

Driving for the Green

NCDOT US Open Projects Initiative

Reuben Blakley, PE, NCDOT Division 8 Engineer

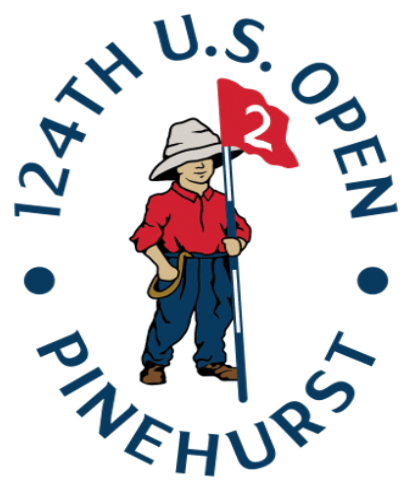
Travis Morgan, PE, NCDOT Division 8 Construction Engineer

May 15, 2024

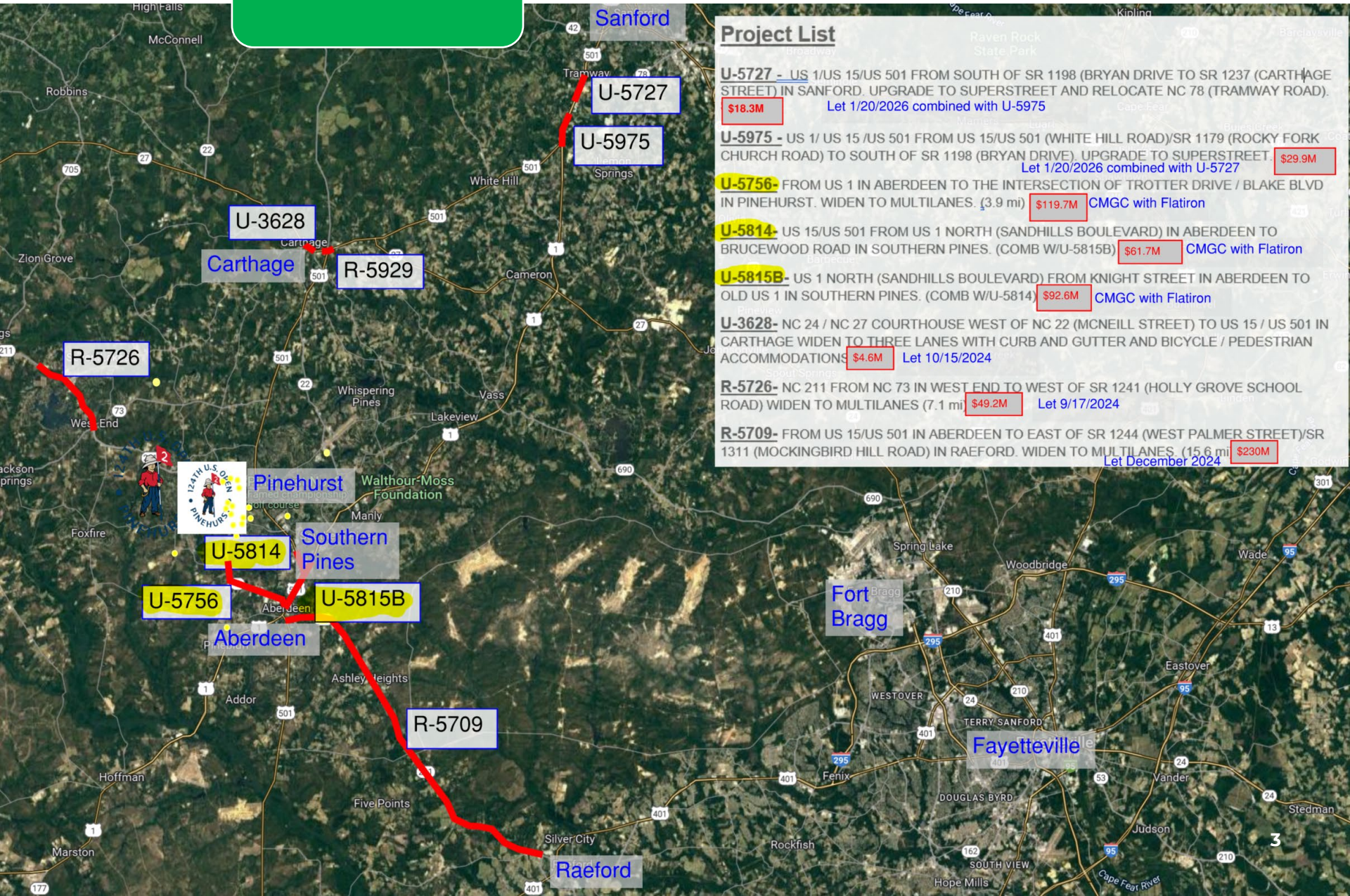


USGA Announces Plans for Golf House
Pinehurst and Five U.S. Open Championships
at Pinehurst
September 9, 2020

Championship Returning in 2024, 2029, 2035, 2041 and
2047



The Course



Project List

- U-5727** - US 1/US 15/US 501 FROM SOUTH OF SR 1198 (BRYAN DRIVE TO SR 1237 (CARTHAGE STREET) IN SANFORD. UPGRADE TO SUPERSTREET AND RELOCATE NC 78 (TRAMWAY ROAD). **\$18.3M** Let 1/20/2026 combined with U-5975
- U-5975** - US 1/US 15/US 501 FROM US 15/US 501 (WHITE HILL ROAD)/SR 1179 (ROCKY FORK CHURCH ROAD) TO SOUTH OF SR 1198 (BRYAN DRIVE). UPGRADE TO SUPERSTREET. **\$29.9M** Let 1/20/2026 combined with U-5727
- U-5756**- FROM US 1 IN ABERDEEN TO THE INTERSECTION OF TROTTER DRIVE / BLAKE BLVD IN PINEHURST. WIDEN TO MULTILANES. (3.9 mi) **\$119.7M** CMGC with Flatiron
- U-5814**- US 15/US 501 FROM US 1 NORTH (SANDHILLS BOULEVARD) IN ABERDEEN TO BRUCEWOOD ROAD IN SOUTHERN PINES. (COMB W/U-5815B) **\$61.7M** CMGC with Flatiron
- U-5815B**- US 1 NORTH (SANDHILLS BOULEVARD) FROM KNIGHT STREET IN ABERDEEN TO OLD US 1 IN SOUTHERN PINES. (COMB W/U-5814) **\$92.6M** CMGC with Flatiron
- U-3628**- NC 24 / NC 27 COURTHOUSE WEST OF NC 22 (MCNEILL STREET) TO US 15 / US 501 IN CARTHAGE WIDEN TO THREE LANES WITH CURB AND GUTTER AND BICYCLE / PEDESTRIAN ACCOMMODATIONS. **\$4.6M** Let 10/15/2024
- R-5726**- NC 211 FROM NC 73 IN WEST END TO WEST OF SR 1241 (HOLLY GROVE SCHOOL ROAD) WIDEN TO MULTILANES (7.1 mi) **\$49.2M** Let 9/17/2024
- R-5709**- FROM US 15/US 501 IN ABERDEEN TO EAST OF SR 1244 (WEST PALMER STREET)/SR 1311 (MOCKINGBIRD HILL ROAD) IN RAEFORD. WIDEN TO MULTILANES. (15.6 mi) **\$230M** Let December 2024



U-5814 Southern Pines

U-5756 Aberdeen

U-5815B Southern Pines

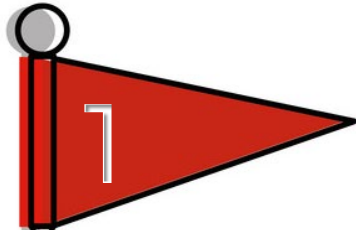
R-5709



The Approach

- Aggressively deliver key Transportation improvements to the US Open area
- Bring in industry partners to fill roles as:
 - General Project Manager Jerry Page/GF
 - Right of Way Project Manager Hugh Thompson/Ritchie Tuttle/PPS, CLA
 - Utility Project Manager Brandy Creech/MBI
- Implement best project management strategies
 - Identify and Reduce risks
 - Optimize design efforts
 - Reduce ROW impacts – Locate septic systems early
 - Reduce Utility impacts – Leave utility layer on
 - Acquire right-of-way prior to 2024 US Open.
 - Accomplish a majority of utility relocation prior to 2024 US Open
- Tee up the next phase
 - Projects to contract after the 2024 US Open
 - Completed prior to the 2029 US Open.



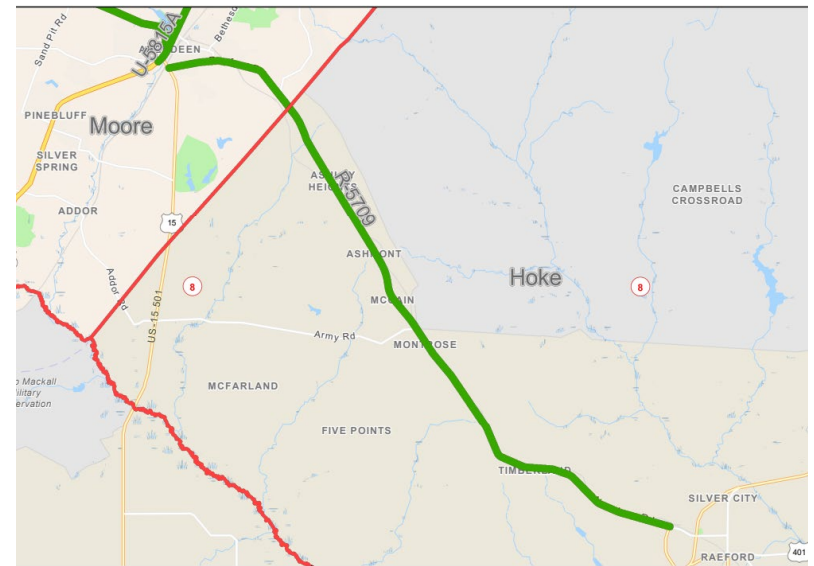


R-5709

NC 211 from US 15-501 in Aberdeen to Palmer Street Extension in Raeford

- Widen to 4-lane divided – 15.7 miles
- Project is needed to accommodate future traffic volumes and improve safety.
- Clearing, grubbing and erosion control contract underway and ROW acquisition is almost complete. Dry utilities are currently relocating.
- Current project letting December 2024. Construction duration maybe post 2029.

The Front Nine





R-5726

NC 211 from NC 73 in West End to Holly Grove Church Road

- Widen to 4-lane divided predominately – 4.8 miles
- Project will improve safety and mobility and is needed to handle future growth and proposed traffic volumes.
- Primarily daytime construction with a possibility of nighttime work.
- Clearing, grubbing and erosion control contract and ROW acquisition are complete. Dry utilities are currently relocating.
- Project letting September 2024

The Front Nine

M
MOTT
MACDONALD



3/4

U-3628 / R-5929 (On Hold)

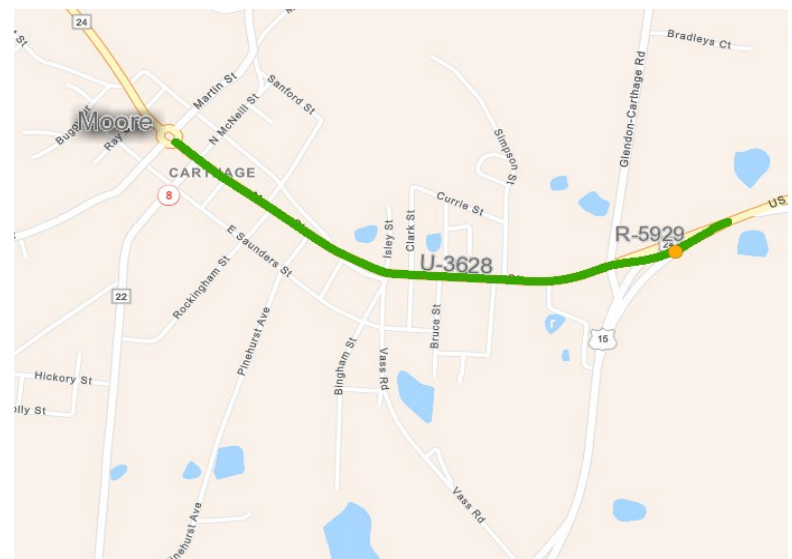
NC 24/27 from Traffic Circle to US 15-501/Glendon-Carthage Road (Carthage)

- Widen to 3-lane section – 1.4 miles
- Project will improve safety and upgrade pedestrian accommodations along the corridor.
- ROW acquisition is complete and dry utility relocations are underway.
- Project letting March 2025

The Front Nine



RS&H

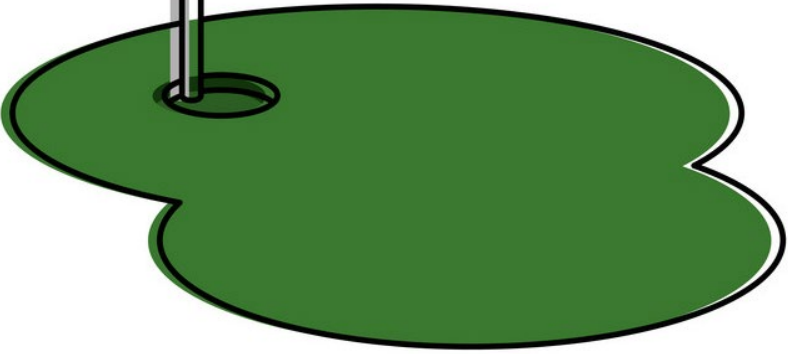




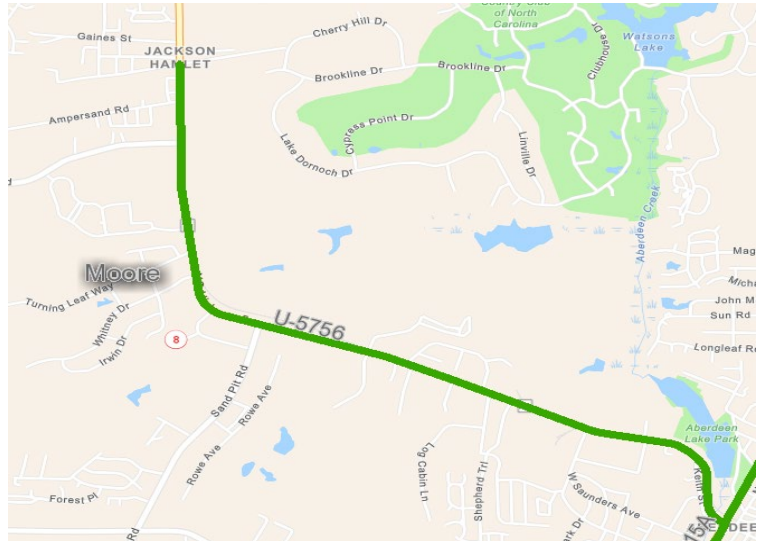
U-5756

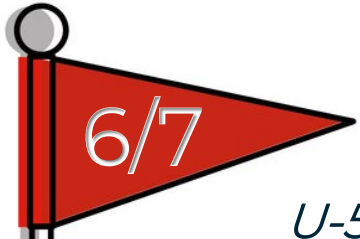
NC 5 from US 1 to Trotter Drive/Blake Boulevard (Aberdeen/Pinehurst) - CMGC

- Widen to 4-lane divided (short area of 3-lane included) – 4.3 miles
- Project will improve safety and mobility and is needed to handle future growth and traffic volumes.
- Work involving lane closures to be limited to nights.
- Preconstruction activities August 2024



The Front Nine

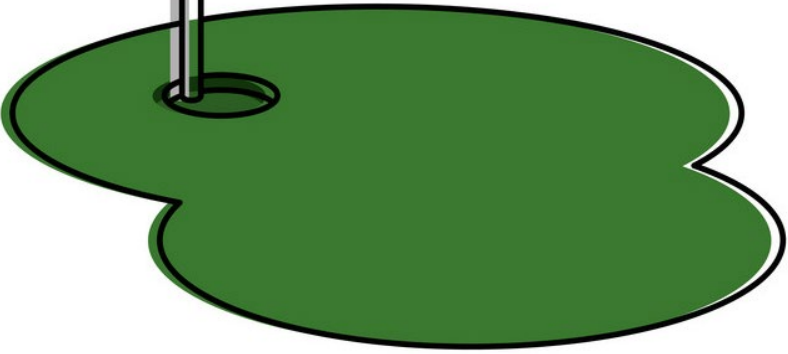




U-5727 / U-5975

US 1/US 15-501 from Bryan Drive to Carthage Street (Sanford)

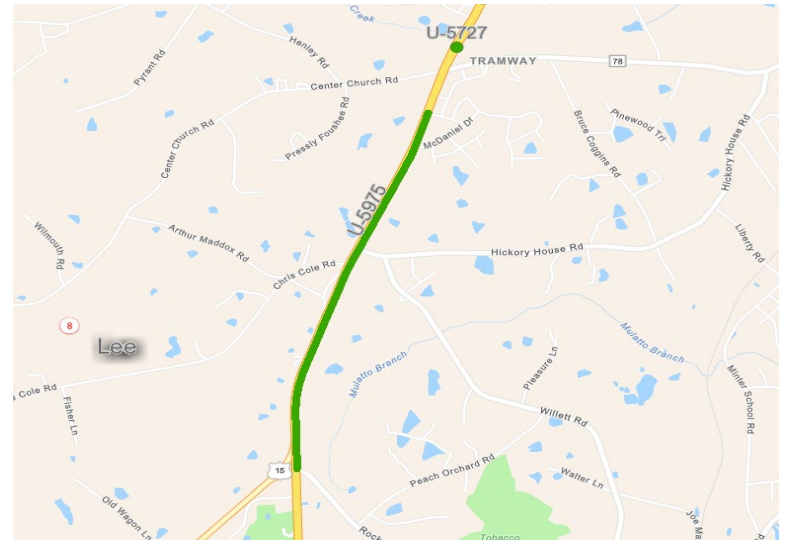
- Reduced Conflict Intersections – 4 miles
- Safety Improvements / Signal Upgrades / Increased Corridor Capacity
- Right of Way acquisition underway
- Project Letting January 2026

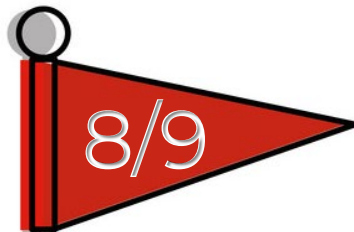


The Front Nine



STEWART





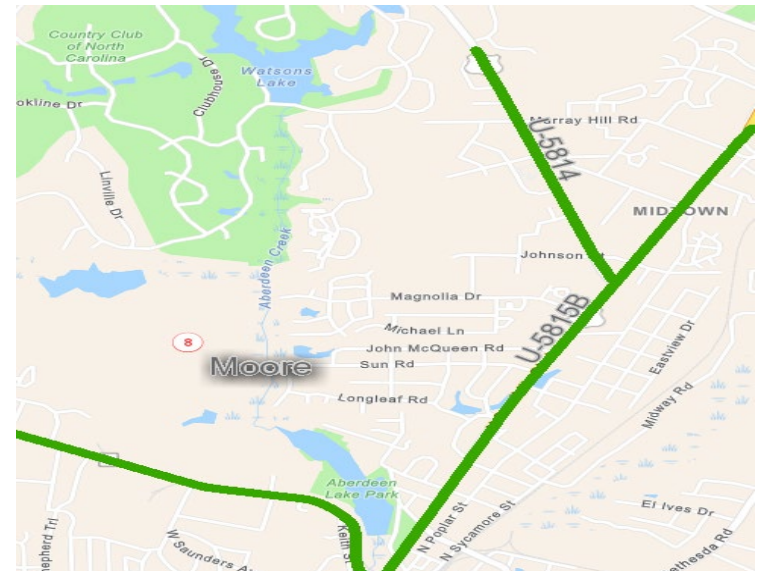
U-5814 / U-5815B

US 1 from Knight St. to Old US 1 & US 15-501 from US 1 to Brucewood Rd. - CMGC (Aberdeen/Southern Pines)

- Reduced Conflict Intersections – 4.1 miles
- Safety Improvements / Signal Upgrades / Increased Corridor Capacity
- 18" Water Transmission line relocation complete
- Preconstruction activities August 2024

The Front
Nine

Kimley»Horn





Paying to Play



Course	Green Fees (Right of Way)	Cart Fees (Utilities)	Caddy Fees (Construction)
R-5709	\$60M	Combined w/ ROW	\$230M
R-5726	\$26M	Combined w/ ROW	\$49M
U-3628	\$1.5M	Combined w/ ROW	\$4.6M
R-5929	\$0.5M	\$1M	\$6M
U-5756	\$6.2M	\$2.3M	\$120M
U-5727	\$9.4M	Combined w/ ROW	\$18.3M
U-5975	\$4M	\$4.1M	\$30M
U-5814	\$12M	Combined w/ ROW	\$62M
U-5815B	\$12M	Combined w/ ROW	\$93M
		Construction Totals	➔ \$613M



The Hazards



Course	Parcels	Relocatees	Category
R-5709	486	96	Homes - 70 Businesses - 20 Churches - 5 Signs/Billboards - 1
R-5726	127	42	Homes - 6 Businesses - 22 Churches - 1 Signs/Billboards - 11 Misc - 2
U-3628	43	9	Businesses - 1 Signs/Billboards - 7 Misc - 1
U-5756	46	2	Businesses
U-5727	87	0	None
U-5975	96	6	Homes - 3 Businesses - 3
U-5814	51	0	None
U-5815B	127	1	Business
Totals	1063	156	



More Hazards

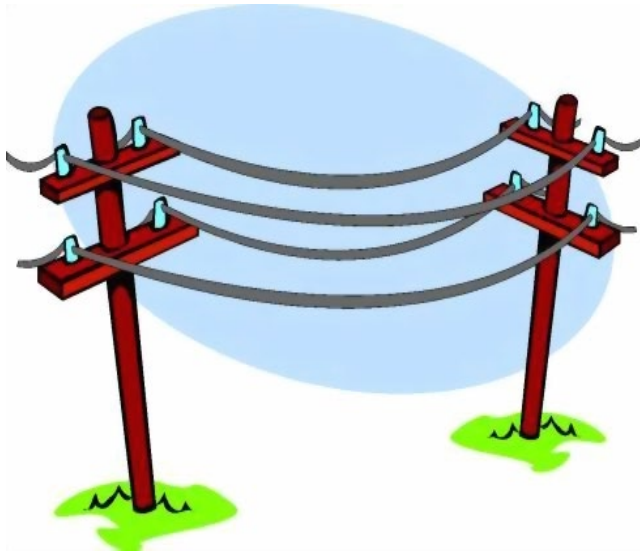


STIP	Utility Owners in Conflict
R-5709	Duke Energy, Piedmont Natural Gas, Town of Aberdeen (Water /Sewer), Hoke County Public Works (Water/Sewer), Town of Raeford (Water/Sewer), Brightspeed (Telephone), Spectrum (CATV), Conterra Broadband (Telecommunications), MCI (Telecommunications), DOT (Fiber Optic), Windstream (Telecommunications)
R-5726	Duke Energy, Brightspeed, Conterra, Spectrum, Moore County (Water)
U-3628	Duke Energy, Brightspeed, Conterra, Spectrum, Town of Carthage (Water/Sewer)
U-5727	Duke Energy, Windstream, MCNC, Randolph Telecom, Spectrum, Conterra, PSNC, City of Sanford (water)
U-5975	Duke Energy, AT&T, Windstream, Spectrum, MCNC, Segra, PSNC, City of Sanford (water)
U-5756	Duke Energy Progress (Transmission and Distribution), Windstream, Brightspeed, Spectrum, Conterra, SEGRA, Dixie Pipeline, PNG, Town of Aberdeen Water & Sewer, Moore County Public Utilities
U-5814/U-5815B	Duke Energy Progress (Transmission and Distribution), Windstream, Brightspeed, Spectrum, Conterra, Verizon Wireless, MCNC, SEGRA, Crown Castle, PNG, Town of Aberdeen Water & Sewer, Town of Southern Pines Water, Moore County Public Utilities

Staying out of the Bunker

Utilities

- Building and Maintaining relationships with all Utility Owners



Staying out of the Bunker

Utilities

- Phasing of projects to allow for clearing/grubbing/utilities to start sooner
 - Clearing and Grubbing contract ahead of roadway contract to allow for C&G and Erosion Control to be installed ahead of Duke so their resources can focus on relocation of their facilities and not environmental permitting, tree clearing, etc.



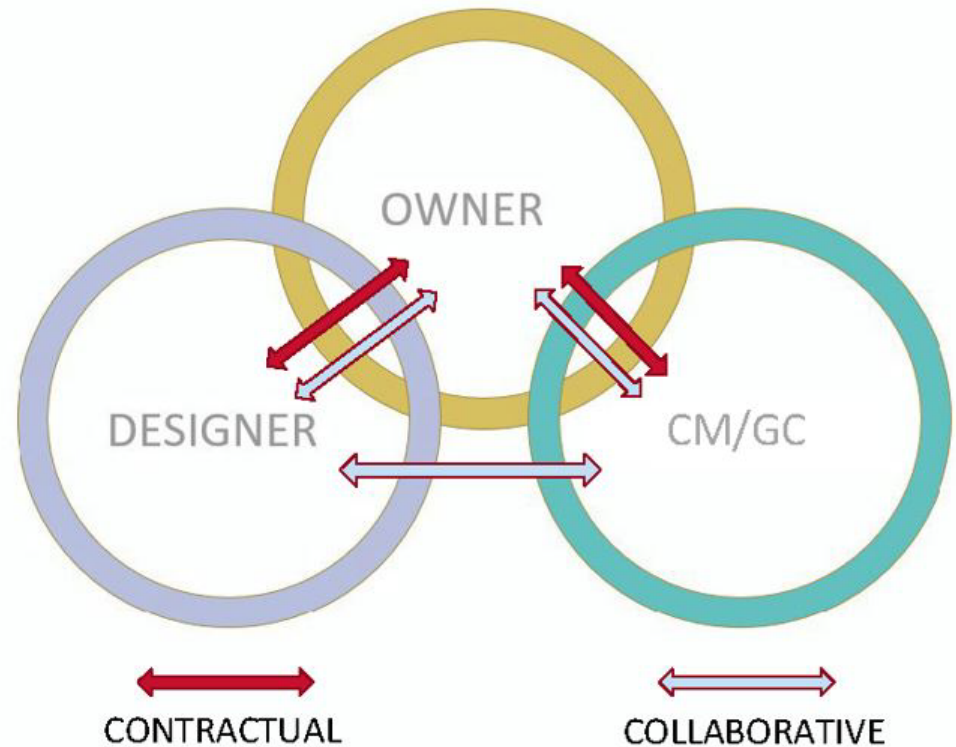
Staying out of the Bunker



Going to Overtime

Construction Manager / General Contractor (CMGC)

- Designer and CMGC each selected separately based on Qualls and contracted separately with the Owner
- Construction begins after determining a Guaranteed Maximum Price (GMP)



Going to Overtime

Benefits of CMGC Delivery Method

- Identifies and Mitigates Risks
- Open Book Pricing Exercises
- Design-Bid-Build if Needed
- Reduced Constructability Issues
- Contractor Input on Design Alternatives
- Compressed Schedule/Early Work
- Innovation through Contractor Input
- Flatiron / Fred Smith Joint Venture Team



Leaderboard Updates

Business Stakeholder / Public Outreach

- Business Stakeholder Distribution List
- Public Mailing List
- Comment Management
- Toll Free Call-in Number
- Project Email
- Social Media Post
- Media Outreach

Get Project Update

Email	SUBSCRIBE
Text	GET ALERTS

Leaderboard Updates

Project Public Information Content

- Project Webpage
- Anticipated to go live July 2024
- Project Videos
- Collateral Materials

U.S. 1/15-501 Improvements (Moore County)



County: Moore	Estimated Cost: \$54.5 million
Status: In Development	Start Date: 2022
STIP Number: U-5814, U-5815A, U-5815B, U-5815BA	Completion Date: TBD

Projects

U.S. 1/15-501 Improvements (Moore County)

[Project Highlights](#)

[Project History](#)

[Project Maps](#)

[Project Documents](#)

[Public Meetings](#)

[News Releases](#)

[Related Links](#)

[Contact](#)

NCDOT STIP Project U-5976

Pinehurst Traffic Circle

US 15-501 / NC 211 / NC 2 Intersection

Past/Current Conditions

- Five-leg traffic circle constructed in 1956
- Gateway intersection of major routes, US 15-501 / NC 211 / NC 2
- 600 foot diameter circle
- Single lane circulator with right-turn bypass lanes



U-5976 – Pinehurst Traffic Circle

STIP Description: US 15 / US 501 FROM SR 1905 (VOIT GILMORE LANE) IN SOUTHERN PINES TO SR 1208 (PAGE ROAD) IN PINEHURST. UPGRADE SR 1208 INTERSECTION AND CONSTRUCT IMPROVEMENTS TO PINEHURST TRAFFIC CIRCLE AND APPROACHES

Project Schedule/History

May 19, 2016 - P 4.0 Project submitted by TARPO (SPOT ID# H150922) – Improvement type (Improve Intersection)-*72.83 out of 100 possible points*

August 3, 2017 – Approval of 2018-2027 STIP by NCDOT Board of Transportation

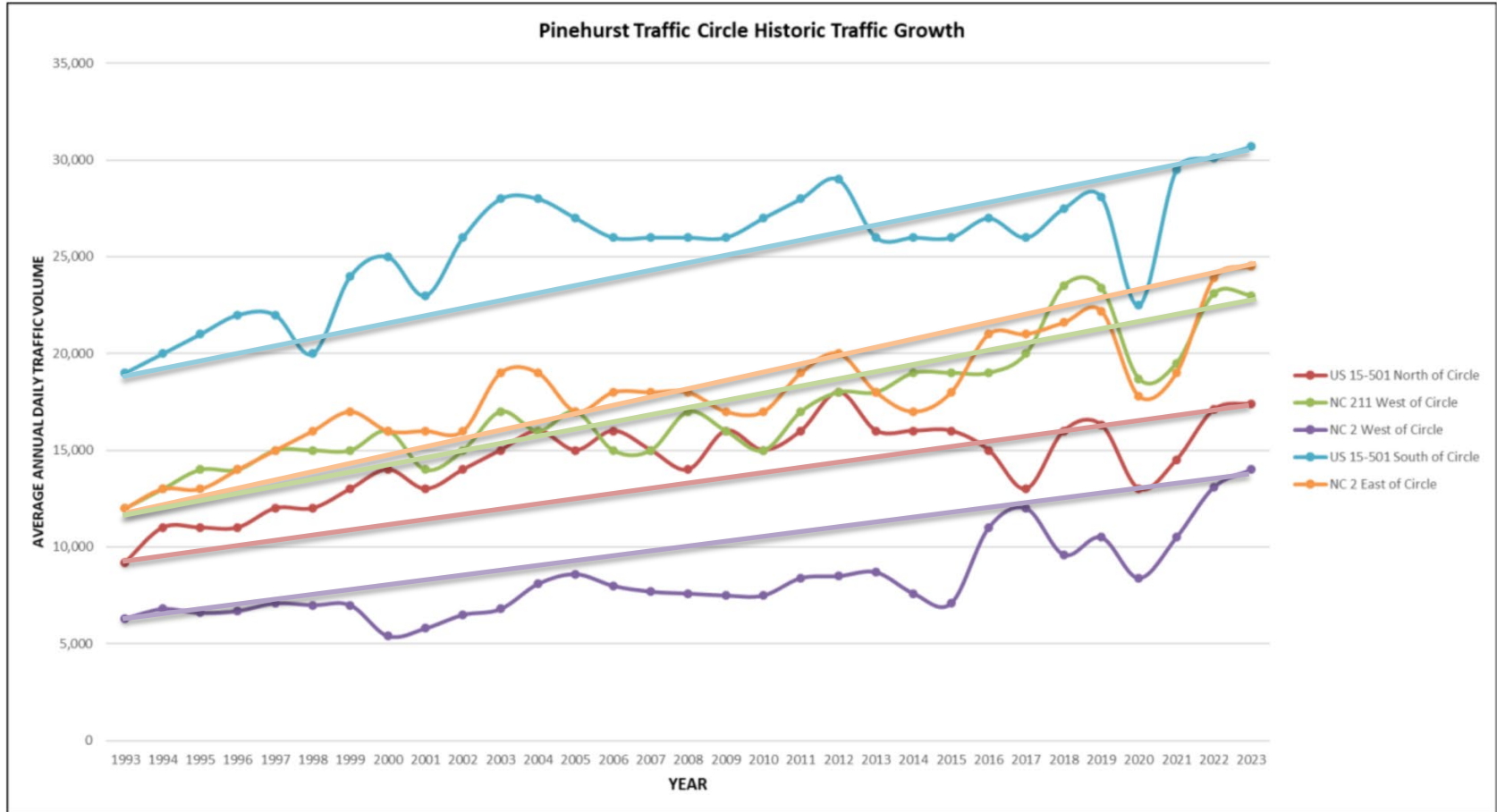
Summer 2024 – Public Meeting

Summer 2029 – Contract Letting, Construction expected to last at least 2 ½ years.



- The Pinehurst Traffic Circle (PTC) experienced 50,000 daily trips in 2023 and the traffic demand is expected to rise to 80,000 daily trips in the next 25 years-60% increase. In 2013, there were 43,500 daily trips and there has been a slow consistent growth (1-2% a year) across all PTC legs over the last 20 years.
- Population in Moore County :
 - *Projections from OSBM- State Demographer Website*
 - 2021 – 2022 - 2.6% increase
 - Projections – 2020 to 2050 is expected to have 79% increase in population
 - 2020-2030 – 27% Increase : 100k – 127K
 - 2030-2040 – 20% Increase : 127K – 153K
 - 2040-2050 – 17% Increase : 153K – 179K

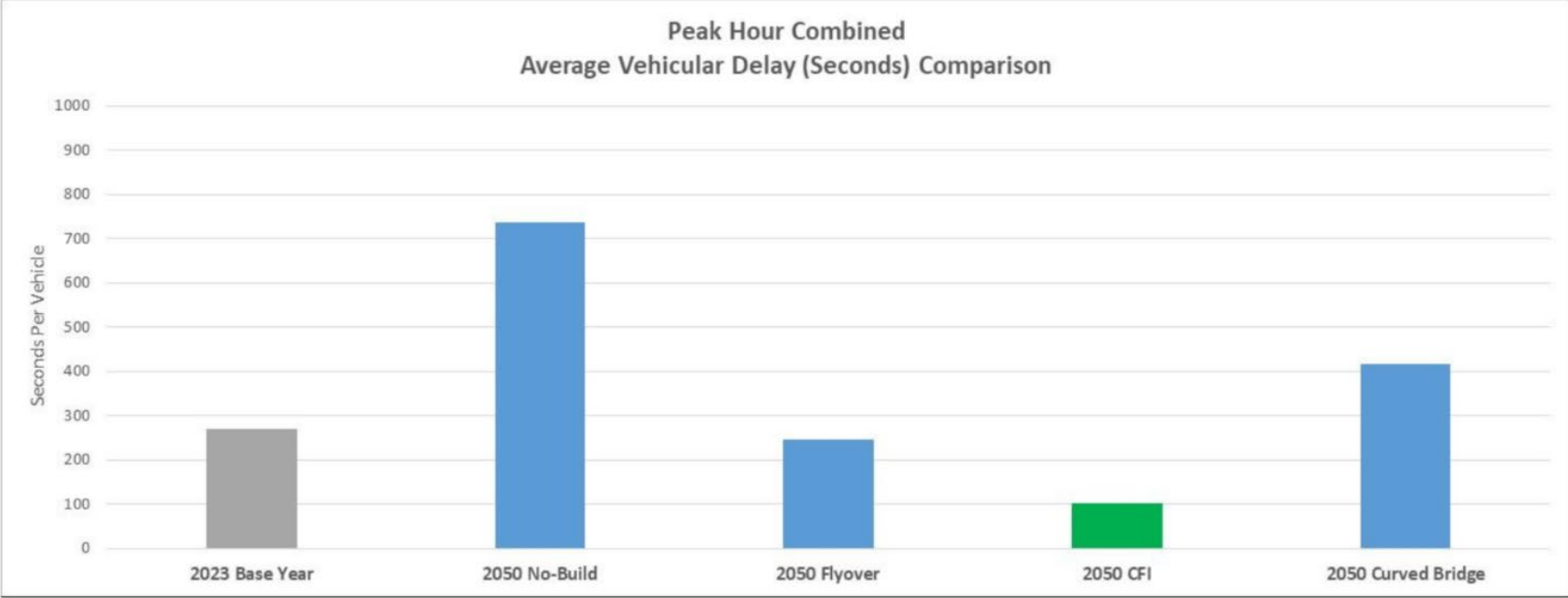
Exhibit 1. Pinehurst Traffic Circle NCDOT Historic AADT Traffic Volumes



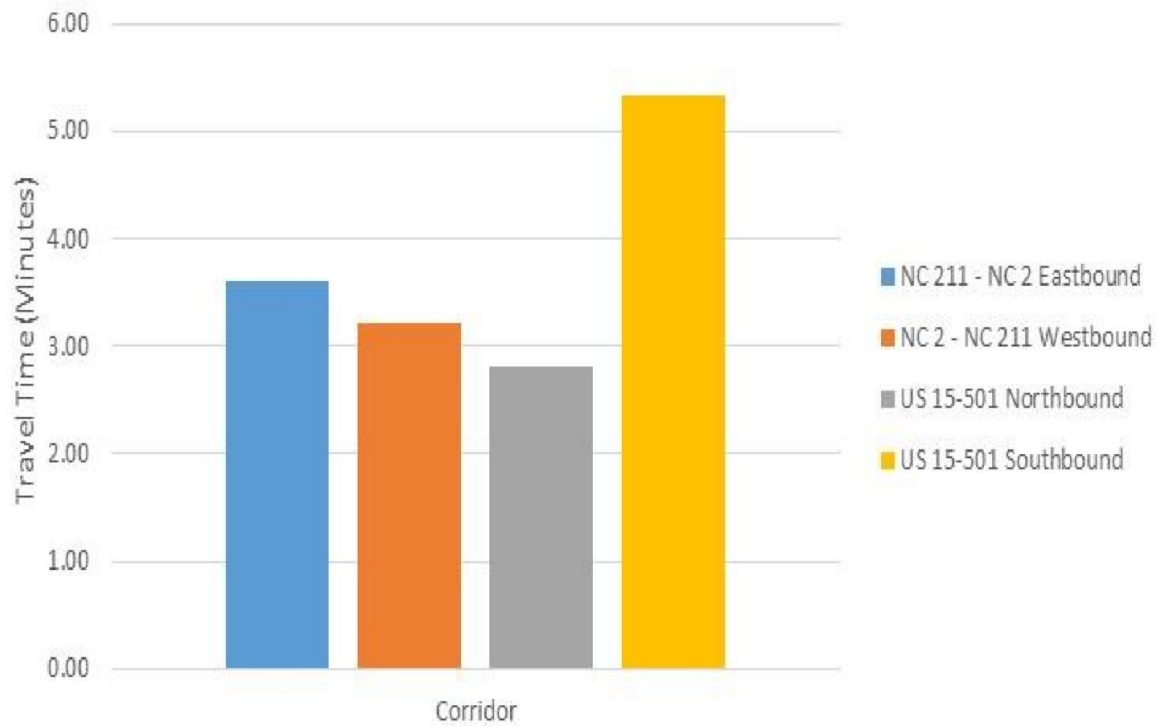
LOS	Control Delay at Roundabout Approach
A	Less Than 10 Seconds
B	10 – 15 Seconds
C	15 – 25 Seconds
D	25 – 35 Seconds
E	35 – 50 Seconds
F	Greater than 50 Seconds

- Since the PTC is at or over its designed traffic processing capacity for multiple time periods throughout the day, only 70 percent of peak hour demand can actually move through the PTC in 2050. The remaining 30 percent will need to seek alternative routes or face extremely congested traffic conditions.
- Delays of several minutes can occur during peak travel times to navigate through the PTC.

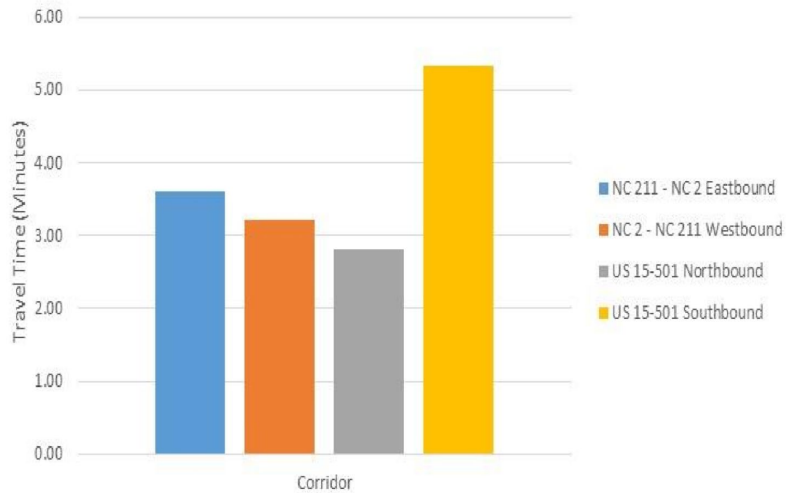
Exhibit 4. 2050 AM and PM Peak Hour Combined Average Vehicular Delay



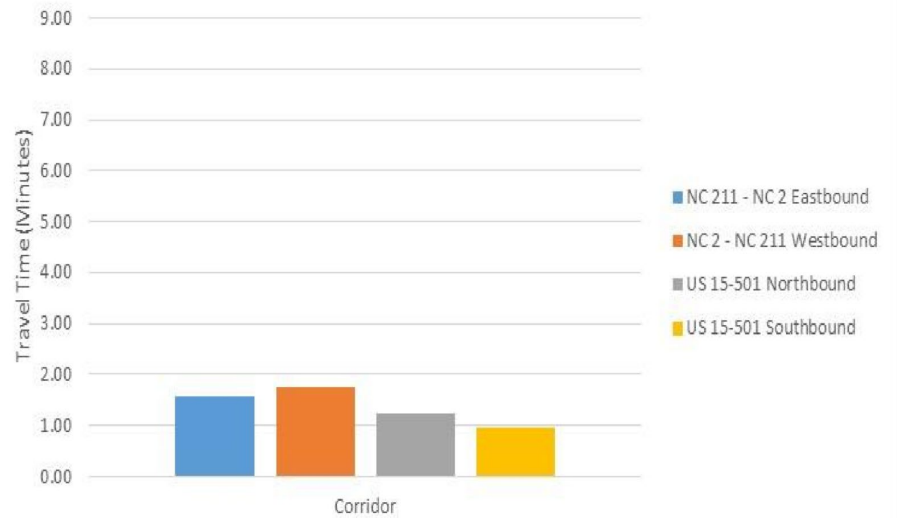
2050 AM Peak Hour Travel Times - Selected Movements Through PTC - No-Build Alternative



2050 AM Peak Hour Travel Times - Selected Movements
Through PTC - No-Build Alternative



2050 AM Peak Hour Travel Times - Selected Movements
Through PTC - CFI Alternative



US 15-501 Northern Leg at Traffic Circle



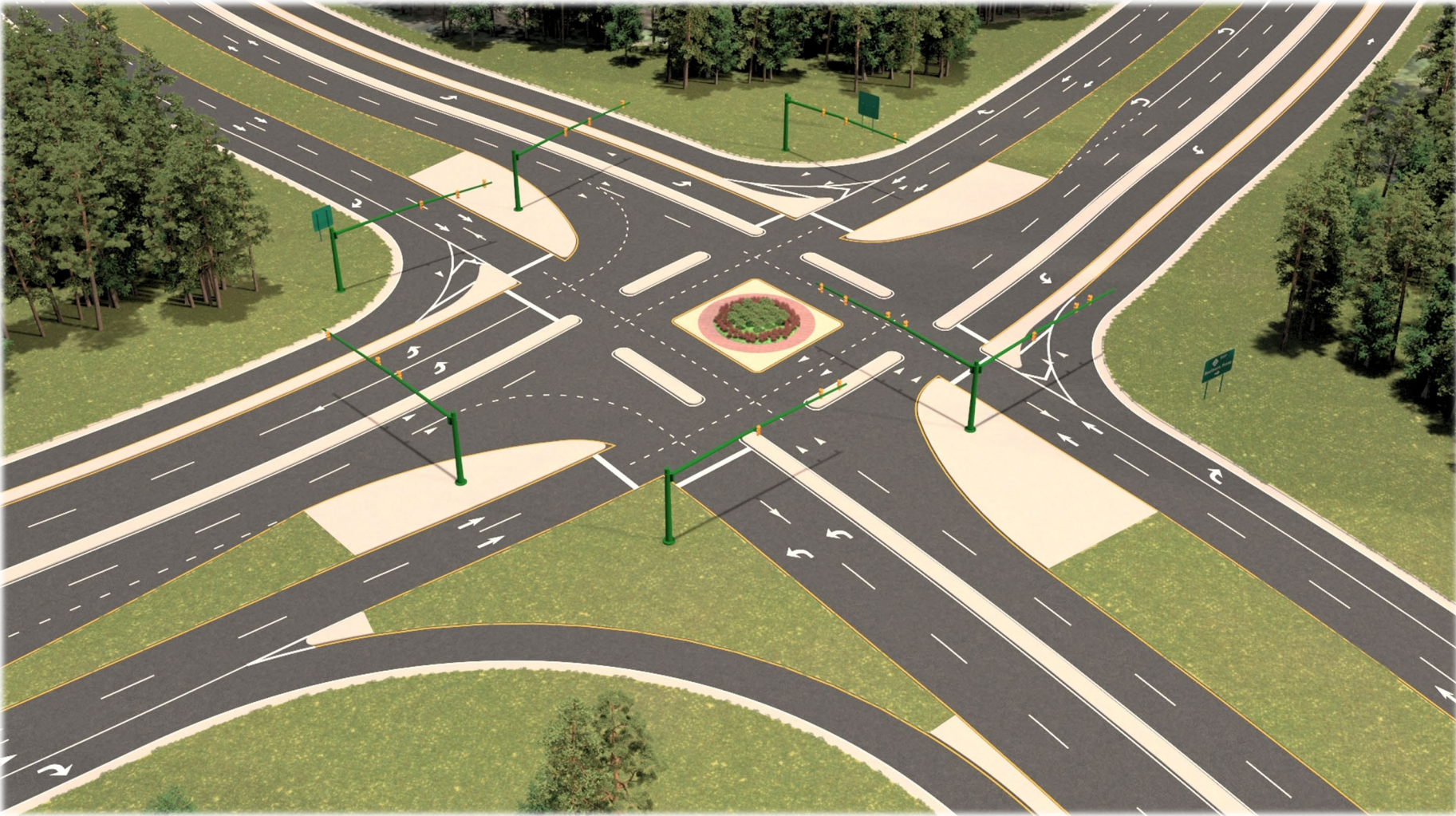
NC 211 Western Leg at Traffic Circle



- Approximately 850 crashes have occurred in the PTC vicinity over the last 5 years, ** June 2018 – May 31, 2023*
 - estimated \$31,750,000 in crash costs.
- Crash Frequency - Steadily Increasing
 - 2011 study – 309 crashes,
 - 2017 update – 421 crashes,
 - 2023 update – 840 crashes.

Year	Injury Accidents	PDO Accidents	Inj Accident Cost	PDO Accident Cost	Total Cost/Yr
2018	19	85	\$3,192,000	\$1,224,000	\$4,416,000
2019	23	147	\$3,864,000	\$2,116,800	\$5,980,800
2020	16	108	\$2,688,000	\$1,555,200	\$4,243,200
2021	33	157	\$5,544,000	\$2,260,800	\$7,804,800
2022	25	148	\$4,200,000	\$2,131,200	\$6,331,200
2023	12	67	\$2,016,000	\$964,800	\$2,980,800
	128	712	\$21,504,000	\$10,252,800	\$31,756,800
Inj Accident (B+C) Average			\$168,000		
PDO Accident Average			\$14,400		

Overview of CFI Intersection



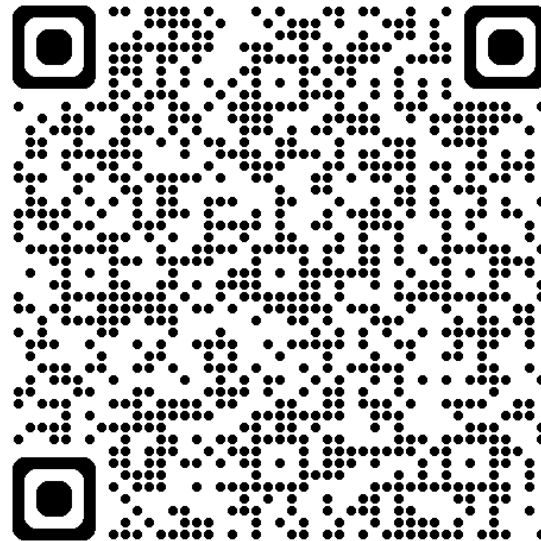
Midland Road Intersection with NC 211



Preliminary Public Hearing Map

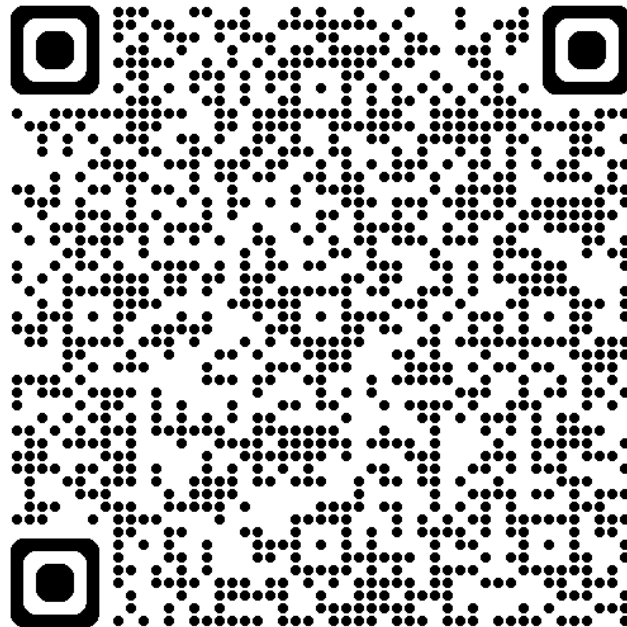


Continuous Flow Intersections



<https://www.ncdot.gov/initiatives-policies/Transportation/safety-mobility/continuous-flow-intersection/Pages/default.aspx>

Reduced Conflict Intersections



<https://www.ncdot.gov/initiatives-policies/Transportation/safety-mobility/reduced-conflict-intersections/Pages/default.aspx>

Contact Info

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