Surf City Bridge

NC-210 EAST COAST GREENWAY

FEASIBILITY STUDY

STEERING COMMITTEE MEETING #3 – OCTOBER 26, 2022

McAdams

Cape Fear Council of Governments

Integrated Mobility Division
N.C. Department of Transportation

Pender County NC

Town of Surf City 1949

Meeting Agenda

Community Engagement

- Stakeholder Meetings to date
- Public Meeting November 14

Route Selection Criteria

Recommended Route Alignments & Prioritization

Typical Cross Sections, Intersections & Design Considerations

Policy & Maintenance

Greenway along NC 50

Stakeholder Meetings

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

Completed Meetings:

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

Upcoming Meetings:

- Landowners
  - 1:1 Conversations with Pender County Staff
  - Mailed Notice of Public Meeting
  - Talk with landowners along preferred route
  - Routes selected through large parcels held by the same entity.
  - Gauge level of interest in working with the COG
  - Gather feedback and document concerns

Public Meeting #1

CAPE FEAR COUNCIL OF GOVERNMENTS

NC 210 EAST COAST GREENWAY FEASIBILITY STUDY
PUBLIC MEETING

DROP-IN EVENT

Monday, November 14th

5:30 PM – 7:30 PM

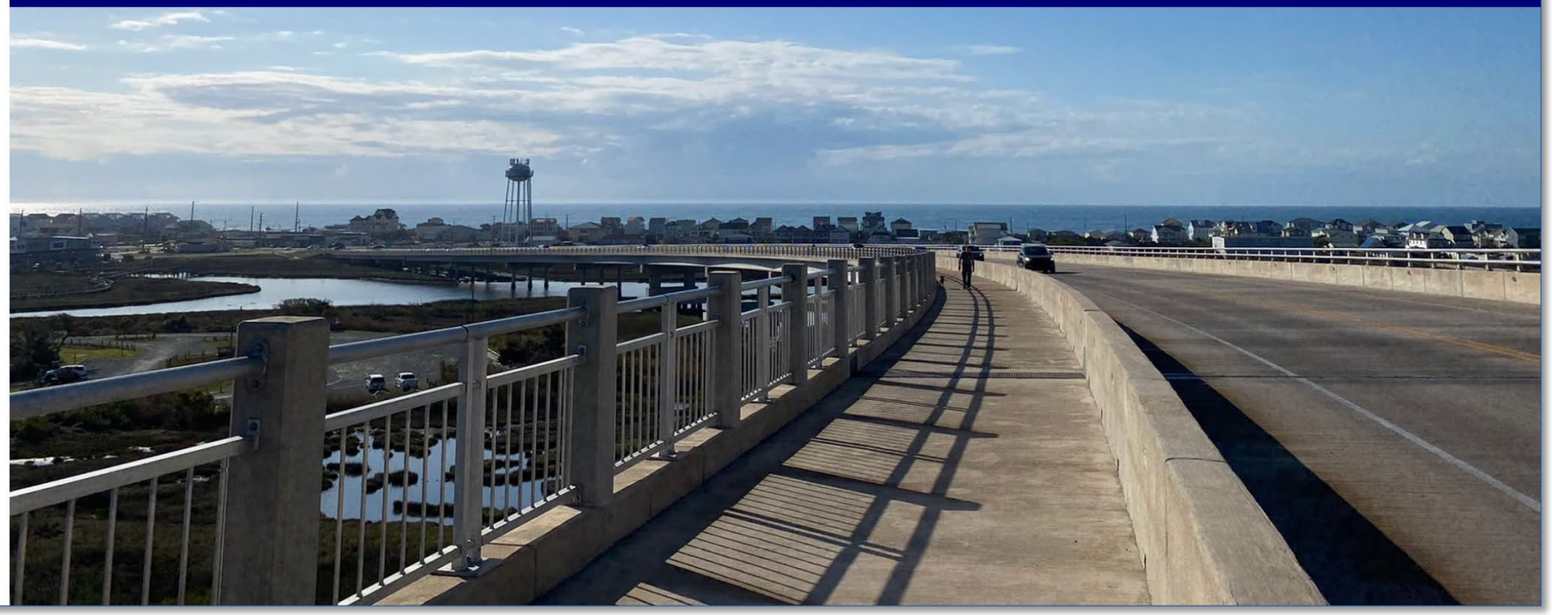
Surf City Town Hall
214 W Florence Way,
Hampstead, NC 28443

PUBLIC MEETING

The Cape Fear Council of Governments is seeking community input on updates to the NC 210 East Coast Greenway Feasibility Study.

Join us to learn about project updates, review the routes, and provide input!

For more info, please visit: https://capefearcog.org/nc210ecg/



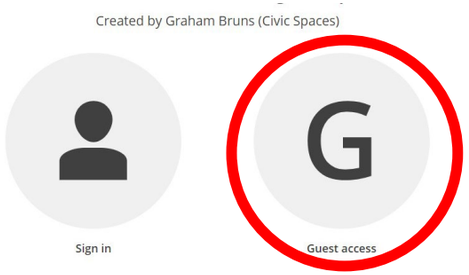
McAdams

Provide Your Input in Conceptboard

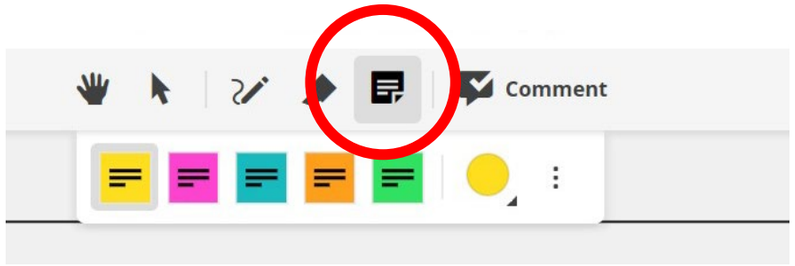
1. Click on link in chat box

https://app.conceptboard.com/board/asxu-kxee-fk6z-rxfd-5rp3

2. Select Guest Access

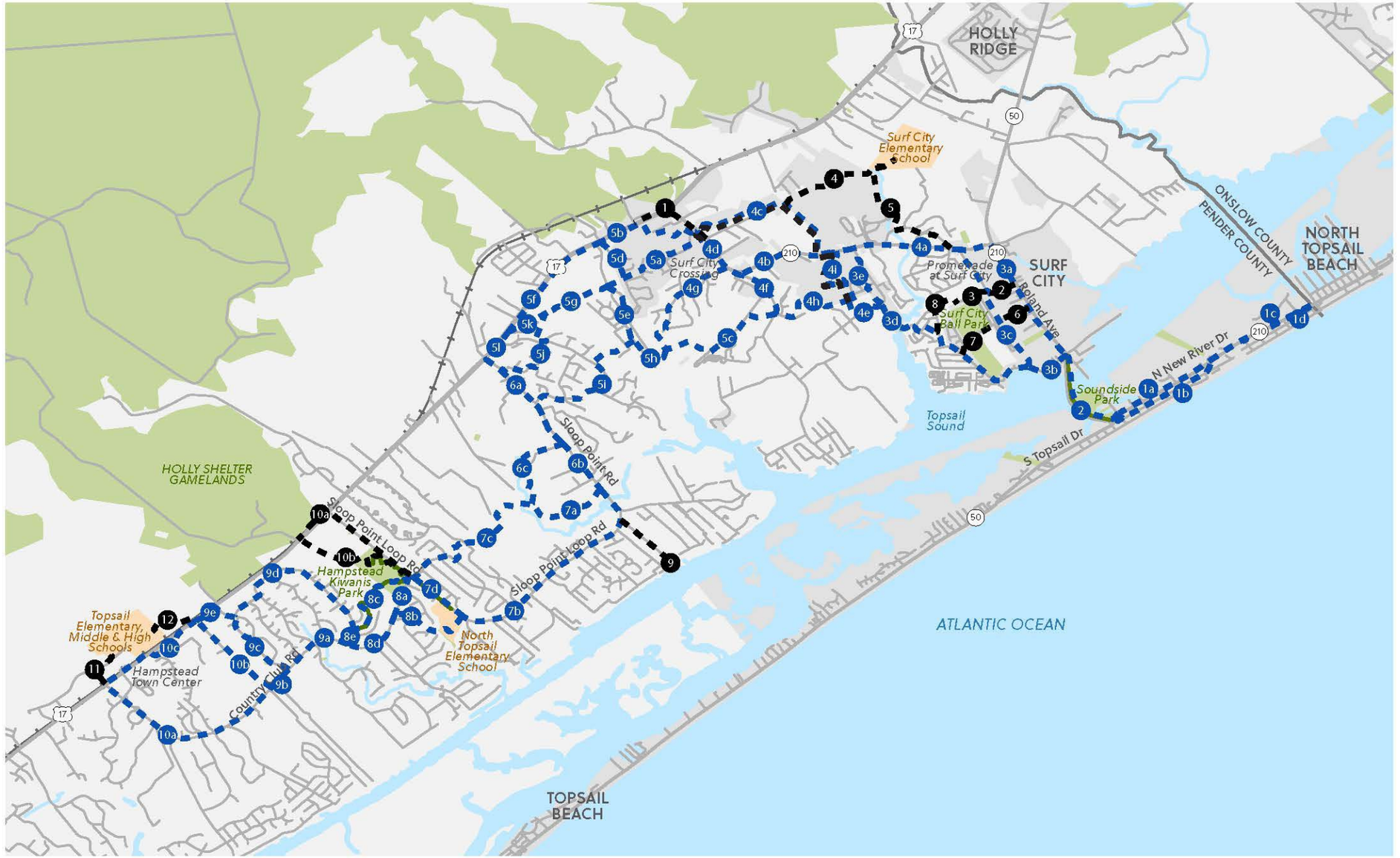


3. Select “post it note” and share your thoughts on each potential solution.



TIP: Include your name in your comment if you want to be identified or need follow up! -NIA

Studied Routes + Connectors



NC-210 EAST COAST GREENWAY CORRIDOR FEASIBILITY STUDY

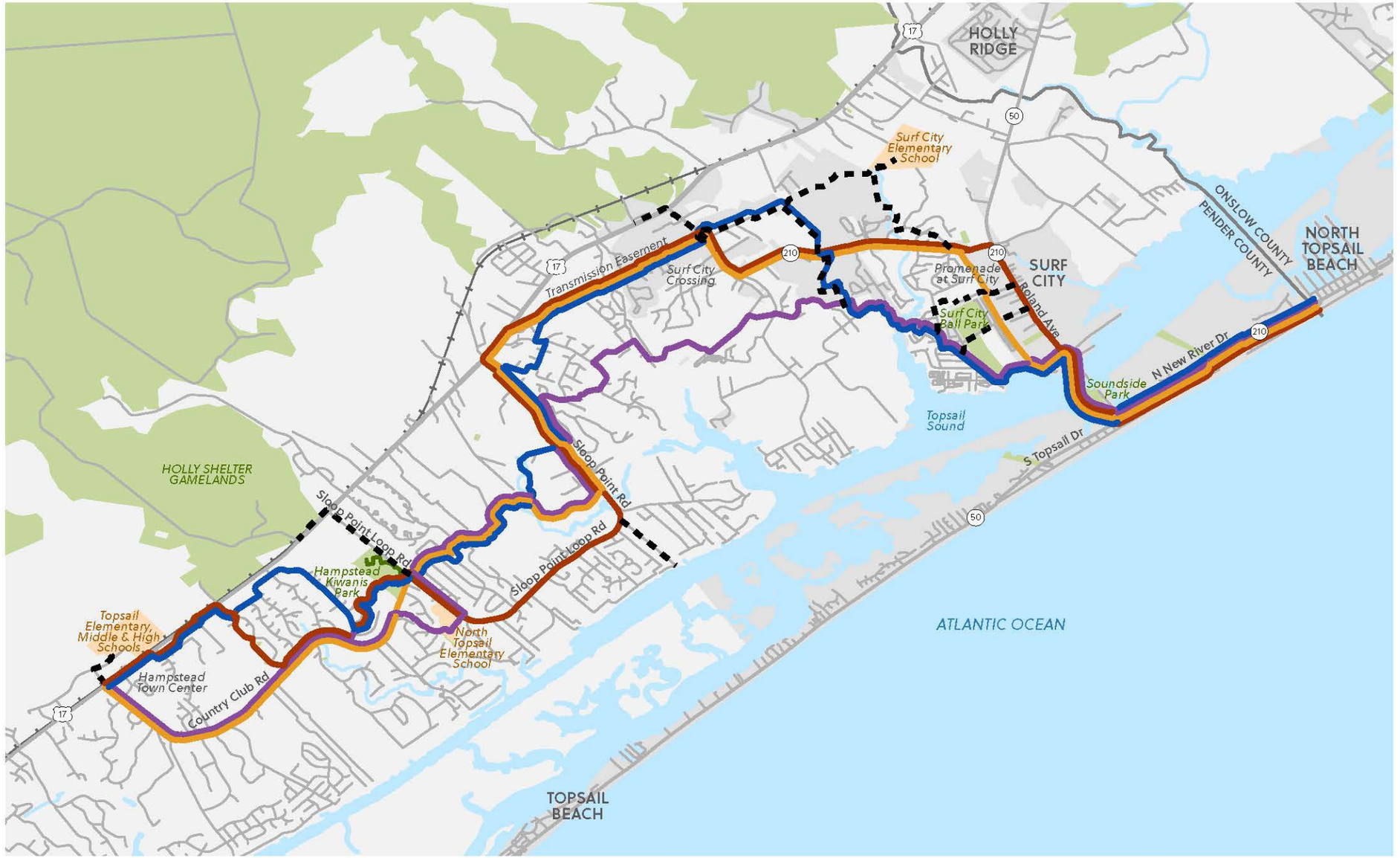
STUDIED ROUTES + CONNECTORS

LEGEND

NC-210 ECG CORRIDOR

- Studied Routes
- Study Connectors

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



NC-210 EAST COAST GREENWAY CORRIDOR FEASIBILITY STUDY

STUDIED ROUTES + CONNECTORS

LEGEND

STUDIED ROUTES

- Route 1
- Route 2
- Route 3
- Route 4
- Study Connectors

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

Route 1 + Connectors

NC-210 EAST COAST GREENWAY CORRIDOR FEASIBILITY STUDY

STUDIED ROUTE 1 + CONNECTORS

LEGEND

NC-210 ECG CORRIDOR

- Studied Route 1
- Study Connectors

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

Route 2 + Connectors

NC-210 EAST COAST GREENWAY CORRIDOR FEASIBILITY STUDY

STUDIED ROUTE 2 + CONNECTORS

LEGEND

NC-210 ECG CORRIDOR

- Studied Route 2
- Study Connectors

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

NC-210 EAST COAST GREENWAY CORRIDOR FEASIBILITY STUDY

STUDIED ROUTE 3 + CONNECTORS

LEGEND

NC-210 ECG CORRIDOR

- Studied Route 3
- Study Connectors

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

Route 4 + Connectors

NC-210 EAST COAST GREENWAY CORRIDOR FEASIBILITY STUDY

STUDIED ROUTE 4 + CONNECTORS

LEGEND

NC-210 ECG CORRIDOR

- Studied Route 4
- Study Connectors

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

Decision Matrix Methodology Discussion

ROUTE ALTERNATIVE SELECTION CRITERIA
Physical Feasibility The ability to successfully engineer and permit each alternative is a critical consideration for determining realistic options for 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.
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.
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.
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.
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.
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.
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.
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.
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.

Decision Matrix Methodology

Score (High = Most Desirable, Low = Least Desirable)	NC 210/ECG FEASIBILITY STUDY			
ROUTE ALTERNATIVE SELECTION CRITERIA	**Route 1**	**Route 2**	**Route 3**	**Route 4**
Physical Feasibility *The ability to successfully engineer and permit each alternative is a critical consideration for determining realistic options for the route alternative.*	Low	High	Mid	Low
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.*	Mid	Mid	High	Low
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.*	Mid	Low	Mid	High
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.*	Low	High	Mid	Mid

Decision Matrix Methodology

Score (High = Most Desirable, Low = Least Desirable)	NC 210/ECG FEASIBILITY STUDY			
ROUTE ALTERNATIVE SELECTION CRITERIA	**Route 1**	**Route 2**	**Route 3**	**Route 4**
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.*	Low	High	Mid	Low
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.*	Mid	High	Mid	Low
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.*	Low	High	Mid	Mid
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.*	Mid	High	Low	Mid

Decision Matrix Methodology

Score (High = Most Desirable, Low = Least Desirable)	NC 210/ECG FEASIBILITY STUDY			
ROUTE ALTERNATIVE SELECTION CRITERIA	**Route 1**	**Route 2**	**Route 3**	**Route 4**
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.*	High	Mid	Mid	Low
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.*	Low	Mid	High	Low
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.*	High	Low	Mid	Mid
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.*	Mid	High	Mid	Low

TYPES OF FACILITIES

Greenways

Multi-Use Paths

Protected Bike Lanes

Buffered Bike Lanes

Bike Lanes & Sidewalks

Most Protected → **Least Protected**

TYPICAL CROSS SECTIONS

MAINLINE (PREFERRED)

A 12’ wide paved trail is recommended for the mainline trail as it will require the least amount of long-term maintenance and has greater eligibility from the widest variety of funding sources.

Asphalt pavement is recommended based on site conditions, anticipated trail use, and cost considerations. Limited sections of concrete pavement may be required to accommodate site conditions, as necessary.

Shoulders or shy zones of 2’ or greater should be kept clear of any obstacles to ensure full trail width remains usable.

TYPICAL CROSS SECTIONS

MAINLINE WITHIN ROW – CURB AND GUTTER

A 12’ wide paved trail is recommended for the mainline trail as it will require the least amount of long-term maintenance and has greater eligibility from the widest variety of funding sources.

Asphalt pavement is recommended based on site conditions, anticipated trail use, and cost considerations.

Speed limits and traffic volumes will dictate the clear zone and if a curb and gutter section will provide sufficient separation for trail users

A minimum of 2-ft grass utility strip is recommended with a desired width of 5-ft when available ROW allows.

In constrained areas, the width of the utility strip and the trail can be reduced to minimize ROW impacts, and if necessary, the trail can be placed directly at the back of the curb face.

TYPICAL CROSS SECTIONS

MAINLINE WITHIN ROW – DITCH SECTION (PREFERRED)

A 12’ wide paved trail is recommended for the mainline trail as it will require the least amount of long-term maintenance and has greater eligibility from the widest variety of funding sources.

Asphalt pavement is recommended based on site conditions, anticipated trail use, and cost considerations.

Speed limits and traffic volumes will dictate the clear zone. If ROW allows, a ditch section between the road and trail is preferred.

TYPICAL CROSS SECTIONS

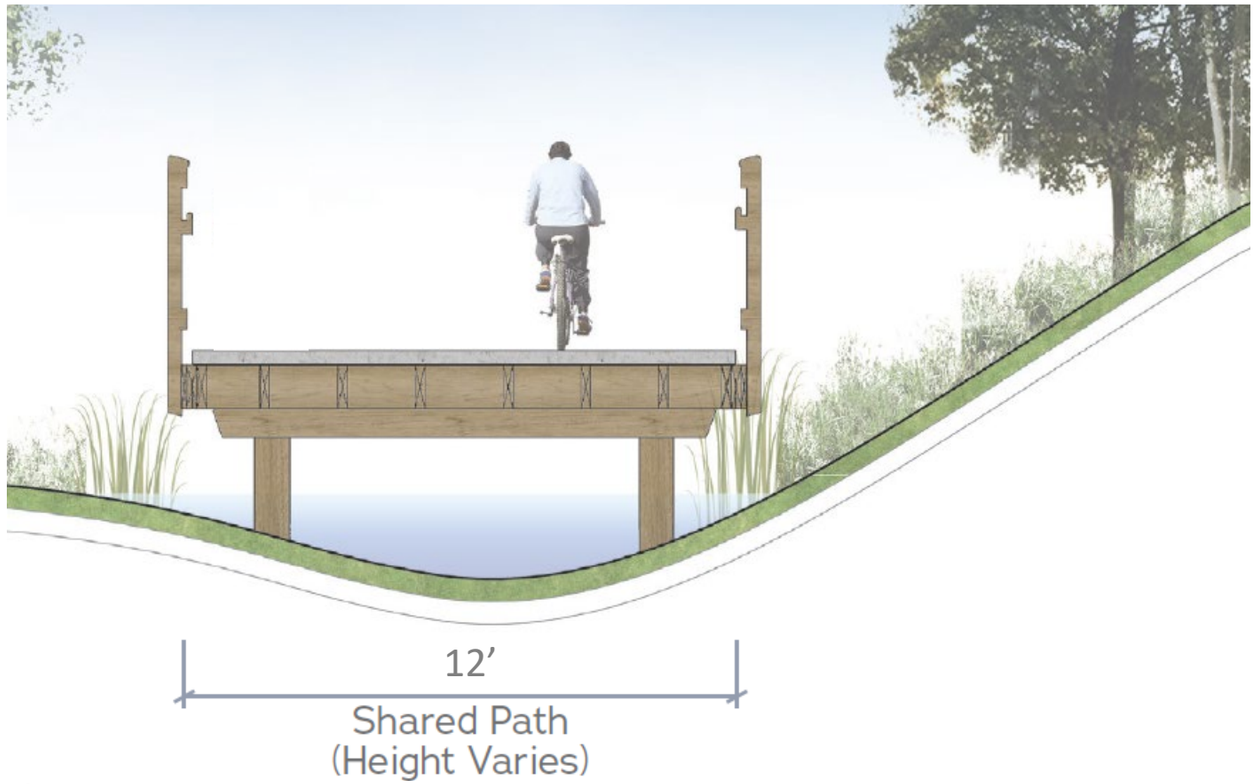
BOARDWALK

A 12’ clear width elevated boardwalk is recommended in areas where the trail:

- crosses wetlands;
- approaches bridge crossings in the floodplain/floodway; and
- crosses areas of wet or unstable ground.

The deck surface should be concrete which provides greater friction to reduce the risks of slips and falls and reduces long-term maintenance burdens compared to those associated with other materials such as timber.

Timber safety rails and handrails are shown with a timber pile substructure system. Boardwalk substructure design and materials may vary depending upon specific site conditions and geotechnical recommendations.



TYPICAL CROSS SECTIONS

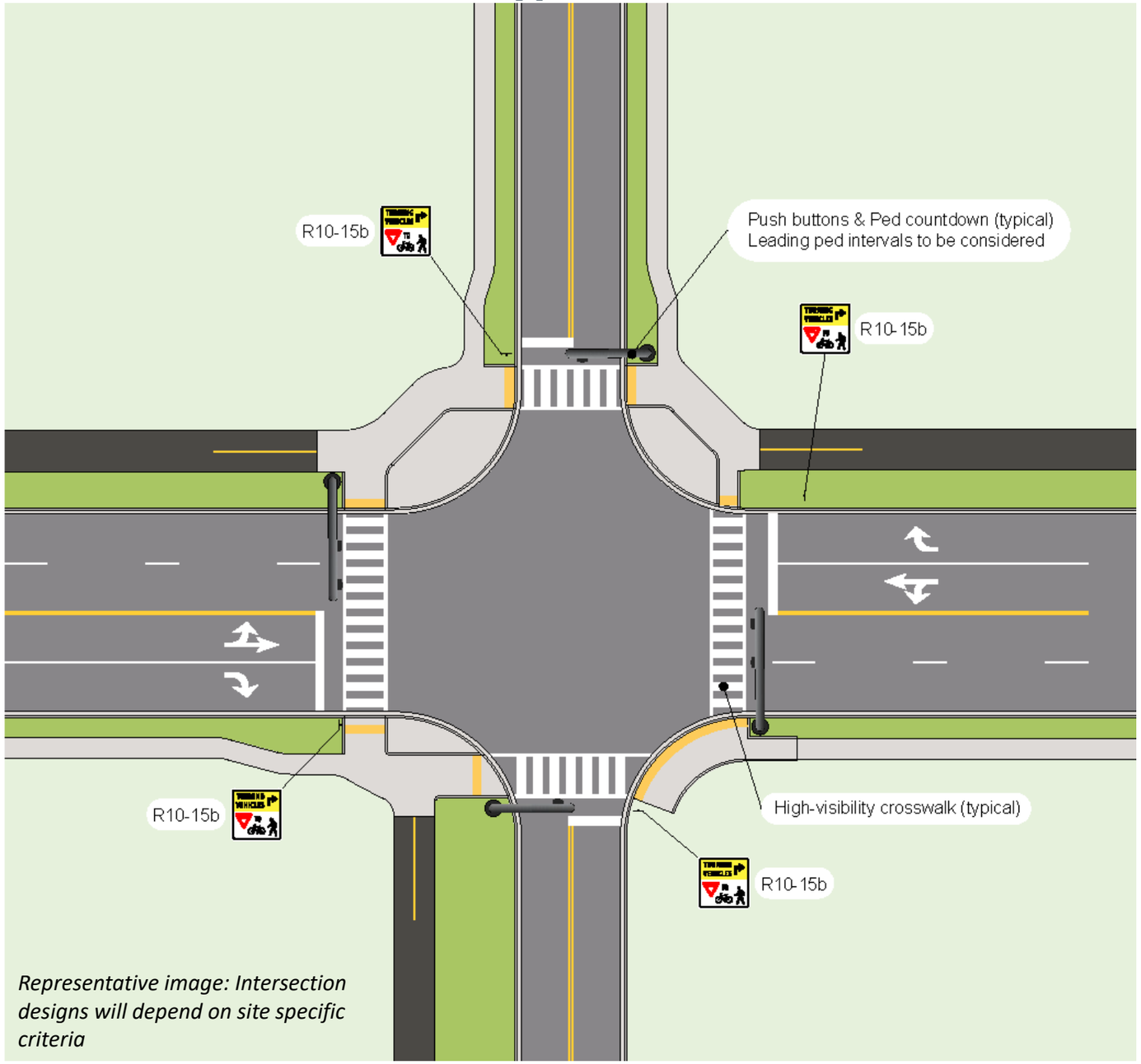
BRIDGE

A 12’ clear width bridge is recommended in where the trail crosses the river or streams.

Prefabricated steel truss bridges are a common, cost-effective bridge type in this application and are the recommended bridge type for this typical section. Corten / weathering steel is a finish which should be considered for its ability to blend well with natural surroundings and its minimal maintenance requirements as compared to those for painted finishes.

The deck surface should be concrete which provides greater friction to reduce the risks of slips and falls and reduces long-term maintenance burdens compared to those associated with other materials such as timber. Bridge substructure design and materials may vary depending upon bridge design type, specific site conditions, and geotechnical recommendations.

Typical Intersection Treatment – Minor Signalized



Representative image: Intersection designs will depend on site specific criteria

Provides signalized crossings for all movements across the intersection.

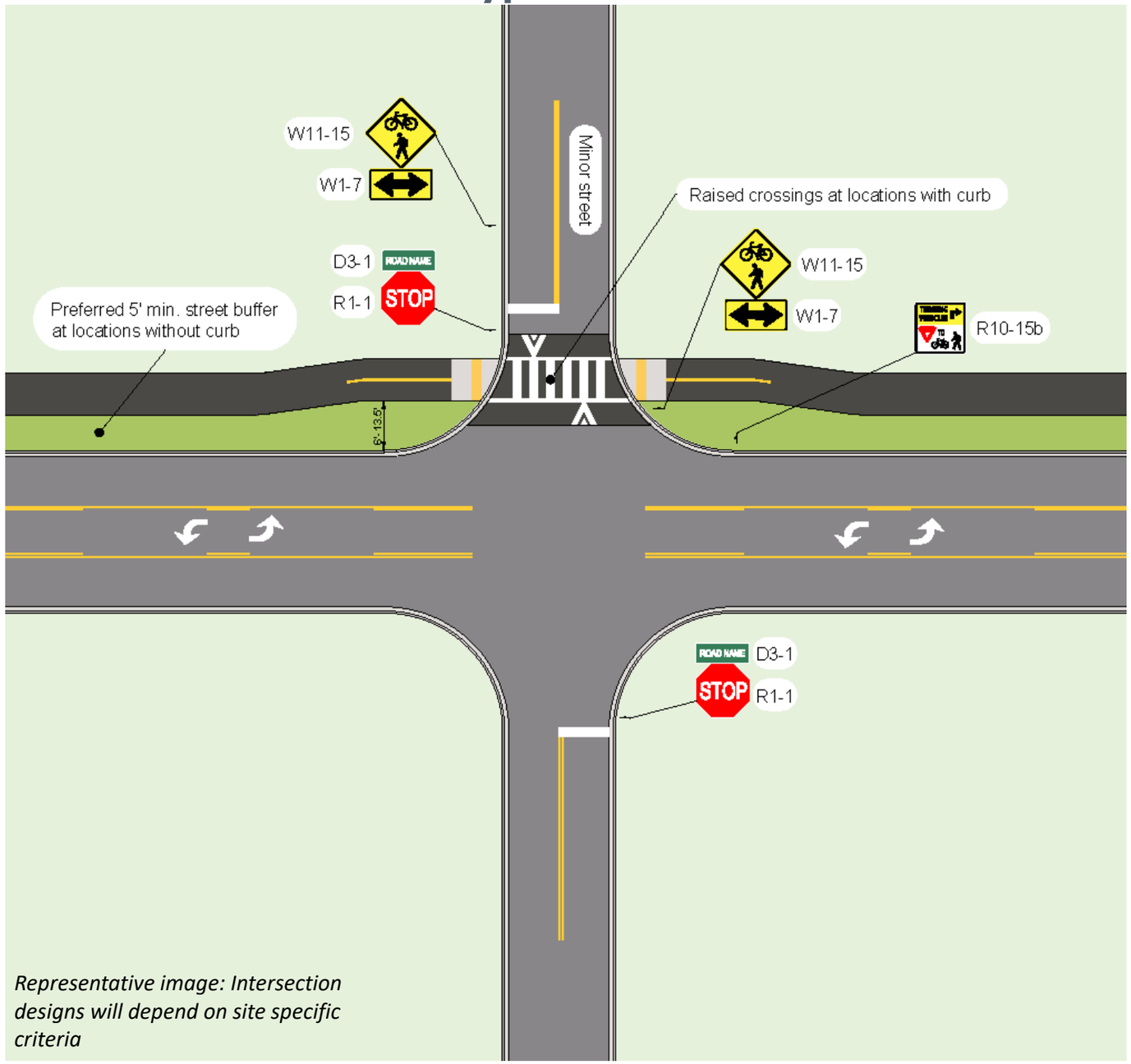
Depending on the intersection, there also may be a pedestrian refuge in the center of the main road.

Potential intersections to be used:

- *US 17 @ NC 210*
- *US 17 @ Vista Ln/Topsail High School*
- *US 17 @ Country Club Dr*
- *NC 210 @ Alston Blvd Ext*

Recommendations specific to this study will be made for key intersections once a recommended route has been selected.

Typical Intersection Treatments – Stop Controlled



Representative image: Intersection designs will depend on site specific criteria

Provides signed crossings for trail movements across the minor road.

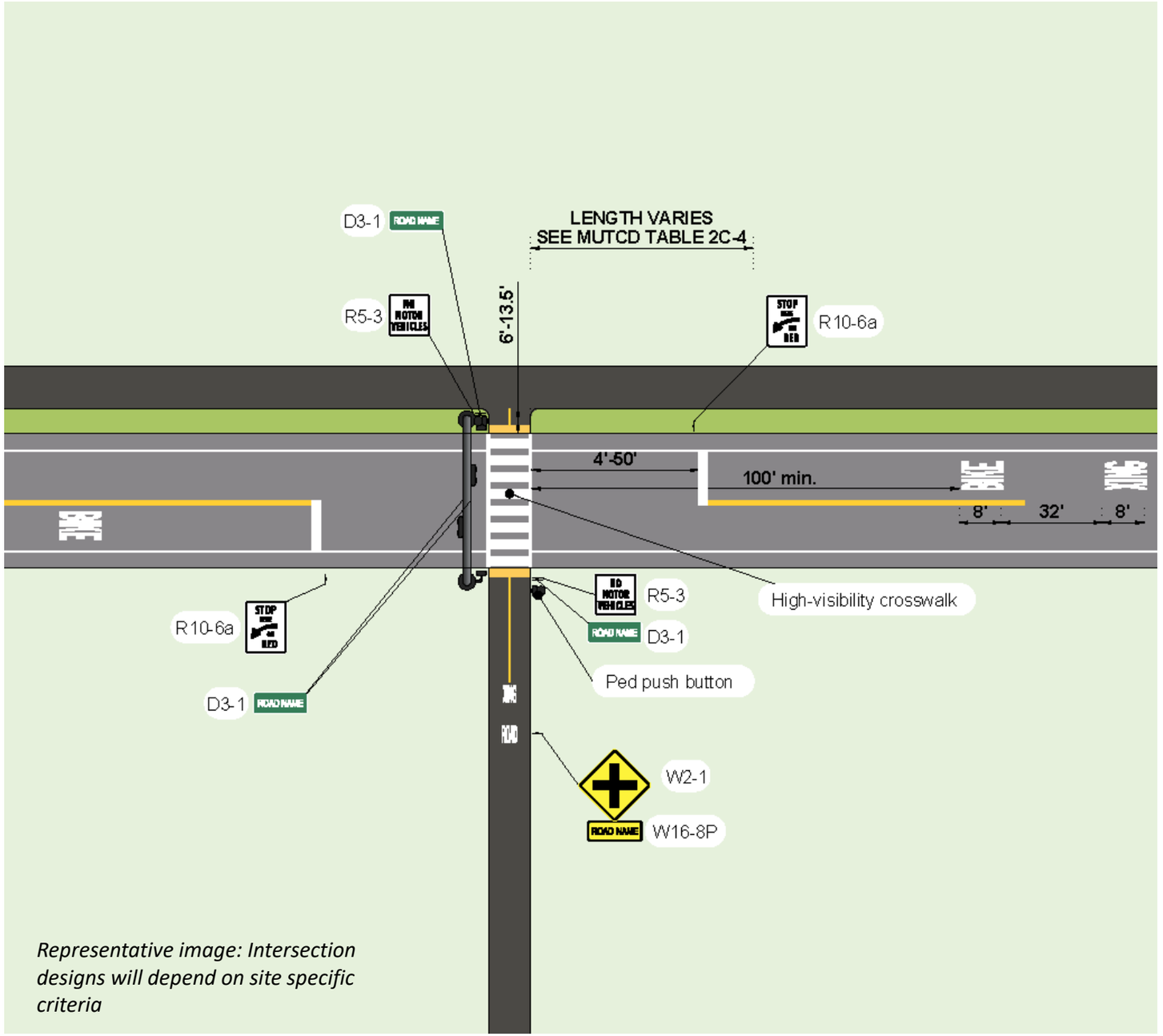
Stop bar and sign would be moved back from current location so that the trail crosswalk would be between the intersection and stopped vehicle.

Could also include a raised crossing when curb and gutter are present.

Potential intersections include but are not limited to:

- *NC 210 @ J H Batts Rd*
- *NC 210 @ Saltwater Landing Dr*
- *US 17 @ Cornel Ln*
- *US 17 @ Royal Tern Dr*
- *Sloop Point Loop Rd @ W Craftsman Way*
- *Country Club Rd @ Azalea Dr*
- *Country Club Rd @ Ravenswood Rd*

Typical Intersection Treatments – Major Mid-Block Crossing



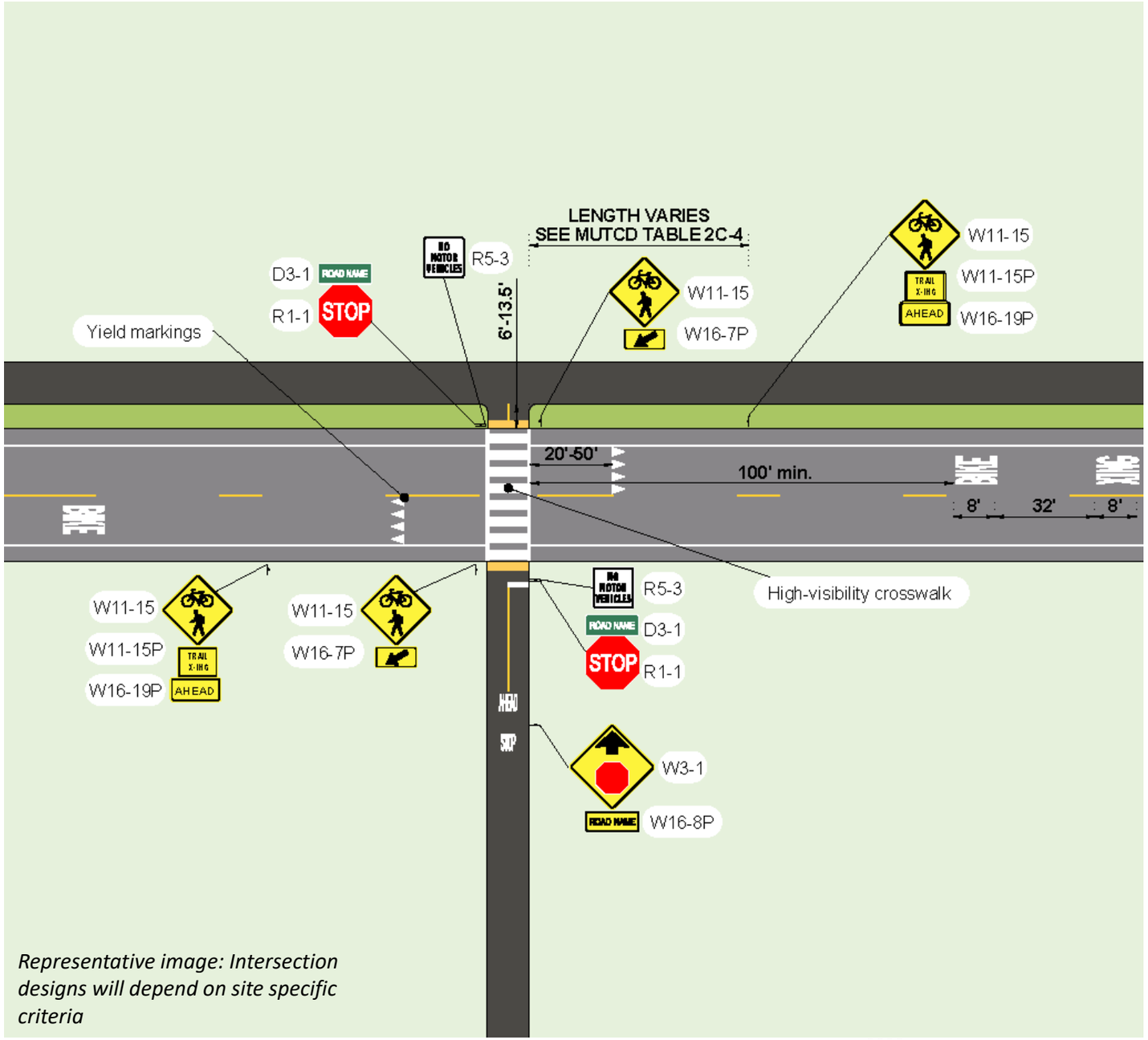
Representative image: Intersection designs will depend on site specific criteria

Provides signalized crossings for trail movements across the road using a HAWK with ped activation.

Potential intersections to be used:

- *Sloop Point Loop Rd @ North Topsail Elementary*
- *Country Club Dr east of Olde Point Rd*

Typical Intersection Treatments – Minor Mid-Block Crossing



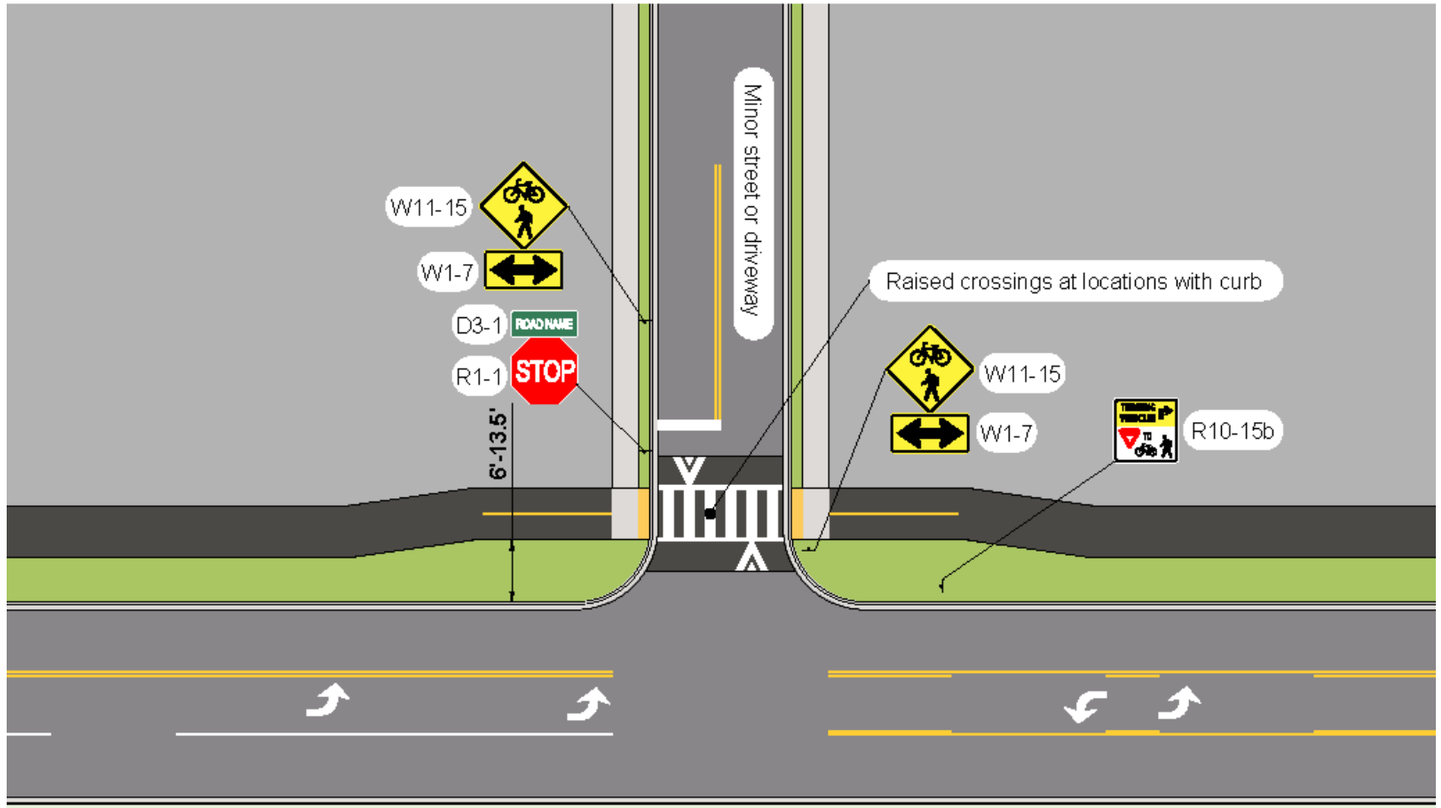
Representative image: Intersection designs will depend on site specific criteria

Provides signed crossings for trail movements across the road using a Rectangular Rapid Flashing Beacons (RRFB) with ped activation.

Potential intersections to be used:

- *Duke Easement @ Alston Blvd Ext*
- *Duke Easement @ Groves Point Dr*
- *Azalea Dr @ Existing Hampstead Greenway*
- *Country Club Dr east of Yacht Basin Landing*

Typical Intersection Treatments – Major Driveway Crossing



Representative image: Intersection designs will depend on site specific criteria

Potential crossing marking at high-use driveways includes:

- optional bike/ped symbols
- 24"x24" white colored pavement
- yellow centerline

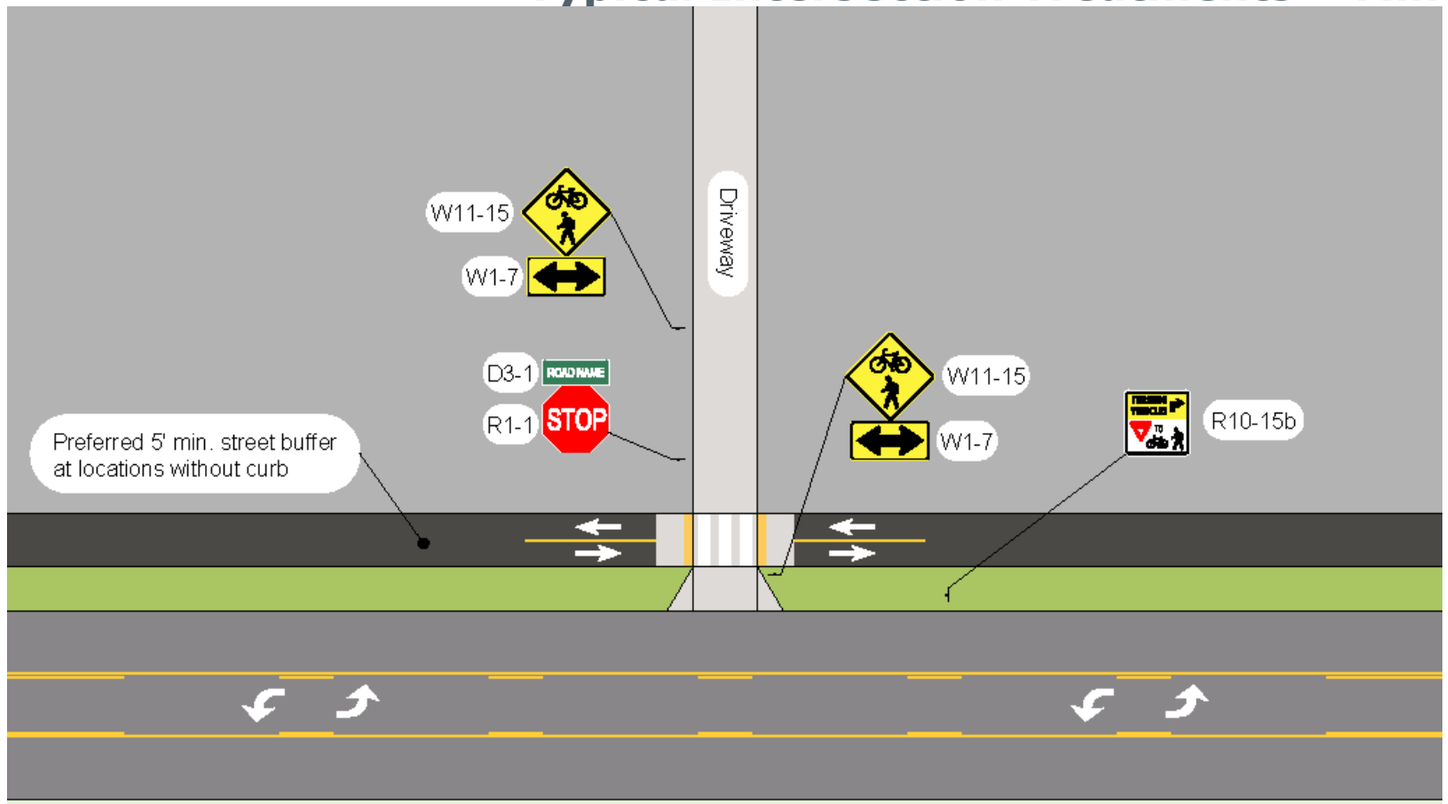
Alternative major driveway trail crossing marking

Provides signed crossings for trail movements across the commercial driveway.

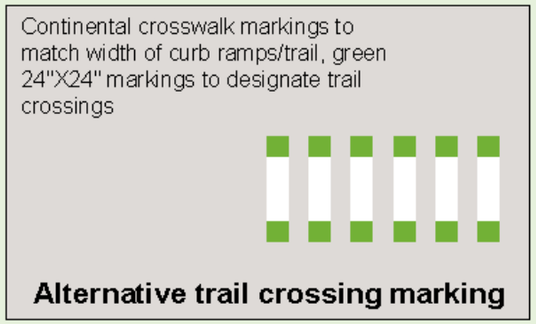
Potential intersections to be used:

- *NC 210 at Walmart Neighborhood Mkt*
- *NC 210 at Lowe's Home Improvement*

Typical Intersection Treatments – Minor Driveway Crossing



Representative image: Intersection designs will depend on site specific criteria



Provides signed crossings for trail movements across the commercial driveway.

Potential intersections to be used:

- *Future US 17 Frontage Rd driveways*
- *N Topsail Dr commercial entrances*
- *NC 210/N New River Dr commercial entrances*

Future Project Specific Intersection Design

Recommendations specific to this study will be made after a recommended route has been selected.

- Additional Key intersections on the recommended route
- Additional Typical Intersection – Minor Unsignalized, applicable locations include:
  - *NC 210 (N New River Rd) @ Shell Rd*
  - *NC 210 @ Atkinson Loop Rd*
  - *NC 210 @ Magnolia Reserve*
  - *Sloop Point Rd @ Topsail Lake Dr*
  - *Watts Landing Rd @ Old Post Office Rd*
- Finalized List of Recommended Crossing Locations (recommendations included in this presentation may change)

Maintenance Discussion - Tasks

Maintenance of the greenway is essential to the facility's long-term viability. Maintenance may be broken down by task, task type, and/or recommended frequency.

- Maintenance task (e.g., mowing, flood repairs, light replacement, pavement repair, sand removal)
- Task type (e.g., routine, minor repairs, major reconstruction)
- Recommended frequency (e.g., on-going, annually, specific # of years)

MAINTENANCE TASK	TASK TYPE	RECOMMENDED FREQUENCY
Tree / Bush trimming Mowing Trail sweeping Signage / Map / Kiosk Updates / Replacement Trash removal / Litter clean-up Planting, pruning, landscaping Flooding repairs Repainting / Restriping Minor patching Minor bridge repairs Lighting replacement Bollard locks / Replacement Pest management	Routine	On-Going / Annually
Greenway and sidepath sealcoating	Minor Repairs	Every 5 Years
Greenway and sidepath resurfacing: • Asphalt • Concrete • Boardwalk	Major Reconstruction	Every 10-15 Years Every 20 Years 10 Years
Complete greenway and sidepath replacement, regrading, and resurfacing	Major Reconstruction	Every 20 Years

Source: Best Practices in Trail Maintenance: A Manual by the Ohio River Greenway, Perdue University

Maintenance Discussion - Responsibilities

Maintenance responsibilities are currently open for discussion to determine which stakeholders will oversee each segment of the proposed trail.

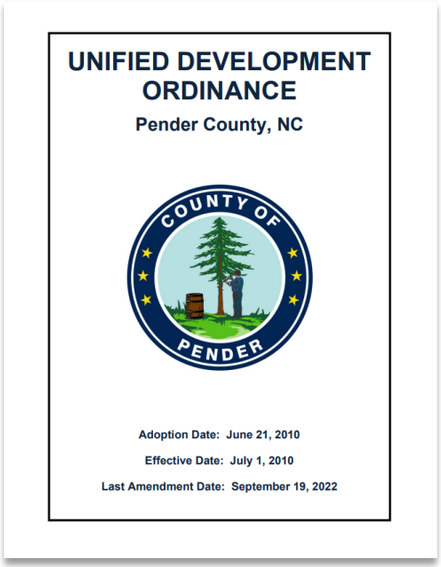
- Typical: A County, with responsibility for recreational facilities countywide, may assume maintenance for the greenway in unincorporated areas or in municipalities where it already provides maintenance of facilities.
- Typical: Municipalities may assume responsibilities for segments within their respective jurisdictional boundaries.
- Special Conditions: A private entity may assume responsibility for a specific element or segment based on municipal agreements

Policies

Recommendations

Provided the multi-jurisdictional nature of the project corridor, all jurisdictions along the NC-210 ECG Corridor should consider modifying their existing ordinances and design guidelines to incorporate standards for greenways. Four key recommendations for greenway-related policies and design improvements are included below.

- Include definitions for active transportation facilities (i.e., bike facilities, sidewalks, and greenways)
- Encourage/require developer-built greenways, multi-use paths, or other bicycle/pedestrian facilities
- Incorporate design guidelines for greenways and multi-use paths
- Adopt a Complete Streets ordinance



Policies

Comparison of Policies

The project team reviewed the existing policies and design guidelines for each jurisdiction along the NC 210 ECG corridor. The table below compares the existing policies and guidelines from each jurisdiction to the recommendations provided on the previous slide.

	Definitions for Active Transportation Facilities	Developer Built Greenways	Design Guidelines	Complete Streets Ordinance
Town of Surf City	X	*The Town's Subdivision Regulations set requirements that where a proposed subdivision includes any part of a greenway as officially adopted by the town, such part of such greenway shall be dedicated and platted by the subdivider in the location shown on the plan.* *The Town may wish to update its development ordinances to require that developers build bicycle/pedestrian facilities which are include in adopted plans.*	*The Town's Street Design Standards include options for multi-use paths (MUPs) along roadway corridors, but additional details are limited.* *The Town may wish to update these standards to include specific typical sections for greenways/MUPs as it has for streets. The Town should also consider updating its minimum MUP width to 12 feet.*	X
Pender County	X	*Section 4.12.6 of the County's UDO defines the Bicycle and Pedestrian Improvement Overlay District (BPIOD), which requires Bicycle and pedestrian infrastructure to be constructed as part of a development within that district provided the improvements are included in an adopted County plan.* *The County may need to amend its zoning map to add a BPIOD to cover the NC 210/ECG study area.*	*X*	X

Next Steps: Project Schedule

Thank you!

Contact Us:

Nia Rodgers
rodgers@mcadamsco.com

Kathryn Zeringue
zeringue@mcadamsco.com

Graham Bruns
bruns@mcadamsco.com