on roughly 300 acres just southeast of the NC 36 and I-42 interchange in the middle of the project corridor. Construction is expected to begin in 2026.

In the project area there are 6 or more churches, at least 30 shopping centers, 15 apartment complexes and numerous residential properties. As noted previously there is one school, West Clayton Elementary School, east of Guy Road along NC 36.

Of note in the project vicinity there are two historic sites, the Sanders-Hairr House (listed on the National Register) on Cornwallis Road, and Home of Keeper of Records and Seals (Eligible for the National Register) at the NC 36 and Barbara Mill Road intersection. Impacts to the Sander-Hairr House have been avoided. An effects determination was completed for the Home of Keeper of Records and Seals. A finding of 'No Adverse Effects Determination' was signed in May 2018 for this resource (R-3410 No Adverse Effect Determination).

Surveys for Archeological Resources were completed in the project corridor in 2018. A determination of 'No NRPH Archaeological Sites Present' was completed in that same year (R-3410 No NRHP Archaeological Sites Present).

A Natural Resources Technical Report was completed for the project in November 2017 (R-3410 NRTR), and updated in a Memo from May 2018 (R-3410 NRTR Update Memo). The following summary information is taken from these reports with changes, as needed, to reflect the current status of the corridor. These reports include detailed information and data tables regarding natural communities, protected species, and jurisdictional resources.

The study area is part of the Neuse River basin (U.S. Geological Survey [USGS] Hydrologic Unit [HUC] 03020201). There are no water supply watersheds (WS-I or WS-II) within or within 1.0 mile downstream of the study area. There are no primary nursery areas (PNA) or anadromous fish within the study area. Additionally, there are no North Carolina Wildlife Resources Commission (NCWRC)-designated trout waters within or within 1.0 mile of the study area. The North Carolina 2022 Final 303(d) list of impaired waters identifies no waters within or 1.0 mile downstream of the study area as impaired.

The U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) lists the following nine federally protected species which are potentially affected by activities at the project site, under the Endangered Species Act (ESA) (checked for the study area in September 2025).

- Tricolored Bat – proposed endangered
- Red-cockaded woodpecker - threatened
- Southern hognosed snake – proposed theatened
- Neuse River waterdog - threatened

- Carolina madtom - endangered
- Atlantic pigtoe w critical habitat - threatened
- Dwarf wedgemussel - endangered
- Yellow Lance w critical habitat - threatened
- Monarch butterfly – proposed threatened

Twenty-nine streams were identified in the project area. They include Buffalo Creek, Swift Creek, White Oak Cree, and Little Creek with associated unnamed tributaries. Thirty potential jurisdictional resources were identified in the project area. Locations of these resources are illustrated in Figures 4A to 4H.

Project Purpose and Need

A Purpose and Need Memo was created for the project in January 2018. The memo was retained for internal project documentation but never formally approved and is copied here for inclusion in the project record (*indented text*).

> ***Project Need***
>
> *The primary need for the proposed improvements is the increasing traffic congestion along NC 42. As northwestern Johnston County has developed from a rural area to more characteristically suburban, traffic volumes on NC 42 have steadily grown. Continued development, with its associated population growth in the project vicinity, is planned by both Johnston County and the Town of Clayton.*
>
> *The functionality of a roadway corridor is generally controlled by its signalized intersections. When delay at intersections increases and queues lengthen, the Level of Service (LOS) provided by a roadway declines. Level of Service is graded from A to F, with A indicating free-flow conditions, D indicating that volumes have neared the roadway or intersection capacity, and F representing a breakdown in traffic flow.*
>
> *Currently all but two signalized intersections along NC 42 operate at LOS D or better during the morning and evening peak hours. The other two, Old Drug Store Road (SR 1524) and Cornwallis Road (SR 1525), currently operate at LOS E.*
>
> *However, rapid development around two-lane NC 42 will soon over-burden its capacity, leading to substantial congestion during morning and evening peak hours. Traffic forecasts for 2040, the project design year, illustrate the impact of the area's changing land use patterns on future traffic volume. By 2040, traffic volumes will exceed the roadway's capacity, causing substantial delay and queuing at most signalized and unsignalized intersections. Eight of the thirteen currently signalized intersections will operate at LOS E or F during one or both of the peak hours in 2040. To alleviate this congestion and accommodate the increase in traffic, additional roadway capacity is needed.*

Project Purpose

The primary purpose of the project is to provide additional capacity on NC 42 to accommodate the growth in traffic tied to the suburban development occurring in the area. To ensure that roadway improvements support forecasted traffic growth, the project's primary objective is to achieve a LOS D or better for the corridor as a whole in 2040, the project design year. Roadways operating at LOS D are generally considered to be operating at capacity. Reduction in delay experienced at signalized intersections is another useful measure of effectiveness.

Roadway Capacity

The capacity of a roadway is determined by several factors, including the number of lanes, the roadway setting (i.e. urban, suburban, or rural), posted speed limits, and other factors. The posted speed limits within the NC 42 study area range from 35 to 55 mph, with most of the roadway posted at 45 mph. According to NCDOT Transportation Planning Branch guidance on establishing roadway capacity, the operational capacity (LOS D) of NC 42 ranges from 15,600 to 20,200 vehicles per day (vpd), depending on the posted speed.

Currently, the roadway is operating at or near its capacity (R-3410 Traffic Tech Memo). However, growth in traffic volumes will exceed the roadway's capacity by 2040. Table 1 illustrates the current (2016) and 2040 (design year) traffic volumes throughout the NC 42 project area. Traffic volumes in all sections of the roadway, except one, will exceed 20,200 vpd, the upper limit of its current capacity, by 2040.

Table 1. Existing and Projected Traffic Volumes (Annual Average Daily Traffic (AADT))

Segment	2016 (Existing)	2040 (Design Year)*
NC 50 to Cleveland Road (SR 1010)	14,400 - 21,300	23,000 - 35,400
Bratton Drive to Cornwallis Road (SR 1525)**	20,400 - 21,000	32,600 - 33,600
Cornwallis Road (SR 1525) to US 70 Bypass	18,900 - 19,500	30,200 - 31,200
US 70 Bypass to Amelia Church Road (SR 1552)	17,500 - 18,300	28,000 - 29,300
Amelia Church Road (SR 1552) to Barber Mill Road (SR 1555)	10,800 - 15,900	17,300 - 25,100
Barber Mill Road (SR 1555) to US 70 Business	12,900 - 18,800	29,600 - 30,100

** No Build*
***The I-40 interchange area is not included in the table. It is addressed in STIP Project I-4739.*

Intersection Analysis

All signalized intersections, except two, within the project study area currently operate at LOS D or better during peak hours (Table 2). However, periods of moderate queuing is occurring during morning peak hours on several legs of the following intersections:

- *NC 50*

- *Cornwallis Road (SR 1525)*
- *Barber Mill Road (SR 1555), and*
- *US 70 Business eastbound ramps.*

During the evening peak hour, moderate to considerable queueing is occurring on some legs of the intersections listed below. In some cases, the queues spill back into adjacent intersections, exacerbating delays at nearby unsignalized intersections.

- *NC 50*
- *Amelia Church Road (SR 15xx)*
- *Guy Road (SR 15xx)*
- *Old Drug Store Road (SR 15xx)*
- *Cornwallis Road, and*
- *Barber Mill Road.*

By 2040, 8 of the 13 currently signalized intersections will operate at LOS E or F during one or both peak hours. Average delay increases substantially in 2040, with seven intersections exceeding 55 seconds during the morning peak and six exceeding 55 seconds in the evening peak hour.

Table 2. Signalized Intersection Level of Service Analysis

Signalized Intersections with NC 42	2016 Existing				2040 No-Build			
	Morning		Evening		Morning		Evening	
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
NC 50	D	48.5	D	42.2	F	162.4	F	137.5
Old Drug Store Road	E	57.8	D	40.6	F	218.1	F	175.1
Cleveland Road (SR 1010)	D	36.4	C	28.6	F	105.5	D	41.1
Bratton Drive	B	13.2	B	11	C	20.3	B	17.1
Walmart Driveway	B	18.8	B	20.3	D	38.5	D	37.3
Cornwallis Road (SR 1525)	D	38.9	D	55.4	F	165.6	F	236.6
Government Road (SR 1556)	B	14	B	11.1	E	70.5	D	52.3
US 70 Bypass EB Ramps	A	6.4	A	6.9	B	18	B	18.4
US 70 Bypass WB Ramps	B	13	B	16.4	C	22.8	B	19.9
Johnston UNC Hospital	B	10.5	B	11.5	C	24.7	C	26.8
Amelia Church Road (SR 1552)	C	25.3	C	31.8	E	70.5	F	80.8
Guy Road (SR 1551)	B	12.3	B	22.1	D	49.8	E	55.2
Barber Mill Road (SR 1555)	D	49.6	D	51.2	F	146	F	226

Source: NCDOT Division 4, Traffic Technical Report for NC 42 Widening from NC 50 to US 70 Business, Mott MacDonald, Inc. January 2018.

Other Desirable Outcome

Non-Motorized Transportation. Along with the Johnston County Comprehensive Bicycle Plan, the Town of Clayton's JCMH Small Area Plan recommends bicycle and pedestrian

facilities between US 70 Bypass and US 70 Business. Incorporating facilities into the project that accommodate both cyclists and pedestrians in this portion of the project is a desirable outcome that will facilitate travel to the West Clayton Elementary School and encourage non-motorized travel among medical staff to and from the hospital and medical complex located on NC 42.

Transportation Plans

See previous discussion on beginning on page 4.

System Linkage, Logical Termini, and Independent Utility

NC 42 generally runs east-to-west through central North Carolina, beginning in Asheboro and ending in Ahoskie. Within the project area, it collects traffic from the unincorporated Cleveland community, the Town of Clayton, and northwestern Johnston County and provides access to NC 50, I-40, US 70 Bypass, and US 70 Business.

Although the NC 42 corridor contains an interchange with I-40, the interchange itself is excluded from STIP Project R-3410. Improvements to the interchange are being evaluated under STIP Project No. I-4739 and extend from Old Drug Store Road (SR 1524) to just east of Bratton Drive. The break in the R-3410 project is logical, given the high volume of vehicles turning west from the eastbound I-40 ramp, then turning again within one-half mile of the interchange. In 2016, 18,600 vehicles per day (vpd) turned west onto NC 42 from I-40, where the current Annual Average Daily Traffic (AADT) volume is 35,600. Traffic volume on NC 42 drops by 60 percent to 14,500, west of Old Drug Store Road, with 8,600 vpd turning right on Glen Road (SR 1547), 12,300 vpd turning either left or right onto Cleveland Road (SR 1010) and 8,100 vpd turning left onto Old Drug Store Road.

On the east side of I-40, the turning movements from NC 42 are not as high, and the interchange project extends approximately 1,600 feet along NC 42, to incorporate roadway approach improvements that could affect two nearby signalized intersections, Cleveland Crossing Drive (SR 1628) and Bratton Drive.

The 8-mile long project is of sufficient length to address environmental issues on a broad scope. It has independent utility, as it will reduce congestion along NC 42 even if no additional transportation improvements in the area are made, and the proposed improvements do not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

Social and Economic Conditions

<u>Population.</u> Since the opening of the I-40 interchange at NC 42 in 1990 population growth has accelerated in Johnston County. Access to I-40, via the NC 42 interchange and the US 70 Bypass (Clayton Bypass) has shortened commuting times to employment centers in Wake County and Research Triangle Park, helping to make northwestern Johnston County and the Town of Clayton attractive residential locations.

Between 1990 and 2010, Johnston County experienced a 108 percent rate of growth (Table 3). Though the County's growth rate is expected to slow, projections indicate that it will continue to add residents at a rate substantially higher than the state as a whole through 2037. In 2010, the county had 168,878 residents. By 2037 (the last year forecasts are available), it is expected to grow to over 303,000. Most of the growth will occur in the northwestern portion of the county and around its towns.

The Town of Clayton is also growing rapidly. Between 1990 and 2010, the town's population grow by 239 percent. Its 2010 population was 16,116. By 2040, Clayton is expected to have over 38,000 residents.

Table 3. Population Trends

	1990	2000	2010	2020	2030	2037/2040
Johnston County	81,306	121,965	168,878	220,591*	271,031*	303,201*
Clayton	4,756	6,973	16,116	22,612	30,380*	38,148*
North Carolina	6,632,448	8,046,813	9,535,483	11,039,342*	12,463,244*	12,553,271*
		Growth 1990-2000	Growth 2000-2010	Growth 2010-2020	Growth 2020-2030	Growth 2030-2037/2040
Johnston County		50.0%	38.4%	30.6%	22.9%	11.9%
Clayton		46.6%	131.0%	40.3%	34.4%	25.6%
North Carolina		21.3%	18.5%	15.8%	12.9%	0.7%

**Projected. Note that 2037 projections are for Johnston County and North Carolina.*
Sources: NC Office of Budget and Management Demographics, Town of Clayton 2040 Comprehensive Plan, US Census Bureau 2000 Census Summary File 1.

<u>Existing and Future Development.</u> Land use immediately adjacent to the NC 42 corridor is comprised of a mix of commercial, residential, and institutional development, with some active farms in the vicinity of the US 70 Bypass interchange and near NC 50, the project's western terminus. The project vicinity is predominantly comprised of suburban residential developments, mostly single family homes. "For sale" signs are common on vacant land in the area. Commercial clusters exists around the I-40 interchange, Cleveland Road, and NC 50. Institutional uses are scattered throughout the project corridor, and include West Clayton Elementary School, Johnston County UNC Health Care Hospital, and several churches.

The Town of Clayton's 2040 Comprehensive Plan, as well as Johnston County's 2030 Comprehensive Plan anticipate and support continued suburban residential and commercial development along NC 42 throughout the project area. Additionally, a higher-intensity mix of residential, retail, and heath care providers is planned around the hospital, just east of the US 70 Bypass interchange.

3.2 Purpose and Need Statement

The Purpose and Need Statement from the Type III Categorical Exclusion that was signed on July 2, 2018 (R-3410 Categorical Exclusion) is as follows with minor changes to reflect the current road designations in the corridor:

The primary need for the proposed improvements is the increasing traffic congestion along NC 36. As northwestern Johnston County has developed from a rural area to more characteristically suburban, traffic volumes on NC 36 have steadily grown. Currently, all but two signalized intersections along NC 36 operate at Level of Service (LOS) D or better during the morning and evening peak hours. The other two, Old Drug Store Road (SR 1524) and Cornwallis Road (SR 1525), currently operate at LOS E.

Rapid development around two-lane NC 36 will soon over-burden its capacity, leading to substantial congestion during morning and evening peak hours. By 2040, the project's design year, traffic volumes will exceed the roadway's capacity, causing substantial delay and queuing at most signalized and unsignalized intersections. Eight of the thirteen currently signalized intersections will operate at LOS E or F during one or both of the weekday peak hours. To alleviate this congestion and accommodate the increase in traffic, additional roadway capacity is needed.

The primary purpose of the project is to provide additional capacity on NC 36. To ensure that roadway improvements can support forecasted traffic growth, the project's primary objective is to achieve a LOS D or better for the corridor as a whole in 2040. Roadways operating at LOS D are generally considered to be operating at capacity.

3 Project Study Area Defined

The proposed study area boundary illustrated on project mapping (Figure 1) includes logical termini and is of sufficient size to allow the development of one or more alternatives that meet the Purpose and Need for the proposed project. The study area extends 8.3 miles along NC 36 from the NC 50 intersection at the western project terminus to US 70 Business in Clayton, generally encompassing an area 200 feet on each side of the existing road centerline. The study area also includes sufficient area along y-lines, as appropriate, along the following intersecting roads:

- NC 50
- Cornwallis Road
- Government Road
- Amelia Church Road
- Guy Road/Barbara Mill Road

The general dimensions of the study area are a 200-foot buffer from the existing center line along the project length of NC 36, excluding the interchanges at I-40 and I-42. The intersecting roads have a 50-foot buffer extending 500 feet in both directions from the NC 36 intersections.

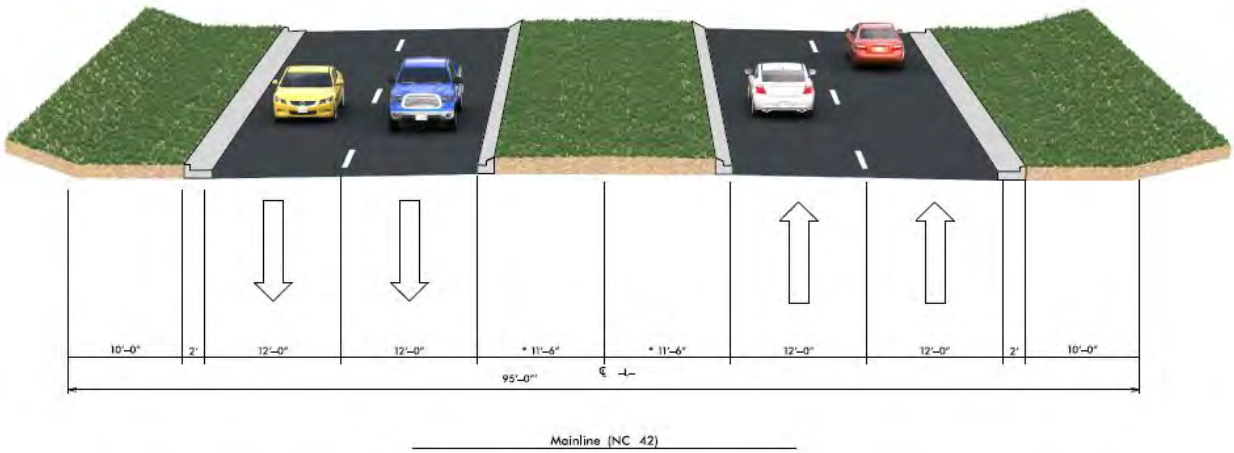
4 Detailed Study Alternatives

Proposed Typical Section

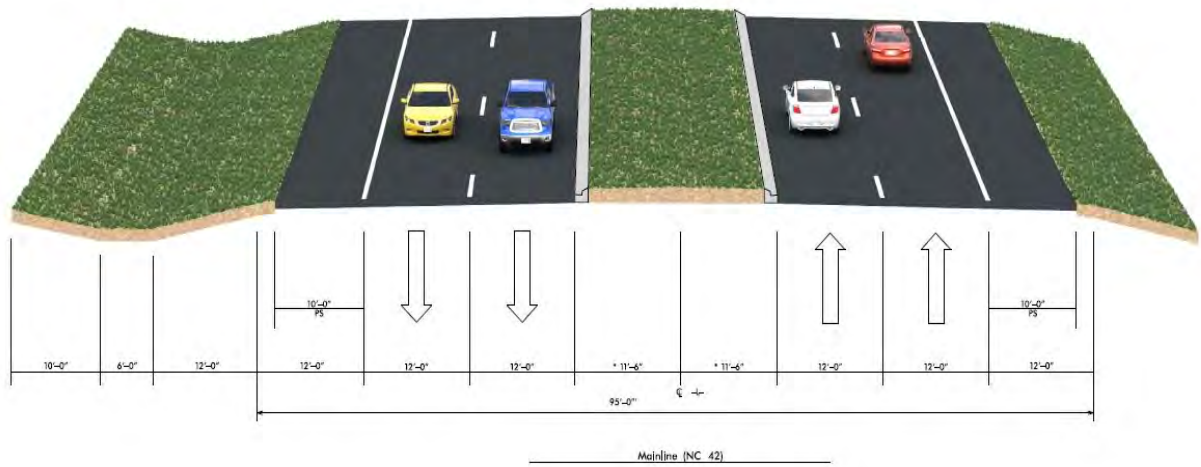
The proposed general typical-section for widening this section of NC 36 includes four 12-foot travel lanes and a 23-foot grass median. The proposed design speed is 40 to 50 mph, variable. The typical section is consistent with the NCDOT Roadway Design Manual for this type of facility and design speeds.

To avoid impacts to existing resources and to tie into the existing facilities the general typical section was adjusted as follows:

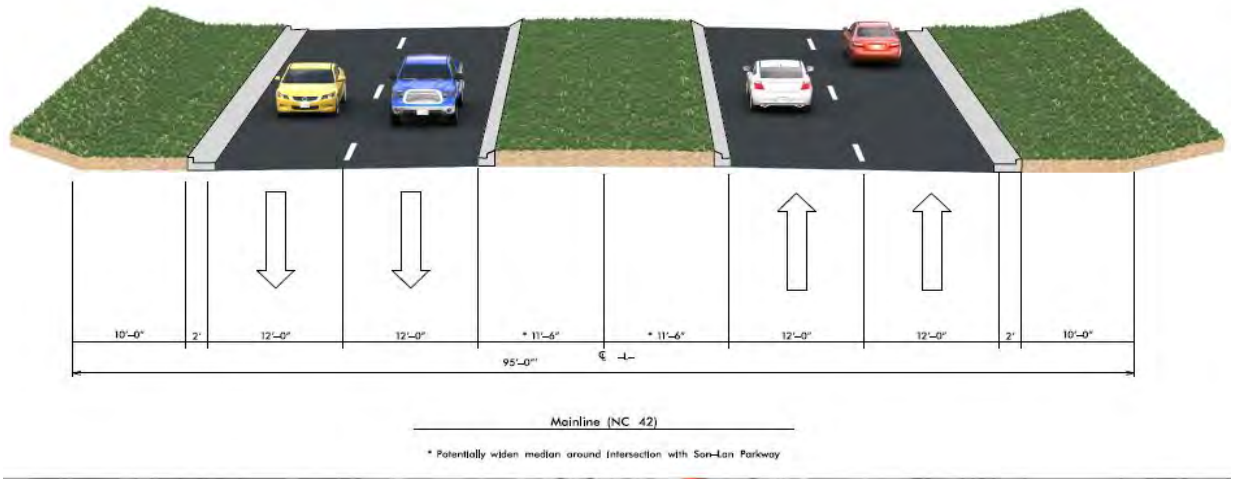
Curb and Gutter section from NC 50 to Old Drug Store Road (West Area).



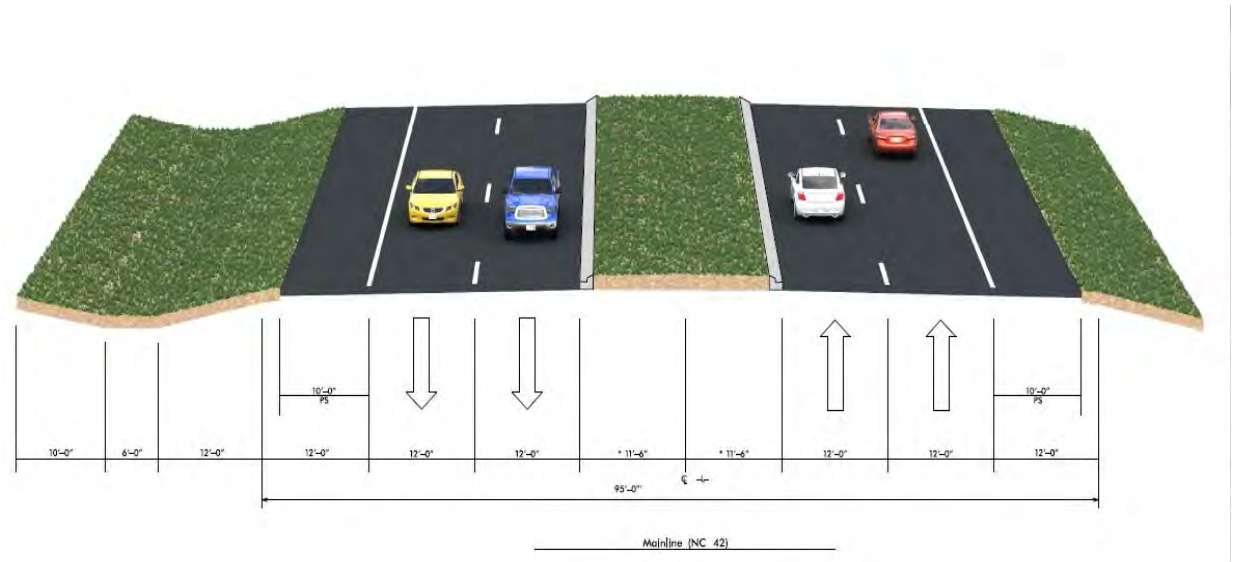
Shoulder section from NC 50 to Old Drug Store Road (West Area).



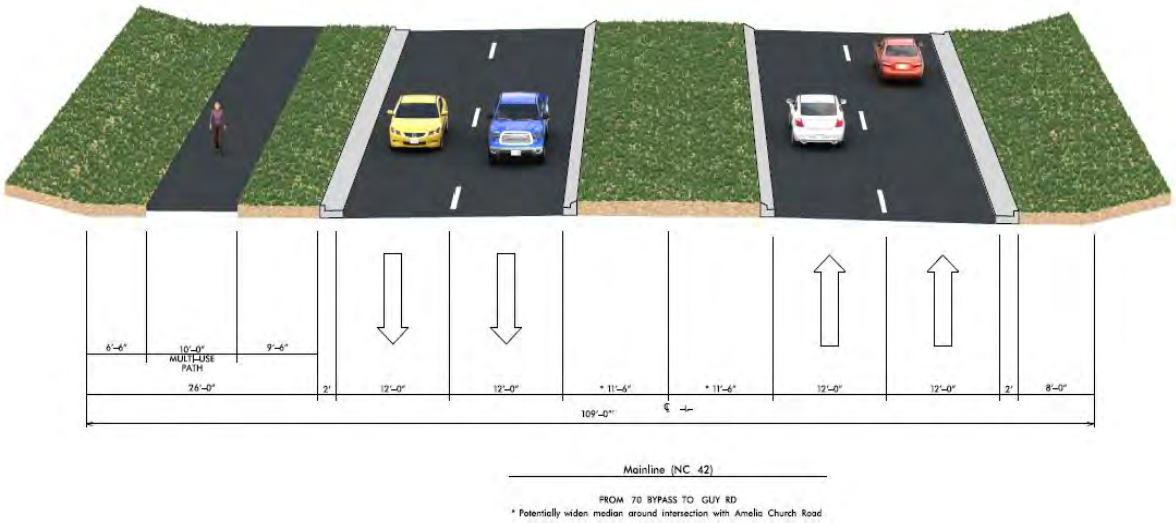
Curb and Gutter section west of Son-Lan Parkway (Central Area)



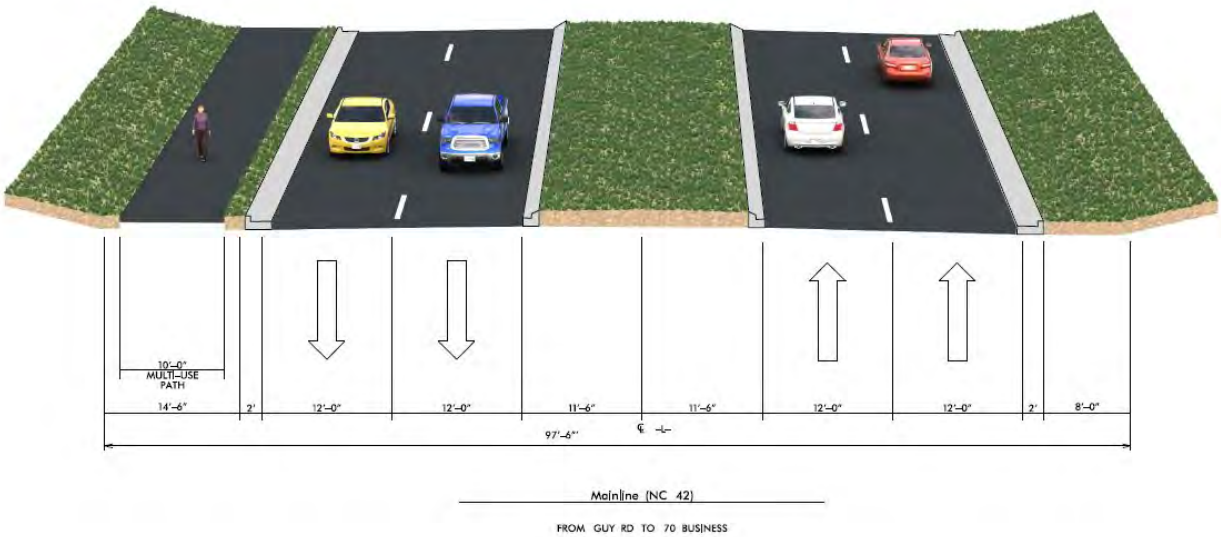
Shoulder section east of Son-Lan Parkway (Central Area)



Curb and Gutter section from I-42 (US 70- Bypass) to Guy Road (East Area)



Curb and Gutter section from Guy Road to US 70 Bus. (East Area)



NCDOT is in discussions with the Town of Clayton to include sidewalk and/or Multiuse Path (MUP) along both sides of NC 36 in the East Area.

Best Fit Widening Alternative

Utilizing known environmental and community features, a preliminary best-fit alignment was created. This best fit alternative proposes to widen NC 36 with a best fit alignment from the intersection with NC 50 to US 70 Business in Clayton. This alignment is a hybrid of north and south widening that allows for the opportunity to avoid impacts to historical architecture, community resources and jurisdictional resources, as needed. Figures 4A to 4H depict the potential impact footprint for the Best Fit Alternative. The impact area includes a buffer that reflects the stage of design and allows for conservative evaluations of potential impacts. Those designs that are at or near DRPS include a 40-foot buffer outside of the cut and fill slopes (West Area and East Area). The design for the Central Area is approaching Right-of Way stage. Its impact footprint is the combined perimeter of easements and right-of-way with a 15-foot buffer added to the exterior. Table 3 and 4 provides the impacts to streams and wetlands for the Best-Fit Alternative with buffers and Table 5 provides potential impacts to Other Environmental Features.

Table 3. Potential Impacts to Streams

Stream Name/NRTR Identification	**Length (ft)**
Buffalo Creek	323.3
Little Creek	241.76
SA	58.39
SA-1	114.77
SA-2	285.56
SB	325.5
SE	342.59
SG	125.75
SG-1	204.04
SH	95.94
SI	204.95
SL	50.45
SO	90.1
SP	31.53
SQ	53.6
SR	370.5
SS	42.97
ST	270.05
SU	397.15
Swift Creek	262.41
SY	506.38
White Oak Creek	280.62
TOTAL	**4,737.58**

Table 4. Potential Impacts to Jurisdictional Wetlands

Name	Area (Acres)
WAA	0.05
WB	0.03
WBB	0.39
WC	0.5
WE	0.05
WF	0.11
WG	0.04
WI	0.04
WJ	0.65
WM	0.02
WN	0.13
WP	0.07
WQ	0.29
WR	0.87
WS	0.06
WT	0.18
WW	0.03
WZ	0.28
	3.79

Table 5. Potential Impacts to Other Environmental Features

ENVIRONMENTAL FEATURES		POTENTIAL IMPACTS
Relocations[1]	Residential	12
	Businesses	10
	Total Relocations	***22***
Historic Properties (effect)		No Adverse Effect (2)
Archeological Resources		0
Community Facilities		2 [3]
Noise Receptors[2]		175
Federally Protected Species	Dwarf wedgemussel	MA-LAA[4]
	Atlantic pigtoe	MA-LAA
	Yellow lance	MA-LAA
	Carolina madtom	MA-LAA
	Neuse River waterdog	MA-LAA
	Southern hognosed snake	TBD
	Red-cockaded woodpecker	No Effect
	Tricolored bat	MA-LAA
	Monarch butterfly	TBD

1. Estimate based on review of 2025 Public Meeting Maps (Public Meeting Maps Central and East and Public Meeting Maps West) and current aerial photography.

2. Noise receptors are noise-sensitive locations where human activity may be impacted by high noise levels.

3. The Town of Clayton Operations Center will experience minor right-of-way acquisition and driveways will be relocated.

   West Clayton Elementary School will experience right-of-way acquisition, and its parking and internal circulation system will be revised.

4. May Affect – Likely to Adversely Affect

Other Alternatives

North Side Widening Alternative

The north side widening alternative proposed to widen NC 36 from NC 50 to US 70 Business. This alternative would have the majority of its impacts to properties on the north side of the facility with limited opportunities to avoid resources. The project coordination with resource agencies and FHWA did not recommend carrying this alternative forward for detailed analysis (R-3410 Meeting Minutes).

South Side Widening Alternative

The south side widening alternative proposed to widen NC 36 from NC 50 to US 70 Business. This alternative would have the majority of its impacts to properties on the south side of the facility with limited opportunities to avoid resources. The project with resources agencies and FHWA did not recommend carrying this alternative forward for detailed analysis (R-3410 Meeting Minutes).

No Build Alternative

The No-Build alternative consists only of routine maintenance along NC 36 within the project study area. This alternative does not include any pavement widening. This alternative would not meet the Purpose and Need.

5 Bridging Decisions

There are three (3) existing bridges over perennial streams in the project corridor. Currently each bridge is a 2-lane bridge with one travel lane in each direction. It is proposed that each bridge will be replaced with dual bridges for 2 travel lanes in each direction. The existing bridges will be utilized during construction to carry traffic as a new structure is built to one side. The new structure will serve as an on-site detour for all the traffic so that the old bridge can be demolished and the second of the bridge pair can be constructed. Details on construction staging have not been finalized and are subject to change.

The structures were evaluated in the Hydraulic Planning Report completed in 2018 (R-3410 Hydraulic Planning Report).

Johnston County Bridge No. 21 at Swift Creek

Bridge No. 21 over Swift Creek is a 113-foot, 3-span reinforced concrete structure with I-beams. It was constructed in 1947. It currently has a sufficiency rating of 33.86 out of 100 and is considered structurally deficient for deck geometry and overall-structure (Routine Bridge Report, January 12, 2024). The replacement structures at Swift Creek are proposed to be 3-span, 400-foot long bridges aligned to the south of the existing structure (R-3410 Bridge Survey and Hydraulic Design Report Swift Creek, 2023).

Johnston County Bridge No. 45 at White Oak Creek

Bridge No. 45 over White Oak Creek is a 225-foot, 6-span reinforced concrete structure with I-beams. It was constructed in 1947. It currently has a sufficiency rating of 38.92 out of 100 and is considered structurally deficient for overall-structure (Routine Bridge Report, January 12, 2024). The replacement structures at White Oak Creek are proposed to be 3-span, 160-foot long bridges aligned to the south of the existing structure (R-3410 Bridge Survey and Hydraulic Design Report White Oak Creek, 2023).

Johnston County Bridge No. 58 at Little Creek

Bridge No. 45 over Little Creek is a 70-foot, 2-span, prestressed cored slab structure. It was constructed in 1967. It currently has a sufficiency rating of 70.07 out of 100 (Routine Bridge Report, January 26, 2024). The replacement structures at White Oak Creek are proposed to be 150-foot long bridges aligned to the south of the existing structure.

There are 2 box culverts in the R-3410 corridor. Both culverts are in the West Area near NC 50. The structures were evaluated in the Hydraulic Planning Report completed in 2025 (R-3410 Hydraulic Planning Report West).

The current culvert at Buffalo Creek is a 2-barrel 9'x 8' reinforced concrete box culvert (RCBC). It is recommended to be extended with a 2-barrel 9' x 9' RCBC (buried 1-foot) 85.8 feet to the north and 51.6 feet to the south. The second existing box culvert is on an unnamed tributary to Buffalo Creek and is a single-barrel 7' x7' RCBC. It is recommended to be replaced to the east of the existing with an approximately 160-foot long 2-barrel 8' x 6' RCBC.

6 Avoidance and Minimization

During September 2017 and January 2018 coordination meetings were held with the Federal Highway Administration (FHWA), US Army Corps of Engineers (USACE), NC Division of Water Resources (NCDWR), and NCDOT (R-3410 Meeting Minutes September 2017 and R-3410 Meeting Minutes January 2018). The purpose of the meetings was to discuss the Merger Process relative to the project and potential USACE permitting concerns, and to discuss development of the Best-Fit Alignment. The following is a summary of the development of the Best-Fit Alternative and minimization efforts associated with alignment shifts.

- At NC 50, the widening begins symmetrically on the existing roadway to tie into the lanes west of NC 50.
- The roadway then shifts to the north to minimize impacts to Stream SA-P (UT to Buffalo Creek). (*The naming identifies for the streams and wetlands correspond to the identifiers utilized in the 2018 NRTR*). Steeper slopes to further minimize impacts will be considered in final design.
- A U-turn bulb was located between Stream SA-P and Buffalo Creek to avoid impacts to both.
- The widening shifts to the north, becoming symmetrical near Wood Haven Lane, to minimize impacts to Wetland WC on the south side, as well as impacts to a veterinary hospital and other businesses.
- East of I-40, the widening begins symmetrically to tie into the design planned for I-4739 (I-40 interchange improvements) and minimize business impacts.
- The widening then shifts to the south, east of Son-Lan Parkway. A large wetland complex surrounds Swift Creek, where a new bridge will be constructed to the south of the existing bridge. The southern shift minimizes impacts to Wetlands WI and WJ, on the north side. Wetland WJ is the only wetland potentially impacted over 0.5 acre. USACE asked if further minimization to that wetland is possible, however it was noted that WJ is located at the toe of the slope.
- The widening continues on the south side to avoid impacts to residences and business and crosses White Oak Creek with a new bridge to the south of the existing bridge (the existing bridge will also be replaced).

- The widening becomes symmetrical around the US 70 Bypass interchange to tie into existing lanes.
- East of US 70 Bypass, the widening shifts to the north to avoid impacts to a medical office complex on the south side of NC 42, across from the Johnston County UNC Hospital complex.
- East of Amelia Church Road, the widening becomes symmetrical, avoiding displacements of residences and businesses on each side of NC 42.
- West of Barber Mill Road, the widening shifts to the north to avoid impacts to a historic property. This impacts West Clayton Elementary School, located directly across NC 42 from the historic property.
- Barber Mill Road will be realigned to the west, moving it away from the school entrance and the conflicts with school buses and parents picking up / dropping off students. It was noted that the realignment takes advantage of a dedicated right-of-way corridor adjacent to the Town of Clayton maintenance facility.
- East of the elementary school, the widening shifts to the south to avoid impacting a church, then becomes symmetrical when crossing Little Creek and tying into existing lanes at US 70 Business. Minimal impacts to Wetlands WP and WN are possible on each side of NC 42.

7 Merger Plan Review/Next Steps

Based on the Merger Plan for the project, NCDOT proposes that the next Merger Meeting will be a combined CP 3 (LEDPA) and CP 4A (Avoidance and Minimization Measures), tentatively scheduled for July 2026. Concurrent with the next Merger Meeting, NCDOT will complete a Right-of-Way Consultation. Merger Team members will be notified of any changes that require a revision of this timetable.

Figures

1 - Project Vicinity and Study Area

2 - Other STIP Projects in Area

3A to 3F - Environmental Features Map

4A to 4H - Potentially Impact Footprints with Jurisdictional Resources

Preliminary & Subject to Change

Garner

Clayton

Wake County

Johnston County

Veterans Parkway

US Highway 70 W

North Carolina Department of Transportation

WGI

STIP Project No. R-3410
NC 42 Improvements from
NC 50 to US 70 Business
Johnston County, North Carolina

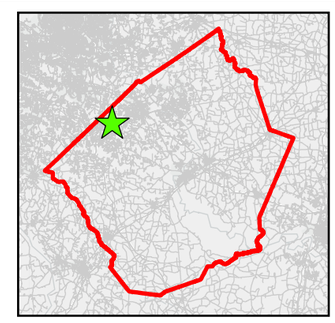
February, 2026

R-4310 Study Area

County Boundary

N

0 1 2 4 Miles



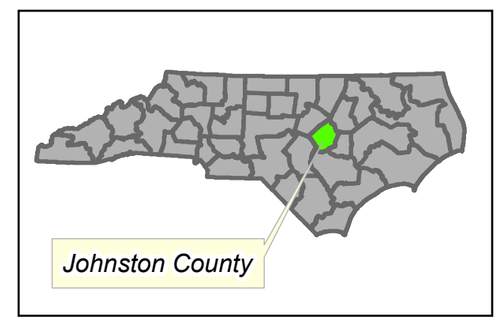


Fig. 1 - Project Vicinity and Study Area

Preliminary & Subject to Change

Garner

Clayton

I-5111

TO-6166

BL-0050

U-5943

I-4739

Veterans Parkway

R-3410

U-6208

U-6216

Wake County

Johnston County

North Carolina Department of Transportation

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STIP Project No. R-3410
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NC 50 to US 70 Business
Johnston County, North Carolina

March, 2026

STIP Project Locations

NC Route

Rivers and Streams

STIP Project R-3410

Statewide Highway Project

Regional Highway Project

Division Highway Project

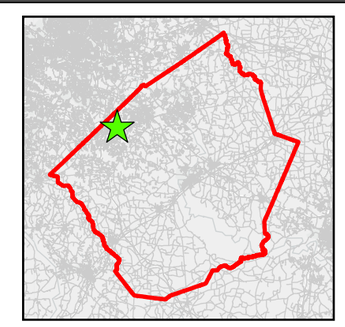
Regional Pub. Trans. Project

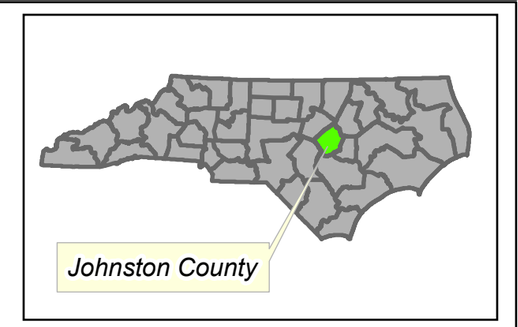
City Limits

County Boundary

N

0 1.5 3 6 Miles





Preliminary & Subject to Change

Project Location

Wake County
Johnston County

Pierce Rd
Nicklaus Dr
Veterans Pkwy
Wood Haven Dr
Old Drug Store Rd
Shipwash Dr
Cleveland Rd
Southfort Dr
Black Angus Dr
Mary Ln
Adams Point Dr
Airedale Trail
Angie Rd
NC 42 W

Wawa
Circle K
Little Pirates on Board! Bilingual Child Development Center
Saint Zion Amanda Missionary Baptist Church
Cleveland Child Care & Development Center
West View Elementary
Food Lion
Sheetz
Middle Creek Commons
Lowe's Food
Publix
Publix Super Market at Middle Creek Crossings
Utley's MHP
Mt. Zion Global Methodist Church

North Carolina Department of Transportation

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STIP Project No. R-3410
NC 42 Improvements from
NC 50 to US 70 Business
Johnston County, North Carolina

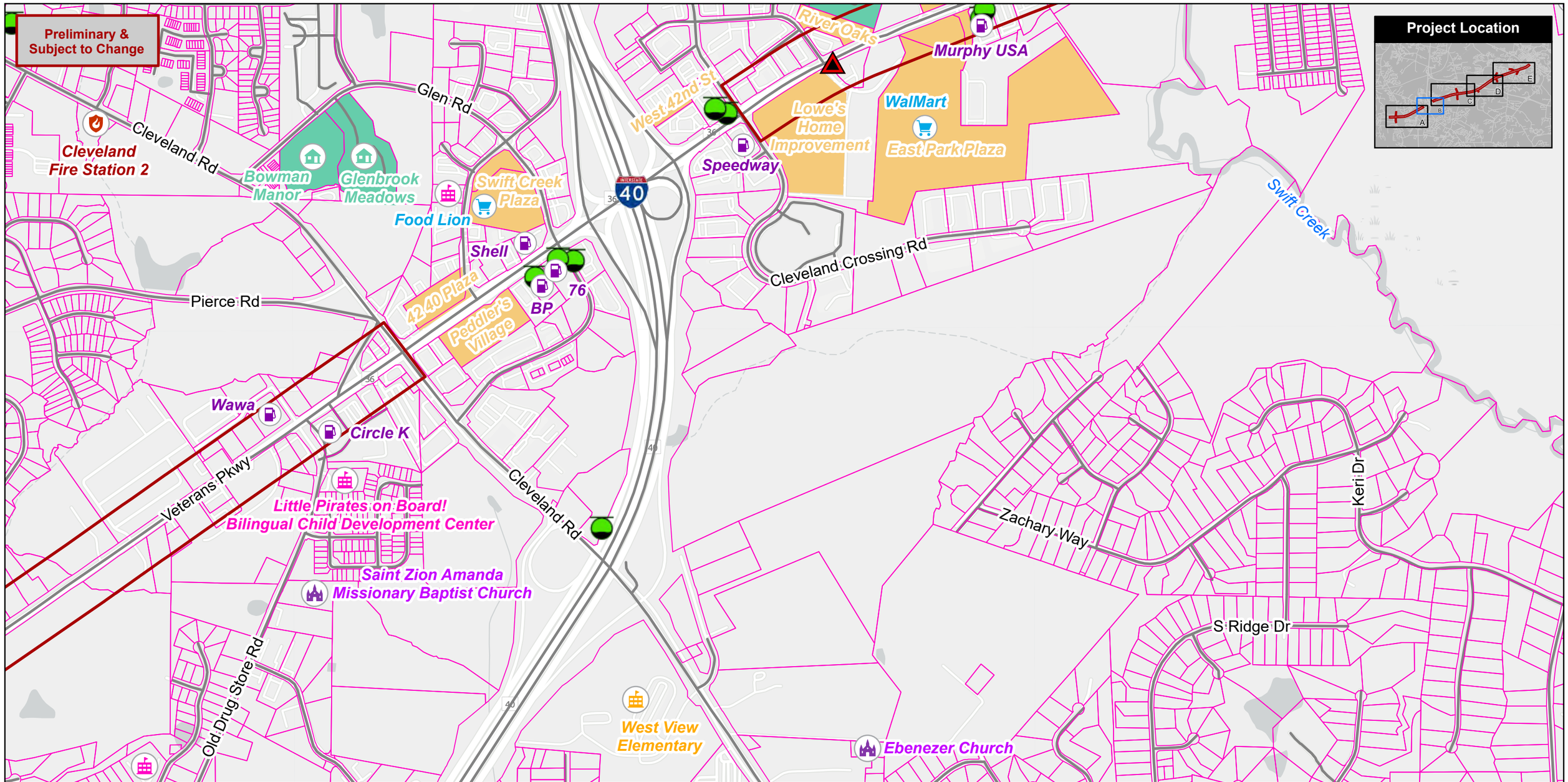
February, 2026

Fig. 3A - Environmental Features

Places of Worship
Mobile Home Park
Day Care Facilities
Grocery Stores
Schools
Gas Stations
Regulated UST - Low Risk
NC Route
Jurisdictional Streams
Jurisdictional Wetlands
Jurisdictional Ponds
Voluntary Agricultural District
Shopping Centers
Parcels
County Boundary
R-4310 Study Area

0 0.25 0.5 1 Miles

N



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STIP Project No. R-3410
NC 42 Improvements from
NC 50 to US 70 Business
Johnston County, North Carolina

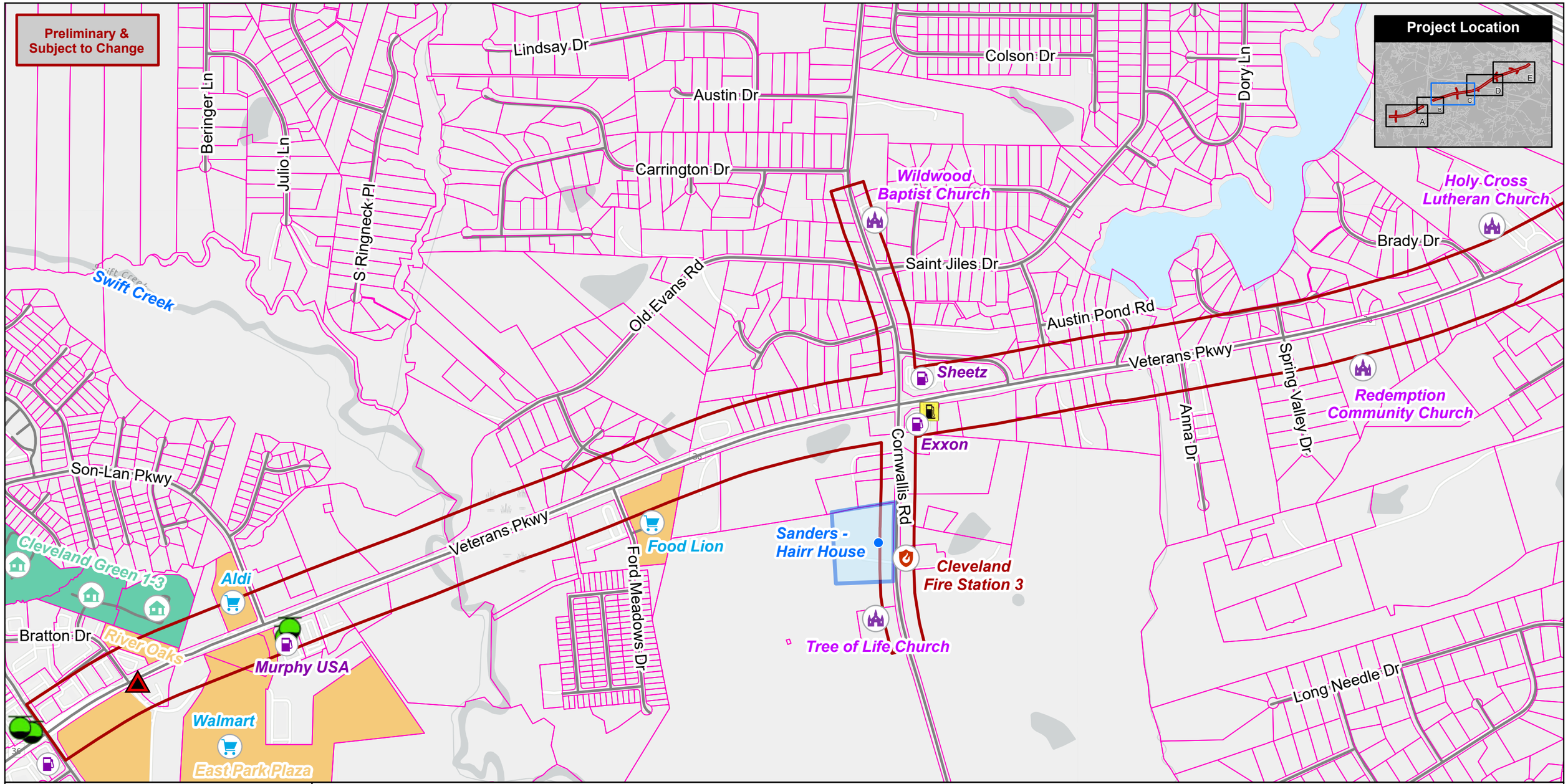
February, 2026

Fig. 3B - Environmental Features

- Places of Worship
- Fire Stations
- Schools
- Grocery Stores
- Day Care Facilities
- Fair Housing Equal Opportunity Property
- Regulated UST - Low Risk
- Gas Stations
- Hazardous Waste Sites
- NC Route
- Jurisdictional Streams
- Jurisdictional Wetlands
- Jurisdictional Ponds
- Fair Housing Equal Opportunity Boundary
- Shopping Centers
- Parcels
- R-4310 Study Area

0 0.25 0.5 1 Miles

N



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STIP Project No. R-3410
NC 42 Improvements from
NC 50 to US 70 Business
Johnston County, North Carolina

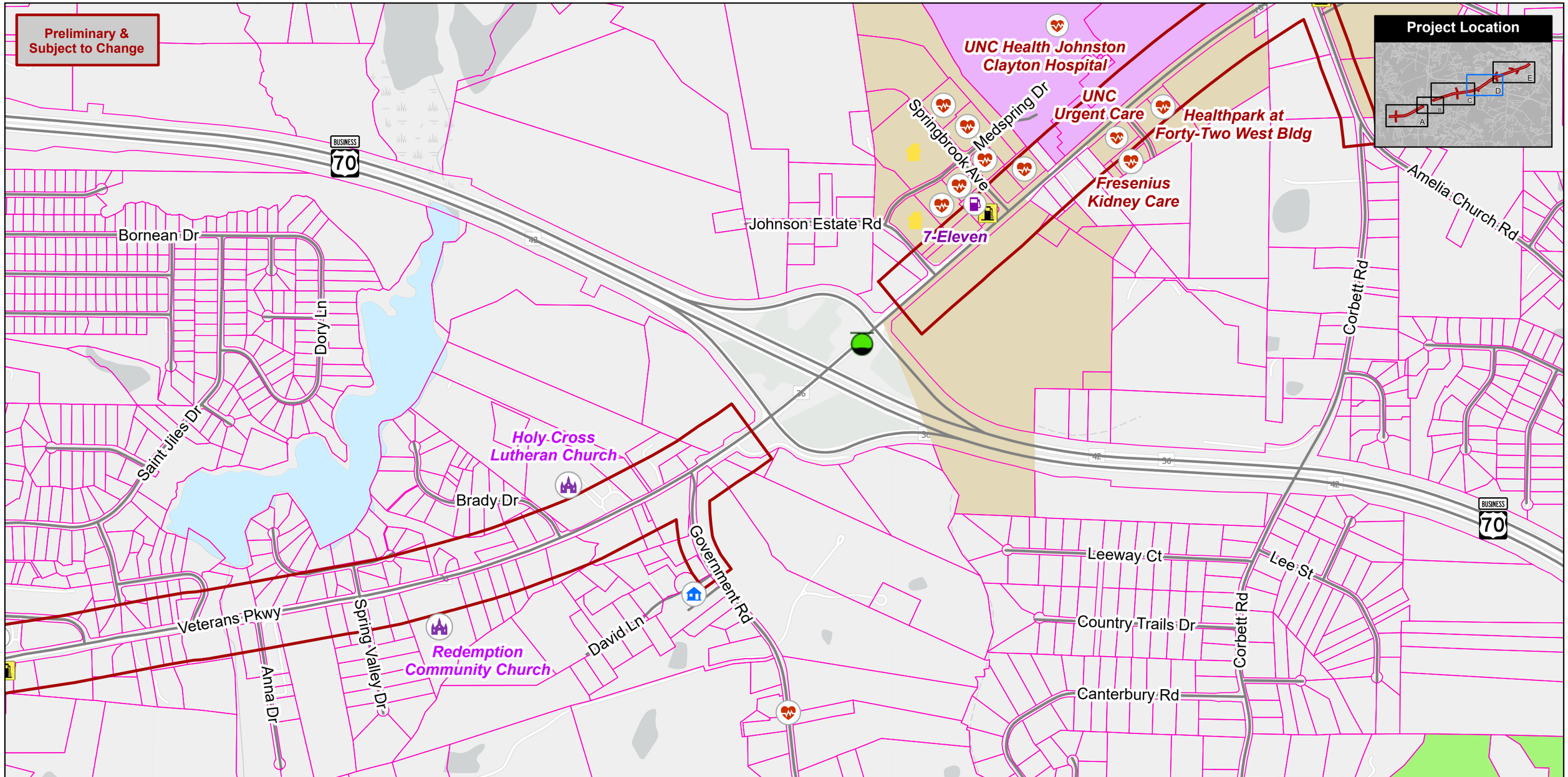
February, 2026

Fig. 3C - Environmental Features

- Places of Worship
- Fire Stations
- Fair Housing Equal Opportunity Property
- Grocery Stores
- Gas Stations
- Regulated UST - Low Risk
- Hazardous Waste Sites
- UST - Active Facilities
- NR Individual Listing
- NC Route
- Jurisdictional Streams
- Jurisdictional Wetlands
- Jurisdictional Ponds
- Fair Housing Equal Opportunity Boundary
- NR Individual Boundary
- Shopping Centers
- Parcels
- R-4310 Study Area

0 0.25 0.5 1 Miles

N



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STIP Project No. R-3410
NC 42 Improvements from
NC 50 to US 70 Business
Johnston County, North Carolina

February, 2026

Fig. 4D - Environmental Features

- Places of Worship
- Mobile Home Park
- Medical Facilities
- Gas Stations
- Regulated UST - Low Risk
- UST - Active Facilities
- Nursing Homes
- NC Route
- Jurisdictional Streams
- Jurisdictional Wetlands
- Jurisdictional Ponds
- UNC Health Johnston Hospital-Complex Boundary
- Clayton Municipal Limits
- Voluntary Agricultural District
- Parcels
- R-4310 Study Area

0 0.25 0.5 1 Miles

N

Preliminary & Subject to Change

Project Location

Christ the King Church
Clayton Middle School
West Clayton Elementary School
Koinonia Reformed Baptist Church
S Lombard St
BUSINESS 70
Iglesia Cristiana El Cordero de Dios
Maplewood Cemetery
Alta MHP
Cricket Hollow Run
Guy Rd
Praise Temple Apostolic Church
BP
Home of Keeper of Records & Seals
Gregory Dr
Amelia Church Rd
Winding Wood Dr
E Moss Creek Dr
Breezewood Ln
Bentwood Ln
Coxwoods Rd
Pinecroft Dr
Laurel Ridge Dr
XRC
State Ave
Han-Dee Hugo's
Woodlawn Way
Waterford Dr
Wexford Dr
Veterans Pkwy
Alder Ln
Amelia Christian Church
Glenbrook Meadows
Iglesia Primeros Frutos
Mt. Calvary Baptist Church
Stone Ln
Stonebrook Dr
Barber Mill Rd
Grovewood Dr
West Clayton Church of God
Sheetz
Short Johnson Rd
Amelia Church Rd

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NC 42 Improvements from
NC 50 to US 70 Business
Johnston County, North Carolina

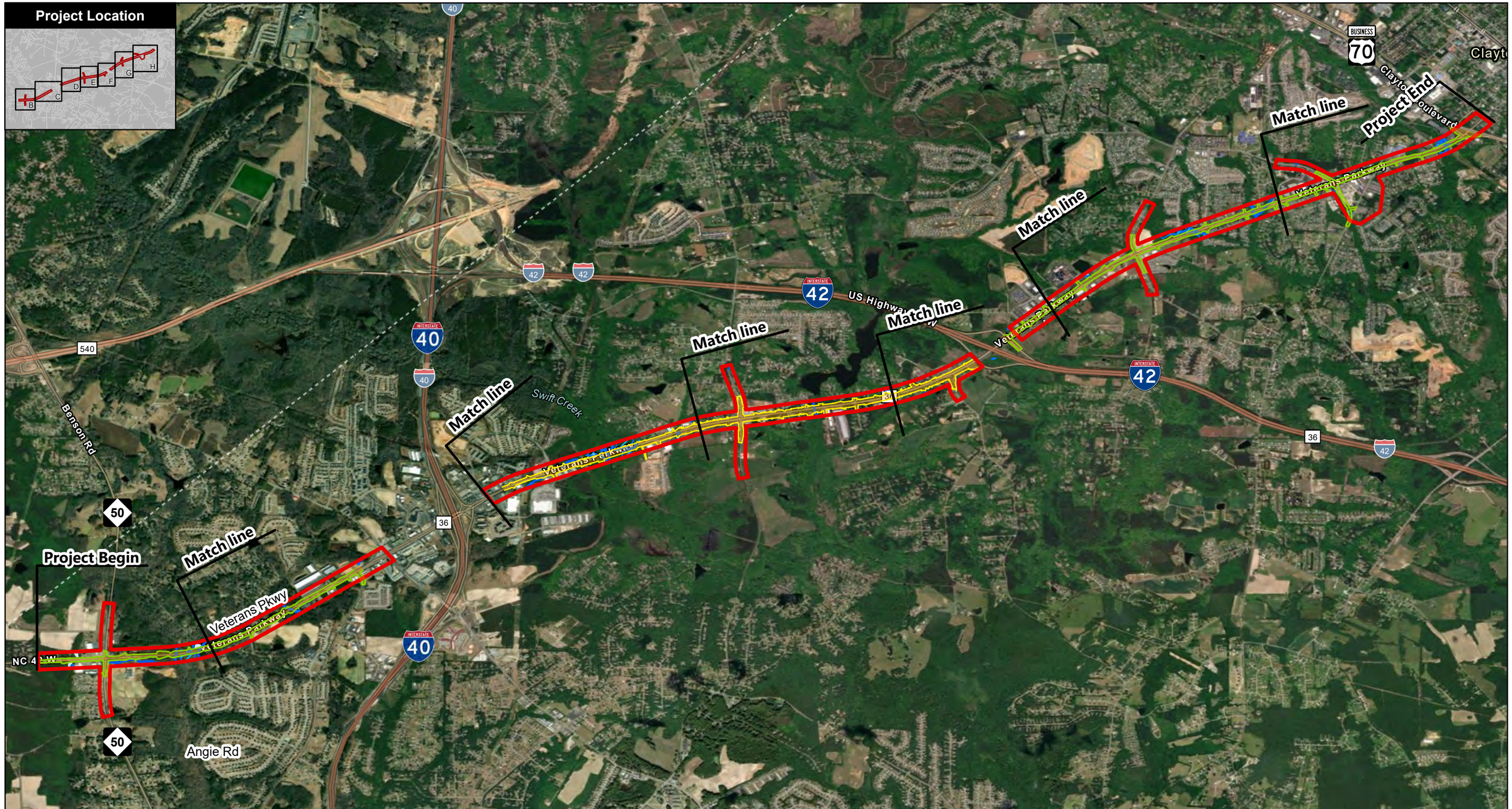
February, 2026

Fig. 3E - Environmental Features

- Places of Worship
- Parks and Rec
- Schools
- Mobile Home Park
- Gas Stations
- Fair Housing Equal Opportunity Property
- Day Care Facilities
- Cemetery
- Regulated UST - Low Risk
- UST - Active Facilities
- Nursing Homes
- DOE - Determined Eligible
- NC Route
- Community Park Loop & Little Creek Loop MUP (Recommended)
- Jurisdictional Streams
- Jurisdictional Wetlands
- Jurisdictional Ponds
- Parks and Rec Property
- Fair Housing Equal Opportunity Parcel
- UNC Health Johnston Hospital-Complex Boundary
- Home of the Keeper of Record and Seals Property
- Town of Clayton Operations Center
- Shopping Centers
- Clayton Municipal Limits
- Parcels
- R-4310 Study Area

0 0.25 0.5 1 Miles

N



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STIP Project No. R-3410
NC 42 Improvements from
NC 50 to US 70 Business
Johnston County, North Carolina
March, 2026

All Areas

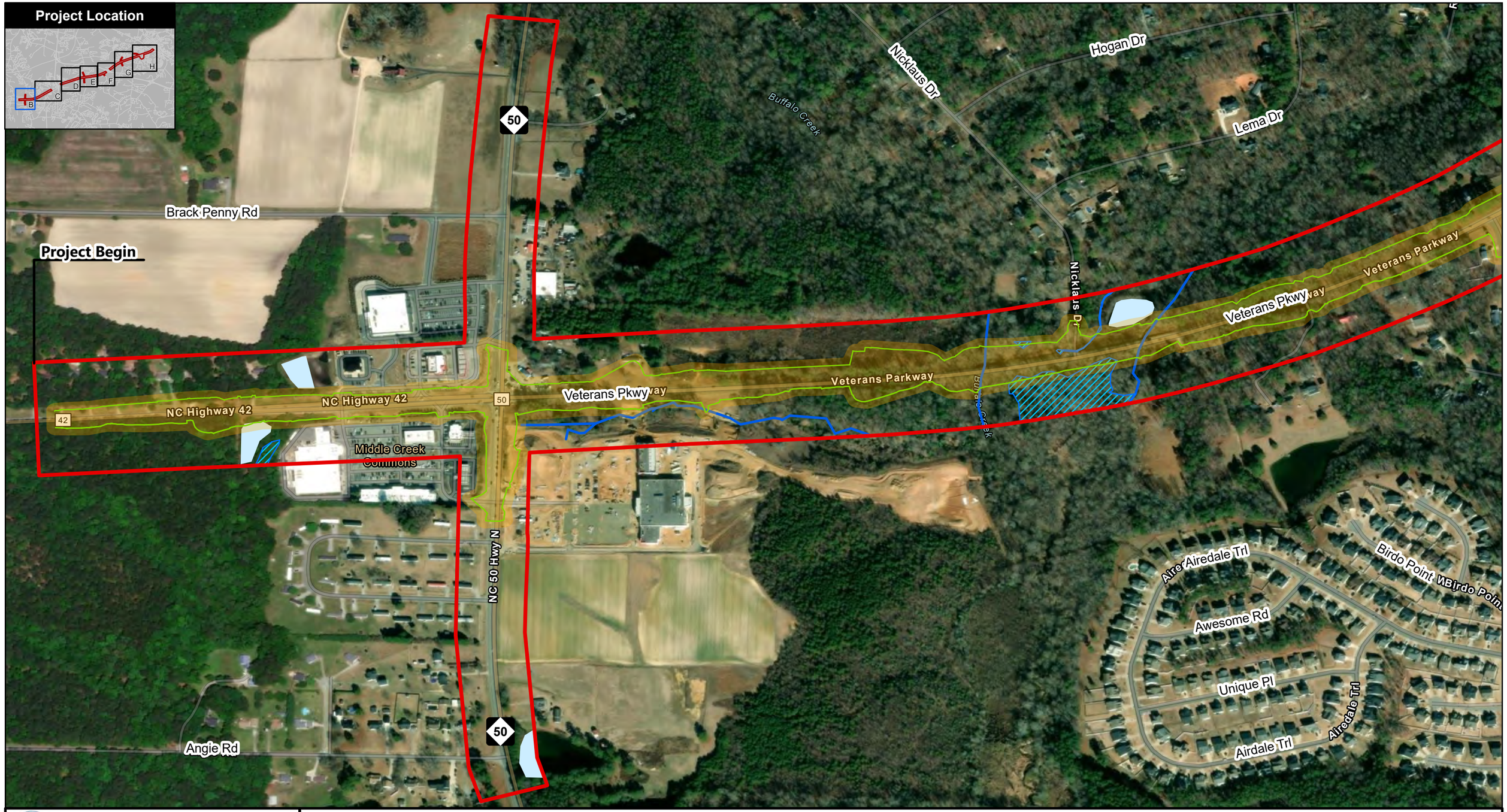
Figure 4A

Potential Impact Footprint

- Cut and Fill Slopes
- Easements and Right of Way
- Streams
- Impact Area - 40 Ft Buffer
- Study Area
- Wetlands
- Ponds

0 3,800 7,600 Feet

N



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STIP Project No. R-3410
NC 42 Improvements from
NC 50 to US 70 Business
Johnston County, North Carolina
March, 2026

West Area

Figure 4B

Potential Impact Footprint

Cut and Fill Slopes
Streams
Impact Area - 40 Ft Buffer
Study Area
Wetlands
Ponds

0 550 1,100 Feet

N

North Carolina Department of Transportation

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STIP Project No. R-3410
NC 42 Improvements from
NC 50 to US 70 Business
Johnston County, North Carolina
March, 2026

West Area

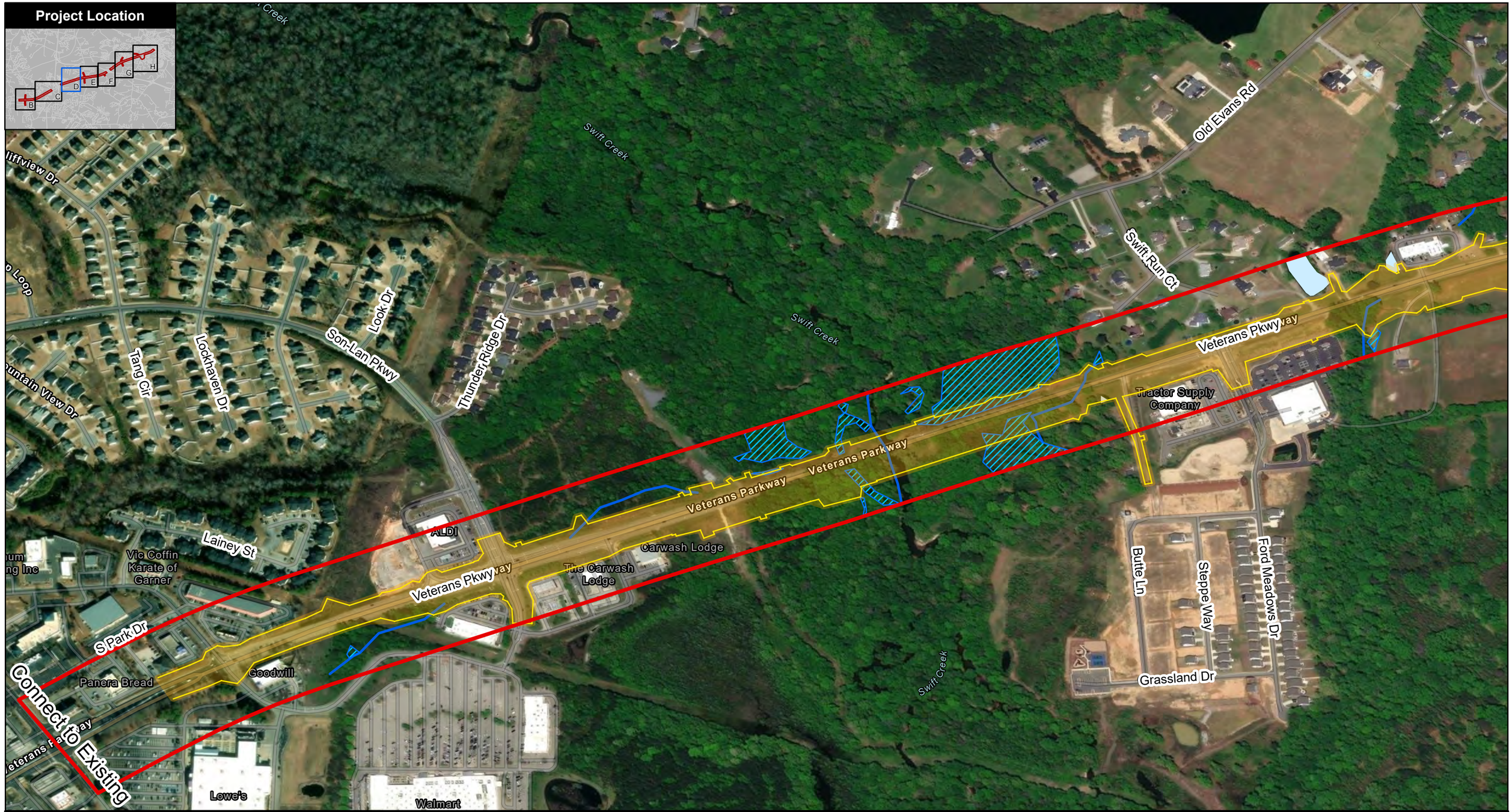
Figure 4C

Potential Impact Footprint

Cut and Fill Slopes
Streams
Impact Area - 40 Ft Buffer
Study Area
Wetlands
Ponds

0 550 1,100 Feet

N



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STIP Project No. R-3410
NC 42 Improvements from
NC 50 to US 70 Business
Johnston County, North Carolina
March, 2026

Central Area

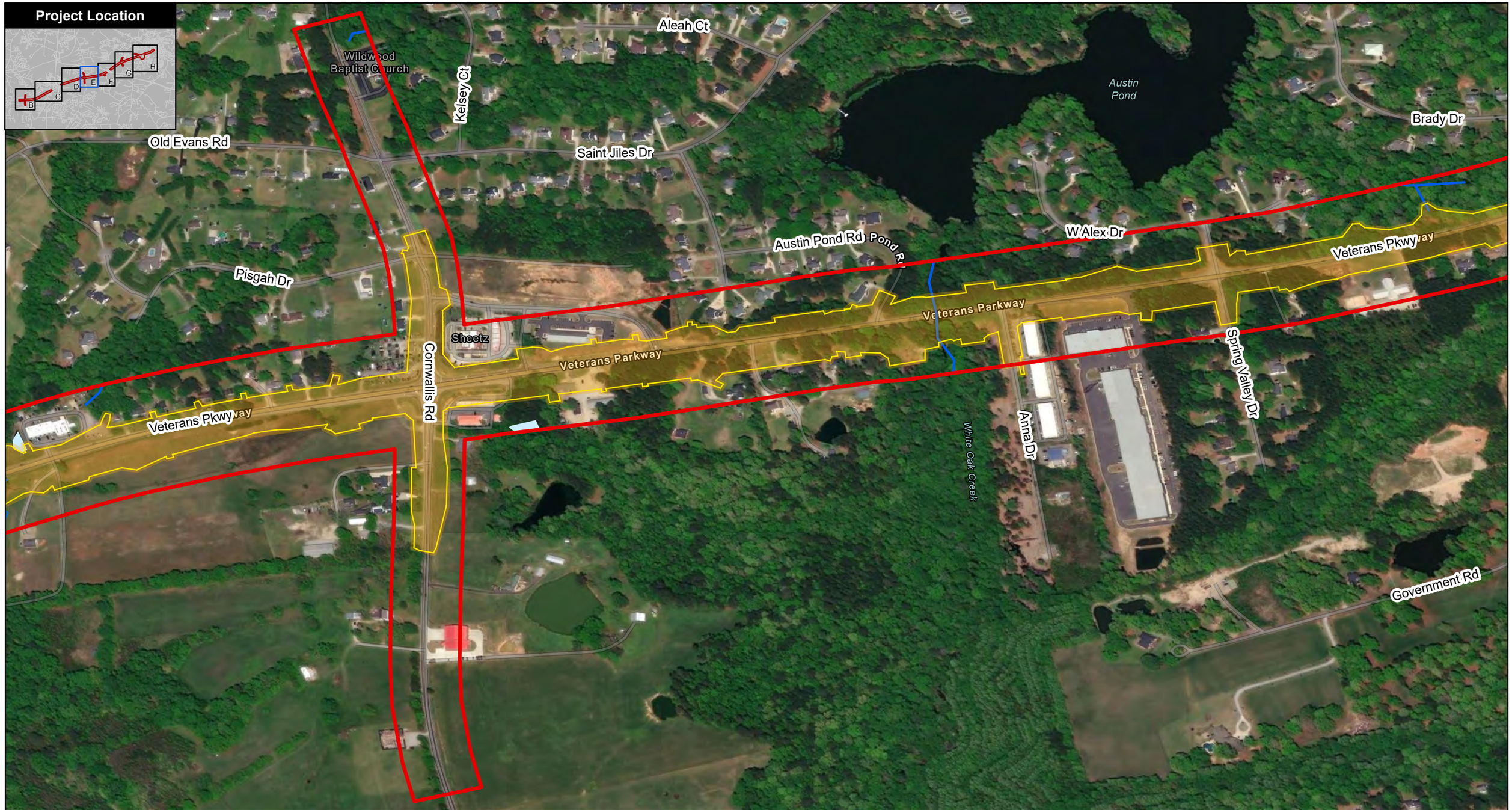
Figure 4D

Potential Impact Footprint

Easements and Right of Way
Streams
Impact Area - 15 Ft Buffer
Study Area
Wetlands
Ponds

0 550 1,100 Feet

N



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STIP Project No. R-3410
NC 42 Improvements from
NC 50 to US 70 Business
Johnston County, North Carolina
March, 2026

Central Area

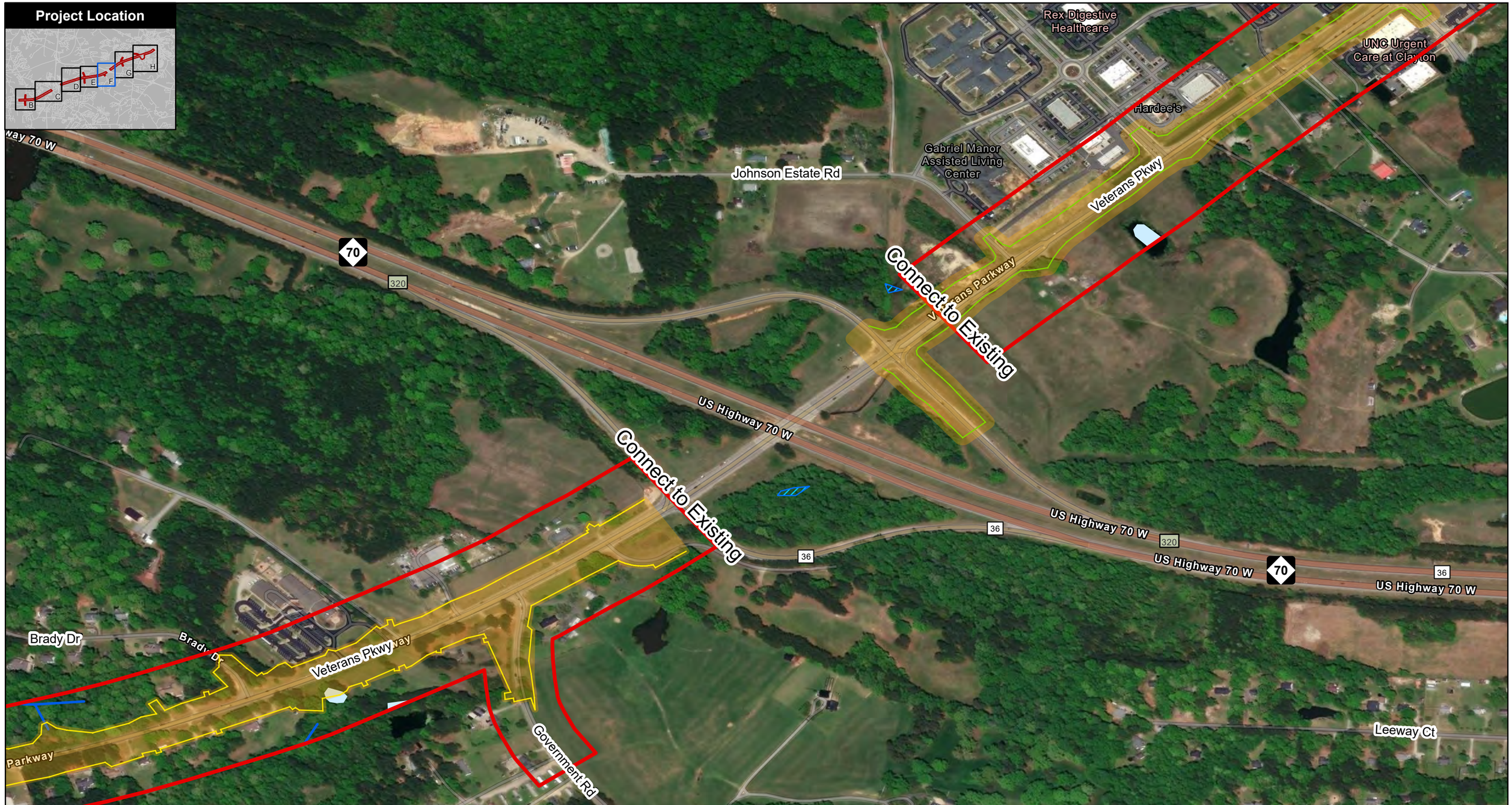
Figure 4E

Potential Impact Footprint

Easements and Right of Way
Streams
Impact Area - 15 Ft Buffer
Study Area
Wetlands
Ponds

0 550 1,100 Feet

N



North Carolina Department of Transportation

WGI

STIP Project No. R-3410
NC 42 Improvements from
NC 50 to US 70 Business
Johnston County, North Carolina
March, 2026

Central Area

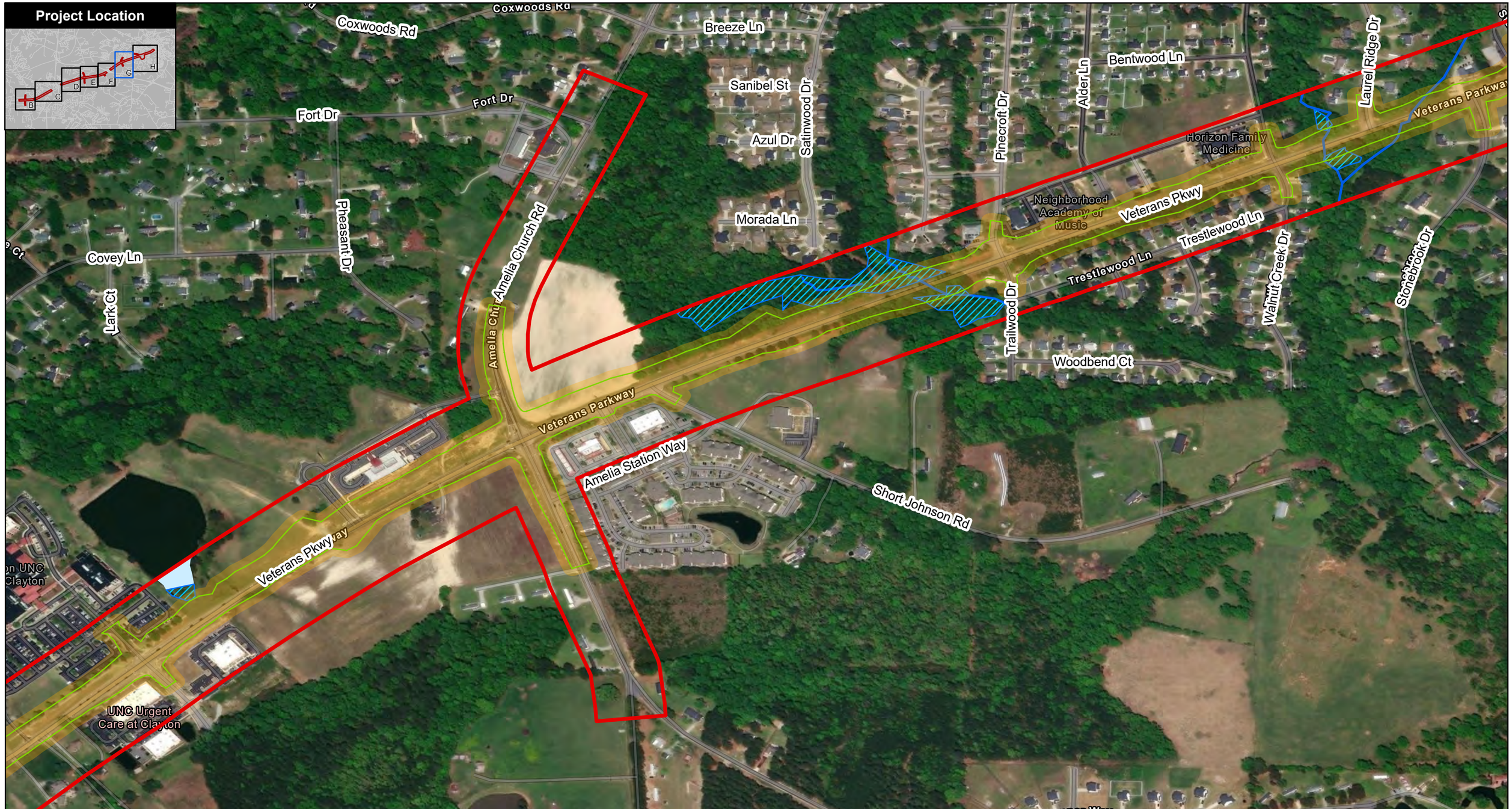
Figure 4F

Potential Impact Footprint

- Easements and Right of Way
- Cut and Fill Slopes
- Streams
- Impact Area - 15 Ft Buffer
- Study Area
- Wetlands
- Ponds

0 550 1,100 Feet

N



North Carolina Department of Transportation

WGI

STIP Project No. R-3410
NC 42 Improvements from
NC 50 to US 70 Business
Johnston County, North Carolina
March, 2026

East Area

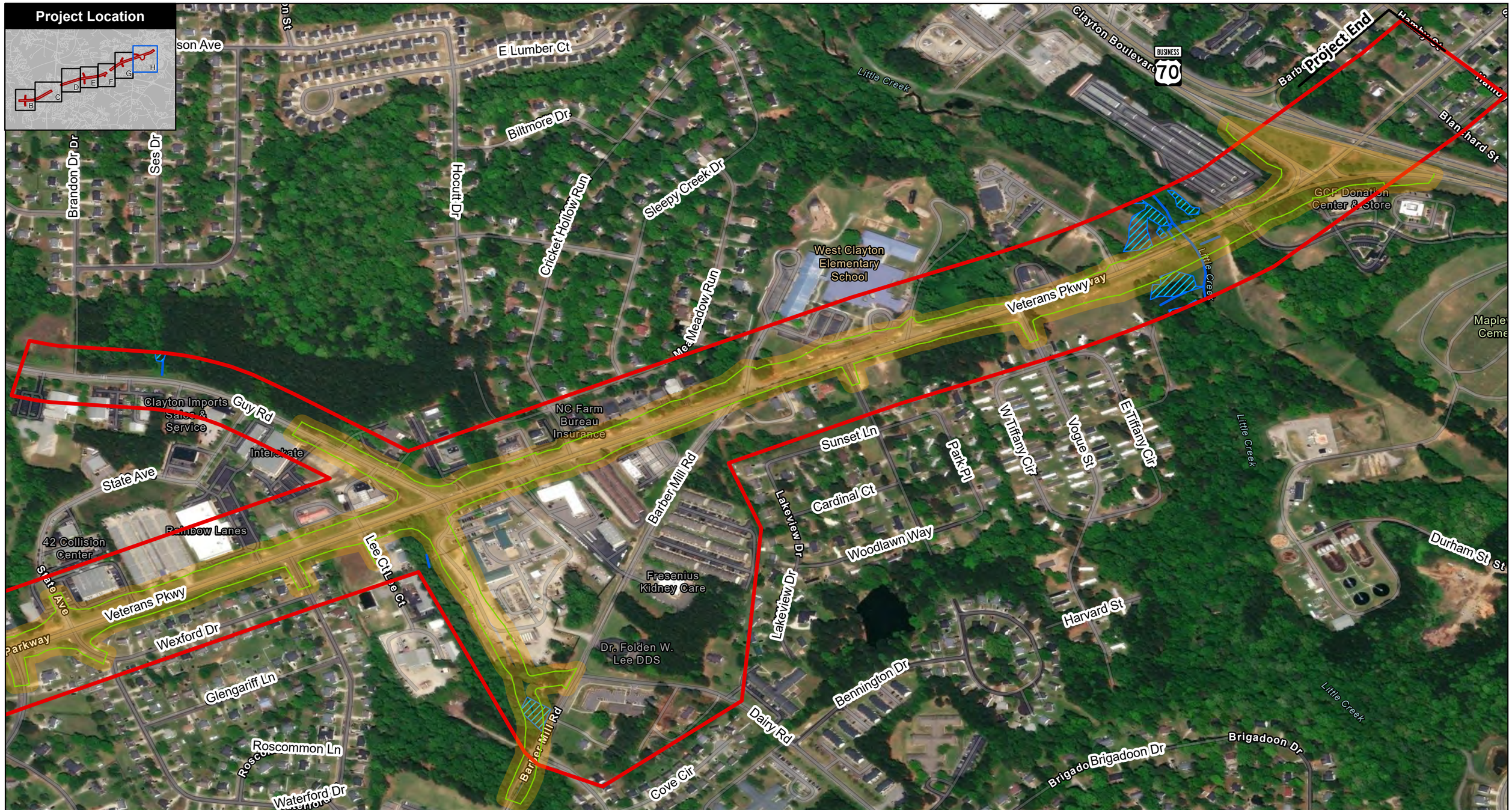
Figure 4G

Potential Impact Footprint

Cut and Fill Slopes
Streams
Impact Area - 40 Ft Buffer
Study Area
Wetlands
Ponds

0 550 1,100 Feet

N



North Carolina Department of Transportation

WGI

STIP Project No. R-3410
NC 42 Improvements from
NC 50 to US 70 Business
Johnston County, North Carolina
March, 2026

East Area

Figure 4H

Potential Impact Footprint

Cut and Fill Slopes
Streams
Impact Area - 40 Ft Buffer
Study Area
Wetlands
Ponds

0 550 1,100 Feet

N