



Pinehurst Traffic Circle Improvements in Moore County

South of Pinehurst Manor Drive to Page Road

State Transportation Improvement Program Project No: U-5976

PROJECT DESCRIPTION

The N.C. Department of Transportation Division 8 is proposing improvements to the Pinehurst Traffic Circle (PTC) from South of Pinehurst Manor Drive to Page Road (S.R. 1208), as State Transportation Improvement Project (STIP) U-5976. The purpose of the project is to improve traffic safety and operations and increase the intersection capacity and efficiency. The total length of the project is approximately 1 mile.

PUBLIC INVOLVEMENT

Public Meetings are an important step in the N.C. Department of Transportation's procedure for making you, the public, an integral part of the project development process. Our goal tonight is to provide information on the project development process, present the proposed design and gather your input on the project. Your input helps guide our planners and engineers to develop transportation solutions that complement the community's goals and visions. A comment form is included with this handout. You may leave the comment form here with us tonight or email or mail it to us through August 23, 2024.

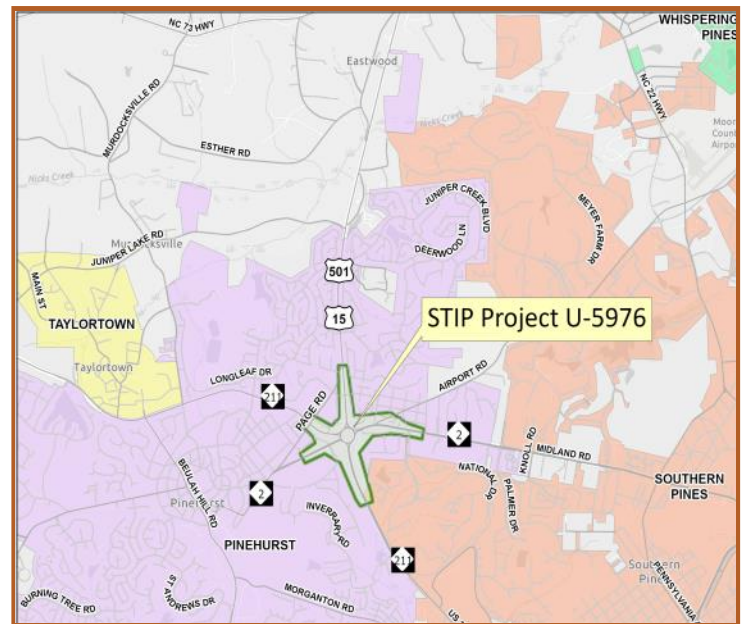
Comments may be submitted:

- ⇒ **Online:** <https://publicinput.com/pinehursttrafficcircle>
- ⇒ **Email:** pinehursttrafficcircle@publicinput.com
- ⇒ **Phone:** 984-205-6615 code 7045



(Access the public webpage)

Figure 1. Project Vicinity Map



Comment Period Ends: August 23, 2024

PROJECT SCHEDULE		ESTIMATED PROJECT COSTS	
Public Meeting #1	July 16, 5pm – 7pm	Right of Way	\$ 23.8 M
Public Meeting #2	July 18, 5pm – 7pm	Construction	\$ 28.1 M
Public Meeting #3	July 23, 5pm – 7pm	Utility Relocation	\$ 2.4 M
Environmental Document	November 2026	Total Cost	\$ 54.3 M
Right of Way Acquisition	February 2027		
Construction	August 2030		

Project Overview

PROJECT PURPOSE AND NEED

The primary needs to be addressed by STIP Project No. U-5976 are traffic mobility, capacity and safety at the traffic circle. The traffic circle currently experiences above average peak hour delays (many legs operating at Level of Service F). Over the past five years, there has been an average of one crash every 2+ days resulting in crash damage costs of approximately \$31.8 Million in damages. Growing traffic volumes and congestion are contributing factors to increased accidents. The purpose of the project is to reduce congestion and improve safety and mobility in this growing area of Moore County.

CURRENT CONDITIONS

The Pinehurst Traffic Circle (PTC) experienced 50,000 daily trips in 2023 and is expected to grow to 80,000 daily trips by 2050. Delays of several minutes occur during peak travel times through the PTC. Traffic engineers use a term called “Level-of-Service”, with grades A (low traffic/small delays) to F (excessive congestion) to assess traffic flow on freeways and intersections. Delays analyzed for the PTC resulted in a Level-of-Service F for multiple legs of the PTC. These conditions, during peak periods, currently cause traffic queues that back up 1/4 to 1/2 mile at several PTC legs, depending on the time of day. These queues, given the future traffic demand projected growth, could extend 3/4 to 1 1/2 miles for multiple PTC legs during future peak travel periods. These queues would extend into the existing signalized intersection upstream of several legs of the traffic circle, impairing operations and safety, and blocking un-signalized intersections and driveways.

Figure 2. Traffic Queuing on U.S. 15-501 Northern Leg



The vehicle congestion and queuing problems result in substantial safety and crash issues for motorists who use the PTC. Approximately 850 crashes have occurred in the PTC vicinity over the last 5 years, resulting in an estimated \$31.8 Million in damages. Though most crashes are low severity, **a crash is occurring near or at the PTC approximately every 2 days**. The rate of crashes in the vicinity of the PTC is higher than a standard signal-controlled intersection that experiences the same amount of daily traffic.

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PROJECT HISTORY

The current project effort has produced feasibility studies completed for the PTC in 2014, 2017 and 2022. The concept showing the best performance initially, the multi-roundabouts concept, may have been difficult for some motorists to understand and navigate. None of the other concepts were able to provide adequate long-term traffic mobility. Additional concepts that impacted the PTC were studied, including grade separated interchanges, a diverging diamond interchange, and a partial cloverleaf interchange. The currently preferred concept, the Continuous-Flow Intersection (CFI), when compared to all the other previously studied concepts, produced the best traffic operations performance with minimal right-of-way impact and is expected to have a positive safety benefit over many of the other alternatives and certainly, the existing traffic circle.

Project Overview

PROPOSED IMPROVEMENTS

NCDOT proposes improvements to the Pinehurst Traffic Circle (PTC) from South of Pinehurst Manor Drive to Page Road, a length of 1 mile. This project is programmed in the 2024-2033 STIP as project number U-5976. Components of the project include replacing the existing Traffic Circle with a Continuous Flow Intersection (CFI) (See Figure 3). The CFI would create a single major intersection of U.S. 15-501 and N.C. 211 / N.C. 2 in the middle of the existing PTC that separately serves through movements along with bi-directional left-turn and right-turn movements at a single coordinated two-phase traffic signal. A free-flow southbound merge lane area for N.C. 211/N.C. 2 eastbound to southbound U.S. 15-501 traffic and an unsignalized U-turn median break along U.S. 15-501 south of Pinehurst Manor Drive are included in the current design.

Figure 3. Proposed Continuous Flow Intersection

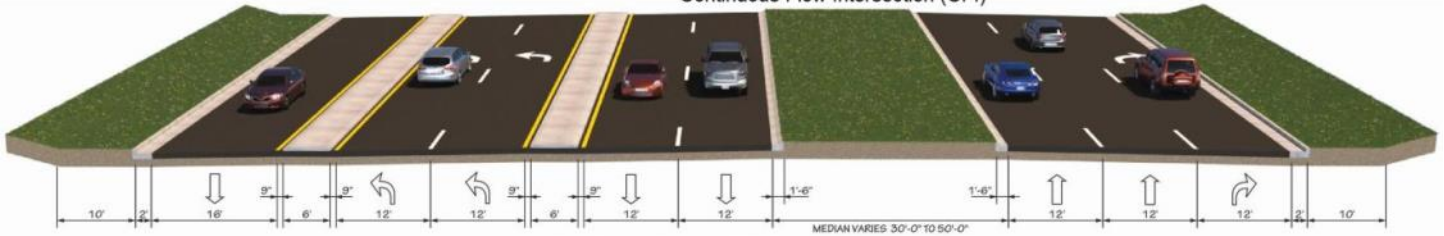
The CFI design would move traffic through the traffic circle vicinity much more efficiently than most traditional intersection designs, with less cost, and right-of-way impact. This alternative was one of over 15 separate alternative designs evaluated over the course of the project since 2013. The CFI has consistently



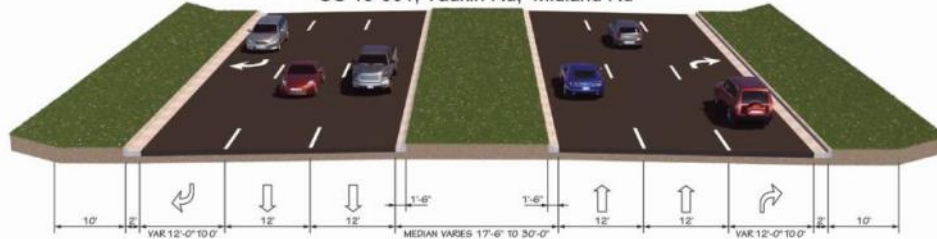
provided better estimated mobility results than any other alternative studied to date. The CFI design can move left-turn traffic at the same time as through traffic in both directions along a roadway using simple two-phase traffic signals. The signals can be coordinated together to adjust to variances in traffic flow throughout the day and over the course of time as future demand increases. NCDOT will coordinate with existing traffic signals in the PTC area to keep vehicles together and minimize stops – something the PTC currently cannot do. If you stop at the cross-over signal to begin your left-turn, you will also get a green light at the main cross-over signal when you complete your left-turn. Aesthetics will be impacted with the elimination of the current circle. However, land previously covered by the traffic circle will provide additional areas for landscaping and decorative plantings to retain a “gateway” feel.

Typical Sections

Continuous Flow Intersection (CFI)



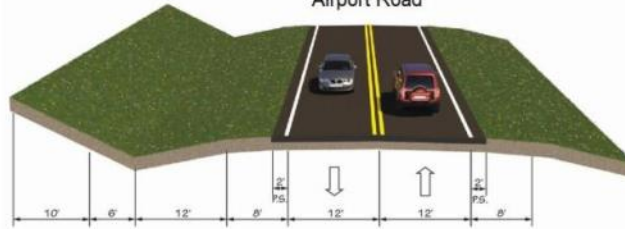
US 15-501, Yadkin Rd, Midland Rd



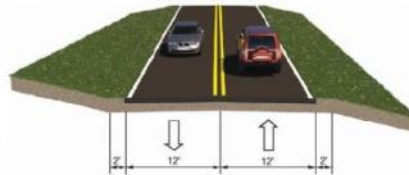
PGA Boulevard

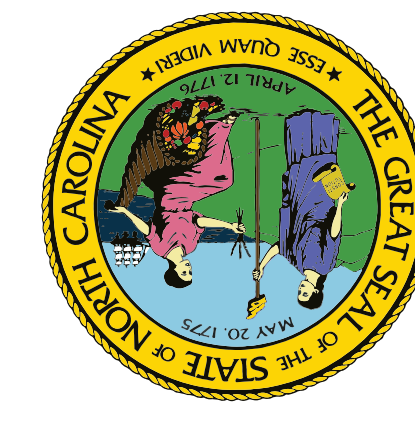
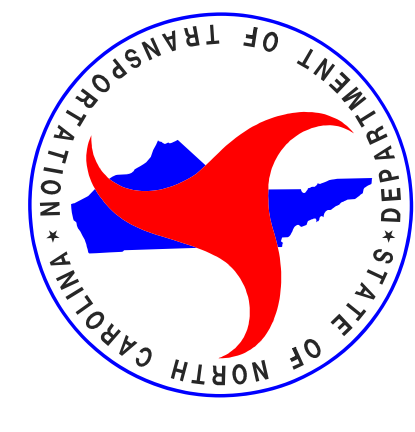


Airport Road



Dalrymple Road





PUBLIC MEETING MAP
TIP PROJECT: U-5976
WBS: 45964
MOORE COUNTY
US 15/501 FROM SOUTH OF PINEHURST MANOR DRIVE TO SR 1208 (PAGE ROAD) IN PINEHURST
UPGRADE INTERSECTION AND CONSTRUCT IMPROVEMENTS TO PINEHURST TRAFFIC CIRCLE AND APPROACHES.
MODIFIED CONTINUOUS FLOW INTERSECTION

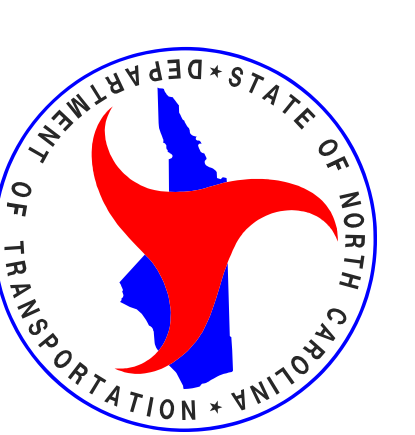
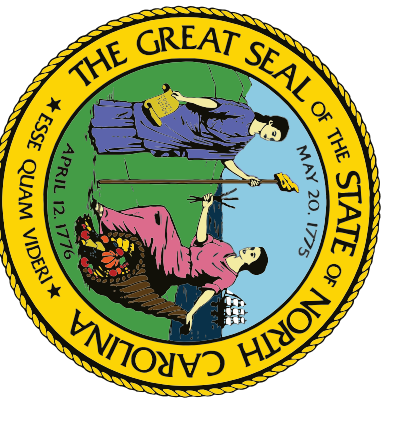
DRIVEWAY NOTE
 DRIVEWAY LOCATIONS NOT SHOWN AND ARE SUBJECT TO CHANGE BASED ON FINAL DESIGN.

RIGHT OF WAY NOTE
 RIGHT OF WAY WIDTHS ARE PRELIMINARY AND ARE SUBJECT TO CHANGE BASED ON FINAL DESIGN.

LIMITED CONTROL OF ACCESS
 LIMITED CONTROL OF ACCESS IS DEFINED AS A CONNECTION TO A FACILITY PROVIDED ONLY VIA RAMP AT INTERCHANGES, MAJOR EXPRESSWAYS, AND LIMITED ACCESS HIGHWAYS. PRIVATE DRIVEWAY CONNECTIONS ALLOWED TO A SERVICE ROAD. NO PRIVATE DRIVEWAY CONNECTIONS ALLOWED TO A SERVICE ROAD.

UTILITY INFORMATION
 TO PROVIDE GREATER VISUAL CLARITY, EXISTING AND PROPOSED UTILITIES ARE SHOWN ON THIS MAP. THE UTILITY INFORMATION SHOWN ON THESE MAPS IS FOR INFORMATION ONLY AND DOES NOT REPRESENT THE EXACT LOCATION OF UTILITIES. UTILITY EASEMENTS ARE PRELIMINARY AND ARE SUBJECT TO CHANGE.

PUBLIC MEETING MAP
TIP PROJECT: U-5976
WBS: 45964
MOORE COUNTY
MEETING DATES: JULY 16, 18 & 23, 2024
US 15/501 FROM SOUTH OF PINEHURST MANOR DRIVE TO SR 1208 (PAGE ROAD) IN PINEHURST
UPGRADE INTERSECTION AND CONSTRUCT IMPROVEMENTS TO PINEHURST TRAFFIC CIRCLE AND APPROACHES.
MODIFIED CONTINUOUS FLOW INTERSECTION



INCOMPLETE PLANS
 DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION

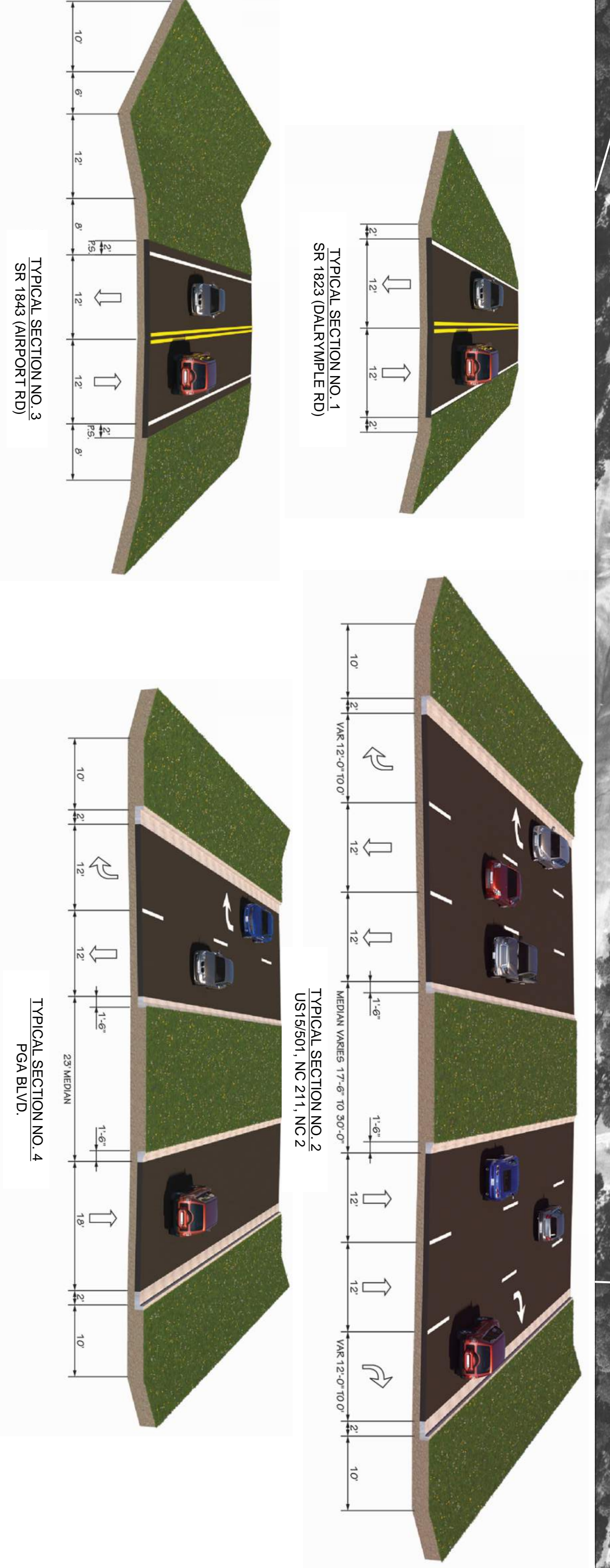
DESIGN DATA
 Functional Class = Principal Arterial
 Design Speed = 50 MPH
 Max. Super-elev. = 8%

Date Of Orthophotography = Mar. 2021 (NC One Map)

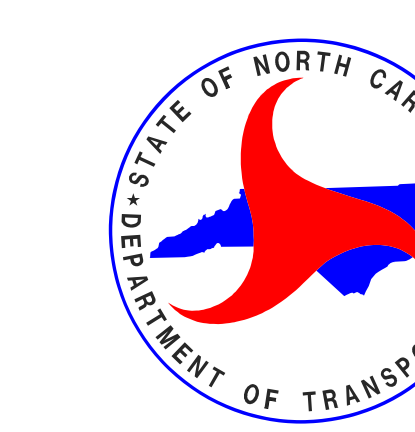
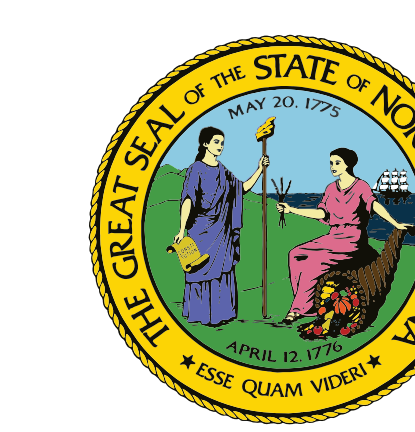
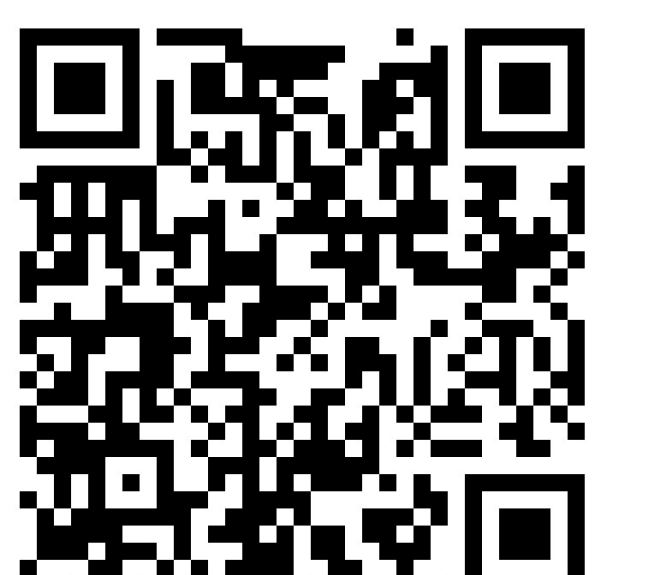
100' 0' 100' 200'
 50' (ENGLISH)

LEGEND

- BUILDINGS
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- PROPOSED EASEMENTS (DRAINAGE, CONSTRUCTION, AND UTILITY)
- EXISTING ROADWAY
- EXISTING ROADWAY TO BE RESURFACED
- EXISTING ROADWAY TO BE REMOVED
- PROPOSED ROADWAY
- PROPOSED STRUCTURES REMAINING WALLS, ISLANDS, CURB AND GUTTER
- EXISTING STRUCTURES, ISLANDS, SIDEWALK CURB AND GUTTER TO BE RETAINED
- EXISTING STRUCTURES, ISLANDS, SIDEWALK CURB AND GUTTER TO BE REMOVED
- LAKES, RIVER, STREAMS AND PONDS
- PROPOSED LIMITED CONTROL OF ACCESS
- PROPERTY LINES
- HISTORIC PROPERTY BOUNDARY
- CITY LIMITS
- FUTURE ROADWAY
- 2030 FUTURE ADT
- 2050 FUTURE ADT
- PROPOSED TRAFFIC SIGNAL
- EXISTING TRAFFIC SIGNAL



PUBLIC MEETING MAP
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MOORE COUNTY
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UPGRADE INTERSECTION AND CONSTRUCT IMPROVEMENTS TO PINEHURST TRAFFIC CIRCLE AND APPROACHES.
MODIFIED CONTINUOUS FLOW INTERSECTION



Public Survey

Please circle your answer

1. How far do you live from the Pinehurst Traffic Circle?
 - a. Less than 1 mile
 - b. 1-3 miles
 - c. 3-5 miles
 - d. 5-10 miles
 - e. Greater than 10 miles

2. How frequently do you use the traffic circle?
 - a. More than once a day
 - b. Once a week
 - c. Once a month
 - d. Less than once a month

3. Are you content with current traffic conditions at the traffic circle?
 - a. No
 - b. Fairly
 - c. Yes
 - d. Very Content

4. Do you support modifying the traffic circle to improve future traffic conditions?
 - a. Not at all
 - b. For the most part
 - d. Yes

5. What is an acceptable wait/delay time at the traffic circle?
 - a. Less than 1 minute
 - b. 1-2 minutes
 - c. 2-5 minutes
 - d. 5-10 minutes
 - e. more than 10 minutes

Please expand on any answers or provide additional feedback in the comment sheet below.

TITLE VI PUBLIC INVOLVEMENT FORM

Completing this form is **completely** voluntary. You are not required to provide the information requested in order to participate in this meeting.

In accordance with Title VI of the Civil Rights Act of 1964 and related authorities, the N.C. Department of Transportation assures that no person(s) shall be excluded from participation in, denied the benefits of, or subjected to discrimination under any of the Department's programs, policies, or activities, based on their race, color, national origin, disability, age, income, or gender.

Completing this form helps meet our data collection and public involvement obligations under Title VI and NEPA, and will improve how we serve the public. Please place the completed form in the designated box on the sign-in table, hand it to an NCDOT official or mail it to the Environmental Analysis Unit, 1598 Mail Service Center, Raleigh, NC 27699-1598.

All forms will remain on file at the NCDOT as part of the public record.

Zip Code: _____ Street Name: <i>(i.e. Main Street)</i> _____	Gender: <input type="checkbox"/> Male <input type="checkbox"/> Female
Total Household Income: <input type="checkbox"/> Less than \$12,000 <input type="checkbox"/> \$47,000 – \$69,999 <input type="checkbox"/> \$12,000 – \$19,999 <input type="checkbox"/> \$70,000 – \$93,999 <input type="checkbox"/> \$20,000 – \$30,999 <input type="checkbox"/> \$94,000 – \$117,999 <input type="checkbox"/> \$31,000 – \$46,999 <input type="checkbox"/> \$118,000 or greater	Age: <input type="checkbox"/> Less than 18 <input type="checkbox"/> 45-64 <input type="checkbox"/> 18-29 <input type="checkbox"/> 65 and older <input type="checkbox"/> 30-44
Have a Disability: <input type="checkbox"/> Yes <input type="checkbox"/> No	
Race/Ethnicity: Select all that apply and enter additional details in the spaces below. <input type="checkbox"/> American Indian or Alaska Native – <i>Enter, for example, Navajo Nation, Blackfeet Tribe of the Blackfeet Indian Reservation of Montana, Native Village of Barrow Inupiat Traditional Government, Nome Eskimo Community, Aztec, Maya, etc.</i> _____ <input type="checkbox"/> Asian – <i>Provide details below.</i> <input type="checkbox"/> Chinese <input type="checkbox"/> Asian Indian <input type="checkbox"/> Filipino <input type="checkbox"/> Vietnamese <input type="checkbox"/> Korean <input type="checkbox"/> Japanese <i>Enter, for example, Pakistani, Hmong, Afghan, etc.</i> _____ <input type="checkbox"/> Black or African American – <i>Provide details below.</i> <input type="checkbox"/> African American <input type="checkbox"/> Jamaican <input type="checkbox"/> Haitian <input type="checkbox"/> Nigerian <input type="checkbox"/> Ethiopian <input type="checkbox"/> Somali <i>Enter, for example, Trinidadian and Tobagonian, Ghanaian, Congolese, etc.</i> _____ <input type="checkbox"/> Hispanic or Latino – <i>Provide details below.</i> <input type="checkbox"/> Mexican <input type="checkbox"/> Puerto Rican <input type="checkbox"/> Salvadoran <input type="checkbox"/> Cuban <input type="checkbox"/> Dominican <input type="checkbox"/> Guatemalan <i>Enter, for example, Colombian, Honduran, Spaniard, etc.</i> _____ <input type="checkbox"/> Middle Eastern or North African – <i>Provide details below.</i> <input type="checkbox"/> Lebanese <input type="checkbox"/> Iranian <input type="checkbox"/> Egyptian <input type="checkbox"/> Syrian <input type="checkbox"/> Iraqi <input type="checkbox"/> Israeli <i>Enter, for example, Moroccan, Yemeni, Kurdish, etc.</i> _____ <input type="checkbox"/> Native Hawaiian or Pacific Islander – <i>Provide details below.</i> <input type="checkbox"/> Native Hawaiian <input type="checkbox"/> Samoan <input type="checkbox"/> Chamorro <input type="checkbox"/> Tongan <input type="checkbox"/> Fijian <input type="checkbox"/> Marshallese <i>Enter, for example, Chuukese, Palauan, Tahitian, etc.</i> _____ <input type="checkbox"/> White – <i>Provide details below.</i> <input type="checkbox"/> English <input type="checkbox"/> German <input type="checkbox"/> Irish <input type="checkbox"/> Italian <input type="checkbox"/> Polish <input type="checkbox"/> Scottish <i>Enter, for example, French, Swedish, Norwegian, etc.</i> _____	

How did you hear about this meeting? (newspaper advertisement, flyer, and/or mailing) _____

For more information regarding Title VI or this request, please contact the NCDOT Title VI Nondiscrimination Program at (919) 508-1808 or toll free at 1-800-522-0453, or by email at titleVI@ncdot.gov. Thank you for your participation!



**NCDOT - Environmental Analysis Unit
Attn: Tony Gallagher
1598 Mail Service Center
Raleigh, NC 27699-1598**

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