



*Surf City Bridge*

# NC-210 EAST COAST GREENWAY

## FEASIBILITY STUDY

STEERING COMMITTEE MEETING #2 – AUGUST 24, 2022





# Meeting Agenda

- **Greetings**
- **Defining Success and Project Goals**
- **Community Engagement**
  - Survey Results
  - Stakeholder Meetings To date
- **Route Alternatives Development**
- **Route Selection Criteria**
- **Next Steps**



*Greenway along NC 50*

# Greetings!

## Welcome Committee Members:

- **Todd Bluemnriech**  
Chief Officer for Organizational Development  
Pender County Schools
- **Derek Arthur**  
Surf City Planning Board

## Welcome McAdams Team Member:

- **Haley Nafissi**  
Bicycle + Pedestrian Planner



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*Greenway along NC 50*

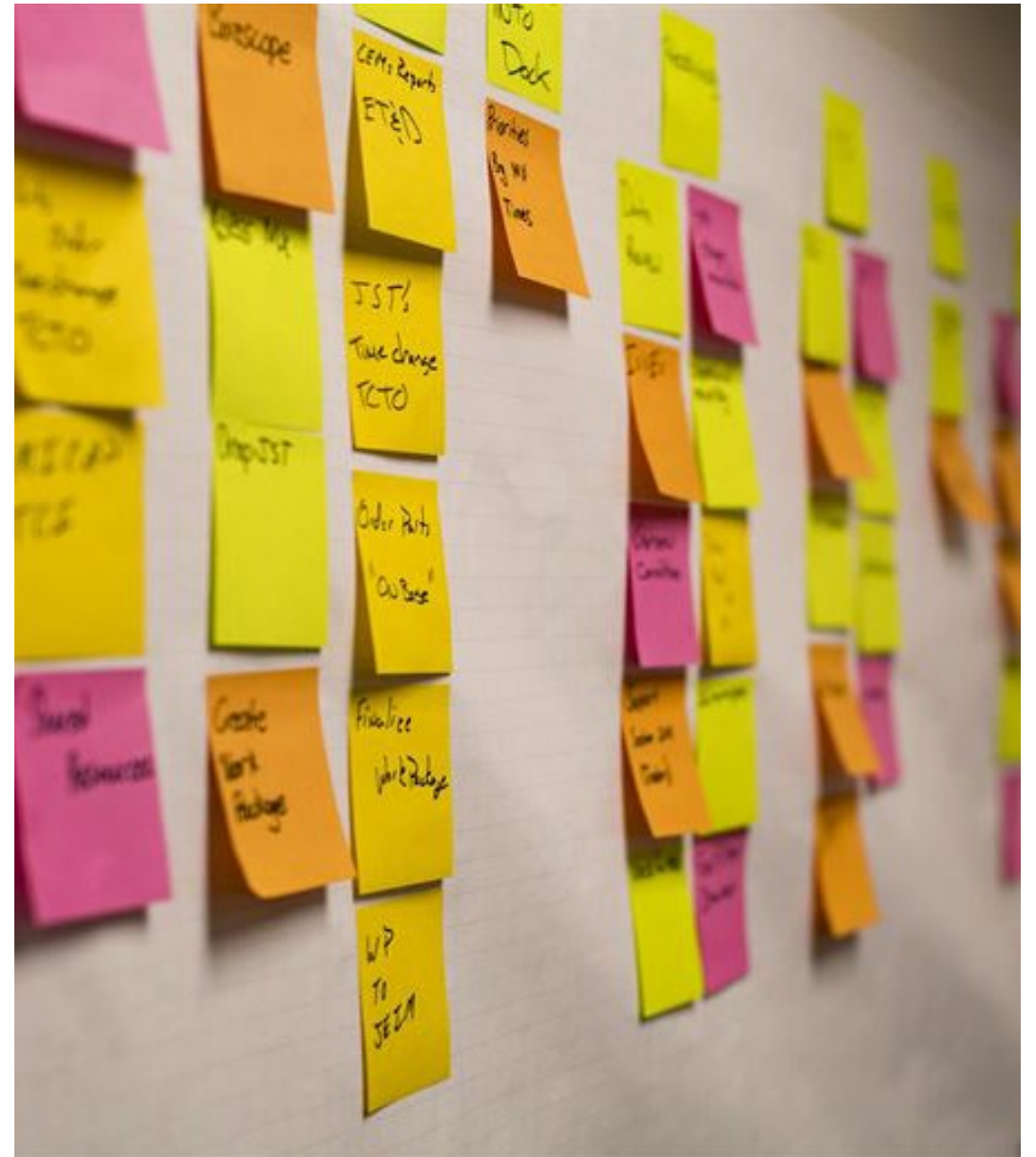
## Defining Success Exercise

## What does success look like?

- Accessible to all user groups (8 to 80)
- Planning Guidance
  - Inform future NCDOT work on US 17 and NC 210
  - A foundational plan for local communities
- Safety
  - Comprehensive safety priorities
  - Improvements to drastically reduce bike/ped accidents

## What are the biggest obstacles?

- Fast pace of land development
- Funding sources
- Limited right of way
  - Cost of right of way
  - Impacts to scenic routes

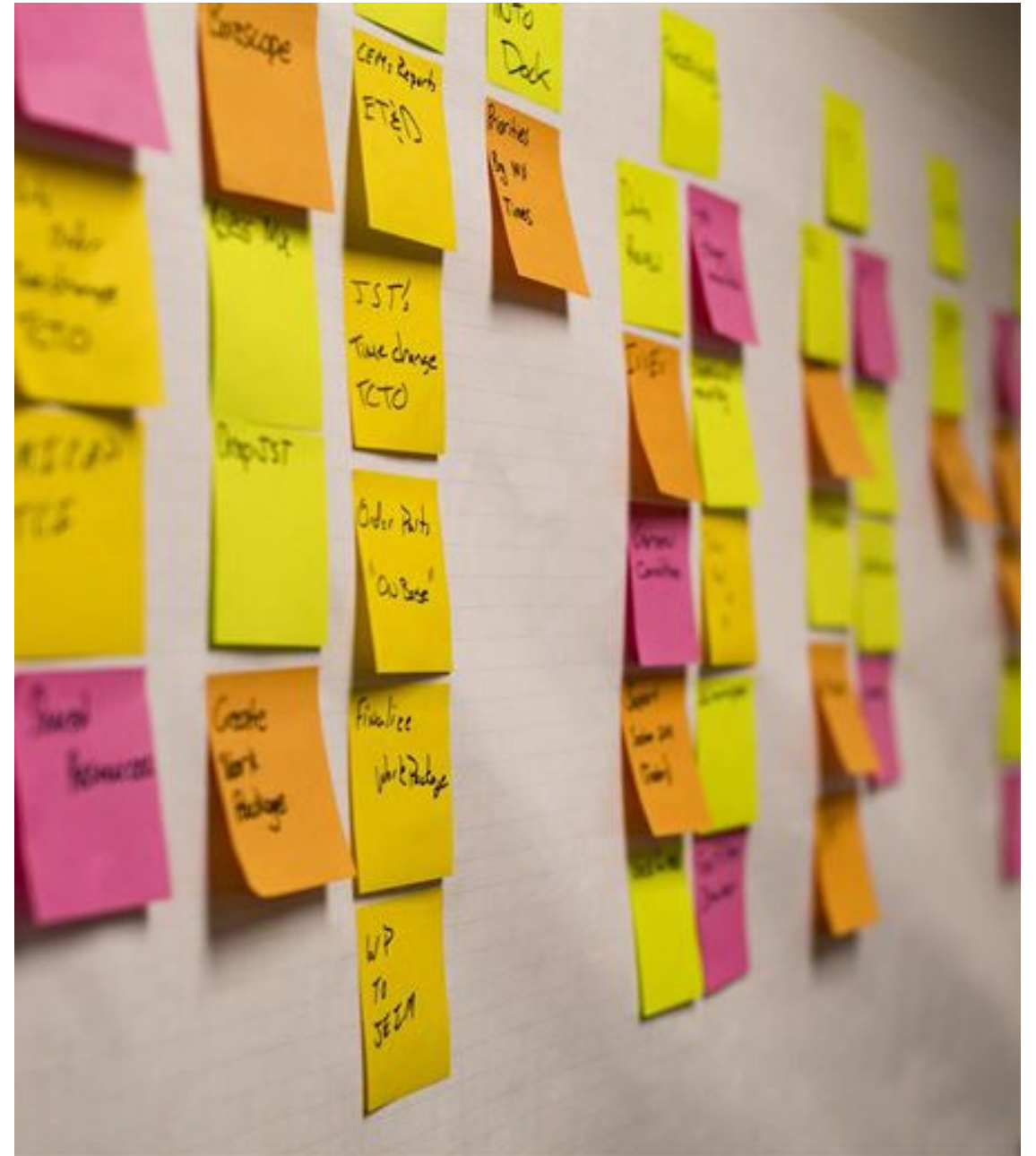




# Defining Success Exercise

## What are the opportunities?

- High priority area for conservation from land trusts and the military for buffering (REPI program)
- Establish a trail corridor before future development
- Lots of great businesses and places of interest to connect with bike/ped facilities
- Community has a focus on tourism and thus incentive to prioritize bike/ped development
- Opportunity to avoid weekend car traffic going into Topsail/Surf City
- Local environmental beauty
- Consider and define 'motorized vehicles' in advance of ordinance or deed restrictions
- Do not aim small, get multiple options adopted



# Draft Goals

**Safety** - *Provide safe access points, road crossings, and paths for bikers, walkers and hikers of all ages and abilities.*

**Accessibility & Connectivity**- *Provide easy access for a range of user groups to parks, shopping, schools, places of interest and outdoor recreation areas.*

**Environmental Protection** - *Prioritize the development of a route and design solutions that balance potential impacts on environmental features with the desire for access to natural scenery and outdoor recreation opportunities.*

**Regional Collaboration** - *Collaborate with government entities and other regional stakeholders to identify priorities and concerns. Coordinate to support future funding, design, construction and maintenance.*

**Project Feasibility** - *Prioritize the development of a route that is permittable, solves right of way challenges, and generates public excitement that can be focused towards future construction and maintenance funding efforts.*





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# Community Survey

## Overview:

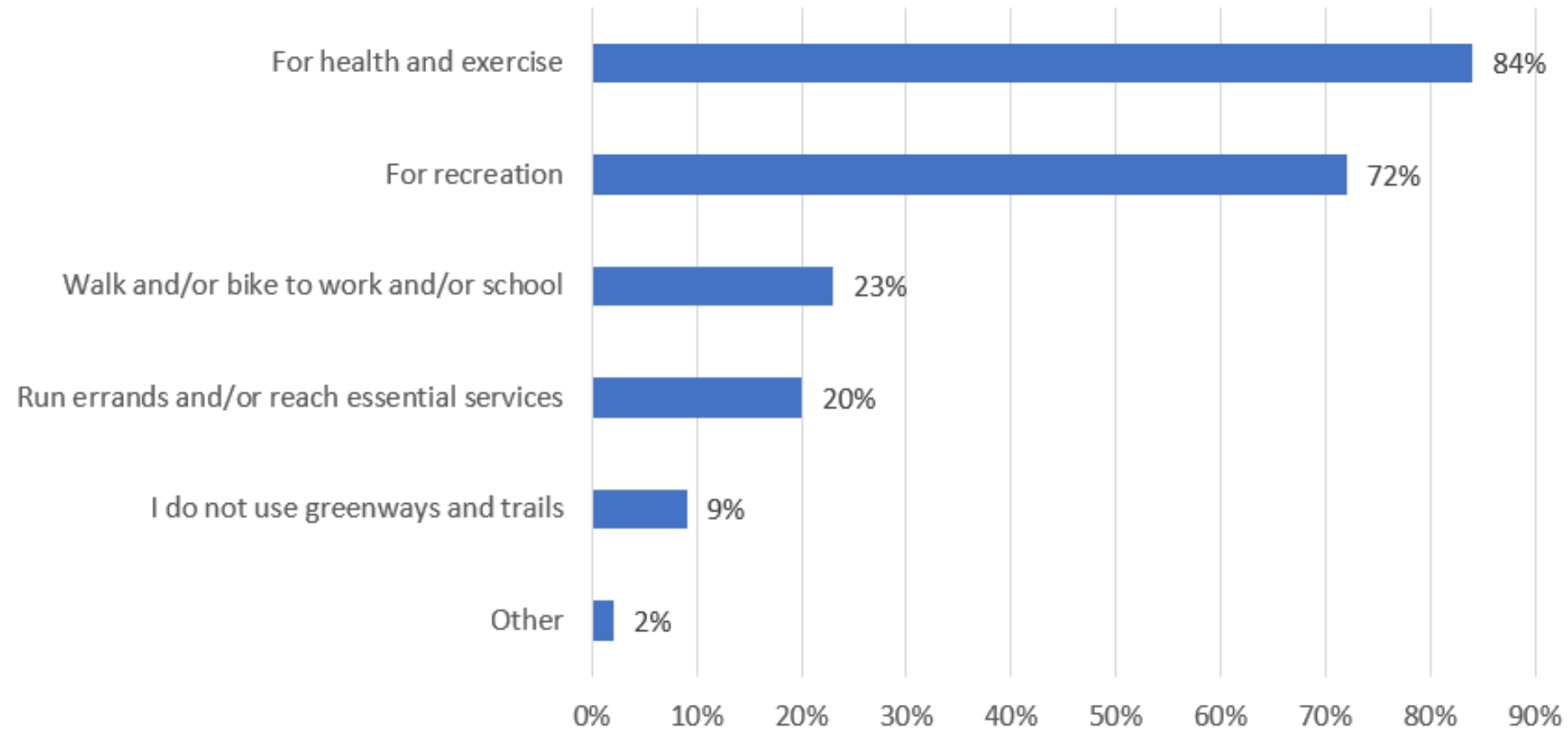
- Launch date: July 12, 2022
- Open for comments until August 8, 2022
- The survey attracted 1,774 participants who provided approximately 1,500 comments.
- The feedback obtained through this survey will support the framework for developing the proposed East Coast Greenway through Pender County.

## Survey Purpose:

- Introduce the project and gauge public support.
- Solicit and compile public comment on destinations, opportunities and challenges, user preferences, and route preferences.
- Fulfill requests for information.
- Develop an email contact list for interested parties.

# Survey Results

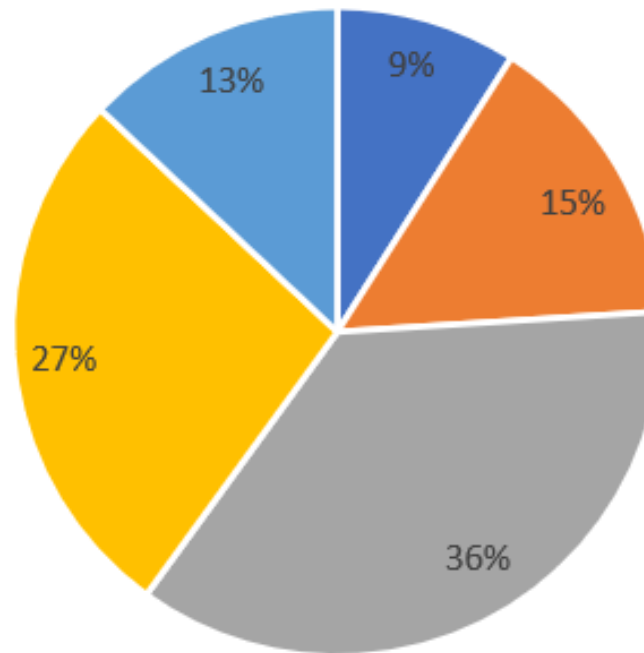
**Question 1.** How do you currently use greenways, trails, and multi-use paths in Hampstead, Surf City, and neighboring communities? *Select all that apply.*





## Survey Results

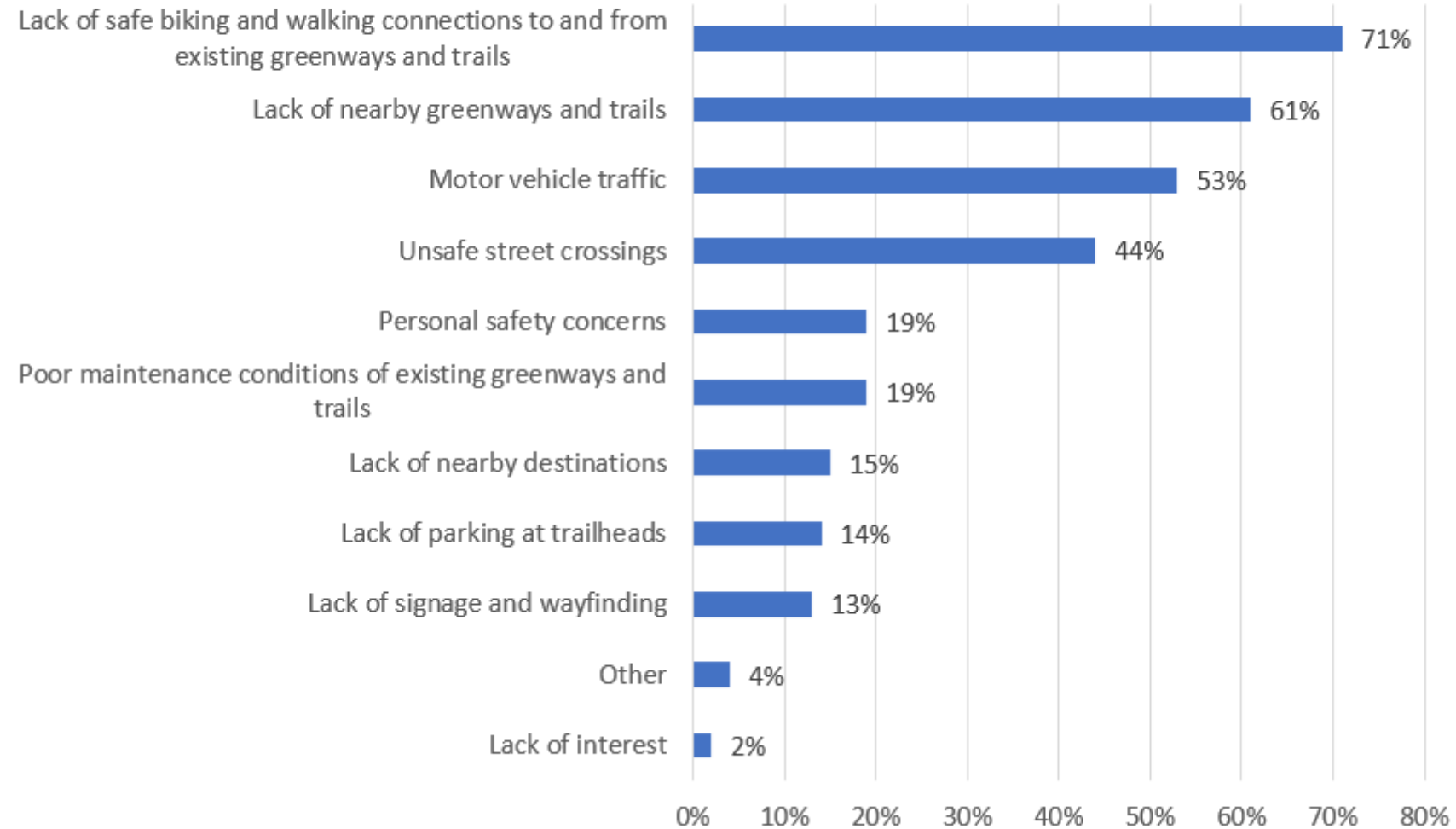
**Question 2.** How frequently do you use greenways, trails, and multi-use paths in Hampstead, Surf City, and neighboring communities?



■ Never ■ Daily ■ A few times a week ■ A few times a month ■ A few times a year

# Survey Results

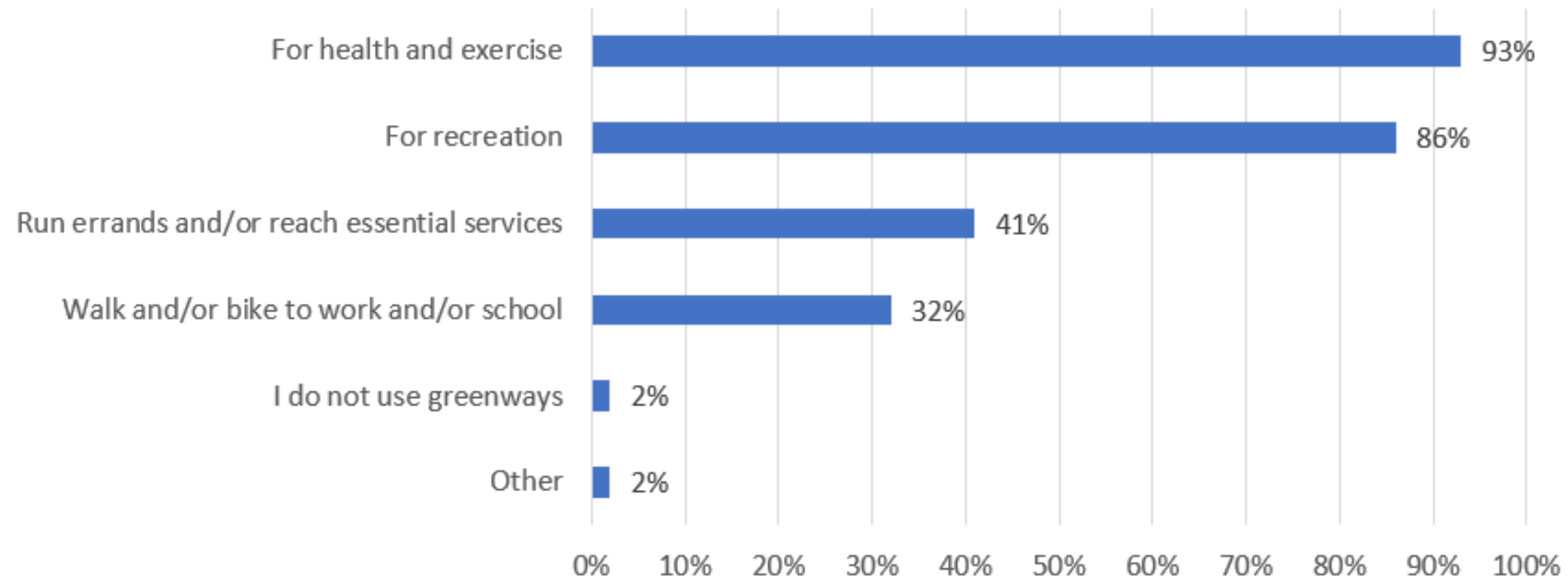
**Question 3.** What factors discourage you from using greenways, trails, and multi-use paths in Hampstead, Surf City, and neighboring communities? *Select all that apply.*





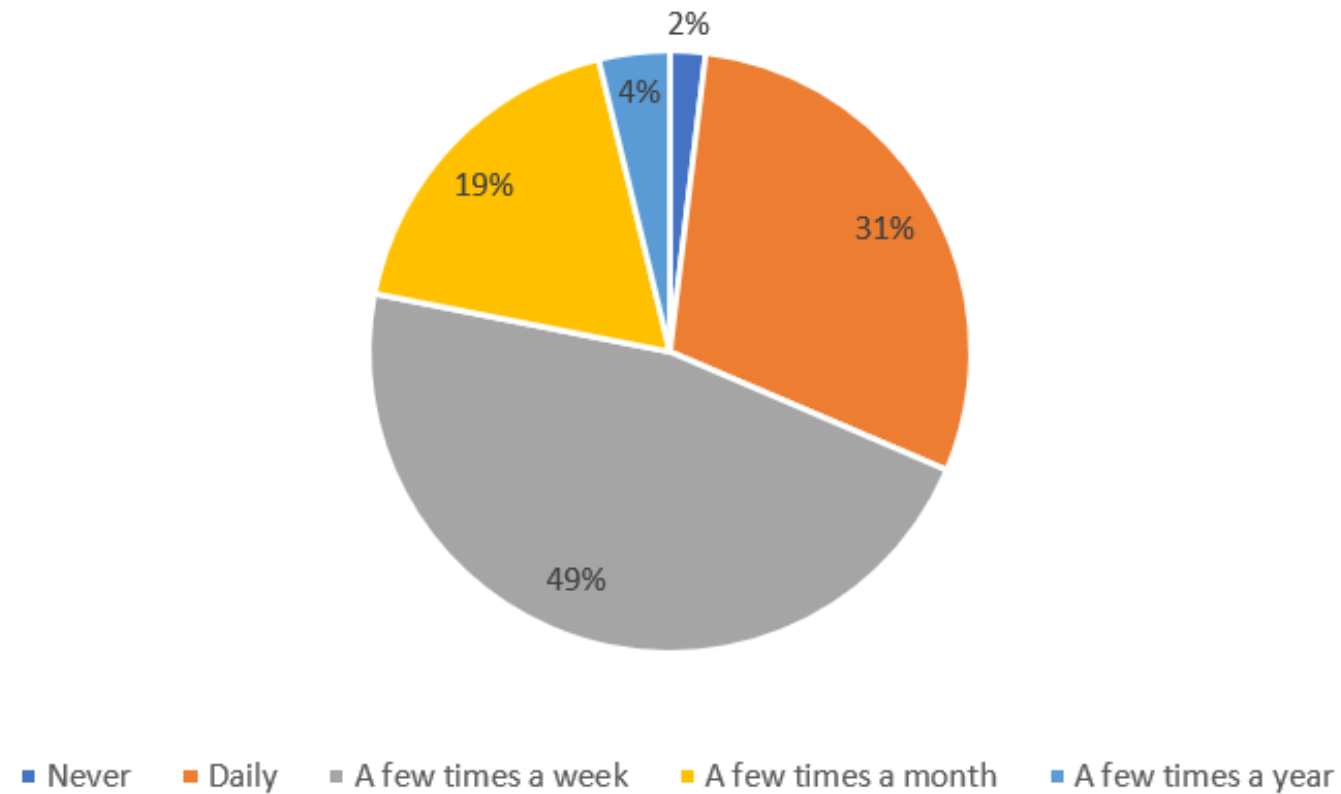
## Survey Results

**Question 4.** How would you like to use the proposed NC-210 East Coast Greenway corridor (connecting Hampstead, Surf City, and North Topsail Beach) once the trail is constructed? *Select all that apply.*



# Survey Results

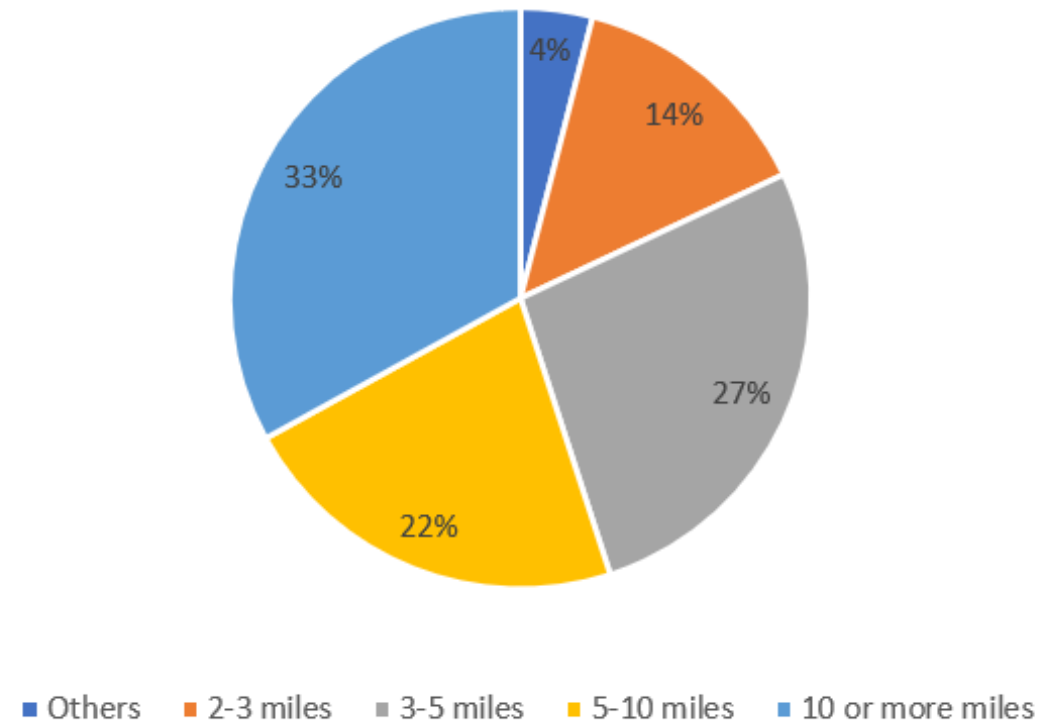
**Question 5.** How frequently would you use the proposed NC-210 East Coast Greenway corridor (connecting Hampstead, Surf City, and North Topsail Beach) once the trail is constructed?





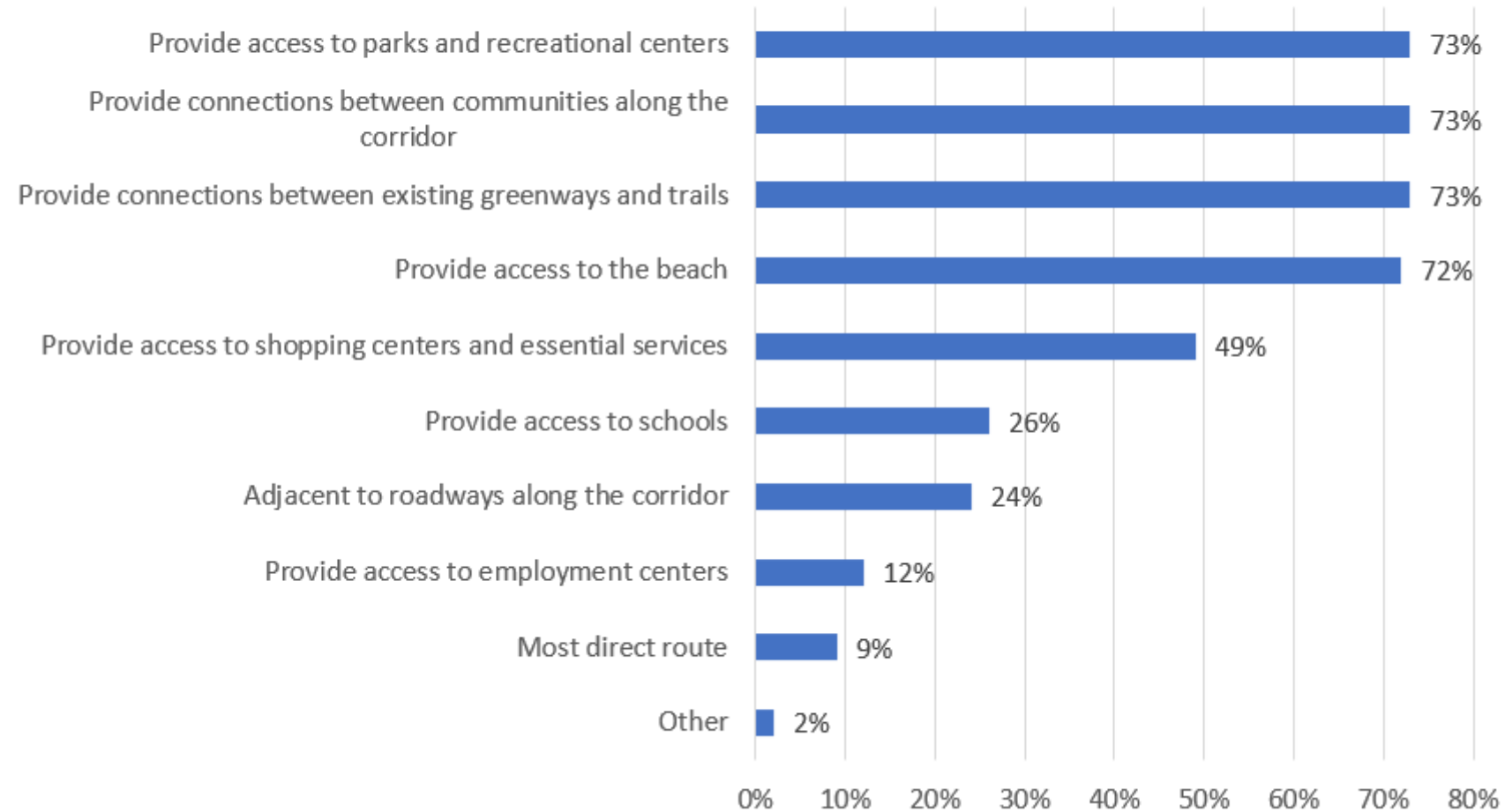
## Survey Results

**Question 6.** On average, how long of a distance would you be willing to travel along the proposed NC-210 East Coast Greenway corridor (connecting Hampstead, Surf City, and North Topsail Beach) as a part of a trip or activity?



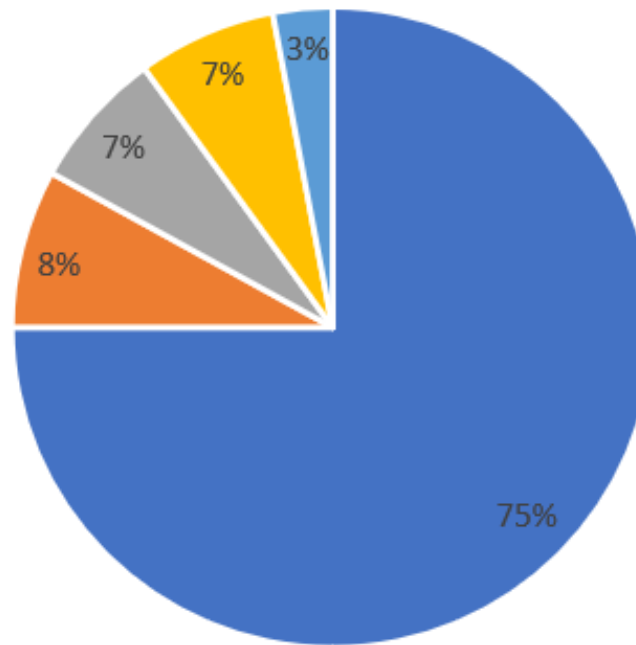
# Survey Results

**Question 7.** What are your routing preferences for the proposed NC-210 East Coast Greenway corridor (connecting Hampstead, Surf City, and North Topsail Beach)? *Select all that apply.*



## Survey Results

**Question 8.** What is your primary mode of transportation for commuting to work or school and/or running errands?

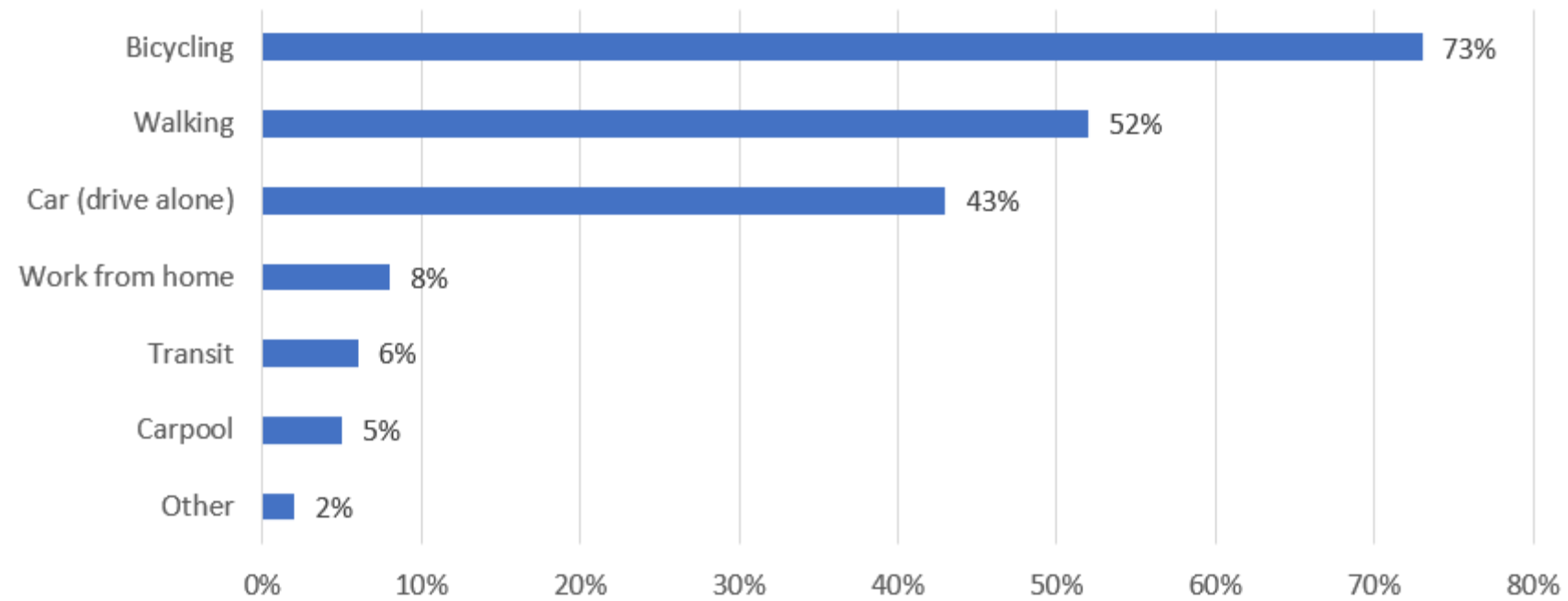


■ Car (drive alone) ■ Work from home ■ Bicycling ■ Walking ■ Others



# Survey Results

**Question 9.** Now consider your desired commute or mode for running errands in the future. Which modes would you like to use? *Select all that apply.*









# **NC-210 EAST COAST GREENWAY CORRIDOR FEASIBILITY STUDY** AREAS IN NEED OF BICYCLE + PEDESTRIAN INFRASTRUCTURE

## **LEGEND**

Study Routes  
BIKE/PED INFRASTRUCTURE NEEDS  
Identified Location  
Identified Corridor

Existing Greenways  
Roadways  
Rail  
Water Bodies  
Parks  
Schools  
Municipalities  
Counties

- Walking and biking on the island, especially south of Surf City, is unsafe due to a lack of sidewalks and bike paths
- Many major roads including NC 210 are narrow and do not have even a wide shoulder for pedestrians, bicyclists, or joggers
- Safe paths and crosswalks are important for encouraging youth to walk or bike to school
- Country Club Rd is unsafe for pedestrians and cyclists yet serves several residential neighborhoods
- Pedestrian safety barriers may be needed at US 17
- Traffic on US 17, NC 210, and NC 50 is very high, especially in tourist season



# Stakeholder Meetings

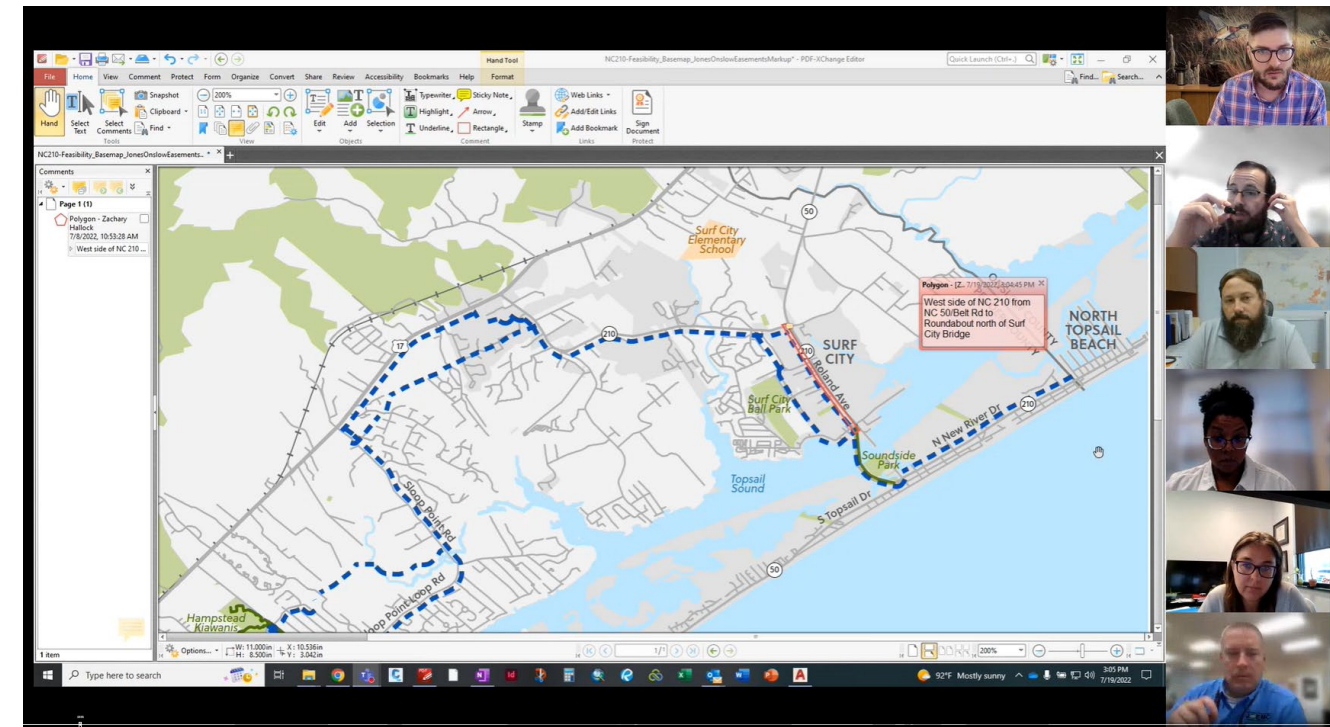
Coordination between neighboring jurisdictions, NCDOT, and landowners on route preferences, maintenance, and project development.

## Completed

- Duke Energy
- Jones-Onslow EMC
- State Trails, East Coast Greenway, & Friends of Mountains-To-Sea
- Fish and Wildlife Coordination Call

## Upcoming

- Interjurisdictional
- NCDOT
- Landowners to be determined



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*Greenway along NC 50*

# Route Alternatives Development

## Routes derived from:

- **Preliminary Corridor Alignment**
- **GIS Existing Conditions Analysis**
- **Steering Committee Meeting #1 Mapping Comments:**
  - Possible alternate routes and desired destinations
  - Related projects (e.g., Mountains-to-Sea Trail Route, new development)
  - Unique concerns (e.g., gated communities, conditions changed from GIS data, etc.)

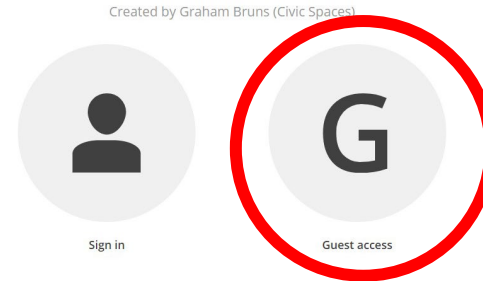


# Concept Board

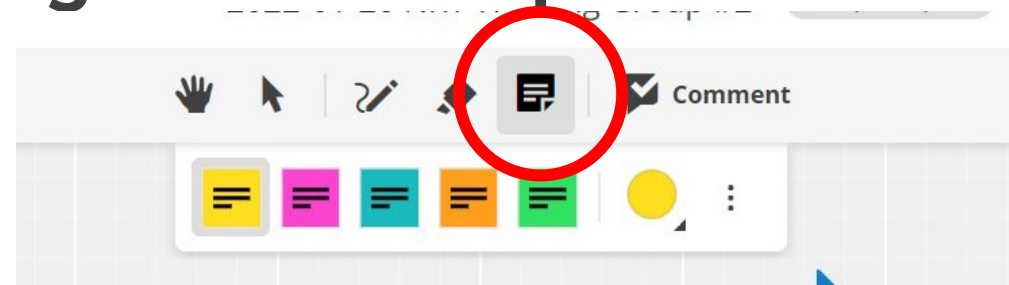
- 1. Click on link in chat box

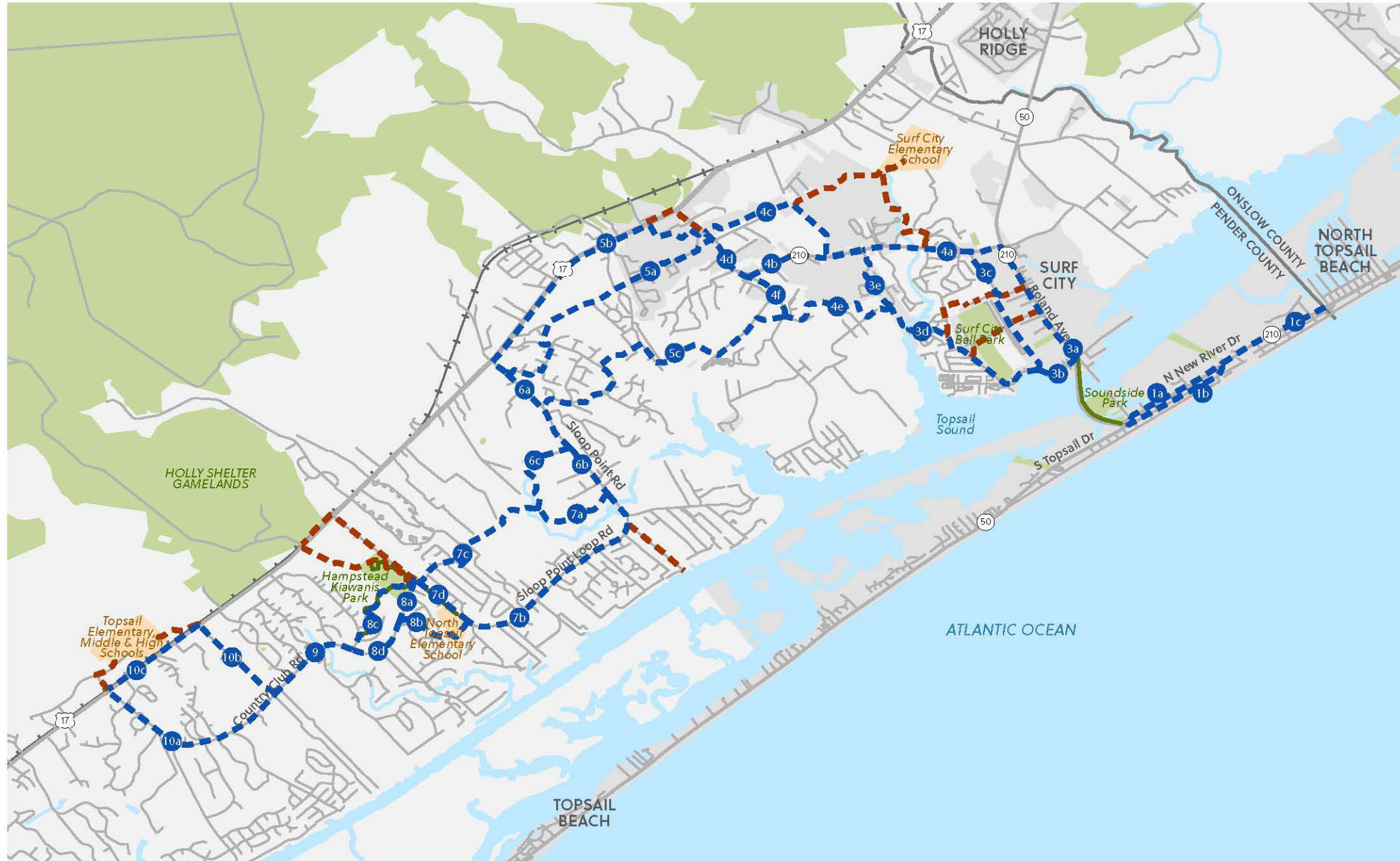
<https://app.conceptboard.com/board/d9rf-mi3i-gnid-x7as-gtbn>

- 2. Select Guest Access



- 3. Select "post it note" and share your thoughts on each potential solution.



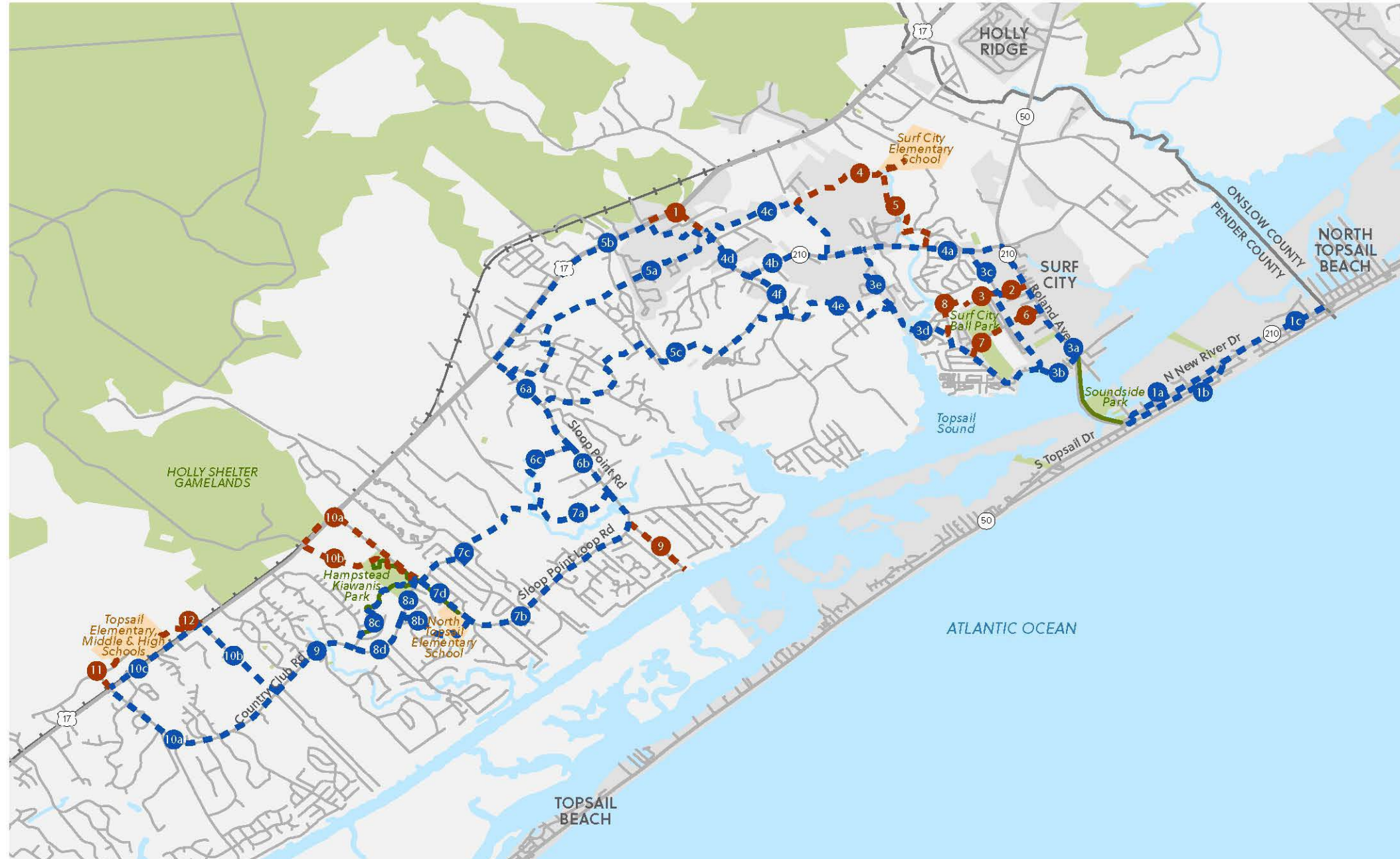


# **NC-210 EAST COAST GREENWAY CORRIDOR FEASIBILITY STUDY STUDY CORRIDOR**

## **LEGEND** **NC-210 ECG CORRIDOR** Study Routes

- Existing Greenways
- Roadways
- Rail
- Water Bodies
- Parks
- Schools
- Municipalities
- Counties





# **NC-210 EAST COAST GREENWAY CORRIDOR FEASIBILITY STUDY** **STUDY CORRIDOR ROUTES + CONNECTORS**

**LEGEND**  
**NC-210 ECG CORRIDOR**  
 - - - Study Routes  
 - - - Study Connectors

Existing Greenways  
 Roadways  
 Rail  
 Water Bodies  
 Parks  
 Schools  
 Municipalities  
 Counties



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## Opportunities & Constraints

- Topography
- Jurisdictional Features
- FEMA Floodway / Floodplain
- Structures (Walls/Bridges/Boardwalks)
- Traffic Context (Volume/Speeds/Signals)
- Right-of-Way / Property Impacts
- Building Setbacks
- Driveways / Conflict Points
- Utility Impacts
- Drainage Impacts
- Constructability
- Cost Effective
- Long-Term Maintenance

# Opportunities & Constraints – On Road Alignments

- Ditches Vs. Curb & Gutter
  - Curb and gutter with closed drainage systems
  - Clear Zone
  - Utilities
- Right of Way
  - Can utilize the roadway ROW and only require some easement
- Roadway Characteristics
  - Posted Speed
  - Traffic Volume
  - # Lanes and Roadway Geometry



# Drainage – Ditches





# Drainage – Curb & Gutter





# Understanding the Clear Zone

CLEAR ZONE DISTANCES  
(IN FEET FROM EDGE OF TRAVEL LANE)

DESIGN SPEED	DESIGN ADT		FILL SLOPES	
40 MPH OR LESS		6:1 OR FLATTER	5:1 TO 4:1	3:1
	UNDER 750	7 - 10	7 - 10	**
	750 - 1500	10 - 12	12 - 14	**
	1500 - 6000	12 - 14	14 - 16	**
	OVER 6000	14 - 16	16 - 18	**
45 - 50 MPH				
	UNDER 750	10 - 12	12 - 14	**
	750 - 1500	12 - 14	16 - 20	**
	1500 - 6000	16 - 18	20 - 26	**
	OVER 6000	18 - 20	24 - 28	**
55 MPH				**
	UNDER 750	12 - 14	14 - 18	**
	750 - 1500	16 - 18	20 - 24	**
	1500 - 6000	20 - 22	24 - 30	**
	OVER 6000	22 - 24	26 - 32*	**
60 MPH				
	UNDER 750	16 - 18	20 - 24	**
	750 - 1500	20 - 24	26 - 32*	**
	1500 - 6000	26 - 30	32 - 40*	**
	OVER 6000	30 - 32*	36 - 44*	**
65 - 70 MPH				
	UNDER 750	18 - 20	20 - 26	**
	750 - 1500	24 - 26	28 - 36*	**
	1500 - 6000	28 - 32*	34 - 42*	**
	OVER 6000	30 - 34*	38 - 46*	**

DESIGN SPEED	DESIGN ADT		FILL SLOPES
40 MPH OR LESS		6:1 OR FLATTER	5:1 TO 4:1
	UNDER 750	7 - 10	7 - 10
	750 - 1500	10 - 12	12 - 14
	1500 - 6000	12 - 14	14 - 16
	OVER 6000	14 - 16	16 - 18
45 - 50 MPH			
	UNDER 750	10 - 12	12 - 14
	750 - 1500	12 - 14	16 - 20
	1500 - 6000	16 - 18	20 - 26
	OVER 6000	18 - 20	24 - 28

\* CLEAR ZONE DISTANCES CAN BE LIMITED TO 30 FEET UNLESS IN A HIGH ACCIDENT RATE AREA.

\*\* SINCE 3:1 SLOPES ARE NOT RECOVERABLE, ADDITIONAL RUNOUT AREA MUST BE PROVIDED AT THE TOE OF THE SLOPE. PLEASE REFER TO FIGURE 1 ON SHEET 1-4M.



# Understanding the Clear Zone

24'-28' Clear Zone

Potential remaining area for trail

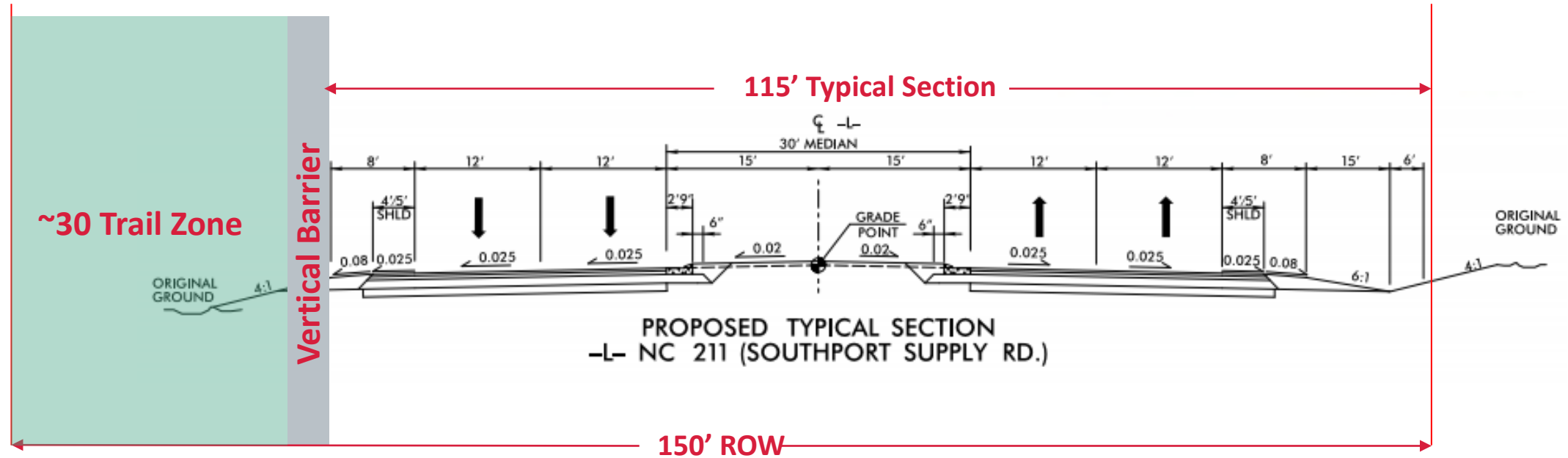
45 MPH Posted Speed Limit  
8300 AADT (2020)

30' existing EOP to EOP

240' ROW



# Understanding the Clear Zone





# Opportunities & Constraints – Off Road Alignments

- Structures
  - Boardwalks
  - Retaining walls
  - Bridges
- Utility Corridors
  - Already cleared and rough graded
  - Typically, no houses or buildings
  - Limited Structures for trail
- Right of Way
  - Will need full easements





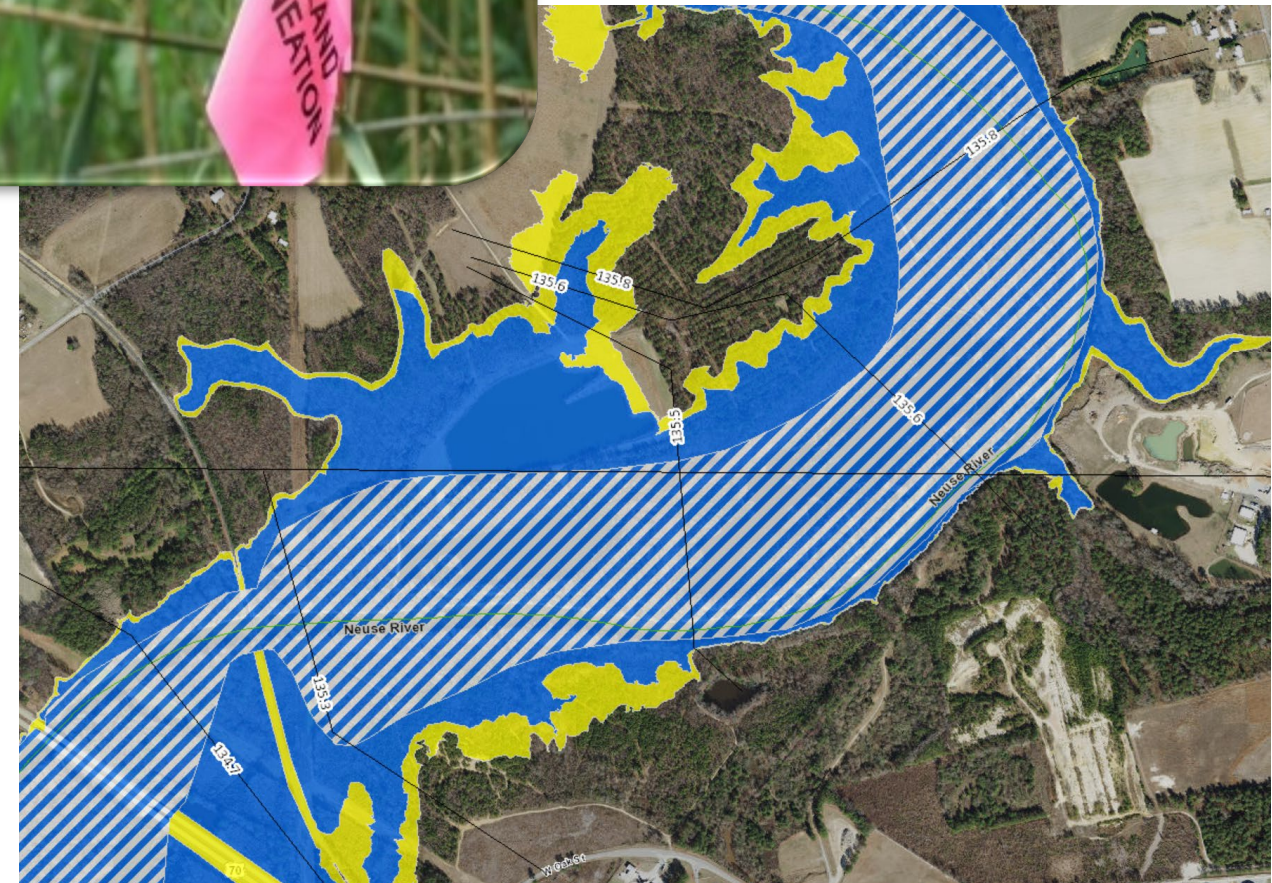
# Structures





# Opportunities & Constraints – Environmental Considerations

- Streams
  - River Crossings
  - Stream and tributary crossings
  - Jurisdictional Permitting
  - Construction Access
- Wetlands
  - Delineations
  - Permitting
  - Boardwalks
  - Constructability
- Flood Plain





# Route Selection Methodology Discussion

## ROUTE ALTERNATIVE SELECTION CRITERIA

### **Cost**

The magnitude of the total life-cycle cost for each alternative (including design, construction and ongoing maintenance) is a significant factor in determining which alternative to implement.

### **Property Impacts**

Real estate acquisition can play a major role in project cost and schedule. The ability of the route alternatives to utilize publicly-owned properties, existing easements, public right-of-way, and limit impacts to privately property owners is considered.

### **Potential Funding Opportunities**

Given the importance of securing funding from a variety of potential sources, the diversity, total amount, and likelihood of receiving funding available to each alternative is considered.

### **Environmental Impacts**

The ability of each alternative to minimize impacts to streams, wetlands and other jurisdictional features (including associated buffers, floodplain elevations, and other environmental factors) during construction and operation of the proposed facility is also considered.

### **Physical Feasibility**

The ability to successfully engineer and permit each alternative is a critical consideration for determining realistic options for the route alternative.

### **Community Priorities**

To ensure consistency with public preferences and existing plans, goals identified in previous planning efforts and feedback from public engagement/stakeholder outreach activities are utilized to evaluate the route alternative.

### **Desired Connectivity**

In order to maximize use of the facility, determining which route alternatives connect popular origins and destinations identified by the public and other stakeholders is considered.

### **Traffic Impacts**

The magnitude of the disruption of vehicular traffic by the ultimate design of each route alternative and associated temporary impacts during the construction process is considered.

### **Implementation Timeframe**

The amount of time it takes to plan, fund, design, and ultimately construct each route alternative is important to consider, especially in conjunction with community priorities, as to how long is a tolerable time to wait for project completion.

### **Accessibility**

Convenience of use and accommodation for users of all ages and abilities is a significant consideration to ensure the ultimate route alternative is a community amenity designed for universal use.

### **Leadership Support**

The depth of support from elected officials and agencies for each route alternative as well as whether there is a clear project sponsor to champion the route alternative through implementation, is an important factor for ensuring successful project completion.

### **Placemaking and User Experience**

The potential ability of the route alternatives to help drive tourism, contribute to the local economy, and brand the surrounding area by as one that promotes healthy, active lifestyles is also considered.

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# Next Steps: Project Schedule





# Thank you!



## Contact Us:

**Nia Rodgers**

[rodgers@mcadamsco.com](mailto:rodgers@mcadamsco.com)

**Kathryn Zeringue**

[zeringue@mcadamsco.com](mailto:zeringue@mcadamsco.com)

**Graham Bruns**

[bruns@mcadamsco.com](mailto:bruns@mcadamsco.com)