



NORTH CAROLINA

Department of Transportation



Concurrence Points 1 & 2 Purpose and Need & Study Area Defined and Alternatives Considered

NC 111 (Catherine Lake Road) Extension from US 258 (Richlands Highway) to SR 1308 (Gum Branch Road)

Onslow County, NC

Meeting Agenda

- Introductions
- Purpose of meeting
- Project overview
- Concurrence Point 1
 - Purpose and Need
 - Study Area Defined
- Concurrence Point 2
 - Detailed Study Alternatives (DSA) Carried Forward
- Next steps / schedule
- General discussion / action item review

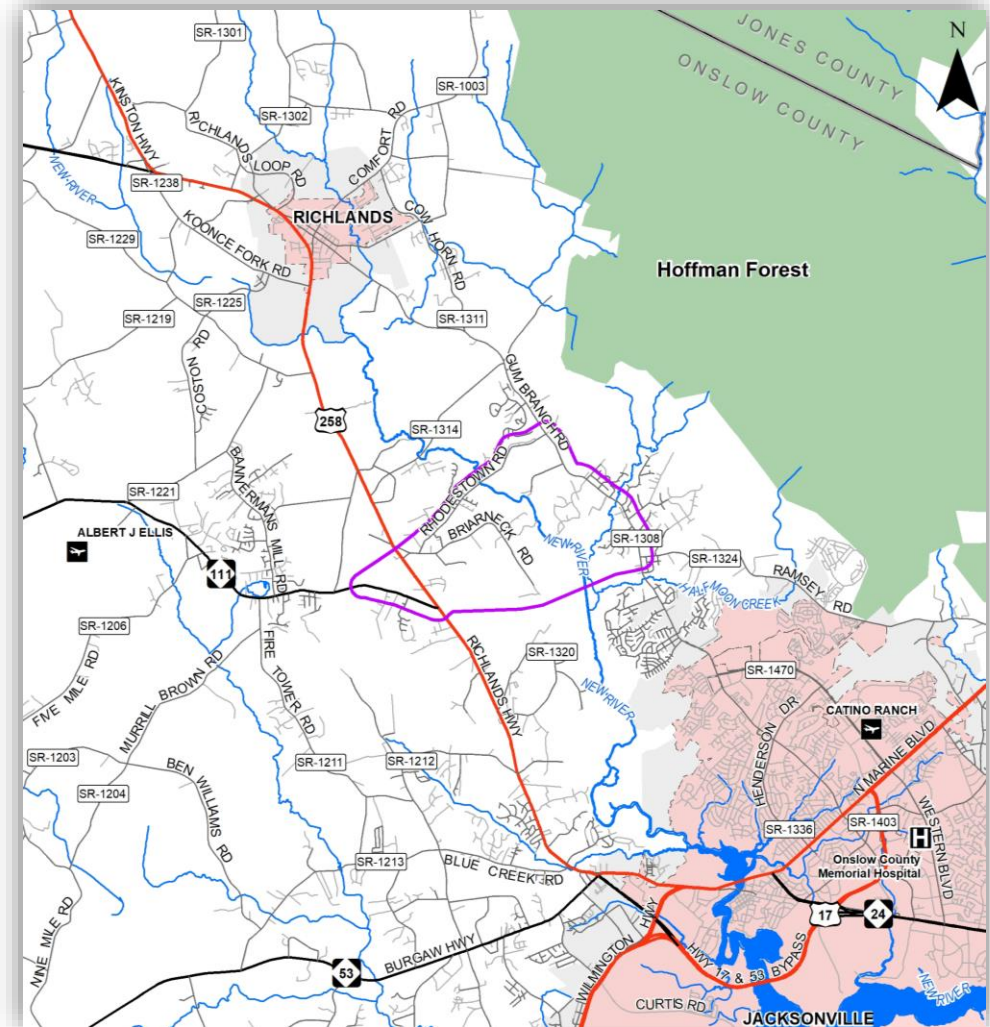


New River, south of Rhodestown Road

Proposed Project

The NCDOT proposes to extend NC 111 (Catherine Lake Road) from US 258 (Richlands Highway) to SR 1308 (Gum Branch Road) approximately 5.5 miles north of Jacksonville in Onslow County.

The project includes a potential new location crossing of the New River.



Project Background

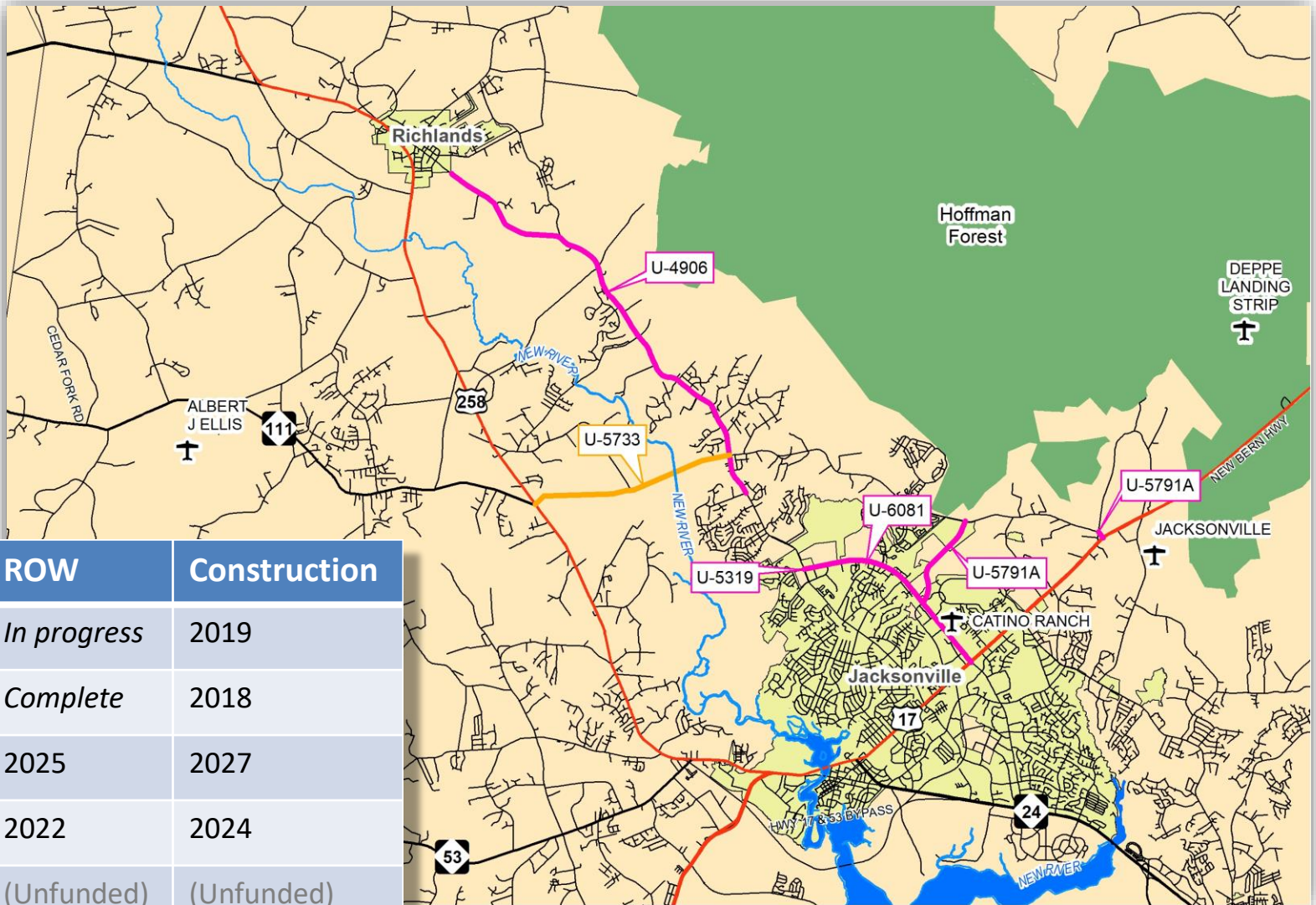
- **2007** NCDOT prepared a Feasibility Report (FS-03030C) for a proposed connector (“Northwest Corridor”) from US 258/NC 24 to US 17
 - Located south of U-5733
- **2015** JUMPO 2040 LRTP included “TIP ID U-5733” in 2016-2025 (short term) new location corridor improvements
- **2016** NCDOT hosts External Scoping Meeting (September 14)
 - Preliminary Study Area revised to include potential alternatives further north
- **2018** JUMPO’s draft CTP recommends STIP U-5733 be constructed as a Boulevard

Project Schedule and Cost

- 2018–2027 NCDOT STIP (rev. October 1, 2018). The schedule and cost estimates are subject to change.
- Federal funding is anticipated

Project Phase	Schedule (Fiscal Year)	Cost Estimate
Utilities	2023	\$500,000
Right of Way	2023	\$2,107,000
Construction	2025	\$37,576,000
	Total Cost	\$41,183,000

Nearby STIP Projects



STIP	ROW	Construction
U-4906	<i>In progress</i>	2019
U-5319	<i>Complete</i>	2018
U-6081	2025	2027
U-5791A	2022	2024
U-5791B	(Unfunded)	(Unfunded)

Existing Facility Characteristics

Facility	Lanes (width in ft.)	ROW (ft.)	Speed Limit (mph)	2016 AADT (vpd)
NC 111	2 (10)	60	45	5,000-9,999
US 258	5 (11)	100	55	10,000-34,999
Gum Branch Road	2-3 (10)	60	45	10,000-34,999
Ramsey Road	2 (10)	60	45	2,000-4,999
Rhodes town Road	2 (10)	60	45	2,000-4,999
Briarneck Road	2 (9)	60	35-45	500-1,999

- Hurricane evacuation route = NC 111 (Catherine Lake Rd) & US 258 (Richlands Hwy)
- Strategic Highway Network (STRAHNET) = US 258 (Strahnet Route) & NC 111 (Intermodal Terminal Connector)
- Strategic Transportation Corridor (Corridors W and X) = US 258
- Safety issues = US 258 / NC 111 intersection

A photograph showing a road intersection. The road has double yellow lines and a white shoulder line. There are many trees, including tall pines and some bare deciduous trees. In the background, there is a small building and a yellow sign with a left-pointing arrow. The sky is blue with some clouds.

MERGER CONCURRENCE POINT 1

Purpose and Need & Study Area Defined

Rhodestown Road at Briarneck Road, view to the east

Concurrence Point 1

Project Purpose & Need

Project Need

- Improved mobility and connectivity between Gum Branch Road and US 258

Concurrence Point 1

Project Purpose & Need

Project Purpose

- The primary purpose of the proposed project is to improve the transportation network in the project study area to benefit mobility and connectivity
 - Achieve improved mobility by reducing overall vehicle hours traveled (VHT) in the transportation network
 - Achieve improved connectivity in central Onslow County by reducing travel times in the project vicinity and providing a roadway connection closer to activity centers in Jacksonville

Concurrence Point 1

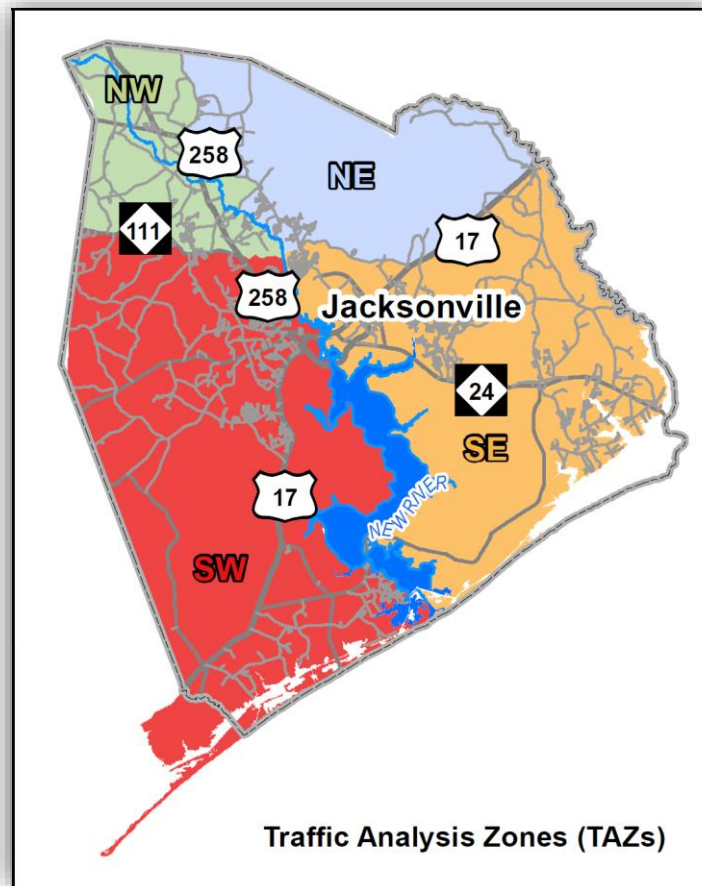
Project Purpose & Need

Project Purpose

- Secondary benefits:
 - Improve overall network efficiency and capacity by reducing delay on the existing network facilities
 - Improve the US 258/NC 111 intersection skew

Concurrence Point 1 Project Purpose & Need

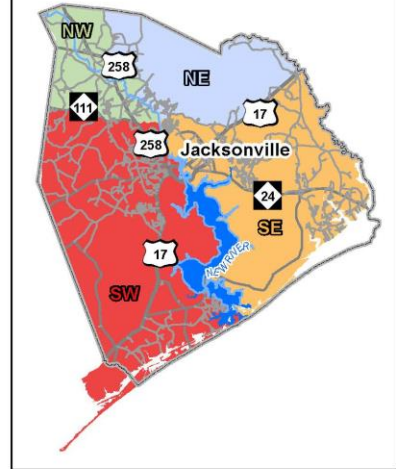
- Current and projected network travel times



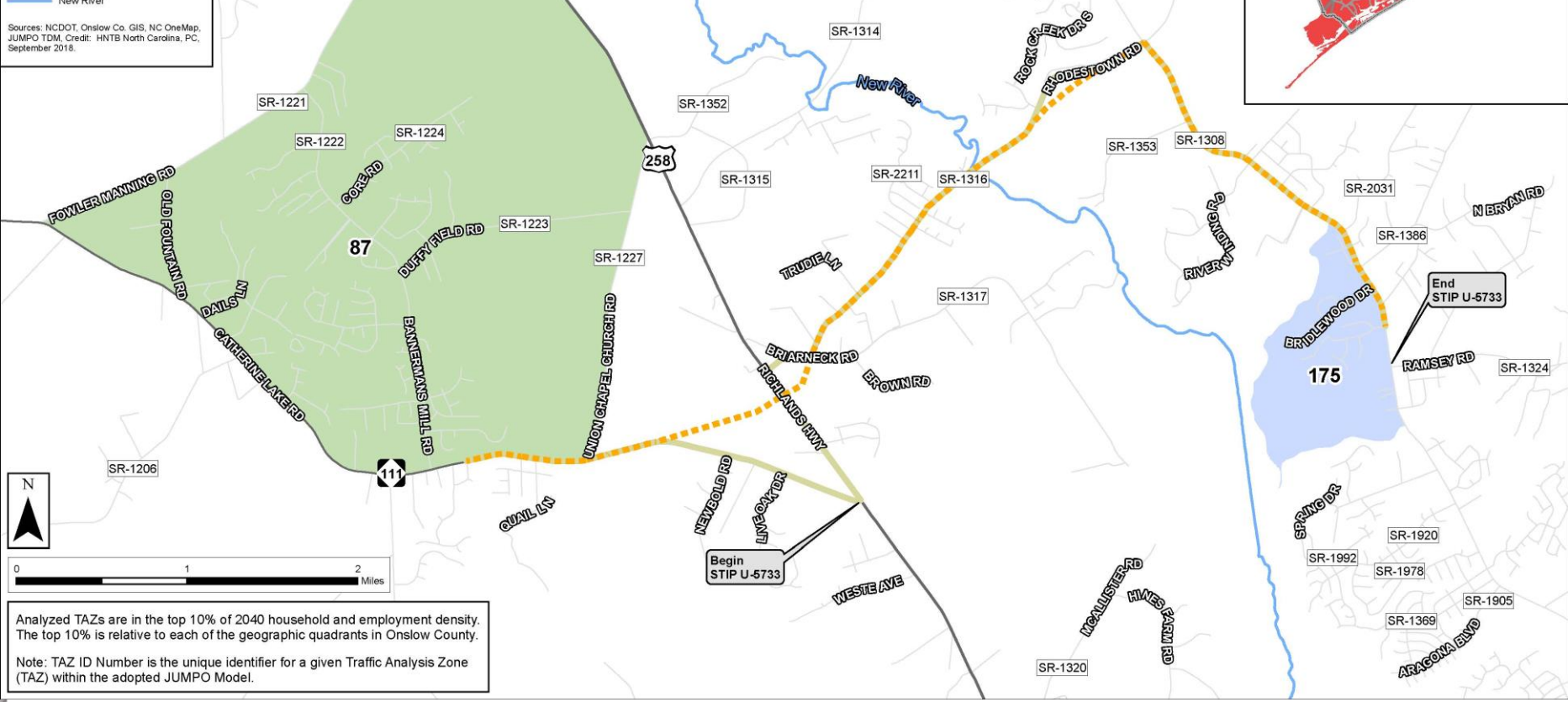
- Legend**
- # Northwest Quadrant - TAZ 87
 - # Southwest Quadrant - TAZ 166
 - # Northeast Quadrant - TAZ 175
 - # Southeast Quadrant - TAZ 249
 - Existing Route: NW, NE
 - Northern Alternative: NW, NE
 - US Route
 - NC Route
 - Road
 - New River

Travel Times and Time Savings by Concept Alternative (Mins)

	No Build	Northern	Middle	Southern
FY (2040)	14.3	11.3	10.2	9.1
Savings	0	3 (21%)	4.1 (29%)	5.2 (36%)



Sources: NCDOT, Onslow Co. GIS, NC OneMap, JUMPO TDM. Credit: HNTB North Carolina, PC, September 2018.



Analyzed TAZs are in the top 10% of 2040 household and employment density. The top 10% is relative to each of the geographic quadrants in Onslow County.

Note: TAZ ID Number is the unique identifier for a given Traffic Analysis Zone (TAZ) within the adopted JUMPO Model.

Concurrence Point 1

Project Purpose & Need

- An average commuter – based on an assumed commuting rate of twice a day, 5 days a week, for 48 weeks – traveling between “TAZ 87” (northwest) and “TAZ 175” (northeast) would save:
 - 24 hours/year with the Northern Concept Alternative
 - 32.8 hours/year with the Middle Concept Alternative
 - 41.6 hours/year with the Southern Concept Alternative

Concurrence Point 1

Project Purpose & Need

- An average commuter – based on an assumed commuting rate of twice a day, 5 days a week, for 48 weeks – traveling between “TAZ 87” (northwest) and “TAZ 249” (southeast) would save:
 - 0.8 hour/year with the Northern Concept Alternative
 - 2.4 hours/year with the Middle Concept Alternative
 - 20.8 hours/year with the Southern Concept Alternative

Concurrence Point 1

Project Purpose & Need

Summary of Percent Changes in Vehicle Hours Traveled (VHT) and Vehicle Miles Traveled (VMT) for the Entire Jacksonville Region by Concept Alternative in the Future Year (2040) Build Scenario

Future Year Measurements of Effectiveness (MOEs)	No Build	Northern Alternative		Middle Alternative		Southern Alternative	
		No.	Percent Change	No.	Percent Change	No.	Percent Change
Vehicle Hours Traveled (VHT) (hours)							
VHT PM Period (15:00–19:00)	73,287	73,112	-0.2%	73,117	-0.2%	57,382	-21.7%
VHT PM (Avg. PM Period Congested)	7,353	7,141	-2.9%	7,363	0.1%	6,887	-6.3%
Vehicle Miles Traveled (VMT) (miles)							
VMT PM Period (15:00–19:00)	2,648,403	2,646,219	-0.1%	2,645,418	-0.1%	2,643,807	-0.2%
VMT PM (Avg. PM Period Congested)	124,886	120,994	-3.1%	124,482	-0.3%	118,810	-4.9%

Concurrence Point 1

Project Purpose & Need

Traffic Operation Benefits

- Travel time savings

Cumulative Time Savings (Minutes) of All Trips Between the Four Selected TAZs by Concept Alternative

Scenario	"Northern" Alt	"Middle" Alt	"Southern" Alt	Total
BYNB (2010)	N/A	N/A	N/A	155.1
BYB (2010)*	-5.5	-8.6	-14	N/A
FYNB (2040)	N/A	N/A	N/A	186.5
FYB (2040)*	-6.8	-9.1	-20	N/A

* cumulative travel time savings in minutes generated by all trips between the four selected TAZs

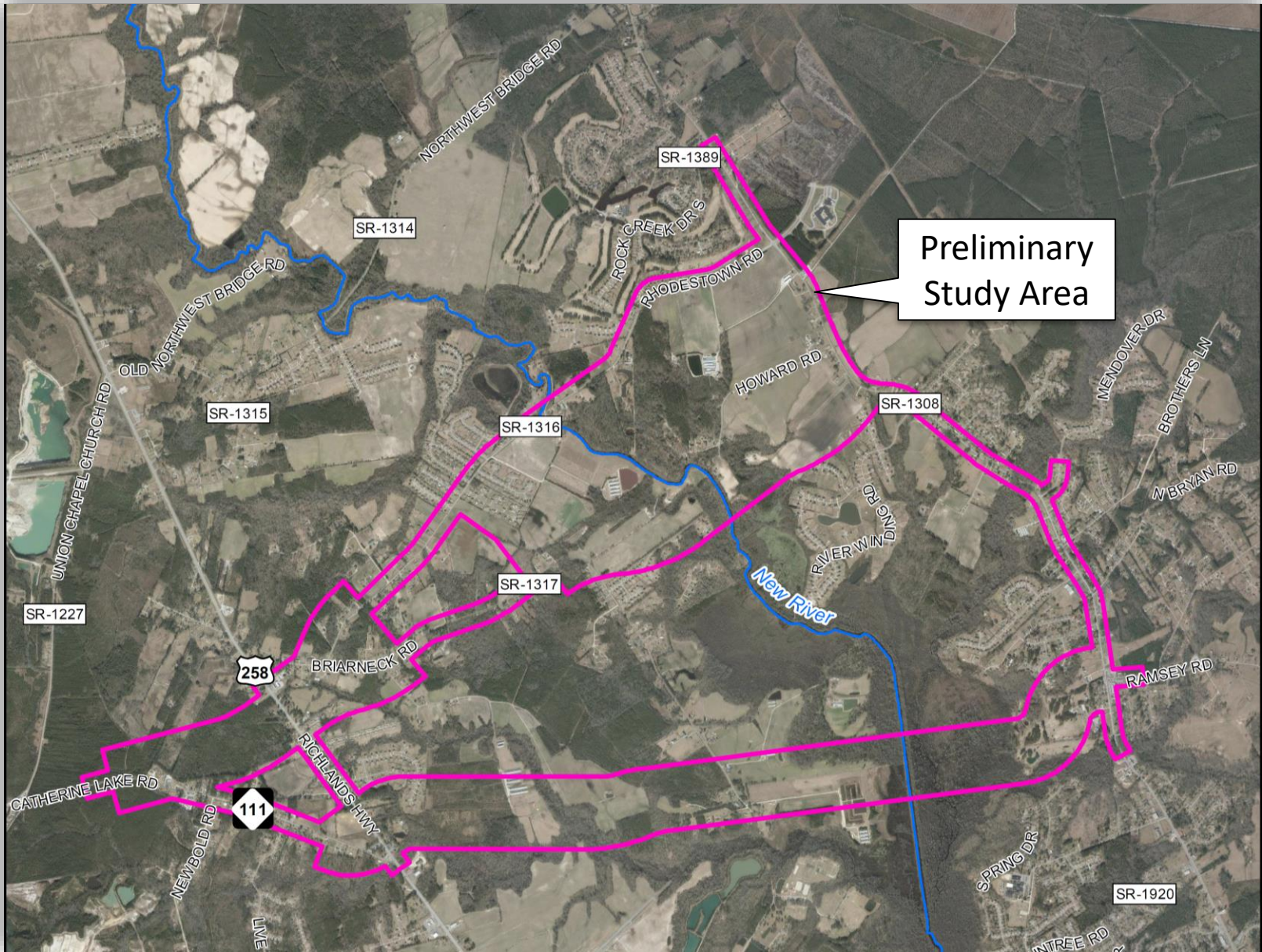
- Reduction of VHT and VMT



NC 111 at US 258 intersection, view to the northeast

Concurrence Point 1 Study Area

- The study area encompasses three conceptual roadway corridors between NC 111/US 258 and Gum Branch Road, approximately 1,725 acres in total
- The corridors were developed based on conceptual roadway alignments which were buffered:
 - 250 feet on either side of upgrade existing sections and
 - 750 feet on either side of new alignment sections
- The study area includes sufficient area to pursue alignment shifts and apply avoidance and minimization measures during design development
- The study area may be revised based on selection of detailed study alternatives in CP 2



Concurrence Point 1

Purpose and Need & Study Area Defined

Section 404/NEPA Merger Project Team Meeting Agreement Concurrence Point No. 1 Project Purpose and Need and Study Area Defined

Project Name/Description: US 258 (Richlands Highway) to SR 1308 (Gum Branch Road). Construct Extension of NC 111 on new location. **STIP Project: U-5733**

Project Need:

The need to be addressed by the proposed project is to improve network mobility and connectivity between Gum Branch Road and US 258 in the project area.

Project Purpose:

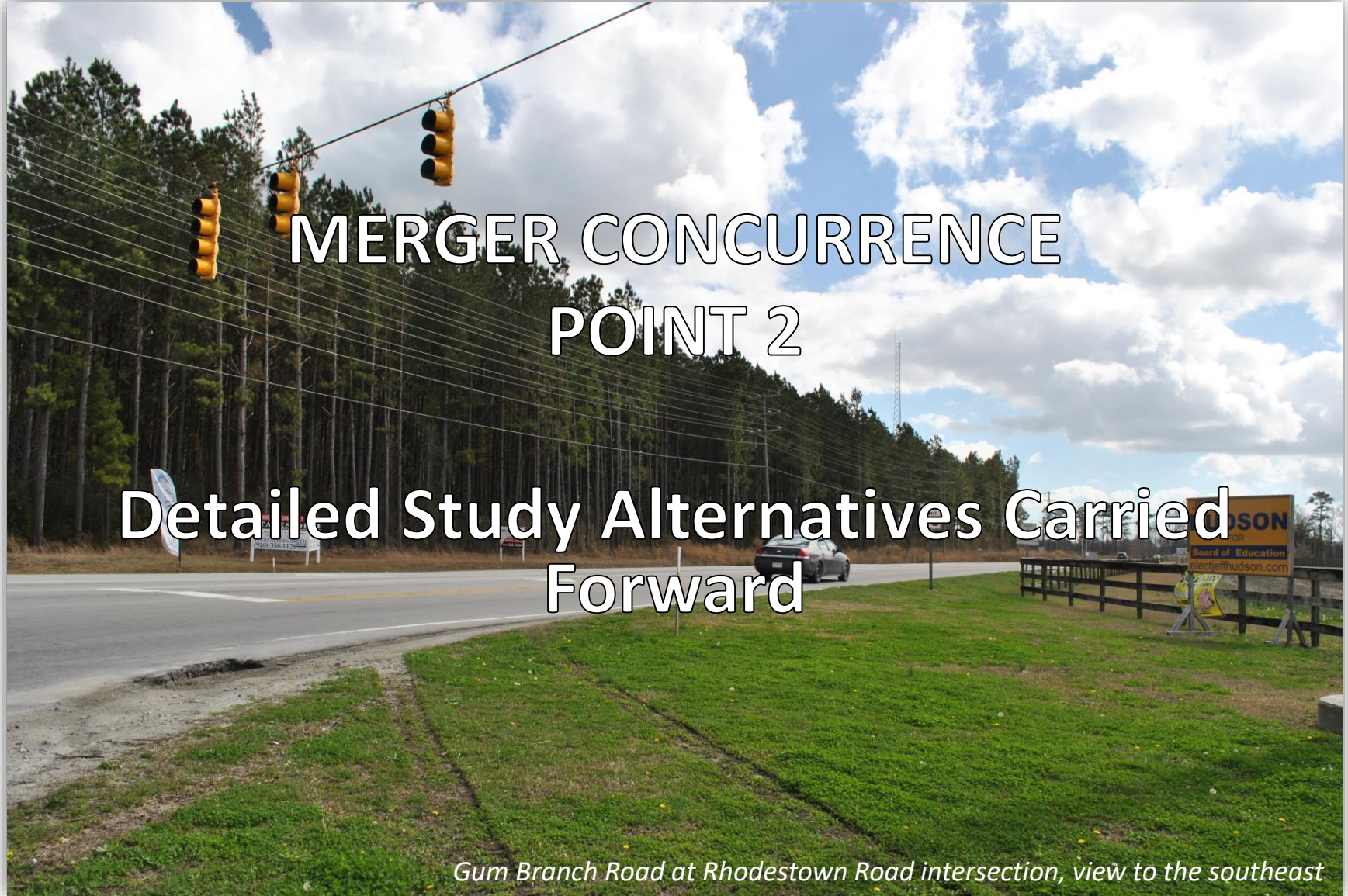
The primary purpose of the proposed project is to improve the transportation network in the project study area to benefit mobility and connectivity. The project will achieve improved mobility by reducing overall vehicle hours traveled (VHT) in the transportation network. The project will achieve improved connectivity in central Onslow County by reducing travel times in the project vicinity and providing a roadway connection closer to activity centers in Jacksonville.

Project Study Area

The project study area boundaries are shown on Figure 2, dated August 2018. The study area encompasses three conceptual roadway alignments between NC 111/US 258 and SR 1308 (Gum Branch Road). Conceptual alignments are buffered 250 feet on either side of upgrade existing sections and 750 feet on either side of new alignment sections. The resultant study area encompasses approximately 1,725 acres, including sufficient area to pursue alignment shifts and apply avoidance and minimization measures during design development.

The Merger Team has concurred on this date of October 17, 2018, on the above project purpose and need and the study area as shown in **Figure 2** for STIP Project U-5733.

USACE _____	FHWA _____
USEPA _____	NCDOT _____
USFWS _____	NOAA Fisheries _____
NCDWR _____	NCHPO _____
NCWRC _____	JUMPO _____
NCDCM _____	



MERGER CONCURRENCE POINT 2

Detailed Study Alternatives Carried Forward

Gum Branch Road at Rhodestown Road intersection, view to the southeast

Concurrence Point 2

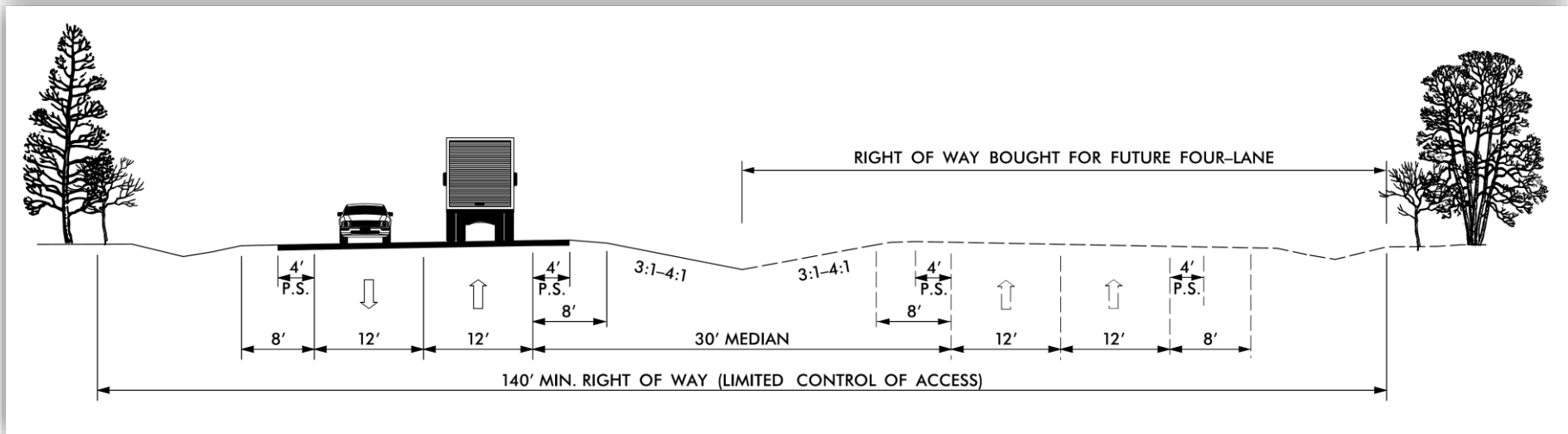
DSAs Carried Forward

Alternatives under consideration

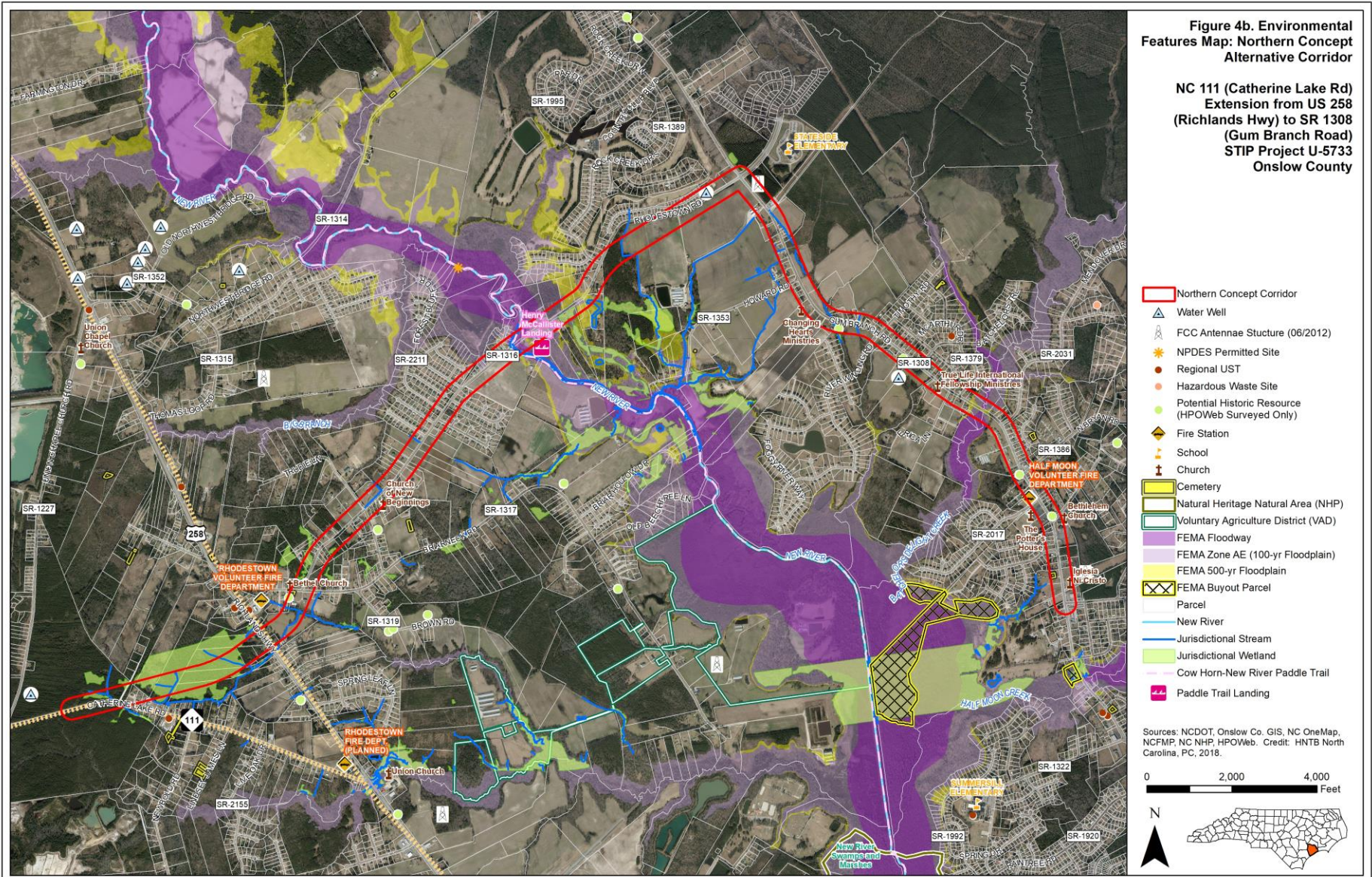
- No-Build Alternative
- Build Alternatives
 - “Northern” Concept Alternative - improve existing Rhodestown Road
 - “Middle” Concept Alternative - improve existing Briarcliff Road with new alignment New River crossing
 - “Southern” Concept Alternative - new alignment

Concurrence Point 2 DSAs Carried Forward

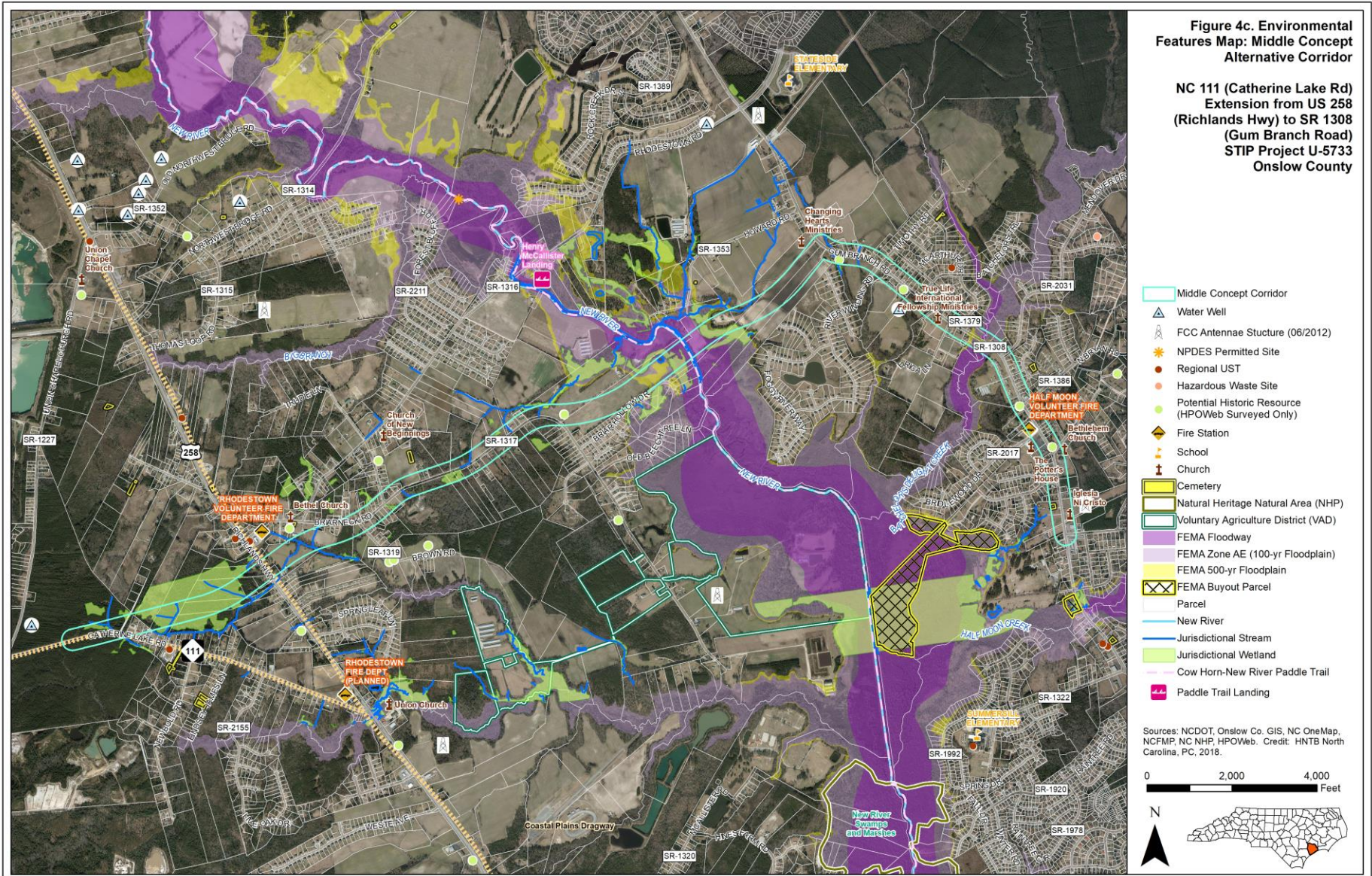
- Two-lane roadway on multi-lane right-of-way
- Arterial standards



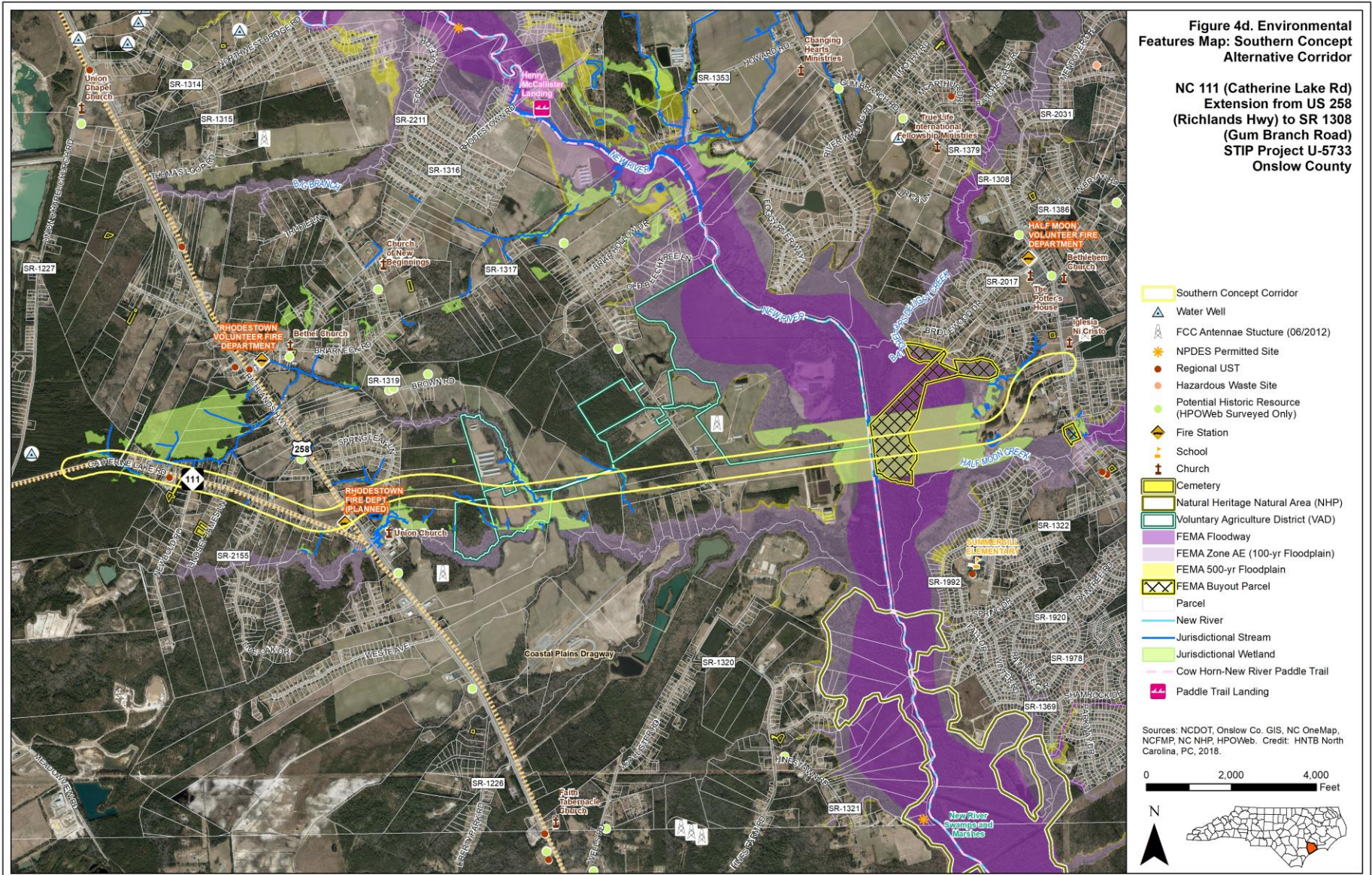
Northern Concept Alternative Corridor (6.5 miles)



Middle Concept Alternative Corridor (5.7 miles)



Southern Concept Alternative Corridor (4.7 miles)



Presence of Resource by Concept Alternative Corridor

Type		Northern Concept Alt	Middle Concept Alt	Southern Concept Alt
Parks		1	0	0
Recreational trail		2	2	2
Churches		4	3	0
Schools		0	0	0
Streams (# of crossings)		10,080 feet* (10)	9,190 feet* (11)	5,990 feet (5)
Wetlands		37 acres*	44 acres*	44 acres
FEMA Floodway (width)		270	930	2,400
ESA Protected Species [^]		No Effect	No Effect	No Effect
Parcels		383	236	124
Potential Relocations ⁺	Residential	232	146	71
	Commercial	26	20	12
	Institutional	6	5	0

Notes: * 5 acres of wetland or 480 feet of stream associated with the Gum Branch Road crossing of Bachelor's Delight Creek, calculated based on Onslow County GIS data (i.e., NRTR/WEX did not cover this crossing); [^] Habitat present for American alligator, but Biological Conclusion not required. ⁺ Potential relocations are a subset of parcels within the concept corridors. "Vacant" and "Open" parcels are not included in these counts.

Concurrence Point 2 DSAs Carried Forward

NCDOT recommends that the following concept alternatives are carried forward for detailed study:

- No-Build Alternative
- Middle Concept Alternative
- Southern Concept Alternative

NCDOT recommends that the following concept alternatives are not carried forward for detailed study:

- Northern Concept Alternative

Concurrence Point 2 DSAs Carried Forward

Section 404/NEPA Merger Project Team Meeting Agreement

**Concurrence Point No. 2
Detailed Study Alternatives Carried Forward**

Project Name/Description: US 258 (Richlands Highway) to SR 1308 (Gum Branch Road). Construct Extension of NC 111 on new location. **STIP Project: U-5733**

- **Northern Alternative** - realign NC 111 to intersect Rhodestown Road; improve Rhodestown Road to Gum Branch Road intersection; purchase right of way for a future multi-lane roadway.
- **Middle Alternative** - realign NC 111 to intersect Briarneck Road; improve Briarneck Road for approximately one mile; construct new alignment roadway to cross the New River on new location to a new Gum Branch Road intersection; purchase right of way for a future multi-lane roadway.
- **Southern Alternative** - realign NC 111 to a new intersection with US 258; construct new alignment roadway to cross the New River on new location to the existing Ramsey Road and Gum Branch Road intersection; purchase right of way for a future multi-lane roadway.

The Merger Team has concurred on this date of October 17, 2018, on the above identified detailed study alternatives to be carried forward for STIP Project U-5733.

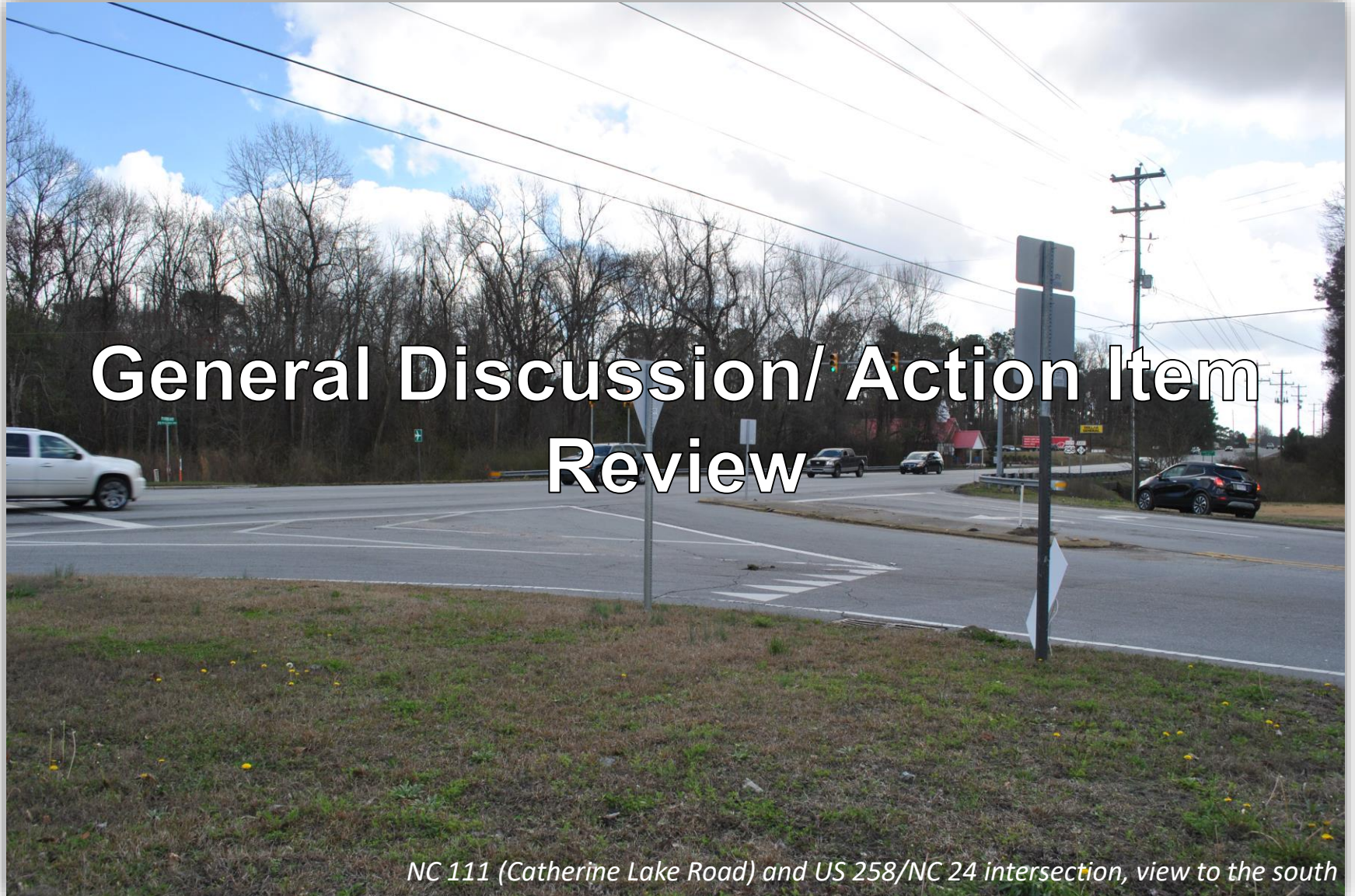
USACE _____	FHWA _____
USEPA _____	NCDOT _____
USFWS _____	NOAA Fisheries _____
NCDWR _____	NCHPO _____
NCWRC _____	JUMPO _____
NCDCM _____	

Schedule*/ Next Steps

- Traffic operations analysis – *underway*
- Functional-level roadway design – Winter 2018/19
- Hydraulic recs (e.g., structure lengths) – Winter 2018/19
- CP 2A – Winter 2018/19
- Technical studies – Winter 2018/19 through Summer 2019
- Concept public meeting – Spring 2019
- Environmental Assessment – Summer 2019
- Public Hearing – Fall 2019
- CP 3 & 4A – Fall 2019
- FONSI (anticipated) – Winter 2019/20

Schedule is tentative and subject to change

General Discussion/ Action Item Review



NC 111 (Catherine Lake Road) and US 258/NC 24 intersection, view to the south



Briarneck Road, view to the southeast

Concurrence Point 1

Project Purpose & Need

Network Mobility

- *Connectivity*
Ability to improve roadway network connectivity.
- *Travel Time*
Travel time to/from Origin - Destination.

Quantity of Travel

- *Traffic Demand*
Number of vehicles per day (vpd) using a facility.
- *Trips Completed*
Number of trips successfully completed through the traffic network.

Quality of Travel

- *Network Speed*
Average speed traveled through the traffic network.
- *Delay Per Vehicle*
Average delay per vehicle in the traffic network.

Concurrence Point 1

Project Purpose & Need

[https://articles.extension.org/pages/62111/wh
at-are-the-differences-between-mobility-
accessibility-and-connectivity-in-
transportation-planning](https://articles.extension.org/pages/62111/what-are-the-differences-between-mobility-accessibility-and-connectivity-in-transportation-planning)

Concurrence Point 1

Project Purpose & Need

HCS 7 Roadway Segment LOS Results for 2018 Base Year PM Peak Hour

Roadway Segment	2018 Base Year ¹			
	No-Build	Build Northern Alternative	Build Middle Alternative ²	Build Southern Alternative
Gum Branch Road - South of Rhodestown Road (1.0-mile segment)	D	D	E	D
Gum Branch Road - North of Ramsey Road (1.5-mile segment)	E	E	E	D
Rhodestown Road - West of Gum Branch Road (1.4-mile segment)	B	B	B	A
Ramsey Road - East of Gum Branch Road (1.0-mile segment)	B	B	B	B

¹ The 2018 Base Year scenarios are from the 2018 U-5733 Project Level Traffic Forecast.

² BYB Middle Alternative LOS grades for "South of Rhodestown Road" are actually "South of NC 111 Extension." This is displayed as such to capture the re-routed traffic volumes from the proposed NC 111 extension onto Gum Branch Road.

Concurrence Point 1

Project Purpose & Need

HCS 7 Roadway Segment LOS Results for 2040 Future Year PM Peak Hour

Roadway Segment	2040 Future Year ¹			
	No-Build	Build Northern Alternative	Build Middle Alternative ²	Build Southern Alternative
Gum Branch Road - South of Rhodestown Road (1.0-mile segment)	E	E	F	D
Gum Branch Road - North of Ramsey Road (1.5-mile segment)	F	F	F	E
Rhodestown Road - West of Gum Branch Road (1.4-mile segment) ³	B / C	C	B	B / C
Ramsey Road - East of Gum Branch Road (1.0-mile segment)	C	C	C	D

¹ The 2040 Future Year scenario displayed assumes that both Gum Branch Road and Ramsey Road will be two-lane to three-lane facilities. This is based on a traffic estimate (supplemental to the 2018 traffic forecast) where all LRTP projects are in place except for the Gum Branch Road and Ramsey Road widening projects.

² FYB Middle Alternative LOS grades for "South of Rhodestown Road" are actually "South of NC 111 Extension." This is displayed as such to capture the re-routed traffic volumes from the proposed NC 111 extension onto Gum Branch Road.

³ Two LOS results for one location represent directional driving (i.e. eastbound / westbound) LOS results that differ from each other.

NRTR Study Area

