

2024

Island Greenway, NC Paved Trail Feasibility Study

Island Greenway to Fort Fisher



alta

Acknowledgments

Steering Committee

Yvonne Bailey, Carolina Beach Bike and Pedestrian Committee

Eileen Clute, Kure Beach Bicycle and Pedestrian Advisory Committee

Kat Deutsch, State Parks

John Ellen, Kure Beach Bicycle and Pedestrian Advisory Committee Liaison/
WMPO Representative

Hart Evans, NCDOT Integrated Mobility Division

Hap Fatzinger, North Carolina Aquarium at Fort Fisher

Meghan Finnegan, MOTSU

Sean Geer, Kure Beach Parks and Recreation

Vanessa Lacer, Wilmington Urban Area MPO

Mo Linquist, Kure Beach Bicycle and Pedestrian Advisory Committee

Abby Lorenzo, Wilmington Urban Area MPO

Andrew Meeker, East Coast Greenway Alliance

Allen Oliver, Town of Kure Beach

Jeffrey Owen, Fort Fisher State Recreation Area

Liz Smith, Kure Beach Village HOA

Jim Steele, Fort Fisher State Historic Site

Emma Stogner, Wilmington Urban Area MPO

Ed Strauss, Beachwalk HOA

Ed Wilkinson, Kure Beach Resident

Joanna Zazzali, North Carolina Aquarium at Fort Fisher

Consultants

Alta Planning + Design, Inc.

Smart Moves Consulting

PROJECT CONTACT

Hart Evans

Statewide Planning and Programming Manager

NCDOT Integrated Mobility Division

jhevans1@ncdot.gov

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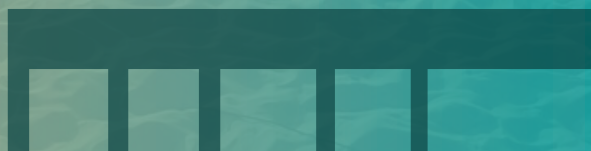
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Executive Summary



Purpose

Kure Beach and NCDOT's Integrated Mobility Division (IMD) initiated this feasibility study to explore future options for roughly 4 miles of continuous paved trail and/or bike boulevard running from the southern terminus of the existing Island Greenway to the Fort Fisher Ferry Terminal as part of the East Coast Greenway.

Vision

The Island Greenway to Fort Fisher Trail will create an accessible, beautiful, and safe transportation and recreational connection to local destinations for residents and visitors of all ages and abilities.

Goals



Identify a recommended alignment for the Island Greenway/East Coast Greenway from the existing Island Greenway to the Fort Fisher Ferry.



Provide a bicycle and pedestrian facility for all ages and abilities, with an emphasis on safety and accessibility.



Fill a gap in the statewide Great Trails State network and the East Coast Greenway.



Connect residents and visitors to all recreation facilities and to the beach easily and comfortably.



Minimize environmental impact through sustainable design to reduce maintenance needs in the future.

Project Background

This feasibility study builds on recent planning efforts including the Great Trails State Plan and the Kure Beach Comprehensive Bicycle & Pedestrian Plan, which featured this trail project as the highest priority recommendation. The East Coast Greenway Alliance applied for and received funding to conduct this study through NCDOT-IMD's Paved Trails Feasibility and Sidewalk Program in Spring 2023.

- ▶ Military Ocean Terminal Sunny Point (MOTSU)
- ▶ East Coast Greenway Alliance
- ▶ The North Carolina Aquarium
- ▶ North Carolina Department of Natural and Cultural Resources (NC DNCR)
- ▶ North Carolina State Parks
- ▶ Citizen representatives

Project Process

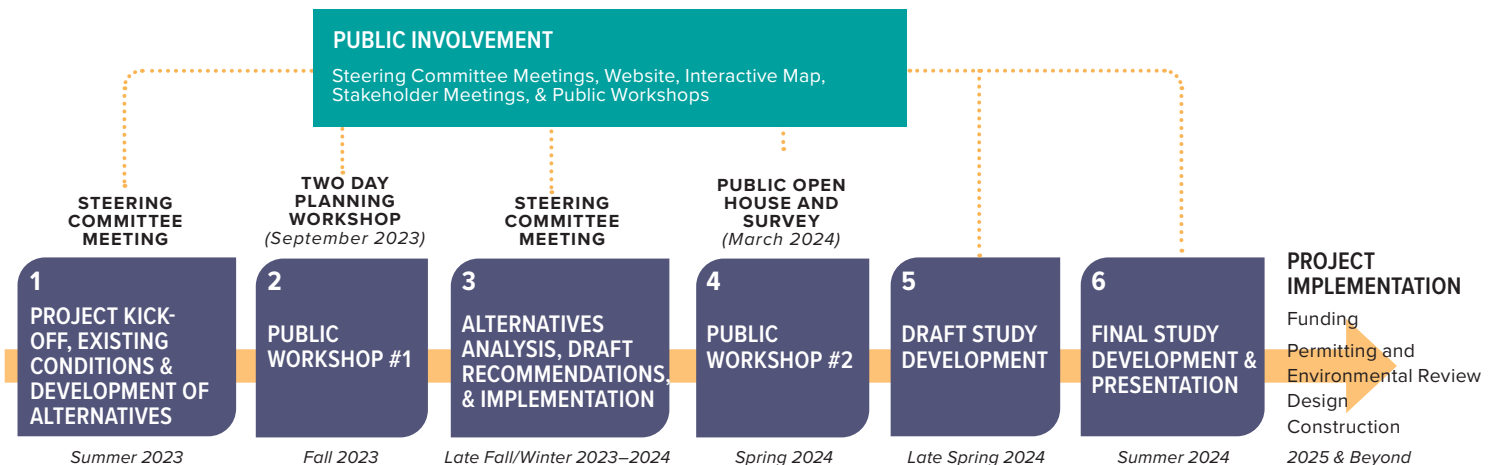
The study was guided by a Steering Committee representing a range of perspectives, and drew upon a group of stakeholders for input throughout the process, including, but not limited to:

- ▶ NCDOT Integrated Mobility Division (IMD)
- ▶ Wilmington Urban Area Metropolitan Planning Organization (WMPO)
- ▶ Town of Kure Beach



The project team worked with a steering committee throughout the process to provide direction at key decision points in development of the study.

Project Schedule

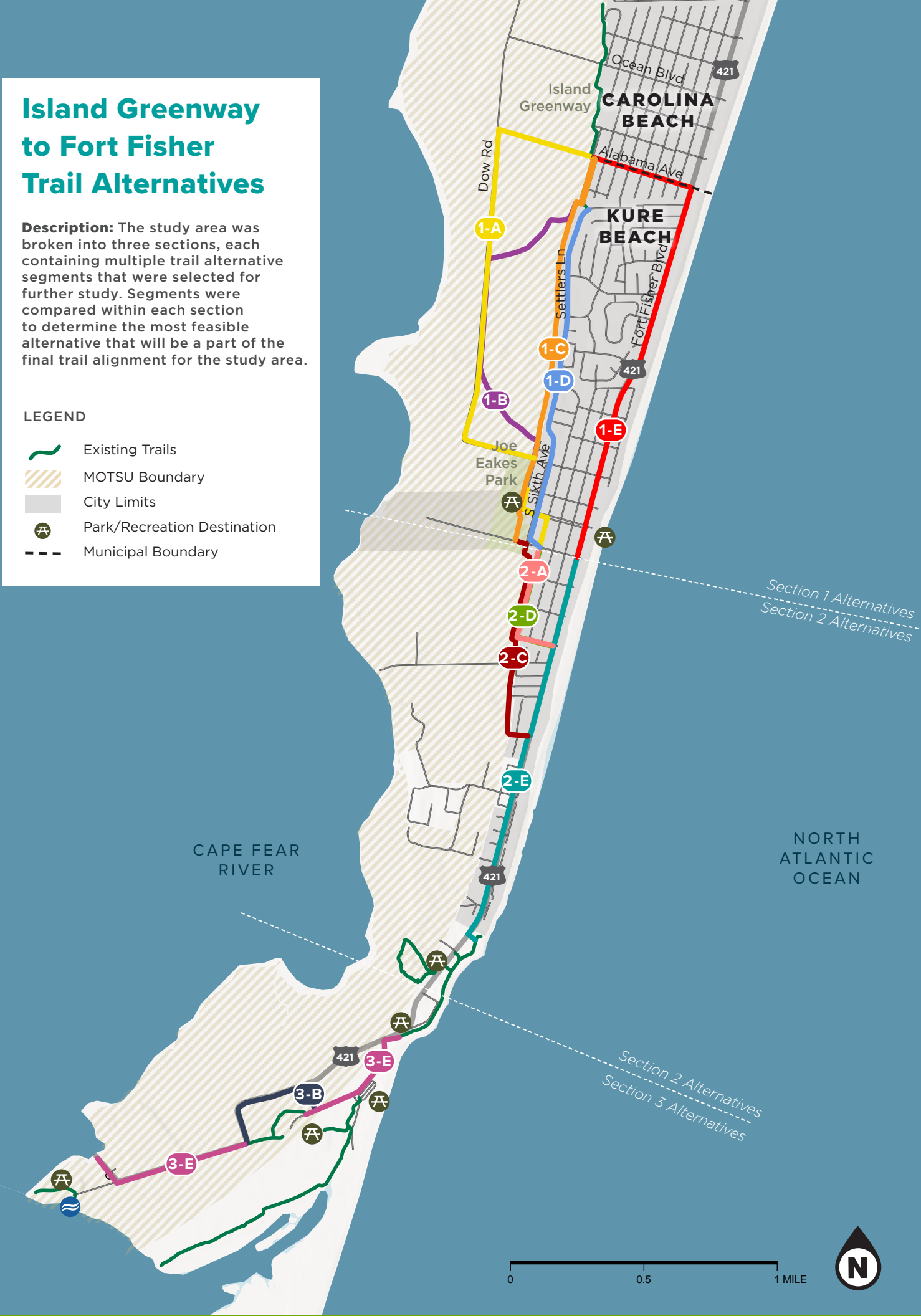


Island Greenway to Fort Fisher Trail Alternatives

Description: The study area was broken into three sections, each containing multiple trail alternative segments that were selected for further study. Segments were compared within each section to determine the most feasible alternative that will be a part of the final trail alignment for the study area.

LEGEND

- Existing Trails
- MOTSU Boundary
- City Limits
- Park/Recreation Destination
- Municipal Boundary



Public Open Houses & Survey

Two public open houses were held, one in September 2023 and one in April 2024. The first meeting was held to solicit public feedback on options for routing, opportunities and challenges, trail typologies, criteria for route selection, and more. The second open house was held in conjunction with a survey. The same questions were asked of the meeting attendees and survey respondents. The public was asked which route they thought would be the highest performing and which route they preferred. The public also identified which amenities they would



like to see on a future trail and how to phase trail development. Both meetings were well attended and over 676 people completed the survey.

Phase One: Fort Fisher Blvd Sidepath



Photo renderings were developed for the study to help communicate how the trail might look on the ground.

Coming to a Preferred Alternative

Through stakeholder input, public input, fieldwork, and consultant analysis, the project team identified a “preferred alternative.” The “preferred alternative” is the combination of trail segments that create the most optimal trail route based on multiple factors. A decision matrix was developed, informed by guidance from the Steering Committee, to rate the alternatives. The preferred alternative (right) was supported by feedback from the general public.

Trail Phasing

This plan proposes three distinct project phases:

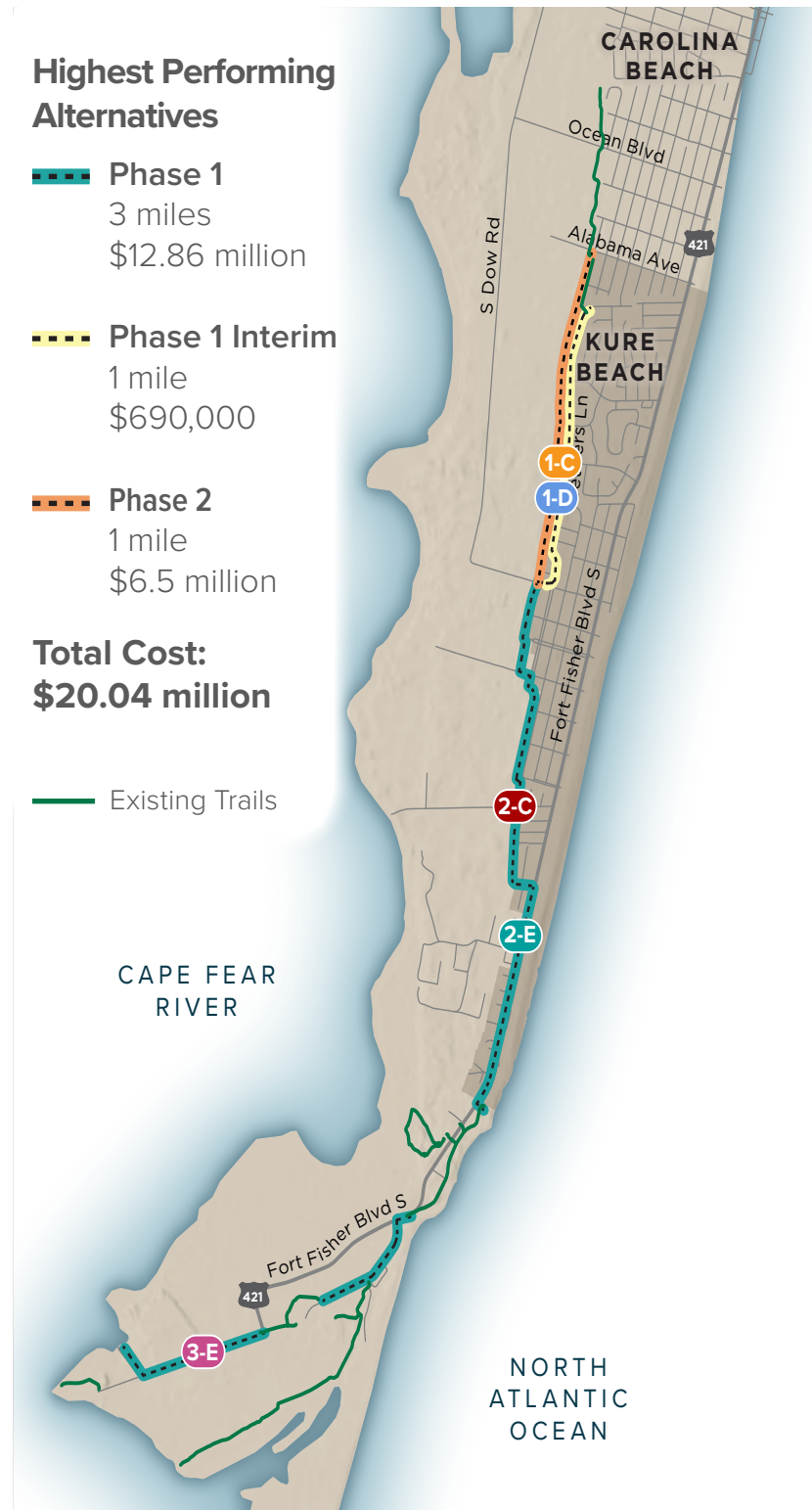
- ▶ **Phase One:** the first section is a trail from Avenue K to the Fort Fisher Ferry Terminal. This proposed trail is 3 miles and provides connections to many beach access points, a state recreation area and state historic site, the North Carolina Aquarium, and the Fort Fisher Ferry.
- ▶ **Interim Phase One:** an on-road bike boulevard connection on Settlers Lane between the proposed 3-mile trail and the existing Island Greenway. This interim measure will incorporate upgrades to the roadway to make it safer and more walk- and bike-friendly.
- ▶ **Phase Two:** An additional mile of trail connecting the Phase One trail from Avenue K to the existing Island Greenway along the Eastern MOTSU boundary. The exact location of this trail is to be determined.

Highest Performing Alternatives

- Phase 1**
3 miles
\$12.86 million
- Phase 1 Interim**
1 mile
\$690,000
- Phase 2**
1 mile
\$6.5 million

Total Cost:
\$20.04 million

Existing Trails



Once completed, the entire trail corridor proposed in this study would be 4 miles.

PHASE ONE:**K Ave to Fort Fisher Ferry**

- ▶ **Length:** 3 miles
- ▶ **Trail Type:** 12-foot wide asphalt shared-use path; 10-foot wide concrete path with grass strip and curb along Fort Fisher Blvd
- ▶ **Destinations:** Residential neighborhoods, Kure Beach Town Hall, Joe Eakes Park, Fort Fisher State Historic Site, Fort Fisher State Recreation Area, North Carolina Aquarium at Fort Fisher, Fort Fisher Ferry Terminal.
- ▶ **Jurisdictions and Partners:** Project is within the Town of Kure Beach, MOTSU, and state DNCR and NCDOT-owned property. Partners include the Town of Kure Beach, MOTSU, NC DNCR, WMPO, and NCDOT.
- ▶ **Total Estimated Cost:** \$12.86 million

PHASE TWO:**Island Greenway Extension**

- ▶ **Length:** 1 mile
- ▶ **Trail Type:** 12-foot wide asphalt shared-use path (SUP)
- ▶ **Destinations:** Existing Island Greenway and points north in Carolina Beach, residential neighborhoods, Joe Eakes Park, Kure Beach Town Hall, and Kure Beach Fire Department.
- ▶ **Jurisdictions and Partners:** Project is within MOTSU and the Town of Kure Beach.
- ▶ **Total Estimated Cost:** \$6.5 million

PHASE ONE INTERIM PROJECT:**Settlers Lane Bike Boulevard**

- ▶ **Length:** 1 mile
- ▶ **Trail Type:** Bike boulevard
- ▶ **Destinations:** Existing Island Greenway and points north in Carolina Beach, residential neighborhoods, Joe Eakes Park, Kure Beach Town Hall, and Kure Beach Fire Department.
- ▶ **Jurisdictions and Partners:** Project is within Town of Kure Beach jurisdiction as a locally maintained road.
- ▶ **Total Estimated Cost:** \$690,000



Implementation

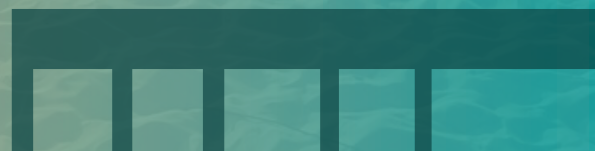
The Implementation Chapter provides a step-by-step program of action for project partners to begin the process of securing funding, acquiring right-of-way, and building the trail in a strategic and phased approach.

It will take the collective action of many project supporters to successfully implement phases of the trail corridor. This includes project champions from the Town of Kure Beach; nonprofit partners such as the East Coast Greenway Alliance and the Great Trails State Coalition; state agency partners such as NCDOT's Integrated Mobility Division (IMD); local residents, boards, and commissions; and many others. The diagram below shows the steps for each project phase, not necessarily sequential depending on opportunity and schedule, that should be taken to ensure the project is a success.



\ 01 \

Introduction



Overview

This study was led by the North Carolina Department of Transportation Integrated Mobility Division (NCDOT IMD) to understand options for an approximately 4-mile greenway from the existing Island Greenway in Carolina Beach to the Fort Fisher-Southport Ferry Terminal.

In an area that currently lacks dedicated facilities for walking and biking, this greenway will improve transportation and recreation options in the area and promote sustainability. It will make critical connections to Carolina Beach, Kure Beach, local parks, and the ferry terminal. Once completed, it will provide alternative transportation options to over one million annual visitors to destinations in the area, including the Fort Fisher State Historic Site, Fort Fisher State Recreation Area, and the North Carolina Aquarium at Fort Fisher, and help complete our Statewide Trail network as part of the Great Trails State Network and East Coast Greenway State Trail route

This study explored the feasibility of several greenway alignment options through the Town of Kure Beach and



the Fort Fisher Area. Alignment alternatives focused on using public right-of-way (ROW), as well as other options that were explored in partnership with land owners.

In addition to the NCDOT IMD, project partners included the Town of Kure Beach and the East Coast Greenway Alliance.

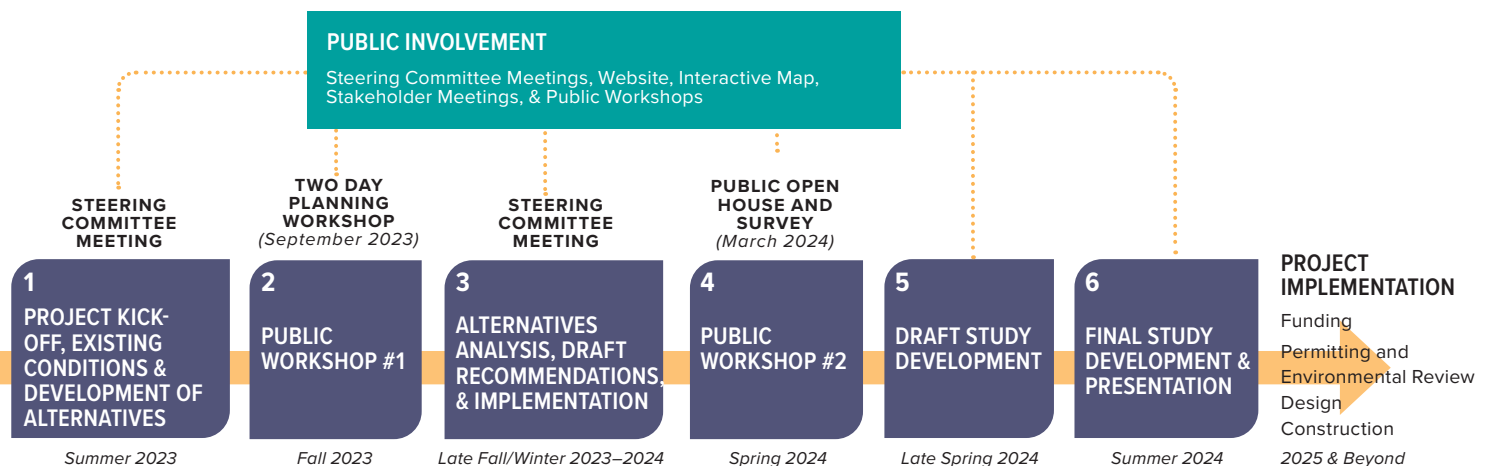
Background

Several local and state planning efforts have been conducted, which has led to the feasibility study of this greenway corridor. Major recent events leading to the development of this plan include the completion of the Town of Kure Beach's Comprehensive Bicycle and Pedestrian Plan in 2022, which prioritized the study of this greenway. In a survey for the plan, over 91% of participants responded in favor of improvements for walking and biking conditions, and the Island Greenway extension into Kure Beach was listed as the number one ranked project in the entire plan.

Around the same period, NCDOT featured this greenway corridor in the Great Trails State Plan Implementation Report as one of 11 priority projects in the statewide trails network. NCDOT IMD created a Paved Trails Feasibility and Sidewalk Program to improve the pipeline of bicycle and pedestrian projects that can be constructed. As this trail alignment is part of the East Coast Greenway, The East Coast Greenway Alliance applied for the program and received funding for the feasibility study in Spring 2023. Other findings from previous plans that informed the vision, goals and analysis in this study are summarized in Table 2.



Process and Schedule



Vision

The Island Greenway to Fort Fisher Trail will create an accessible, beautiful, and safe transportation and recreational connection to local destinations for residents and visitors of all ages and abilities.

Goals



Identify a recommended alignment for the Island Greenway/East Coast Greenway from the existing Island Greenway to the Fort Fisher Ferry.



Provide a bicycle and pedestrian facility for all ages and abilities, with an emphasis on safety and accessibility.



Fill a gap in the statewide Great Trails State Network and the East Coast Greenway, a state trail and national greenway route.



Connect residents and visitors to all recreation facilities and to the beach easily and comfortably.



Minimize environmental impact through sustainable design to reduce maintenance needs in the future.

Project Benefits

According to North Carolina's Great Trails State Coalition and local data, the benefits of greenways include:

RECREATION



- ▶ Trails make communities better places to live by **preserving and creating free and open spaces** for recreation.
- ▶ Trails provide new opportunities for **outdoor recreation and non-motorized transportation**.
- ▶ The addition of this trail to the existing trail network would create around **7.2-miles of continuous greenway**, and improve connections to three parks, and connections to beach access points.
- ▶ Trails can increase **community wellbeing** by acting as a **social gathering space** and creating opportunities for random encounters and interactions between community members

HEALTH



- ▶ Trails provide a dedicated **space for physical activities**, such as walking, hiking, and biking.
- ▶ Trails increase physical activity, **improve physical and mental health**, and improve an individual's sense of well-being.

TRANSPORTATION



- ▶ Trails are an integral part of a **multi-modal transportation system**.
- ▶ This trail will provide a **critical connection** from Kure Beach and Carolina Beach to Fort Fisher Area and local connections to neighborhoods.
- ▶ Trails improve alternative transportation access for residents and visitors. There are **over 1-1.5 million annual visits¹ to destinations** at the southern part of the proposed trail. Alternative transportation access will help reduce vehicle trips and the excess demand on parking.
- ▶ This trail can reduce vehicle trips to the Fort Fisher Ferry and encourage active transportation. Currently, 2.1% of the **over 3.5 million annual ferry passengers** travel there using active transportation modes.²

¹ Based on NC Aquarium and Fort Fisher State Historic Site annual visitation numbers from the last few years.

² NCDOT Ferry Division, 2023.

ECONOMIC

- ▶ Trails **attract and retain business and residents**; this is why trails are considered a quality of life amenity.
- ▶ Trails benefit businesses located nearby as **trail users spend money** on equipment, food, lodging, and entertainment.
- ▶ Proximity to trails and greenways can **increase property values**, attract buyers, and make property easier to sell.³
- ▶ Trails generate a return on investment. **For every \$1.00 spent on trail construction, \$1.72 is generated** annually from local businesses and tax revenue, and benefits related to health and transportation.⁴



ENVIRONMENTAL

- ▶ Trails encourage human-powered forms of transportation, **improving water and air quality, and slowing climate change.**
- ▶ Trails serve as hands-on environmental classrooms, providing a chance to **raise awareness about the important flora and fauna** of Pleasure Island.
- ▶ Trails can have stormwater features that capture surrounding stormwater to be slowly cleaned through filtration, **reducing flooding and improving water quality.**



3 Urban Land Institute: Active Transportation and Real Estate: The Next Frontier. Washington, D.C.: the Urban Land Institute, 2016.

4 ITRE, Alta and NCDOT, 2018.



Relevant Plans and Policies

This section provides a review of previous plans completed for the study area, as well as current policies that are important to this study.

Relevant Plans and Policies

The Town of Kure Beach, NCDOT, Wilmington Urban Area Metropolitan Planning Organization (MPO), and other agencies in the Cape Fear Region have prioritized bicycle and pedestrian connectivity in planning efforts over the years. Table 1 lists the plans that were reviewed during the planning process. Table 2 on the following pages provides a summary of key bicycle and pedestrian, transportation, land use, and parks and recreation recommendations from previous plans and studies that are relevant to the Island Greenway Feasibility Study. Relevant policies were also reviewed and are summarized starting on page 20.

Table 1. Plans Reviewed

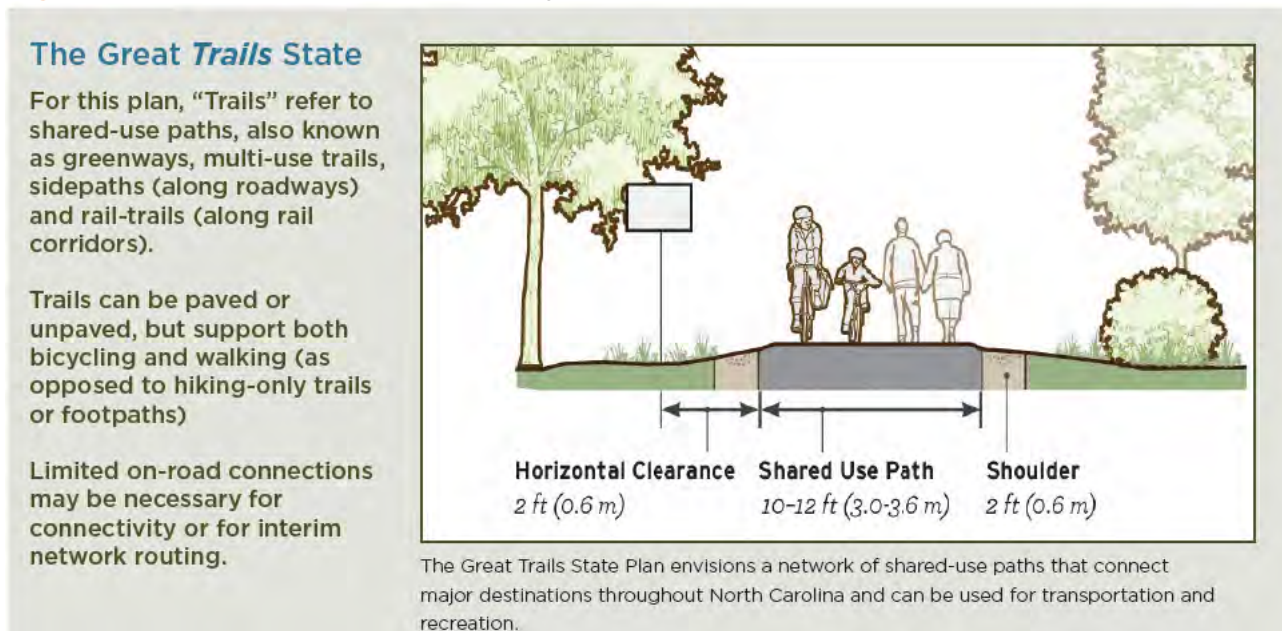
PLAN NAME	AGENCY	YEAR
The Great Trails State Plan	NCDOT	2022
Kure Beach Bicycle and Pedestrian Plan	Town of Kure Beach Wilmington Urban Area MPO	2022
East Coast Greenway State Trail Plan	East Coast Greenway Alliance	2022
Cape Fear Moving Forward 2045 Metropolitan Transportation Plan	Wilmington Urban Area MPO	2020
Military Ocean Terminal Sunny Point Joint Land Use Study	Cape Fear Council of Governments	2019
Fort Fisher State Recreation Area General Management Plan	North Carolina Department of Natural and Cultural Resources Division of Parks and Recreation	2017
Cape Fear Regional Bicycle Plan	Cape Fear Council of Governments	2017
Move. Play. Connect. Comprehensive Greenway Plan	City of Wilmington New Hanover County	2013
Corridor Study For Dow Road	Wilmington Urban Area MPO	2009

Relevant Plans and Studies

Table 2. Plan Review Findings and Recommendations

PLAN NAME + YEAR	KEY FINDINGS + RECOMMENDATIONS
<p> GREAT TRAILS STATE PLAN (2022)</p> <p>NCDOT</p>	<ul style="list-style-type: none"> • Development, network recommendations, and implementation strategies for connecting communities and destinations with a network of greenways. • Public input collected identified parks as the top destination for walking and biking, and Fort Fisher was identified as a top connection to state parks in the coastal region. • Proposed shared-use path segments to connect existing segments through Kure Beach to Fort Fisher- Southport Ferry as part of the East Coast Greenway State Trail.

Figure 2. Great Trails State Plan Facility Vision



KURE BEACH BICYCLE AND PEDESTRIAN PLAN (2022)

**Town of Kure Beach
and Wilmington Urban
Area Metropolitan
Planning Organization
(See Figure 3)**

- Network and program recommendations, implementation steps, design guidelines, and funding opportunities for expanding active transportation facilities.
- Recommended Short Island Greenway Connection from existing Island Greenway to proposed Island Greenway Extension (along the Military Ocean Terminal Sunny Point (MOTSU) Boundary Alternative alignment) and neighborhood connection to Settlers Lane (part of Neighborhood Bikeway Alternative alignment). Public feedback showed support for safe connections, although concerns were stated for potential conflicts with traffic on Settlers Lane.
- Recommended greenway extension and connector from Island Greenway in Carolina Beach to Town Hall/K Avenue (along MOTSU Boundary Alternative alignment). Public feedback showed this as the number one selected project in Kure Beach. Island Greenway Extension requires MOTSU approval.
- Recommended Island Greenway Extension from K Avenue to Fort Fisher. Two alignment options proposed through MOTSU property. Public feedback showed support for the project, as well as some concerns. Island Greenway Extension requires MOTSU approval.
- Feasibility study needed for Fort Fisher Boulevard sidepath. Public feedback was largely in favor of improvements along this corridor with some concerns about cost and removal of parking.
- Sidepath recommended along Fort Fisher Boulevard from Avenue E to state park. Public feedback was largely in favor of this project and improved connectivity.

SHORT ISLAND GREENWAY CONNECTION

Carolina Beach Island Greenway connects to here.

Add sign about safety on beach roads where speed limit is 15 mph.

ISLAND GREENWAY EXTENSION TO FORT FISHER
Project will not be possible without approval from the Department of Defense at Military Ocean Terminal Sunny Point (MOTSU). Alternate alignments west of here are highly unlikely to be approved by MOTSU. Town is seeking input from MOTSU.

Existing conditions along the Broadview corridor in MOTSU Sunny Point.

If land is too small, it should:

- Allow to preserve the natural feel of the corridor by existing broad greenway north of Fort Fisher Blvd over engagement and improved bike lanes in the neighborhood.
- Be designed for pedestrian rather than increased roadway required through area.
- Be designed to get enough narrow landscaping and trees between the road and homes to provide privacy (street frontage) and have priority or advantage whenever from the street).
- Be designed with mid-way markers (like both safety and wayfinding).
- Have a well-defined and formal maintenance and management plan in place.
- Be designed with landscaping (MOTSU requirements).

SIDEWALK CONNECTION TO TOWN HALL

Existing conditions along town hall corridor at K Ave.

Conceptual images of recommended improvements to town hall corridor.

The sidewalk should be aligned to have maximum potential impact on the design and construction.

BOARDWALK WIDENING
(Using durable surface to reduce maintenance costs)

Example Kure Beach Boardwalk.

Conceptual example of a wider boardwalk with a more durable surface material.

K AVE CROSSING IMPROVEMENTS

Existing conditions at Fort Fisher Blvd and K Ave.

Conceptual images of recommended improvements to K Ave crossing.

Aver view about Kure Beach being a place where residents want people walking and bicycling, similar to San Diego's Torrey Pines Community.

Consider lane width 20' NHTSA speed limit.

Fisher path to Fort Fisher State Park, NC Aquarium and Ferry Terminal.

SIGNED BIKE ROUTES (sharrows and wayfinding signage providing safer alternatives to Fort Fisher Blvd)

Conceptual images of sharrows and wayfinding signage. These signs are placed and stop bars are placed in addition to allow for better flow along the bicycle route.

Other examples of bicycle route wayfinding signs.

See project not about the full alignment and expansion for the Kure Beach Greenway Extension to Fort Fisher.

FORT FISHER BLVD CROSSING IMPROVEMENTS (flashing beacons at beach access points)

Examples of flashing beacons for beach access points (at Carolina Beach).

FORT FISHER BLVD SIDEWALK (K Ave to E Ave sidewalk on west side)

Existing conditions along Fort Fisher Blvd on the west side of the street (looking south).

The addition of sidewalks on this side would require either narrowing existing high cost parking spaces or creating additional parking spaces at 15-20' parking spaces in total (side high cost).

A lower cost solution would be to create pedestrian space with pavement treatments and lighting. Sidewalks would create new safety controls.

BICYCLE LANE CROSSING IMPROVEMENTS (at all streets intersecting with bike lanes)

Examples of painting bicycle lane intersection markings.

Legend:

- Crosswalks and flashing beacons at beach access points
- Crosswalks and median islands
- Shared lane markings and wayfinding
- Bicycle lane intersection markings
- Proposed shared use path
- Proposed shared use path outside town limits, requires approval and coordination with other agencies
- Proposed sidewalk

Kure Beach Bicycle & Pedestrian Plan

Project Recommendations Map

Legend:

- Local community
- State
- County
- Municipality
- Township
- City
- Village
- Unincorporated Area
- Water
- Landmark
- Fort Fisher State Park
- NC Aquarium and Ferry Terminal
- Fort Fisher State Park
- NC Aquarium and Ferry Terminal

Scale: 0 to 1 mile

N

- List of trail development projects and information, including status, land needs, and cost estimates.
- Kure Beach Island Greenway segment of East Coast Greenway connecting Carolina Beach Island Greenway to Aquarium Path and Fort Fisher-Southport Ferry.
- Alignment requires land acquisition or easement.

CAPE FEAR MOVING FORWARD 2045 METROPOLITAN TRANSPORTATION PLAN (2020)

**Wilmington Urban Area
MPO**

- Multi-modal vision for regional and local projects that advance the MPO's goals for the transportation network.
- Public input collected shows that a majority of respondents would bike or walk more often if there were more dedicated facilities, such as multi-use paths, bicycle lanes, or sidewalks.
- Bike/ped project: K Avenue and US 421 crossing improvements (along the Fort Fisher Boulevard Alternative alignment).
- One pedestrian improvement project in Fort Fisher (along Fort Fisher Boulevard Alternative alignment).
- Public transportation project: Pleasure Island Trolley bus stop at Fort Fisher-Southport Ferry, creating an additional destination along the Fort Fisher Boulevard Alternative alignment.

MILITARY OCEAN TERMINAL SUNNY POINT JOINT LAND USE STUDY (2019)

**Cape Fear Council of
Governments**

- Report to identify ways to protect military operational capability of MOTSU while supporting growth of neighboring communities through improved communication and policies/procedures for compatible land uses.
- Recommendation for Pleasure Island ESCZ (PIE): Local governments on Pleasure Island should work with MOTSU to identify opportunities to continue developing compatible recreational uses in the [PIE] (such as the recently constructed greenway trail in Carolina Beach).
- Compatibility analysis acknowledges the Town of Kure Beach's anticipated community needs for bike and pedestrian paths either in the fire lane or on the Dow Road ROW.

Relevant Plans and Studies (continued)

FORT FISHER STATE RECREATION AREA GENERAL MANAGEMENT PLAN (2017)

North Carolina
Department of Natural
and Cultural Resources
Division of Parks and
Recreation

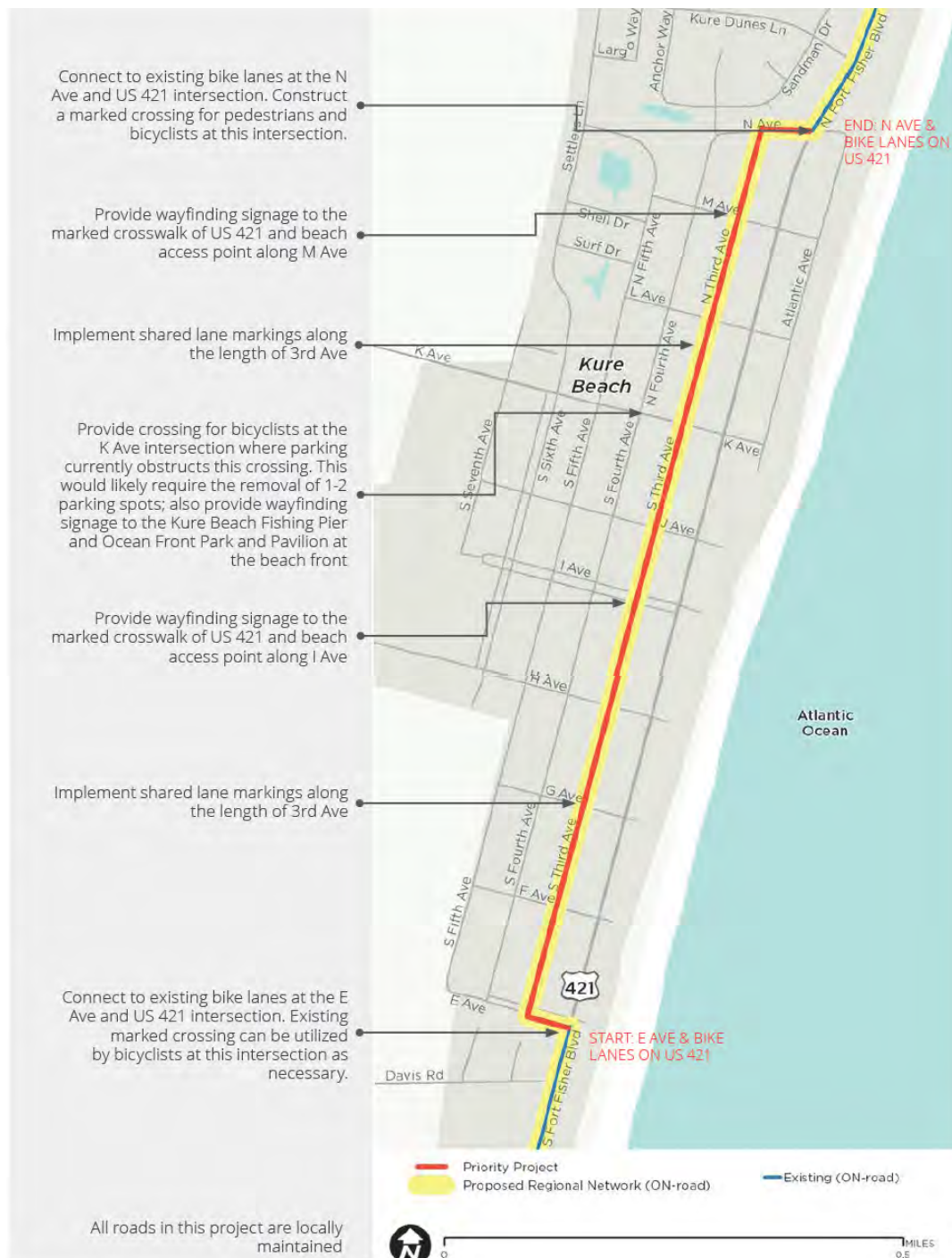
- Acts as a management plan for preserving land and promoting recreation opportunities in the state park. Existing Basin Trail from Loggerhead Road parking area to Basin Overlook.
- Projects include additional parking, building renovation, and maintenance area for vehicles.

CAPE FEAR REGIONAL BICYCLE PLAN (2017)

NCDOT
(See Figure 4)

- Network, policy, and program recommendations, implementation steps, design guidelines, and funding resources for achieving a 30-year vision for improving bicycling infrastructure.
- Public input gathered showed that improving bicycle conditions in the region is "very important" to the majority of respondents and the majority of respondents would bike more if there were more bike lanes, trails, and safe crossings.
- Short-term priority project: Kure Beach Through-Route - shared lane markings from intersection of E Avenue and US 421 to intersection of N Avenue and US 421 to avoid high traffic volumes on US 421 (connects to Fort Fisher Boulevard Alternative alignment).
- Pleasure Island opportunities and recommendations: Kure Beach to Fort Fisher Southport Ferry long term improvement should include separated bicycle facilities along US 421, as well as pedestrian facilities.

Figure 4. Cape Fear Regional Bicycle Plan Priority Project Map




Relevant Plans and Studies (continued)

MOVE. PLAY. CONNECT. COMPREHENSIVE GREENWAY PLAN (2013)

City of Wilmington and New Hanover County
(See Figure 5)

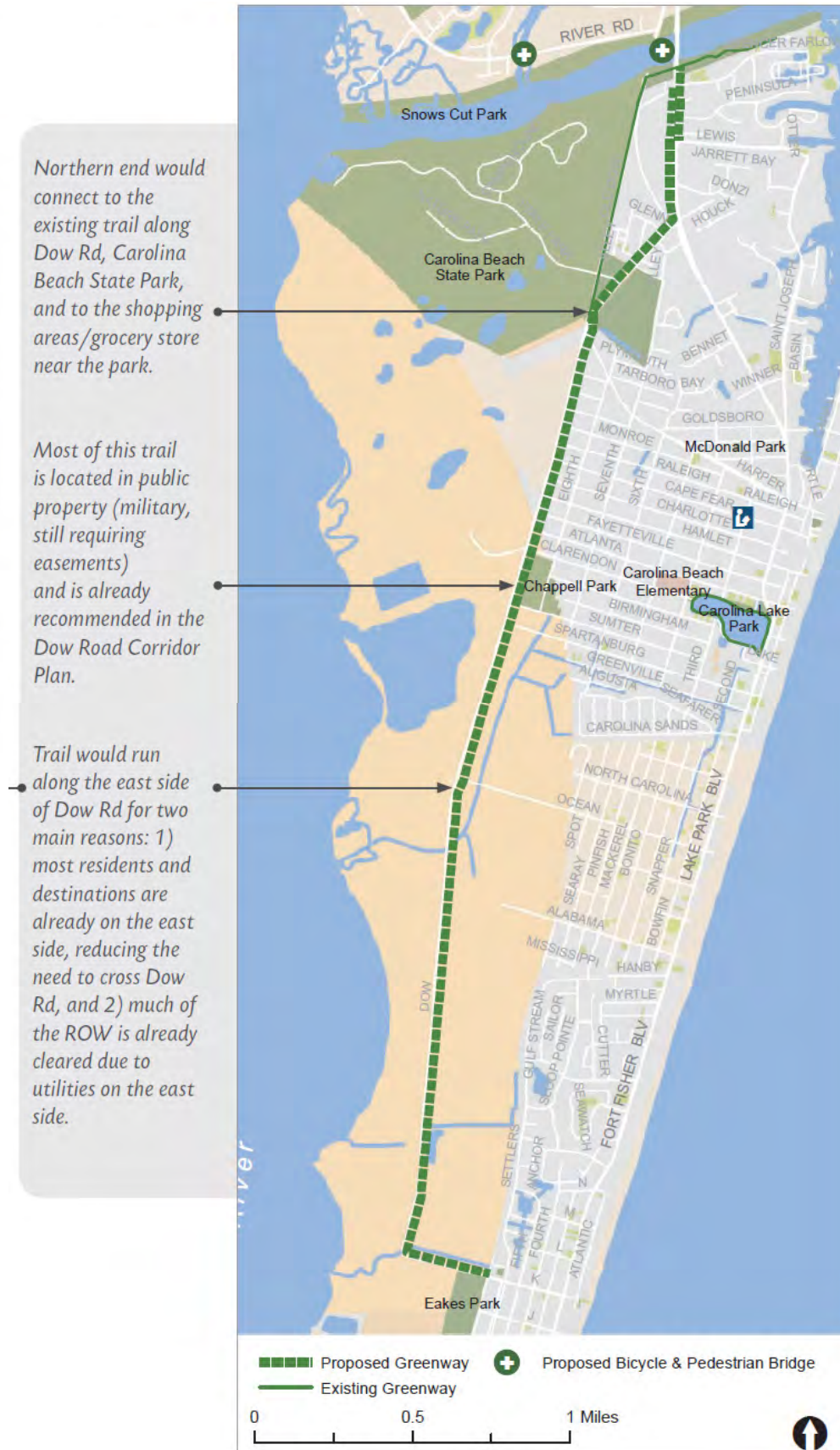
- Recommendations, design guidelines, and implementation steps for completing a comprehensive greenway network throughout Wilmington and New Hanover County.
- Public input collected showed that the goal of creating more greenways in New Hanover County is "very important" to a majority of respondents and most respondents would use greenways more if they were closer or there were more facilities.
- Dow Road identified as top corridor for new trails for improved bike/ped connectivity (along Dow Rd Alternative alignment).
- Proposed network: greenway along Dow Rd Trail from Chappell park to K Avenue (along Dow Rd Alternative alignment), greenway along Lake Park E Ave from Carolina Sands to Alabama Ave (along Fort Fisher Blvd Alternative alignment), sharrows along Fort Fisher Blvd from N Ave to E Ave (along Fort Fisher Blvd Alternative alignment).
- Priority projects include Dow Rd Trail from Snows Cut to Seventh Ave (along Dow Rd Alternative alignment).

CORRIDOR STUDY FOR DOW ROAD (2009)

 **Wilmington Urban Area Metropolitan Planning Organization**

- Feasibility study for Dow Road proposed extension and supporting multi-modal transportation facilities.
- Public feedback received showed support for improvements along Dow Rd and K Ave.
- Recommended bike lanes along Dow Road and K Avenue (along Dow Rd Alternative alignment).
- Recommended multi-use path along Dow Road from state park to K Avenue, crossing from west to east side of the road one mile south of Ocean Boulevard (along Dow Rd Alternative alignment).

Figure 5. Move. Play. Connect. Dow Rd Trail Map



Relevant Policies

East Coast Greenway

The East Coast Greenway (ECG) is a continuous 3,000-mile route for biking, walking, and other active modes from Maine to Florida. Kure Beach is part of the planned ECG route through North Carolina.

The ECG is envisioned as a fun, safe, and accessible route that connects major cities, small towns, and nature on facilities that are completely separated from motor vehicle traffic. Currently, about 35% of the ECG route is protected from traffic, and the remaining sections are on-road. The completed ECG will support local commutes and long adventures alike, fostering healthy, sustainable, and prosperous communities throughout the Eastern Seaboard.

Visit www.greenway.org to learn more.

In order for a trail to be considered to be part of the East Coast Greenway, it needs to meet the following requirements:

- ▶ Trails should be open and free to the public every day of the year.
- ▶ Avoid steep grades, aiming to follow American Association of State Highway and Transportation Officials (AASHTO) guidelines.
- ▶ The trail must be wide enough for shared use; all new trails are expected to be designed and built according to AASHTO best practices.



- ▶ Trail surface must be firm and easily navigable by different user types and users of all ages and abilities.
- ▶ Trail must be separated from traffic by a combination of both horizontal spacing and vertical elements to protect trail users from motor vehicles.

Based on these guidelines, the trail facilities prioritized for this study include a shared-use path, sidepath, and separated bike lane with sidewalk.

Figure 6. East Coast Greenway Map



NCDOT Complete Streets Policy

The N.C. Department of Transportation’s “Complete Streets” policy directs the department to consider and incorporate multiple modes of transportation when building new projects or making improvements to existing infrastructure. The benefits of this approach include:¹

- ▶ Making it easier for travelers to get where they need to go.
- ▶ Encouraging the use of alternative forms of transportation.
- ▶ Building more sustainable communities
- ▶ Increasing connectivity between neighborhoods, street, and transit systems.
- ▶ Improving safety for pedestrians, cyclists, and motorists.

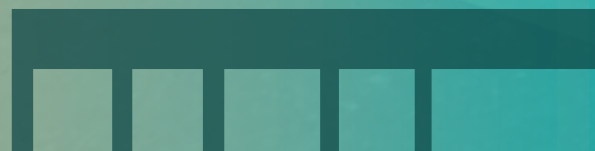
Military Ocean Terminal Sunny Point (MOTSU)

The proposed study area is unique in that the western half is within the Military Ocean Terminal Sunny Point (MOTSU) buffer zone boundary. MOTSU is a military terminal located on the opposite side of the Cape Fear River from Pleasure Island. The area within the buffer zone boundary is to remain undeveloped, preserved, and with limited access to the property. Carolina Beach worked with MOTSU to build the Island Greenway along the eastern perimeter of MOTSU property, demonstrating a willingness to work with neighboring municipalities for specific acceptable land uses. The Town of Kure Beach and the NC Department of Natural and Cultural Resources will work with MOTSU to seek their input and approval for an extension of the Island Greenway as part of the feasibility study process. If that route is determined to be the most suitable for the greenway, the Town will work with MOTSU for approval. For additional MOTSU input and policy guidance, refer to the Stakeholder Input section on page 26.

¹ <https://connect.ncdot.gov/projects/BikePed/Pages/Complete-Streets.aspx>

\ 02 \

Community Involvement



OUTLINE OF ENGAGEMENT

Introduction

The community involvement process included steering committee meetings, stakeholder meetings, community open house meetings, and an online survey. Public and stakeholder input helped to inform plan priorities and alignment preferences. The following sections summarize the two community open houses, stakeholder input, and the results of the spring 2024 online survey. See Appendices A-D for further details.

Community Open House #1

There were 240 attendees at the first public open house in September 2023. This included 221 Kure Beach residents, 17 Pleasure Island residents, and 2 non-locals.

The project team gathered input on opportunities and challenges of greenway alignment options and which facility typology the public favored; solicited feedback on the most important criteria for route selection; and asked the public about “what the Island Greenway will be” and “who will use it.”

Comments were generally positive towards the greenway, although some participants expressed concerns. When asked which type of facility they prefer for walking and biking, the overwhelming response was a shared-use path on a greenway.

Additional alignment options were included as a part of this study's consideration after initial public input and field analysis.

Desired Facility Types:



1 Shared-Use Path:
Greenway
224 votes



2 Shared-Use Path:
Sidepath
47 votes



3 Separated Bike
Lane with Sidewalk
11 votes

COMMON TOPICS OF PUBLIC INPUT (FROM WORKSHOP #1)



*Pedestrian/
bicycle*



*Greenway
benefits*



*Property
values*



*Safety/crime
and privacy*

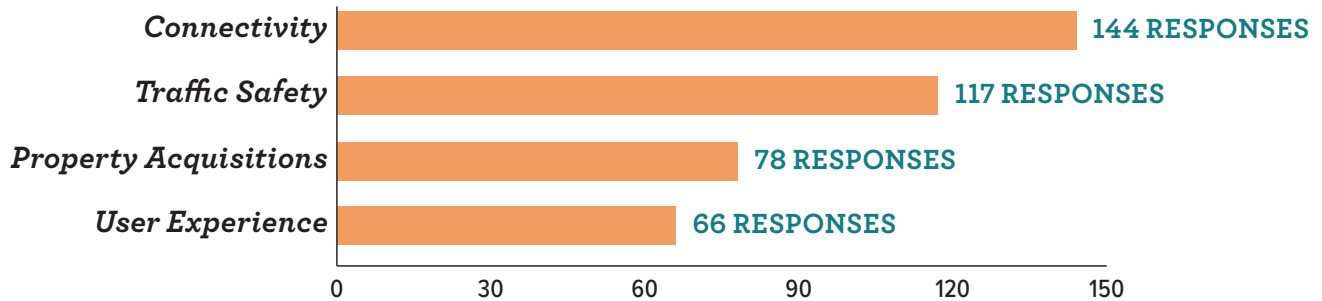


*Preservation
of natural*

Criteria for Route Selection

Participants were asked their opinion on the most important criteria for route selection. Most respondents favored connectivity, with 144 total responses and 125 responses from Kure Beach residents, and Traffic Safety, with

117 total responses and 108 responses from Kure Beach residents. Property Acquisitions and User Experience were the next most common choices.



What Will the Island Greenway Be?

“Safe place for the greater good, cars are dangerous”

“A way to bring the island together”

“Loss of privacy and property value”

“Town needs the greenway for residents and visitors!”

“Great place to bicycle off the busy streets”

“It will preserve “Forever Green” land behind Settlers”

“A path to the ferry and Southport”

“Increased property values for the 21st century community”

“The greenway will be a safe alternative to Dow or Fort Fisher for all!”

A minimal impact on the environment and privacy for residents were suggested by multiple attendees in written comments.

Who Will Use the Island Greenway?

“Residents and vacationers”

“My family, my guests, tourists”

“Runners, walkers, cyclists”

“Families, friends, residents”

“My family and dog”

“My husband, me, grandkids, my walking buddies, my friends...”



Opportunities and Constraints



Map posters showed alignment options for the northern, central, and southern sections of the study area. Participants were asked to share opportunities and constraints for the study area and alignment options. Map thumbnails with alignments are shown at left. Below is a summary of comments provided for alignment options. For a full list of detailed comments, see Appendix A.

Map 1: Ocean Boulevard to H Ave.

Dow Road

- » Provides a more natural setting
- » High vehicle speeds
- » Wetlands are prevalent



MOTSU Eastern Boundary

- » Adjacent property owners are concerned with safety, crime, privacy
- » Wetlands and wildlife (some of which may be threatened or endangered) are prevalent in the area
- » Current drainage and stormwater issues in the area
- » Received both support and opposition from residents

Settlers Lane

- » Residents often backing out of driveway
- » Congestion with residential traffic and active transportation users



Fort Fisher Boulevard

- » Dangerous with car traffic

Map 2: H Ave. to Fort Fisher State Historic Site

Fort Fisher Boulevard

- » Travels through commercial area and near beach access points
- » On-street parking is heavily used
- » Frequent flooding with storms
- » Connects to destinations in the south

Map 3: Fort Fisher State Historic Site to Ferry

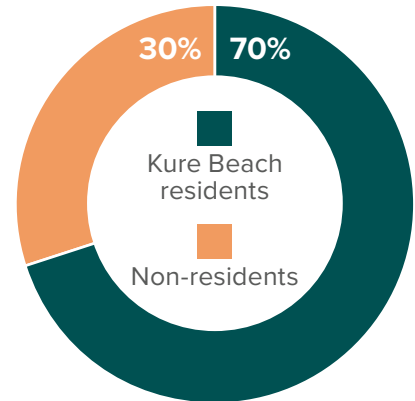
Options South of the Town of Kure Beach

- » Residents feel Fort Fisher Blvd is dangerous and would have impacts to parking along Fort Fisher Blvd, but want to ensure it is being connected to
- » Preference to stay away from roads, or have a good buffer

Community Open House #2 and Survey

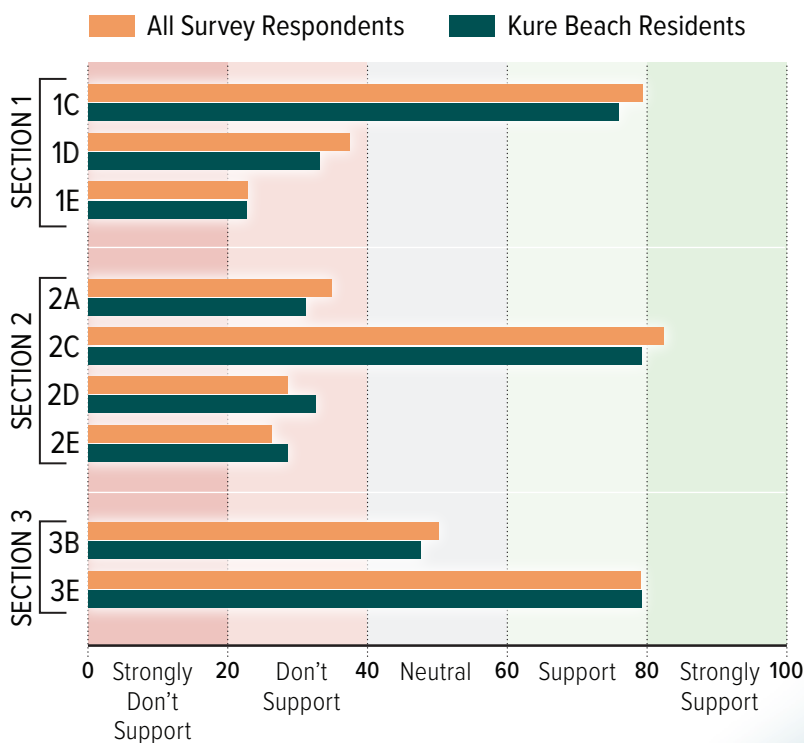
The public was given the opportunity to weigh in on the trail alignment alternatives from March 20 through April 20, 2024. On March 20, a public meeting at Kure Beach Town Hall was held that described the evaluation of the trail alignment alternatives. The 116 attendees reviewed the evaluation and provided input on their trail alignment preferences, through the survey that was available in both online and printed format. During the full public input period, 676 surveys were submitted (646 online surveys and 30 hard copy surveys). *For detailed analysis of public response, demographics of surveyees and their comments, see Appendix D, The Full Survey Details.*

WHO TOOK THE SURVEY?

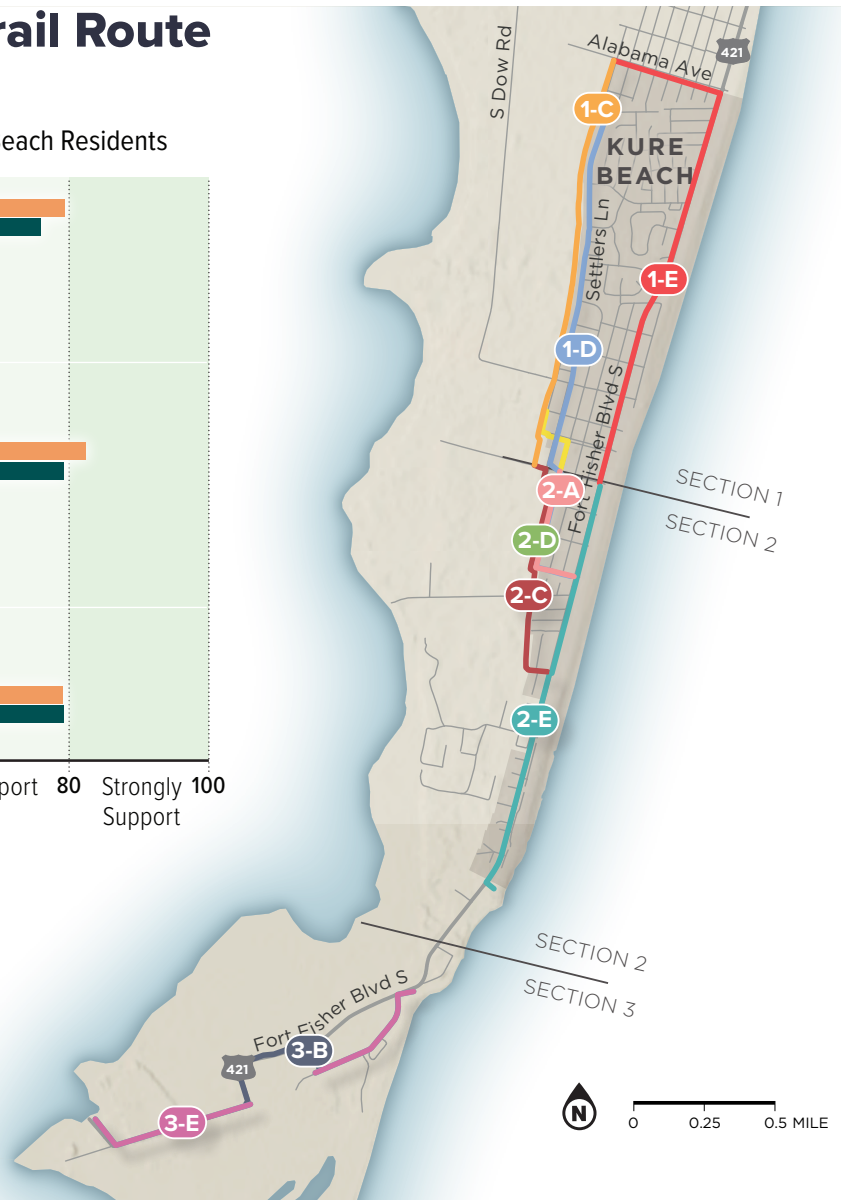


TRAIL SECTIONS AND OPTIONS

The Public's Preferred Trail Route

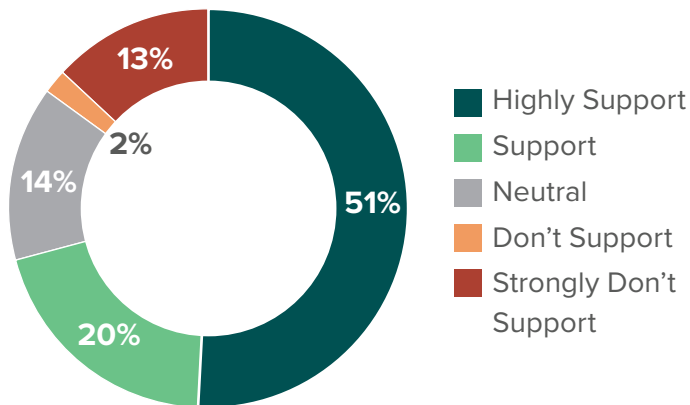


Respondents were asked to select how much they support each trail option based on a scale.



Feedback on Proposed Phasing and Amenities

SUPPORT FOR PROPOSED PHASING



PROPOSED PHASES



FEEDBACK ON PHASING

Surveyees were shown a proposed phasing of the entire corridor and asked how much they supported the phasing plan based on a scale. For comments on phasing, see Appendix D, The Full Survey Details.

Most Desired Amenities along the New Trail

most votes

fewest votes



Trailheads



Wayfinding Signage



Areas to Rest



Residential Connections



Emergency and Maintenance Contact Info



Environmental/Historic Interpretation



Lighting



Public Art



Community Spaces

THEMES OF PUBLIC COMMENTS ON AMENITIES



Strong desire for **privacy, security, and safety** for residents and families, including buffers between properties and the trail



Preference for a trail **away from road traffic**, especially avoiding Route 421



Opposition to lighting due to **concerns about light pollution** and wildlife impact; varied opinions on the necessity and type of lighting, with suggestions for **solar-powered or minimal lighting** options



Consideration for minimizing the environmental impact and **preserving the natural landscape** along with concerns about **maintenance** of the trail and landscaping



Consideration for **accessibility and convenience**, including access to nearby amenities like bars and restaurants



Suggestions for amenities such as **bathrooms, benches, bike repair stations, and mile markers** as well as **panic buttons, recycling stations, and workout equipment**

General Comments from the Public

SECTION 1

Residents emphasized the importance of keeping pedestrians and cyclists safe from traffic and having a nature-like trail. Connectivity was also important. Residents expressed varied opinions on the proposed trail routes, with some supporting 1C for its safety and alignment with existing greenways, while others oppose having the trail behind their homes on Settlers Lane, citing privacy, security, and environmental concerns.

**REFER TO
THE MAP
OF TRAIL
SECTIONS
AND
OPTIONS
ON PAGE
34**

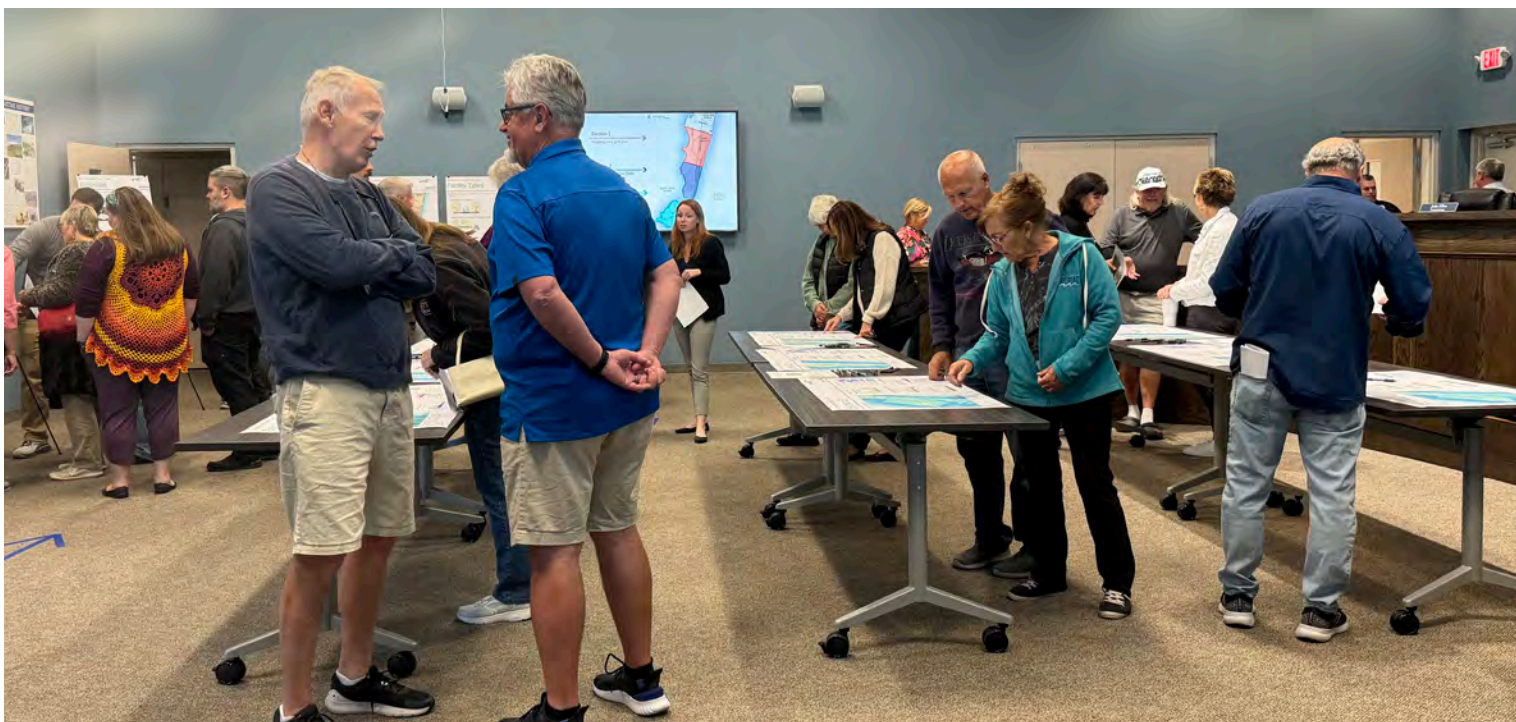
SECTION 2

Many respondents prioritized safety, preferring routes away from busy roads to provide a safer, more pleasant experience. Option 2C emerged as a favored route for its safety, scenic qualities, and separation from vehicle traffic. Some expressed concerns about the impact on wetlands and wildlife, and some expressed a preference for more cost-effective options. Many emphasized the importance of a continuous route.

SECTION 3

There was strong support for paths away from vehicular traffic, especially for the safety of children and cyclists. Many emphasized the importance of preserving green spaces and wetlands. Some expressed concerns about the cost of the project. There was support for connections to key landmarks like the aquarium and ferry terminal. Some favored 3B for its less trafficked areas while others preferred 3E for its safety and environmental considerations.

Below: Participants offer feedback and opinions at the public meeting on March 20, 2024, at Kure Beach Town Hall. Photo courtesy of NCDOT.



Stakeholder Input

The study team identified public land owners, land managers, and partners in planning and implementation as stakeholders for the project. These entities provided feedback on alignment alternatives and, in some cases, stakeholders dictated whether an alignment would be allowed within their property. The following is a summary of their feedback. For a full set of meeting notes from these conversations, see Appendix B.

NC DEPARTMENT OF TRANSPORTATION, DIVISION 3

Alta and NCDOT IMD met with staff on October 18th, 2023. Note that NCDOT manages and owns any state-maintained road, seen on the Built Environment map in this study. The following points were made:

- ▶ **Use of Dow Road for a sidepath:** While NCDOT does own the road ROW, they feel this option is less feasible due to ROW constraints. They do not prefer this option.
- ▶ **Use of Fort Fisher Boulevard ROW for a sidepath or other facility type:** ROW in the northern half above Avenue E is much more constrained and would require loss of parking which is in high demand. NCDOT feels a multi-use path is less feasible. South of Avenue E the ROW opens to 60+ feet, providing greater opportunity for a side path.
- ▶ **Preferred option for the greenway:** NCDOT prefers to keep the trail consistent with location and trail specifications of the connecting Island Greenway. That means that using the MOTSU Eastern Perimeter (Options 1-C and 2-C) are most preferred for them.

MOTSU

In the Fall of 2023, Alta and NCDOT IMD have had ongoing communications with MOTSU to keep them up-to-speed on the project and timeline. MOTSU provided feedback on the alignments shown at the public open house which are shown below:

- ▶ **Dow Road Alternative:** MOTSU does not consider Dow Road as a feasible or safe design option/location for a greenway. This is due to explosive safety requirements, security restrictions, and the speed limit on Dow Road. An at-grade crossing on Dow Road or K Avenue would be unsafe.
- ▶ **MOTSU Boundary/Eastern Perimeter Alternative:** MOTSU is open to a greenway along the property line, with fencing constructed as an in-kind contribution (like Carolina Beach's Island Greenway).
- ▶ **Settlers Lane Alternative:** No feedback was given from MOTSU.
- ▶ **Fort Fisher Boulevard Alternative:** Fort Fisher Blvd is a state-owned road located on MOTSU

property at its southern end. Coordination with NCDOT would be needed. Factors to consider include NCDOT ROW, road speed and buffer distance requirements, wetlands, vegetation constraints, etc.

► **Requirements for any MOTSU approved alternatives:**

- » MOTSU would require an environmental study for the preferred alternative on MOTSU property in order to move forward with the recommendation.
- » Any alternative on MOTSU property would require specific permitting/environmental review as required by Army regulations. MOTSU would require the completion of an Environmental Condition Report or equivalent per Table 15-2 of the AR 200-1, Environmental Protection and Enhancement. It can be costly and could take 12 months or more to complete this and all required reviews of the final report.

WILMINGTON METROPOLITAN PLANNING ORGANIZATION

Alta and NCDOT IMD met with staff on September 7th, 2023 and received input on the following:

- **Upcoming projects:** No major Statewide Transportation Improvement Plan projects other than the submission for pedestrian infrastructure to connect the ferry and parking. The MPO is currently updating its transportation plan, this greenway project could be listed as a project to consider. Several pedestrian crossing and ADA improvements were also mentioned.
- **Dow Road:** Crossing Dow Road would not be a good idea.

FORT FISHER HISTORIC SITE

Alta and NCDOT IMD met with Fort Fisher Historic Site on August 28th, 2023. Much of the southern half of the corridor travels through several land units under the jurisdiction of the NC Department of Natural and Cultural Resources. Note that in some places the State leases and is under MOTSU guidelines and review requirements. The team received input on the following:

- **Routing through Fort Fisher Historic Site/State Recreation Area:** There are many important cultural resources that cannot be impacted, including the revetment wall. Comments were provided on where the trail should go exactly.

NC AQUARIUM

Alta and NCDOT IMD met with the NC Aquarium on August 28th, 2023. Much of the southern half of the corridor travels through several land units under the jurisdiction of the NC Department of Natural and Cultural Resources. Note that in some places the State leases and is

under MOTSU guidelines and review requirements. Feedback on the potential alignments in this are shown below.

- **Aquarium access:** While the aquarium is open to their current trail connecting into proposed alignment, their section of the trail would be closed from dusk to dawn and could impede some ferry commuters (who would have to ride US 421).

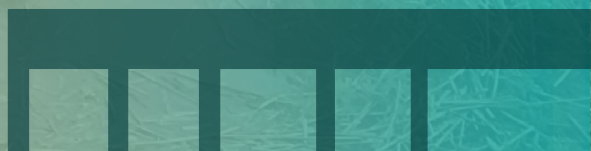
FORT FISHER STATE RECREATION AREA

Alta and NCDOT IMD met with Fort Fisher State Recreation Area on August 28th, 2023. Much of the southern half of the corridor travels through several land units under the jurisdiction of the NC Department of Natural and Cultural Resources. Note that in some places the State leases and is under MOTSU guidelines and review requirements. Key points are listed below.

- **Parking is a commodity and a major challenge:** While the greenway may alleviate some of the demand for parking, others may want to use the parking lots as a trailhead, which are already full during summers. People are illegally parking along Fort Fisher Blvd and Loggerhead Rd, which may conflict with the sidepath unless certain design features, like a curb, can be implemented to help alleviate parking issues. Loss of parking to accommodate the greenway would not be supported.
- **Routine flooding:** Much of US 421 near the ferry floods during lunar tides and any greenway design would need to accommodate this.

\ 03 \

Study Considerations and Alternatives





Local Context and Considerations

This section describes key considerations that influence the feasibility and optimal route for a trail from the Island Greenway to the Fort Fisher-Southport Ferry, including:

- *Local Context and Land Use*
- *Human Environment*
- *Available ROW*
- *Traffic Volumes and Speeds*
- *Natural Environment*

Natural and Built Environmental Conditions Overview

There are a number of factors that will influence the feasibility of proposed alignments which are summarized here.

Natural Environment

WETLANDS

There are substantial number of wetlands bordering or potentially intersecting with alignments. Wetlands require US Army Corp of Engineer regulation. If above a tenth of an acre is impacted, mitigation and permitting is required and can be costly. The trail alignments shown have been developed to avoid wetlands as much as possible. Two wetland data layers shown on the maps are the National Wetlands Inventory (NWI) data and the NC Coastal Wetlands layer, which is a predictive model of where wetlands may be. This data is not always accurate and should not be considered ground truthed. A wetland and hydrology delineation would typically occur at a later phase of the project.



Example of wetland on the eastern edge of Fort Fisher Blvd south of the NC Aquarium.

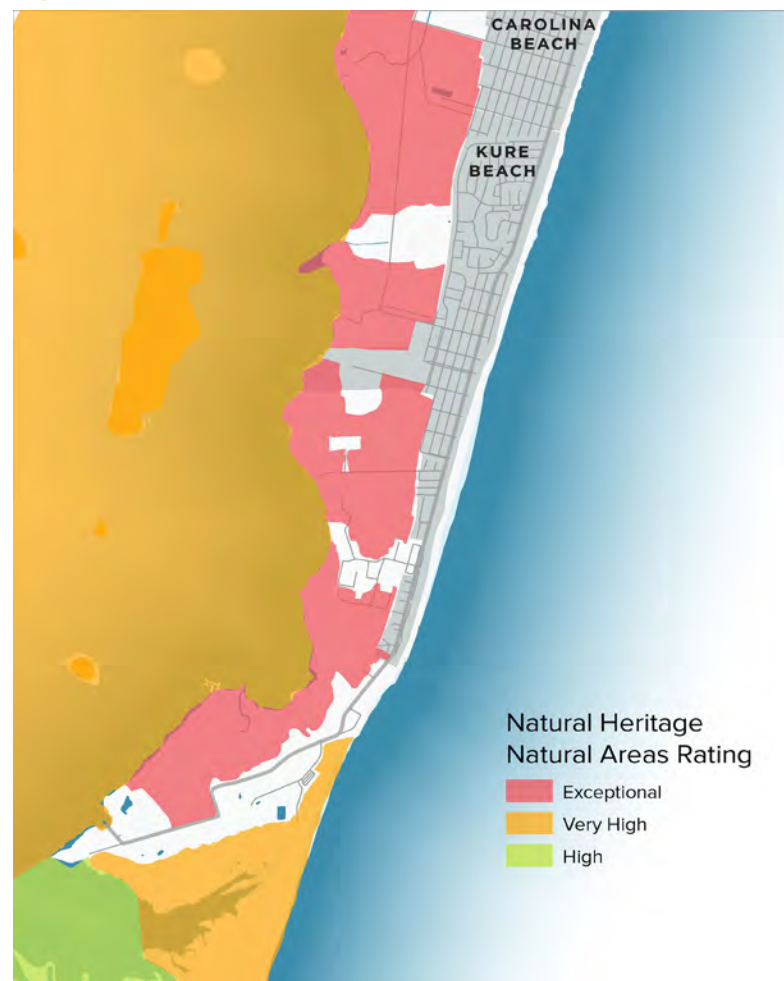
FLOODPLAIN

The southern area of the study area along Fort Fisher Blvd is within the coastal floodplain, meaning it can more regularly flood, especially with sea level rise.

THREATENED AND ENDANGERED SPECIES

Pleasure Island has many areas that fall within Critical Habitat designed by the US Fish and Wildlife Service and NC's designated State Natural Areas. These designations both represent species that are listed Federally or of State importance. Most of the areas

Figure 7. Natural Areas Map



outside of the Town of Kure Beach are within the State Natural Areas, and the MOTSU area is listed as exceptional, meaning it has very high occurrence of state or federal species. The designated Natural Areas within the study area are shown in Figure 8.

Built Environment

MOTSU PROPERTY

The MOTSU property is land owned and managed by the US Army that surrounds the Sunny Point military terminal across the Cape Fear River. Sunny Point serves as a transfer point between rail, trucks, and ships for the import and export of weapons, ammunition, explosives, and military equipment for United States Army. Considering the nature of its operations, a buffer zone around the terminal has been secured, and that property is owned by the US Army. The buffer zone protects civilians from a potential explosive path.

All of this property is restricted, with the exception of areas already leased to the towns. MOTSU staff have rights to restrict any use and would require an environmental study to be done if any trail is proposed on the property. MOTSU staff is required to review any externally requested use of its property and determine if the use granted must be of direct benefit to the US, promote the national defense or an Army mission, or be in the public interest. The use must also be compatible with the installation/project mission (Army Regulation 405-80). MOTSU would require specific permitting/

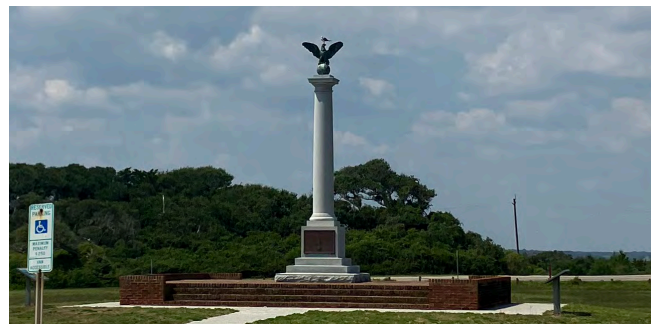
environmental review as required by Army regulations. Specifically, MOTSU would require an Environmental Condition Report or equivalent per Table 15-2 found in the AR 200-1, Environmental Protection and Enhancement. It can take up to 12 months to complete the report and all required reviews of the final report.

HAZARDOUS SITES

Any hazardous site on the map could require remediation if an alignment were to uncover contaminants. These are listed on the map and may or may not indicate the need for remediation. These sites are monitored and regulated by the NC Department of Environmental Quality.

NATIONAL REGISTER OF HISTORIC PLACES (NRHP)

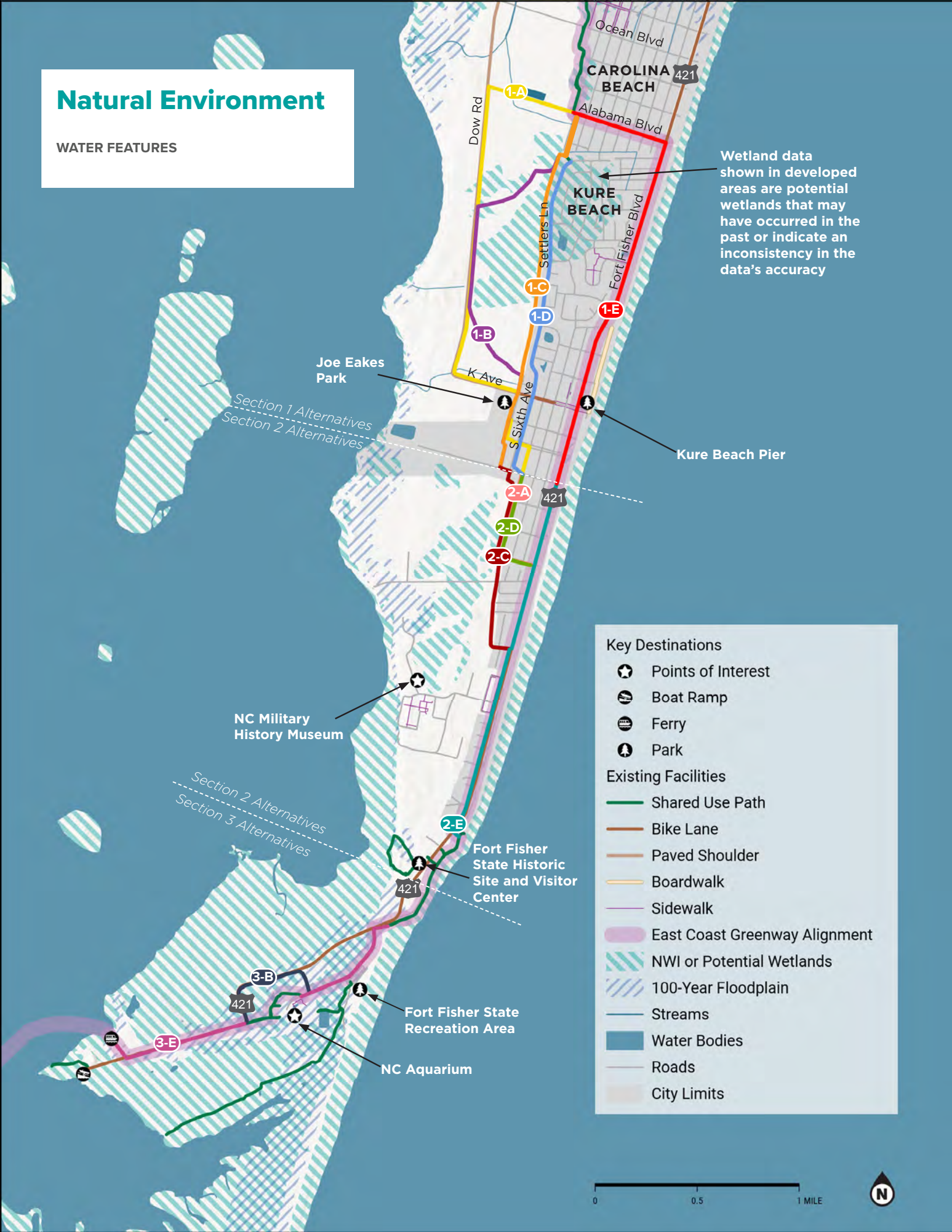
The Fort Fisher State Historic and Recreation Site is within the NRHP which is in place to ensure an intact cultural landscape and cultural resources are protected. NRHP designation requires a deeper level of review in future phases of trail design. Additional archaeological resources may be present and could be a roadblock to greenway development, but have not been assessed in this study.



1921 Fort Fisher Monument is a designated historic site.

Natural Environment

WATER FEATURES



Natural Environment

LAND FEATURES



Human Environment

LAND USE FEATURES



HISTORIC FEATURES



Human Environment

ROADWAY CHARACTERISTICS

Speed Limit: 55 MPH
AADT*: 5,800
ROW: 60'

Speed Limit: 25 MPH
AADT: 10,500
ROW: 100'

Speed Limit: 25 MPH
AADT: 8,100
ROW: 50'

Speed Limit: 35 MPH
AADT: 7,000
ROW: 60'

Speed Limit: 35 MPH
AADT: 2,000
ROW: 60'

Downtown Kure Beach Inset Map

Speed Limit: 25 MPH
AADT: 6,900
ROW: 60'

Speed Limit: 35 MPH
AADT: 5,300

Speed Limit: 25 MPH
AADT: 5,300

Existing Facilities

- Shared Use Path
- Bike Lane
- Paved Shoulder
- Boardwalk
- Sidewalk
- East Coast Greenway Alignment
- Local Road
- State Maintained Road
- Water Bodies
- City Limits

*Annual Average Daily Traffic (AADT) is the total volume of vehicle traffic on a road over a period of one year.

0 0.5 1 MILE



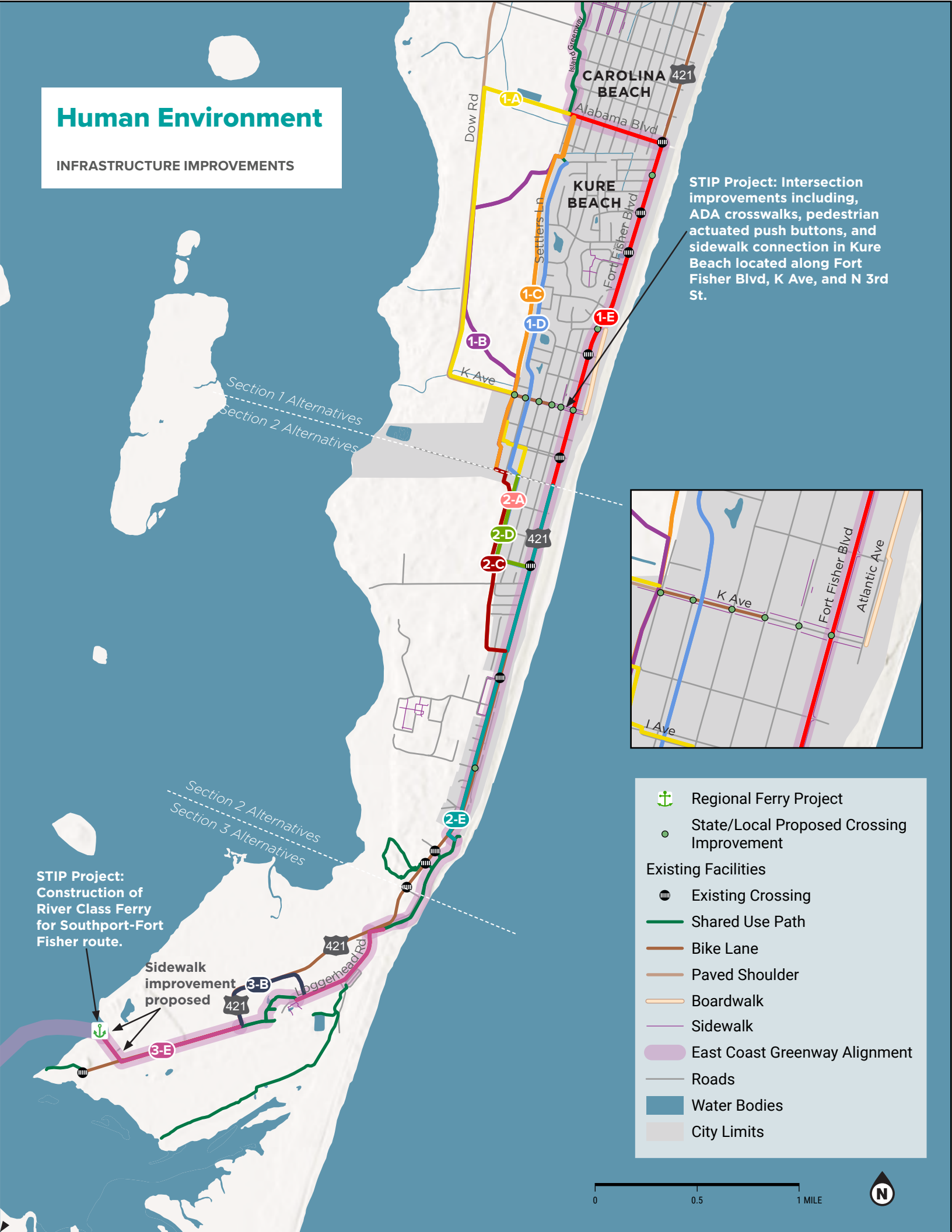
Human Environment

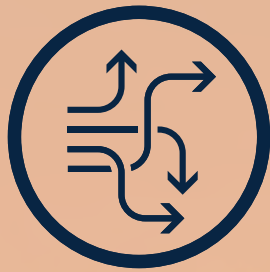
INFRASTRUCTURE AND SAFETY



Human Environment

INFRASTRUCTURE IMPROVEMENTS










Alternatives

Multiple alternatives within each section of the study area were selected for further study. This section describes opportunities and constraints along each alternative and provides examples of the recommended facility types for each alternative.

Island Greenway to Fort Fisher Trail Alternatives

Description: The study area was broken into three sections, each containing multiple trail alternative segments that were selected for further study. Segments were compared within each section to determine the most feasible alternative that will be a part of the final trail alignment for the study area.

LEGEND

-  Existing Trails
-  MOTSU Boundary
-  City Limits
-  Park/Recreation Destination
-  Municipal Boundary



Summary of Alternatives

Table 3. Summary of Alternatives (Note alternatives within sections 1-3 are compared against each other)

ID	DESCRIPTION	FACILITY TYPE; LENGTH (MILES); COST*	OPPORTUNITIES AND CHALLENGES
1A	Dow Road Begins at Alabama Ave, ending at H Ave and S 5th Ave	Sidepath 1.8 mi. \$6.1 M	Opportunities: Continuation from Alabama Ave, away from residential backyards Challenges: Low lying wetland area, utilities, option lacks support from MOTSU and NCDOT Division 3
1B	MOTSU Boundary Interior Begins at Alabama Ave to Dow Rd through the dirt service access	Shared-use path 1.6 mi. \$5.5 M	Opportunities: Uses existing road, less wetland disturbance Challenge: Lacks support from MOTSU
1C	MOTSU Eastern Perimeter Begins at Alabama Ave, ends at H Ave	Shared-use path 1.32 mi. \$4.5 M	Opportunities: Continuous with existing Island Greenway, MOTSU open to option Challenges: Some wetland indicators, resident concerns about impacts to neighboring properties
1D	Settlers Lane Begins at Alabama Ave and Spot Ln, ends at H Ave	Bicycle Boulevard 1.33 mi. \$700,000	Opportunities: Less expensive option and least impacts Challenge: Could not be a separated trail facility so would not be an off-road East Coast Greenway designated route
1E	Fort Fisher Boulevard Begins at Alabama Ave, ends at H Ave	Bike Lane 1.85 mi. \$7.2 M	Opportunity: Utilization of NCDOT ROW Challenges: Constant driveway access points interrupting facility, utilities, limited ROW width and total loss of parking may be needed
2A	Joe Eakes Park Connection Begins at H Ave, ends at E Ave and Fort Fisher Blvd	Side Path 0.79 mi. \$2.4 M	Opportunities: Utilize parking on Ave I, connect to Joe Eakes Park Challenges: Needs connection to Kure Beach's commercial core
2C	MOTSU Eastern Perimeter S Begins at H Ave, ends at President Davis Ave and Fort Fisher Blvd	Shared-use path 0.86 mi. \$3.1 M	Opportunities: MOTSU open to option of using land behind residential area Challenges: Ditches and stormwater drainage will need to be designed around
2D	Fifth Ave S (Use of parking) Begins at H Ave, ends at E Ave and Fort Fisher Blvd	Sidepath 0.47 mi. \$1.8 M	Opportunities: Use of parking median and Town ROW to accommodate trail, option to make Fifth Ave S one way Challenges: Removes parking
2E	Fort Fisher Boulevard Begins at H Ave, ends at Fort Fisher Boundary	Sidepath 1.51 mi. \$6.3 M	Opportunities: On-street parking ends; ROW opens up south of Red Lewis Dr Challenges: Utilities, still has occasional driveway access points
3B	Aquarium Bypass Begins at Loggerhead Rd, ends at Fort Fisher Blvd, avoiding the NC Aquarium's nightly closures	Shared-use path 0.5 mi. \$1.4 M	Opportunities: Avoids aquarium campus nightly closures Challenges: May impact wetlands and require boardwalks, additional permitting
3E	Fort Fisher Boulevard Begins at Loggerhead Rd, ends at the Fort Fisher Ferry	Sidepath 1.12 mi. \$3.1 M	Opportunities: Potential trailhead at Ferry Challenges: Sand dunes; impacts to ditches and wetland species parallel to road, may require significant permitting and require boardwalks, impacts to utilities

*See an explanation of how costs were generated on page 102

Opportunities and Constraints

Section 1



Opportunity
 Constraint
 Opportunity
 + Constraint

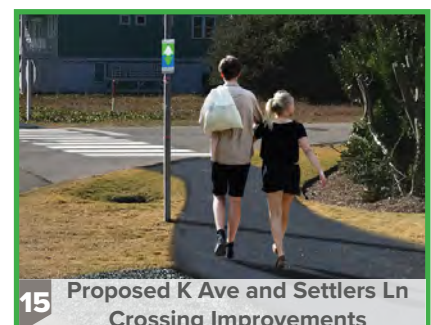
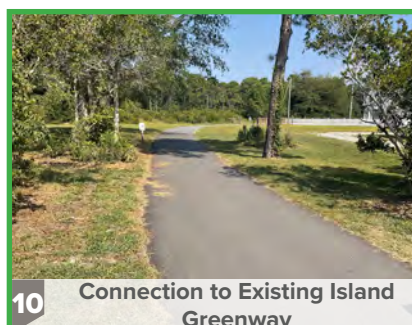
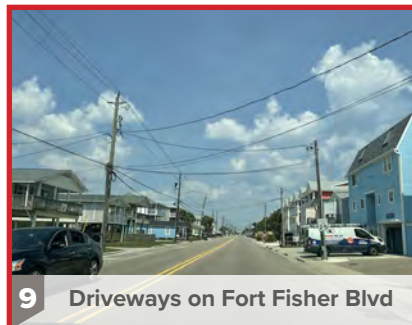
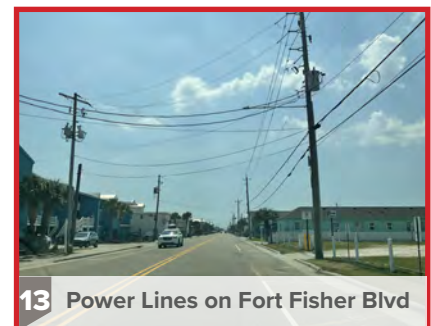
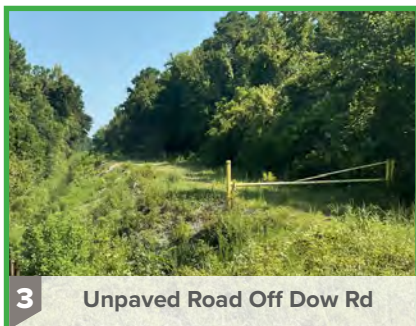
- Historic Preservation Site
- Points of Interest
- Boat Ramp
- Ferry
- Park
- Public Beach Access
- Kure Beach Town Hall
- Water Tower
- East Coast Greenway Alignment

- Existing Facilities**
- Existing Crossing
 - Shared Use Path
 - Bike Lane
 - Paved Shoulder
 - Boardwalk
 - Sidewalk

- Public Parcels, Parks, and Conserved Lands
- Natural Heritage Area
- MOTSU Installation Boundary
- Building Footprints
- Parcels
- 4' Contours

- 100-Year Floodplain
- Streams
- Water Bodies
- Wetlands
- Potential Wetlands

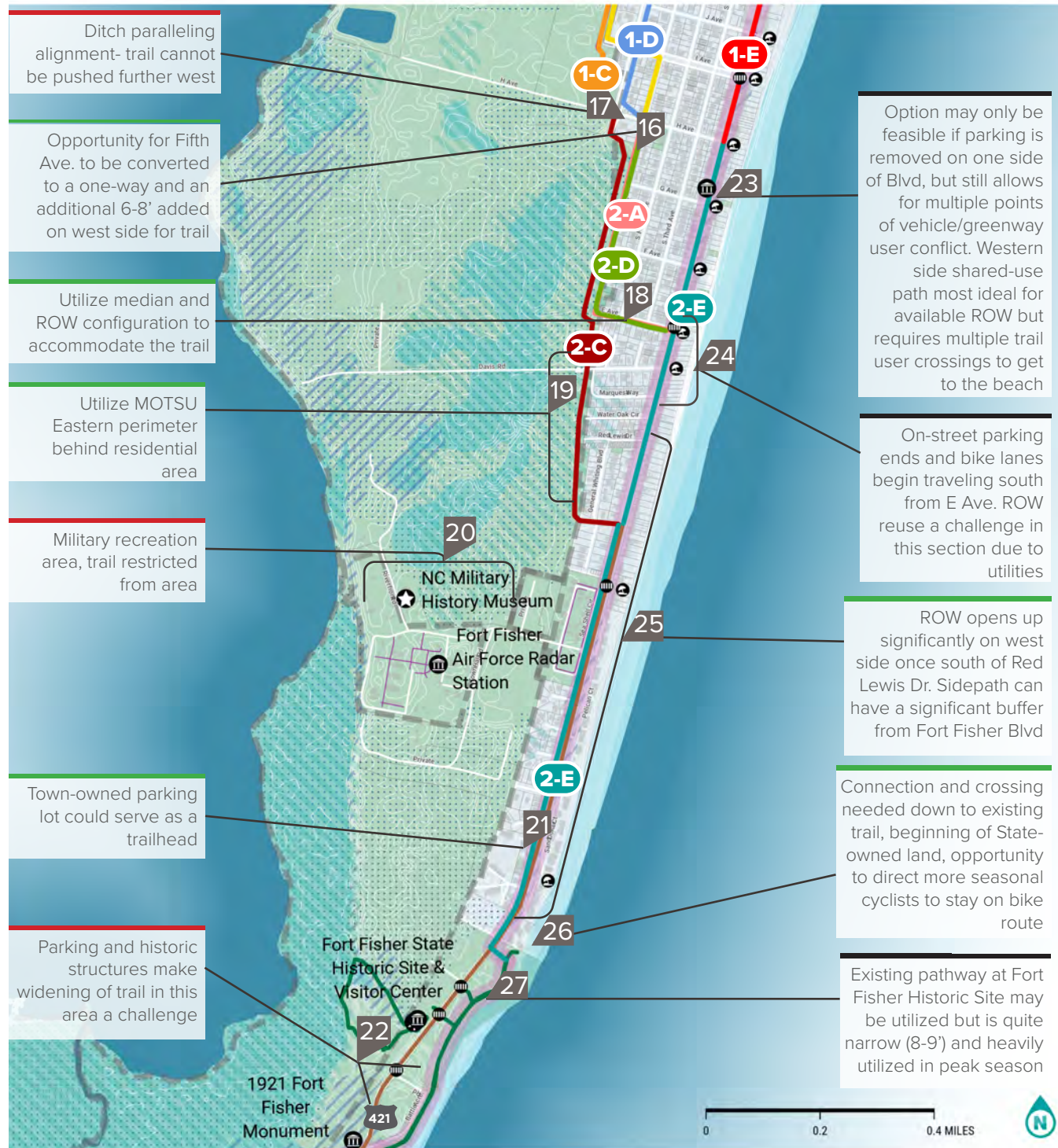
Existing Site Conditions



Note: Numbering corresponds with map on the facing page

Opportunities and Constraints

Section 2



Opportunity
 Constraint
 Opportunity + Constraint

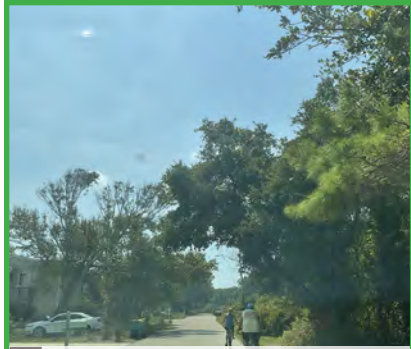
- Historic Preservation Site
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- Public Beach Access
- Kure Beach Town Hall
- Water Tower
- East Coast Greenway Alignment

- Existing Facilities
- Existing Crossing
- Shared Use Path
- Bike Lane
- Paved Shoulder
- Sidewalk

- Public Parcels, Parks, and Conserved Lands
- Natural Heritage Area
- MOTSU Installation Boundary
- Building Footprints
- Parcels
- 4' Contours

- 100-Year Floodplain
- Streams
- Water Bodies
- Wetlands
- Potential Wetlands

Existing Site Conditions



16 Fifth Ave. to Turn into One-Way



20 Military Area Restriction Sign on MOTSU Property



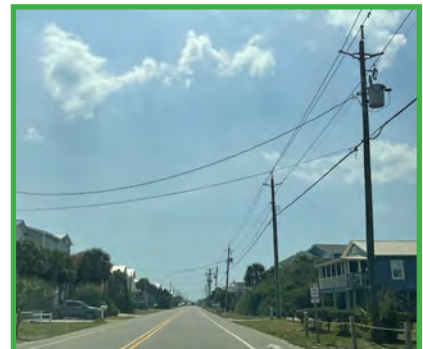
24 Utilities on Fort Fisher Blvd



17 H Ave has limited ROW



21 Town Owned Parking Lot



25 Potential Space for Sidepath with Buffer South of Davis Rd.



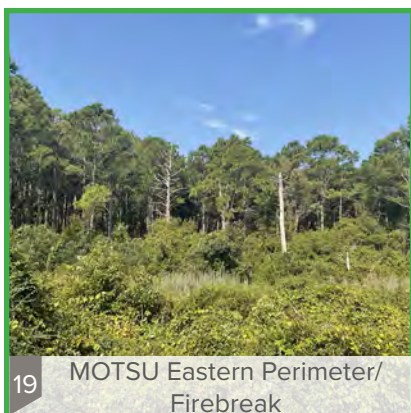
18 E Avenue Median and ROW



22 Fort Fisher Historic Structure



26 Street Crossing Connection to Fort Fisher Historic Site



19 MOTSU Eastern Perimeter/ Firebreak



23 Removal of Parking Needed for Any Facility Within ROW



27 Fort Fisher State Recreation Area Trail

Note: Numbering corresponds with map on the facing page

Opportunities and Constraints

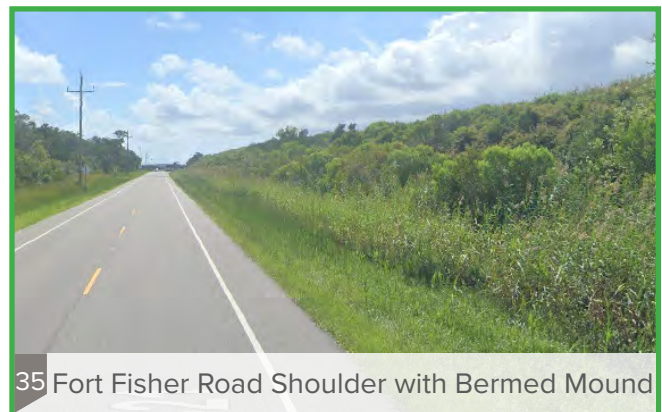
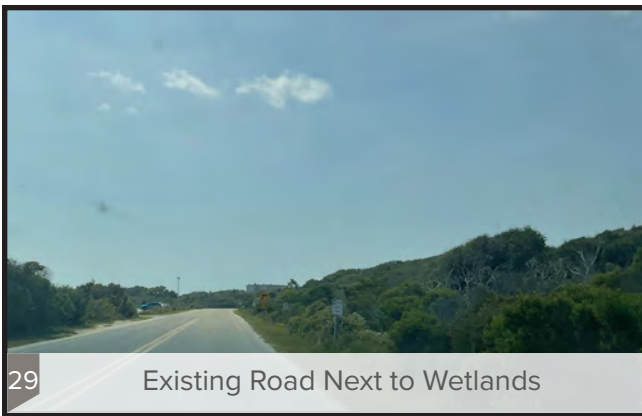
Section 3



Opportunity
 Constraint
 Opportunity
 + Constraint



Existing Site Conditions



Note: Numbering corresponds with map on the facing page



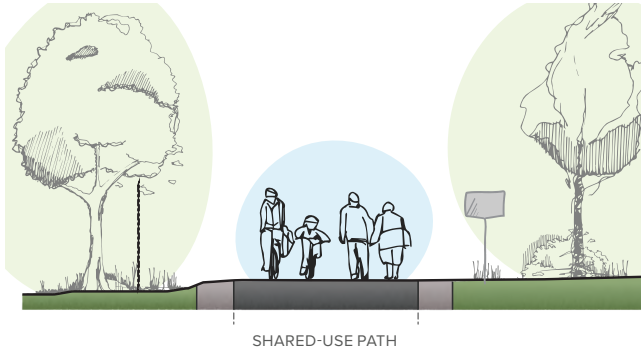
Facility Types and Typical Cross Sections

This section describes the trail cross sections that could be used to complete each alignment, depending on its context. Most cross sections include a shared-use path or a sidepath with roadway context to illustrate traffic volumes and speeds that necessitate different levels of separation.

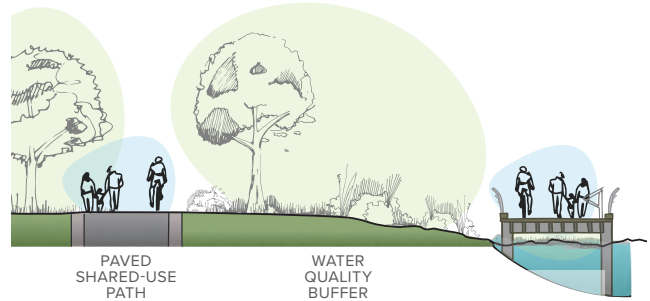
Facility Types

The following five facility types show the range of cross sections that could be used throughout the study area. Options for each alternative are also described.

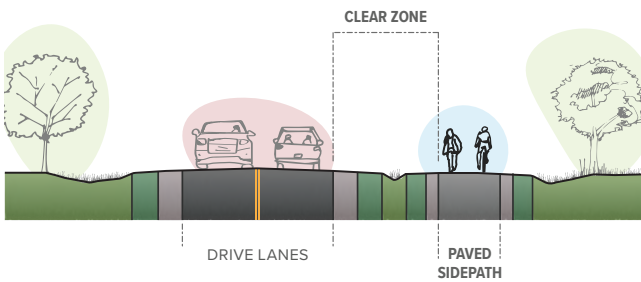
SHARED-USE PATH: GREENWAY



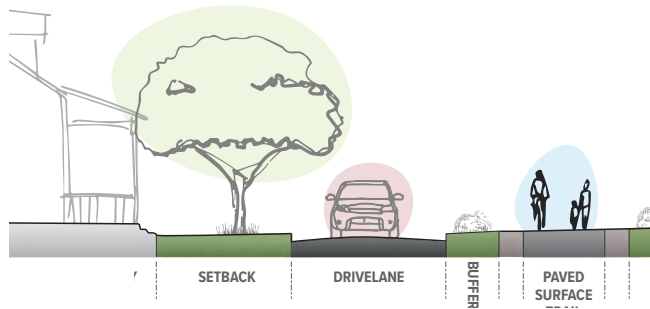
SHARED-USE PATH: BOARDWALK, WETLANDS, OR WETLAND ADJACENT



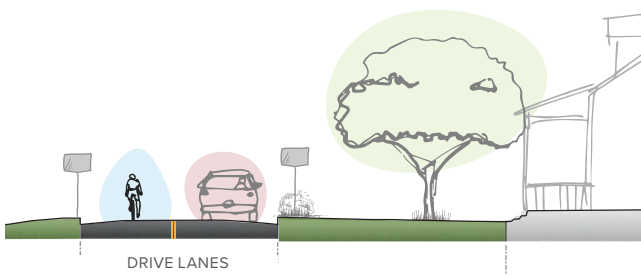
SIDEPATH: MINOR HIGHWAY



SIDEPATH: RESIDENTIAL



BICYCLE BOULEVARD



Facility Types of Each Alternative

Table 4. Alternative Facility Types

ID	NAME	FACILITY TYPE(S)
Section 1 Alternatives		
1A	Dow Road	Minor Highway Sidepath
1B	MOTSU Boundary Interior	Shared-Use Path/ Boardwalk
1C	MOTSU Eastern Perimeter	Shared-Use Path/ Boardwalk
1D	Settlers Lane	<i>Bicycle Boulevard</i>
1E	Fort Fisher Boulevard*	<i>Bike Lanes</i>
Section 2 Alternatives		
2A	Joe Eakes Park Connection	Residential Sidepath/ Shared-Use Path
2C	MOTSU Eastern Perimeter S	Shared-Use Path Boardwalk
2D	Fifth Ave S	Residential Sidepath
2E	Fort Fisher Boulevard	Minor Highway Sidepath
Section 3 Alternatives		
3B	Loggerhead Rd	Shared-Use Path
3E	Fort Fisher Boulevard	Minor Highway Sidepath

* Alternative 1E is not represented as a cross section, as it is not a greenway typology.

Note: Italicized facilities cannot be designated officially as East Coast Greenway off-road routes.

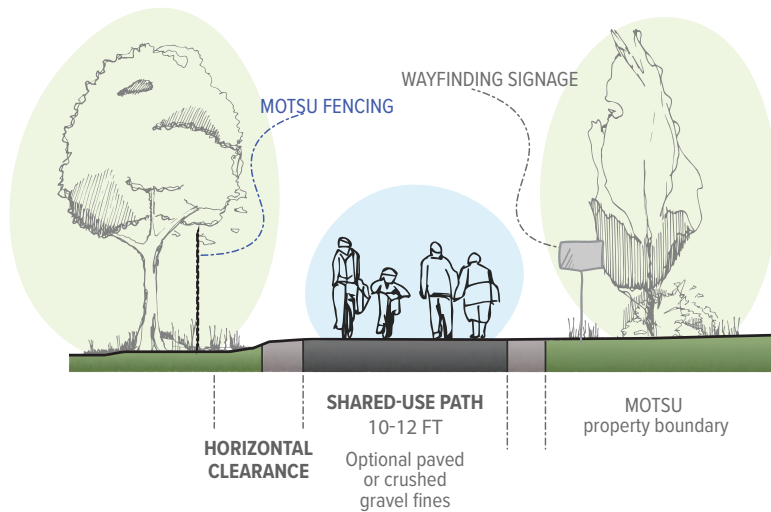


Facility Types and Associated Alignment Alternatives

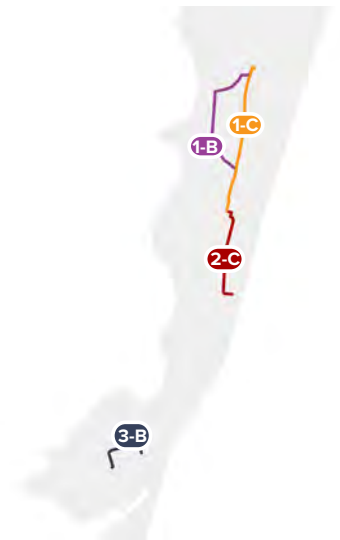
SHARED-USE PATH: GREENWAY

Alignment Alternatives: **1-B** **1-C** **2-C** **3-B**

Items in *blue* required on MOTSU property

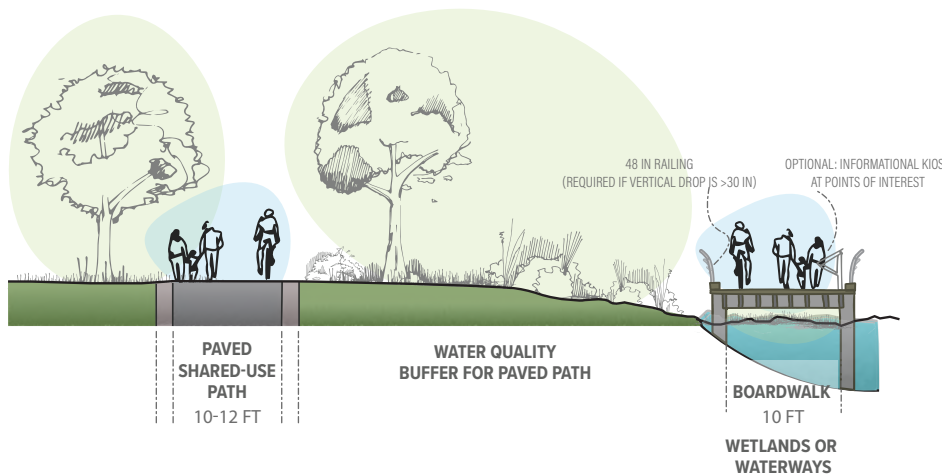


MAP OF ALTERNATIVES

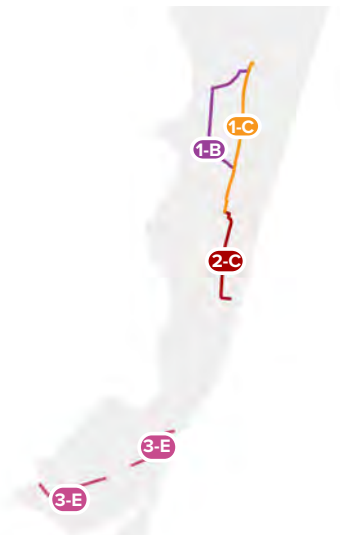


SHARED-USE PATH: BOARDWALK, WETLANDS, OR WETLAND ADJACENT

Alignment Alternatives: **1-B** **1-C** **2-C** **3-E**



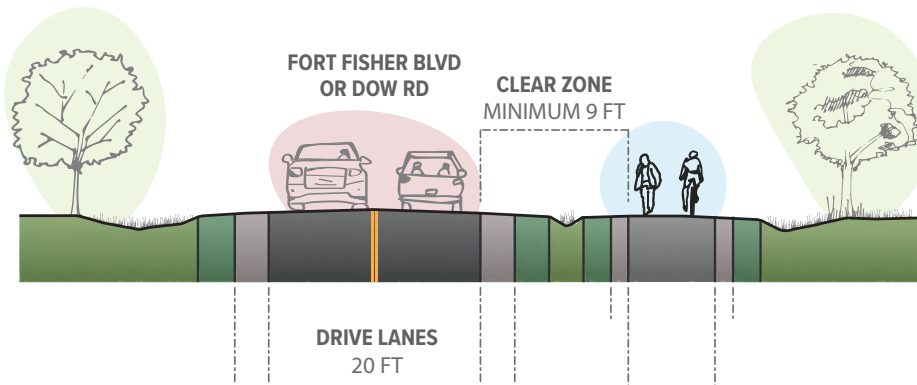
MAP OF ALTERNATIVES



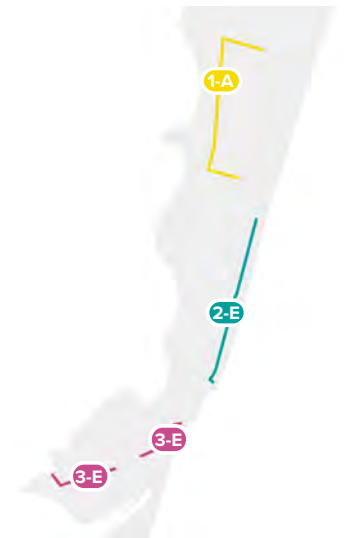
Facility Types and Associated Alignment Alternatives

SIDEPATH: MINOR ROADWAY

Alignment Alternatives: **1-A** **2-E** **3-E**

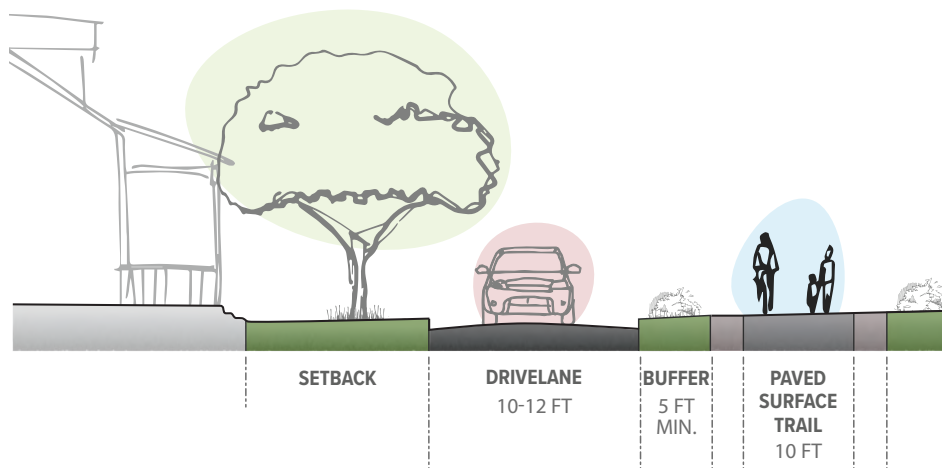


MAP OF ALTERNATIVES



SIDEPATH: RESIDENTIAL

Alignment Alternatives: **2-A** **2-D**



MAP OF ALTERNATIVES

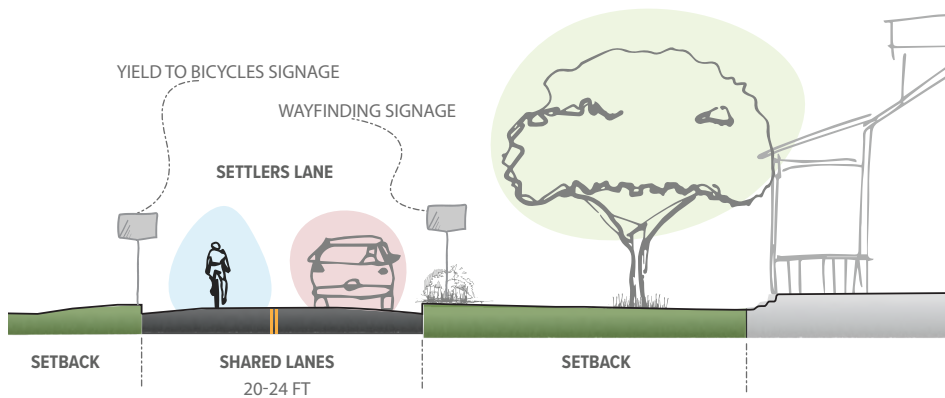


Facility Types and Associated Alignment Alternatives

Note: The below facility types do not meet the East Coast Greenway separated facility requirements

BICYCLE BOULEVARD

Alignment Alternatives: **1-D**



MAP OF ALTERNATIVES



BICYCLE LANES

Alignment Alternatives: **1-E**

Alternative 1E is not represented as a cross section, as it is not a greenway typology. Bike lanes would require significant loss of parking along Forth Fisher Boulevard.

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Evaluation and Recommendations

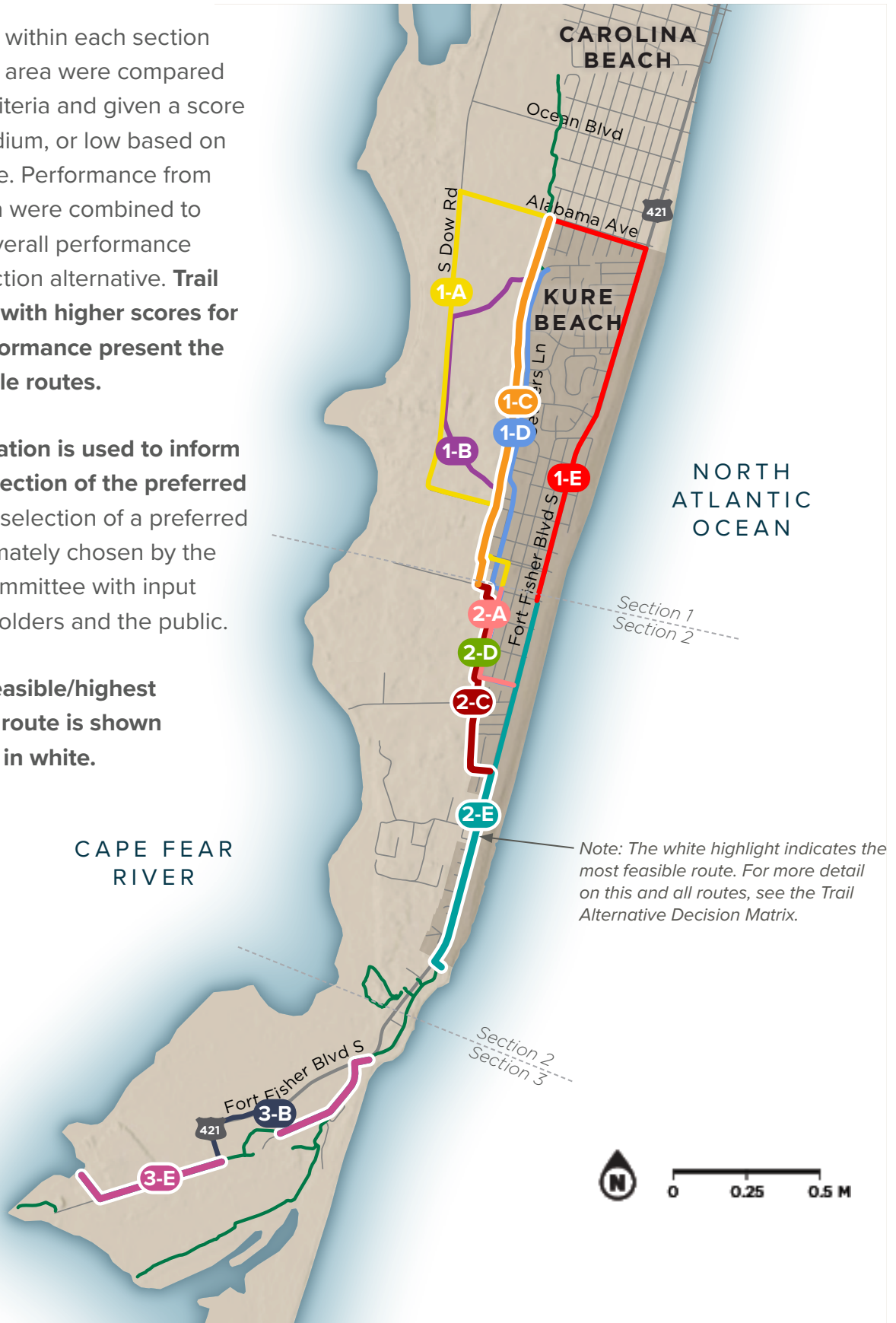


Criteria Scoring and The Most Feasible Route

Alternatives within each section of the study area were compared across all criteria and given a score of high, medium, or low based on performance. Performance from each criteria were combined to create an overall performance for each section alternative. **Trail alignments with higher scores for overall performance present the most feasible routes.**





This information is used to inform the final selection of the preferred route. Final selection of a preferred route is ultimately chosen by the Steering Committee with input from stakeholders and the public.

The most feasible/highest performing route is shown highlighted in white.








Criteria for Evaluating Alternatives

Alternatives within each section of the study area were compared and given a score of high, medium, or low based on the following criteria:

GOAL	EVALUATION MEASURES	DETAILS ON PERFORMANCE		
		Low	Medium	High
 Connectivity	<ul style="list-style-type: none"> Connects to existing and future destinations, such as such as other trails, parks, historic sites, schools, and neighborhoods Expands the area's overall walking and biking transportation network Enhances the trail's transportation function 	<p>Lower or little connection to destinations</p> <p>Expands network where there is low demand and few facilities</p>	<p>Connects mostly neighborhoods and parks</p> <p>Expands network where there is more demand and some walking and biking facilities</p>	<p>Connects to the greatest amount of destinations</p> <p>Expands network where there is the most demand a need for walking and biking facilities</p>
 Traffic Safety	<ul style="list-style-type: none"> Minimizes crossings with roadways and driveways Has sufficient ROW for a trail to be appropriately separated from traffic 	<p>Along higher speed roads (50 mph+) and/or traffic</p> <p>Has minimal or no separation</p> <p>Has more than 20 driveway cuts and road crossings</p> <p>ROW is limited</p>	<p>Along roads with 35-50 mph speeds and/or some traffic</p> <p>Has some separation</p> <p>Has less than 20 driveway cuts and road crossings</p> <p>ROW is somewhat limited</p>	<p>Along or crosses lower traffic roads (35 mph or below)</p> <p>Has largest separation from roads</p> <p>Has few driveway cuts and/or road crossings</p>
 Cost	<ul style="list-style-type: none"> Minimizes cost compared to other alternatives (based on planning level cost estimates) 	<p>Most expensive due to length, needed structures, environmental impacts, utilities (powerlines and stormwater infrastructure), and ROW acquisition</p> <p>Alternative cost is more than \$6 million</p>	<p>Some expenses due to length, needed structures, environmental impacts, and utilities</p> <p>Alternative cost is between \$2-6 million</p>	<p>Few expenses due to length, needed structures, environmental impacts, and utilities</p> <p>Alternative cost is below \$2 million</p>
 Property Usage	<ul style="list-style-type: none"> Minimizes property impacts by using public right-of-way (ROW) or private property where landowners have allowed for use of land 	<p>Landowners do not support this option and/or limited public ROW exists</p>	<p>Some very limited ROW acquisition may be needed upon further study of DOT ROW limits, and some coordination and approvals with NCDOT and MOTSU is needed to implement</p>	<p>Options most supported by landowners that would need to grant approval for ROW, and/or is Town and NCDOT owned, no private property ROW needed</p>

Criteria for Evaluating Alternatives (Cont.)

GOAL	EVALUATION MEASURES	DETAILS ON PERFORMANCE		
		Low	Medium	High
 User Experience	<ul style="list-style-type: none"> ▶ Opportunities for shade/tree cover, attractive scenery, desired destinations, separation from traffic, gentle grade, and trail amenities ▶ Meets criteria for East Coast Greenway off-road facility 	<p>Adjacent to the road with little separation and higher speed traffic</p> <p>Cannot be adequately separated (Alternatives 1D and 1E)</p>	<p>Adjacent to the road with some separation and higher speed traffic</p> <p>Some connection to natural areas and/or amenities</p>	<p>Complete separation from the road and higher speed traffic</p> <p>Connection to amenities, natural areas, and scenic views</p>
 Environmental Impact	<ul style="list-style-type: none"> ▶ Provides conservation benefits ▶ Minimizes impacts to wetlands, habitat of threatened and endangered species, and trees ▶ Minimizes tree removal, grading, and addition of impervious surfaces 	<p>Has indication of potential impacts to habitat of threatened and endangered species, up to 5+ stream crossings, greater impact to wetlands, potential stormwater impacts, and tree impacts</p>	<p>Has few indications of impact to threatened and endangered habitat, some potential impacts to wetlands, less than 5 stream crossings, some tree removal</p>	<p>Has no indications of impact to threatened and endangered habitat, minor or no impacts to wetlands, less than 5 stream crossings, limited tree removal</p>
 Resident Benefit	<ul style="list-style-type: none"> ▶ Provides benefits to residents within the study area while minimizing potential negative impacts 	<p>Concerns from residents about privacy or neighborhood impact (Alternatives 1C and 1D) or potential loss of parking (1E, 2D, and 2E)</p>	<p>Fewer expressed concerns from residents or perceived impacts</p>	<p>Benefits residents with no expressed reasons for concern about privacy, or reduction in parking</p>
 Public Input	<ul style="list-style-type: none"> ▶ Accounts for preferences of the public based on input received during this and other planning efforts 	<p>To be determined (TBD)</p>	<p>To be determined (TBD)</p>	<p>To be determined (TBD)</p>
 Stakeholder Input	<ul style="list-style-type: none"> ▶ Accounts for feedback and preferences from key stakeholders based on communication and other planning efforts 	<p>Not supported by stakeholders (NCDOT and MOTSU do not support Alternative 1A, and MOTSU does not support 1B)</p>	<p>Supported by stakeholders</p> <p>MOTSU will have final approval on any alignment within their jurisdiction</p>	<p>Most supported by stakeholders</p> <p>MOTSU will have final approval on any alignment within their jurisdiction</p>

Trail Alternatives Decision Matrix

	SECTION ONE				
CRITERIA	1A	1B	1C	1D	1E
Connectivity					
Traffic Safety					
Cost**					
Property Usage					
User Experience					
Environmental Impact					
Resident Benefit					
Public Input	N/A*	N/A*			
Stakeholder Input					
Overall Performance	LOW	LOW	HIGH	MED	LOW

	SECTION TWO				SECTION THREE	
CRITERIA	2A	2C	2D	2E	3B	3E
Connectivity						
Traffic Safety						
Cost**						
Property Usage						
User Experience						
Environmental Impact						
Resident Benefit						
Public Input						
Stakeholder Input						
Overall Performance	MED	HIGH	MED	MED	MED	HIGH

PERFORMANCE:	Low	Medium	High
	Received majority low scores and/or determined infeasible due to lack of support by landowner	Received majority medium scores or majority low/medium scores and 2-4 high scores	Received 5 or more high scores

Decision Matrix Performance Details

CRITERIA	SECTION ONE				
	1A	1B	1C	1D	1E
Connectivity	Furthest from destinations	Further from destinations	Direct connection to destinations		Direct connection to destinations
Traffic Safety	Partially along high speed roadway	Partially along high speed roadway	Most removed from roadways	Within roadway	Along highly trafficked roadway
Cost**	\$6.1M	\$5.5M	\$5M	\$700,000	\$7.2M
Property Usage	Infeasible, ROW will not be granted		MOTSU supported**	Within road ROW	Needs ROW beyond NCDOT's ROW
User Experience	Adjacent to a high speed road	Partially adjacent to a high speed roadway	Removed from roadways	Within roadway	Along highly trafficked roadway
Environmental Impact	Many env. sensitive areas per MOTSU	Some wetland impacts may occur, further study is needed, some stormwater issues		No impacts	Has some stormwater issues
Resident Benefit	Furthest from residences	Furthest from residences	Resident concern about privacy	Resident concern users on road	Significant loss of parking
Public Input	N/A*	N/A*	Most supported	Public doesn't support	Public doesn't support
Stakeholder Input	MOTSU and NCDOT don't support	MOTSU doesn't support	MOTSU and NCDOT support***	No vocalized concern	NCDOT less supportive inadequate ROW

CRITERIA	SECTION TWO				SECTION THREE	
	2A	2C	2D	2E	3B	3E
Connectivity	Residences and park connection	Residences and park connection	Residences and park connection	Ties commerce and beaches	Farther from aquarium	Closest to aquarium
Traffic Safety	Crosses low traffic roads	Most separated from roads	Crosses low traffic roads	Less separated, many driveways	Minimal road crossings	Two road crossings
Cost**	\$2.4 M	\$3.1 M	\$1.8 M	\$6.3 M	\$1.4 M	\$2.4 M
Property Usage	Town-owned/ MOTSU ROW***	MOTSU supported***	Town-owned/ MOTSU ROW***	Mostly within NCDOT ROW***	MOTSU ROW/ State Use***	MOTSU ROW/ State Use***
User Experience	Separated facility but along roads	Separated facility, in woods	Separated facility but along roads	Sidepath with driveway cuts	Separated facility but along road	Separated facility partially along road
Environmental Impact	Minimal impact, along road	Minor stream and wetland impacts	Separated facility but along roads	Potential some stormwater issues	Potential wetland impacts	Potential stormwater and wetland impact
Resident Benefit	Minimal impact, along road	Travels behind residences	One-way road conversion on Fifth Ave S	Potential loss of some parking	Indirect connection	Direct aquarium connection
Public Input	Public doesn't support	Most supported	Public doesn't support	Public doesn't support	Neutral public support	Most supported
Stakeholder Input	No preference given	MOTSU supported***	No preference given	NCDOT supported if w/ in ROW	No preference given	Closest to existing facilities, preferred

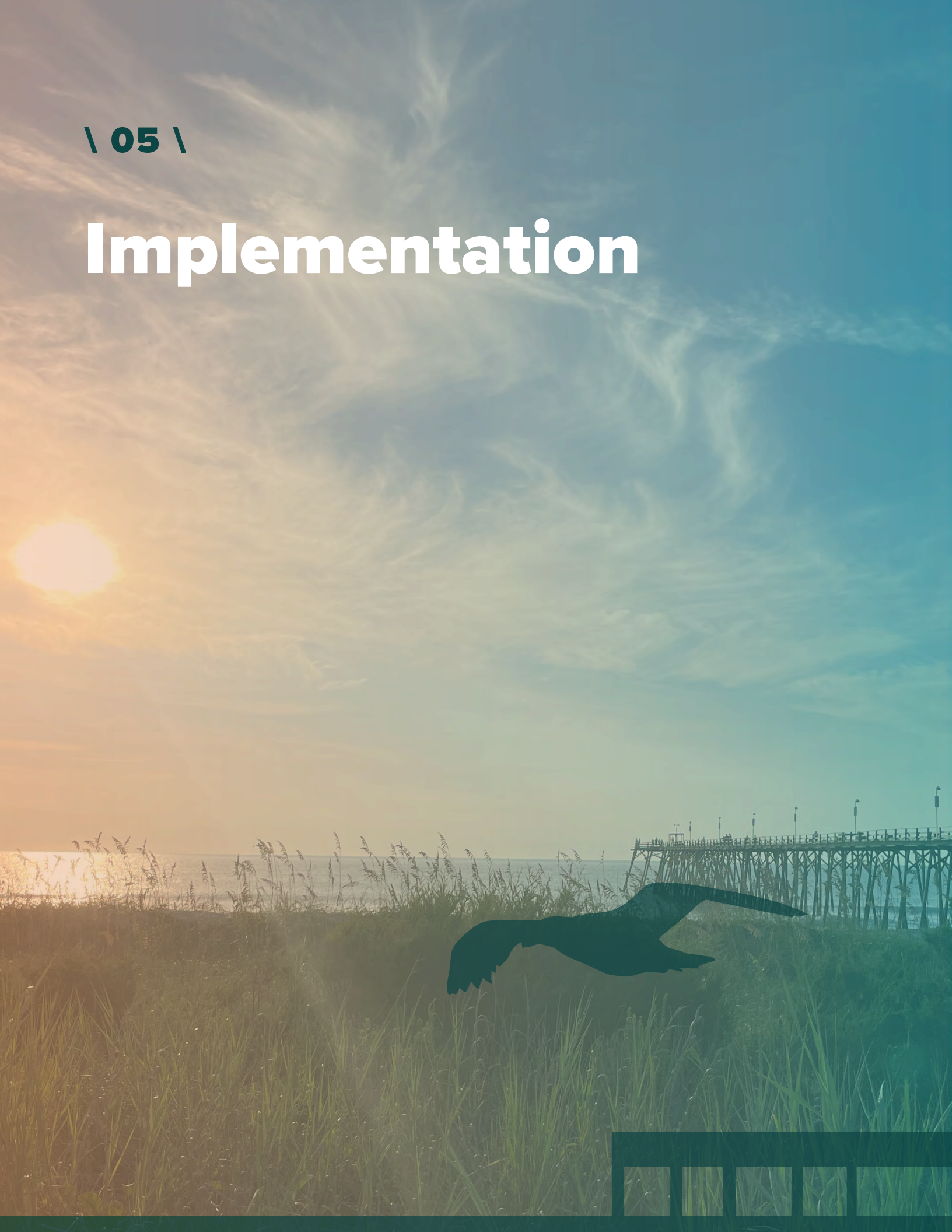
*Public did not vote due to option being infeasible.

**Based on planning-level cost estimates; see Table 3 for cost estimates for each alternative.

***MOTSU support does not infer support of the selected facility type or final approval of alignment. MOTSU will grant official permissions in the next phase when environmental study and more detailed design has been done.

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Implementation





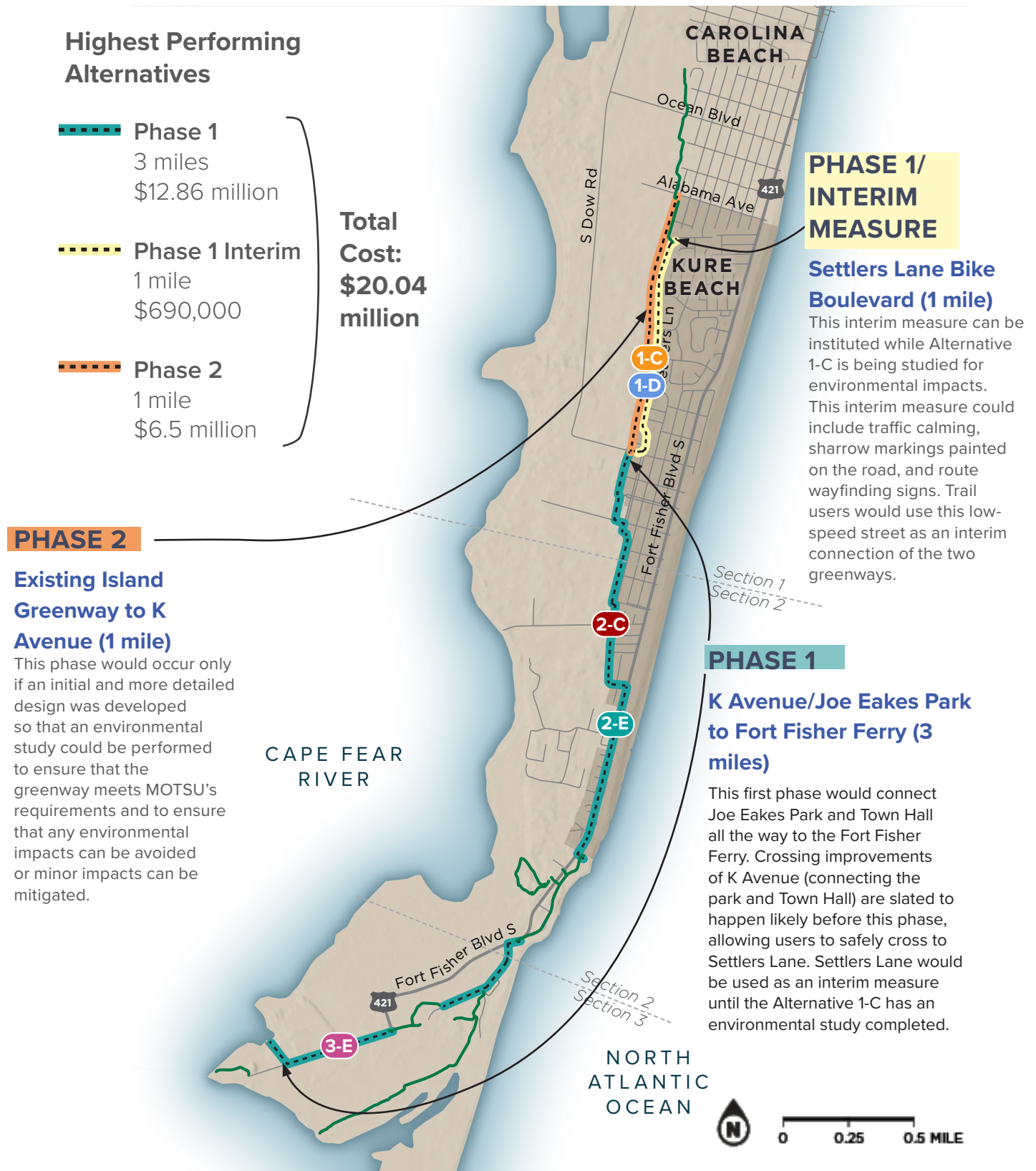
Trail Phasing and Action Steps

This section provides the program of action for Kure Beach and its project partners to begin the development of the trail in a strategic and phased approach. Partners should adopt a flexible and opportunistic approach to implement the trail recommendations in a timely and efficient manner.

Implementation includes the physical development of trail phases, operations, management, and programming, all underpinned by the vision and goals of this project. The vision, goals, and guidance of the Steering Committee were established early in the planning process. The project vision should be at the forefront of each step of the implementation process, to continually remind project partners, the public, and potential funding agencies why this project is so important to the region.

Phasing

The following phasing is proposed for the most feasible trail alignments, for a total of 4 miles.





Project Cutsheets

The following pages describe the trail phases in detail, including maps, estimated planning-level project costs, and conceptual graphics.

Phase One



RECOMMENDATIONS

Phase

1

1 Interim

2

Trailheads

Crossing Improvements

EXISTING FACILITIES

Existing or Funded Crossing

Shared Use Path

Bike Lane

Paved Shoulder

DESTINATIONS & LANDMARKS

Historic Preservation Site

Points of Interest

Boat Ramp

Ferry

Park

Public Beach Access

Kure Beach Town Hall

Water Tower

Public Parcels, Parks, and Conserved Lands

Natural Heritage Area

Streams

Water Bodies

Wetlands

100-Year Floodplain

MOTSU Installation Boundary

Building Footprints

Parcels

City Limits

PHASE ONE: K Ave to Fort Fisher Ferry

A shared-use path and sidepath connecting the Island Greenway Extension to the rest of Kure Beach and important cultural, historic, and recreation destinations on the south part of the island.

Overview

Location and Length:

Fort Fisher Ferry to K Avenue (3 miles)

Trail Types:

12-foot wide asphalt shared-use path (SUP);
10-foot wide concrete path with curb.

Structures Required:

None

At-Grade Crossings:

One Rectangular Rapid Flashing Beacon (RRFB) across from Fort Fisher State Historic Site.

Key Connections and Destinations:

Residential neighborhoods, Kure Beach Town Hall, Joe Eakes Park, Fort Fisher State Historic Site, Fort Fisher State Recreation Area, North Carolina Aquarium at Fort Fisher, and Fort Fisher Ferry Terminal.

Acquisition Needs:

Trail right-of-way would be granted via a lease from MOTSU. Minimal, additional ROW may be needed along Fort Fisher Blvd, but may be very limited and would be determined in the next phase of design.

Permitting Needs:

- ▶ 401/404 Permit
- ▶ NCDOT Encroachment Permit
- ▶ Floodplain Development Permit
- ▶ NCDEQ Erosion Control

Jurisdictions and Partners:

Project is within the Town of Kure Beach, MOTSU, and NC DNCR and NCDOT-owned property. Partners include the Town of Kure Beach, MOTSU, and NC DNCR.

Estimated Project Costs

CONSTRUCTION COST SUBTOTAL (2024)	\$5,193,000
Project Contingency (30%)	\$1,557,900
CONSTRUCTION COST TOTAL (2024)	\$6,751,000
Inflation Factor (8% over 4 years)	\$2,434,000
CONSTRUCTION COST TOTAL (2028)	\$9,185,000
Design and Permitting (15%)	\$1,378,000
Construction Engineering Inspection (15%)	\$1,378,000
ROW ACQUISITION COST	TBD
TOTAL ESTIMATED COST	\$12,860,000

Potential Funding Sources

- ▶ Recreational Trails Program
- ▶ Transportation Alternatives
- ▶ Community Development Block Grant (CDBG)
- ▶ NC Resilient Coastal Communities Program Grant (if paired with flood mitigation, innovative stormwater design)
- ▶ Private sources
- ▶ State funds

PHASE 1

Fort Fisher Blvd Sidepath

Phase One of the trail as it exits MOTSU lands onto President Davis Ave and then onto Fort Fisher Blvd.





Next Steps

- ▶ Complete an environmental study and wetlands delineation to inform 10% design and as a required step by MOTSU.
- ▶ Complete 10% Schematic Design, as a preliminary design will give a more accurate cost estimate and better position the project for grants.
- ▶ Apply for funding for design and/or construction.

PHASE 1

Fort Fisher Blvd Sidepath





A greenway is proposed along the southern section of Fort Fisher Boulevard as it travels towards the Fort Fisher Ferry Terminal. It is proposed on the south side of the roadway.

Phase One Interim Project



RECOMMENDATIONS

Phase

- 1
- 1 Interim
- Trailheads

EXISTING FACILITIES

- Existing or Funded Crossing
- Shared Use Path
- Bike Lane
- Paved Shoulder

DESTINATIONS & LANDMARKS

- Historic Preservation Site
- Points of Interest
- Boat Ramp
- Ferry
- Park
- Public Beach Access
- Kure Beach Town Hall
- Water Tower

- Public Parcels, Parks, and Conserved Lands
- Natural Heritage Area
- Streams
- Water Bodies
- Wetlands
- 100-Year Floodplain
- MOTSU Installation Boundary
- Building Footprints
- Parcels
- City Limits

PHASE ONE (Interim): Settlers Lane Bike Boulevard

A bike boulevard from the Spot Lane Island Greenway connector at the north end of Settlers Lane to the intersection with K Avenue.

Overview

Location and Length:

Settlers Lane from Island Greenway to K Avenue (1 mile).

Trail Types:

Bike boulevard

Structures Required:

None

At-Grade Crossings:

Improved K Ave crossing to Joe Eakes Park from the north is already funded.

Key Connections and Destinations:

The existing Island Greenway and points north in Carolina Beach, residential neighborhoods, Joe Eakes Park, Kure Beach Town Hall, and Kure Beach Fire Department

Acquisition Needs:

None

Permitting Needs:

- ▶ NCDOT Encroachment Permit
- ▶ NCDEQ Erosion Control

Jurisdictions and Partners:

Project is within Kure Beach jurisdiction as a locally maintained road.

Estimated Project Costs

CONSTRUCTION COST SUBTOTAL (2024)	\$277,000
Project Contingency (30%)	\$83,100
CONSTRUCTION COST TOTAL (2024)	\$361,000
Inflation Factor (8% over 4 years)	\$131,000
CONSTRUCTION COST TOTAL (2028)	\$492,000
Design and Permitting (15%)	\$74,000
Construction Engineering Inspection (15%)	\$74,000
TOTAL ESTIMATED COST	\$690,000

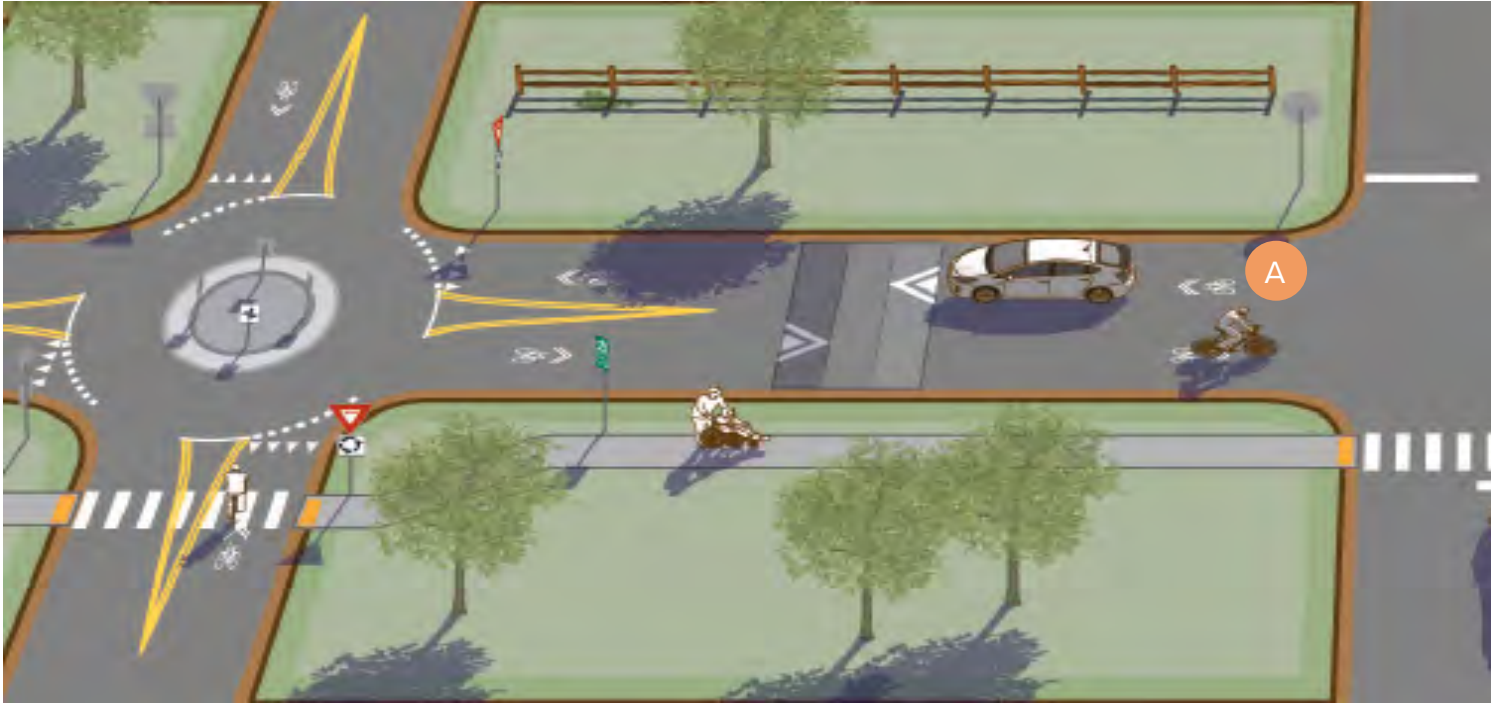
Potential Funding Sources

- ▶ Transportation Alternatives
- ▶ Community Development Block Grant (CDBG)
- ▶ Private sources
- ▶ State funds

Next Steps

- ▶ Many of these improvements can be made in-house by Town of Kure Beach employees; consider a gradual implementation of bike boulevard elements.

PHASE ONE: INTERIM PROJECT

Settlers Lane Bike Boulevard

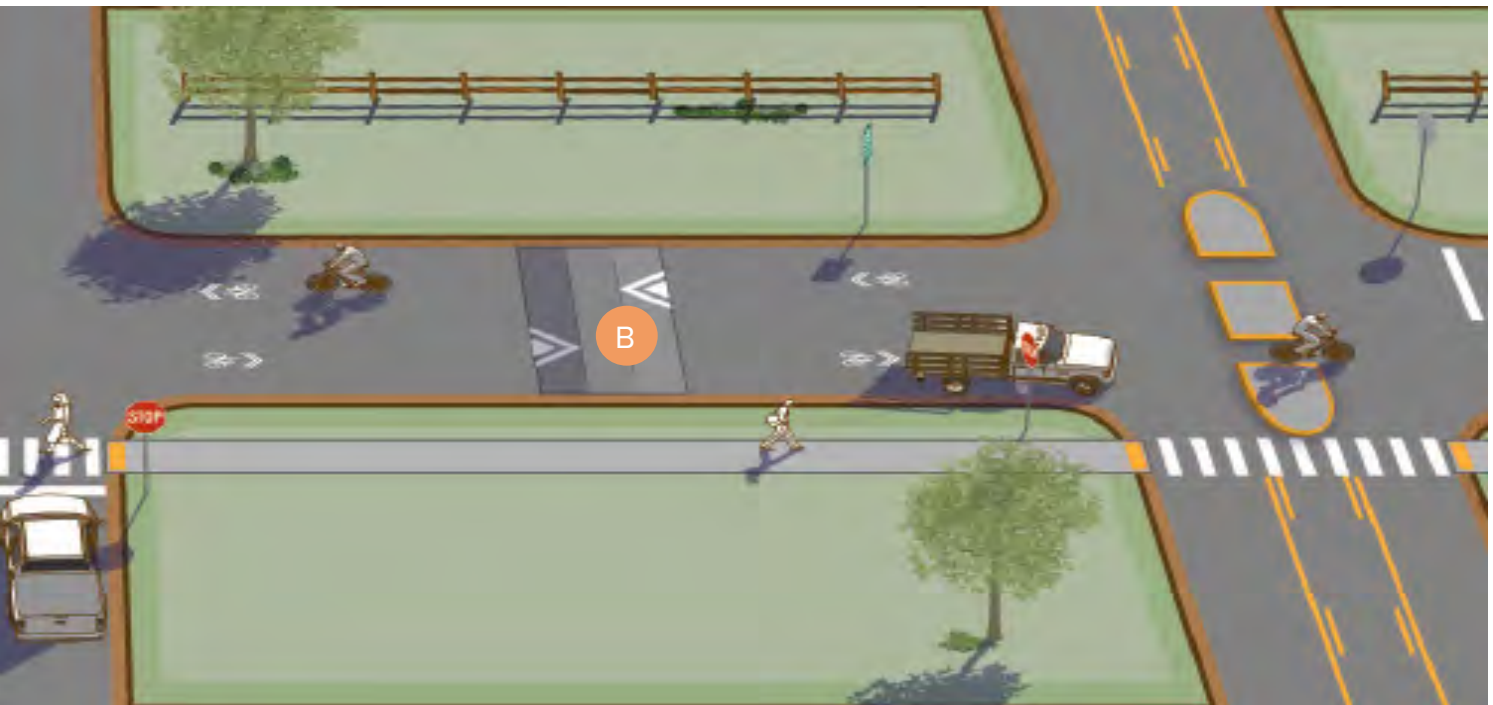
The graphic above shows a concept for a bike boulevard with shared lane markings for bicycling and traffic calming.

Example photos:

- A** Shared lane markings, or sharrows, are commonly used in bike boulevards. The standardized symbol serves as a reminder for motorists to share the road with bikes. The image on the right depicts a sharrow in Kansas City, MO.
- B** Example facility including traffic calming speed bumps in Rocky Mount, NC. Slower automobile speeds are integral in creating a pleasant experience for users of a bike boulevard.



A bike boulevard is a low-stress roadway designed to prioritize bicyclists and accommodate mixed traffic (automobiles, bikes, pedestrians)



Typical Treatments

Various road enhancements can transform an existing residential road into a bike boulevard. Beyond shared lane markings and speed bumps, additional advisements include intersection crossing enhancement tools and signage. Safe intersection design for pedestrians and cyclists can include crosswalk markings, curb extensions, and active warning beacons.

For further resources regarding bike boulevard designs, please reference the Small Town and Rural Design Guide cited on pages 218-219 in the Design Guidelines Appendix. Bike boulevards are also previously mentioned on page 65 under Facility Types.

Suitable Street Types

Bike boulevards are intended for low-speed, local residential roadways. Due to the mixed traffic design, automobile speeds should be minimized to achieve desired bike boulevard benefits. As such, Settlers Lane is an appropriate site for a bike boulevard.

Typical Signage

Wayfinding materials will help community members physically locate and utilize this Interim Project on Settlers Lane. Potential signage options are human-scale, and share relevant wayfinding information for road users. This may include directional arrows and mileage estimates to nearby landmarks.



Phase Two



RECOMMENDATIONS

Phase

- 1
- 1 Interim
- 2
- Trailheads

EXISTING FACILITIES

- Existing or Funded Crossing
- Shared Use Path
- Bike Lane
- Paved Shoulder

DESTINATIONS & LANDMARKS

- Historic Preservation Site
- Points of Interest
- Boat Ramp
- Ferry
- Park
- Public Beach Access
- Kure Beach Town Hall
- Water Tower

- Public Parcels, Parks, and Conserved Lands
- Natural Heritage Area
- Streams
- Water Bodies
- Wetlands
- 100-Year Floodplain
- MOTSU Installation Boundary
- Building Footprints
- Parcels
- City Limits

PHASE TWO: Island Greenway Extension

A shared-use path connecting the southern terminus of the existing Carolina Beach Island Greenway to K Avenue and Joe Eakes Park.

Overview

Location and Length:

End of existing Island Greenway to K Avenue (1 mile).

Trail Types:

12-foot wide asphalt shared-use path (SUP); some boardwalk may also be needed, depending on results on wetland delineation.

Structures Required:

Some amount of boardwalk may be needed; to be determined via a wetland delineation.

At-Grade Crossings:

Improved K Ave crossing to Joe Eakes Park from the north is already funded.

Key Connections and Destinations:

The existing Island Greenway and points north in Carolina Beach, residential neighborhoods, Joe Eakes Park, Kure Beach Town Hall, and Kure Beach Fire Department.

Acquisition Needs:

Trail right-of-way would be granted via a lease from MOTSU.

Permitting Needs:

- ▶ 401/404 Permit
- ▶ NCDOT Encroachment Permit
- ▶ NCDEQ Erosion Control
- ▶ Any other permits required by MOTSU

Jurisdictions and Partners:

Project is within MOTSU and the Town of Kure Beach.

Estimated Project Costs

CONSTRUCTION COST SUBTOTAL (2024)	\$2,619,000
Project Contingency (30%)	\$785,700
CONSTRUCTION COST TOTAL (2024)	\$3,405,000
Inflation Factor (8% over 4 years)	\$1,228,000
CONSTRUCTION COST TOTAL (2028)	\$4,633,000
Design and Permitting (15%)	\$695,000
Construction Engineering Inspection (15%)	\$695,000
TOTAL ESTIMATED COST	\$6,487,000

Potential Funding Sources

- ▶ Recreational Trails Program
- ▶ Transportation Alternatives
- ▶ Community Development Block Grant (CDBG)
- ▶ NC Resilient Coastal Communities Program Grant (if paired with flood mitigation, innovative stormwater design)
- ▶ Private sources
- ▶ State funds

Next Steps

- ▶ Complete an environmental study and wetlands delineation, to inform 10% design and as a required step by MOTSU.
- ▶ Complete 10% Schematic Design, as a preliminary design will give a more accurate cost estimate and better position the project for grants.
- ▶ Apply for funding for design and/or construction.

PHASE 2

Island Greenway to K Avenue



Trail integrated into park, as envisioned in the park master plan, and a trailhead integrated into parking area

Exact location from Ave. K to the Island Greenway to be determined, may vary and will be based on a wetland delineation and MOTSU feedback—it may/may not be located at the fire break

TOWN HALL

JOE EAKES PARK

Crossing currently funded, and will likely be completed prior to Phase 2

K AVENUE





OPTIONS FOR PHASE 2



Vegetative Buffer



Fencing (current fencing on the Island Greenway)



A boardwalk may be needed in some areas

Action Steps

The following pages describe a series of action steps that will need to be accomplished. Again, flexibility should be built into the process based on multiple factors including funding availability and resource sharing across counties. These steps may not be completed in the exact sequence shown below, although they are generally in sequential order.



INITIAL ACTION

Step 1: Approve Trail Study

The Town of Kure Beach should adopt the trail study in order to be competitive for any grants. Town leadership should then determine which partners will be critical in championing and providing technical assistance as the project moves forward, and seek their involvement in future Island Greenway partnership meetings.

At minimum, this partnership should consist of the Town of Kure Beach, NCDOT, The East Coast Greenway, and NC DNCR. Determine who will facilitate these meetings, which will ideally be led by a local partner.

EARLY ACTIONS

Step 2: Complete the MOTSU Required Environmental Study

An environmental study is needed to better ground truth environmental constraints. MOTSU requires an Environmental Baseline Survey (EBS). It is also recommended to do a ground-truthing and eventual delineation of wetlands for both Phases 1 and 2. This study would be performed by a private consultant and submitted to MOTSU for review. Partners would need to fund this study.

Step 3: Develop a 10% Schematic Design and Cost Estimate, Get Public Input

A 10% Planning and Engineering Construction Document set is recommended for both phases 1 and 2 with refined cost estimates. This set typically includes an alignment, limits of disturbance, environmental constraints, and any amenities.

This refined alignment could explore how much buffer separation there can be from the Eastern MOTSU boundary, and most importantly will give MOTSU the level of detail they will need to be able to approve further exploration of the design and initiate lease agreement discussions.

Once the plans are ready to go the public, neighborhoods adjacent to the MOTSU eastern boundary, as well as the public, should be kept abreast of the evolution of the design. The community should remain informed on key issues, such as the size of the buffer, visibility of the homes, and use of design strategies to minimize or mitigate environmental impact (especially mitigating wetland and stormwater impacts).

Step 4: Take the 10% Design to MOTSU for Feedback and for Lease Agreement Discussions

MOTSU will want to review any plans and may request modifications. The agency may be able to begin discussions about leasing land to accommodate the trail. This is a critical step in the progress. **Note: MOTSU will not officially approve until they can review the 100% design in Step 9.**

Step 5: Continued Public Engagement, Take the Revised 10% Design Back to the Public

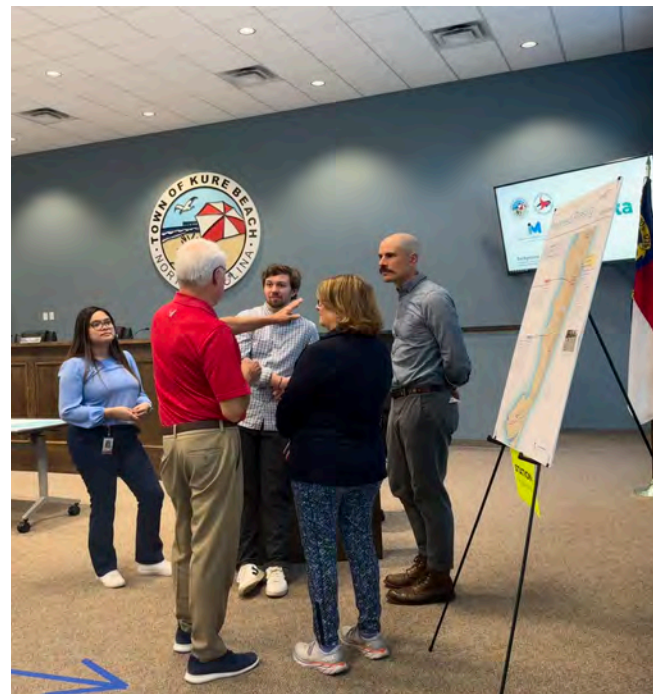
Publish final plans to be publicly available or host a final public open house for information sharing. The following steps can help build on engagement to date:

- ▶ **Continue to Build Partners:** Many groups and agencies already support this project. Continue to encourage other nongovernment partners to “sign-on” and support the plan and project implementation, including different user groups, local boards, committees, and commissions.
- ▶ **Marketing and Communications about the Trail:** Generate positive stories about the beneficial impacts that the trail will have in the region. Work with local media outlets and make use of social media to share the project information.

- ▶ **Public and Landowner Engagement:** Continue public engagement by staging information at community events. Make a concerted effort to reach out to adjacent landowners to hear from them and share information routinely to prevent disinformation.
- ▶ **Public/Elected Officials Engagement:** Utilize public officials supportive of the project to be peer advocates to educate other leaders.

Step 6: Build Out Interim Phase 1 Project on Settler's Lane

This Interim Phase 1 project will increase safety for trail users as a connection while Phase 1 is being completed and Phase 2 is being studied. See more about this step on pages 82-83.



Additional public engagement can occur after the environmental study and 10% design are complete.

TRAIL DEVELOPMENT ACTIONS

Step 7: Determine the Project Manager and Management Partners for Phase 1

Prior to any grant applications, identify a project manager to oversee final design and construction and confirm management/maintenance partners. NCDOT may be able to play a role in project management of design and construction.

The Town will likely maintain everything within its jurisdiction, but the partner(s) who will maintain the corridor south of the Town is less clear. The partnership should meet with all relevant partners to explore who is willing to take on management of segments of the corridor. This will need to be formalized into an MOU later (see Step 10).



Phase 1 is made up of a patchwork of managed lands from the Town of Kure Beach, a large portion owned by MOTSU, and lands managed by NC DNCR and NCDOT. It will take a complex partnership and unifying project manager to oversee its implementation.

Step 8: Pursue a Local Funding Match

Grants typically require a 20-30% match. Pursue different means of acquiring a match, including fundraising through citizens or private foundations, the Town's general fund, and/or working with state legislators to get appropriations through the state budget. All of this will require dedicated efforts through the Town of Kure Beach and its partners.

Step 9: Apply for Grants for Phase 1 Complete Design and Engineering and Construction or Pursue Full Design in the Interim While Waiting for Grant Awards

Pursue larger grants to complete this phase. This would include everything for survey, 100% design, right-of-way acquisition (or coordinating with agencies for leases), permitting, and construction.

Prior to grant applications, steps 7 and 8 must be in place. This step involves developing a survey, acquiring permits, and preparing Plans, Specifications, and Estimates (PS&E) for construction. Permits would include environmental, access, all construction activities (e.g., earth moving, erosion control, use of fill material, and impacts to wildlife), and in some instances, accessibility. Contract directly with a design development consultant to complete the Phase 1 PS&E. These plans

should meet the requirements of construction funding for each project phase. For example, if a phase is constructed with federal transportation funding, PS&E will need to address USDOT, FHWA, and NCDOT design development requirements. PS&E documents will need to be reviewed and approved by local, state, and federal authorities. A separate workflow process for completing PS&E for each phase of the project should be prepared. Once design is complete, an updated and more accurate cost estimate should be provided.

This plan's Appendix provides a list of typical sources of funding from federal, state, and local public and private sources. In some cases, funding for both design and construction can be accomplished through a federal grant, although a project is more likely to be funded with design completeness, some level of environmental review, and high degree of project readiness. Keep in mind federal funding can often take 6 to 12 months just to get under contract. **Note: MOTSU will want to approve the final design once it is developed. They cannot give full approval until this step is completed and may have additional comments or requests.**

Step 10: Complete an Operations and Management Plan with a Maintenance Budget, MOU Between Partners, and a Secured Lease With MOTSU

Operations and management are often forgotten due to the complexity and challenges of trail acquisition, funding, and construction. It is highly recommended for the partnership described in Step 1 to begin these conversations in 2024. For all segments of the trail, operations, maintenance, and management are critical elements of project development. Trails are public resources and components of local green infrastructure. There can be an unwarranted belief that trails either take care of themselves or should be managed in a less attentive manner. This is, of course, not true. Trails require daily, weekly, and monthly attention as well as a systematic approach to maintenance to keep them functioning in the way they were designed and constructed.

The Town of Kure Beach will most likely be the managing entity for the trail within its own jurisdiction. South of their jurisdiction, it is a patchwork of MOTSU, State (NC DNCR) land leased from MOTSU, and NCDOT ROW. The management and maintenance strategy should be explored deeper on this southern section.

Step 11: Bid, Award, and Construction of Phase 1

This step includes construction of a trail from Avenue K in Kure Beach to the terminus at the Ferry. Once design and funding are secured, the next step will be to bid and award a construction contract for each phase of the project. Typically, bid packages for each phase will be prepared by a consultant. Depending on how the project is funded, a sponsoring agency will administer the bid, and oversee awarding a construction contract. The process of bidding and awarding a construction contract takes time, no less than three to four months and as much six to eight months depending on the approval process of the agency that awards the contract.

Once a bid is awarded, the selected construction contractor will be given a specific number of working or calendar days to build the trail. It is normal for construction activities to take between six months and one year to complete. Sometimes construction may take longer based on the complexity of a given project. If the project is federally funded, federal processes, requirements, and timelines must be adhered to and they project may take longer.

Step 12: Host a Groundbreaking Ceremony

For each phase, partners should work together to host a groundbreaking ceremony. Make sure to invite and involve everyone who has worked in partnership to make a particular phase successful. Elected official invitations will help build additional support for future phases. Especially invite those elected officials who seem less aware or supportive of segments of the trail in their area. Groundbreaking ceremonies will vary in size and celebration. Be certain to invite local media outlets to attend, arrange for interviews with key stakeholders, and document the celebration.

Step 13: Hold a Ribbon Cutting Ceremony

Once construction is completed, it will be time for a second celebration and official public opening of the trail segment. As with the groundbreaking ceremony, it will be important to include all parties that made trail construction a success. This is also a good time to recognize those who will operate and maintain each segment of the trail. A celebratory ride or walk should be included in the festivities.



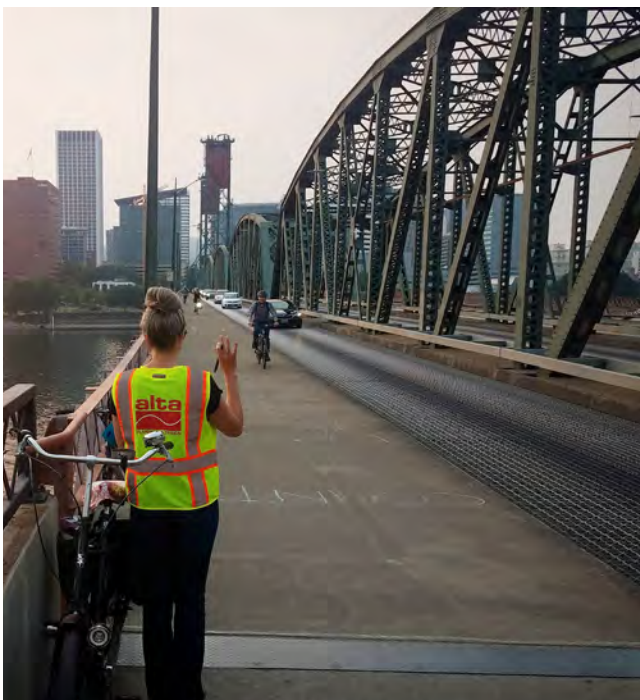
Groundbreaking ceremony for a section of the Atlanta BeltLine rail-trail in Atlanta, GA. Inviting elected officials can help build additional support for future phases of the trail.

ONGOING OPERATIONS

Step 14: Implement Trail Programming and Events to Celebrate and Activate the Trail

The trail will be an ideal landscape for programming and hosting of events. Some of these events can generate additional revenue to offset the costs associated with operations, maintenance, and management of the system.

The trail can also serve as an outdoor classroom where young and old alike can learn about local and regional history, experience the wonders of nature, and visit important cultural landscapes that are part of our community.



Trail user counts and surveys are examples of methods to evaluate trail performance.

Operations, maintenance, and management are critical elements of project development. Like a city street system, park system, or utility networks, trails should be managed as highly valued public assets.

Step 15: Evaluate the Performance of the Trail

The partnership should evaluate the trail's use and performance together. For example, if transportation funds were used, how effective is the trail segment at providing alternatives to the use of cars for a specific trip? If environmental education was a primary emphasis of a particular segment, how effective has the segment been in serving the educational needs of school groups? Evaluations can be completed starting within one year of the official public opening.

ACTION PLAN

STEPS/ACTIONS	ORGANIZATION(S)	RESOURCES NEEDED	TIME FRAME
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INITIAL ACTION

1. APPROVE STUDY

Jurisdictions present to regulating board for approval	Town of Kure Beach	• Staff needed to present to regulating board	Fall 2024
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EARLY ACTIONS

2. COMPLETE THE MOTSU REQUIRED ENVIRONMENTAL STUDY (PHASES 1 & 2)

Environmental Baseline Survey, ground-truthing and delineation of wetlands.	Private consultant to perform study and submit to MOTSU for review	• Funding for study	Ongoing
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3. 10% SCHEMATIC DESIGN, COST ESTIMATE, PUBLIC INPUT (PHASES 1 & 2)

Refined alignments including refined cost estimates, limits of disturbance, environmental constraints, and amenities.	Town of Kure Beach to lead Town portion, partner lead TBD on non-Town portio	• Staff time • May need consultant for 10% design, cost estimate, and further public engagement efforts	Ongoing
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4. MOTSU FEEDBACK ON 10% DESIGN, LEASE AGREEMENT DISCUSSION

MOTSU review plans and begin discussions around leasing land to accommodate the trail.	Town of Kure Beach and DNCR to work with partners within their jurisdiction	• Consultant fee to make revisions to 10% design	Ongoing; beginning in 2025
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5. CONTINUED PUBLIC ENGAGEMENT

Continue to build partners, marketing and communications of the trail, public and landowner engagement	Town of Kure Beach to lead, WMPO to assist	• Staff time • Communication experts within organization	Ongoing
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6. BUILD OUT INTERIM PHASE 1 PROJECT ON SETTLERS LANE (PHASE 1B)

Construct Settlers Lane bike boulevard connection as an interim project while Phase 1 is being completed and Phase 2 is being studied.	Town to lead, with potential assistance from WMPO	• Design and construction funds, some of this may be able to be done in-house by the Town	Ongoing; beginning now, in place by Phase 1 construction
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A NOTE ABOUT PHASE 2 ACTIONS AND TIMELINE

Steps 7 through 15 will be repeated for Phase 2. The Town of Kure Beach will lead much of the development of the trail, but close collaboration with partners will be needed. The time frame for Phase 2 is dependent on MOTSU approval.

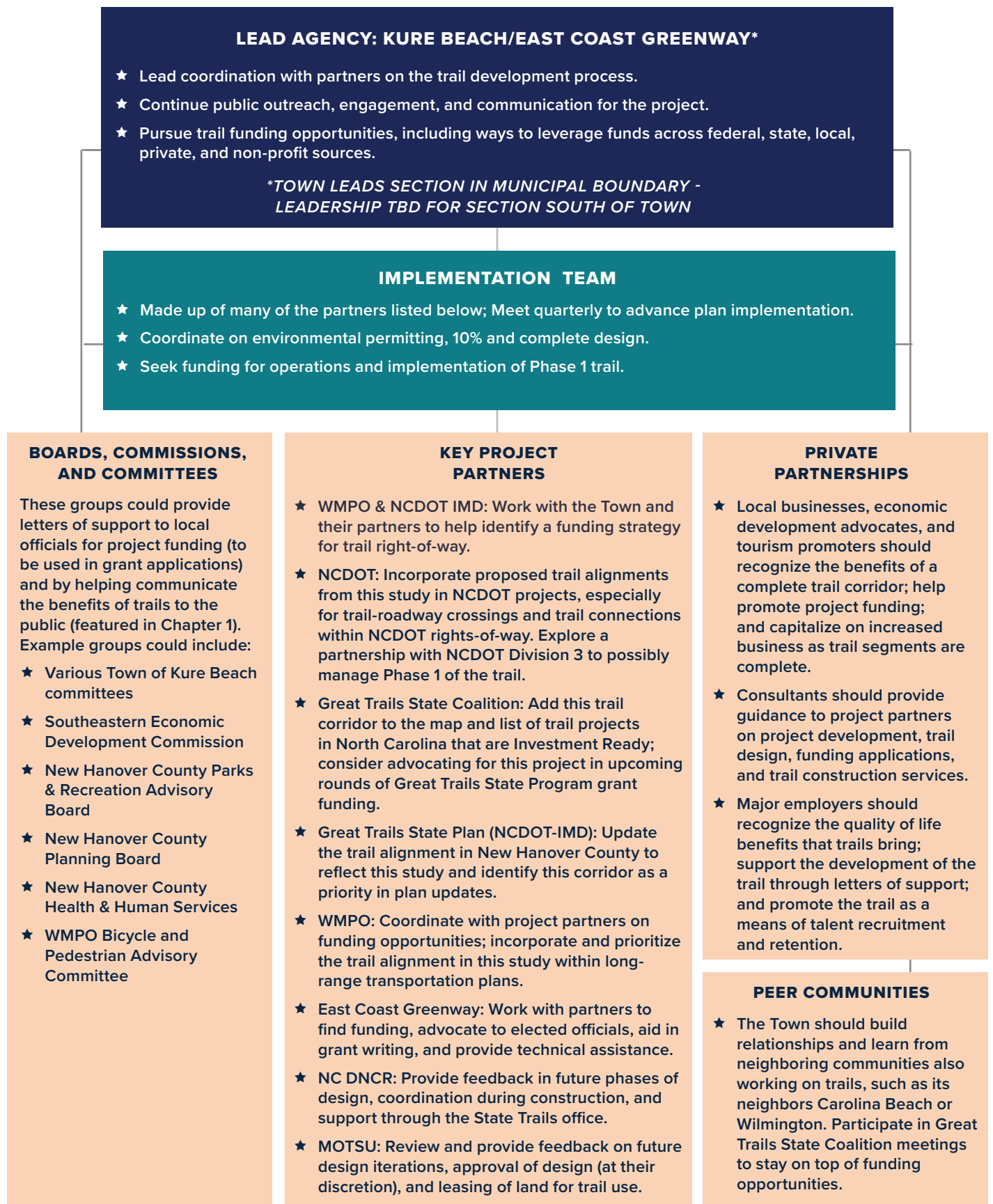
STEPS/ACTIONS	ORGANIZATION(S)	RESOURCES NEEDED	TIME FRAME
TRAIL DEVELOPMENT ACTIONS (REPEAT FOR PHASE 2)			
7. DETERMINE PROJECT MANAGER & PARTNERS FOR PHASE 1			
Partners meet to designate a project manager to oversee final design and construction and confirm maintenance roles.	Kure Beach to lead for their section of trail, coordinate with NCDOT	• Staff time	Ongoing; beginning now, in place by Phase 1 construction
8. PURSUE A LOCAL FUNDING MATCH			
Secure local match through sources such as private donations or general fund.	Town of Kure Beach to work with WMPO and NCDOT; East Coast Greenway Alliance may also be able to assist	• Construction funding	Ongoing; beginning now, Phase 2 would occur 3-5+ years from now
9. APPLY FOR FUNDING FOR PHASE 1			
Pursue federal, state, and local grant funding for trail construction.	Town of Kure Beach to lead and identify lead for non-Town segment potentially working with consultant	• Staff time (or consultant) for grant writing	Secure within 2025-2028, if possible, Phase 2 would occur 3-5+ years from now
10. COMPLETE AN OPERATIONS AND MAINTENANCE PLAN, MOU BETWEEN PARTNERS (ALL PHASES), AND SECURED LEASE WITH MOTSU (PHASE 2)			
All partners should participate in completion of an operations & maintenance plan including a MOU between partners.	All partners to coordinate	• Staff time	Complete by time construction begins (completion of step 11)
11. BID, AWARD, AND CONSTRUCT PHASE 1			
Bid, award, and construct Phase 1	Town of Kure Beach to coordinate on in-town portion, lead for non-Town segment TBD. NCDOT be able to coordinate overall contract for Phase 1; explore further.	• Staff time and funding in place to complete construction	TBD; based on MOTSU approval
12. & 13. GROUNDBREAKING & RIBBON-CUTTING CEREMONIES			
Groundbreaking ceremony	Town of Kure Beach to coordinate with all participating partners like WMPO, MOTSU, etc.	• Staff time	TBD; based on MOTSU approval

ONGOING OPERATIONS

14. & 15. PROGRAMMING AND PERFORMANCE EVALUATION

Program the greenway and evaluate performance	Town of Kure Beach and DNCR to determine what kind of programming and evaluations may occur on their sections	• Staff time • Funding for programming	Programming and evaluation will be ongoing
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Organizational Framework for Implementation



Operations and Maintenance (O&M)

The following guiding principles will help assure the operation of a first-class trail system:

1

Good maintenance begins with sound planning and design.

6

Keep complete records of regular inspections.

2

Foremost protect life, property, and the environment.

7

Maintain an effective, responsive public feedback system and promote public participation.

3

Promote and maintain a quality outdoor recreation and transportation experience.

8

Be a good neighbor to adjacent properties.

4

Maintain quality control and standards and conduct regular inspections.

9

Operate a cost-effective program with sustainable funding sources.

5

Develop a management plan that is reviewed and updated annually with tasks, operational policies, standards, and routine and remedial maintenance goals.

10

Establish, adopt, and implement a uniform plan and level of quality amongst City and County agencies along the project corridor.

Operations & Management (O&M) Agreements

Kure Beach will be responsible for trail maintenance within municipal limits. Outside of Kure Beach limits, the lead(s) of maintenance is to be determined. Leads could potentially be a mix of state agencies, but should be determined soon, as this will be a requirements for any grant applications.

O&M Strategies and Actions

The purpose of an O&M plan is to promote a well-maintained, well-groomed, safe, secure, and pleasant-to-use trail. O&M plans describe tasks of work to be performed, along with policies and programs that will be undertaken by responsible partners to operate, manage, and maintain the trail. Operations and maintenance refer to day-to-day tasks as well as the long-term remedial tasks and programs performed to keep resources and facilities of the trail in a usable condition. This begins with sound design, durable construction, and a comprehensive management plan. In addition, community groups, residents, business owners, developers, and other stakeholders will continue to be engaged in the long-term stewardship of the resources preserved and enhanced by the trail. The following are typical routine, remedial, and seasonal maintenance tasks:

Routine Maintenance refers to the normal regime of trail sweeping, trash and debris removal, sign replacement, weed control, tree and shrub trimming, ice or snow removal, and other regularly scheduled activities. Routine maintenance also includes minor repairs and replacement such as fixing cracks and potholes or repairing broken furniture and furnishings.

Remedial Maintenance refers to correcting significant defects as well as repairing, replacing, or restoring major components that have been destroyed, damaged, or significantly deteriorated during the life of the project. Some items (“minor repairs”) may occur on a five- to ten-year cycle such as repainting, seal coating asphalt pavement, or replacing signage. Major reconstruction items will occur over a longer period or after an event such as a flood. Examples of major reconstruction remedial maintenance include stabilization of a severely eroded hillside, repaving a significant stretch of the trail surface, repaving a street used for biking, or replacing a footbridge. Remedial maintenance should be part of a long-term capital improvement plan.

Seasonal Maintenance is in addition to the routine and remedial categories and includes seasonal tasks that should be performed on an as-needed basis. Designated maintenance crews should remove leaf debris, sediment from flood events, snow, and ice from all trail facilities as soon as possible. (Leaf debris is hazardous when wet, and special attention should be given to facilities with heavier usage).

Life Cycle of Built Facilities

Constructed greenway facilities will have a limited life cycle, or useful life. The life cycle varies based on environmental impact, use, and care of the resource. The following chart offers a typical life cycle for major trail elements:

GREENWAY COMPONENT	LIFE CYCLE
Asphalt Trails	10-20 years
Concrete Trails	25-35 years
Gravel Trails	5-10 years
Wood Bark Trails	2-3 years
Wood Boardwalk Trails	7-10 years
Steel Bicycle and Pedestrian Bridge	15-20 years
Asphalt Parking Lot	10-12 years
Crosswalks	3-5 years
Greenway Signage	7-10 years
Park Benches	7-10 years
Trash Receptacles	7-10 years
Wood Bollards	5-7 years
Metal Bollards	15-20 years

Adopt-a-Trail

An Adopt-a-Trail program is one method for maintaining the environmental and aesthetic quality of the trail by generating a strong sense of ownership among citizens. Through the Adopt-a-Trail program, residents, businesses, trail users, and various community groups can have an active role in maintaining the lands and facilities of the trail. Volunteers work with local agency staff to participate in trail projects, which may include:

- ▶ Picking up litter
- ▶ Raking leaves
- ▶ Removing graffiti or touching up murals
- ▶ Spreading mulch or gravel
- ▶ Sweeping paved trails
- ▶ Removing exotic invasive plants
- ▶ Planting flowers
- ▶ Reporting safety hazards, illegal dumping, injured or dead animals, storm damage, and other issues

Trail Ambassador Programs

Trail Ambassadors differ from those who participate in Adopt-a-Trail services. Ambassadors are an additional set of eyes and ears on the trail. They promote goodwill, help trail users with minor needs (such as directions), and promote safety and authorized use of the trail. Ambassadors often work in pairs and are usually given clothing to signify their status. Ambassadors

are typically volunteers who provide services to an entire trail corridor. Some communities may deputize Ambassadors and provide them with telecommunications equipment. Ambassadors are skilled in first aid, they are very knowledgeable about the trail and location of services and facilities, and they are also knowledgeable about natural and cultural resources. As with Adopt-a-Trail programs, Trail Ambassadors will undergo orientation and training. They are asked to work specific dates and times. Some local governments will ask that they sign waiver of liability forms. Often, Ambassadors make use of a bike to complete their service.

Crime Prevention Through Environmental Design (CPTED)

Many trail managers across the United States employ Crime Prevention Through Environmental Design (CPTED) techniques in the design, development, and management of trails. According to the National Crime Prevention Institute, “CPTED is the proper design and effective use of the built environment which may lead to a reduction in the fear and incidence of crime, and an improvement of the quality of life.”

CPTED theories contend that law enforcement officers, architects, city planners, landscape designers, and resident volunteers can create a climate of safety in a community right from the start. CPTED’s goal is to prevent crime by designing a physical environment that positively influences human

behavior. For trails, people who use the trail regularly should perceive it as safe, and would-be criminals should view the trail as a highly risky place to commit crime. CPTED strategies rely upon the ability to influence offender decisions that precede criminal acts.

CPTED is based on the following principles: natural surveillance, natural access control, and territorial reinforcement.

NATURAL SURVEILLANCE

Natural surveillance increases the threat of apprehension by taking steps to increase the perception that people can be seen while using a trail. Natural surveillance occurs by designing the placement of physical features, activities, and people in such a way as to maximize visibility and foster positive social interaction among legitimate users of public space. Potential offenders feel increased scrutiny and limitations on their escape routes. Natural surveillance design features include:

- ▶ Use adjacent roadways and the passing vehicular traffic as a surveillance asset.
- ▶ Create landscape designs that provide surveillance, especially in proximity to designated points of entry and opportunistic points of entry.
- ▶ Use the shortest, least sight-limiting fence appropriate for the situation.
- ▶ When creating lighting design, avoid poorly placed lights that create blind-spots for potential observers and miss critical areas. Potential problem areas should be well-lit: pathways, stairs, entrances/exits, parking areas, children’s play areas, recreation

areas, storage areas, and dumpster and recycling areas.

- ▶ Avoid too-bright security lighting that creates blinding glare or deep shadows, hindering the view for potential observers. Eyes adapt to night lighting and have trouble adjusting to severe lighting disparities. Using lower-intensity lights often requires more fixtures.
- ▶ Place lighting along pathways and other pedestrian-use areas at proper heights for lighting the faces of the people in the space (and to identify the faces of potential attackers).
- ▶ Natural surveillance measures can be complemented by mechanical and organizational measures. For example, closed-circuit television (CCTV) cameras can and should be used.

NATURAL ACCESS CONTROL

Natural access control limits the opportunity for crime by taking steps to clearly differentiate between public space and private space. Natural access control occurs by selectively placing entrances and exits, fencing, lighting, and landscape to limit access or control flow.

- ▶ Use a single, clearly identifiable point of entry.
- ▶ Use low, thorny bushes to keep people out of sensitive areas.
- ▶ Use waist-level, picket-type fencing to control access and encourage surveillance.
- ▶ Natural access control is used to complement mechanical and operational measures to control access and strengthen security of an area.

NATURAL TERRITORIAL REINFORCEMENT

Natural territorial reinforcement promotes social control through increased definition of space and improved proprietary concern. An environment designed to clearly delineate private space does two things. First, it creates a sense of ownership. Owners have a vested interest and are more likely to challenge intruders or report them to the police. Second, the sense of owned space creates an environment where “strangers” or “intruders” stand out and are more easily identified. Natural territorial reinforcement occurs by using buildings, fences, pavement, signs, lighting, and landscape to express ownership and define public, semipublic, and private space. Additionally, these objectives can be achieved by assignment of space to designated users in previously unassigned locations.

- ▶ Maintain premises and landscaping such that it communicates an alert and active presence occupying the space.
- ▶ Provide trees in residential areas. Research indicates that, contrary to traditional views within the law enforcement community, outdoor residential spaces with more trees are seen as significantly more attractive, safer, and more likely to be used than similar spaces without trees.
- ▶ Restrict private activities to defined private areas.
- ▶ Display security system signage at access points.
- ▶ Avoid cyclone fencing and razor-wire fence topping as it communicates the absence of

- ▶ a physical presence and a reduced risk of being detected.
- ▶ Scheduling activities in common areas increases proper use, attracts more people, and increases the perception that these areas are controlled.
- ▶ Natural territorial reinforcement measures make the typical user feel safe and make the potential offender aware of a substantial risk of apprehension or scrutiny.

Funding for O&M

Several types of funding sources can be identified and it is likely that a combination will offer the best solution. The following are potential funding sources:

- ▶ Budget allocation commitments
- ▶ Partnerships
- ▶ Dedicated tax
- ▶ Endowments
- ▶ Outside funding sources
- ▶ In-kind services

BUDGET ALLOCATIONS

These funds come directly from annual budget allocations by the respective municipality. Typically, this is the most reliable revenue source for project management, operations, and maintenance. This is the most common and likely source of O&M funding. Note that on most trail projects, private donors or other potential partners will want to see a strong long-term public commitment to management as a condition of awarding grants for capital trail improvements and

management programs.

PARTNERSHIPS

Some elements of the program serve multiple public and private benefits including access for corridor upkeep, promotion of local businesses, utility access, school facilities, road maintenance, and enhancement of adjacent private properties. This may provide opportunities for task sharing and cost sharing among the various beneficiaries. These options should be vigorously and creatively explored. In addition, area businesses may have a vested interest in sponsoring and participating in trail maintenance along segments of the corridor.

DEDICATED TAX

A number of communities have specific dedicated tax programs in place such as open space sales taxes or special districts with property tax-based funding. To implement such a program, it will be important to have a specific visionary plan in place and build broad-based public support and partnerships with park, recreation, and open space advocacy groups. Pursuing this process should begin with an examination of the potential property, sales, lodging, and other potential tax bases.

ENDOWMENTS

An endowment is a set-side account held strictly to generate revenue from investment earnings. The endowment could be held by a nonprofit. Funding of the endowment

could come from a percentage of capital grants and from an endowment campaign. The endowment could also be funded by bequests and deferred giving such as donations of present or future interests in stock or real estate. To have an impact, the endowment should have several million dollars in its “corpus” (asset holdings). This endowment could be built up gradually in tandem with project development.

OUTSIDE FUNDING SOURCES

Outside funding sources include public and private sector grants that can be applied toward management including routine and remedial maintenance. Some federal programs have funded trail replacement projects in a number of locations, though the availability of such programs in the future is hard to predict. Private contributors might help fund seasonal youth “trail ranger” programs or purchase equipment such as a sweeper. Note that, except for remedial projects, private donors are generally not interested in funding operations and maintenance. Outside funding sources may be unpredictable year after year; therefore, this funding is considered “uncontrollable income.”

IN-KIND SERVICES

Management services might be supported and enhanced by available non-cash resources such as volunteers, youth, student labor, user groups (such as cyclist associations), correctional services, and seniors. In-kind support may also include donations of materials and equipment.

Groups may be encouraged to “adopt” a park or a trail and hold annual fundraisers. The corridor might also be eligible for youth programs such as AmeriCorps.

Note, however, that volunteer and in-kind participation will likely meet only a fraction of the operations and maintenance needs, and funding of these programs may be sporadic. The management program will still need a base of trained professionals and proper equipment. These programs require staff time to coordinate.

Volunteers offer a cost-effective method for maintaining certain aspects of trails. For example, local Eagle Scouts can work with local government staff to build or repair bridges and help with other small construction projects. The Federal Volunteer Protection Act of 1997 protects volunteers of nonprofit organizations or governmental entities. The act states that such volunteers are not liable for harm caused by their acts of commission or omission, provided the acts are in good faith.



Appendices



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Public Open House #1 Summary





Island Greenway Feasibility Study Open House

Wednesday, September 6, 2023; 5:30-7:30pm

Location: Kure Beach Fire Department and Ocean Rescue, 608 K Avenue, Kure Beach, NC 28449

Prepared by: Alta Planning + Design

Summary of Public Feedback

Introduction

The proposed "Island Greenway to Fort Fisher Feasibility Study" will establish an approximate 4.8-mile greenway route and implementation plan for the corridor connecting the southern terminus of the Carolina Beach Island Greenway to the Fort Fisher – Southport Ferry Terminal. Once completed, this Island Greenway to Fort Fisher multi-use path will result in an effectively-continuous greenway that will connect Carolina Beach State Park, Carolina Beach, Kure Beach, Fort Fisher State Recreation Area, Fort Fisher State Historic Site, the North Carolina Aquarium at Fort Fisher, and the Fort Fisher Ferry. This segment will be a part of both the East Coast Greenway State Trail route and the North Carolina Great Trails State Network.

The purpose of the engagement was to...

1. Garner input on opportunities and challenges of different alignment options that are being considered.
2. Understand which facility typology the public most supports.
3. Get feedback on what criteria is most important during route selection.
4. Hear from the public about "what the Island Greenway" will be and "who will use it."

Public Meeting

At the public open house, there were a total of 240 attendees. This consisted of 221 Kure Beach Residents, 17 Local Residents to other areas of Pleasure Island, and 2 Non-Locals. Attendee sign In sheets, with names redacted for privacy, are attached in Appendix A.

Key Takeaways

Many written comments collected at the open house were generally positive towards the greenway, although there were concerns with certain alignment options presented on the meeting materials.

Major themes included concerns about property value, maintenance, safety/privacy, and preservation of natural areas, specifically wetlands. Key points related to these themes are outlined below, and all individual comments from the meeting are included in Appendix A.

- Pedestrian/bicycle safety
 - Many residents want safer places to ride bicycles and walk that are away from roads, especially Fort Fisher Blvd. which many feel is not safe for families.
- Greenway benefits



- The greenway will be used by and benefit families. Many felt that families will greatly benefit from the trail as there is no good place for inter-generational groups of family members to be together on bikes or walking.
- Property values
 - Property owners along the Settlers Lane expressed concern about the alignment along the eastern MOTSU boundary and said it would have negative impacts to property value due to proximity to a public greenway facility. Other citizens stated they think it will raise their property values or have personal experience with property values increasing with the Island Greenway.
- Maintenance
 - Residents were concerned about who will maintain the greenway.
- Safety/crime and privacy
 - The majority of concerns were along the MOSTU Eastern Boundary/Firebreak alignment: increased crime, such as theft and child abduction, were mentioned as concerns by a number of residents. Many were concerned about privacy and want to see a significant buffer from their homes.
- Preservation of natural areas.
 - Many want to see preservation of natural areas within the MOTSU boundary, including concerns about flooding and protection of wetlands, wildlife, and tree canopy.

Map posters for three segments of the study area asked participants to share opportunities and constraints for any of the alignment options. The pictures of the maps are attached in the appendix. Below is a summary of comments provided for each alignment option:

- Dow Road
 - Provides a more natural setting
 - High vehicle speeds
 - Wetlands are prevalent
- MOTSU Eastern Boundary
 - Property owners concerned with safety, crime, privacy
 - Wetlands and wildlife are prevalent in the area
 - Current drainage and stormwater issues in the area
 - Concerned about impact to property values
- Neighborhood Bikeway
 - Residents often backing out of driveway
 - Congestion with residential traffic and active transportation users
- Fort Fisher Boulevard
 - Routes along commercial area and beach access
 - Dangerous with car traffic
 - On-street parking is heavily used
 - Frequent flooding with storms
 - Connects to destinations in the south
- Options South of the Town of Kure Beach
 - Residents feel Fort Fisher Blvd. is dangerous and would have impacts to parking, but want to ensure it is being connected to
 - Preference to stay away from roads, or have a good buffer

Preferred Facility Type

When asked about preferred facility types for walking and biking, the majority of responses showed a preference for a Greenway. With the ability to place two dots, 224 total responses were placed on this option, including 204 responses from Kure Beach Residents. A secondary preference for Sidepath facility type was shown with 47 total responses, including 43 from Kure Beach Residents. The Separated Bike Lane with Sidewalk facility type option received 11 total responses.

MEMORANDUM



Facility Types:

Separated Bike Lane with Sidewalk

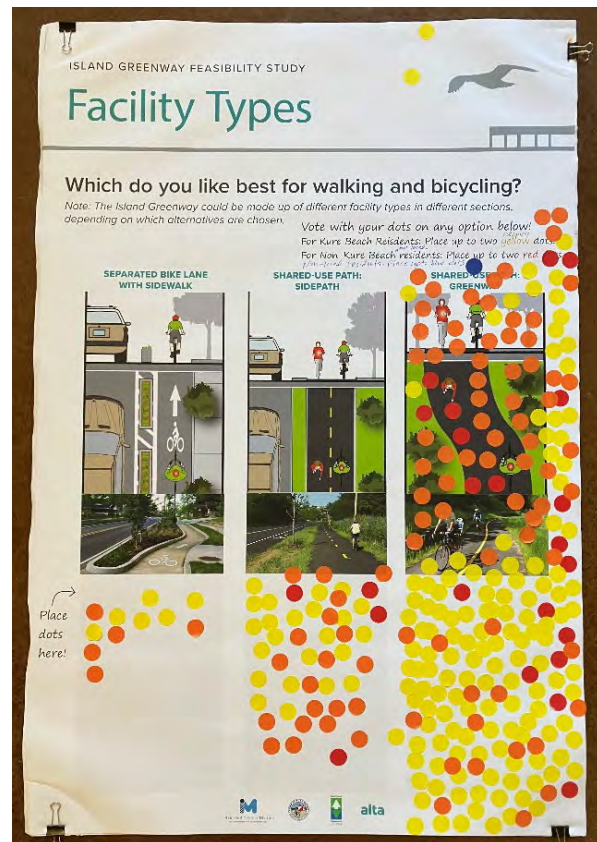
- Kure Beach Residents (yellow/orange): 11
- Local Residents (red) : 0
- Non-Local Residents (blue) : 0

Shared-Use Path: Sidepath

- Kure Beach Residents (yellow/orange): 43
- Local Residents (red) : 4
- Non-Local Residents (blue) : 0

Shared-Use Path: Greenway

- Kure Beach Residents (yellow/orange): 204
- Local Residents (red) : 18
- Non-Local Residents (blue) : 1



Criteria for Route Selection

Participants were asked their opinion on the most important criteria for route selection and given the ability to place three dots on any criteria. Most respondents favored Connectivity, with 144 total responses and 125 responses from Kure Beach Residents, and Traffic safety, with 117 total responses and 108 responses from Kure Beach Residents. Property acquisitions and user experience were the next most common choices, with 78 and 66 total responses, respectively. Cost was chosen as an important criterion with 23 total responses. Other criteria were written in and are listed below:

Route Selection (Which criteria are the most important):

Connectivity

- Kure Beach Residents (yellow/orange): 125
- Local Residents (red) : 17
- Non-Local Residents (blue) : 2

Traffic Safety

- Kure Beach Residents (yellow/orange): 108
- Local Residents (red) : 9
- Non-Local Residents (blue) : 0



Cost

- Kure Beach Residents (yellow/orange): 23
- Local Residents (red) : 0
- Non-Local Residents (blue) : 0

Property Acquisitions

- Kure Beach Residents (yellow/orange): 75
- Local Residents (red) : 3
- Non-Local Residents (blue) : 0

User Experience

- Kure Beach Residents (yellow/orange): 60
- Local Residents (red) : 5
- Non-Local Residents (blue) : 1

Other

- Have trail go through trees without cutting a wide swath.
Biking in forest: 3
- Least invasive footprint to protect environment (trees)
and wildlife: 7
- Privacy safety for Settlers Lane: 7

Next Steps

The planning process is currently within the Draft Study Development Phase. The second public open house and public survey will be in February 2024.

ISLAND GREENWAY FEASIBILITY STUDY

Route Selection

Which criteria do you feel are most important when considering the best trail route? Vote with your dots below!

Kure Beach Residents: Place up to three yellow dots.
Non-Kure Beach Residents: Place up to three red dots.
Non-Kure Beach Locals: Place up to three blue dots.

Connectivity
Routes may be influenced by many factors, including need for land acquisition, trail length, trail surface, trail width, number and type of bridges and roadway crossings, trail intersections, need for grading, and need for construction within floodplains.

Public Safety
Routes may be influenced by many factors, including need for land acquisition, trail length, trail surface, trail width, number and type of bridges and roadway crossings, trail intersections, need for grading, and need for construction within floodplains.

Cost
Total costs can be influenced by many factors, including need for land acquisition, trail length, trail surface, trail width, number and type of bridges and roadway crossings, trail intersections, need for grading, and need for construction within floodplains.

Property Acquisitions
Routes may be influenced by many factors, including need for land acquisition, trail length, trail surface, trail width, number and type of bridges and roadway crossings, trail intersections, need for grading, and need for construction within floodplains.

User Experience
Routes may be influenced by many factors, including need for land acquisition, trail length, trail surface, trail width, number and type of bridges and roadway crossings, trail intersections, need for grading, and need for construction within floodplains.

Other:

Other: *Look for top 1000 trees*

Other: *Look for top 1000 trees*

Other: *Look for top 1000 trees*

Other: *Look for top 1000 trees*

Alta Planning + Design, Inc.



Appendix A: Individual Responses

The Island Greenway Will be...

- It will preserve “Forever Green” land behind Settlers
- A safe place for me to bike
- Safe place for the greater good, cars are dangerous
- Help keep people and children safe off roads with a safe place to walk, jog and bike
- Great and safe addition for exercise, walkers, bikers
- The Greenway would be – safe, family/children friendly
- Wonderful for everyone! Great for the environment and health.
- A path to the ferry and Southport
- Added safety, added fun, added value, less pedestrian and bike traffic on roads
- Great place for the family to ride safely
- I look forward to everyone being able to ride safely and be able to see the undeveloped areas
- Good for my family, biking, walking safely- instead of on main street
- Increased safety for pedestrians and bicyclists
- Protect children from criminals/unknown strangers
- Fantastic and a great way to get all over the island!
- Great for community
- A safe place to run and ride bikes
- A way to bring the island together
- Increased property values for the 21st century community
- Make it safe for walkers and bikers
- A safe place
- A safe place to bike and walk
- A safe place to walk, run, bike in the community. Great way to stay active and fit.
- Keep bikes and people off roads traveled by cars
- Great place to walk and ride bike safe from cars
- A great place to walk or bike safely





- Safety
- A great place for the future of KB
- A great addition to KB, a safe way to traverse the island from the ferry to CB
- Great for community. Long overdue.
- No privacy
- I will use it for bike riding, walking, walking my dog, enjoying nature
- Allow me to safely ride my bike to friend's house in Southport.
- Great 4 the Politicians, disaster for residents who eventually pay for it
- A great place to exercise.
- An easy way for anyone to come into my backyard and break into my house. No!
- Protect trees and wildlife, maritime forest. Less pavement and fences.
- Safe for walkers and bikers.
- Safe place to walk and ride without traffic.
- Pros: Increased land value, safer for cyclists, beautiful for community
- A safe place to ride or walk
- Awesome for being able to safely go around all areas of the island
- The greenway will be a safe alternative to Dow or Ft Fisher for all!
- A safe place for me and my family to bike and walk
- I love how the animals enjoy (deer, fox, etc) the CB Greenway too!
- Connectivity with CB and Path that minimizes using public roads.
- Disaster
- Safety and recreation
- Safe bike path for grandkids would be great
- To connect state parks- Use state road
- Safe place to ride
- Crime on houses that back on fire ln
- A easy way for someone to come in my backyard and break into my house
- The birds will love the open space!
- We need a safe place to ride. Make it happen
- The greenway would be: safe, family/children friendly
- Safe place to walk and ride without traffic
- A great addition not only for Kure residents but for all
- Enjoyment for the whole family
- Encourage outdoor lifestyle



- Extended greenway will encourage more exercise and community
- Biking and walking
- A lovely way for citizens to enjoy nature and get healthy exercise. East Coast connectivity
- Great place to bicycle off the busy streets
- A safe place to ride or walk
- Love the safety of the path especially during peak season
- A trail like CB
- Must get bikes and pedestrians off the roads too dangerous on bike lanes
- Loss of privacy and property value
- A bad idea

Who Will Use the Island Greenway?

- Residents and vacationers
- Dog walking, exercise, walk, run, bike
- Residents, families
- My family, my guests, tourists
- My family, friends, renters
- My family
- My family and with my dog
- My family
- Families, friends, residents
- My family
- Family and us
- Myself, family, friends, neighbors
- My family and dog
- Family
- Now everyone will be able to enjoy this undeveloped area
- Friends and family
- My family will use it as we do now
- We use the CB greenway several times a week: bike riding, walking
- Runners, walkers, cyclists
- Keep bikes and people off roads traveled by cars
- Town needs the greenway for residents and visitors!
- My husband, me, grandkids, my walking buddies, my friends, and neighbors. Love the IG!



- I ride my bike and walk the IG with family and friends. Want a safe place to ride and walk.

General Comments:

- Extending the bike and walking trail in our beach community is a fantastic idea with numerous benefits. Beyond the obvious allure of picturesque view this expansion promises to significantly enhance the health and well being of our community members. Access to trails encourage physical activity making it easier for residents to engage in regular exercise and enjoy the great outdoors. Where it's a brisk morning walk, leisurely bike ride, these activities promote cardiovascular health, reduce stress and foster a sense of unity among neighbor by extending a safe trail away from roads and cars
- Keep in mind the cost of continual upkeep.
- If you can put it anywhere- put it where people will be okay with it- why antagonize 80+ homes?
- Yes please- we want it.
- I know that fences may be unpopular along the greenway, but dog and cat owners may view them as a positive thing.
- This open house idea was poorly executed- it was impossible to have a meaningful conversation! There should have been a presentation to bring attendees up to speed!!
- I paid a premium to be on Settlers Lane. This will would create noise and privacy issues.
- Concerns about the trail prox. Against the 4th Ext S homes on buffer.
- Yes greenway! Too dangerous for pedestrians on the road- even on quiet res. Streets!
- Really need to define exactly where the greenway is proposed along Eastern MOTSU boundary- homeowners think it is against their fence line.
- Resident- Do NOT want it behind my house on Settlers- takes away privacy.
- Yellow- wide enough for bikes and people.
- I use CB Greenway several days a week to go to gym, library, etc. It absolutely is a benefit to all on the Island. This would make KB an even better community!
- Please make this happen! Great idea!
- A bike/pedestrian path separated from Dow Road is the best option. It is good for environment and children.
- Even Google has a bicycle overlay. It's going to happen!
- I don't want people looking in my backyard.
- Do not put a greenway behind Settlers.
- The draw to our Island Paradise for residents and tourists is being outdoors. The greenway is one of those draws. We need the Greenway!
- Firebreak: flooding, residential.
- I love and fully support this project however it can be accomplished! Will add another level of wonderful to town and make walkers/bikers safer.
- A greenway behind Settlers is UNSAFE for my baby and toddler. Child abduction is too important.
- Best decision Carolina Beach Council ever made!!!
- Bicycling on Ft Fisher, using a walker or stroller, is dangerous. Kids and seniors need the greenway!

MEMORANDUM



- One life saved is worth the effort.
- Don't bulldoze and pave maritime forest. Save the wetlands.
- Please take into consideration human life and safety.
- Run it along Dow Rd from CB Park to KB Park, would not affect anyone's property.
- Dow Rd more applicable thruway, privacy for Settlers Lane residents.
- I am a resident of house on Settlers. I do not want this behind my home. It already floods there. Dow Rd is the best option.
- Dow Rd is the only option. Protect wetlands!
- Flooding or proposed trail behind General Whiting.
- Road safety for walkers, cyclists and scooters is a concern. This would be great for so many reasons. This is an active community.
- Our children, pets and grandchildren need a safe place to bike and walk. The streets in Kure Beach are too narrow to ride.
- Wild life behind firelane.
- Homeowner safety that backs up to firelane.

MAP 1 – Island Greenway to H Avenue

- Behind Settlers is not an option for us
- Settlers is becoming congested with walker/bikers. Need alternative to walking and riding in street.
- All the people that live on Settlers Ln will have no access to the bike path. And if you do put gates in then we have to worry about people coming thru the gates to vandalize.
- Propose place behind
- Dow Rd is a better and cheaper option- KB Resident
- Stay off 421 as much as possible
- Great plan- please extend greenway along back of Settlers. Make is safe for everyone.
- Lake Park Blvd is a part of all the routes eventually and would make sense to make that the whole routes, and make the whole town more navigable for bikes and pedestrians.
- Off main road behind Settlers
- Fort Fisher option doesn't have great appeal
- Stay off Dow Rd
- Safer proposed than Dow Rd
- Off main road behind Settlers
- Not behind Settlers- home safety at risk!
- Is this an issue? Has anyone in CB had any issues? Hoping that decisions are based on facts.
- Unsafe
- Many driveways that people back out of onto road
- Beachwalk mailboxes and pool and clubhouse frequently visited. Vehicles back out onto road.
- Avoid the fear. Win-win solution is absolutely possible! Fences, shrubs, etc.
- No to all of it!
- A greenway behind Settlers puts my 4 month old girl and 2.5 yr old boy at risk for child abduction- unacceptable risk – don't marginalize my kinds- use Dow Rd
- Behind houses and Settlers safest route. Safety first.
- Don't like Fort Fisher as an option
- Stay off Settlers. Too dangerous. Road behind home on Settlers.
- Great plan to utilize off road path behind Settlers and Dow would work is off main road only.
- Greenway should continue the spot by the water station? Go behind the houses on Settlers. Safest way



MEMORANDUM



- Greenway should be along Dow Rd and NOT behind homes on Settlers Lane.
- Opportunities
- Ft Fisher is dangerous. Too much traffic already.
- Save the wetlands. Put the greenway along Dow Road where hundreds of people already bike, run, and walk.
- Safe option for riding and walking.
- Stay off Ft Fisher! Too dangerous!
- I support MOTSU Boundary.
- "It has been very fun." I live next to the Greenway in CB and think it has been an easy and fun way to travel. Also keeps people off of the streets so you won't get run over. I would love for it to go into Kure Beach. I use it to go from my house to the park and use it to go to friends' houses.
- Stay off of Fort Fisher- too dangerous.
- Pedestrian crossing and speed bump and flashing light at Dow Road/Joe Eakes crossing.
- Too many cars parking out (2 per household equals danger) NOT recommended for Settlers
- Unsafe (Dow Rd)
- Put bike path on Dow Rd.
- Safety concerns, especially at night.
- Greenway should be along Dow Rd and NOT behind home on Settlers Lane. Easiest connection from Carolina Sate Park to ferry. Don't place on wetlands behind homes on Settlers Lane.
- Greenways should run along major roads, not on wetlands behind homes.
- Safety and privacy not considered for Settlers owners. Not in my back yard.
- Opportunities: Settlers Ln is an existing right of way with adequate lighting for traffic in a residential setting. The street is lightly traveled and could easily be converted to a one-way to make space for a dedicated bike/multiuse lane. Residents already experience bike and pedestrian traffic on this road. This road has established slow speeds for current traffic. This road meets up with CB Greenway and it is how we currently travel to the Greenway.
- There seems to be a misconception where the greenway would be located along Settlers Lane- residents believe it would be located right next to their fences.
- We paid a premium price for our property on Settlers Lane because of the privacy of the backyard.
- No behind Settlers Ln. Down Road OFF-ROAD PATH!
- Alabama and Dow Rd should be route.
- I would like it to go behind the houses on Settlers so I won't have to ride with traffic.
- MOTSU option makes sense
- Keep KB active and healthy- walk and ride!
- Anywhere except Fire Lane.
- Safe option instead of riding in road.
- Use Mots land- Shared use but not with autos



- No Access on and off Greenway on Fire Lane for Police/Emergency or the people on the Greenway. *Don't destroy our wetlands and wildlife. DO NOT ON Fire Lane.
- There is no on or off proposed route on the fire break near Settlers once you are on it.
- This is a safe proposal for bike and walking traffic.
- I feel that Settlers Ln is the best
- Behind Settlers is not private and would be safest. It would allow great connectivity.
- Floods on fire lane behind Settlers Lane. Best route is Dow Rd. I am not for route behind houses on Settlers. Privacy, security, and property value concerns.
- MOTSU is best place for trail
- A safe option. That's important.
- Increase noise level since there is not natural buffer- people, dogs
- Property behind homes on Settlers frequently wet. Also floods.
- Great community project, for friends, family, and visitors.
- I would love there to be a connecting greenway from Alabama to Fort Fisher not on or near roads as I don't feel that is safe. I would like it to be similar to CB.
- The greenway is a safe way to ride bikes. This is important when there are so many baby boomers that day drink and drink and drive all day long... not just at night.
- Opportunity: Dow Rd is already on established right of way that is distanced from residences yet connected to the communities. There are wide forested buffers on both sides of the road that offer a natural environment while not encroaching on privacy. Electricity also already runs along this road and additional lighting could easily be added while the forest would provide light pollution buffer to residences.
- Wildlife and wetlands were not considered
- Dow Road has the room for Bike/Ped path.
- My choices: 1. MOTSU boundary 2. Neighborhood bikeway 3. Dow Rd 4. Ft Fisher (most dangerous)
- Current "connector" is not maintained. Public works does not have enough headcount- who is going to maintain???
- Opportunity: Dow Road causes the least issues for residents and is a nice, green area. It would be useful for getting to shops and attractions on the island. Other options are disruptive.
- This (orange route) is best route. Control for drainage issues.
- This same type route worked in CB.
- Wetlands
- Challenges: The firebreak behind Settlers Ln has many challenges:
- Swampy terrain
- Currently an appreciated Dark space allowing stargazing from residences
- Currently offers privacy and a view of nature to residences as well as quiet
- Limited entrances and exits

MEMORANDUM



- The “Settlers Lane” alternative should consider including buffer/vegetation between houses and greenway as appropriate
- Challenges: Bike committee has 2 people who their sole agenda is for a bike path to run behind Settlers Lane homes. One comment from Head of Bike/Ped Committee- I don’t care about the residents on Settlers. I only care about the children. We would have no privacy- more chances of theft. This is on wetlands.
- Connect behind Beach Walk! Property value have not gone down on the CB greenway!

MAP 2 – H Avenue to Fort Fisher State Historic Site

- Only trail that makes sense here is MOTSU – in forest
- Need a safer route. Need a greenway
- Widen Dow Rd bike path for biking and walking west side
- Fisher Blvd is absolutely dangerous people walk in bike path making bikers go out in front of traffic- need another solution to get to south end of island
- A greenway needs to be green – NOT ON THE ROAD
- FF is unsafe – pedestrians were hit last year IN A crosswalk. More development means even more traffic
- Fort Fisher now has parking spots where does this fit??
- Keep off Fort Fisher Blvd. It's already very busy with people, cars, flooding with storms. Thanks.
- Can we stay on the MOTSU prop the whole way down?
- FF Blvd route would cost a ton if widened. Every individual property would have to be appraised and owners would be paid for their losses.
- Orange route!
- MOTSU Boundary Alternative around 6th and I
- Flooding
- Whichever route is chosen, the greenway should have connections to the town “grid” so as to assure it serves a transportation purpose and not recreation alone.
- Great idea and freq. biker and greenway walkers with family- expanding thru FF would be great to bike with family to ferry and Southport!! Great civic effort!
- Opportunities: Fort Fisher Blvd offers several opportunities:
 - Beach access
 - Existing right of way and lighting
 - Access to Recreational Areas such as KB Pavilion, Blakeslee AF Rec Area, Fort Fisher Rec Area, Aquarium, & Ferry terminal
- Safety first, relaxation second
- Dow Rd has become a highway. Noisy, not relaxing for bike/peds
- Currently used by golf carts and mostly electric bikes/scooters not safe for bikes and kids (orange)
- I think behind Settler is the best option.
- We live on the greenway in CB. Is it THE BEST thing that has happened. We love it. It has doubled our property value. We enjoy seeing to many people enjoying the greenway. Please connect to the CB Greenway. Contact me for real life info about living on the greenway.



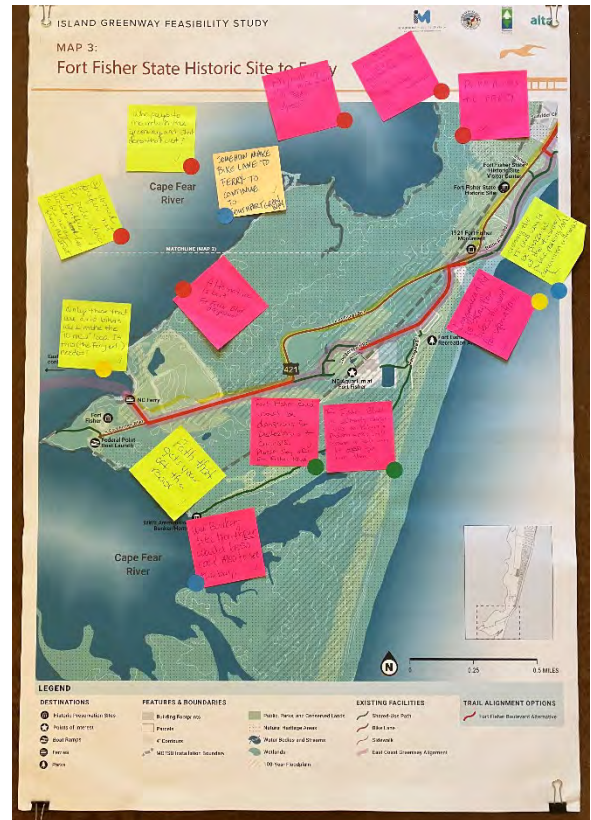
MEMORANDUM



- I am for it but want it to be safe from traffic and lit.
- Putting a fence on MOTSU disrupts the natural flow of the wildlife! Not wanted behind houses for obvious reasons.
- Inhinges on our privacy for houses on Settlers Lane.
- Fire Lane behind Settlers should not be an option
- This is a great idea for residents and creates a buffer between Town and Federal lands. Win/win!
- Owner privacy on Settlers Ln that backs to firelane
- Want to see extension- go off road, get to Fort Fisher
- Road safety for walkers, cyclists and skaters is a concern. This would be great for so many reasons. This is an active community.

MAP 3 – Fort Fisher State Historic Site to Ferry

- Who pays to maintain the greenway and what does that cost?
- Bike/walking access to Ft Fisher and ferry! Aquarium!
- Bike access to ferry is important to me
- Bike access to ferry
- Crossing the FF Blvd would be dangerous at the museum/public parking/and aquarium entrances
- Loggerhead Rd is okay for bikes, no need for separation
- Ft Fisher Blvd is already dangerous to bikers and pedestrians. Let's create a safe way to get down there
- Ft Fisher Blvd would be dangerous for pedestrians and cyclists. Please stay off Ft Fisher Blvd.
- WW Bunker bike trail spur would be so cool. Also to see the bay.
- Path that gets you off the road
- Only those that are avid bikers will make the 10 mile loop. Is this (the Ferry ext) needed?
- I would prefer not to ride where is traffic... would love to be away from the street
- Somehow make bike lane to ferry – to continue to Southport Greenway
- Alternative is best. Ft Fisher Blvd dangerous



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Stakeholder Meeting Minutes



Island Greenway Feasibility, Southern Corridor Meeting

Island Greenway Trail Feasibility Study

Monday, August 28, 2023 11:00-12:00 EST

Attendees:

Allen Oliver (Mayor Pro-Tem)

Hap Fatzinger (NC Aquarium at Fort Fisher)

Andrew Meeker (ECG)

Jim Steele (Fort Fisher Historic Site)

Jeff Owen (NC Parks)

Hart Evans (NCDOT)

Kim Williams (Alta)

Elizabeth Burke (Alta)

Meeting Minutes

- General Opportunities and Constraints
 - Refer to previous meeting notes with Jason Reyes of Alta for Great Trail State Plan Implementation.
 - Notes about local species and maritime forest next to the recreation area and existing trails. There are alligators and snakes on property, and mosquitos. (Jeff Owen)
 - The Aquarium would like to see increased bike access and is fine with travel through our site, although the gates close from 5pm-8am which will restrict access to pathway through the gate. (Hap Fatzinger)
 - There is the potential to re-route part of the trail to go around the gate, although parking in the State Park might be affected.
 - Another way into the State Park could be at the edge of the historic site and crossing US-421.
 - Aquarium gate may not impact the feasibility study.
 - Getting by the state park parking lot and into the aquarium's existing trail would probably be the best option as a sidepath down US-421.
 - The roadway gets filled up with illegal car parking down Loggerhead Road. The current alignment shown as a red line goes through this area.
 - The trail would need to be separated from roadway so that people aren't blocked by parked cars.
 - US-421 is supposed to be a DOT maintained road, but the existing facility is not very good and needs maintenance.
 - Because of the road conditions we wouldn't want to use the existing four-foot bike lane.
 - There is the possibility to extend the existing bike path along right hand side of the road going south.
 - There is less illegal parking than on Loggerhead Road, although there is a large drainage ditch on that side as well.



- The existing four-foot bike lane on Loggerhead Road is narrow and not really used because of sand and other maintenance issues.
- Would a curb along bike path help the facility to manage parking?
 - o Left hand side has parallel parked cars but has gotten wetter, but a curb could help mitigate the flooding.
 - o There are parking signs along the right-hand side going south, but people parallel park along the other side.
 - o Sea level rise has increased wetness along the left side of the road.
- US-421 is historically a dangerous roadway.
 - o There are sharp turns and fast traffic racing toward the ferry.
- The speed limit was 55 mph but has since turned to 45 mph.
- Sometimes the entire road gets under water.
 - o Lunar tides reach the road.
 - o A possible solution could be ditches on both sides of the road for drainage.
- Where do jurisdictions meet?
 - o The project site is on State land with different jurisdictions.
 - o Jurisdictions easily work together, so there are no expected constraints while collaborating.
 - o State Park area starts south of the rock wall near historic site and ends at the aquarium gate.
 - There is some overlap of aquarium property.
 - o Includes Basin Trail.
- Further south is Federal property and the ferry.
- The trail along the rocks is State Historic Site jurisdiction, ending where the rocks end and the sand gets soft (cars often get stuck here.)
 - o There might be potential to tie into a future trail depending on width, although there are concerns, like the difficulty of crossing from one side of US-421 to the other and picking up at the historic site.
 - o Coordination with Army Corps of Engineers will be needed to expand the trail along the wall for bike/pedestrian access.
 - 100ft within the wall centerline is Army Corps jurisdiction.
 - Requirements had to be met for past work on the existing trail.
 - o Widening the pathway and connection is possible, but it's unclear how it would connect to Loggerhead Road.
 - o Losing dedicated parking spaces will lead people to parking anywhere and everywhere, as there are currently parking issues from Battle Acre Road all the way south.
 - o Potential to keep people from parking on the facility, although there is a lot of visitor traffic.
- Parking in the area has gotten very busy in recent years.
 - State statute prevents charging for parking in the area.
 - Many use these parking areas to go to the beach.
- Is there any potential for new trailheads?
 - There is no parking near the ferry, only at the boat ramp in the south end.
 - o Spots get filled and visitors end up parking on the roadside.
 - Ferry traffic can get backed up to the curve of US-421 waiting to get on.



- The trail could give people an opportunity to walk or bike to the beach.
 - There is potential to park at Kure Beach or Carolina Beach and travel to zbeach.
 - Visitors could use proposed trails and make a day of visiting State area rather than driving.
- There is strong opposition to adding more parking anywhere in the area.
 - This is the only free beach parking in the county, leading to lots of visitors.
 - A parking deck has been proposed in the past, although increased capacity would just increase the number of users.
 - The aquarium is looking to adjust existing parking instead of adding parking with the expansion of their facilities.
 - Historic site visitation has risen, but no additional parking will be added with the expansion of the visitor center.
 - Emergency vehicle access is a problem.
- Public Meeting
 - We will have a simplified map showing alignment options.
 - We will show the red line alignment to public.
 - The feedback received may be mostly in town area, not in the south section.
 - Improvements are needed along aquarium trails.
 - They only have a bike path that goes around the parking lot.
 - Width doesn't meet requirements for ECG.
 - It is within a maritime forest causing issues with roots, etc. growing through the pavement.
 - The trail slows people down, it is great for families, it gives a change from being out in the road.
 - One section contains a bridge and a dock overlooking the pond and alligators.
 - Improvements need to be made to the decking.
- We are possibly talking to MOTSU during the fieldwork visit.
 - A lot of property in the south is leased from MOTSU.
 - Every 5 years the lease is renewed for 300+ acres.
 - MOTSU is not currently pushing to fence in areas.
- Aquarium accreditation requires barriers around the facility to secure the site.
 - The pond/marsh is considered impenetrable, but there is a fence along another pond near the aquarium and around a lot of the perimeter.
 - There are alligators in both ponds, in ditches along road, and in the parking lot sometimes.
 - Could a path circumvent the fencing or is it too wet?
 - A path could be routed around the current bike path, but it can't connect to the existing path because that has access to the parking lot.
- Anything west of the buffer zone line will have to involve MOTSU.

Note: The following page is a markup of stakeholder comments of the southern corridor during the meeting.



ISLAND GREENWAY SOUTHERN CORRIDOR

NCDOT TRAIL
FEASIBILITY STUDY

alta

Trail Alignment Options

Fort Fisher Blvd
Alternative

Existing Facilities

Shared Use Path
Bike Lane
Sidewalk
East Coast Greenway
Alignment

Points of Interest

Boat Ramp
Ferry
Park
Historic Preservation
Sites
Natural Heritage Area
MOTSU Installation
Boundary

100-Year Floodplain

Water Bodies
Wetlands
4' Contours
Stream
Parcels
Kure Beach City Limit



Island Greenway Feasibility Study

Wilmington Metropolitan Planning Organization Meeting

September 7th, 2023

-
- Kim Williams, Elizabeth Burke, Erika Herbel, Alta
 - Abby Lorenzo, MPO
 - Vanessa, MPO
 - Hart, NCDOT
 - Allen Oliver, Town of Kure Beach

What's being prioritized?

- STIP (Statewide Transportation Improvement Plan) Prioritization
 - no major projects
 - Submittal for replacement of Snows Cut Bridge to island
 - Submittal for on site pedestrian improvements for Ferry Terminal to connect to future greenway
 - Community wants bike ped connectivity from Southport to Pleasure Island
 - Sidewalk connecting future trail on 421 sidepath to ferry terminal
 - Submittal ferry project for additional ramp system
 - Delivery in current STIP is 3rd vessel
 - Additional service to increase use of ferry
 - Peak summer, have to wait 2-3 ferries to use it
- Sept 15 close of call for project for annual direct allocation of funds
 - Kure Beach K Ave ped improvements has money
- Updates to MTP
 - Currently in public engagement
 - Project list can compete for state funds
 - Including bike ped
 - WMPO will sit with Kure Beach to find priorities
- Other transportation projects in Kure?
 - Intersection K Ave
 - 7 midblock crossings from bike ped plan
 - More demand from the public for next round
 - Slowing traffic, improving safety
 - Map sent from Adrienne for top 7
 - Target is installation May 1 (3)
 - More study needed outside Town Hall (4)
 - Greenway and crosswalk improvements
 - Connectivity to community center and hotel with federal grant
 - ADA issues and maybe another crossing on 3rd Ave
 - N Ave sidewalk section to beach access- 2040 WMPO plan
 - Boardwalk issues along Atlantic Ave
- Dow Rd
 - Need to understand ROW and ownership/easement
 - MOTSU will likely have issue



- Issues during bike ped plan
 - Fences required
- No crossing from MOTSU
 - Maybe no Ocean or Alabama to Down Rd
- Dow Rd and greenway plan show greenway on Dow Rd
- Blast zone restrictions are becoming more stringent
- Commander makes a difference on options, some more interested in community development
 - Changes every 2 years
 - Working with MOTSU planner will be helpful
 - Back and forth planner before showing an alignment
- Land Use plans shows interest in accommodating needs
- Other Kure facilities on MOTSU property
 - Sewage lagoon, water tower, maintenance building
- Fencing will be tied to every lease agreement
- What can we do to make Settlers happy?
- MOTSU
 - Any benefit from having an easement and trail
 - Clearing/maintenance help?
 - Helping with fire control?
 - Stormwater pipe being added on firebreak
- Environmental analysis won't be extremely accurate without MOTSU data
 - Long eared bat, tri colored bat, endangered woodpecker
- Disallow lighting on MOTSU
 - Lighting may be a detriment to certain species and may not be allowed.
- Important that every comment from public is typed and shared with public
 - Key themes, etc
 - Scan sign in sheets
 - Important to hear tax payers and users

Island Greenway Feasibility Study Meeting with NCDOT Division 3

Wednesday, October 18th, 2024 from 3-4 PM
[Virtual Meeting Via Microsoft Teams](#)

AGENDA

Project overview: The trail Feasibility Study is looking at providing a paved multiuse path/trail from Fort Fisher Ferry Terminal north to Alabama Ave in Kure Beach, which will connect to the Island Greenway in Carolina Beach. The attached map shows the alternatives we are studying and what we are trying to connect to. The feasibility study will determine the preferred alternative based on costs, public input, environmental constraints, user safety, and anything else that comes up from coordination with MOTSU, NCDOT, and other local stakeholders.

10 minutes / **Overview of the Project and Where We are in the Scope of the Project**

50 minutes / **Trail Alternatives of the Corridor**

Note we will be asking thoughts on different scenarios shown on this map that are NCDOT State maintained roads. We would want to know your thoughts on opportunities, constraints, any future projects or plans in the area, and overall if you feel like certain options will or won't work.

Multiuse Path Alternatives Options Being Considered on State Maintained Roads:

Dow Road (*likely non-viable option per MOTSU military, but still worth getting local division input*), proposed side path along east side of the road.

- Does DOT own Dow Road or does DOT have a permanent easement with MOTSU?
- What are the ROW widths along this corridor?
- Do you see any issues with a side path on the east side of Dow Road from DOT's perspective?

Fort Fisher Boulevard, potential facility types based on where you are, Alta will discuss options.

- Do you have any thoughts about readapting the roadway and loosing parking to accommodate any kind of facility, especially as you travel from K Avenue to E Avenue?
- Do you have any thoughts about a side path being incorporated within the road ROW, especially from E Avenue south to Fort Fisher State Historic Park? Is there ROW that can be utilized?



- Do you have any thoughts about a side path along Fort Fisher Park from near the State Aquarium to the Fort Fisher Ferry?
- Can you share what the ROW widths are along Fort Fisher? Does it vary, seems to based on the parcel data.

Loggerhead Road, potential side path facility

- Do you have any thoughts about a sidepath on Loggerhead Road as it serves as the main point of access to the North Carolina Aquarium?
- Is there ROW here? Who owns it?

Preference on Options

- Of the options shown, do you have any strong opinions that certain options should not be considered a preferred option?

Island Greenway to Fort Fisher Feasibility Study Context Map

PREPARED FOR THE NCDOT-IMD
FEASIBILITY STUDY GRANT
PROGRAM

Proposed corridor: 4.8 miles

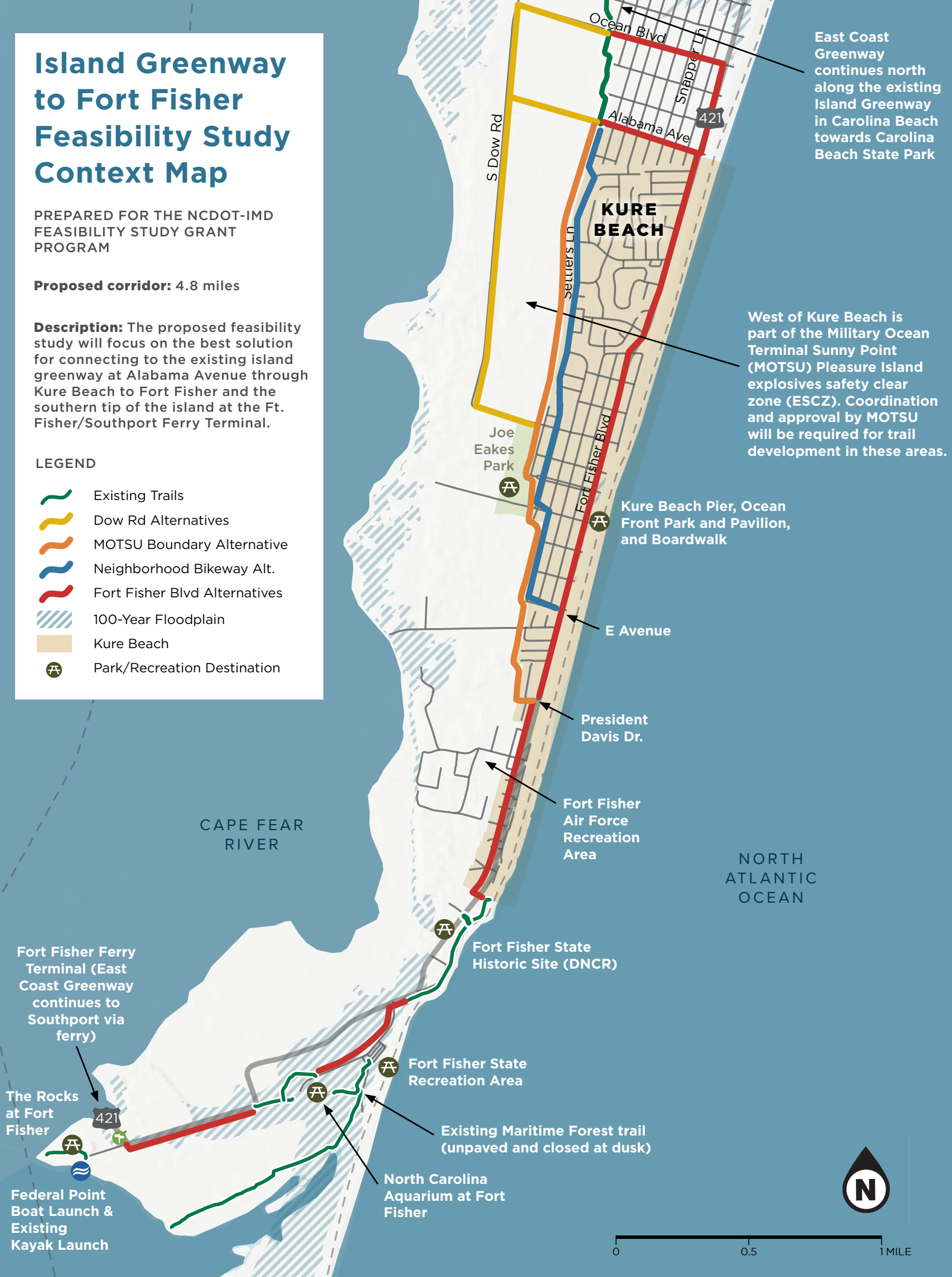
Description: The proposed feasibility study will focus on the best solution for connecting to the existing island greenway at Alabama Avenue through Kure Beach to Fort Fisher and the southern tip of the island at the Ft. Fisher/Southport Ferry Terminal.

LEGEND

- Existing Trails
- Dow Rd Alternatives
- MOTSU Boundary Alternative
- Neighborhood Bikeway Alt.
- Fort Fisher Blvd Alternatives
- 100-Year Floodplain
- Kure Beach
- Park/Recreation Destination

East Coast Greenway continues north along the existing Island Greenway in Carolina Beach towards Carolina Beach State Park

West of Kure Beach is part of the Military Ocean Terminal Sunny Point (MOTSU) Pleasure Island explosives safety clear zone (ESCZ). Coordination and approval by MOTSU will be required for trail development in these areas.



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Steering Committee Meeting Minutes





Meeting Minutes

Island Greenway Trail Feasibility Study Kick-off

Tuesday, July 18, 2023 1:00-2:30 ET

Steering Committee Kick-off

Attendees/Project Management Team:

- Kim Williams (Alta)
- Erika Herbel (Alta)
- Adrienne Harrington (SmartMoves Consulting)
- Allen Oliver (Town of Kure Beach Mayor Pro-Tem)
- Sean Geer (Town of Kure Beach Parks and Recreation)
- Hart Evans (NCDOT)
- Edward Wilkinson (Resident)
- Yvonne Bailey (Carolina Beach Bike/Ped Committee)
- Mike Smith (Kure Beach Village HOA)
- Kat Deutsch (NC State Parks)
- Andrew Meeker (East Coast Greenway)
- Hap Fatzinger (NC Aquarium at Fort Fisher)
- Mo Linqvist (Bike/Ped Committee)
- Ed Strauss (Beachwalk HOA)
- Emma Stogner (WMPO)
- Vanessa Lacer (WMPO)
- Meghan Finnigan (MOTSU)

Develop Vision and Goals, and Identify Critical Issues

Vision

What should be the impact, scope, and big inspirational idea of this project?

Major themes:

- A safe walkable and bikeable corridor that is accessible to all ages and abilities.
- Connection to various state and local resources such as recreation areas which will serve as a destination for not only community members, but also for visitors.
- Connecting residences to recreation and other destinations.
- Create a linear park that provides a beautiful and enjoyable experience for recreation, gathering, exercise, and improving mental health.
- A transformative community amenity that will be used and cherished by both locals and visitors.
- Connecting the island to the greater trail system of the East Coast Greenway.



Goals

What are some goals for the project? What does it need to achieve when finished?

Major themes:

- Maximize use of NCDOT rights-of-way or public easements.
- Identify stakeholders.
- Identify cost.
- Gather diverse input, but especially year-round residents.
- Sustainable trail design.
- Ensure that environmental impact is minimal.
- Connect to destinations across the island.
- Allow for multimodal forms of transportation.
- Coordinate effectively with state and federal partners.
- Create comfortable and immediate access.

Critical Issues

What are some critical issues associated with creating a paved trail in the study area of interest and ways we want to address those issues in the planning process?

- One alignment is within the MOTSU Boundary, so would need coordination and approval from them.
- Maintenance costs ex. trash pickup and policing.
- Need to consider environmental impacts and permitting.
- Stormwater management.
- Dow Road is very busy and uncovered, and out of the way from destinations as well as residential areas.
- There is higher traffic near the beach especially during tourist season.



Meeting Minutes

Island Greenway Trail Steering Committee Meeting #2

Thursday, September 7th, 2023

Attendees:

- Kim Williams (Alta)
- Elizabeth Burke (Alta)
- Erika Herbel (Alta),
- Craig Wyzinski (Mayor)
- Abby Lorenzo (Wilmington MPO)
- Vanessa Lacer (Wilmington MPO)
- Hart Evans (NCDOT)
- Allen Oliver (Mayor Pro-Tem)
- Adrienne Harrington (Smart Moves Consulting)
- Andrew Meeker (ECG)
- Jim Steele (Fort Fisher Historic Site)
- Mo Linquist (Bike Ped Committee)
- Eileen Clute (Bike Ped Committee)
- Ed Wilkinson (Citizen Rep)
- BJ Tipton (ECG)
- Roy Irwin (Resident)

AGENDA

30 minutes / **Findings from the field visit, review of corridor options, opportunities and constraints mapping** (what are we missing?)

10 minutes / **Findings from public feedback**

20 minutes / **Decision matrix** (what factors will help us choose the preferred alignment), exercise to **prioritize criteria**.

15 minutes / **Discussion on preferred alignments** (pros and cons of each)

15 minutes / **Next steps**

- **Meet with MPO and NCDOT Division 3**, discuss options within NCDOT ROW
- **Meet with MOTSU** for feedback on trail alignment options



Findings from the field visit, review of the corridor options, opportunities, and constraints mapping?

- Overview

- Focus on starting at Alabama Ave
- Dow Road: MOTSU dependent
- Settlers Lane: Consider an on-road greenway route on Settlers Lane, but that could not be qualified as an official ECG route because it would have to be separated/protected
- Definition of the path for ECG designation:
 - Protected route
 - Separated bike lanes buffered and sidewalk, SUP with 5 ft buffer, off road greenway
 - There must be separation between road and the trail (5 ft minimum or vertical separation/curb)
- Fort Fisher Blvd
 - South of K Avenue is more open and feasible
- There are two routes within MOTSU boundaries and would both require approval
- Don't want to start adding more routes, so alternative would be needed now if MOTSU may be an issue
- The exact alignments have not been flushed out, the lines on the maps are generalized locations
 - The most important step for the northern section is talking to MOTSU
 - Environmental data will be needed, National Wetlands Inventory data is not always accurate, this might be procured in the next phase
 - Issues with Settlers Ln- moving alignment further into the MOTSU tree line 30-40 yards would be preferred
 - Carolina Beach worked with MOTSU to go around stormwater ponds and neighborhoods, because of this MOTSU may be willing to discuss doing something similar to avoid environmentally sensitive areas
 - Could follow the Carolina Beach precedent
- Multi-step process
 - There may be revisions based on feedback from stakeholders: Especially MOTSU
 - Need to narrow down the options based on restrictions
- Feasibility study is not scoped to do a full environmental study
 - Design phase will have full environmental analysis and the route will look slightly different based on that. The Army Corp of Engineers isn't typically consulted until the next phases of more detailed design
- Fort Fisher Blvd from Alabama Ave to K Avenue is being kept on the table for now because of MOTSU constraints and the potential that they will not approve the use of their land for the other alignment options
 - Parking, driveways, and curb cuts make a path difficult
 - 50ft frontage for homes
 - On-road neighborhood greenway might be an option if we eliminate parking
 - Need to get ROW width

- There is already a Fort Fisher Blvd intersection project at K Avenue
 - Bring the trail through the intersection, improvements are planned to happen
 - May have big impacts to businesses
 - Looking at ROW for sidewalk through intersection, 10 ft wide separated path would be a challenge
 - Can incorporate it into the design if it is feasible
- Another option: Central medians
 - 6th Ave, H Avenue, E Avenue
 - 6th Ave is narrow in front of six homes, parking could change and be redesigned, the church would be impacted. Could look at a one-way configuration an option
 - In the future, if this is the preferred option, Alta can make an exhibit to see reduction in parking for the potential alignment options
- MOTSU allows use of property up to President Davis Rd, we can go along Fifth Ave or 6th Ave
- Wetlands in Fort Fisher along roadside
 - Federal rules changing, may not be jurisdictional but need to maintain flood control
 - Sidepath along road
 - Cross Fort Fisher Blvd near town limits line
 - Alta engineers will look at prime crossings and design options
 - Crossing may be best at the parking lot near the start of existing path
- There is no current plan for connection from west side of Fort Fisher alignment to the museum, parking planned only
- Opportunities on Dow Rd:
 - Flat, sides are cleared
 - Dow Rd seems like an attractive way to keep it out of Settlers Lane
- Issues with Dow Rd:
 - Adjacent routes along 17, 117, 421 in other jurisdictions
 - Huge sign that says to stay in car on MOTSU property, MOTSU has indicated they may not prefer this option
 - Existing facilities for connections are Ocean Blvd and Alabama Ave
 - Points of interest for connectivity are in town
 - Impacts gross explosive weight calculations area
 - MOTSU has final say
 - Carolina Beach greenway is fenced- anyone walking outside of a vehicle has to be contained- likely the same would apply
 - ROW for sidepath needs to be assessed with MOTSU, further into property is more of an issue
 - Referenced facility on Dow Rd in 2019 MOTSU Land Use Study
 - Environmental impacts and blast zone from them

What did we hear from the public?



- What are the options for ECG typologies?
 - o People anticipated where typologies would be locally
 - o People tend to prefer road separation and separated greenway
- Transparency of process is in question
 - o Some people feel that people here from last night were not from Kure Beach (though sign-in sheet and colored stickers for Kure Beach residents tell us otherwise)
 - o Some are unclear about the process timeline that Alta provided at entryway
 - o Next Steps: Summarize and share feedback
- Route selection criteria:
 - o Connectivity- getting to destinations
 - o Traffic safety- least amount of crossings
 - o Cost is an important aspect to compare
 - o Property acquisitions- not much acquisition is required for any route
 - o User experience- beautiful, how it feels
 - o Other Factors:
 - Environmental
 - Wildlife/ecological (natural heritage zone)
 - Stormwater
 - Include effect to residents?
 - Used in Carolina Beach routing
- There isn't resistance to the trail, but resistance to current options based on the environment, proximity, and cost
- Issue with wetlands; we need to account for wetlands, wildlife species, etc
- Potential to get state representatives involved to convince MOTSU to approve use of their property
 - o Not a typical path, requires fencing, explosive zone issues
 - o State trails coordinator involved, three state agencies, MOTSU
 - o ECG has prioritized funding from state

Decision matrix (what factors will help us choose the preferred alignment)

- Measure property impacts and privacy
- Address homeowner experience, community experience, and tradeoffs
- Measure economic development and tourism
 - o 1.8 million visitors currently
- Evaluate "Community togetherness"
 - o Bring community together rather than being divisive
 - o Building community consensus
- Calculate traffic reduction
- Break alignments into southern and northern corridor alignments
- Anticipate user experience
 - o Park experience versus transportation route

MEMORANDUM



- Include public input criteria
- Include resident benefit criteria
 - o Privacy and parking impacts
- Include stakeholder input criteria
 - o MOTSU

Discussion on the preferred alignment

- Settlers Ln On-Street Route
 - o Neighborhood greenway on low traffic street, would need signage, traffic calming as last alternative if MOTSU backs out
 - o Residents don't want it on that street, though they may prefer it over fire break option
 - o Work trucks blocking the street, etc make it difficult
 - o Council wanted Settlers Ln as through-route
 - o Would be a Spot Ln connector to Joe Eakes Park
 - o Access for residents on Settlers Ln to Firebreak route a concern, if a greenway was there how would they get access?
- Neighborhood Greenway on Settlers Ln (or protected cycle track on Fort Fisher Blvd)
- Fort Fisher Blvd
 - o May not be feasible or desirable on Fort Fisher Blvd, for the northern section, Alta engineers will look at the possibilities
- Dow Rd
 - o Lower in connectivity
 - o Farther away from destinations
 - o Settlers Lane residents are in support of it
- Firebreak
 - o More environmental concerns, wetlands
 - o Not as many entry points
 - o More convenient for residents, closer to destinations
 - o More streamlines and direct connection to Carolina Beach Greenway which would provide a shorter connection and less path length

Next Steps

- Meet with MPO and NCDOT Division 3
 - o ROW limits, data
- Meet with MOTSU
 - o Alignment impacts
- Create online file upload for sharing public feedback letters
- Gather more feedback before decisions are made
 - o Public feedback important for decisions



- Survey- prioritization of routes, amenities, residence info
- Investigate environmental and human impact
 - Summary of key findings
 - Cost comparison
 - Maintenance consideration
- Share summary with the residents, including exact responses



Island Greenway Feasibility Study Steering Committee Meeting #3

Monday, January 29th, 2024 from 1:00-2:30 PM
Virtual Meeting

Attendees:

- Kim Williams (Alta)
- Elizabeth Burke (Alta)
- Jean Crowther (Alta)
- Hart Evans (NCDOT IMD)
- Allen Oliver (Town of Kure Beach)
- Roy Erwin (Kure Beach Citizen)
- Ed Wilkinson (Kure Beach Citizen)
- Eileen Clute (Kure Beach Bike and Pedestrian Committee)
- Andrew Meeker (East Coast Greenway Alliance-ECG)
- Abby Lorenzo (WMPO)
- Jim Steele (Fort Fisher State Historic Site)
- Meg Finnegan (MOTSU)
- Adrienne Harrington (Smart Moves Consulting)
- Jeff Own (Fort Fisher SRA)
- Kat Deutsch (State Trails Planner)
- Mo Linquist (Kure Beach Bike and Pedestrian Committee)

MEETING SUMMARY

20 minutes / **Overview of Plan** (presented by Kim with Alta)

This is a draft plan that will be flushed out with more details and preferred alignment later, which will include design and other details. Today we will get your preferences on the preferred alignments and any questions or comments you have. We ask you to use the chat and raise hand function while others are talking. We plan on getting to the discussion and input on goals for the next facilitated public meeting and the public survey.

Background

This is a collaboration with Kure Beach, NCDOT, and the East Coast Greenway Alliance. It is also part of a bigger process in the state and other studies that are being done.



Process and Schedule

At this point we are at the third Steering Committee Meeting, and we are looking at the next public meeting in March. The draft study will be developed in late Spring and we are looking at no later than June or July to have a completed study.

Project Vision and Project Goals

The project goals were informed by the Steering Committee. We measured each alignment based on how it was performing in each of these goals.

Key Findings to Date

Community Open House #1

The community input was helpful. We heard concern related to Settlers Ln, but also support for separated facilities that provide safety away from the road. Common topics we heard were safety and preservation of natural areas. Stakeholder engagement was important because stakeholders in some situations own a lot of the land in question. NCDOT supports use of their right-of-way, but they did give certain areas a lack of support, such as Dow Rd. They cited concerns of high speeds and utility conflicts. MOTSU also cited a lack of support on Dow Rd for reasons such as being within the Blast Zone and potential impacts natural resources. There does seem to be enough right-of-way on Settlers Lane and further south. MOTSU gave us their preferred alignment and told us some alignments that do not work. As far as showing some of the details for design, we are asked not to get too into detail yet before MOTSU can review an environmental study and more detailed design. WMPO and NCDOT Division 3 shared that they also had concerns for Dow Rd. There is a lack of support for the previous Dow Rd Plan that was done. Alta and the Leadership team also met with the state agency representatives in the Southern part of the corridor and got detailed feedback from them.

Trail Alternatives and Typologies

The majority of segments are the shared use path typology. Some areas could contain wetlands. Specifically, 3-E has more potential for wetlands and the costs will likely be higher here. Segments 1-D and 1-E don't meet ECG trail standards so they wouldn't be preferred.

Key Considerations

There are threatened species along the shorelines and Dow Rd. Those will be accounted for in the next phase of the design. Wetlands will also be considered through wetlands delineations. The human environment data, such as ROW and speeds, also helped determine preferred alignments. The phasing plan allows for further studies on certain segments.



10 minutes / **Leadership Team Recommendations**

- Preferred alignment

Kim: The highest performing and most feasible alternatives are highlighted. This is not a final decision. These scored high in the decision criteria. There are routes 1-C and 2-C in the northern section that meet up to 2-E where the right-of-way gets wider. The route continues to 3-E. 1-A and 1-B at this point are considered not feasible options because MOTSU is not able to grant right of way.

- Phasing

Kim: The phasing plan allows for Phase 1 in the southern portion of the study area to start implementation. The Phase 1 Interim measure can provide a temporary facility while the 1-C route is studied further and implemented later in a second phase.

45 minutes / **Group Discussion on Recommendations**

Consensus on preferred alignments*

*With caveat that final concurrence will happen based on public input

What are your thoughts about the highest performing routes?

Ed Wilkinson: In terms of the cost of the item in consideration, the calculation at the end of the report for 1-C you did not indicate any conflicts with utilities. From Ave K up to Kure Village Way on Avenue C there is buried sewer and water pipes. The cost should take this into account. Take a look at the Kure Beach listing of utilities to identify this in the table and cost. The 1-C alignment has wetlands compensation driven by federal and state law. The current rate is \$528,000 per acre. That cost is going to have to be paid, so the wetlands mitigation cost should be added in some areas as inhibitors. Who is going to pay for the environmental study? There is a heavy federal influence on environmental studies. The feasibility team needs to come up with a definitive answer on who will be paying for this. I'm sure NCDOT has contractors that can do this study, but unless they are on a small business list, we will find this tied up in court. MOTSU suggested it will be 12 months or more, but there is an Assistant Secretary of Defense that will eventually have to deal with whatever approvals will come out of there and will have to have a step-by-step approval. The narrative is detailed about what MOTSU requires, but there needs to be a handle on costs because that will make or break this. In regard to 1-D, the ECG already has a road that is used to endorse connection to the state park on Avenue E.. There are some topographical corrections that need to be made and a cost for identified restraints and advantages. This could be two years or more to get a report for MOTSU to consider.

Jean: Those will be important issues to consider in the next phase after this draft.



Allen: A point of clarification on something that Ed brought up. We do have a forced main sewer that runs through an easement on a private property behind houses. The trail will not have any impact on the utilities. We don't have any utilities on MOTSU property.

Andrew: A general response for the highest performing route, I think this would be a fantastic facility. Ed brought up the ECG route, that is the East Coast Greenway interim routing which is considered temporary until we can create an official route. 1-D and 1-E options would not qualify for this. Could wetland offsets be avoided if there was a boardwalk facility to reduce impacts? In terms of the phasing, it makes sense. There's part of me that wonders if there is a benefit to moving forward on the northern phase while the conversation is going on.

Kim: As far as wetland mitigation impacts, we can't come up with a cost before wetlands are delineated. We can put a caveat in the report, but that cost information would rely on the next phase. As far as boardwalks go, the footer is considered the impact rather than the boardwalk area. There are also on-site offsets you can do for wetlands, so you can preserve wetlands or restore wetlands. In regard to the stormwater facilities mentioned along 1-C, the utilities data was provided to us and will be taken more into account on the next phase of the design and cost.

Kat: The two sidepath options are shown with 5 ft and 9 ft grass buffers. Designated state trails have to be physically separated from traffic. I'm not sure that 5 ft would count and 9 ft would depend on the speeds.

Kim: Could we get clarification on that? We would go by Federal AASHTO standards and would like to know what the State Trail requirements are.

Kat: Grass buffer is a grey area for us. It depends on the speeds. If you can get speed limits information to me, I can double check that.

Allen: Town Council has made a decision to hold off on the storm water process that runs along the MOTSU property. Because of the homeowners and HOA, we put that project on the back burner and don't have plans to bring it up. It is no longer an issue.

Roy: I wrote comments on the draft. One item that was discussed before for 1-C is a vegetation that would be planted between the firebreak and the properties. Is that planning included as part of the cost estimate?

Kim: It's not currently, but if it is chosen as the preferred alignment it can be included.

Roy: Who would pay for that? The town?

Kim: I think that gets figured out in the next phase. It can sometimes be covered in a grant. We talked with MOTSU about buffers along their property line, and we decided that could be understood better in the next phase of the design. We can include cost for it in the next phase for future need in any grants.



Megan (chat): That's right Kimberly, no specific comments from MOTSU on buffer/off-set distances

Roy: Hopefully the utility plan has not been abandoned. The forest main along the break, I don't know if you can get access to the properties.

Allen: The forced main issue, we are going to look at other areas to pull the water away from the homes. We do need to look at something but right now it won't be on the MOTSU properties. Right now, we would have to bring small equipment through the property owners land, which will be on a case-by-case basis.

Ed: On the description of the advantages of each of the routes, connectivity was a key element of the assessment. From Spot Ln down Avenue K, it was identified that that route has a lot of connectivity, but that backs up to private property. One of the other issues that would have to be evaluated is easements from property owners along that route. You will have to negotiate right-of-way issues with private property owners. With the MOTSU reclamation plan there is a mitigation sequence to deal with the reclamation of wetlands plans. Avoid, minimize, and compensate. I would like to know from MOTSU, are they going to have to approve each step of that beforehand. That is important for cost and time tracking.

Mo: When we did our Comprehensive Bike and Pedestrian Plan, the plan showed a line going behind Settlers Ln. It was my understanding that it was not the exact space. It was more of an idea of where that would be. As far as MOTSU goes, if they have not approved Dow Rd, is there a space allowed between the back of Settlers property? How far west have they approved?

Meg: At the moment, nothing from MOTSU has been approved. We were asked to provide comments on this draft. It is leadership's position that 1-A and 1-B will not be approved if the Town was to request it. There are no setback, buffers, or specific distances that have been approved for 1-C yet. There will need to be a design for MOTSU to review in order to provide a distance west. If the town finishes the plan, the town can request site approval from MOTSU so they can go in and study the area for design. Every level of command would have to approve site approval and a design plan. It is very lengthy and time consuming. At the moment, MOTSU has various safety review boards that a greenway would have to go through. It isn't something that MOTSU would just sign off on, but there would be an approval process.

Eileen: Thank you for that explanation. Is it fair to say that we can go through the entire process and have an approved plan that is contingent on an environmental study? With 1-C, one of the contingencies is that there is an environmental process required by MOTSU. If that was selected hypothetically, it could go through the whole process before getting an approval by MOTSU?

Meg: My recommendation would be to do the phasing, so that the site study can happen and the southern portion of the trail can move forward.



Kim: A 10% design schematic is typically something that I would assume MOTSU can respond to?

Meg: Yes.

Ed: Would the Assistant Defense Secretary for Energy, Installations and Environment have to be involved in this.?

Meg: Once it gets to headquarters, any one they would like to approve it has the right to.

Ed: Is there a normal review process?

Meg: MOTSU is currently going through a leadership change. We currently answer to three different headquarters. The processes depend on what exactly we are doing. There is a process for design, environmental review, and property.

Ed: So you could be retired before this gets approved?

Meg: I can't say for certain how long this would take. The first step would be environmental review.

Consensus on phasing*

*With caveat that final concurrence will happen based on public input

What are your thoughts on the phasing proposed?

Andrew: To clarify, would any of the Phase 1 sections around 2-C fall under MOTSU property? Would those require site approval and environmental review?

Kim: In environmental screening and talking to MOTSU, there seem to be less significant impacts. It would fall under the same process but will likely cause less concern.

Meg: If it is on MOTSU property it will follow the same processes.

Andrew: So that will create a different process for the Phase 1 segments?

Meg: Yes, but the southern area is currently leased to the state, so that would add another layer to the mix.

Hart: I wanted to thank everyone and let everyone know, most of these projects we work on are phased. We wish we had the money to build everything at one, but the phasing process is very typical.



Kim: In terms of the Phase 1 interim measure, what does everyone feel is the perception of the Settlers Ln interim facility?

Mo: I don't think it's a bad idea because it's the goat path that people are currently using. It's also the route on our bike map. There was some resistance from homeowners that didn't want more traffic in front of their homes, but I think they have relaxed from that. Would this be a sharrow painted on the road?

Roy: It doesn't seem to be a problem right now.

Eileen: I wonder if it will be a perception that that is what will be implemented. If it is an interim, that needs to be well communicated. There might be a perception that 1-D was an alternative as well as 1-C. Now we're doing a mix of both of those.

Ed: It has become more acceptable over time. If there is a mark on the road that will help improve safety I will be even more received. Still one of the issues is bike safety and the expectation of being able to cruise through without being aware of other traffic. NC laws require that all road users adhere to traffic laws. The town will have to step up in term so traffic enforcement and management until people can navigate that. I think it can be accepted until studies are finished. The Bike and Pedestrian Committee can communicate the interim nature.

Mo: We're talking about the ECG and the Island Greenway. I think it would be advantageous to have Settlers Ln and crossing K Ave be designated too as part of the Island Greenway. The main goal of the Bike Ped Committee is to get bikers off Fort Fisher Blvd.

Kim: Our next step is to bring this material to the public, so if there are any comments on that. We will send the message to the public that this is not final.

Ed: In terms of the public relations piece, if you had the caveats in the reports, one of the things that the public has constantly criticized is this plan not being complete. Adding caveats that we mentioned will be very useful.

10 minutes / **Group Discussion on What We Take to the Public**

Kim: The next round of public engagement will bring these materials to the public. We will be getting feedback on each of the alignments and a ranking that will be shown in the final study. We can understand the public preferences in the meeting and a public survey. We will need this committee to help distribute the survey.

What else do you think is an important goal for the public meeting?



Ed: If you can give a good estimate in terms of cost. The current costs are loose and need further detail. If you can refine the cost, folks are often very concerned about

things that Kure Beach will pay for and will influence taxes. You can add cost on this list of potential feedback to get from the public.

Kim: We can talk to the leadership team, but the current thought is to save the time needed for that for the next step. The current costs in comparison to each other are fairly accurate.

Allen: Will you plan on doing the same format as the last meeting? We will need to coordinate better because the amount of people last time was overwhelming. We got started before people knew what was going on. The survey is a great idea. We should understand the types of responders and their relation to Kure Beach.

Kim: We can try to think if it is a similar scenario, what is the best way to structure that. We can discuss further with the leadership team. Mo, you mentioned wanting to have a handout. Are there any other concerns?

Eileen: With the kickoff of phase two, if you can do a level set where you landed before having everyone go in it would be helpful to give an overview before providing comments.

Mo: The survey form the Bike Ped Plan was amazing. We had a lot of responses digitally. Is there a way that we can have a Zoom meeting during public input, so people can be in other areas and hear what is being presented and get the accurate information? The biggest problem that we have is misinformation. It would be great to get information straight from you and then give their comments.

Kim: We can think that through and maybe presentation slides before going into the survey.

Mo: Yes, something to give them the correct information.

Allen: We recently completed a new land use plan, and the survey part was the most powerful part. We got 800 participants, showing that a lot of people are involved even if they can't attend the meetings.

5 minutes / **Next steps**

- Coordination with NCDNCR on state managed areas

Kim: Kat, if you think this is a good stage to take to the larger state agency review, should we work on that?



Kat: I am happy to pass that along at this stage.

Kim: If the other state stakeholders have a preference, please let me know.

Jeff (chat): Send it on up.

- Send to NCDOT Division 3
- Public meeting and Survey:
 - Feedback on typologies
 - Rank preferred alignments, per section, leave comments
 - Vote on top segment to be phased in first (we may refine/combine segments)
 - Handout brochure

Kim: We will send out a doodle poll for dates in the early spring. We won't have as many Alta representatives there, so I would like to lean on the Bike Ped Committee to take on tasks with some instruction provided beforehand. We will come back after that and finalize the public engagement. Then we will go into more detailed design.

Ed: When will the plan be done?

Kim: Some time of June or July. There are some approval processes from NCDOT, but that is our goal. Please provide comments on the online draft and we will try to address comments and questions online.

John Ellen: Please add me to the email communications as I am the town council liaison to the bike ped committee.

Kim: Yes, you have been added to the contact list.

To all...If you continue leaving comments or questions in the online document, we will work on addressing each of those.



Island Greenway Feasibility Study Steering Committee Meeting #4

Friday, June 7th from 10:00-10:30 AM
Virtual Meeting

Attendees:

- Kim Williams (Alta)
- Hart Evans (NCDOT IMD Project Manager)
- Allen Oliver & Sean Geer (Town of Kure Beach)
- Roy Erwin (Kure Beach Citizen)
- Liz Johnson (West Side Kure Beach Citizen)
- Eileen Clute (Kure Beach Bike and Pedestrian Committee)
- Andrew Meeker (East Coast Greenway Alliance-ECG)
- Abby Lorenzo (WMPO)
- Jim Steele (Fort Fisher State Historic Site)
- Adrienne Harrington (Smart Moves Consulting)
- Mo Linqvist (Kure Beach Bike and Pedestrian Committee)
- Vanessa Lacer (WMPO)
- Beth King (WMPO)
- Joanna Zazzali (NC Aquarium Fort Fisher)

MEETING SUMMARY

15 minutes / Summary of Public Feedback

- **Kim** – Welcomes everyone, explains the main topic of today's meeting, which is to review public input from the engagement survey, discuss the drafted document "Feedback on Proposed Trail Options" which outlines survey results, and chat about next steps in the planning process. Each attendee has access to this drafted document and can provide detailed feedback after reviewing it, within the month, if desired.
 - Summary of "Feedback on Proposed Trail Options" document
 - Survey respondents include public meeting Open House attendees and online responses, totaling 676 completed surveys. This number represents about 70% of Kure Beach residents.
 - Responses were organized by residents and non-residents, where they identified 70% of the survey respondents as residents.
 - Survey goal was to discern public preference for path locations and project phase implementations.
 - Highest Supported Public Preferences: Section 1C, Section 2C, and Section 3E. These preferences generally reflect the options



previously identified by the leadership team and Steering Committee.

- Discussed suggestion phasing options based on the survey. Phase One provides temporary greenway connections (see yellow line in Draft) located on-street, and ideally with traffic calming / safety measures, until part two can begin. Phase One and Two require collaboration with MOTSU since a lot of MOTSU-owned land is involved. An environmental review is required to progress the project, prior to any further action. In addition to this, an early 10% design is required. MOTSU is very clear that they aren't supporting anything specifically until this review and design is completed and approved accordingly. As such, Kim emphasizes the large amount of time and uncertainty that is inevitable during this phase.
 - Please reference the draft for further details.
- **Allen** – Been trying since April to reach out to MOTSU and find what's exactly required for the environmental review, and no one's responded with substance. Doesn't have a clear picture of what the env review is or what they're looking for. Also, communication with MOTSU is limited as Megan, a representative from MOTSU, is on maternity leave.
- **Roy** - To Allen, you can search "Army Regulation 200" and understand what MOTSU requires for an environmental study
- **Allen** – Understands and is aware of that, but wants direct confirmation from MOTSU about their expectations and required processes. Especially regarding path logistics like width and location. Allen expressed his desire for clarity from MOTSU
- **Liz Johnson** – requests more explanation about what they're talking about (what MOTSU wants, why it's important, etc.) since she joined the committee late.
- **Allen** = recaps that MOTSU currently hasn't told anyone details about the required environmental review. Since April, he's been asking MOTSU for more details and can't get an answer. No one from MOTSU has returned his phone calls.
- **Liz** – Shares thanks to Allen for clarifying things.
- **Kim** – emphasizes that this process will take a while.. Phase 1 and 2 will most likely take a while, and the Environmental Review is the first step before proceeding further with implementation.
 - Back to the survey results – she lists the most desired amenities along the New Trail, with Areas to Rest being the most frequently mentioned amenity. Mentions themes of public comments on amenities
 - Displays the Phasing Diagram.
 - Explains map with the various phases visually represented/ described.
 - Emphasizes in Phase 1, with a bike boulevard, signage is important to link the two paths clearly
- **Andrew Meeker** – question about Phase 1, since the distance covers 3 miles, would it be done in one complete project? Or does it make more sense to split it up?



- **Kim** – To Andrew, from previous engagement, people want to see it done as one Phase. Mentions a unique aspect of this phase, which is the town limits and who will claim responsibility for managing this portion of the path. This poses a significant challenge for the future.
- **Andrew** – Shares thanks to Kim for answering his question.
- **Kim** – Wraps up this conversation about public survey results. Since the engagement process is wrapping up, she wants to transition to the implementation process.

10 minutes / **Next Steps and Final Schedule for The Study**

- **Kim** – Explains how the implementation phase follows the engagement and proposed phasing process. The implementation chapter includes more design details --- such as where trailheads would be located, more detailed cost estimates, and more discussions about desired designs. Regarding scheduling, the rest of June is dedicated to implementation planning, then a round of revisions will occur, and hopefully wrap up the project at the end of July.
- **Liz** – To Kim, is confused about the term “implementation”.
- **Kim** – To Liz, implementation is a design chapter; it’s talking about the physical and nonphysical infrastructure needed to make this project come to life. The implementation chapter discusses the recommended steps to complete each phase of the project, and it advises how each partner can collaborate. It explains the “nonphysical” planning processes, which are the partnership and organizational structure needed to successfully complete a large greenway trail. Funding advisements and a resource library will be in the appendix, too.
- **Allen** – To Liz, can find old emails to get Liz up to speed about the project since she’s late joining the committee late.
- **Kim** – To Liz, can send you scope of work, too, and provide time for you to look over details during the review process. Also, feel free to individually chat to recap things personally.
- **Liz** – appreciates this and emphasizes that the terminology is confusing for the public.
- **Kim** – gives clarity to the role of this project. The project implementation isn’t guaranteed. Rather, this project provides a feasibility assessment of the option for Kure Beach to implement a greenway. The actual implementation of such a project depends on the city.
- **Roy** – Brings up concern about how no one’s walked the path near the fire lane since it’s been mowed. This has been mentioned multiple times in local meetings.
 - Thinks that people want a beautiful greenway with minimal view of houses, and he’s requested a meeting with MOTSU to discuss these preferences but no response, like Allen’s communication struggles with MOTSU.
 - Roy thinks a lot of people who filled out these questionnaires are expecting a greenway like Carolina Beach Greenway, but it visually won’t all look like that. This communication and expectation deficit concerns him.



- **Kim** – Shares that, ultimately, the specific location of Phase One of the greenway is up to MOTSU. It'll most likely be a balancing act with MOTSU, identifying the best location for the path. She emphasizes the shared goal of placing as much distance between the greenway and private homes as possible. Opens up comments from anyone else who has been involved in these conversations.
- **Allen** – Agrees with Kim's comments; their whole goal throughout this planning process is to locate the path far from houses as logistically possible. This depends on MOTSU's environmental review, though. Once MOTSU is back to the table and responding about. He reiterates that he wants to listen to the concerns of people and is framing his discussion with MOTSU with the public opinion in mind.
- **Roy** – Expresses skepticism about how this plan was initially described to the public, regarding the initial location down the fire lane compared to recent discussions.
- **Mo** – Explains how we don't really have the decision of where it's going to be. Mo reminds Roy of the initial Bike Ped plan, and their goals of connectivity. Especially in connecting the island greenway to the ferry. And how the location of the path wasn't ever discerned / distinguished explicitly. Rather, a lot depends on MOTSU's decisions.
- **Roy** – To Mo, no comment.
- **John Evans** – from NCDOT point, they're currently working on 25 feasibility studies throughout the state. In terms of actually walking the corridor, we did a site review and explained there's no need to walk the complete path until after the environmental review and professionals evaluate things. He explains, also, that there's a real potential for the town to do the 10% design, and MOTSU not approve it. He urges people to be prepared for various circumstances.
- **Roy** – To John, wants clarification for the right of way on Dow Rd. He explains how he's heard conflicting reports saying that NCDOT had no restrictions on it, but now there's talk from MOTSU that there are restrictions.
- **John** – Explains there has been some discrepancies on who owns the right of way. Clarifies that MOTSU does hold the right of way, and NCDOT currently holds a small sliver of right of way. Not much activity is authorized on such a small parcel.
- **Kim** – References a Draft which is posted on the town's website about this matter. States that both the local NCDOT Division and MOTSU didn't support the Dow Rd alignment.
- **Liz** – Asks a question about the environmental review process. Where does the funding come from? Is it federally funded?
- **John** – Answers by broadly discussing that it depends on who sources the funding the environmental review.

5 minutes / **Implementation Steps:**

- **Kim** – Wraps the meeting up by summarizing things broadly. Reiterates that the implementation portion of this plan should provide guidance for people to understand future action items and engagements with the public. Encourages



people to adopt realistic expectations about the timing of all of this; actual implementation might be several years from now. Opens discussion up for questions, and prompts people to send her an email answering the following two topics about implementation:

- **How Partners Want to Be Engaged Moving Forward**
- **One Step That You Think Is Most Critical**

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Full Survey Details



Island Greenway Feasibility Study Public Survey Results

The public was given the opportunity to weigh in on the trail alignment alternatives from March 20 through April 20, 2024. On March 20, a public meeting was held at Kure Beach Town Hall that described the evaluation of the trail alignment alternatives. The 116 attendees reviewed the evaluation and provided input on their trail alignment preferences, through the survey that was available in both online and printed format. During the full public input period, 676 surveys were submitted (646 online surveys and 30 hard copy surveys).

Overview:

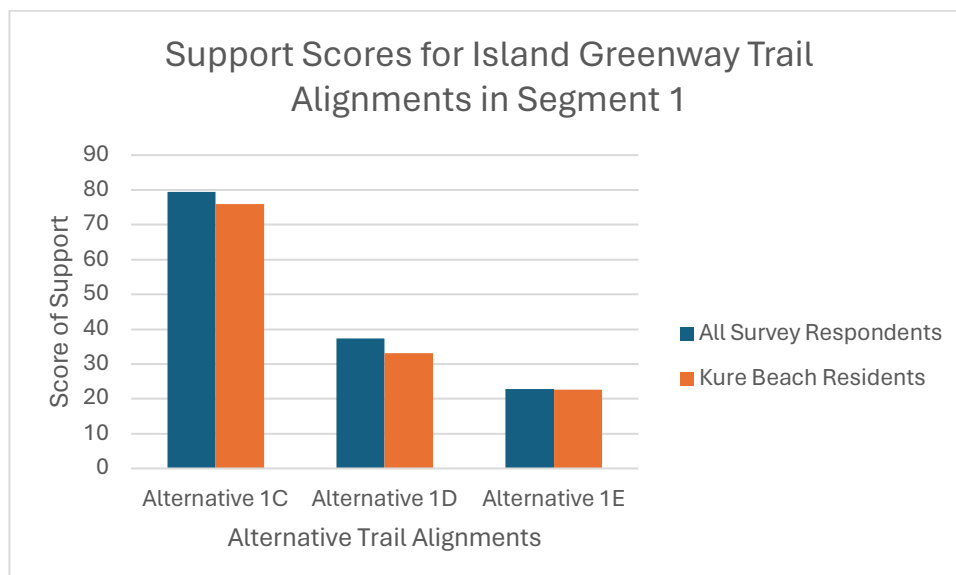
676 people took the survey

- 166 (or 24.6%) are not residents of Kure Beach
- 387 (or 57.2%) are residents of Kure Beach
- 123 (or 18.2%) did not respond to the question about residency

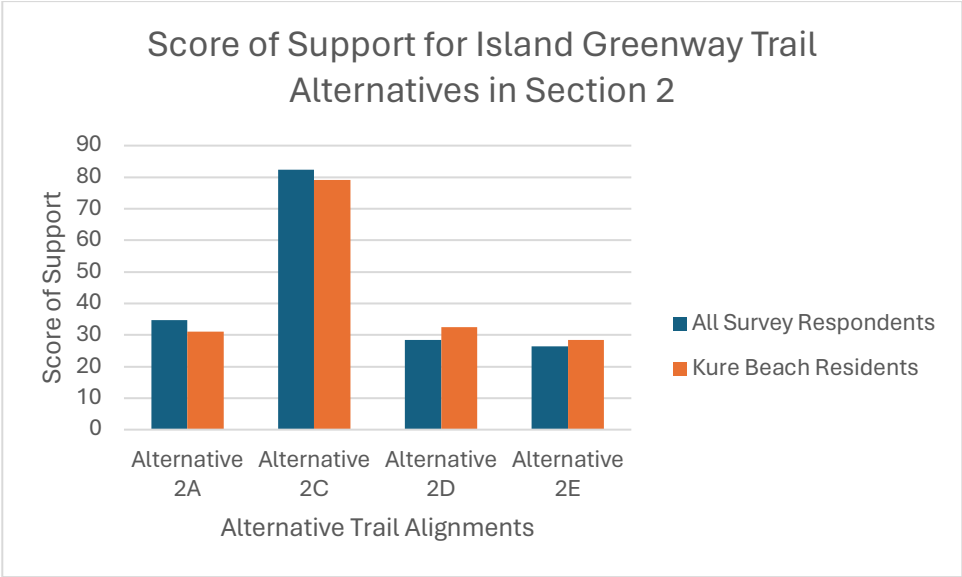
The 'Scale of Support' is used as reference for how the public indicated their support level for each alignment. In the online survey, the public was allowed to slide a dot between 0 and 100 to indicate their support for each alignment alternative with 0 being the least support for the alignment and 100 being the most support.

- High support is considered a support score of 81-100;
- Support is considered a score of 61-80;
- Neutral is a score of 41-60;
- No support is a score of 21-40; and
- Strongly don't support is a score of 0-20.

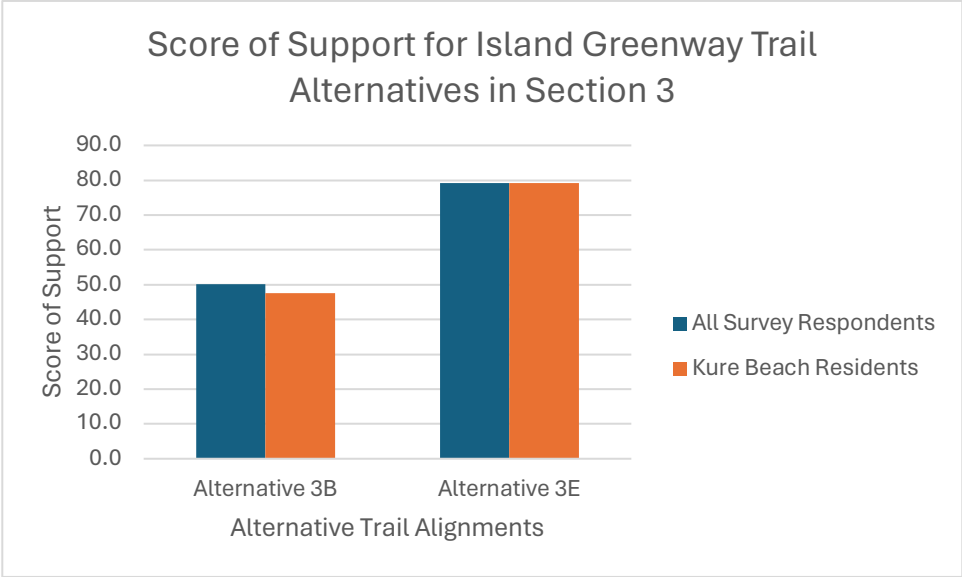
Section 1 Overview



Section 2 Overview



Section 3 Overview



Section 1

Support for Alternative 1C

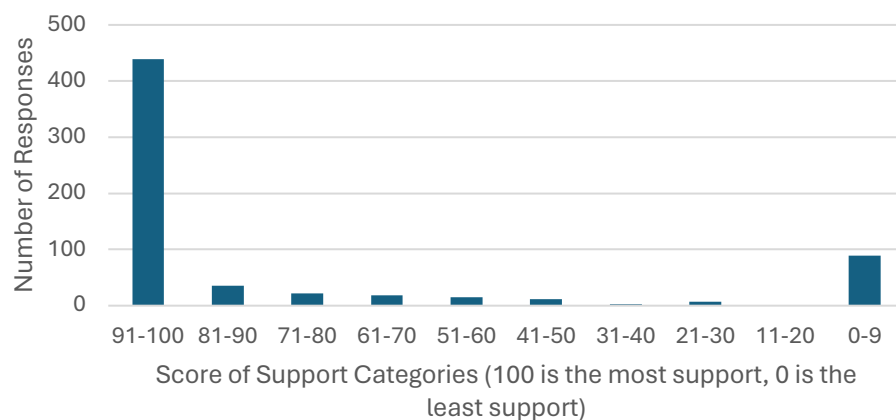
646 survey respondents answered this question.

- 387 are residents;
- 166 are not residents; and
- 93 did not answer the question about residency.

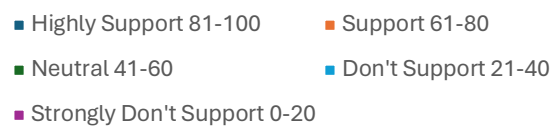
How much do you support the trail alternative 1C (high performing)?

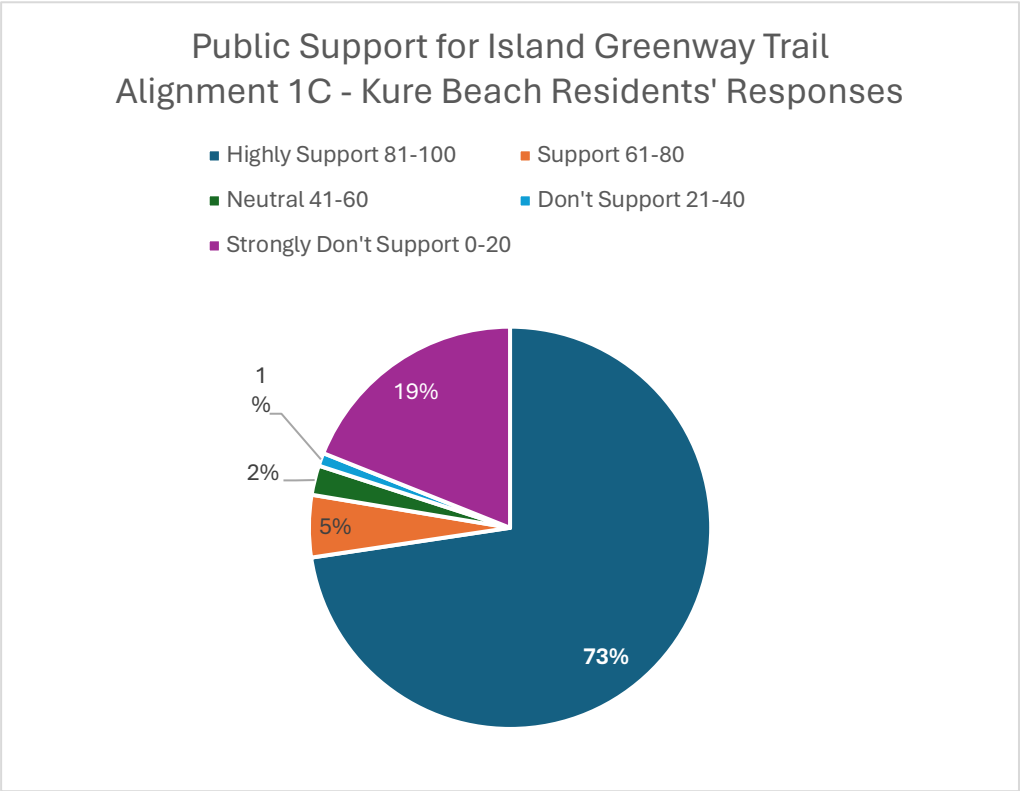
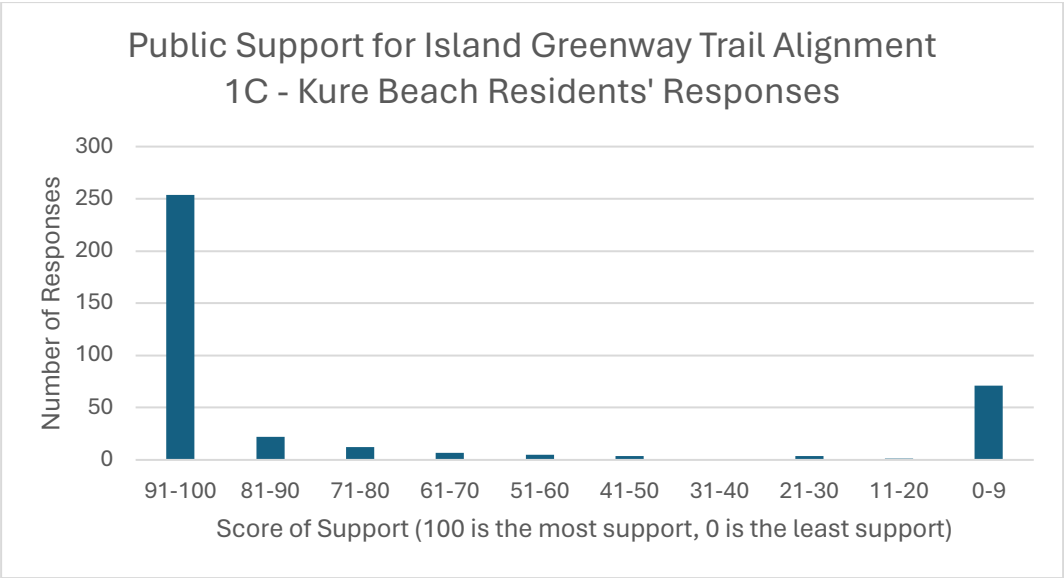
- The average score of support among all survey respondents is 79.40;
- The average score of support among residents is 75.9; and
- The average score of support among non-residents is 90.6.

Public Support for Island Greenway Trail
Alignment 1C - All Responses



Public Support for Island Greenway Trail
Alignment 1C - All Responses





Support for Alternative 1D

586 survey respondents answered this question.

- 355 are residents;
- 141 are not residents; and
- 90 did not answer the question about residency.

How much do you support the trail alternative 1D (medium performing)?

- The average score of support among all survey respondents is 37.4;
- The average score of support among residents is 33.1; and
- The average score of support among non-residents is 45.4.

Support for Alternative 1E

601 survey respondents answered this question.

- 368 are residents;
- 148 are not residents; and
- 85 did not answer the question about residency.

How much do you support the trail alternative 1E (low performing)?

- The average score of support among all survey respondents is 22.8;
- The average score of support among residents is 22.7; and
- The average score of support among non-residents is 21.2.

Section 2

Support for Alternative 2A

526 survey respondents answered this question.

- 345 are residents;
- 135 are not residents; and
- 46 did not answer the question about residency.

How much do you support the trail alternative 1D (medium performing)?

- The average score of support among all survey respondents is 34.8;
- The average score of support among residents is 31.1; and
- The average score of support among non-residents is 42.7.

Support for Alternative 2C

591 survey respondents answered this question.

- 371 are residents;
- 162 are not residents; and
- 58 did not answer the question about residency.

How much do you support the trail alternative 2C (high performing)?

- The average score of support among all survey respondents is 82.4;
- The average score of support among residents is 79.2; and
- The average score of support among non-residents is 91.1.

Support for Alternative 2D

518 survey respondents answered this question.

- 341 are residents;
- 132 are not residents; and
- 45 did not answer the question about residency.

How much do you support the trail alternative 2D (high performing)?

- The average score of support among all survey respondents is 28.5;
- The average score of support among residents is 32.5; and
- The average score of support among non-residents is 26.2.

Support for Alternative 2E

554 survey respondents answered this question.

- 361 are residents;
- 143 are not residents; and
- 50 did not answer the question about residency.

How much do you support the trail alternative 2E (high performing)?

- The average score of support among all survey respondents is 26.3;
- The average score of support among residents is 28.5; and
- The average score of support among non-residents is 31.3.

Section 3

Support for Alternative 3B

515 survey respondents answered this question.

- 336 are residents;
- 141 are not residents; and
- 38 did not answer the question about residency.

How much do you support the trail alternative 3B (medium performing)?

- The average score of support among all survey respondents is 50.1;
- The average score of support among residents is 47.6; and
- The average score of support among non-residents is 57.6.

Support for 3E

556 survey respondents answered this question.

- 353 are residents;
- 160 are not residents; and
- 43 did not answer the question about residency.

How much do you support the trail alternative 3E (high performing)?

- The average score of support among all survey respondents is 79.1;
- The average score of support among residents is 79.2; and
- The average score of support among non-residents is 81.4.

Phasing

Q1. Do you support the project being phased in 2 parts? 505 people answered this question.

Score of Support for Phasing

Option	Total	Percentage
Highly Support 81-100	258	51%
Support 61-80	100	20%
Neutral 41-60	69	14%
Don't Support 21-40	11	2%
Strongly Don't Support 0-20	67	13%

505

Amenities

Survey respondents were asked to place amenities in order of importance. The list below ranks the amenities in order, from most important to least important:

1. Connections to residential streets and residences
2. Wayfinding signage
3. Environmental or historic interpretation
4. Trailheads with a few parking spots and signage
5. Connections from the trail to beach access
6. Lighting
7. Information about who to contact in case of emergency or for maintenance issues
8. Art or placemaking that reflects the community and sense of place of the area

Demographics

Q1. How did you hear about this survey?

How did you hear about this survey?	Total	Percentage
- Flyers/posters	1	0.2%
- Local news outlets	20	3.9%
- Neighborhood newsletter/email	184	35.7%
- Other	48	9.3%
- Social media	182	35.3%
- Word of mouth	80	15.5%

515

Q2. Are you a resident of Kure Beach?

Are you a resident of Kure Beach?	Total	Percentage
Yes	387	70%
No	166	30%

553

Q3. Please enter your zip code.

Note: zip codes listed below are those listed by more than one respondent.

Zip Code	Total	Percentage
28401	2	0.4%
28403	3	0.6%

28409	6	1.1%
28411	2	0.4%
28412	6	1.1%
28428	153	28.8%
28443	3	0.6%
28449	332	62.5%
28451	2	0.4%

Q4. What is your age?

What is your age?	Total	Percentage
18-25	3	0.6%
26-35	10	1.9%
36-45	61	17.5%
46-55	94	35.2%
56-65	189	35.2%
66-75	138	25.7%
Over 75	18	3.4%
Prefer not to answer	20	3.7%
Under 18	4	0.7%

Q5. What is your gender?

What is your gender?	Total	Percentage
Female	249	46.6%
Male	250	46.8%
Prefer not to answer	34	6.4%
Transgender	1	0.2%

534

Q6. What is your race/ethnicity?

What is your race/ethnicity?	Total	Percentage
American Indian or Alaska Native	1	0.2%
Asian	1	0.2%

Black or African-American	1	0.2%
Hispanic, Latino, or Spanish	3	0.6%
I prefer not to answer	63	12.0%
Other	2	0.4%
White	450	85.9%
White; American Indian or Alaska Native	1	0.2%
White; Hispanic, Latino, or Spanish	1	0.2%
White; I prefer not to answer	1	0.2%

524

Open-Ended Comments

About Section 1

Comments: Would you like to provide any comments on Section 1 and how the alternatives were evaluated?

Summary of Comments:

- Strong support for the Carolina Beach greenway, citing its safety and serene environment away from vehicle traffic.
- Residents emphasize the importance of keeping pedestrians and cyclists safe from traffic.
- Support for a nature-like trail away from traffic.
- Safety and connectivity is important.
- Preference is shown for alternatives that keep walkers and bikers away from traffic, with a focus on safety and enjoyment of nature.
- Residents express varied opinions on the proposed trail routes, with some supporting 1C for its safety and alignment with existing greenways, while others oppose having the trail behind their homes on Settlers Lane. A fence along the trail is suggested for safety.
- Some residents express opposition to the path behind Settlers Lane (1C), citing privacy, security, and environmental concerns (preserving wetlands and trees).
- There are calls for considering resident preferences and safety as top priorities in determining the trail route.

!C seems to have a more negative effect to residents and the environment than 1E and !D.

1A and 1B should be further evaluated by NCDOT

1A is the best option
1-A to 2E is best 1E to 2E is good too
<p>1A, 1B Removed from list because MOTSU does not support trail development "that far inside the boundary of their property" is unacceptable, ridiculous, making this entire study a complete FARCE! Dow Road already has a "bike lane" on DOW ROAD. MOTSU even lists and lauds the bike lane in their Land Use Plan, along with CB, KB parks, etc. DOW Rd is Well established for many years, NCDOT & WMPO also for years have been responsible for widening, maintenance, even painting bike lane symbols RECENTLY. NCDOT has ROW along all state roads, including DOW. Study Stakeholders should be challenging, legally if necessary, this Commander's incorrect position. Or wait until he is reassigned and his replacement takes command. Having lived on Settlers for 25 years, there has never been such an uncooperative MOTSU Commander, including the now devastating forest clearing, deep ditches, roads, harming wetlands, wildlife and potentially endangering residents homes during hurricanes from the lack of WIND BLOCKING, WATER DRINKING TREES.</p> <p>IMO, this negates the whole North of K FEASIBILITY STUDY, therefore I REFUSE TO PARTICIPATE! EXCEPT I DO NOT SUPPORT, WILL NOT EVER SUPPORT PATH (1C) BEHIND SETTLERS 60 RESIDENTS HOMES, RISKS OF SAFETY (Ex. 2 Recent Sexual Assaults in Raleigh, Durham), SECURITY, PRIVACY, AND ENVIRONMENTALLY HARMFUL IN MARITIME FOREST, WETLANDS, FENCED HARMING WILDLIFE,!!! (Judy Larrick, 645 Settler Ln, Kure Beach)</p>
1B is my choice
<p>1-C As depicted you show the path running through a treed area. In fact, the pathway if built to the same standards as the Carolina Greenway would be placed 10 feet behind the fence line of the homes on Settlers Lane. The only view would be into residents backyards, patios, decks, screen porches, bedroom windows and outdoor showers as well as infringing on the residents right to privacy and enjoyment of their property. This route looks great on paper, but fails to recognize the residents rights to privacy and their overall well being as expressed many, many Times in this study. In the grid to assess the elements of a route, I'm surprised and embarrassed for Alta to not include a level for residential impact. This study in regard to 1-c is flawed! I support the route on Settlers Lane. 1-D</p>
1C is clearly the best choice! Being adjacent to Ft Fisher Blvd is not optimal!!
1C is highly visible so I feel safe walking/biking alone. Also, I am sure my neighbors wont like people behind their homes. I love 1C.
1-C is in wetlands and would disrupt natural vegetation and animals. There is not enough room between proposed path and existing homeowners.

1c is preferred, but for notable cost difference vs. 1d.so lean to 1d
1-c is safest and connects to already existing Carolina beach trails.
1C is scenic safe and separated from all other traffic which is preferred. Nice extension to existing path way
1C is the best and safest option. Folks backing out cars into the bike path will lead to some accidents.
1C is the best option.
1C is the only alternative that gives the same natural feel as the CB Greenway
1c is the only option that makes sense.
1C is the only smart option. Don't call it a greenway if using existing road/s with traffic. CB just build it and home owners didn't really have a say. Now those CB home owners use the greenway as a selling point for their sale homes.
1C is the primary option. Regardless of the arguments for 1D, you still put trail users in traffic areas. While it appears to be a suitable option, it does not remove the fact you have walkers, riders interacting with vehicles for safety. The 1c path replicates the exiting train in CB which has proven to be beneficial to all. When riding the existing trail the vast majority of the trail is protected from adjacent residential by suitable vegetation.
1C is the safest option. Those on settlers in KBV will be allowed to put up 6ft fences in the near future.
1C is the safest route for pedestrians and bikes
1C is the superior option. 1D is effectively the current situation and unclear why the cost for such would be anything other than \$0.
1C- looks to be DIRECTLY BEHIND 7 homes on Settlers Ln. This invades the privacy, security, lighting, present environment of these residents. Perhaps proposed 1C path could be designed further west into the MOTSU property? If an MOTSU property is used, 1 (1C) wetlands and water levels are huge and costly environmental issues.; 1C- looks to be DIRECTLY BEHIND 67 homes on Settlers Ln. This invades the privacy, security, lighting, present environment to these

residents. Path could be designed further west into the MOTSU property? If any MOTSU property is used, (1C) wetlands and water levels are huge & costly environmental issues. NOT OK.
1C makes by far the most sense to proceed.
1C makes the most sense and contributes to the existing trail in Carolina Beach
1C provides a seamless continuation of the existing trail that ends at Alabama Ave. I see significant challenges with any use of Settlers Lane as there are dozens of driveways that come onto that street and potential exists for owners to back into cyclists unknowingly. Also, many residents many views an increase of cyclists on "their" street as an encroachment on their freedom of movement. Lastly, I think more walkers/runners will be drawn to a dedicated shared use trail as appears to be the case on the CB section
1C provides the most safety for both pedestrians and bicyclists using the trail by having an independent trail from cars. Families in the area would like to have a safe alternative than using the roads. I live on the corner of Settlers Lane and see first hand the safety concerns of having bike and foot traffic on a main road. Extension of the greenway will only bring more traffic and warrants its own trail path behind Settlers Lane for the safety of all involved.
1C seems like the only viable option. 1E has too much traffic/parking/driveway crossings. 1D is not optimal but is what most residents currently use to bike to the Carolina Beach Greenway.
1C would be a highly desirable and outstanding solution for my family walking, cycling and exercising. Lets do it!
1C would be ok only if no fence was required
1C would bring the path straight into Joe Eakes park and to me this is a wonderful place to end up or simply rest and continue your southerly ride. I live on 7th Ave with Joe Eakes as my front yard and I think this is a great idea!!
1-D and 1-E are better than nothing
1D and 1E are dangerous options due to road traffic. Why take the risk with the pedestrians?
1D and 1E are too dangerous to bike riders and walkers. Heavy traffic.

1D puts too much at risk for pedestrians and bikes. If this route is picked at least make it NO Parking on Settlers for anyone including residents and add a bike lane.

At least the main road Fort Fisher has a bike lane already but is way to dangerous for kids and people driving and texting.

Behind the homes on Settlers is the only logical option.

1D still has us on public roads so jot ideal as a permanent solution

1E has the least impact on residents and wetlands.;

1-E is highly undesirable

1E is the same thing as now and is not safe for pedestrians or even bikes.

1-E there is too much traffic and narrow road

1E truly is not safe and would make driving on that road more stressful than it already is.

1-E would e disastrous as the road is fast already and no stop signs. Do not consider.

1E would not provide a safe path for children & would limit passing of different users. With higher traffic in the summer & continued community growth, a path along the communities most trafficked roadway would increase the likelihood of fatal vehicle / pedestrian accidents. I prefer 1C to take the path away from roadways as much as possible. I often walk & ride my bicycle on Settlers Lane with my spouse & have often been honked as we attempt to walk/ride side by side when we don't hear vehicles approaching from behind. Increased traffic combined with increased pedestrian traffic will eventually force the reconsideration of 1C very quickly.

A \$5 million dollar cost and an over \$7 million dollar cost for options 1C and 1E are atrocious. Who is going to pay for this? Higher taxes certainly would not work.; Speaking with a representative at the 3/20/24 meeting, I addressed the fact that Governor Cooper signed an Executive Order on 2/12/24 to protect and preserve wetland areas. From looking at the map it is clear to see that the area where option 1C is located goes right through wetland areas. There is water approximately 1 foot below ground level at all times and extends as far east past Settlers Lane. There are concerns for greater flooding than currently happens if pathways are constructed.

A few loudmouth BULLIES on Settlers Lane should not be allowed to destroy this opportunity for a safe biking/walking trail in Kure Beach.
A Greenway should be as far removed from vehicular traffic as possible to allow for the most natural experience
As a frequent Greenway user via running and biking, plus experience as a pedestrian on roads due to no Greenway, 1E is a dangerous idea. I would not feel safe with this nor advocate for its implementation.
As a Kure Beach resident, I strongly oppose putting a path behind Settlers Lane! The wooded area behind there is home to many wildlife animals and plants. The families that purchased lots and homes along Settlers Lane paid a premium for the privacy and beauty of this view. The proposed path along Fort Fisher Blvd makes the most sense to me. I have seen that the pedestrian and bike traffic increase along Fort fisher Blvd. This is where everyone walks and bikes close to the beach. It seems that improving the safety along this route by adding the walking and bike path along Fort Fisher Blvd. would make the best sense for residents and visitors. I strongly oppose putting a path behind Settlers Lane! The wooded area behind there is home to many wildlife animals and plants. The families that purchased lots and homes along Settlers Lane paid a premium for the privacy and beauty of this view. Thank you!
As a parent with young children, I would prefer to not have to go on the busy main roads to stay on the trail as is the case for 1E.
As a resident and user of the Carolina Beach greenway, it makes most sense to be off of the roads and a part of nature
As a resident on Settlers Lane the traffic and speeds of traveling cars is already dangerous. Numerous people do not stop at the stops signs as well. I also think the main road of Fort Fisher has the same heavy traffic and not a good idea. 1C is behind the streets and safest.
As Kure Beach residents for many years, we have walked the road to get to the Island Greenway in CB, as well as the road south to get to E Ave and beyond to Fort Fisher. We have found that cars and bikes do not allow any space for walkers and have come dangerously close to hitting us even when we walk or bike in single file on side streets, as well as Fort Fisher. One of us was hit by a bike on Fort Fisher that was going the wrong direction. Also the concerns of homeowners along the 1C alternative, although sincere, do not bear out as the trail in CB has not experienced any of those problems according to the CB Police. We feel that 1C would be the best route.
Automobile drivers do not drive safely with bikes. Bicyclists need to follow same laws as do cars
Avoid 1E. Include buffer between trail and houses in 1C.
Based on which I feel are safest for my family.; Based on traffic safety and connectivity.

Best alternative !
Both 1C and 1D notably impact resident adversely while 1E currently has Bike and Pedestrian lanes on either side of the road. A Bike path already exists!
Both shared use path options are clearly more desirable
Clearly 1-C is the best route
Closer to dow, the better
Connecting the existing greenway in CB with the 1C option provides a logical flow for walking, running and "light" bike enjoyment without ANY type of vehicle interaction or concern. This includes cars, trucks, golf carts and workman vehicles (lawncare, trash/recycle, plumber, electrician, general construction and MAJOR home construction) which often impede pedestrians from a safety perspective..
<p>Connectivity rating criteria or ranking seem flawed for 1C vs 1D. If they both existed as trails they would have the same connectivity or 1C would have less than 1D as they have similar termini but 1D has more places that people could join or leave the path. The evaluation, however, is reflecting opposite.</p> <p>I am a resident on Settlers Ln and am sad to see that an option to turn Settlers Ln into a one-way with the divided path alongside is not being considered. This would alleviate some of the traffic concerns for this path and as a resident myself, I do not think the change to one-way would be an extraordinary hardship.</p> <p>I have many concerns about 1C along the firebreak. I have witnessed large areas of standing water in this area and I actually have a bald Cyprus growing behind my house in this area (a testament to how wet it routinely is). I am also concerned for the privacy of my residence. The cost for 1C compared to 1D is also a large factor to me. I also would not want the engineering for the path to increase water that reaches my property.</p> <p>I regularly bike and walk on Settlers Ln currently and travel to the existing greenway in this manner and have never had an issue with traffic. Don't fix what ain't broke :-)</p>
Cost factor and the fact that Settlers Lane is not a busy road and I've biked it at all times of the day and in every season. Dow Rd should be the trail and you've taken it out of the equation
Do it the right way. Add a shared use path. We have a beautiful area and should encourage outdoor spaces like the existing portion of the greenway. Make Kure Beach pedestrian and bike friendly, not just by adding a lane to an existing road.
Do not feel riding or walking on a road is a safe choice

Do not put non motorized/bicycles or pedestrians on any roads
Do not support at all....."feasability study" is a facade for a project that unquestionably appears to be a fore-gone conclusion from the beginning. I have asked repeatedly for estimated systemic expenses only to be brushed under the rug. Many in this community feel the same. Town Council needs to have an open meeting without maps and trails for general and open discussion.
Dow Road car speed is dangerous
Dow Road is the only option that appeases all sides this issue. The ROW already exists where little to no property harm or environmental harm would occur. Do better. The entire study seems slanted, that is, it's encouraging participants to vote a certain way.
Environmental issues must be taken into account
Evaluated based on enjoyment of connection. Scenic & peaceful ; Evaluated based on serenity of connection. Scenic & peaceful
Fence off trail on both sides
Fort Fisher is a nightmare to ride walk on. Tourist are looking for addresses and recreation and not watching for pedestrians. Why is all of Wilmington getting a multi use path down roadways and Pleasure Island is not? I cannot take my grandchildren south on bike rides.
From a safety perspective 1C is the least safest to both those using the trail and those living directly adjacent to the trail. The trail is too long if alone on it and someone from a home approaches me. With a fence trapping me to the one side, there's nowhere for me to go and nobody to see me there. 1D and 1E are much safer, public options for walking and biking on.
Great idea for safety and bike riding
Great job collecting and analyzing data. The completion of this section is the most vital part of the project to have a truly connected and safe pedestrian and bike route for our island.
Greenway should stay green. It follows the existing path.
How come there is no choice for 1B. That would be the less resistance from residents along settlers.

I asked Carolina Beach Police department about crime as it relates to their bike path. The answer was "none". The officer chuckled and said the issues were about congestion on the bike path because so many people were using it.

I believe MOTSU should not remove the options deemed unfeasible due to lack of ROW...Federal land that we the taxpayers own and the blast zone is being interpreted in an overly aggressive way.

I do not feel that the decision matrices properly weighted connectivity in 1D and 1C. 1C doesn't connect to anything except end points, while 1D connects to people's houses, at least. I understand that 1C makes a new trail while 1D uses an existing one, but it doesn't actually improve connectivity, and 1C should be rated lower than 1D, since you could at least get off of the Greenway more readily to go to other destinations.

Making Settlers Ln could make 1D easier to implement, and I say that as a resident of Settlers Ln.

Emergency access is a concern with 1C, since there are no access points to that area throughout, and adding lighting there is a concern, in addition to ongoing privacy concerns.

The drawings for 1D depicted trees between the path and homes, but I don't see how that is possible with the space available.

1D is considerably less expensive than the alternatives, and I currently bike it, and have had no issues. It is also more environmentally friendly than making a path through wetlands.

I do not support expanding the Greenway. If it must be done 1D is the best of the worst options since it uses already installed roads.

I do not support these paths through our community.

I do not want this path behind my house. Would you?

I don't believe it is a good idea to have this project if it cannot be done with the nature trails, otherwise it's no different than walking on the roads currently. I understand the concern the residents have however I believe a privacy fence could be erected along the path.

I don't like the path on Spot Lane but looks like that doesn't matter to you, so that bicycle/foot traffic needs to be kept off Settlers.

I feel like the town is not taking into consideration how the residents feel whose property backs up to the fire lane. The town is moving forward with 1-C regardless of our input. We have concerns about privacy, security with strangers being behind our property and impacts to the environment. I believe that the other two options should be highly considered. The other sections will be going along Ft. Fisher Blvd so why can it not go further up to avoid settlers lane.

I found this to be extremely confusing as the maps are very difficult to view clearly.

I fully support 1C as the best route for ease of connectivity, safety and walkability
<p>I give my strongest endorsement to the Section 1C alternative.</p> <p>My wife and I have lived in Kure Beach for 18 years and are avid walkers averaging about 45 minutes a day, 6 days a week throughout these years.</p> <p>We always walk against traffic on both Fort Fisher Boulevard and on the town's side streets. In 2016 I was hit by bicyclist from behind in the Fort Fisher bike lane so since then we have stayed on our town's side streets.</p> <p>The vast majority of these streets have no sidewalks so like everyone else, we walk in the street. But even so, we have been almost hit by vehicles seven times including three times on Settlers Lane.</p> <p>The opening of Carolina Beach's greenway has absolutely been the best thing that has happened and we walk there often. First, it is stress free by not having to constantly be on the look-out for vehicles. The trail is very wide for two-way pedestrian and bike traffic so congestion is never a concern. And second, it is just far enough away from "civilization" to totally enjoy nature's serenity. These intangible benefits of peace and quiet on 1C's alignment cannot possibly be matched with walking/biking on a side street, let alone Fort Fisher Boulevard</p>
I have concerns for resident's safety, security, privacy, flooding, wetlands, protected wildlife, policing. Nobody has walked this path however we are supposed to vote on this????
I highly support the 1C in section 1
I live on Spot adjacent to current Greenway. My experience indicates that Kure Beach privacy concerns are unfounded.
I love 1-C.
I love how you presented the information! Great job. ; Love how you presented the info! Great job.
I love our island and totally support areas like this that allow safe walking and biking and enjoying the outdoors. Thank you for all the hard work and dedication to this project. I feel this will add to the pleasure experienced here on pleasure island!
I love the thought of the greenway extending all the way to the ferry. But not at the expense of encroaching on the homes on Settlers Lane. They bought their homes specifically for the privacy and this will destroy that. There must be a solution that could be implemented that both the homeowners and the greenway supporters could be happy with.

I prefer the trail to be away from traffic.
I put many national and statewide surveys in the field during my career. I think this survey instrument is the most complicated one I have ever seen. I'm not sure what I am even voting for in some of these sections. Residents who want to keep the route away from the back yards on Settlers Lane can vote for 1-A or 1-B. They are splitting the impact of their very similar votes and giving a boost to those who vote the firelane/wetlands route.
I rate 1-B as the second option with the same rating as 1C
I support 1B.....This was wrongfully taken away from your survey. MOTSU has not made a final decision on putting the trail on Dow Road; I vote highly supportive for trail alternative 1B but your committee did not allow residents to vote on this trail
I support all possibilities ; All options supported.
I think having a bike path on dow road is dangerous and the same on Fort fisher Blvd; I want my family to be safe like they are on the exciting green way from Alabama avenue to Mike Chappell Park
i think max use with least interruption to Settlers Lane traffic + residences is to go behind the houses, with access pts.... not avoiding people in cars or pulling out of driveways.
I think moving the path too far into the woods might make women feel unsafe on the path
I think that the 1C option seems heads above the other options.
I travel by foot on Settler's Lane multiple times a day and on bicycle a few times a week. I have done this for years and have never come across any problem with traffic on the road or vehicles moving in or out of driveways. Using the road will significantly reduce the cost of the project compared with placing the path behind the people's homes (1C). This cost differential is millions of dollars which as a resident do not want to spend. Also, it would be in the wetlands of MOTSU land and as stated an environmental impact study would need to be performed. Plus, there may be additional variables ,not readily noticed in the wetlands, that may further increase cost. In addition, the residents living in the homes along the west side of Settlor's Lane are opposed to having the project behind their homes for multiple valid reasons. The situation is different compared with Carolina Beach where the Greenway is separated from the majority of the homes by a significant distance and plants, trees.
I use the Carolina Beach trails and find most sections away from roadways are the safest sections to travel.

I would like as much trail as possible but I also understand homeowners concerns
I would not like a walking path in my backyard.
I'd like to keep pedestrians away from traffic
if we can get an off-road MUP, that is always best. Settlers Lane looks like it would be on road, but at least it's not Ft. Fisher Blvd. Anything is better than Ft. Fisher Blvd through the business section of KB.
IMO, the 1C trial alternative is the only one that makes sense
It apprrs this survey is highly skewed toward option 1-c
It does not seem feasible to have the trail interact with either Ft. Fisher Blvd or Settlers Ln due to traffic in both of these locations.
It is imperative that people are safe so it is key to avoid Fort Fisher or 1E. 1D is a good interim solution but not long term. This road is heavily traveled with trucks, cars, and walkers so it provides a lot of challenges for those backing out of their driveways with such congestion. 1C is the way to go!
It is the safest route without sharing the road for families.
It is the safest trail for pedestrians to commute on.
It isn't a greenway when you destroy natures habitat for a paved roadway. Wetlands and animal habitats will be destroyed with 1-C.
It keeps walkers and bikers off street!; It keeps walkers and bikers off streets!
It needs to be 1C. Not sure how to answer 1D and 1E because I'm in support of having this achieved.
It would be nice not to be on a road with cars and especially not the main thoroughfare.

Its important to keep the trail aligned with the existing island Greenway.
keep all of the options farthest away from existing roads.
keeping bikes off the congested roadways is most preferred
Keeping the greenway off the road as much as possible is critical to making this a success.
Like the idea of having a more nature like trail at least on one side. Lower vehicle traffic noise as well as away from downtown.
Long overdue Let's get this plan together and financed
LOVE LOVE LOVE 1-C! It is safely away from car traffic and in a space where we can enjoy the natural beauty of trees and southeastern NC landscapes!
Love the 1C and it will be wonderfully to safely bike walk in our town.
Love the current Greenway because it is not in traffic. It is safe and has nice natural areas. Having a path along the road should not be called "island Greenway" Options D & E are mostly in trafficked areas. You can already ride your bike along lake park/ fort fisher blvd...it just doesn't feel very safe.
Many advanced cyclists will ride 1E due to the volume/usage on 1C and the desire to avoid pedestrians and maintain steady speed.; I trust East Coast Greenway Alignment.
More bike less cars. Convert the main lake park corridor "stroad" into something like Hendersonville. I am in the top 5% earners on the island. More bikes less cars.
Most direct route. Safest route. Most scenic route
Most environmentally friendly construction should be pursued; no clear cutting of trees and habitats
motsu all the way

MOTSU isn't against 1A, this is not true
Much safer
Must stay off roadway
My personal preference is to save existing trees
No
No
No
No
No.
Off road is most preferable
Off the traffic roads is ideal. Settlers Lane is not very busy but accidents will happen. I live on Settlers Lane and need to be extra careful backing out of our driveway.
Only a few are the noisiest.
Option 1C is by far the most beneficial, providing an aligned greenway that is safe, connects existing parks in CB and KB, and minimizes disruptions on existing motor vehicles roadways and parking areas
Over time residents privacy will be not be an issue as trees and shrubs grow back after intial construction; Should include a side trail along K ave to the Kure beach pier, by improving the current bike path / sidewalks

Please connect w CB
Please do not give in to 20 homeowners at the expense of everyone else in the community.
Please evaluate use of e bikes on all sections
Please save money for the residents
Please think of the positive impacts on the whole island community. This will be enjoyed by locals and give tourists a reason to return. Thanks!
really like the idea of 1C!
Residential impact was not weighed high enough
Residential streets and fort fisher blvd are danyfor both cyclist and drivers; Not on settlers or fr fisher blvd streets. Both would be dangerous
Residents bought houses back in town to be away from crowds of people and the problems that come with it ie crime vandalism added noise.
Safest option for Walker, runners & bikers
Safety and user enjoyment should be highest priorities.
Safety away from traffic.
Safety is one of my top priorities which is why I most highly support 1C
Safety it my highest priority. My family probably wouldn't use if car traffic is a concern.

Seems to be the most cost effective as 1E route already exists and have recently been remarked by NCDOT as bicycle route. Too, foot traffic apparently is not an issue given the the location and proximity of 1E route along State route 421 to hotels, restaurants and other amenities used by visitors to the Island. Folks who live here already use neighbor streets for bike & foot transportation.
Separate multi use path away from traffic is ideal for families' safety, especially those with children
Settlers is narrow especially when work vehicles are parked. Ponding from rain or sprinklers makes road even more different to run or walk with traffic
Shared use path is relaxing exercise, any bike path along Ft. Fisher Blvd is not relaxing, too dangerous for family use. Residential bike paths are a reasonable alternative, but not as desirable as a share use path that promotes safe area for exercise and alternative transportation on the island.; Residents privacy is a concern they have, however, if done with plenty of privacy trees, plants, that should allay those concerns.
speed limit 15mph for e bikes. Enforced
Start with lowest cost and expand in future. It would be nice to have soon. Important: bathroom?
Stay off the roadways
Stay out of traffic
Still don't want it behind my house!!!!; Still don't want it behind my house in settlers!; Don't want it behind my house!!!; Don't want it behind my house period
Support 1C
Thank you for making this possible 👍 👍
The 1c behind the houses on settlers lane should be built, but at least 100 ft behind the houses minimum for privacy.
The 1C option would be highly preferred due to the lack of auto traffic and having a more natural and peaceful surroundings.

The 5 million dollar price tag is outrageous especially if the trail is of no use to all the residents of Kure Beach
The CB Greenway already in existence is a 1C and it has been a great success.
The estimated amount to implement option 1D seems way too high. Why waste the money on interim solution.
The Island Greenway in CB is the best thing that has happened in CB in the last 25 years. The reason it works and is so busy is because you feel like you are walking or biking in nature, away from the streets, away from traffic.
The least amount of danger for walkers and bikers
The people who live on settlers lane are attempting to bully the community into a miserable situation, over their own selfishness & persecution fetish.
The primary reason we moved after living in KB for 18 yrs (p-t and f-t) was because the initial proposed routes were either Settlers Lane or behind the houses on Settlers Lane. Also I almost hit a woman bike rider not stopping at the KVV-Settlers Lane intersection. Fortunately I was driving below the speed limit and could stop. Also, it became increasingly difficult to back out of our driveway because the bikers are going too fast.
The safety afforded by 1C is far superior to 1D and 1E and justifies the additional cost. Given the proven success, lack of concerns/problems and popularity of a similar trail already implemented in Carolina Beach, the "privacy concerns" expressed by a small minority of residents should not be given excessive weighting. The trail would not encroach on their property and residents are free to install fencing and shrubs/trees on their property if they feel they need further assurances of privacy/security.
There are really no options provided here
There is already too much traffic and lawn companies blocking Settlers Lane (1D). 1C is the only alternative.
There is so much bicycle and pedestrian traffic already on Settlers that you can't get into or out of the community. The ONLY option is 1C to get people OFF Settlers. It's ridiculous, and bikers and pedestrians refuse to yield to let cars through.
These other alternatives violate the homeowner's right to privacy for the homes they purchased backing up to government preserved land. There are many coyotes, deer and different species of birds that live and breed in that area along with the wetlands that are now required by state law to be preserved

This doesn't have to be an either or. One can both build a shared use path while also adding sharrows and bike lanes elsewhere. But for the purposes of a Greenway the shared use path is the obvious goal.
This is not user friendly keep giving to look which is which ; Town should support the homes on Settlers that do not want it behind their homes! This should not be an option
This would be wonderful
Too dangerous. Children will be riding bikes and I dont want them near cars.
Too much traffic on settle and the main road to support a bike trail too
Trail 1c goes through wetlands. Many residents yards flood from runoff from motsu property. The has already been several incidents in the neighborhood from people accessing their properties from the fire lane. Privacy and safety are concerns also.; Privacy safety flooding wetlands
Trail along Settlers Lane would be least intrusive to current Kure Beach homeowners.
Two designated bike route currently exist and are paved and marked. The first is along Dow Road - option 1A - and the second is along Ft. Fisher Blvd - option 1E. Additionally, ft. Fisher Blvd (option 1E) is currently identified by the East Coast Greenway published map as the current East Coast Greenway route - "On Road Route". There is NO need to proceed further with 2 designated bike paths!
Under the category of Resident Benefit, the note should reflect that most residents want 1C ,but some have privacy concerns, in order to give an accurate picture. How many residents have privacy concerns versus how many residents want 1C? There seems to be an assumption based on a small, vocal number alleging to reflect a number that's unsupported by data, such as a petition or other formal method. If there is the data, it should be provided.
Use your own study and work to choose the best option for all residents. U are the experts.
Using a route already having vehicle traffic is not safe
Vast preference for 1C
We already have bike lanes on option E. Why should we pave even more areas, build fences and waste money one options 1C and 1D?

We do not want people walking or biking right behind our home, with our bedrooms being on the 1st floor and we DO NOT want a fence to stare at. We bought our home for the privacy.
We don't support taking anyone's property for the path. We are in support of the pathway in the safest manor possible.
We love the current trail and would love to see it extended in a similar fashion towards Ft. Fisher. Do not support 1E do to lost parking as parking is currently a problem in Kure beach (not enough parking) and this would exacerbate the issue.
We need safe bikeways and walkways!
We need to have the path away from roads/cars as much as possible for safety.
We should utilize what the paths we currently have and expand, giving the island a top to bottom ability to bike/walk/move scenically while allowing traffic to move safely.
Wetlands will be compromised. This is agenda driven with a predetermined outcome. Horrible for the citizens of Kure Beach. ; Misleading. A predetermined outcome for this preferred route is obvious to the community.
When speaking to other property owners like myself they do not want it at all.
Will motorized bicycles be banned?
Would prefer a greenway that does not share busy roads with traffic so it would be safe for children.

About Section 2

Comments: Would you like to provide any comments on Section 2 and how the trail alternatives were evaluated?

Summary of Comments:

- Preference for Safety: Many respondents prioritize safety, preferring routes away from busy roads like Fort Fisher Blvd. They want to minimize the risk of accidents involving pedestrians and cyclists.
- Support for Off-Road Trails: There's widespread support for keeping the trail away from main roads, especially Fort Fisher Blvd, to provide a safer and more pleasant experience for walkers and bikers.

<ul style="list-style-type: none"> Concerns about Existing Roads: Routes that involve significant interaction with existing roads are generally seen as less desirable due to safety concerns, traffic issues, and potential conflicts with vehicles. Specific Route Preferences: Option 2C emerges as a favored route due to its safety, scenic qualities, and separation from vehicle traffic. Other options are viewed as less desirable, particularly those that involve more interaction with existing roads. Environmental Considerations: Some express concerns about the impact on wetlands and wildlife, emphasizing the importance of minimizing environmental disruption. Cost Considerations: Cost is mentioned as a factor, with some expressing a preference for more cost-effective options. Support for Connectivity: Many emphasize the importance of connectivity, wanting the trail to connect with existing paths and provide a continuous route for pedestrians and cyclists.
15 mph e bike speed limit enforced
1C and 2C are the best options. There are no negative impacts from this happening.
2 E is the best route
2-A and 2-D are better than nothing
2A and 2E are too dangerous, tourist traffic is hazardous and driveways have hard visual. 2D is too short and brings back to traffic.
2C by far makes more sense and much safer than being on Fort Fisher Blvd.
2C- can't tell if path is IN FRONT of homes to the east with MOTSU property to the west OR is 2C actually in MOTSU property? Either way - OK. 2D- path IN FRONT of homes. -OK.; Also, 2C-there's about 8-10 homes where the MOTSU path looks to be DIRECTLY BEHIND them. OK only if this portion is pushed further west.
2C gets the furthest down the path without getting on the main road, but cuts behind people's homes who currently have privacy, so it has issues.
2A and 2D are similar, but I think the extra cost is worth the benefit to traffic and park

connectivity.
I think that if 2E were selected for the full length, that a better job would be done on the section that all of them go to, which I think will otherwise most likely be generally ignored.
2C is an obvious choice in my humble opinion. The other options would be acceptable but not in line with what the CB Greenway currently offers. Let's go for the gold!
2C is clearly the best option. 2E is not a viable option due to traffic/parking/driveway crossings all along Fort Fisher Blvd. 2A and 2D are ok but not great.
2-C is clearly the best route
2C is most preferable as it keeps folks off the roads
2C is scenic safe and separated from all other traffic which is preferred. Nice extension to existing path way
2C is the safest for pedestrians and bicyclists
2C minimizes time spent on roads intended for vehicle traffic. Let me also add that the explosion of golf carts on the island in the last few years is yet another argument for a dedicated shared use path
2C provides the most safety for all
2c will keep you off of street vehicle interaction. Currently you are required to access Ft. Fisher Blvd several times to make the journey to the current 2c end-point. While there is a bike line on Ft. Fisher, it's hairy at best taking a bike ride to the Air Force rec center. It would be ideal to have the trail end at an Air Force rec center access point.
2E - too dangerous - driveways and traffic: 2D is too short and again takes riders and walkers into traffic.
2E seems like a bad idea. Lots of driveways and fiber lines probably in the way. Heavy traffic also in summer months.
Again - I agree that Option 2C is the superior route to go .

Again as far back for as far long keep pedestrians and bikes off of Fort Fisher Blvd as long as you can.
Again, full "off the road" options provide a safer environment for all concerned, without any type of possible impediment from vehicles (cars, trucks, commercial services, golfcarts, etc).
Again, keeping bicyclists and pedestrians off Ft. Fisher Blvd as long as possible should be the goal.
Again, same comments as above. All for the project as long as a solution can come up that the privacy of the homeowners is dealt with to their satisfaction.
Again, we already have a marked bike route along 2E. Let's use it!!
Again, why are we spending money to pave areas and build fences when we already have a bike lane on Ft. Fisher? I do not want the path in front or behind my house.
Alternative 2E is currently a marked and paved Bike Route and is listed by the East Coast Greenway was an "on road" element of the East Coast Greenway and is so designated in it's official publications and on its official map.
Any "trail" using Fort Fisher Blvd creates a significant safety concern for families utilizing the trail and would lead to tragedy. We already have limited road width access that is very lightly used. I don't see any benefit to utilizing FF Blvd. alternatively homeowners will likely be upset if their front yards are used to create an off road asphalted trail.
Anything to keep the costs down is preferable.
As I stated above, I would like to see this path continue along Fort Fisher Blvd. It would really help to have a safe place to walk and bike to the beautiful south end of our island.
As stated before, minimizing interaction with traffic would seem to be the only way to enforce safety and effectiveness of these paths.
As with Section one comments, the most cost effective as 2 E route already exists and have recently been remarked by NCDOT as bicycle route. Too, foot traffic apparently is not an issue given the the location and proximity of 1E route along State route 421 to hotels, restaurants and other amenities...See More
Bike and pedestrian safety are a high priority.

Coat; Cost
Cost is high factor for me here. But really want to be away from traffic!
Currently, route 2E is the one most used by bikers and walkers. Even though the cost for this option is extremely high, this is where the money would be well spent. Major improvements are needed for safety for all. The road as it is now, is too narrow for vehicular traffic combined with bikes and walkers. In its' present form it is a very unsafe combination.
Do not put non motorized/bicycles or pedestrians on roads
Due to the wetlands, 2 E is the best option
Enjoy riding in woods
For safety & enjoyment, I support options that best separates pedestrians from vehicle roadways.
Greenway over riding with or near traffic.
I along with other neighbors do not want more traffic near our homes
I am assuming that if 2C is selected, it would still require the portion of 2E south of President Davis Ave to be completed.
I answered this to the best of my ability, but found it a bit confusing. I would like a path that connects with the existing path in CB and continues off street as much as possible. Part of the path's appeal is that it is natural, so I would like to see it in the most natural setting as possible all the way to the end. Away from cars, among the trees, etc. for both bikes and walkers/runners.
I could support 2C more if a large buffer would be guaranteed between homes and greenway.
I do not like that the trail crosses FF Blvd at the south end 2x. It should always stay on the west side. It is dangerous because of so many cars entering those areas for free parking, south end access and the aquarium.

I do not support expanding the Greenway. If it must be done then the 2A or 2D is the best of the worst options since it uses already installed low traffic roads.
I do not support these paths through our community
I do not understand what the 2A option is
<p>I give my strongest endorsement to the Section 2C alternative.</p> <p>My wife and I have lived in Kure Beach for 18 years and are avid walkers averaging about 45 minutes a day, 6 days a week throughout these years.</p> <p>We always walk against traffic on both Fort Fisher Boulevard and on the town's side streets. In 2016 I was hit by bicyclist from behind in the Fort Fisher bike lane so since then we stayed on our town's side streets.</p> <p>The vast majority of these streets have no sidewalks so, like everyone else we walk in the street. But even so, we have been almost hit by vehicles seven times including three times on Settlers Lane.</p> <p>The opening of Carolina Beach's greenway has absolutely been the best thing that has happened and we walk there often. First, it is stress free by not having to constantly be on the look-out for vehicles. The trail is very wide for two-way pedestrian and bike traffic so congestion is never a concern. And second, it is just far enough away from "civilization" to totally enjoy nature's serenity. These intangible benefits of peace and quiet on 2C's alignment cannot possibly be matched with walking/biking on a side street, let alone Fort Fisher Boulevard.</p>
I like 2-C.
I support and recommend consideration of East Coast Greenway Alignment. Is there NCDOT data or police data on cycling "accidents" or collisions in these zones? Is there a section of road where more "crashes" "accidents" or "collisions" (with auto or pedestrian) have been reported?
I support keeping the trail away from Fort Fisher Blvd.
I would just like to see a bike path away from Ft Fisher Blvd and in the woods not streets as much as possible. It's a little hard still to tell from the maps. ; So there is no off road path from Pres Davis to Ft Fisher? This is really too bad, as Ft Fisher Blvd will still have to be used for this part.
I would not send my kids on any roads.

I'd rather the trail be more continuous and not in highly motorized roads. I'd like fewer traffic intersections.
It appears this would not interfere with as much wetlands, save the taxpayers money and keep the Greenway out of the neighborhoods
It should stay well off of Fort Fisher Blvd.
Keep additional foot/bike traffic off of the main driving road.
keep all of the options farthest away from existing roads.
Keep bikes off Fort Fisher as much as possible. Already issues on Ft Fisher with current path. Lanes on Ft Fisher are as wide as a Costco parking spot, and cars, if able, while passing a biker will cross the double yellow to provide comfortable passing gaps. Side of Ft Fisher has some drops, or soft sand, making the full width of the current side not usable. Bikers and walkers stay away from this edge. Add trash cans, work trucks, and parked cars...and there is real potential for accidents.
Keep the Greenway next to the green!
Keeping the route as close for the preceding route for continuity and easy to follow directions for young and new bikers. Having a clear path that runs with the park makes sense .
Keeping the trail off of busy roads makes the most sense when considering ease of use and safety concerns. With the increasing traffic, pedestrians and cyclists are at increased risk of harm if the trail utilizes the same roads as motor vehicles.
Keeping the trail secluded and away from the roads makes for a safe and leisurely ride south without worrying about traffic.
Keeping walkers and bikers off streets!

Let's get this plan financed and rolling for approval
Leverage Eakes Park as a stopping and meeting place, esp w the restrooms that will be there.
LOVE LOVE LOVE 2-C! It is safely away from car traffic and in a space where we can enjoy the natural beauty of trees and southeastern NC landscapes!
Love the 2C option
Make it a greenway!
More bikes less roads. Convert lake park into a Hendersonville structure.
motsu great but what about blakeslee?
My
Need to stay away from traffic
No
No
No
No
No

No comment
No.
Not exactly sure where 2D is but my ideal would to have it all part and separate from roads for safety
Off the traffic road is ideal.
Only 2C seems to really "work"
Price seems high for this section. Maybe too much is put into it, switch to cheaper product
Privacy invasion, wetland disturbances and wildlife consolidation
Ranked by least trafficked areas coming in top choices. Greenway should continue to be safe for families walking and biking with young children. That will not happen on the main roads.
Residential area path (2D) is least desireable, putting pedestrians, runners, cyclists beside vehicle traffic. 2E would be similar to status quo but with safer route but not scenic or special enough. Its OK but....
SAA comment.
Safest option for walkers, runners & bikers
Safest travel
Safety and continuation of trail.
Safety away from the busy roads are my top priority

Safety is an issue
Safety issues--stay off the main roads--Ft. Fisher & Dow
Safety should be given more weighting than the other criteria. We want families with children to feel comfortable using these trails. 2C affords the safest route and the additional safety justifies the relatively small additional cost over 2A and 2D. 2E is unsafe and should not be considered. One biker or pedestrian strike by a vehicle on trails 2A, 2D, or 2E will easily cost more than \$3M, the cost of implementing 2C.
Same reason as the first comment. Leave our peaceful neighborhoods alone.
Saving trees
Scenic, no car traffic
Section 2C makes the most sense by far
Shared Use path can be used for everyone and families with small children. Being adjacent to a roadway or even in neighborhood is not as safe or as pleasing!
Shared use path! Keep it consistent with the existing greenway!!!
Similar to earlier response, I find most sections away from roadways are the safest sections to travel.
Stay away from traffic areas
Stay off roads as much as possible, especially Fort Fisher Blvd. Safety is #1, followed by citizen enjoyment and aesthetics of the trail, followed by environmental impact, followed by cost.
Still do t want it behind my house; Don't want it behind my house

Support 2c
Survey buttons jump to high support when initially touched. Effort is necessary to push buttons to non support....appears as canned as "fesability".
The beauty of these trails is to be out of the neighborhoods and next to nature.
The factors were vaslid
The further the trail runs from vehicular traffic, the better
The safest and most pleasant path would be 2c
The safest option for greenway users is 2C. It provides the best connectivity with the greatest and safest experience, and the minimum disruption to existing road traffic
The whole thing will end up on Ft Fisher Blvd - why delay the inevitable? Our streets here are safe. Lower the speed limits and more signage.
There are plenty of side streets to get to Fort Fisher. Once on Fort Fisher it's dangerous. Why is all of Wilmington getting a multi use path but Pleasure Island we must ride with 45 mile(yes it's posted 35) tourist looking for their destination
There is no agreement with the air force for this continued path. This is misleading to residents. ; Misleading. No consideration for wetlands or residential impact. Wasteful spending.
This area on Fort Fisher Blvd. Needs to be widened to accommodate vehicles as well as bikers and walkers. My wife and I use this portion of the route often. It is very narrow and unsafe. If any money is used for improvement it needs to be spent in this area.
This would be wonderful
To be a nature trail it should be as far from vehicle traffic as possible whenever possible
Traffic safety

Traffic safety is most important, especially for use by children.
Trail should stay on 5th ave. to provide a better experience. Woods on the West side and will also affect less homeowners.
We should utilize what the paths we currently have and expand, giving the island a top to bottom ability to bike/walk/move scenically while allowing traffic to move safely.
We would MUCH prefer 2C as an option, but anything that connects the path would be great so would support any option if 2C is not going to happen. Greatly prefer the safety and ease of a shared use path - being away from cars and roads allows for much greater enjoyment. It would give out kids a chance to explore and experience independence in getting to Ft. Fisher, without worry of traffic. Also, having ridden my bike to Ft. Fisher on the road, any path that is part of the road is still dangerous.
What is a "paved surface" and how does that compare to a "paved sidepath" and a "shared use path". Those can all be used interchangeably so it's entirely unclear what the decision is here. Is one narrower? Different setbacks? Bike friendly? Who knows. And why does one road get one type and another gets the other? Can't compare alignments unless I know what I'm comparing and why.
You say low impact on wetlands, I would like more about that.

About Section 3

Comments: Would you like to provide any comments on Section 3 and how the trail alignment alternatives were evaluated?

Summary:

- Preference for 3E: Many participants express a preference for option 3E due to safety concerns, minimal impact on wetlands, and its alignment with nature trails.
- Safety Concerns: Safety is a significant consideration, with many advocating for paths away from vehicular traffic and separate from roads, especially for the safety of children and cyclists.
- Environmental Impact: Concerns about the environmental impact of the project, particularly regarding tree cutting and disruption of wildlife habitats, are raised. Many emphasize the importance of preserving green spaces and wetlands.
- Cost: Some express concerns about the high cost of the project, questioning its necessity and potential utilization by residents.
- Connectivity: There's support for paths that connect key landmarks like the aquarium and ferry terminal. Many want to see the option that is closest to these.
- Mixed Opinions: While many support the project, there are varying opinions on the proposed routes, with some favoring 3B for its less trafficked areas and others preferring 3E for its safety and environmental considerations.

15 mph e bike speed limit enforced.
3B and 3E are confusing
3B the detour is too off the trail for an emergency
3B too off the trail
3E hands down. Would compromise on other sections , but want no part of cars at this part of island
3E is the safest for pedestrian and cyclist
3E makes the most sense
A nature trail should be away from vehicular traffic as far as possible whenever possible.
Absolutely favor path that easily connects with Aquarium and also minimizes impact on adjacent wetlands. 3E clear winner
Again , as much off Ft Fisher is great. This is a great part of the island to bike on with ocean and river sights.
Again hopeful that there would be a lovely buffer zone implemented.
Again I would like the entire path if possible to be separate from any road
Again, it is not safe to be on main roads. The police never give out speeding tickets or drunk driving tickets unless there is a problem. The point of a greenway is the nature and beauty of the outdoors.

Again, the total cost of all this construction is just outrageous. There are not enough people living in Kure Beach to support the cost of this trail. It seems a few people think they need this project but it certainly will not be utilized by the majority of the townspeople.
Again, would much prefer 3E but would be happy with any addition to the bike path, so if 3E isn't an option we would support 3 B.
Although I'd prefer 3E for the highest safety rating, I feel like this is a choice where money can be saved. The existing path by the aquarium is underused but still in good shape. Either option would be great.
Any environmental impacts are unacceptable. The toll that development has taken on the island is already too high. The loss of green space and impact on wetlands are incommensurate with minimal standards of environmental health.
Anywhere we are going off of the road is best.
Bike to ferry please
Biking to the aquarium is a great idea, will it destroy wetlands?
Cost
Do not put non motorized/bicycles and pedestrians on roads
Don't want it behind my house; Don't want it behind my house and no one is listening; Don't want it behind my house period. Why won't anyone listen????
from frequently riding 3E, most functionality. Would be ideal to pave a wider section for two direction bike travel from the aquarium trail head to the ferry and boat access
Having a path that rides closer to Rec Area and Aquarium is a good path for landmarks and for visitor access.
How does cutting down trees to make a path make it a "green way"... Seems like a paved path where trees are cut and wildlife displaced is the polar opposite of a greenway.
I do not support the expansion of the Greenway. If it must be done then the 3E selection would be the best of the options.

I do not wish to see our wetlands and wildlife areas turned into asphalt highways for people to ruin our island.
I don't like the idea of the trail being beside the roadway. I don't think it is as safe as a separate path especially if riding bikes with children.
I like 3-E.
I like both options.
I love the current path at the Aquarium and would prefer it to be integrated with the Greenway
I ride at that end and there is very little traffic past the aquarium entrance. Therefore, I think a simple widening of the existing bike lane would be sufficient.
I see advantages of both routes and wonder why not do better th!!
I support the option that best separates pedestrians from roadways.
I support the recommendation
I'd like to go from 3E over to 3B and then back to 3E.
If creating a Greenway, use the longer path for scenic value.
If funding is available to continue the dedicated walking and bike path all the way to the ferry, that would be a great way to access the ferry to Southport.
It is a little difficult for me to picture where exactly these two options would be, based on the maps, but both seem to be decent options to complete the 3rd segment of the trail.
it is not really needed immedi

keep all of the options farthest away from existing roads.
Less road crossing is better
Let's go with a road or greenway combined for the benefit for all. Finance and approve this plan; Thoughtful group of members. Job well done
Let's make this project happen!
Like the idea of connecting to paths already in place around aquarium and basin trail.
Like the lack of traffic in b but the cost is so much higher
Love 3E
Many vehicles leave the roadway around the curve along 3B an I would not feel comfortable riding there even with a separation.
Misleading. There is no easement granted for this to happen.
More bikes less cars. Convert lake park stroad into a Hendersonville like structure.
More greenway the better.
Need designated bike lanes for cyclist safety
No

No
No
No
No additional comment
No additional Comments. It makes sense to use 3E
None
Off the traffic road is ideal.
Prefer the existing shared use path
Route is the only feasible option!
SAA comment.
Safest option for walkers, runners & bikers
Safety away from traffic.

Safety first!
Saving trees
Shared use path on a greenway is the best route for all sections! It is good for all ages and abilities and can accommodate everyone. Roadway path are not as safe.
Shared use path!!!!
Staying in nature and off the roads is the way to go
The path by the aquarium is already quite nice.
I would not be comfortable riding on 3B regardless of it being separated from the road, because of the number of people who routinely go off of the road in that section of road.
The trail alignment should be continuous from Alabama Avenue to Fort Fisher Blvd.
The trail should connect to Ft Fisher facilities,
There are no alternatives to the existing paved route that is 3E.
There should be some trails already there that can be utilized.
This map is useless. I can't see where 3B actually goes.
This would be wonderful
Too bad there's so much path on Ft Fisher Blvd. If kids can't ride on Settlers Ln or the roads south of K Ave, they certainly will never reach the ferry or aquarium....
Traffic safety and environmental impact are most important to me.

Traffic safety should be the #1 consideration.
Try to keep costs down and save the wetlands with many animal and plant species that need protecting.
Use existing greenway.
Users should be able to cross over on Ft Fisher to Aquarium.
Using already crowded existing paths through FF park is unlikely to result in a positive experience for beach guests or trail users. Any use of existing roadway is also problematic in my view due to the high potential for vehicular/pedestrian/cyclist accidents.
Very excited to be able to have that available for walking and biking. Please find a solution for the homeowners that will satisfy them and get the project going. Their peace of mind is the priority for this project to become a reality and I hope that whoever is in charge of decisions, respects their thoughts and opinions.
We should utilize what the paths we currently have and expand, giving the island a top to bottom ability to bike/walk/move scenically while allowing traffic to move safely.
You are trying to link up access to the aquarium and the ferry. While you might think that is a good idea I think not. Who do you think is going to use it. Maybe an occasional biker going on the ferry okay. But do you really think a family of four or five is going to bike for an outing at the aquarium or a day at the beach at the state park. I don't think so. Again an idea with no thought no one will use costing a ton of money and not benefiting the residents of the island.

About Phasing

Comments: Do you have any other comments about the project phasing?
Again your survey is not giving any comments of support for a pathway on 1B Our only option is for 1D
All at once
Bathroom?
Bike safety is a must. I see kids on bikes in traffic in the road daily; Committee did a great job
Build it!!! It benefits everyone.
But no speed bumps please!
Can we start tomorrow? :)
Can't do everything at once...so phasing makes sense. Whatever phase is finished will be used by happy bikers, joggers, etc. I am personally looking forward to this, which will be an amazing amenity for Kure Beach, the Island, and greater Wilmington area.
Communicate range of time to complete each. 3-5 yrs?, 7-10? ... once funded.

Concerns for temporary solution becoming permanent
Continuing environmental study 1C "minimize the effects on residents"???? DO YOU WANT YOUR CHILDREN PLAYING IN YOUR YARD NEXT TO COMPLETE STRANGERS HAVING ACCESS TO YOUR BACKDOOR???? ; WITHOUT DOW ROAD ROW, CANCEL ENTIRE PHASE 2 AND CONTINUE USING NEIGHBORHOOD STREETS, NEVER, EVER BEHIND SETTLERS LN (1C)
Currently you can ride a bike from the greenway in CB to fort fisher using the "proposed path" without "phasing". If the phasing of the Greenway is going to make crossings more safe, AND we will see more traffic control by law enforcement at the crossings and on the roads that more bikes and pedestrians will be using, then it is a good idea. If not, this should not be advertised as the Cross Island Greenway, as it will not actually be any safer then it is now to ride your bike on Lake Park or Fort Fisher Blvd.... which never feels safe as the road is currently not wide enough to feel comfortable with traffic going in both directions, golf carts, trucks, bikes and pedestrians, etc.... esp not to bring small children on it.
Do not support the path being behind the houses on Settlers Ln. it is too obtrusive to those residents.
Doing Phase 2 first is good since Settlers Lane (and other roads north of K Avenue) is currently working. Phase 2 appears to be easier and possibly quicker to complete. Phase 1 needs further assessment for 1C to work effectively.
Don't bother- continue to use settlers lane
Don't want it behind my house; Please don't put it behind settlers!!! Save the animals!!!; Please do jot out it on MOTSU property behind my house. We bought this house because of this!!'
Folks already use Settlers to connect across K avenue, so it may not be worth the additional funds to put up temporary measures, unless there is a safe crossing designated across K.
Full support to accelerate phase 1 while phase 2 receives the approvals needed
Get the project underway and completed.
Get walkers and bikers OFF Settlers Ln. It is creating dangerous interactions between pedestrians, bicycles, dog walkers, and cars. Walkers do not walk on the correct side of the road and bicyclists do not obey traffic laws. Cars can not get through during heavy use times. Do not put non motorized/bicycles and pedestrians on roads. Safety first!
Get what can be started underway soon while the studies for the other phase move forward
Get whatever MOSTU requires in order to get 1C and 2c underway.
Getting walkers and bikers off Settlers by having a community path behind Settlers on the west side is critical to this community.
Have easily accessible trading/classes for cyclists and drives. Helmets for all cyclists are required.
How are you funding this?
How much is this going to cost the town of Kure Beach to maintain? Who will pay to maintain and who will maintain outside city limits?
How will this be paid for?
I am excited to see the greenway extended to the ferry! Love where we live
I am not in favor of this project until I know how it will be paid for and who will pay to maintain it. I do not believe many people will use it south of Kure Beach for the amount of money it will cost. Maybe just widen the existing bike lane so there are no crossings down there. I ride that way (in warm weather) and normally do not see more than 1-2 other riders.

I am strongly against using motsu property. It is designated wetlands west of Settlers Lane, lack of privacy for more than 70 homes. There are already drainage issues for parts of Kure Beach Village and Beach Walk.
I am very pleased this project seems to be moving forward and all stakeholders are being given the opportunity to voice their opinions and ideas.
I believe that the Island Greenway represents a great enhancement to our community and that the recommended 1C, 2C and 3E choices are best, and has the least impact to private property. I have no problem with phasing the project.
I do not believe the project is large enough to be two phases, it's a waste of resources and not effective project management negatively impacting efficient operations and better as a single phase start to finish project.
I do not support 1-C at all
I do not support 1C or 1D
I do not support the project. The impact on my he environment is irreversible and combined with our increasing population, this impact will only worsen
I do not support this project
I do not support this project at all. I think it is a waste of town finances and resources. Who is going to do litter pick up and keep the path clean? It will be an extra burden on public works to maintain the fencing, pathway, trash cans . . .
I do support this but I also support the folks living on Settlers Lane having a big say in giving input & feedback during this process. So have a system in place where they can give feedback and get a response. (I do not live on this road or know anyone that does.)
I don't think an interim phase using Settler's Lane is feasible in real life
I encourage us to work closely and aggressively with MOTSU to ensure the trail being in the area. ; I encourage to work closely with MOTSU to ensure the route goes along the eastern edge of their area
I fear the preferred path will be sidelined by this approach
I feel there will be too many traffic safety issues in utilizing Settlers Lane. This is an already busy road.
I have no real opinion on the phasing, but would really like the entire project to be complete! My family is super supportive of the project!!
I oppose any path and phasing.
I support the greenway extension
I think --illegible-- property values behind Settlers, rising flooding, and safety is terribly irresponsible. Why is public input needed before we know if this is even feasible?
I think it is really needed and super excited
I think the trail/greenway should not utilize existing streets. Should be a separate trail. I also would like to see any motorized types of transport banned on greenway. No battery powered bikes or scooters. This is a problem currently on existing greenway.
I thought it would be 3 phases.. Second 3, then 2, then 1.
I wish the phases were switch. I ride on Settlers frequently and don't feel loved riding through Beach Walk
I worry the phasing will result in the greenway never getting completed. Just do it.
I would be better to complete both phases at the same time.; I am a resident of Kure Beach, and the proposed path potentially goes behind my house. I look forward to having easy access.

I would highly support just 1 phase. Get it funded, approved and get it done. Phasing seems to take forever on this island.
I would like if part of it was finished before the rest.
I would love the greenway to happen but I don't see the point of spending money and disrupting residents along 1D. I would think it would be better to save the money and time and focus on 1C route. I would like to add that I also think the path needs to be a distance from peoples properties just like Carolina beach.
I would not implement Phase 1 interim. I suspect this would become the permanent route.
I would rather have Phase 1 and Phase 2 switched around.
I'd rather it be done in one phase but if it has to be done in 2 phases, it's better than nothing. ; Build the greenway!!!!!!!!
I'm excited about this project. My wife & I chose this community after a 30 year military career as the it has great local options to remain active without the need to drive. If this is built, I would also love to see fitness zones along the path for push ups, sit-ups, pull-ups.... Thank you continuing to make Kure Beach a great community to live.
I'm OK with the project being phased in 2 parts AS LONG as Phase 1 is implemented and Phase 2 is NOT forgotten. Often a project is started, then decided it's "good enough" and the rest of the project not completed. I would not want that to happen on this project.
If part 3 is unrealistic moving forward with phase 2 is an asinine idea, force feeding residents of KURE BEACH who will have to fund this stretch. Wasteful spending. The current, unofficial routes are safe and without incident or accident - documented by KB LEO. Why spend money on this when it's not needed? This isn't a safety idea... it's nothing more than a pet project by some passionate people who are disconnected from reality. Moreover, there are no grant trees. This WILL be funded by taxpayers. Wasteful and will cause longtime residents to move. Council should do better and reject this preferred firebreak route.
If the interim measure is adopted, the town of Kure Beach MUST enforce State Traffic laws that are currently on the books! Failure to do so will only result in potential bike - auto problems. Too, the Town has already designated this as a Bike Route... though a "temporary" designation it's very likely to become permanent.
I'm in favor of all of it being done at once, but if it must be done in 2 phases to complete I'm fine.
I'm not sure. How much extra does this cost the town to do this?
Invest and speed up the environmental study with the hope 1C can be initiated as soon as possible.
It seems smart to see if the shared bike path is sufficient and there are not significant environmental impacts to implement phase 2.
It's smart to move forward with the easy-to-implement part while the studies and process move to the final alignment of the phase 2 part.
Just do phase 2 first.
KB did a great job and I use the greenway. It will be awesome to have a none vehicle route through the island.
Let's get it done; No
Let's get it started!! Can't wait to use it!
Let's go all the way!
Lets just bite the bullet and complete all at once.
Looking forward to the 1C island greenway extension

Love this plan can't wait to get it done
Main concern is not riding on Fort Fisher Blvd!!
Makes good sense to me to be able to keep the project moving forward
Makes sense to prioritize phase 1 since Settlers can be unofficially used during that time.
Minimally invasive trail is best using 1A or 1E existing trails - additional wetland disruptions are costly in initial outlay and those areas would require maintenance and operations budget to protect the users and manage the surfaces and repair slippages for user safety and hazard protection. Flooding and mudslides as well as standing water issues and redirecting the natural runoff of rainwater will be detrimental to the current environment and habitat. Our governor supports wetlands protection.
Mostly looking to stay away from traffic
Need to make the project one phase with the contractor starting at each end and meeting at the park for a grand opening
No
No
No
No
No
No
No
No
No
No
no
No preference about the phases.
No real preference about phasing. Keep costs down would be preferable.
No speed bumps!
No. I doubt it will be done in my lifetime.
Not a fan of Settlers Lane or running a greenway through any more wooded areas as shown on 1C. Run the greenway down Dow Road and 421.
Not soon enough! Already soooo much time been taken trying to appease everyone all the while us bicycle riders put our lives in danger because of vehicles speeding and not paying attention. This will be the summer one of us is killed. Let's get this done. There will always be haters and naysayers who don't like change and/ or bicycles. PS I'm an extremely careful rider and I have been hit twice and have had numerous close calls.
On the map it shows Kure Beach Boardwalk as a Shared Use Path. Would you please change this as it is incorrect. In the published material "Bike, Walk and Hike Routes", put out by the Towns of Kure Beach and Carolina Beach, the KB Boardwalk is labeled as "pedestrian only". Please correct this as it is noted on multiple maps in your study. Also, as an FYI, CAMA's position on the boardwalk is for pedestrian access to the dune crossovers to get to the beach. It was never intended, nor should it ever be intended to be a Shared Use Path for these few short blocks. Thank you.
Only support this as an interim route. Would never support Settler's Lane as the permanent route. Settler's Lane is already overcrowded with exercise walkers/runners, bikers,

skateboarders, golf carts, cars and trade trucks parked on roadway. Funneling more activity on this crowded lane would be a serious safety risk.
Optimally you would run it how the Carolina beach segment was done. In the trees and greenery. Off of the roads.
Pay for the whole thing before next voting cycle.
phase 1 and phase 2 - do not consider any other alternatives - 1E and 2E and 3E are the best option with minimal impact on the environment and community. People say the bike path on US 421 helps drivers keep an eye on the 25 mph speed limit at least.
Phase 1 is already there? (except for markings/traffic calming) and is in use already so not sure what this phase really means.
Phase two should be started and completed first to be continuous with current CB greenway.
Phasing gets us something better than what we have now, sooner. Sure it would be great to have it all done at once and quickly, but I'd prefer some improvements soon over all the improvements at one time a few years from now.
Phasing in the project seems sensible and allows optimal consideration of environmental impacts and MOTSU evaluation of path placement within its boundaries.
Phasing is fine. This is a long overdue amenity that are a priority for cities/towns/communities around the country. I think it'll increase the number of permanent residents and provide an activity venue for our many visitors.
Please finish to Davis drive
please proceed with this very worthwhile project. A safe way to bike from end to end of the island is needed and would get a lot of use.
Please work with the town of Carolina Beach to put together a connector for those wanting to cross the Snows Cut Bridge. I ride frequently, live in Myrtle Grove, and ride my electric bike to downtown Wilmington on nice weather days. Would love to ride to Pleasure Island too.
Pleased you are thinking about options. A bike lane on the bridge into Carolina Beach would also be useful and welcome.
Preference based on speed to use. I don't want to see years of planning without action
PRICING/FUNDING SHOULD BE CONSIDERED AS WELL
Providing a safe cycling route through Settlers Lane while the MOTSU study is completed will give bicyclists an alternative to Ft. Fisher Blvd right away. If we can get a MUP on MOTSU land, that would be great, but it will take time.
Putting off the right decision to create the final option makes it less likely to happen in the future.
Really depends on timing for the phases and overall delay/impact to Phase 2 if we start with Phase 1. Phase 2 is the ultimate goal so we shouldn't spend too much time & money on Phase 1 if it makes a significant impact to completing Phase 2.
SAA comment. Everyone will support their own interests. U can't make everyone happy. U decide the best course.
Safest route for pedestrians
Safety biggest concern - sharing with automobile traffic is dangerous and not enjoyable.
Settlers Lane is too busy a street to add more bikes , e-bikes , and pedestrians
Since work must involve MOTSU for section 2, it seems a waste of time and \$ not to do it all at the same time
Sounds great!
Support if phase 1 environmental studies are conducted while phase 2 is completed.

Support phase 2 completion as long as environmental studies are don in conjunction with phase 1
Th
Thank you for asking! I'm so excited!
Thank you for pushing this project through.
Thank you for your dedication and hard work on this proposal. We need this on our island. Would allow us to safely enjoy the outdoors and wildlife. Thank you.
The environmental study should be completed before any interim alternatives are implemented
The first part is beautiful and away from traffic. Please continue the trail away from traffic.
The phased approach described here does not appear to provide any substantial safety improvements. Accordingly, I do not see significant advantages to the phased approach, particularly if it slows or impedes adoption and implementation of the final trails, which afford far greater safety for families and children.
The sooner the better! We are very excited about this.
The sooner the better!!
This appears to be a way to cater to the residents adjacent to the path of 1-C worried about their privacy, these residents concerns should be addressed with appropriate privacy fencing, plants & trees versus putting the path in the street in front of their houses. Thank you for all the work, I'm a volunteer to help if you ever need help with the project.
This could be confusing once changes are made. Also, what's to stop this from being the final solution? This is a neighborhood and the increased traffic (what about golf carts illegally accessing) could be problematic as the season begins. Settlers Lane is already a known cut through to Ocean when the island gets busier.
This is a very tone deaf presentation, and gives the impression that a decision has already been made, despite assurances to the contrary. There would be no need for these phases if 1C is not selected, making it seem a foregone conclusion. I am deeply disappointed in this presentation and the people making it, who are bulldozing over the opinions of people who actually live here.
This is eliminating option 1-E completely, giving the impression that the path has already been decided, despite you underlining it above.
This seems logical!
This seems to be the most practical approach to me.
This survey is beyond skewed. How can you phase in anything when all of the trail options aren't even being shown? This survey is a joke. It's deceptive. Shame on whoever has designed this.
Upon completion perhaps i'll feel comfortable biking again
Want to see this project happen !
We don't need a trail
We've had direct observation of Settlers Lane sharing vehicle, bicycle, and pedestrian traffic and it does not seem safe
Whatever gets this done. 1 or two phases it doesn't matter.
Whatever needs to be done to safely design and implement path is the best way to proceed while reducing environmental impact and finishing within an appropriate time frame.
Whatever needs to happen to make the trail happen. If that helps, yes. If it postpones the best option, then no.
Why phase the project out. People will get more enjoyment of the project if all is completed together in timely fashion

Wonderful project
Would like this to not significantly delay the process as this will be well received and keep pedestrians and bicyclist off the main roads.
would like to get to phase 2 asap
Would prefer for the trail to never be on Settlers, even as interim

About Amenities

Comments: If you selected "other" please indicate what amenity or feature you would like to see.

Summary:

- Desire for privacy and safety for residents, including buffers between properties and the trail.
- Preference for a trail away from road traffic, especially avoiding Route 421.
- Opposition to lighting due to concerns about light pollution and impact on wildlife.
- Suggestions for amenities such as bathrooms, benches, bike repair stations, and mile markers.
- Consideration for minimizing the environmental impact and preserving the natural landscape.
- Concerns about maintenance of the trail and landscaping.
- Various opinions on the necessity and type of lighting, with suggestions for solar-powered or minimal lighting options.
- Emphasis on privacy, security, and safety for residents and families.
- Consideration for accessibility and convenience, including access to nearby amenities like bars and restaurants.
- Suggestions for additional features such as panic buttons, recycling stations, and workout equipment.

A safe buffer, high enough and natural looking to ensure the residents have their privacy.

A trail AWAY from road traffic. I want my young kids to be able to ride bikes and I don't trust tourists on 421

Absolutely no lighting

Action on this project

Bathroom

bathroom

Benches or other spots to briefly rest; a bike pump station like at the start of the Greenway in Carolina Beach

Bicycle repair stations, water access, AED unit,

Bike repair station, air pump

Bike repair station. Bench. Mile markers

Buffers on either side of the trail if possible
Did not pick other but want to stress I do NOT want lighting behind my house on Settlers lane. I am an avid star gamer and enjoy the current lack of light pollution.
Does not adversely impact home/property owners privacy or safety.
I
I do not support this project
I hope when evaluating this question, you consider that I may only care about or want the first choice, and did not rank the others. Also, tmusing this on mobile is difficult because when you scroll, you can accidentally slide amenities up or down.
I just wanted to comment on lighting I think some sort of lighting is important, however the proximity to residences needs to be taken into consideration when decisions are being made for how bright. Also- perhaps the lighting can be solar based to save electricity.
I would want minimal lighting. We have too much light pollution already
Impact to wildlife, and protected species on the island
It's a walk in the woods; no amenities needed
Landscaping plan and maintenance plan - the tiny path in Kure Beach is not maintained now, how are the home going to have privacy?
Least impactful on the current footprint, while keeping KURE BEACH Kure Beach, not Carolina Beach
Leaving nature alone, there's nothing wrong with our streets!
Many greenways I have been on included access to bars and restaurants along the path. Think that would be a bonus if we could think about, including access to that type of venue
My # 1 priority is a trail that is NOT along 421 where walkers/bikers have to compete with speeding vehicles.
NA
No lighting Don't use at night
No lights!!!!
None
None
Not behind my house
Panic buttons alerting KB Police like used on college campuses
park benches placed every half-mile or so to create rest areas
Port--a-Johns along the way
Privacy for residents
Proper signage along the existing streets
Recycling stations & dog poop receptacles
Restrooms, bike repair station, mile markers
Safety, Security, Privacy for Residents Homes and Families, same as for biking! In NO ONE'S BACKYARD, NOT IN MARITIME FOREST, NOT CUTTING ANY TREES, NOT IN WETLANDS, NO FENCE HARMING WILDLIFE!
Sensitive to Residential privacy and security concerns
Shared use path away from traffic
Stop signs for crossing

Street crossing mechanism and lights like CB. Evaluate e-bike use and define for public and on signage
Toilet access with signage indicating distance to facilities to prevent public urination/defecation along the trail
Trash bins. With dog poop bag stations
Use existing routes
Will there be fencing?
Workout benches and equipment for a fitness trail usage by the community
Zip

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Design Guidelines



Design Guidelines

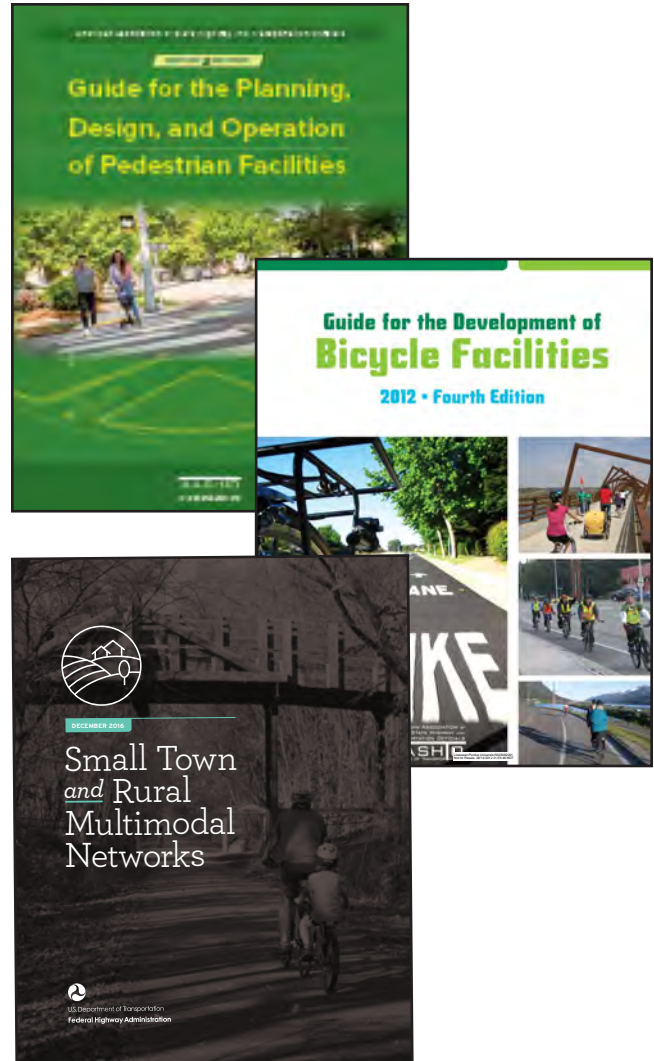
This toolbox presents guidance for local agency staff, elected officials and community advocates to create a more walkable and bicycle-friendly community for people of all ages and abilities. Planners and project designers should refer to these guidelines in developing the infrastructure projects recommended by this plan, but they should not be used as the sole reference for any detailed engineering design.

North Carolina Guidelines

As a starting point, the following list of resources are from the NCDOT website for “Bicycle & Pedestrian Project Development & Design Guidance,” located here (resources listed are linked through this page; last retrieved in December 2021): <https://connect.ncdot.gov/projects/BikePed/Pages/Guidance.aspx>

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (NCDOT)

- ▶ WalkBikeNC: Statewide Pedestrian & Bicycle Plan
- ▶ Glossary of North Carolina Terminology for Active Transportation
- ▶ NCDOT Complete Streets: This policy directs the department to consider and incorporate several modes of transportation when building new projects or making improvements to existing infrastructure. The link below is a landing page with resources such as the Complete Streets policy, the Implementation Guide, Evaluation Methodology, Flowchart, FAQs, and more. <https://connect.ncdot.gov/projects/BikePed/Pages/Complete-Streets.aspx>
- ▶ Evaluating Temporary Accommodations for Pedestrians
- ▶ NC Local Programs Handbook
- ▶ Traditional Neighborhood Development Guidelines



GREENWAY CONSTRUCTION STANDARDS

- ▶ Greenway Standards Summary Memo
- ▶ Design Issues Summary
- ▶ Greenway Design Guidelines Value Engineering Report
- ▶ Summary of Recommendations
- ▶ Minimum Pavement Design Recommendations for Greenways
- ▶ Steps to Construct a Greenway or Shared-Use Trail

National Guidelines

RAILS-TO-TRAILS CONSERVANCY

- ▶ General Design Guidance: <https://www.railstotrails.org/build-trails/trail-building-toolbox/>
- ▶ Rails-with-Trails: <https://www.railstotrails.org/resource-library/resources/americas-rails-with-trails/>

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)

- ▶ Guide for the Development of Bicycle Facilities
- ▶ Guide for the Planning, Design, and Operation of Pedestrian Facilities

THE FEDERAL HIGHWAY ADMINISTRATION (FHWA)

- ▶ Accessibility Guidance
- ▶ Design Guidance
- ▶ Facility Design
- ▶ Facility Operations

MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)

- ▶ Part 4E: Pedestrian Control Features
- ▶ Part 7: Traffic Controls for School Areas
- ▶ Part 9: Traffic Controls for Bicycle Facilities

NATIONAL ASSOCIATION OF CITY TRANSPORTATION OFFICIALS (NACTO)

- ▶ Urban Bikeway Design Guide
- ▶ Urban Street Design Guide

SAFE ROUTES TO SCHOOL (SRTS) NON-INFRASTRUCTURE

- ▶ National Center for Safe Routes to School
- ▶ National Partnership for Safe Routes to School

US ACCESS BOARD

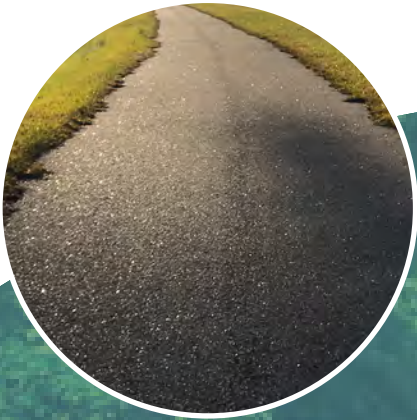
- ▶ ABA Accessibility Standards
- ▶ ADA Accessibility Guidelines
- ▶ ADA Accessibility Standards
- ▶ Public Rights-of-Way, Streets & Sidewalks, and Shared Use Paths

ADDITIONAL FHWA RESOURCES

- ▶ Achieving Multimodal Networks (2016): https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/multimodal_networks/
- ▶ Small Town and Rural Multimodal Networks Design Guide (2017): <https://ruralsignguide.com/>
- ▶ Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations (2018): https://safety.fhwa.dot.gov/ped_bike/step/docs/STEP_Guide_for_Improving_Ped_Safety_at_Unsig_Loc_3-2018_07_17-508compliant.pdf

Trail Surface Considerations

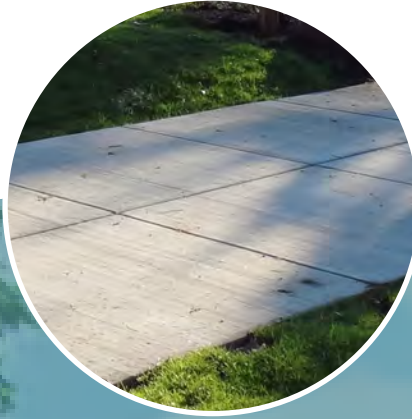
Trail surfaces vary widely in installation cost, user preference, maintenance requirements, aesthetics, and life cycle. These are some considerations for common trail surface types.



ASPHALT

LIFE CYCLE: 10-20 years

- Smooth surface can accommodate many types of uses
- May buckle from tree roots
- Can include a soft-surface shoulder to provide more options for trail users



CONCRETE

LIFE CYCLE: 25-35 years

- Higher initial cost than asphalt
- Durable and resilient to flooding
- Hard surface is not preferred by some users, including runners



CRUSHED STONE

LIFE CYCLE: 5-10 years

- Natural appearance
- Can be made from almost any type of stone
- Accessible for most user types if properly compacted

Sources:

Surface characteristics: Rails to Trails Conservancy. "Surfaces."
www.railstotrails.org/build-trails/trail-building-toolbox/design/surfaces/

Life cycle and cost info: Greenways Incorporated (2022) (except natural earth)

Photos: Crushed Stone: Rocky Branch Trail (Carolina Thread Trail)

Boardwalk: Rich Park Greenway (Piedmont Legacy Trails)



LIFE CYCLE: Constructed greenway facilities have a limited life cycle, or useful life. The life cycle varies based on environmental impact, use, and maintenance. The estimates provided are for the typical life cycle of each trail type.



BOARDWALK

LIFE CYCLE: 7-10 years

- Often used for parts of trails that cross wetlands
- Expensive to install and maintain
- Can be slippery when wet
- Allows drainage and reduces negative impacts on wetlands



NATURAL EARTH

LIFE CYCLE: 5-7 years

- Inexpensive to build and maintain (can often be maintained by volunteers)
- May have drainage issues
- Typically not accessible for wheelchairs, strollers, roller skates/scooters/skateboards, and some bikes

OTHER SURFACES

SOIL-CEMENT

- Uses soil combined with cement and water to stabilize the surface
- Must manage drainage to avoid trail erosion
- Less expensive than asphalt

RESIN-BASED STABILIZED MATERIAL

- Uses resin to bind soil or aggregate together
- Natural appearance
- Less environmental impact than asphalt
- Less expensive than asphalt

RECYCLED MATERIALS

- Uses discarded materials such as old tires mixed into concrete
- Not extensively studied; maintenance needs and costs are not well-documented

Background image: Example walking and biking trail in Arkansas

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Funding Sources



Funding Sources

This appendix is intended to assist Kure Beach stakeholders in identifying the most appropriate federal, state, and local funding sources that can be used for trail design, right-of-way acquisition, and construction.

When considering possible funding sources for bicycle, pedestrian, and trail projects, it is important to remember that not all construction activities or programs will be accomplished with a single funding source. It will be necessary to use several sources of funding that together will support full project completion. Funding sources can be used for a variety of activities, including: programs, planning, design, implementation, and maintenance. This appendix outlines the most likely sources of funding from the federal, state, and local government levels as well as from the private and nonprofit sectors. Note that this reflects the funding available at the time of writing. Funding amounts, cycles, and the programs themselves may change over time.

Building Capacity for Grant Writing

The funding quilt needed to build the trail can take considerable hours in grant writing. There are many options to build capacity for grant writing, including:

- ▶ Working with WMPO staff who regularly write grants.
- ▶ Coordinating with NCDOT IMD about any upcoming grant opportunities, as they often have all-call submissions for potential projects in which they will then help write or pay for professional grant writers, especially for larger federal grants.
- ▶ Contract with professional grant writers that specialize in active transportation funding.

Federal Funding Sources

Federal funding is typically directed through state agencies to local governments either in the form of formula funds or discretionary grants. Federal funding typically requires a local match of 5% to 50%, but there are sometimes exceptions. The following is a list of possible federal funding sources that could be used to support the construction of trail facilities.

Formula Funds (State DOT-administered)

TRANSPORTATION ALTERNATIVES PROGRAM (TAP)

The 2021 Infrastructure Investment and Jobs Act (IIJA) increased TAP from \$850 million to \$1.44 billion per year, an increase of 70%. The North Carolina Department of Transportation (NCDOT) administers this funding for rural areas of the state that do not have a metropolitan planning organization.

In January 2020, NCDOT released the Transportation Alternatives Program (TAP) Bike/Ped Scoping Guide. This document provides detail and guidance on the Project Delivery Process and important elements to consider in bike/ped project development.

For more information: <https://connect.ncdot.gov/projects/BikePed/Documents/BikePed%20Project%20Scoping%20Guidance%20for%20Local%20Governments.pdf>

STBGP-DA & TASA-DA FUNDS

The Surface Transportation Block Grant Program Direct Attributable (STBGP-DA) and Transportation Alternative Set Aside Direct Attributable (TASA-DA) are federal funding sources distributed by metropolitan planning organizations (MPOs). Member jurisdictions of MPOs are eligible to apply for these funds through a competitive funding process that prioritizes locally administered projects. These projects are funded using the federal funding sources directly attributed to the region with a minimum 20% local match.

For more information: <https://www.wmpo.org/stp-datap-da/>

HIGHWAY SAFETY IMPROVEMENT PROGRAM (HSIP)

States where more than 15% of all fatalities involve cyclists or pedestrians (Vulnerable Road Users or VRU) are required to spend 15% of their HSIP funding on bicycle/pedestrian projects. This includes North Carolina, where about 15% of all fatalities involve VRUs. Projects are evaluated, prioritized, and selected at the NCDOT district level based on three years of crash data (targeted funds) or systemic approved projects as outlined in the HSIP guidance. Every state and MPO is required to use at least 2.5% of its apportioned funding to develop planning documents that can include but are not limited to, Complete Streets standards, a Complete Streets prioritization plan, multimodal corridor studies, or active transportation plans (among other uses).

For more information: <https://highways.dot.gov/safety/hsip>

Discretionary Grants (USDOT-administered)

ACTIVE TRANSPORTATION INFRASTRUCTURE INVESTMENT PROGRAM (ATIIP)

The ATIIP awards competitive grants “to plan, design, and construct networks of safe and connected active transportation facilities that connect between destinations within a community or metropolitan region” (FHWA). These grants are intended to support planning and active transportation implementation at the network scale, rather than on a project-by-project basis. ATIIP grants may also fund projects to plan, design, and construct an active transportation “spine,” or a facility that connects communities, regions, or states.

For more information: https://www.fhwa.dot.gov/environment/bicycle_pedestrian/atiip/

HEALTHY STREETS PROGRAM

The Healthy Streets Program is a new discretionary grant program to help expand the use of cool and porous pavement, and to expand tree cover. Goals of the program include mitigating urban heat islands, improving air quality, reducing the extent of impervious surfaces, reducing stormwater run-off and flood risks, and reducing heat impacts to infrastructure and road users. These goals can benefit active transportation by creating a more comfortable walking and biking environment.

For more information: <https://www.congress.gov/117/plaws/publ58/PLAW-117publ58.pdf>

REBUILDING AMERICAN INFRASTRUCTURE WITH SUSTAINABILITY AND EQUITY (RAISE)

RAISE is a competitive grant program that allows the United States Department of Transportation (USDOT) to provide funds for road, rail, transit, and port projects. This grant program was previously known as the Better Utilizing Investments to Leverage Development (BUILD) and Transportation Investment Generating Economic Recovery (TIGER) Discretionary Grants. USDOT evaluates applications for this grant program on the requested infrastructure project’s potential to improve safety, environmental sustainability, quality of life, mobility and community connectivity, economic competitiveness and opportunity (including tourism), state of good repair, partnership and collaboration, and innovation.

For more information: <https://www.transportation.gov/RAISEgrants>

PROMOTING RESILIENT OPERATIONS FOR TRANSFORMATIVE, EFFICIENT, AND COST-SAVING TRANSPORTATION (PROTECT) PROGRAM

The PROTECT grant is a USDOT fund for projects that address the climate crisis by improving the resilience of all surface transportation. Projects should closely follow best available information and practices for climate change risks, impacts, and vulnerabilities. Projects can be funded for

any level and scale of transportation, and this is reflected in that states, MPOs, local governments, federally recognized tribes and affiliated groups, and US territories can all apply directly for the grant. There are two types of grants: Planning and Resilience Grants. Resilience grants have four sub-types: Resilience Improvement, Community Resilience and Evacuation Routes, and At-Risk Coastal Infrastructure. Bicycle and pedestrian paths are eligible surface transportation facilities.

For more information: <https://www.transportation.gov/rural/grant-toolkit/promoting-resilient-operations-transformative-efficient-and-cost-saving>

Other Federal Funding Sources

SAFE ROUTES TO SCHOOL (SRTS) NON-INFRASTRUCTURE PROGRAM

SRTS enables and encourages children to walk and bike to school. The program helps make walking and bicycling to school a safe and more appealing method of transportation for children.

The North Carolina Department of Transportation's Safe Routes to School (SRTS) Program was established in 2005 through SAFETEA-LU as a federally funded program to provide an opportunity for communities to improve conditions for bicycling and walking to school. It is currently supported with Transportation Alternatives federal funding through the Surface Transportation

Block Grant program established under the FAST Act. The SRTS Program has set aside \$1,500,000 per year of Transportation Alternative Program (TAP) funds for non-infrastructure programs and activities over a three-year period. Eligible uses of funds include action plan development, road safety audits, hiring of staff, painting of bike parking lots or traffic gardens at schools, and other programming targeting education, encouragement, and evaluation. Funding requests may range from a yearly amount of \$50,000 to \$100,000 per project. Projects can be one to three years in length. Funding may be requested to support activities for community-wide, regional or statewide programs. Check the link below for information on the current funding cycle.

For more information: <https://connect.ncdot.gov/projects/BikePed/Pages/Non-Infrastructure-Alternatives-Program.aspx>

FEDERAL LANDS TRANSPORTATION PROGRAM (FLTP)

The FLTP funds projects that improve transportation infrastructure owned and maintained by the following Federal Lands Management Agencies: National Park Service (NPS), US Fish and Wildlife Service (FWS), USDA Forest Service, Bureau of Land Management (BLM), US Army Corps of Engineers, Bureau of Reclamation, and independent Federal agencies with land and natural resource management responsibilities. FLTP funds are available for program administration, transportation planning, research, engineering,

rehabilitation, construction, and restoration of Federal Lands Transportation Facilities. Transportation projects that are on the public network that provide access to, adjacent to, or through federal lands are also eligible for funding. Under the IIJA, \$2.2 billion has been allocated to the program for FY 2022-2026.

For more information: <https://highways.dot.gov/federal-lands/transportation>

FEDERAL LAND AND WATER CONSERVATION FUND

The Land and Water Conservation Fund (LWCF) has historically been a primary funding source of the US Department of the Interior for outdoor recreation development and land acquisition by local governments and state agencies. In North Carolina, the program is administered by the Department of Natural and Cultural Resources.

Since 1965, the LWCF program has built a park legacy for present and future generations. In North Carolina alone, the LWCF program has provided more than \$75 million in matching grants to protect land and support more than 875 state and local park projects. More than 38,500 acres have been acquired with LWCF assistance to establish a park legacy in our state. As of August 2020, the LWCF is now permanently funded by the federal government for \$900 million every year. This is hundreds of millions more per year than the fund typically receives.

For more information: <https://www.ncparks.gov/about-us/grants/land-and-water-conservation-fund>

RIVERS, TRAILS, AND CONSERVATION ASSISTANCE PROGRAM

The Rivers, Trails, and Conservation Assistance Program (RTCA) is a National Park Service (NPS) program that provides technical assistance via direct NPS staff involvement to establish and restore greenways, rivers, trails, watersheds and open space. The RTCA program only provides planning assistance; there are no implementation funds available. Projects are prioritized for assistance based on criteria, including conserving significant community resources, fostering cooperation between agencies, serving a large number of users, encouraging public involvement in planning and implementation, and focusing on lasting accomplishments. Project applicants may be state and local agencies, tribes, nonprofit organizations, or citizen groups. National parks and other federal agencies may apply in partnership with other local organizations. This program may benefit trail development in North Carolina indirectly through technical assistance, particularly for community organizations, but is not a capital funding source.

For more information: <https://www.nps.gov/orgs/rtca/index.htm>

State & State-Administered Funding Sources

There are multiple sources for state funding of bicycle and pedestrian transportation projects. However, state transportation funds cannot be used to match federally funded transportation projects, according to a law passed by the North Carolina Legislature.

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (NCDOT) STRATEGIC TRANSPORTATION INVESTMENTS (STI)

Passed in 2013, the Strategic Transportation Investments law (STI) allows NCDOT to use its funding more efficiently and effectively to enhance the state's infrastructure, while supporting economic growth, job creation and a higher quality of life. This process encourages thinking from a statewide and regional perspective while also providing flexibility to address local needs. STI also establishes a way of allocating available revenues based on data-driven scoring and local input. It is used for the State Transportation Improvement Program (STIP), which identifies the transportation projects that will receive funding during a 10-year period. STIP is a state and federal requirement, which NCDOT updates it every two years.

STI's Quantitative Scoring Process

All independent bicycle and pedestrian

projects are ranked based on a quantitative scoring process, with the following main steps:

- ▶ Initial Project Review (NCDOT Strategic Prioritization Office (SPOT))
- ▶ Review Projects and Data (NCDOT Integrated Mobility Division (IMD))
- ▶ Review Data (MPOs, RPOs, Divisions)
- ▶ Review Updates and Calculate Measures (NCDOT IMD)
- ▶ Score Projects (NCDOT SPOT)
- ▶ Bicycle and Pedestrian Project Eligibility Requirements
- ▶ Minimum total project cost = \$100,000
- ▶ Eligible costs include right-of-way, preliminary engineering, and construction

Bicycle and pedestrian and public transportation facilities that appear in a state, regional or locally adopted transportation plan will be included as part of the proposed roadway project. NCDOT will fully fund the cost of designing, acquiring right-of-way, and constructing the identified facilities.

Specific Improvement Types

- ▶ Grade-Separated Bicycle Facility (Bicycle)
- ▶ Off-Road/Separated Linear Bicycle Facility (Bicycle)
- ▶ On-Road; Designated Bicycle Facility (Bicycle)
- ▶ On-Road Bicycle Facility (Bicycle)
- ▶ Multi-Site Bicycle Facility (Bicycle)
- ▶ Grade-Separated Pedestrian Facility (Pedestrian)

- ▶ Protected Linear Pedestrian Facility (Pedestrian)
- ▶ Multi-Site Pedestrian Facility (Pedestrian)
- ▶ Improved Pedestrian Facility (Pedestrian)

Bundling Projects

- ▶ Allowed across geographies and across varying project types.
- ▶ Bundling will be limited by project management requirements rather than geographic limitations.
- ▶ Any bundled project must be expected to be under one project manager/administrative unit (must be a TAP-eligible entity).
- ▶ Makes projects more attractive for LIPs and easier to manage/let.

More Information on Prioritization 7.0 (see Appendix I for more details)

NCDOT's Prioritization Data page has training slides that explain the prioritization process: <https://connect.ncdot.gov/projects/planning/Prioritization%20Data/Forms/AllItems.aspx>

See the "Prioritization Training" folder and the following session information within:

- ▶ Session 3: Detailed information on overall scoring components, including local input points.
- ▶ Session 4: Features relevant project funding information.
- ▶ Session 7: Detailed slides explaining the bicycle and pedestrian project scoring.

High Impact/Low Cost Funds

Established by NCDOT in 2017 to provide funds to complete low-cost projects with high impacts to the transportation system including intersection improvement projects, minor widening projects, and operational improvement projects. Funds are allocated equally to each Division.

Project Selection Criteria

Each Division is responsible for selecting their own scoring criteria for determining projects funded in this program. At a minimum, Divisions must consider all of the following in developing scoring formulas:

- ▶ The average daily traffic volume of a roadway and whether the proposed project will generate additional traffic.
- ▶ Any restrictions on a roadway.
- ▶ Any safety issues with a roadway.
- ▶ The condition of the lanes, shoulders, and pavement on a roadway.
- ▶ The site distance and radius of any intersection on a roadway.
- ▶ \$1.5M max per project unless otherwise approved by the Secretary of Transportation.
- ▶ Projects are expected to be under contract within 12 months of funding approval by BOT.

NCDOT Technical Review & Approval

- ▶ Division Engineer completes project scoring and determines eligibility.
- ▶ Division Engineer determines projects to be funded and requests approval of funding from the Chief Engineer. Division Engineer shall supply all necessary project information including funding request forms, project designs and cost estimates.
- ▶ The Project Review Committee will make a recommendation for further investigation or to include on the Board Agenda for action by the Secretary, NCDOT.

Incidental Projects

Bicycle and Pedestrian accommodations such as bike lanes, wide paved shoulders, sidewalks, intersection improvements, bicycle and pedestrian safe bridge design, etc. are frequently included as “incidental” features of larger highway/roadway projects.

In addition, bicycle safe drainage grates and handicapped accessible sidewalk ramps are now a standard feature of all NCDOT highway construction. Most pedestrian safety accommodations built by NCDOT are included as part of scheduled highway improvement projects funded with a combination of federal and state roadway construction funds.

“Incidental Projects” are often constructed as part of a larger transportation project, when they are justified by local plans that show these improvements as part of a larger, multimodal transportation system. Having a local bicycle or pedestrian plan is important,

because it allows NCDOT to identify where bike and pedestrian improvements are needed, and can be included as part of highway or street improvement projects. It also helps local government identify what their priorities are and how they might be able to pay for these projects. Under the updated NCDOT Complete Streets Policy, NCDOT pays the full cost for incidental projects if the project is proposed in a locally adopted plan (see link to updated NCDOT Complete Streets Implementation Policy below).

For more information: <https://connect.ncdot.gov/projects/BikePed/Documents/Complete%20Streets%20Implementation%20Guide.pdf>

NC HIGHWAY SAFETY IMPROVEMENT PROGRAM

The purpose of the North Carolina Highway Safety Improvement Program (HSIP) is to provide a continuous and systematic process that identifies, reviews, and addresses specific traffic safety concerns throughout the state. The program is structured in several distinct phases:

- ▶ A system of safety warrants is developed to identify locations that are possibly deficient.
- ▶ Locations that meet warrant criteria are categorized as potentially hazardous (PH) locations.
- ▶ Detailed crash analyses are performed on the PH locations with the more severe and correctable crash patterns.

- ▶ The Regional Traffic Engineering staff performs engineering field investigations.
- ▶ The Regional Traffic Engineering staff utilizes Benefit: Cost studies and other tools to develop safety recommendations.

Depending on the cost and nature of the countermeasures, the investigations may result in requesting Division maintenance forces to make adjustments or repairs, developing Spot Safety projects, developing Hazard Elimination projects, making adjustments to current TIP project plans, or utilizing other funding sources to initiate countermeasures. Selected projects are evaluated to determine the effectiveness of countermeasures.

The ultimate goal of the HSIP is to reduce the number of traffic crashes, injuries, and fatalities by reducing the potential for and the severity of these incidents on public roadways.

For more information: <https://connect.ncdot.gov/resources/safety/Pages/NC-Highway-Safety-program-and-Projects.aspx>

HIGHWAY HAZARD ELIMINATION PROGRAM

The Hazard Elimination Program is used to develop larger improvement projects to address safety and potential safety issues. The program is funded with 90% federal funds and 10% state funds. The cost of Hazard Elimination Program projects typically ranges between \$400,000 and \$1 million. A Safety Oversight Committee (SOC) reviews and recommends Hazard Elimination projects to the Board of Transportation (BOT) for

approval and funding. These projects are prioritized for funding according to a safety benefit to cost (B/C) ratio, with the safety benefit being based on crash reduction. Once approved and funded by the BOT, these projects become part of the department's State Transportation Improvement Program (STIP).

For more information: <https://connect.ncdot.gov/resources/safety/Pages/NC-Highway-Safety-program-and-Projects.aspx>

GOVERNOR'S HIGHWAY SAFETY PROGRAM

The Governor's Highway Safety Program (GHSP) funds safety improvement projects on state highways throughout North Carolina. All funding is performance-based. Substantial progress in reducing crashes, injuries, and fatalities is required as a condition of continued funding. Permitted safety projects include checking station equipment, traffic safety equipment, and BikeSafe NC equipment. However, funding is not allowed for speed display signs. This funding source is considered to be "seed money" to get programs started. The grantee is expected to provide a portion of the project costs and is expected to continue the program after GHSP funding ends. Applications must include county level crash data. Local governments, including county governments and municipal governments, are eligible to apply.

For more information: <https://www.ncdot.gov/initiatives-policies/safety/ghsp/Pages/default.aspx>

THE NORTH CAROLINA DIVISION OF PARKS AND RECREATION - RECREATIONAL TRAILS PROGRAM GRANT

Funding from the federal Recreational Trails Program (RTP), which is used for renovating or constructing trails and greenways, is allocated to states. The North Carolina Division of Parks and Recreation and the State Trails Program manages these funds with a goal of helping citizens, organizations and agencies plan, develop, and manage all types of trails ranging from greenways and trails for hiking, biking, and horseback riding to river trails and off-highway vehicle trails. Grants are available to governmental agencies and nonprofit organizations. The maximum grant amount is \$250,000 and requires a 25% match of RTP funds received. Permissible uses include:

- ▶ New trail or greenway construction
- ▶ Trail or greenway renovation
- ▶ Approved trail or greenway facilities
- ▶ Trailhead/ trail markers
- ▶ Purchase of tools to construct and/or renovate trails/greenways
- ▶ Land acquisition for trail purposes
- ▶ Planning, legal, environmental, and permitting costs - up to 10% of grant amount
- ▶ Combination of the above

For more information: <https://trails.nc.gov/trail-grants>

NC PARKS AND RECREATION TRUST FUND (PARTF)

The Parks and Recreation Trust Fund (PARTF) provides dollar-for-dollar matching grants to local governments for parks and recreational projects to serve the general public. Counties, incorporated municipalities, and public authorities, as defined by G.S. 159-7, are eligible applicants. A local government can request a maximum of \$500,000 with each application. An applicant must match the grant dollar-for-dollar, 50% of the total cost of the project, and may contribute more than 50%. The appraised value of land to be donated to the applicant can be used as part of the match. The value of in-kind services, such as volunteer work, cannot be used as part of the match. Property acquired with PARTF funds must be dedicated for public recreational use.

For more information: <https://www.ncparks.gov/more-about-us/parks-recreation-trust-fund/parks-and-recreation-trust-fund>

CLEAN WATER MANAGEMENT TRUST FUND

The Clean Water Management Trust Fund (CWMTF) is available to any state agency, local government, or nonprofit organization whose primary purpose is the conservation, preservation, and restoration of North Carolina's environmental and natural resources. Grant assistance is provided to conservation projects that:

- ▶ Enhance or restore degraded waters;
- ▶ Protect unpolluted waters, and/or contribute toward a network of riparian buffers and greenways for environmental, educational, and recreational benefits;
- ▶ Provide buffers around military bases to protect the military mission;
- ▶ Acquire land that represents the ecological diversity of North Carolina; and
- ▶ Acquire land that contributes to the development of a balanced state program of historic properties.

For more information: <http://www.cwmtf.net/#appmain.htm>

URBAN AND COMMUNITY FORESTRY GRANT

The North Carolina Division of Forest Resources Urban and Community Forestry grant can provide funding for a variety of projects that will help plan and establish street trees as well as trees for urban open space. The goal is to improve public understanding of the benefits of preserving existing tree cover in communities and assist local governments with projects which will lead to more effective and efficient management of urban and community forests.

For more information: https://www.ncforestservice.gov/Urban/urban_grant_program.htm

THE GREAT TRAILS STATE PROGRAM

The Great Trails State Program provides funding for new trail development and extension of existing trails, including paved trails or greenways, natural surface trails, biking trails, equestrian trails, or any other type of trail recognized by the DNCR. There will be one grant cycle distributing \$25 million in non-recurring funding.

For more information: <https://www.ncparks.gov/about-us/grants/great-trails-state-program>

COMPLETE THE TRAILS PROGRAM

Legislation passed in 2021 created the Complete the Trail Program (CTP), which provides over \$30 million of funding for the "planning, construction, promotion, and maintenance of state trails in North Carolina." The planned state trail system is over 3,500 miles, and a portion of CTP funds are designated to support the development of trails that will connect small communities to these trails.

For more information: <https://trails.nc.gov/state-trails/nc-complete-trails-program>

Local Funding Sources

Local governments often plan for the funding of bicycle and pedestrian infrastructure or improvements through development of Capital Improvement Projects (CIP) or occasionally, through their annual Operating Budgets. CIPs should include all types of capital improvements (water, sewer, buildings, streets, etc.) versus programs for single purposes. This allows decision-makers to balance all capital needs. Typical capital funding mechanisms include the capital reserve fund, taxes, fees, and bonds. However, many will require specific local action as a means of establishing a program if it is not already in place.

Private and Nonprofit Funding Sources

Many communities have solicited funding assistance from private foundations and other conservation-minded benefactors. Below are examples of private funding opportunities.

NATIONAL FISH AND WILDLIFE FOUNDATION (NFWF)

The National Fish and Wildlife Foundation (NFWF) is a private, nonprofit, tax-exempt organization chartered by Congress in 1984. The National Fish and Wildlife Foundation sustains, restores, and enhances the Nation's fish, wildlife, plants, and habitats. Through leadership conservation investments with public and private partners, the Foundation is dedicated to achieving maximum conservation impact by developing and applying best practices and innovative methods for measurable outcomes.

The Foundation provides grants through more than 70 diverse conservation grant programs. One of the most relevant programs for bicycle and pedestrian projects is Acres for America. Funding priorities include conservation of bird, fish, plants and wildlife habitats, providing access for people to enjoy outdoors, and connecting existing protected lands. Federal, state, and local government agencies, educational institutions, Native American tribes, and nonprofit organizations may apply twice annually for matching grants. Due to the competitive nature of grant funding for Acres for America, all awarded grants require a minimum 1:1 match.

For more information: <https://www.nfwf.org/apply-grant>

THE CONSERVATION FUND

Through partnerships, technical assistance, and financial support, The Conservation Fund protects America's critical lands and waters to provide greater access to nature, strengthen local economies, and enhance climate resiliency. In particular, The Conservation Fund uses its capital resources to facilitate timely land acquisition, helping conservationists, government agencies, community leaders, and land trusts protect properties for wildlife, recreation (including parks and trails) and/or historic significance. In some scenarios, The Conservation Fund can leverage privately funded dollars to seize on conservation opportunities, working with local communities to ultimately purchase and own conservation/recreation lands. The Conservation Fund is currently working with many communities in North Carolina to preserve rail line corridors for trail use.

For more information: <https://www.conservationfund.org/our-work>

LAND FOR TOMORROW CAMPAIGN

Land for Tomorrow is a diverse partnership of businesses, conservationists, farmers, environmental groups, health professionals, and community groups committed to securing support from the public and General Assembly for protecting land, water, and historic places. Land for Tomorrow works to enable North Carolina to reach a goal of ensuring that working farms and forests, sanctuaries for wildlife, land bordering streams, parks, and greenways, land that helps strengthen communities and promotes

job growth, and historic downtowns and neighborhoods will be there to enhance the quality of life for generations to come.

For more information: <https://www.land4tomorrow.org/>

THE CONSERVATION ALLIANCE

The Conservation Alliance is a nonprofit organization of outdoor businesses whose collective annual membership dues support grassroots citizen-action groups and their efforts to protect wild and natural areas. Grants are typically about \$35,000 each. Funding criteria states that:

- ▶ The project should seek to secure lasting and quantifiable protection of a specific wild land or waterway. We prioritize landscape-scale projects that have a clear benefit for habitat.
- ▶ The campaign should engage grassroots citizen action in support of the conservation effort. We do not fund general education, restoration, stewardship, or scientific research projects.
- ▶ All projects must have a clear recreational benefit.

For more information: <https://conservationalliance.com/grants/?yearly=2020>

BLUE CROSS BLUE SHIELD (BCBS) OF NORTH CAROLINA FOUNDATION

BCBS does not have a traditional grant cycle and announces grant opportunities on a periodic basis. Grants can range from small-dollar equipment grants to large, multi-year partnerships.

For more information: <https://www.bcbsncfoundation.org/overview-and-opportunities/>

DUKE ENERGY FOUNDATION

Funded by Duke Energy shareholders, this foundation makes charitable grants to nonprofit organizations and government agencies. Grant applicants must serve communities that are also served by Duke Energy. The grant program has several investment priorities that could potentially fund bicycle and pedestrian projects. The Duke Energy Foundation is committed to making strategic investments to build powerful communities where nature and wildlife thrive, students can excel, and a talented workforce drives economic prosperity for all.

For more information: <https://www.duke-energy.com/community/duke-energy-foundation>

Z. SMITH REYNOLDS FOUNDATION

This Winston-Salem-based Foundation is committed to improving the quality of life for all North Carolinians. The Z. Smith Reynolds Foundation is a statewide, private, family foundation that has been a catalyst for positive change in North Carolina for more than 80 years. A variety of grant programs are available.

For more information: <http://www.zsr.org/grants-programs>

BANK OF AMERICA CHARITABLE FOUNDATION

The Bank of America Charitable Foundation supports a wide range of activities, including a focus on community greening efforts that create healthy neighborhoods and environmental sustainability through the preservation, creation, or restoration of open space, parks, and community gardens.

For more information: <https://about.bankofamerica.com/en-us/global-impact/charitable-foundation-funding.html>

LOCAL TRAIL SPONSORS

A sponsorship program for trail amenities allows smaller donations to be received from both individuals and businesses. Cash donations could be placed into a trust fund to be accessed for certain construction or acquisition projects associated with the greenways and open space system. Some recognition of the donors is appropriate

and can be accomplished through the placement of a plaque, the naming of a trail segment, and/or special recognition at an opening ceremony. Types of gifts other than cash could include donations of services, equipment, labor, or reduced costs for supplies.

CORPORATE DONATIONS

Corporate donations are often received in the form of liquid investments (i.e., cash, stock, bonds) and in the form of land. Local governments typically create funds to facilitate and simplify a transaction from a corporation's donation to the given locality. Donations are mainly received when a widely supported capital improvement program is implemented.

PRIVATE INDIVIDUAL DONATIONS

Private individual donations can come in the form of liquid investments (i.e., cash, stock, bonds) or land. Local governments typically create funds to facilitate and simplify a transaction from an individual's donation to the given locality. Donations are mainly received when a widely supported capital improvement program is implemented.

FUNDRAISING/CAMPAIGN DRIVES

Organizations and individuals can participate in a fundraiser or a campaign drive. It is essential to market the purpose of a fundraiser to rally support and financial backing. Often times fundraising satisfies the need for public awareness, public education, and financial support.

VOLUNTEER WORK

It is expected that many citizens will be excited about the development of a greenway corridor. Individual volunteers from the community can be brought together with groups of volunteers from church groups, civic groups, scout troops and environmental groups to work on greenway development on special community workdays. Volunteers can also be used for fundraising, maintenance, and programming needs.



Cost Estimates for Preliminary Alternatives

**NOTE: FOR COST FOR FINAL TRAIL PHASES, SEE
APPENDIX H**

****Disclaimer on Order of Magnitude Costs Used to Compare Alternatives:** These order of magnitude planning level costs were developed using the NCDOT Planning Cost Estimator Tool updated in 2023 for the SPOT Prioritization process. This should not be used for construction cost estimates and is only intended for a cost comparison between alternatives. A contingency of +/- \$500,000 should be considered for any cost.*

This cost opinion does not include detailed estimates on: permitting, inspection, construction management, temporary or permanent easements, detailed utility analysis of conflicts and specific relocation needs or the cost for ongoing maintenance, detailed design layout or grading model for quantities, detailed drainage and water quality analysis, cost related to stream crossings, stormwater treatment, detailed utility relocation costs, structural/geotechnical analysis.

It does consider certain costs at a broad planning level, if needed: Design, construction, ROW acquisition cost, signalizations and road crossings, stream crossings, and broad utility relocation cost.

The estimator tool assumes regional cost prices and average land values in North Carolina. This cost opinion is provided for cost comparison only and is adjusted for factors known at the time of preparation. Alta Planning + Design has no control over the cost of labor and material, competitive bidding, or market conditions; and makes no warranties, expressed or implied, concerning the accuracy of the opinion as compared to actual bids or cost.

SIT 7: Protected Linear Pedestrian Facility

Project Name

Island Greenway 1-A

Facility Type:

Shared-Use Path, Multi-Use Path, Rail-Trail,
or Sidepath

Start Over

① Project Length ft

② Proposed Facility Width (Default is 10 feet) ft

③ County

④ City

⑤ Surrounding Development Type

⑥ Registered Historic District ☐ YES ☒ NO

⑦ Impacts to Existing Curb & Gutter ☐ YES ☒ NO

⑧ Number of FEMA Stream Crossings Impacted

⑨ Percentage of ROW Area Needed

⑩ Impact to Active Railroad Track or Railroad ROW ☐ YES ☒ NO

⑪ Roadways Intersected

Interstate	<input type="text" value="0"/>	Major Collector	<input type="text" value="0"/>
Freeway	<input type="text" value="0"/>	Collector	<input type="text" value="0"/>
Major Arterial	<input type="text" value="0"/>	Local Road	<input type="text" value="0"/>
Arterial	<input type="text" value="0"/>	Total	0

⑫ Signalized Intersections Crossed

⑬ Level of Complexity for Signalized Intersections Crossed

⑭ Number of Utility Poles Requiring Relocation

⑮ No Utilities Associated with This Project ☒ No Utilities

Submitted by

[Generate Cost](#) [Edit](#) [Clear](#)

Cost Estimate Summary

Total	\$ 6,175,000
Design	\$ 1,035,000
ROW	\$ 456,000
Utilities	\$ 0
Construction	\$ 4,684,000

[Go to Calculation Tab](#)[Print PDF](#)

Enter Any Desired Notes in the Box Below

All costs are based on 2023 prices and cost components are rounded up to the next \$1,000.

This tool assumes established ecoregion typologies, construction market regions, and average land values specific to North Carolina. They are determined within the tool based on user inputs for project location. This location-based information is used in ROW, construction, and environmental mitigation calculations.

This tool assumes a project impact area for ROW and environmental mitigation calculations based on chosen SIT, facility type, project length, and project facility width.

This tool is limited in accuracy by user inputs and the complexity of questions presented for each project. If the inputs are incorrect, the tool's accuracy will be diminished.

This tool does not estimate costs associated with the purchase or taking of buildings within its ROW estimate calculations. It is assumed that projects would require land acquisition only.

SIT 7: Protected Linear Pedestrian Facility
 Project Name
 Island Greenway 1-B

Facility Type:
 Shared-Use Path, Multi-Use Path, Rail-Trail,
 or Sidepath

Start Over

1 Project Length

8,448 ft

2 Proposed Facility Width (Default is 10 feet)

12 ft

3 County

New Hanover

4 City

Kure Beach

5 Surrounding Development Type

Forested

6 Registered Historic District

☐ YES
 ☒ NO

7 Impacts to Existing Curb & Gutter

☐ YES
 ☒ NO

8 Number of FEMA Stream Crossings Impacted

5

9 Percentage of ROW Area Needed

Minimal (1-15%)

10 Impact to Active Railroad Track or Railroad ROW

☐ YES
 ☒ NO

11 Roadways Intersected

Interstate

0

Major Collector

0

Freeway

0

Collector

0

Major Arterial

0

Local Road

0

Arterial

0

Total

0

12 Signalized Intersections Crossed

0

13 Level of Complexity for Signalized Intersections Crossed

N/A

14 Number of Utility Poles Requiring Relocation

0

15 No Utilities Associated with This Project

☒ No Utilities

Submitted by

KW

Generate Cost

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Cost Estimate Summary

Total	\$ 5,525,000
Design	\$ 955,000
ROW	\$ 406,000
Utilities	\$ 0
Construction	\$ 4,164,000

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Enter Any Desired Notes in the Box Below

All costs are based on 2023 prices and cost components are rounded up to the next \$1,000.

This tool assumes established ecoregion typologies, construction market regions, and average land values specific to North Carolina. They are determined within the tool based on user inputs for project location. This location-based information is used in ROW, construction, and environmental mitigation calculations.

This tool assumes a project impact area for ROW and environmental mitigation calculations based on chosen SIT, facility type, project length, and project facility width.

This tool is limited in accuracy by user inputs and the complexity of questions presented for each project. If the inputs are incorrect, the tool's accuracy will be diminished.

This tool does not estimate costs associated with the purchase or taking of buildings within its ROW estimate calculations. It is assumed that projects would require land acquisition only.

SIT 7: Protected Linear Pedestrian Facility

Project Name
Island Greenway 1-C

Facility Type:
Shared-Use Path, Multi-Use Path, Rail-Trail,
or Sidepath

Start Over

① Project Length ft

② Proposed Facility Width (Default is 10 feet) ft

③ County

④ City

⑤ Surrounding Development Type

⑥ Registered Historic District ☐ YES ☒ NO

⑦ Impacts to Existing Curb & Gutter ☐ YES ☒ NO

⑧ Number of FEMA Stream Crossings Impacted

⑨ Percentage of ROW Area Needed

⑩ Impact to Active Railroad Track or Railroad ROW ☐ YES ☒ NO

⑪ Roadways Intersected
Interstate
Freeway
Major Arterial
Arterial
Major Collector
Collector
Local Road
Total 0

⑫ Signalized Intersections Crossed

⑬ Level of Complexity for Signalized Intersections Crossed

⑭ Number of Utility Poles Requiring Relocation

⑮ No Utilities Associated with This Project ☒ No Utilities

Submitted by

Generate Cost Edit Clear

Cost Estimate Summary

Total	\$ 4,519,000	Go to Calculation Tab
Design	\$ 749,000	
ROW	\$ 335,000	Print PDF
Utilities	\$ 0	
Construction	\$ 3,435,000	

Enter Any Desired Notes in the Box Below

All costs are based on 2023 prices and cost components are rounded up to the next \$1,000.

This tool assumes established ecoregion typologies, construction market regions, and average land values specific to North Carolina. They are determined within the tool based on user inputs for project location. This location-based information is used in ROW, construction, and environmental mitigation calculations.

This tool assumes a project impact area for ROW and environmental mitigation calculations based on chosen SIT, facility type, project length, and project facility width.

This tool is limited in accuracy by user inputs and the complexity of questions presented for each project. If the inputs are incorrect, the tool's accuracy will be diminished.

This tool does not estimate costs associated with the purchase or taking of buildings within its ROW estimate calculations. It is assumed that projects would require land acquisition only.

SIT 7: Protected Linear Pedestrian Facility
 Project Name
 Island Greenway 1-E

Facility Type:
 Shared-Use Path, Multi-Use Path, Rail-Trail,
 or Sidepath

Start Over

1 Project Length

9,768 ft

2 Proposed Facility Width (Default is 10 feet)

10 ft

3 County

New Hanover

4 City

Kure Beach

5 Surrounding Development Type

Urban

6 Registered Historic District

☐ YES
 ☒ NO

7 Impacts to Existing Curb & Gutter

☒ YES
 ☐ NO

8 Number of FEMA Stream Crossings Impacted

0

9 Percentage of ROW Area Needed

Large (25%-60%)

10 Impact to Active Railroad Track or Railroad ROW

☐ YES
 ☒ NO

11 Roadways Intersected

Interstate

0

Freeway

0

Major Arterial

0

Arterial

0

Major Collector

0

Collector

0

Local Road

3

Total

3

12 Signalized Intersections Crossed

0

13 Level of Complexity for Signalized Intersections Crossed

N/A

14 Number of Utility Poles Requiring Relocation

15

15 No Utilities Associated with This Project

☐ No Utilities

Submitted by

KW

Generate Cost

Edit

Clear

Cost Estimate Summary

Total	\$ 7,209,000
Design	\$ 395,000
ROW	\$ 1,678,000
Utilities	\$ 759,000
Construction	\$ 4,377,000

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Enter Any Desired Notes in the Box Below

All costs are based on 2023 prices and cost components are rounded up to the next \$1,000.

This tool assumes established ecoregion typologies, construction market regions, and average land values specific to North Carolina. They are determined within the tool based on user inputs for project location. This location-based information is used in ROW, construction, and environmental mitigation calculations.

This tool assumes a project impact area for ROW and environmental mitigation calculations based on chosen SIT, facility type, project length, and project facility width.

This tool is limited in accuracy by user inputs and the complexity of questions presented for each project. If the inputs are incorrect, the tool's accuracy will be diminished.

This tool does not estimate costs associated with the purchase or taking of buildings within its ROW estimate calculations. It is assumed that projects would require land acquisition only.

Note 1D (on-street greenway on Settlers Lane) was not included as a detailed estimate, rather a lump sum for traffic calming and wayfinding that could be used as an interim measure. If this option is chosen as an interim measure, a more detailed cost estimate will be developed with specific design details and design input from the Steering Committee.

SIT 7: Protected Linear Pedestrian Facility

Project Name

Island Greenway 2-A

Facility Type:

Shared-Use Path, Multi-Use Path, Rail-Trail,
or Sidepath

Start Over

- ① Project Length ft
- ② Proposed Facility Width (Default is 10 feet) ft
- ③ County
- ④ City
- ⑤ Surrounding Development Type
- ⑥ Registered Historic District ☐ YES ☒ NO
- ⑦ Impacts to Existing Curb & Gutter ☐ YES ☒ NO
- ⑧ Number of FEMA Stream Crossings Impacted
- ⑨ Percentage of ROW Area Needed
- ⑩ Impact to Active Railroad Track or Railroad ROW ☐ YES ☒ NO

- ⑪ Roadways Intersected
- | | | | |
|----------------|--------------------------------|-----------------|--------------------------------|
| Interstate | <input type="text" value="0"/> | Major Collector | <input type="text" value="0"/> |
| Freeway | <input type="text" value="0"/> | Collector | <input type="text" value="0"/> |
| Major Arterial | <input type="text" value="0"/> | Local Road | <input type="text" value="0"/> |
| Arterial | <input type="text" value="0"/> | Total | 0 |

⑫ Signalized Intersections Crossed ⑬ Level of Complexity for Signalized Intersections Crossed ⑭ Number of Utility Poles Requiring Relocation ⑮ No Utilities Associated with This Project ☒ No UtilitiesSubmitted by

Generate Cost

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Cost Estimate Summary

Total	\$ 2,427,000
Design	\$ 371,000
ROW	\$ 0
Utilities	\$ 0
Construction	\$ 2,056,000

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Print PDF

Enter Any Desired Notes in the Box Below

All costs are based on 2023 prices and cost components are rounded up to the next \$1,000.

This tool assumes established ecoregion typologies, construction market regions, and average land values specific to North Carolina. They are determined within the tool based on user inputs for project location. This location-based information is used in ROW, construction, and environmental mitigation calculations.

This tool assumes a project impact area for ROW and environmental mitigation calculations based on chosen SIT, facility type, project length, and project facility width.

This tool is limited in accuracy by user inputs and the complexity of questions presented for each project. If the inputs are incorrect, the tool's accuracy will be diminished.

This tool does not estimate costs associated with the purchase or taking of buildings within its ROW estimate calculations. It is assumed that projects would require land acquisition only.

SIT 7: Protected Linear Pedestrian Facility

Project Name
Island Greenway 2-C

Facility Type:
Shared-Use Path, Multi-Use Path, Rail-Trail, or Sidepath

Start Over

① Project Length ft

② Proposed Facility Width (Default is 10 feet) ft

③ County

④ City

⑤ Surrounding Development Type

⑥ Registered Historic District ☐ YES ☒ NO

⑦ Impacts to Existing Curb & Gutter ☐ YES ☒ NO

⑧ Number of FEMA Stream Crossings Impacted

⑨ Percentage of ROW Area Needed

⑩ Impact to Active Railroad Track or Railroad ROW ☐ YES ☒ NO

⑪ Roadways Intersected

Interstate	<input type="text" value="0"/>	Major Collector	<input type="text" value="0"/>
Freeway	<input type="text" value="0"/>	Collector	<input type="text" value="1"/>
Major Arterial	<input type="text" value="0"/>	Local Road	<input type="text" value="0"/>
Arterial	<input type="text" value="0"/>	Total	1

⑫ Signalized Intersections Crossed

⑬ Level of Complexity for Signalized Intersections Crossed

⑭ Number of Utility Poles Requiring Relocation

⑮ No Utilities Associated with This Project ☒ No Utilities

Submitted by

Generate Cost Edit Clear

Cost Estimate Summary

Total	\$ 3,076,000
Design	\$ 518,000
ROW	\$ 218,000
Utilities	\$ 0
Construction	\$ 2,340,000

Go to Calculation Tab

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Enter Any Desired Notes in the Box Below

All costs are based on 2023 prices and cost components are rounded up to the next \$1,000.

This tool assumes established ecoregion typologies, construction market regions, and average land values specific to North Carolina. They are determined within the tool based on user inputs for project location. This location-based information is used in ROW, construction, and environmental mitigation calculations.

This tool assumes a project impact area for ROW and environmental mitigation calculations based on chosen SIT, facility type, project length, and project facility width.

This tool is limited in accuracy by user inputs and the complexity of questions presented for each project. If the inputs are incorrect, the tool's accuracy will be diminished.

This tool does not estimate costs associated with the purchase or taking of buildings within its ROW estimate calculations. It is assumed that projects would require land acquisition only.

SIT 7: Protected Linear Pedestrian Facility

Project Name

Island Greenway 2-D

Facility Type:

Shared-Use Path, Multi-Use Path, Rail-Trail,
or Sidepath

Start Over

- ① Project Length ft
- ② Proposed Facility Width (Default is 10 feet) ft
- ③ County
- ④ City
- ⑤ Surrounding Development Type
- ⑥ Registered Historic District ☐ YES ☒ NO
- ⑦ Impacts to Existing Curb & Gutter ☐ YES ☒ NO
- ⑧ Number of FEMA Stream Crossings Impacted
- ⑨ Percentage of ROW Area Needed
- ⑩ Impact to Active Railroad Track or Railroad ROW ☐ YES ☒ NO

- ⑪ Roadways Intersected
- | | | | |
|----------------|--------------------------------|-----------------|--------------------------------|
| Interstate | <input type="text" value="0"/> | Major Collector | <input type="text" value="0"/> |
| Freeway | <input type="text" value="0"/> | Collector | <input type="text" value="1"/> |
| Major Arterial | <input type="text" value="0"/> | Local Road | <input type="text" value="0"/> |
| Arterial | <input type="text" value="0"/> | Total | 1 |
- ⑫ Signalized Intersections Crossed
- ⑬ Level of Complexity for Signalized Intersections Crossed
- ⑭ Number of Utility Poles Requiring Relocation
- ⑮ No Utilities Associated with This Project ☒ No Utilities

Submitted by

KW

Generate Cost

Edit

Clear

Cost Estimate Summary

Total	\$ 1,886,000
Design	\$ 442,000
ROW	\$ 120,000
Utilities	\$ 45,000
Construction	\$ 1,279,000

Go to Calculation Tab

Print PDF

Enter Any Desired Notes in the Box Below

All costs are based on 2023 prices and cost components are rounded up to the next \$1,000.

This tool assumes established ecoregion typologies, construction market regions, and average land values specific to North Carolina. They are determined within the tool based on user inputs for project location. This location-based information is used in ROW, construction, and environmental mitigation calculations.

This tool assumes a project impact area for ROW and environmental mitigation calculations based on chosen SIT, facility type, project length, and project facility width.

This tool is limited in accuracy by user inputs and the complexity of questions presented for each project. If the inputs are incorrect, the tool's accuracy will be diminished.

This tool does not estimate costs associated with the purchase or taking of buildings within its ROW estimate calculations. It is assumed that projects would require land acquisition only.

SIT 7: Protected Linear Pedestrian Facility


Project Name

Island Greenway 2-E

Facility Type:

Shared-Use Path, Multi-Use Path, Rail-Trail, or Sidepath

Start Over



1

Project Length

7,973

ft

2

Proposed Facility Width (Default is 10 feet)

12

ft

3

County

New Hanover

4

City

Kure Beach

5

Surrounding Development Type

Downtown

6

Registered Historic District

☐ YES ☒ NO

7

Impacts to Existing Curb & Gutter

☒ YES ☐ NO

8

Number of FEMA Stream Crossings Impacted

0

9

Percentage of ROW Area Needed

Large (25%-60%)

10

Impact to Active Railroad Track or Railroad ROW

☐ YES ☒ NO

11

Roadways Intersected

Interstate0

Freeway0

Major Arterial0

Arterial0

Major Collector1

Collector0

Local Road15

Total16

12

Signalized Intersections Crossed

0

13

Level of Complexity for Signalized Intersections Crossed

N/A

14

Number of Utility Poles Requiring Relocation

10

15

No Utilities Associated with This Project

☐ No Utilities

Submitted by

KW

Generate Cost

Edit

Clear

Cost Estimate Summary

Total	\$ 7,169,000
Design	\$ 376,000
ROW	\$ 1,531,000
Utilities	\$ 618,000
Construction	\$ 4,644,000

Go to Calculation Tab

Print PDF

Enter Any Desired Notes in the Box Below

Rounded off to \$7.2 million, due to need for some stormwater utilities along road.

All costs are based on 2023 prices and cost components are rounded up to the next \$1,000.

This tool assumes established ecoregion typologies, construction market regions, and average land values specific to North Carolina. They are determined within the tool based on user inputs for project location. This location-based information is used in ROW, construction, and environmental mitigation calculations.

This tool assumes a project impact area for ROW and environmental mitigation calculations based on chosen SIT, facility type, project length, and project facility width.

This tool is limited in accuracy by user inputs and the complexity of questions presented for each project. If the inputs are incorrect, the tool's accuracy will be diminished.

This tool does not estimate costs associated with the purchase or taking of buildings within its ROW estimate calculations. It is assumed that projects would require land acquisition only.

SIT 7: Protected Linear Pedestrian Facility

Project Name

Island Greenway 3-B

Facility Type:

Shared-Use Path, Multi-Use Path, Rail-Trail,
or Sidepath

Start Over

① Project Length ft

② Proposed Facility Width (Default is 10 feet) ft

③ County

④ City

⑤ Surrounding Development Type

⑥ Registered Historic District ☐ YES ☒ NO

⑦ Impacts to Existing Curb & Gutter ☐ YES ☒ NO

⑧ Number of FEMA Stream Crossings Impacted

⑨ Percentage of ROW Area Needed

⑩ Impact to Active Railroad Track or Railroad ROW ☐ YES ☒ NO

⑪ Roadways Intersected

Interstate	<input type="text" value="0"/>	Major Collector	<input type="text" value="0"/>
Freeway	<input type="text" value="0"/>	Collector	<input type="text" value="0"/>
Major Arterial	<input type="text" value="0"/>	Local Road	<input type="text" value="0"/>
Arterial	<input type="text" value="0"/>	Total	0

⑫ Signalized Intersections Crossed

⑬ Level of Complexity for Signalized Intersections Crossed

⑭ Number of Utility Poles Requiring Relocation

⑮ No Utilities Associated with This Project ☐ No Utilities

Submitted by

[Generate Cost](#) [Edit](#) [Clear](#)

Cost Estimate Summary

Total	\$ 1,392,000
Design	\$ 209,000
ROW	\$ 0
Utilities	\$ 0
Construction	\$ 1,183,000

[Go to Calculation Tab](#)[Print PDF](#)

Enter Any Desired Notes in the Box Below

All costs are based on 2023 prices and cost components are rounded up to the next \$1,000.

This tool assumes established ecoregion typologies, construction market regions, and average land values specific to North Carolina. They are determined within the tool based on user inputs for project location. This location-based information is used in ROW, construction, and environmental mitigation calculations.

This tool assumes a project impact area for ROW and environmental mitigation calculations based on chosen SIT, facility type, project length, and project facility width.

This tool is limited in accuracy by user inputs and the complexity of questions presented for each project. If the inputs are incorrect, the tool's accuracy will be diminished.

This tool does not estimate costs associated with the purchase or taking of buildings within its ROW estimate calculations. It is assumed that projects would require land acquisition only.

SIT 7: Protected Linear Pedestrian Facility

Project Name

Island Greenway 3-E

Facility Type:

Shared-Use Path, Multi-Use Path, Rail-Trail,
or Sidepath

Start Over

- ① Project Length ft
- ② Proposed Facility Width (Default is 10 feet) ft
- ③ County
- ④ City
- ⑤ Surrounding Development Type
- ⑥ Registered Historic District ☐ YES ☒ NO
- ⑦ Impacts to Existing Curb & Gutter ☐ YES ☒ NO
- ⑧ Number of FEMA Stream Crossings Impacted
- ⑨ Percentage of ROW Area Needed
- ⑩ Impact to Active Railroad Track or Railroad ROW ☐ YES ☒ NO

- ⑪ Roadways Intersected
- | | | | |
|----------------|--------------------------------|-----------------|--------------------------------|
| Interstate | <input type="text" value="0"/> | Major Collector | <input type="text" value="0"/> |
| Freeway | <input type="text" value="0"/> | Collector | <input type="text" value="0"/> |
| Major Arterial | <input type="text" value="0"/> | Local Road | <input type="text" value="1"/> |
| Arterial | <input type="text" value="0"/> | Total | 1 |
- ⑫ Signalized Intersections Crossed
- ⑬ Level of Complexity for Signalized Intersections Crossed
- ⑭ Number of Utility Poles Requiring Relocation
- ⑮ No Utilities Associated with This Project ☒ No Utilities

Submitted by

KW

Generate Cost

Edit

Clear

Cost Estimate Summary

Total	\$ 2,420,000
Design	\$ 512,000
ROW	\$ 0
Utilities	\$ 873,000
Construction	\$ 1,035,000

Go to Calculation Tab

Print PDF

Enter Any Desired Notes in the Box Below

All costs are based on 2023 prices and cost components are rounded up to the next \$1,000.

This tool assumes established ecoregion typologies, construction market regions, and average land values specific to North Carolina. They are determined within the tool based on user inputs for project location. This location-based information is used in ROW, construction, and environmental mitigation calculations.

This tool assumes a project impact area for ROW and environmental mitigation calculations based on chosen SIT, facility type, project length, and project facility width.

This tool is limited in accuracy by user inputs and the complexity of questions presented for each project. If the inputs are incorrect, the tool's accuracy will be diminished.

This tool does not estimate costs associated with the purchase or taking of buildings within its ROW estimate calculations. It is assumed that projects would require land acquisition only.

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Planning Level Cost Estimates for Preferred Alternatives

The estimated cost sheets in this appendix correspond to the project phases described in Chapter 5 (Phases 1, 1 interim, and 2).

Cost Disclaimer:

When reviewing the estimated construction costs in this plan, please take into account the following important notes and caveats:

- ▶ Costs will likely change as more information becomes available in the design phase.
- ▶ Costs are listed in the base year of 2024, and are escalated at a rate of 8% to 2028.
- ▶ Cost estimates do not include land acquisition/ROW needs, utility relocations, alterations to drainage structures, engineering, or construction inspection.

Phase One

ITEM NO.		ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
DESC. NO.	SECT. NO.					
0000100000-N	800	MOBILIZATION	1	LS	\$287,000.00	\$287,000.00
0000400000-N	801	CONSTRUCTION SURVEYING	1	LS	\$133,000.00	\$133,000.00
0043000000-N	226	GRADING	1	LS	\$1,010,000.00	\$1,010,000.00
1121000000-E	520	AGGREGATE BASE COURSE	3,160	TON	\$55.00	\$173,800.00
1523000000-E	610	ASPHALT CONC SURFACE COURSE, TYPE S9.5C	900	TON	\$175.00	\$157,500.00
1575000000-E	620	ASPHALT BINDER FOR PLANT MIX	55	TON	\$900.00	\$49,500.00
2549000000-E	846	2'-6" CONCRETE CURB & GUTTER	9,400	LF	\$40.00	\$376,000.00
2591000000-E	848	4" CONCRETE SIDEWALK	10,332	SY	\$80.00	\$826,560.00
2605000000-N	848	CONCRETE CURB RAMP	27	EA	\$3,000.00	\$81,000.00
2612000000-E	848	6" CONCRETE DRIVEWAY	770	SY	\$110.00	\$84,700.00
4457000000-N	SP	TEMPORARY TRAFFIC CONTROL	1	LS	\$340,000.00	\$340,000.00
		RECTANGULAR RAPID FLASHING BEACON CROSSING (EA SIGN)	2	EA	\$10,000.00	\$20,000.00
		10' CLEAR WIDTH WOOD BOARDWALK	1,000	LF	\$1,000.00	\$1,000,000.00
		TRAILHEAD PARKING LOT OFF OF PRESIDENT DAVIS AVE (6 PARKING SPACES)	1	LS	\$25,000.00	\$25,000.00
		TRAILHEAD SIGN/KIOSK	3	EA	\$3,000.00	\$9,000.00
		DRAINAGE ALLOWANCE	1	LS	\$225,000.00	\$225,000.00
		EROSION CONTROL ALLOWANCE	1	LS	\$160,000.00	\$160,000.00
		MINOR ITEMS (5%)	1	LS	\$234,000.00	\$234,000.00
CONSTRUCTION COST SUBTOTAL (2024)						\$5,193,000.00
CONTINGENCY						30% \$1,557,900.00
TOTAL CONSTRUCTION COST (2024)						\$6,751,000.00
INFLATION FACTOR						4 YRS 8% \$2,434,000.00
CONSTRUCTION COST TOTAL (2028)						\$9,185,000.00
DESIGN AND PERMITTING						15% \$1,378,000.00
NCDOT ADMINISTRATION FEE						10% \$919,000.00
CONSTRUCTION ENGINEERING INSPECTION (CEI)						15% \$1,378,000.00
TOTAL ESTIMATED PROJECT COST (2028)						\$12,860,000.00

NOTE: ESTIMATE IS NOT BASED ON AN ENGINEERING DESIGN, AND IS FOR PLANNING PURPOSES ONLY.

ASSUMES LAP FUNDING WITH NCDOT ADMINISTRATION FEE


EXCLUDES RIGHT-OF-WAY COSTS.

UNDERGROUND UTILITY COORDINATION/RELOCATION COSTS UNKNOWN AND NOT INCLUDED.

EXCLUDES POTENTIAL GREEN INFRASTRUCTURE. EXCLUDES POTENTIAL WETLAND MITIGATION FEES.

COMPUTED BY _____ CJA
DATE _____ 6/12/2024

Phase One Interim



Alta Engineering SE, PLLC
NC License #P-1301

PLANNING ESTIMATE

ISLAND GREENWAY FEASIBILITY STUDY

LOCATION: PHASE 1 / INTERIM MEASURE - SETTLERS LANE BIKE BOULEVARD

DESCRIPTION: 260LF 12' WIDE CONCRETE SIDE PATH ALONG K AVENUE

5160LF BIKE BOULEVARD WITH SHARROWS AND SPEED CUSHIONS EVERY 500 FT ALONG SETTLERS LANE

TOTAL LENGTH:

1.0 MILES

TOWN/CITY: KURE BEACH, NC COUNTY: NEW HANOVER

ITEM NO.		ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
DESC. NO.	SECT. NO.					
0000100000-N	800	MOBILIZATION	1	LS	\$25,000.00	\$25,000.00
0000400000-N	801	CONSTRUCTION SURVEYING	1	LS	\$3,000.00	\$3,000.00
0043000000-N	226	GRADING	1	LS	\$15,000.00	\$15,000.00
2591000000-E	848	4" CONCRETE SIDEWALK	347	SY	\$90.00	\$31,230.00
2605000000-N	848	CONCRETE CURB RAMP	6	EA	\$3,000.00	\$18,000.00
4025000000-E		CONTR FURN, ***SIGN (E)	180	SF	\$20.00	\$3,600.00
4072000000-E	903	SUPPORTS, 3-LB STEEL U-CHANNEL	270	LF	\$20.00	\$5,400.00
4102000000-N	904	SIGN ERECTION, TYPE E	20	EA	\$150.00	\$3,000.00
4457000000-N	SP	TEMPORARY TRAFFIC CONTROL	1	LS	\$50,000.00	\$50,000.00
4725000000-E	1205	THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS)	41	EA	\$500.00	\$20,640.00
		SPEED CUSHIONS (PER SET OF 3 AT EACH LOCATION)	11	EA	\$7,700.00	\$84,700.00
		EROSION CONTROL ALLOWANCE	1	LS	\$5,000.00	\$5,000.00
		MINOR ITEMS (5%)	1	LS	\$12,000.00	\$12,000.00
CONSTRUCTION COST SUBTOTAL (2024)						\$277,000.00
CONTINGENCY					30%	\$83,100.00
TOTAL CONSTRUCTION COST (2024)						\$361,000.00
INFLATION FACTOR			4	YRS	8%	\$131,000.00
CONSTRUCTION COST TOTAL (2028)						\$492,000.00
DESIGN AND PERMITTING					15%	\$74,000.00
NCDOT ADMINISTRATION FEE					10%	\$50,000.00
CONSTRUCTION ENGINEERING INSPECTION (CEI)					15%	\$74,000.00
TOTAL ESTIMATED PROJECT COST (2028)						\$690,000.00

NOTE: ESTIMATE IS NOT BASED ON AN ENGINEERING DESIGN, AND IS FOR PLANNING PURPOSES ONLY.

ASSUMES LAP FUNDING WITH NCDOT ADMINISTRATION FEE

EXCLUDES RIGHT-OF-WAY COSTS.

UNDERGROUND UTILITY COORDINATION/RELOCATION COSTS UNKNOWN AND NOT INCLUDED.

COMPUTED BY

CJA

DATE

6/12/2024

Phase Two

ITEM NO.		ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
DESC. NO.	SECT. NO.					
0000100000-N	800	MOBILIZATION	1	LS	\$146,000.00	\$146,000.00
0000400000-N	801	CONSTRUCTION SURVEYING	1	LS	\$48,000.00	\$48,000.00
0043000000-N	226	GRADING	1	LS	\$287,000.00	\$287,000.00
1121000000-E	520	AGGREGATE BASE COURSE	1,880	TON	\$55.00	\$103,400.00
1523000000-E	610	ASPHALT CONC SURFACE COURSE, TYPE S9.5C	540	TON	\$175.00	\$94,500.00
1575000000-E	620	ASPHALT BINDER FOR PLANT MIX	35	TON	\$900.00	\$31,500.00
4457000000-N	SP	TEMPORARY TRAFFIC CONTROL	1	LS	\$20,000.00	\$20,000.00
		10' CLEAR WIDTH WOOD BOARDWALK	1,700	LF	\$1,000.00	\$1,700,000.00
		DRAINAGE ALLOWANCE	1	LS	\$15,000.00	\$15,000.00
		EROSION CONTROL ALLOWANCE	1	LS	\$55,000.00	\$55,000.00
		MINOR ITEMS (5%)	1	LS	\$118,000.00	\$118,000.00
CONSTRUCTION COST SUBTOTAL (2024)						\$2,619,000.00
CONTINGENCY					30%	\$785,700.00
TOTAL CONSTRUCTION COST (2024)						\$3,405,000.00
INFLATION FACTOR				4 YRS	8%	\$1,228,000.00
CONSTRUCTION COST TOTAL (2028)						\$4,633,000.00
DESIGN AND PERMITTING					15%	\$695,000.00
NCDOT ADMINISTRATION FEE					10%	\$464,000.00
CONSTRUCTION ENGINEERING INSPECTION (CEI)					15%	\$695,000.00
TOTAL ESTIMATED PROJECT COST (2028)						\$6,487,000.00

NOTE:

ESTIMATE IS NOT BASED ON AN ENGINEERING DESIGN, AND IS FOR PLANNING PURPOSES ONLY.

ASSUMES LAP FUNDING WITH NCDOT ADMINISTRATION FEE

EXCLUDES RIGHT-OF-WAY COSTS.

UNDERGROUND UTILITY COORDINATION/RELOCATION COSTS UNKNOWN AND NOT INCLUDED.

EXCLUDES POTENTIAL GREEN INFRASTRUCTURE. EXCLUDES POTENTIAL WETLAND MITIGATION FEES.

COMPUTED BY CJA
 DATE 6/12/2024



SPOT Scoring Component Resources

NCDOT P7.0 SPOT Scoring Component Resources

Most opportunities for NCDOT funding must submit to be part of the Statewide Transportation Improvement Program and will receive a score. This can be done in partner with the Kerr-Tar Rural Planning Organization, which serves as a local partner to NCDOT.

NCDOT's Strategic Transportation Prioritization (SPOT) process is a data-driven methodology used to develop the State Transportation Improvement Program (STIP). All projects, including roadway, public transportation, rail, aviation, bicycle, and pedestrian projects are scored according to the SPOT criteria. This appendix provides further detail on how to submit a project for bicycle and pedestrian project scoring.

Scoring Process Overview

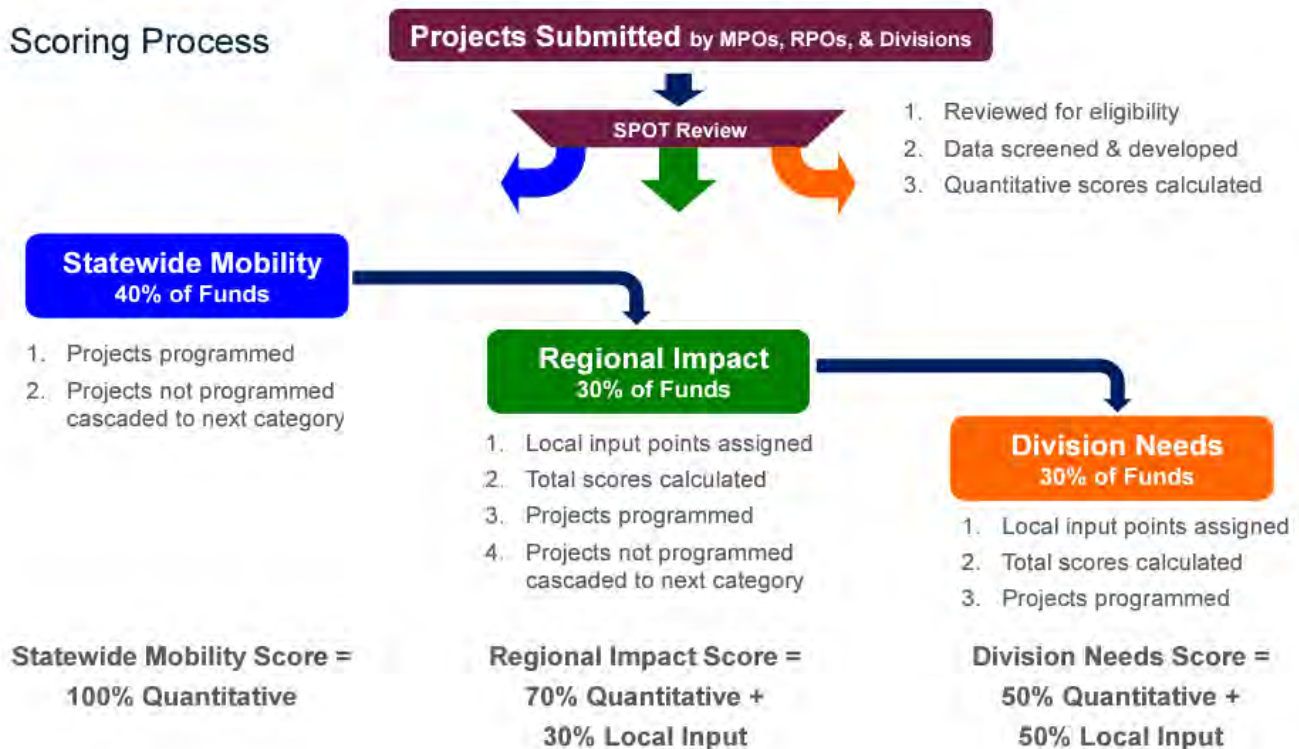
In order to be included in the State Transportation Improvement Program (STIP), projects are first submitted by MPOs, RPOs, and the 14 NCDOT Divisions. Projects are then reviewed for eligibility, quantitative scoring data is developed, and projects are scored. Selected projects receive a share of available funding from three categories: Statewide Mobility (40%), Regional Impact (30%), and Division Needs (30%).

Statewide Mobility projects are evaluated and selected using a 100% quantitative approach, while Regional Impact project scoring is 70% data and 30% local input. Division Needs

project scores are based on 50% data and 50% local input (see below).

Bicycle & Pedestrian Project Scoring

The bicycle and pedestrian project scoring process has not changed from P6 (see figure on the facing page). Bicycle and pedestrian projects are programmed within the Division Needs category, and in order to be eligible, they must be included in a locally adopted plan and have a minimum cost of \$100,000. Eligible project types include right-of-way acquisition, design, and construction;



Slide from NCDOT's 2023 STI training illustrating the scoring process for projects that are eventually included in the STIP.



P6 Bicycle and Pedestrian Scoring

Prioritization and Programming Basics

Criteria	Measure Description	Statewide Mobility (100%)	Regional Impact (70%)	Division Needs (50%)
Safety	(Number of crashes x 40%) + (Crash severity x 20%) + (Safety risk x 20%) + (Project safety benefit x 20%)	N/A	N/A	20%
Accessibility/ Connectivity	Points of Interest pts + Connections pts + Route pts	N/A	N/A	15%
Demand/Density	# of households and employees per square mile near facility	N/A	N/A	10%
Cost Effectiveness	(Safety + Accessibility/Connectivity + Demand/Density) / Cost to NCDOT	N/A	N/A	5%

Slide from NCDOT's 2023 STI training illustrating the bicycle and pedestrian project scoring components.

however, local governments must provide the 20% match for any federally funded projects. Project scoring criteria include safety, accessibility/connectivity, demand/density, and cost effectiveness.

Criteria Details

The **safety** criterion incorporates an analysis of safety risk and project safety benefit, as well as number of crashes and crash severity. **Safety risk** factors include location within an incorporated area (including ETJ), surrounding land uses, roadway configuration, posted speed limit, and annual average daily traffic (AADT).

Safety Benefit is an assessment of the Specific Improvement Types (SITs): the highest-scoring bicycle SITs are new bicycle/pedestrian bridges, new bicycle/pedestrian tunnels, rail trails, and shared use/multi

use paths. The highest-scoring pedestrian improvements are also new pedestrian bridges, new pedestrian tunnels, rail trails, and shared use/multi use paths.

The **Points of Interest** component of the **Accessibility/Connectivity** criterion is measured using the Advancing Transportation through Linkages, Automation, and Screening (ATLAS) tool as well as other data layers. Points are counted if they are within a 1.5-mile buffer for bicycle projects

SPOT P7 ended in 2024 and will be replaced by P8 in the next round.

View the NCDOT STI training and find other scoring process resources on the NCDOT website: [LINK](#)

(SITs 1-5) and a 0.5-mile buffer for pedestrian projects (SITs 6-9).

The SPOT Online tool automatically counts the following POI categories: Government buildings, fire/EMS, transit routes, schools/universities/colleges, parks, tourist destinations, medical, places of worship, and adult education centers. Project submitters can also manually add categories.

Link to ATLAS tool: <https://connect.ncdot.gov/resources/Environmental/EAU/Project-Atlas/Pages/default.aspx>

Link to SPOT On!ine: <https://gis13.services.ncdot.gov/SpotOn!ine/login.aspx?ReturnUrl=%2fSpotOnline%2flogin>

Projects receive additional connectivity points if they connect to existing or planned bicycle and pedestrian facilities, and if the project will improve a national/state/regional bike route or will be designated as a state or federal trail.

Project Bundling

Bundling projects is allowed across project types and geographies (meaning projects do not have to be contiguous or related. The project is limited by project management requirements, as the bundled projects will be under one project manager. Bundling makes projects more attractive for Local Input Points (LIP).

NCDOT Specific Improvement Types (SIT)

NUMBER	SIT	TYPE
1	Grade-Separated Bicycle Facility	Bicycle
2	Off-Road/Separated Linear Bicycle Facility	Bicycle
3	On-Road; Designated Bicycle Facility	Bicycle
4	On-Road Bicycle Facility	Bicycle
5	Multi-Site Bicycle Facility	Bicycle
6	Grade-Separated Pedestrian Facility	Pedestrian
7	Protected Linear Pedestrian Facility	Pedestrian
8	Multi-Site Pedestrian Facility	Pedestrian
9	Improved Pedestrian Facility	Pedestrian

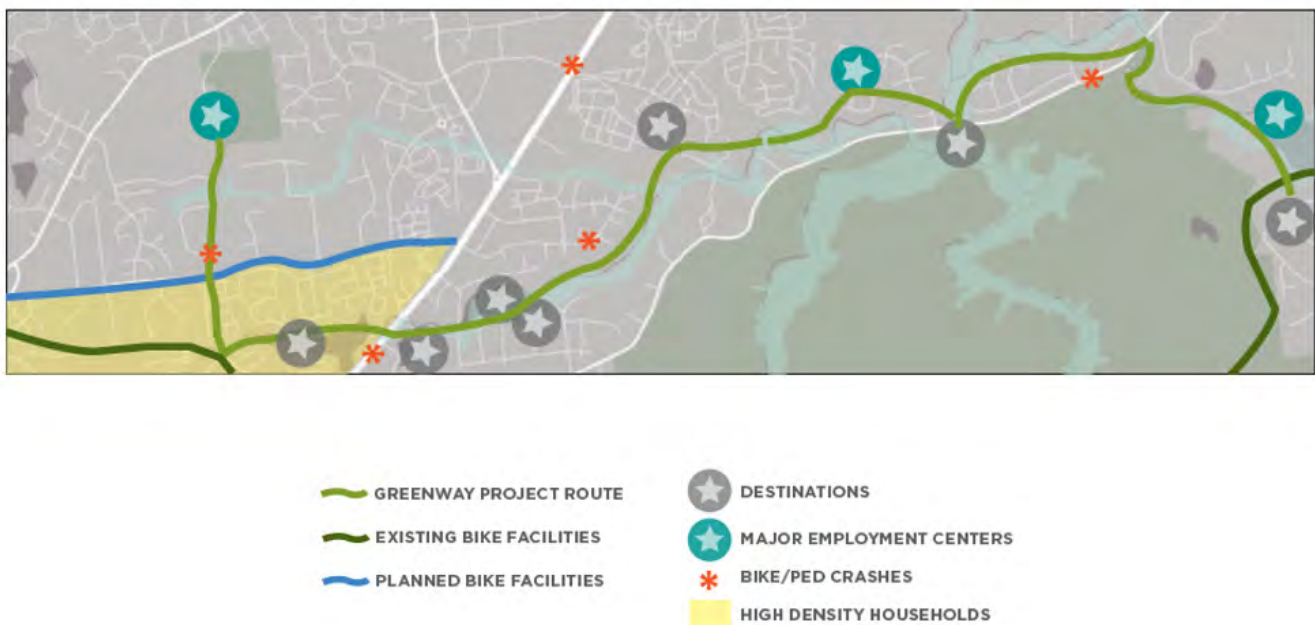
Project Scoring Example

The graphic below demonstrates how two different trail alignments might receive a low or high SPOT score depending on connections to existing and planned bike facilities, employment, and other destinations, as well as location within high density residential areas and in areas where previous crashes have occurred.

Lower Score Example



Higher Score Example





alta