



CAMERON, NC

2022 PEDESTRIAN & BICYCLE PROJECT ACCELERATION PLAN





ACKNOWLEDGEMENTS

Town Staff & Representatives

Jim Leiby, Mayor
Ginger Bauerband, Mayor Pro Tempore
Joey Frutchet, Commissioner
Kane Parsons, Commissioner
David Seiberling, Commissioner
Tasherra Nichols, Commissioner
Wendy Butner, Clerk

Additional Contributors

Lisa Chapman
Tanya Nicely
Gail Brown
Danielle Vargas
Sandra McKinney
Adam Ferguson
Kathy Richardson
Larry Coe
Nick Morrison, NCDOT
John Vine-Hodge, NCDOT
Kathy Vollert, NCDOT
Bryan Kluchar, NCDOT
Matt Day, Triangle J Council of Government
Rober Breyer, Cameron Elementary
Debra Ensminger, Moore County

Prepared By

TOOLE
DESIGN

Supported By



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THE VISION

1

Integrating Mobility with Community Development

PURPOSE

The purpose of this project acceleration plan is to set the foundation for building multimodal transportation infrastructure that supports the Town of Cameron's small town culture of slow-paced living, strong personal connections, and thriving local businesses. The proposed pedestrian and bicycle projects seek to provide comfortable connections between existing community destinations while complementing the Town's charming environment. Projects were prioritized based on community benefit and feasibility of implementation. With specific guidance on design and project implementation, this plan provides a concise roadmap for Cameron to pursue construction in the near future.



INFORMAL PATHS, LIKE THE ONE ABOVE, SHOW THE NEED FOR PEDESTRIAN INFRASTRUCTURE

GOALS

A steering committee of residents and regional stakeholders identified the following goals:

- All Ages and Abilities
- Environmental Sustainability
- Mobility Options
- Connectivity
- Equity
- Safety
- Economic Development
- Health
- Preserve Local Character

RECOMMENDED PROJECTS

In total, this plan includes six pedestrian and bicycle projects. Prioritization criteria based on existing conditions analysis and community engagement provided a methodology to rank the projects. Projects received points based on the extent to which the project satisfies each criterion, shown below. Prioritization scores also helped determine recommendations for implementation.

Prioritization Criteria

All criteria align with one or more of the project goals. Additional information is available in Chapter 3.



Multiple Funding Sources

How diverse are potential project funding sources?



Community Support

Do local officials and the general public support the project?



Destinations Served

Does the project serve multiple community destinations?



Economic Activity Generator

Will the project enhance commerce or tourism?



Location with Crash History

Does the project affect a location of a pedestrian- or bicycle-related crash?



Network Connectivity

Does the project connect to or upgrade existing facilities?



Separation from Vehicles

What is the minimum separation from vehicles that the project provides?



Supportive Land Use

To what extent does the primary development pattern generate demand?



Low Impact

Will the project impact the natural or built environment (structures, utilities, infrastructure, etc.)?

Projects

The map below shows the six projects recommended for the Town of Cameron. Numbered from west to east, the projects include:

- 1: Western Cameron Sidewalk Project
- 2: Cameron Elementary Sidewalk Project
- 3: West Town Sidewalk Project
- 4: Downtown Cameron Sidewalk Project
- 5: Phillips Memorial Park Sidepath Project (a sidepath is a two-way facility that runs parallel to a roadway and accommodates both pedestrians and bicyclists)
- 6: Eastern Gateway Sidewalk Project



MAP 1: RECOMMENDED PEDESTRIAN AND BICYCLE PROJECTS

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EXISTING CONDITIONS

2

Existing Conditions Analysis

COMMUNITY PROFILE

The Town of Cameron is a small community nestled in the Sandhills region of North Carolina. Cameron is a tight-knit community that embraces its southern charm and history, evident by the friendly faces, historical homes, grand magnolias, picket fences, and boutique shops full of vintage treasures. The Town's history brims with an entrepreneurial spirit. Its location at the end of the Raleigh and Augusta Railroad when the Town was incorporated in 1876 drew many entrepreneurs who built turpentine distilleries, established mercantile and hotel businesses, and fostered large-scale dewberry cultivation. Today, Cameron is considered the antiques capital of the Sandhills with a variety of antique stores in downtown and annual antique festivals that attract thousands.

The primary thoroughfare in Cameron is Carthage Street/NC 24-27. From west to east, NC 24-27 becomes Carthage Street at US-1 Business and transitions back to NC 24-27 at Pineywood Church Road.

Demographics

While small, the town is diverse. According to the 2020 Decennial Census, 244 people live in Cameron. Most residents (78.7%) identify as White, though 14.3% identify as Black/African American. In addition, nearly 7% of residents identify as Latino/a or Hispanic. The American Community Survey (ACS) provides additional demographic information for Cameron. According to the ACS, the median age has been trending younger over the past few years; decreasing from 43 in 2017 to 37 in 2019. As of the 2019 ACS:

- Over 25% of residents had received a college degree at the associate's, bachelor's, or graduate level.
- Roughly 6.6% of residents had incomes that placed them below the poverty line
- 12.5% of the Town's population was over 65 years of age
- 11% of the Town's population identified as having a disability

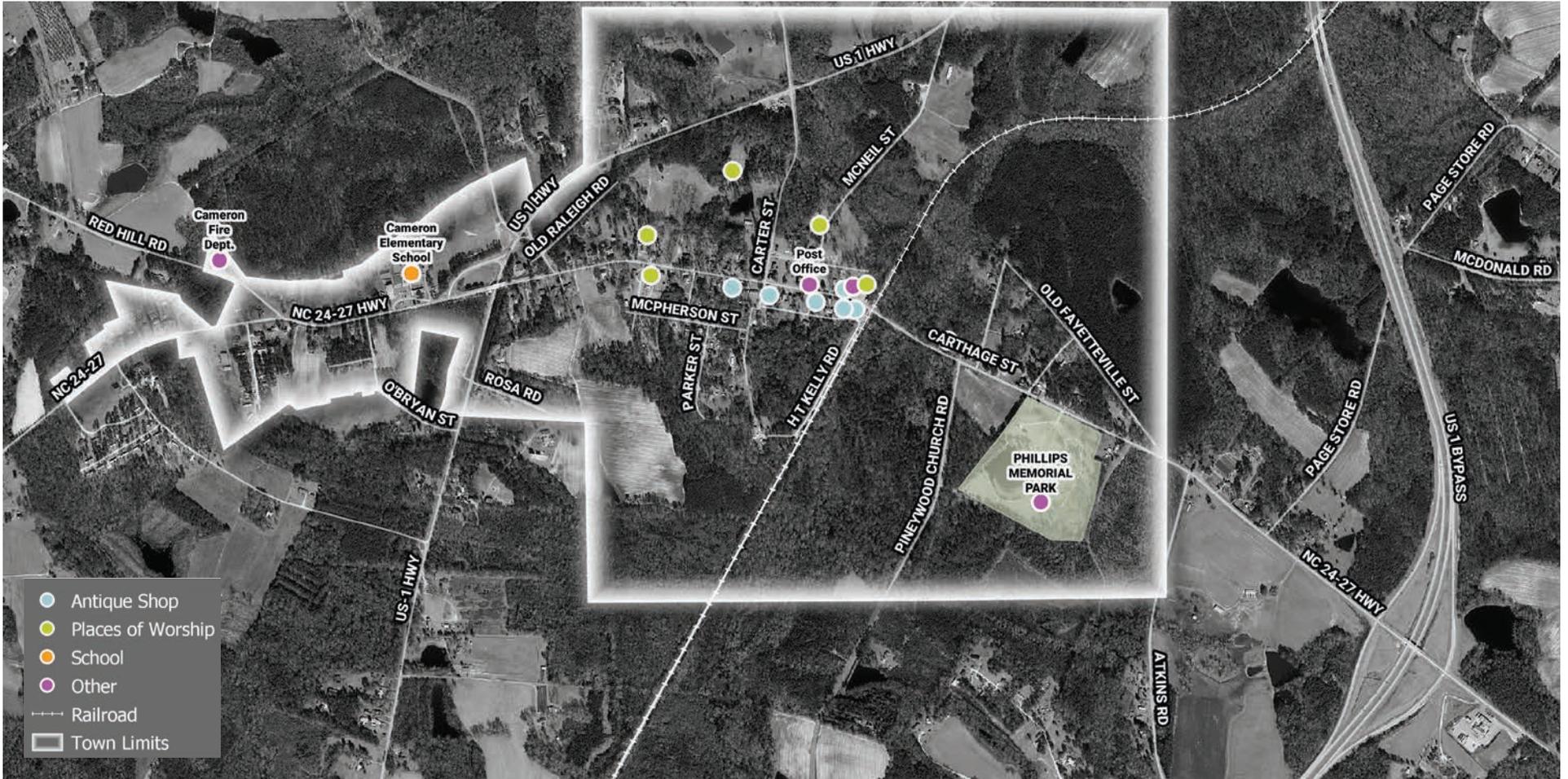
Commuting Characteristics

As of the 2019 ACS, the average commute time for Cameron residents was 27.3 minutes. As the Town's area is only one square mile, many residents commute to an employer outside of the Town limits. Most people drive alone to get to work (71.9%), over a quarter carpool (28.1%), and very few walk, bicycle, or use public transit. The 2019 ACS also indicates about 8% of residents do not have access to a vehicle.

Community Destinations

Cameron has a wealth of churches, civic institutions, and local businesses for residents and visitors to enjoy. The map on the following page shows the distribution of community destinations throughout town. These include the following:

- Ann's Antiques
- Cameron Baptist Church
- Cameron Elementary School
- Cameron Presbyterian Church
- The Clerk's Office
- Ferguson House Antiques
- Fire Department
- First Baptist Church
- Hood Chapel
- Hood Chapel AME Zion Church
- The Market at The Muse Bros.
- McPherson's Antiques
- Old Hardware Antiques
- Phillips Memorial Park
- Shell Yeah Creations
- Sullivan's Antiques and Collectibles
- This Old House Antiques
- Walk by Faith Christian Center
- The United States Postal Service building



MAP 2: COMMUNITY DESTINATIONS



CAMERON IS KNOWN FOR ITS ANTIQUE SHOPS

EXISTING CONDITIONS

STREET CHARACTERISTICS

The existing conditions assessment included analysis of a variety of street characteristics that impact the safety and comfort of nonmotorized users, such as speed, traffic volume, number of lanes, and intersection type. For example, higher speed streets with more travel lanes and greater traffic volumes necessitate more separation for a bikeway to increase user comfort. Similarly, uncontrolled intersections can introduce uncertainty for all roadway users, particularly when limited sight lines or challenging topography are factors. Additionally, the existing conditions analysis helped inform recommendations.

Number of Travel Lanes

All streets within the Town limits have two travel lanes. Within the Town's extraterritorial jurisdiction (ETJ), the only roads that have more or less than two lanes are along US-1; the on- and off-ramps have only one lane, while the highway transitions from two to three lanes as one moves north from NC 24-27. Map 3 on the following page shows the relationship between number of travel lanes and intersection type.

Intersection Types

There are no traffic lights in Cameron. Many intersections use stop signs for traffic

control, although there are a few intersections that have no means of traffic control. These include Old Fayetteville Street at Chestnut Street and McPherson Street at McKeithan Street. While the intersection of McPherson and McKeithan streets is not stop-controlled, these streets do not appear to warrant a stop sign as McKeithan Street is essentially a residential driveway. Except for the crossing arm gates at the CSX railroad, Carthage Street/NC 24-27 lacks any kind of traffic control.

Speed Limits

Most streets in downtown Cameron have a posted speed limit of 25 MPH. Notably, Carthage Street/NC 24-27 has higher speed limits outside of the downtown area. Slightly east of the bridge over Little Crane Creek, the speed limit on Carthage Street increases to 35 MPH and further east, where the road intersects with Graham Street, the speed limit becomes 55 MPH. Beginning at its intersection with Carter Street through the Town's western limits, Carthage Street has a speed limit of 35 MPH.

Speeding is more frequently an issue on multi-lane roads compared to two-lane roads as reduced roadway widths encourage drivers to slow down. However, during site visits to Cameron, high vehicle speeds were observed on Carthage Street in the downtown area. The steering committee also voiced concerns about speeding in downtown along Carthage Street. This issue is likely due to a combination of existing conditions including lack of traffic control devices, overly wide lanes, and topography.

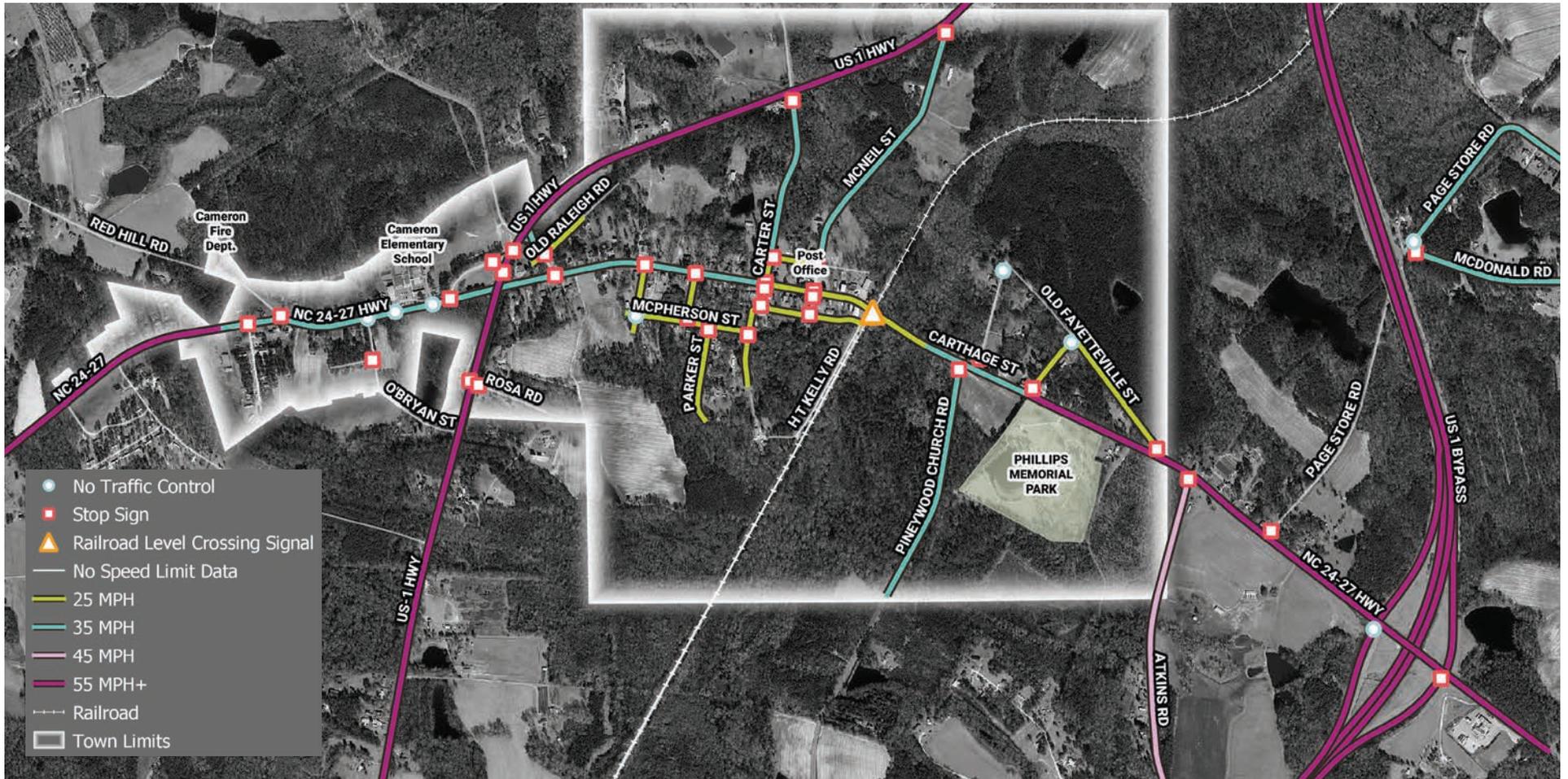
Parking

There is no formalized on-street parking within the Town limits. There is a street-adjacent parking lot along McKeithan Street for the Cameron Baptist Church. Most businesses along Carthage Street have small parking lots that serve the individual business or are shared with the neighboring business. Informal on-street parking exists along Old Fayetteville Street as some properties along this street do not have driveways or designated parking lot areas.

Other Features in the Right-of-Way (ROW)

Notable existing conditions in the ROW along Carthage Street/NC 24-27 also include the following:

- Between US-1 Business and the CSX railroad, there are curbs but no gutters or catch basins for stormwater. This section of roadway has area drains for stormwater. Elsewhere along NC 24-27 stormwater flows off the roadway into shallow drainage ditches.
- Utility poles exist on both sides of the roadway, but are primarily on the north side of the street. Street lighting is provided for most of the corridor.
- There are several mature street trees in town, primarily between US-1 Business and the CSX railroad.



MAP 3: SPEED LIMIT AND INTERSECTION TYPE COMPARISON



TWO-WAY STOP AT CARTHAGE STREET AND CARTER STREET
EXISTING CONDITIONS



STORMWATER AREA DRAIN



CAMERON'S HISTORIC DISTRICT HAS MANY MATURE STREET TREES

PLAN REVIEW AND PREVIOUSLY PROPOSED BICYCLE AND PEDESTRIAN FACILITIES

The 2011 Cameron Pedestrian Plan seeks to make walking a safe and viable transportation option by guiding future Town decisions and funding requests. The 2015 Triangle Area Rural Planning Organization (TARPO) Bicycle and Pedestrian Planning Framework serves as a policy guide for TARPO as future decisions are made regarding bicycle and pedestrian mobility. Pedestrian and bicycle facilities were proposed as part of both plans.

These plans called for the facilities shown below, which are also highlighted in Map 4 on the following page.

- A multi-use path on the south side of NC 24-27 from US-1 to the CSX railroad
- Sidewalk on both sides of Carthage Street/ NC 24-27 from the CSX railroad to the on-ramp to US Business 1 (sidewalk exists for part of this segment)
- Sidewalk on the south side of NC 24-27 from US Business 1 to Cameron Elementary School
- A multi-use path on the south side of NC 24-27 from Cameron Elementary School to the western Town limits
- On-road bicycle infrastructure for the entirety of Carthage Street/NC 24-27 throughout the Town limits

PEDESTRIAN- AND BICYCLE-RELATED CRASHES

Available crash data from a thirteen-year period (2007-2018) was used to determine if there were any patterns established that may impact safety recommendations. The map on the following page shows the location of the four crashes that occurred during this time period as they relate to previously proposed pedestrian and bicycle facilities. Three crashes occurred within Town limits and took place in the roadway along Carthage Street/NC 24-27. Two of these crashes involved pedestrians and occurred at mid-block locations. The other crash within Town limits involved a bicyclist and took place at the intersection of Carthage and Graham streets. It is important to note, dark, un-lit roadway conditions were associated with all three of these crashes.

Another crash took place beyond Town limits but within Cameron's ETJ. This crash involved a pedestrian and occurred in a parking lot. Without pedestrian or bicycle traffic count data, it is difficult to assess the significance of the number of pedestrian- and bicycle-related crashes. With the lack of existing pedestrian and bicycle infrastructure throughout Cameron and the higher likelihood of traffic on Carthage Street/NC 24-27, it is unsurprising that all of the roadway crashes occurred along this route.

Crash Severity

Due to the vulnerability of people walking and bicycling, crash severity is a key factor to assess. Crash data provides a glimpse of the crash severity for pedestrian- and bicycle-related crashes in the Town's ETJ. Of the roadway crashes, two crashes were categorized as possible injuries and the third was categorized as suspected minor injuries.

WALKING AND BICYCLING IN CAMERON TODAY

Cameron is a charming small town with a historic district that includes commercial and residential structures. Downtown has a dense block structure, mature street trees, and buildings that are oriented toward the street - all conditions that contribute to a high-quality pedestrian experience. However, existing infrastructure for people who walk or bike is limited. There are intermittent sidewalk segments on both sides of Carthage Street from Phillips Street to the CSX railroad, but they vary in width, material, and quality. Both NC 24-27 and Pinewood Church Road are part of a signed bike route, but bicyclists must share the road with vehicles.



MAP 4: PREVIOUSLY PROPOSED PEDESTRIAN AND BICYCLE FACILITIES VS. PEDESTRIAN- AND BICYCLE-RELATED CRASHES



A PATCHWORK OF SIDEWALK SEGMENTS THAT VARY IN WIDTH AND MATERIAL ARE SCATTERED ALONG CARTHAGE STREET BETWEEN PHILLIPS STREET AND THE CSX RAILROAD
EXISTING CONDITIONS

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ENGAGEMENT & PRIORITIZATION

3

Project Prioritization Through Engagement

ENGAGEMENT

A steering committee of local residents and regional stakeholders guided development of the plan. In addition to the major engagement activities shown below, an online survey was distributed in April 2021.

DEC. 2020 PROJECT KICK-OFF

2 STEERING COMMITTEE MEETINGS

1 OPEN HOUSE MEETING

2 TOWN BOARD MEETINGS

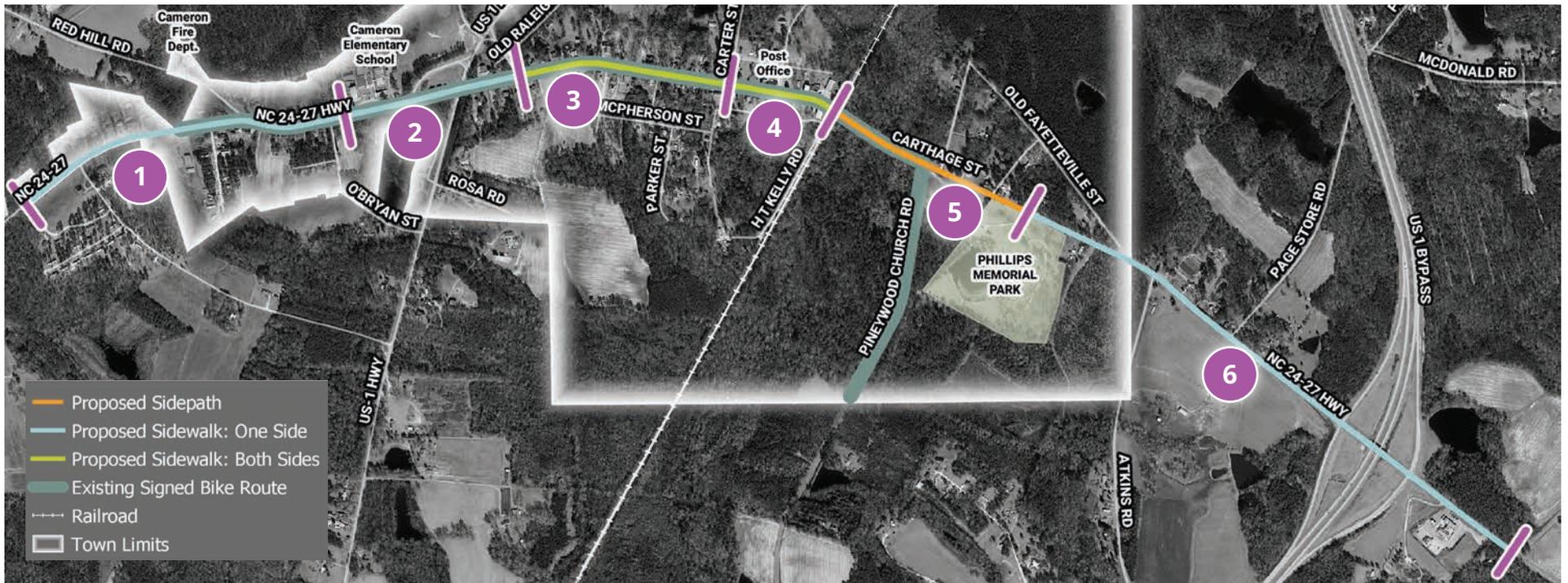
JAN. 2022 PLAN ADOPTION

PRIORITIZATION

Six pedestrian and bicycle projects were identified based on previous plans and feedback from the steering committee. These projects are displayed in Map 5 on the following page. Prioritization criteria were developed from project goals the steering committee established early on in the planning process. Each project was scored based on these criterion. Table 1 on this page and Table 2 on the following page explain the prioritization criteria and project prioritization scoring respectively.

TABLE 1: PROJECT PRIORITIZATION CRITERIA

CRITERIA	DESCRIPTION	ASSOCIATED GOALS	POINTS
 Multiple Funding Sources	How diverse are potential project funding sources?	<ul style="list-style-type: none"> Economic Development 	<ul style="list-style-type: none"> Limited = 1 Moderately diverse = 2 Highly diverse = 3
 Community Support	Do local officials and the general public support the project?	<ul style="list-style-type: none"> All Ages & Abilities Equity Preserve Local Character 	<ul style="list-style-type: none"> Low-None: 0 Medium = 1 High = 2
 Destinations Served	Does the project serve multiple community destinations?	<ul style="list-style-type: none"> Economic Development Connectivity Safety Mobility Options 	<ul style="list-style-type: none"> 0 destinations = 0 1-3 destinations = 2 4-7 destinations = 3 8+ destinations = 4
 Economic Activity Generator	Will the project enhance commerce or tourism?	<ul style="list-style-type: none"> Economic Development Environmental Sustainability Preserve Local Character 	<ul style="list-style-type: none"> No = 0 Yes = 1
 Location with Crash History	Does the project affect a location of a pedestrian- or bicycle-related crash?	<ul style="list-style-type: none"> All Ages & Abilities Health Safety 	<ul style="list-style-type: none"> No = 0 Yes = 1
 Network Development	Does the project connect to or upgrade existing facilities?	<ul style="list-style-type: none"> Connectivity Health Preserve Local Character 	<ul style="list-style-type: none"> No = 0 Yes = 1
 Separation from Vehicles	What is the minimum separation from vehicles that the facility provides?	<ul style="list-style-type: none"> All Ages & Abilities Health Safety 	<ul style="list-style-type: none"> Adjoined to road = 0 Mixed = 1 Off-Road = 2
 Supportive Land Use	To what extent does the primary development pattern generate demand?	<ul style="list-style-type: none"> Connectivity Mobility Options Safety 	<ul style="list-style-type: none"> Agricultural = 0 Low density = 1 Medium density = 2
 Low Impact	Will the project impact the natural or built environment (structures, utilities, etc.)?	<ul style="list-style-type: none"> Equity Environmental Sustainability Preserve Local Character 	<ul style="list-style-type: none"> Major impacts = 0 Moderate impacts = 1 Minimal impacts = 2



MAP 5: RECOMMENDED PEDESTRIAN AND BICYCLE PROJECTS

TABLE 2: PROJECT PRIORITIZATION SCORES

PRIORITIZATION CRITERIA	1: WESTERN CAMERON SIDEWALK	2: CAMERON ELEMENTARY SIDEWALK	3: WEST TOWN SIDEWALK	4: DOWNTOWN CAMERON SIDEWALK	5: PHILLIPS MEMORIAL PARK SIDEPATH	6: EASTERN GATEWAY SIDEWALK
Multiple Funding Sources	1	2	2	3	3	1
Community Support	0	1	1	2	1	0
Destinations Served	0	2	2	4	2	0
Economic Activity Generator	0	0	0	1	1	0
Location with Crash History	0	0	1	0	1	0
Network Development	0	0	1	1	1	0
Separation from Vehicles	2	1	2	2	2	1
Supportive Land Use	1	1	2	2	1	0
Low Impact	2	1	2	1	0	0
TOTAL	6	8	13	16	12	2

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PROJECT CUT SHEETS

4

Purpose

The cut sheets in this chapter present information for the priority projects in a consolidated format. Individual cut sheets are formatted to be printed and folded into a tri-fold pamphlet. Table 3 provides a summary of the project cut sheets.

Content and Assumptions

PROJECT OVERVIEW

This section of the cut sheet describes the existing conditions and the recommended bicycle and/or pedestrian facilities. A map of the project extents is also provided.

CONSIDERATIONS

Current conditions that present constraints and opportunities to the preferred design are described in this section. However, current conditions may change over time.

COST ESTIMATE

Planning-level cost estimates were calculated using the NCDOT Bicycle and Pedestrian Project Estimator Tool. Several assumptions are built into the estimates, including:

- Costs are based on 2019 prices and rounded to the nearest \$5,000

- The minimum cost per component is \$5,000
- Relocation is assumed for 10% of utilities within the project area
- ROW acquisition costs are based on surrounding development patterns

While the Estimator Tool identifies cost for major features, other accessory elements are not accounted for and will likely increase the total cost of a project. These items include, but are not limited to:

- Paving aprons at gravel driveways and side streets (asphalt or concrete)
- Street trees
 - » Planting new trees or preservation of existing street trees through assessment by a certified arborist, air spading to safely reveal roots during construction, or materials to prevent sidewalk upheaval (e.g., root barriers)
- Decorative paving materials (e.g., brick or stamped colored concrete)
- Delineators or guardrails for the concrete buffers to provide separation from vehicles as proposed on vehicular bridges (Cameron Elementary School Sidewalk Project and Eastern Gateway Sidewalk Project)
- Wayfinding signage

IMPLEMENTATION

This section identifies the type of installation required and a recommended timeframe, which is based on the project's prioritization score and future development and/or capital improvements anticipated in the area. This section also lists lead agencies, key partners, and potential funding opportunities.

Potential Funding Sources

- **State Transportation Improvement Program (STIP):** All projects occur on/along a state-owned road (Carthage Street/NC 24-27). If pedestrian and bicycle facilities are included as part of a highway STIP project and match NCDOT standards, the local match would be 20%. When the facility exceeds NCDOT standards (e.g., a brick sidewalk) the Town would be responsible for 100% of the betterment cost.
- **Powell Bill Funds:** This NCDOT program provides 100% funding for resurfacing local roads as well as planning and constructing pedestrian and bicycle facilities. Funds can be used as match for certain grants.
- **Railroad Grade-Crossing Elimination Program:** This Federal program funds projects that eliminate hazards at highway-railway crossings. Funds are distributed to states based on a formula and require a 10% match.
- **NC Recreational Trails Program (RTP):** Up to 75% of project costs (\$250,000 maximum) can be funded through this program for construction of recreational trails including land acquisition and trail amenities.
- **Parks and Recreation Trust Fund (PARTF):** This program provides a 1:1 match for new construction or retrofit of recreational facilities located on a single site. The maximum award is \$500,000.
- **Community Development Block Grant - Neighborhood Revitalization (CDBG-NR):** This program offers full funding (up to \$750,000) for walkability projects and is administered via the NC Department of Commerce.

- **AARP Community Challenge Grant:** This program funds "quick-action" projects that improve livability such as nonmotorized infrastructure projects. No match is necessary and award amount varies widely.

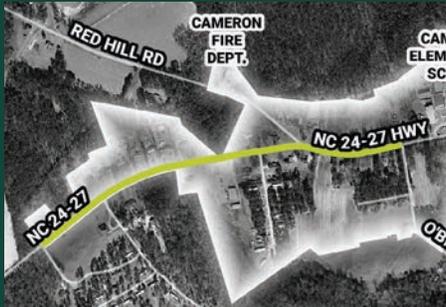
CONCEPT GRAPHICS

This section includes graphics to convey the alignment and configuration of recommended facilities. Plan view renderings of the entire project segment are annotated to highlight critical areas or design details. Illustrative typical sections are also provided. Concept designs are based on readily-available data including GIS shapefiles and aerial imagery, and may not accurately reflect existing conditions.

TABLE 3: PROJECT CUT SHEET SUMMARY

PROJECT	LENGTH	EXTENTS	EXISTING FACILITIES	PROPOSED FACILITIES	PRIORITIZATION SCORE	PROBABLE COST
Western Cameron Sidewalk Project	0.58 miles	Loving Road to Cameron Elementary (west parking lot)	<ul style="list-style-type: none"> • ~55'-65' of ROW • Two-lane road • No curb or gutter • 35 MPH 	<ul style="list-style-type: none"> • 5' wide sidewalk on south side • Tighter corner radii and high-visibility crosswalks at side streets 	6	\$715,000
Cameron Elementary Sidewalk Project	0.30 miles	Cameron Elementary (west parking lot) to US-1 Business North on-ramp	<ul style="list-style-type: none"> • ~60' of ROW • Two-lane road with bridge • No curb or gutter • 35 MPH (25 MPH in school zone) 	<ul style="list-style-type: none"> • 5' wide sidewalk on south side of road • 6' wide sidewalk with concrete buffer on south side of US-1 Business overpass • One high-visibility mid-block crossing with rectangular rapid flash beacons (RRFB) 	8	\$715,000
West Town Sidewalk Project	0.37 miles	US-1 Business North on-ramp to Carter Street	<ul style="list-style-type: none"> • ~60' of ROW • Two-lane road • Curb and patches of sidewalk • 25-35 MPH 	<ul style="list-style-type: none"> • 5' wide sidewalk on both sides • Striped shoulders • Reconstructed intersections with tighter corner radii and new curb ramps 	13	\$955,000
Downtown Sidewalk Project	0.21 miles	Carter Street to CSX railroad	<ul style="list-style-type: none"> • ~60' of ROW • Two-lane road with at-grade railroad crossing • Curb and patches of sidewalk • 25 MPH 	<ul style="list-style-type: none"> • 5' wide sidewalk on both sides • Two high-visibility mid-block crossings; one with RRFB • Striped shoulders • Reconstructed intersections with tighter corner radii and new curb ramps 	16	\$795,000
Phillips Memorial Sidepath Project	0.36 miles	CSX railroad to Phillips Memorial Park entrance	<ul style="list-style-type: none"> • ~60' of ROW • Two-lane road with bridge • No curb or gutter • 35 MPH (25 MPH from railroad to bridge) 	<ul style="list-style-type: none"> • 10' wide sidepath on south side • 10' wide pedestrian- and bicycle-only bridge over Little Cane Creek • Tighter corner radii and high-visibility crosswalks at side streets 	12	\$1,370,000
Eastern Gateway Sidewalk Project	1.04 miles	Phillips Memorial Park entrance to Bass Road	<ul style="list-style-type: none"> • ROW varies from ~65'-250'; ~65' typical • Multi-lane road with bridge • No curb or gutter • 55 MPH 	<ul style="list-style-type: none"> • 5' wide sidewalk on south side • 5.5' wide sidewalk with concrete buffer on south side of US-1 overpass • Tighter corner radii and high-visibility crosswalks at highway ramps 	2	\$1,675,000

1. Western Cameron Sidewalk Project



PROJECT OVERVIEW

- Length: 0.58 miles
- Extents: Loving Road to Cameron Elementary (west parking lot)

This is a two-lane section of road with ~55'-65' of ROW, 11' wide lanes, and no curb or gutter. This project recommends a 5' wide sidewalk on the south side of NC 24/27. A ~11' wide landscape strip will help reduce impact to existing infrastructure. Although the design does not propose installing any new curbs, it does include narrowing corner radii and providing high-visibility crosswalks at side street crossings.

Considerations

The area is primarily low-density residential. The speed limit is 35 MPH, however, high vehicular speeds are a concern due to the lack of traffic control devices.

CONSTRAINTS

Though relatively minor, some of the constraints include:

- Shallow drainage ditches along roadway
- Guy wires for some power poles may need to be relocated
- One overly large commercial driveway

OPPORTUNITIES

- The relatively flat topography means a sidewalk will not require much grading
- Sufficient ROW to route the sidewalk behind the drainage ditch
- Possibility for construction via private development or capital improvements

Cost Estimate

TABLE 4: WESTERN CAMERON SIDEWALK PROJECT PROBABLE COST

ITEM	TOTAL
Design	\$145,000
ROW Acquisition	\$5,000
Utility Relocation	\$55,000
Construction	\$510,000
TOTAL COST	\$715,000

Implementation

This project requires new construction for the sidewalk, high-visibility crosswalks, and concrete or paved aprons at all gravel driveways and side streets. The project has the second lowest prioritization score and should be implemented on a long-term timeframe as private development occurs.

LEAD AGENCIES

- NCDOT
- TARPO
- Town of Cameron

KEY PARTNERS

- Moore County
- Private developers

POTENTIAL FUNDING

- NCDOT STIP
- Powell Bill Funds (for changes to all side streets)

Concept Graphics

The following page presents the proposed typical section and a plan view rendering of the recommended design. Due to the length of the project, the plan view rendering is split into two frames.

FIGURE 1: WESTERN CAMERON SIDEWALK CROSS SECTION VIEW FACING EAST

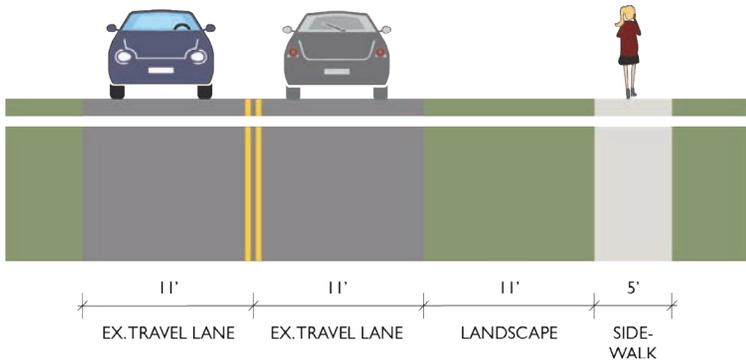


FIGURE 3: DESIGN DETAIL: TYPICAL TREATMENT FOR SIDEWALK CROSSING AT SIDE STREETS (1"=40')

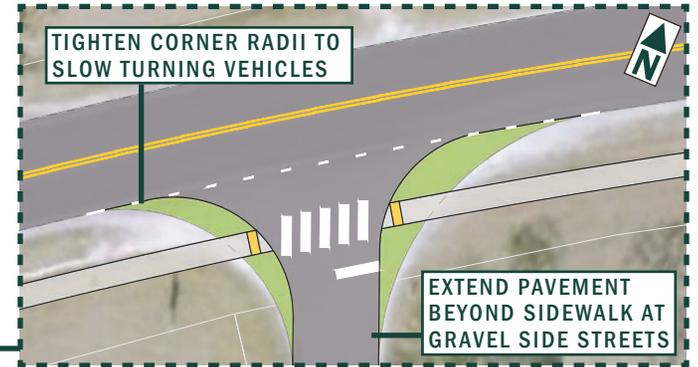
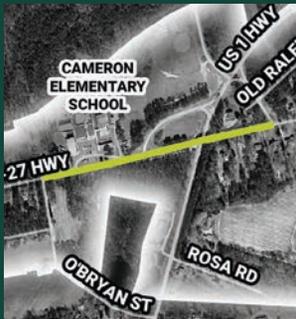


FIGURE 2: WESTERN CAMERON SIDEWALK CONCEPT (1"=160')



2. Cameron Elementary Sidewalk Project



PROJECT OVERVIEW

- Length: 0.30 miles
- Extents: Cameron Elementary (west parking lot) to US-1 Business North on-ramp

This is a two-lane section of road with ~60' of ROW, 11'-12' wide lanes, no curb or gutter, and a bridge over US-1 Business. The project proposes a 5' wide sidewalk on the south of NC 24/27 with a ~11' wide landscape buffer. A high-visibility mid-block crossing with Rectangular Rapid Flashing Beacons (RRFBs) is proposed at the school. On the bridge, the sidewalk has a 4' buffer.

Considerations

Although the speed limit in the school zone is 25 MPH, a RRFB is recommended to increase visibility of pedestrians at the mid-block crossing. The bridge has an existing 4' wide sidewalk on the north, but the highway ramps limit its usefulness.

CONSTRAINTS

- Bus turning movements may impact location of the mid-block crossing
- Steep slopes surround the bridge
- Stormwater area drains and driveway culverts exist east of the bridge

OPPORTUNITIES

- A small landscape island in the Elementary School parking lot provides a logical place for the mid-block crossing
- Overly wide lanes on the bridge may be narrowed to make space for a new sidewalk and concrete buffer

Cost Estimate

TABLE 5: CAMERON ELEMENTARY SIDEWALK PROJECT PROBABLE COST

ITEM	TOTAL
Design	\$140,000
ROW Acquisition	\$5,000
Utility Relocation	\$30,000
Construction	\$540,000
TOTAL COST	\$715,000

Implementation

This project requires new construction with retrofits in the school parking lot and on the bridge over US-1 Business. Re-striping the centerline shift on the approach to and over the bridge is possible through regular maintenance cycles. The project should be implemented on a medium-term timeframe or as development occurs.

LEAD AGENCIES

- NCDOT
- TARPO
- Moore County Schools

KEY PARTNERS

- Town of Cameron
- Developers

POTENTIAL FUNDING

- NCDOT STIP
- CDBG-NR
- AARP

Concept Graphics

The following page contains typical sections for both the roadway and bridge segments of the project. Plan view renderings of the project and areas with special design details are also provided.

FIGURE 4: CAMERON ELEMENTARY SIDEWALK CROSS SECTION VIEW FACING EAST

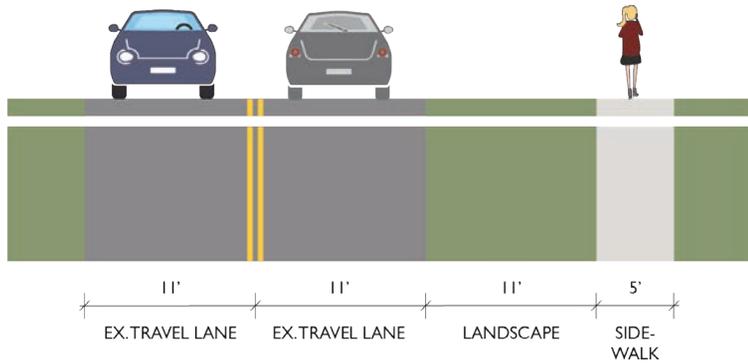


FIGURE 5: CAMERON ELEMENTARY SIDEWALK: US-1 BUS. BRIDGE CROSS SECTION VIEW FACING EAST

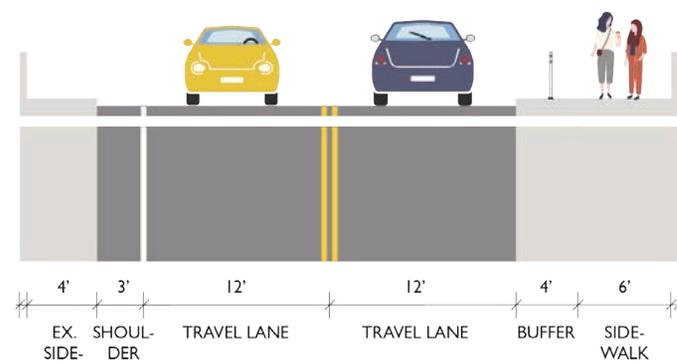


FIGURE 6: CAMERON ELEMENTARY SIDEWALK CONCEPT (1"=160')



FIGURE 7: DESIGN DETAIL: MID-BLOCK CROSSING TO CAMERON ELEMENTARY SCHOOL (1"=40')

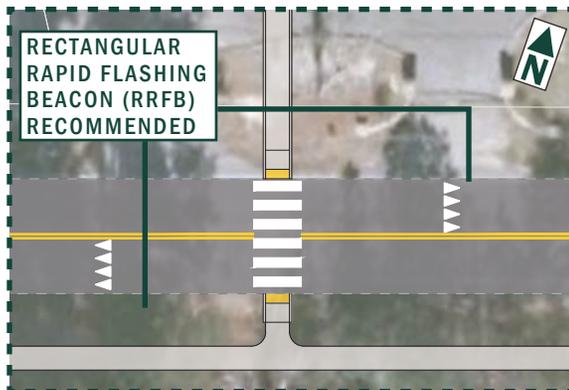


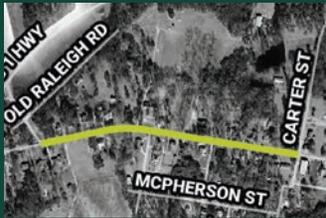
FIGURE 8: DESIGN DETAIL: SIDEWALK WITH CONCRETE BUFFER AND DELINEATORS ALONG BRIDGE (1"=40')



FIGURE 9: BRIDGE WITH PROTECTED SIDEWALK AND FENCING



3. West Town Sidewalk Project



PROJECT OVERVIEW

- Length: 0.37 miles
- Extents: US-1 Business North on-ramp to Carter Street

This is a two-lane section of road with ~60' of ROW, 12.5' wide lanes, curbs, and a couple short sidewalk segments. The project proposes 5' wide sidewalks on both sides of NC 24/27. To accommodate existing street trees, the landscape buffer is 5' wide on the north and 10' wide on the south. The project also includes a striped shoulder to visually narrow travel lane widths. At side streets, upgrades include high-visibility crosswalks, new curb lines for tighter corner radii, and curb ramps.

Considerations

As this area includes the National Register Historic District, minimizing impact to historic structures and using context-appropriate materials (e.g., brick or stamped concrete) will be key, but will require additional funding to cover betterment costs. This project received the second highest prioritization score.

CONSTRAINTS

- Brick church sign at McKeithan Street
- ROW acquisition may be necessary for a wide enough landscape buffer to limit disturbance to mature trees
- Multiple informal driveways, where narrowing may not be feasible

OPPORTUNITIES

- Relatively flat topography

Cost Estimate

TABLE 6: WEST TOWN SIDEWALK PROJECT PROBABLE COST

ITEM	TOTAL
Design	\$220,000
ROW Acquisition	\$5,000
Utility Relocation	\$70,000
Construction	\$660,000
TOTAL COST	\$955,000

*ESTIMATE DOES NOT INCLUDE BETTERMENT COST FOR BRICK OR STAMPED CONCRETE

Implementation

This project requires new construction for the sidewalks and crossings. Facilities at McKeithan Street and Phillips Street entail retrofit of existing roadway. Lane re-striping is possible through regular maintenance cycles. If concurrent implementation with the Downtown Sidewalk Project is not feasible, this project should be pursued in a medium-term timeframe or as utility investments occur.

LEAD AGENCIES

- NCDOT
- TARPO
- Town of Cameron

KEY PARTNERS

- Business owners and churches

POTENTIAL FUNDING

- NCDOT STIP
- Powell Bill Funds (for changes to all side streets)
- CDBG-NR, AARP

Concept Graphics

The following page contains the proposed typical section for the project. Due to the length of the project, the plan view rendering is split into two frames.

FIGURE 10: WEST TOWN SIDEWALK CROSS SECTION VIEW FACING EAST

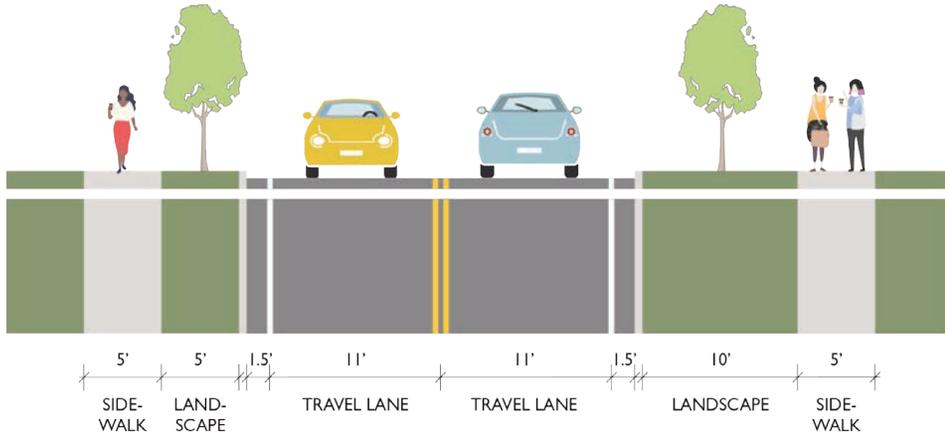


FIGURE 11: WEST TOWN SIDEWALK CONCEPT (1"=100')

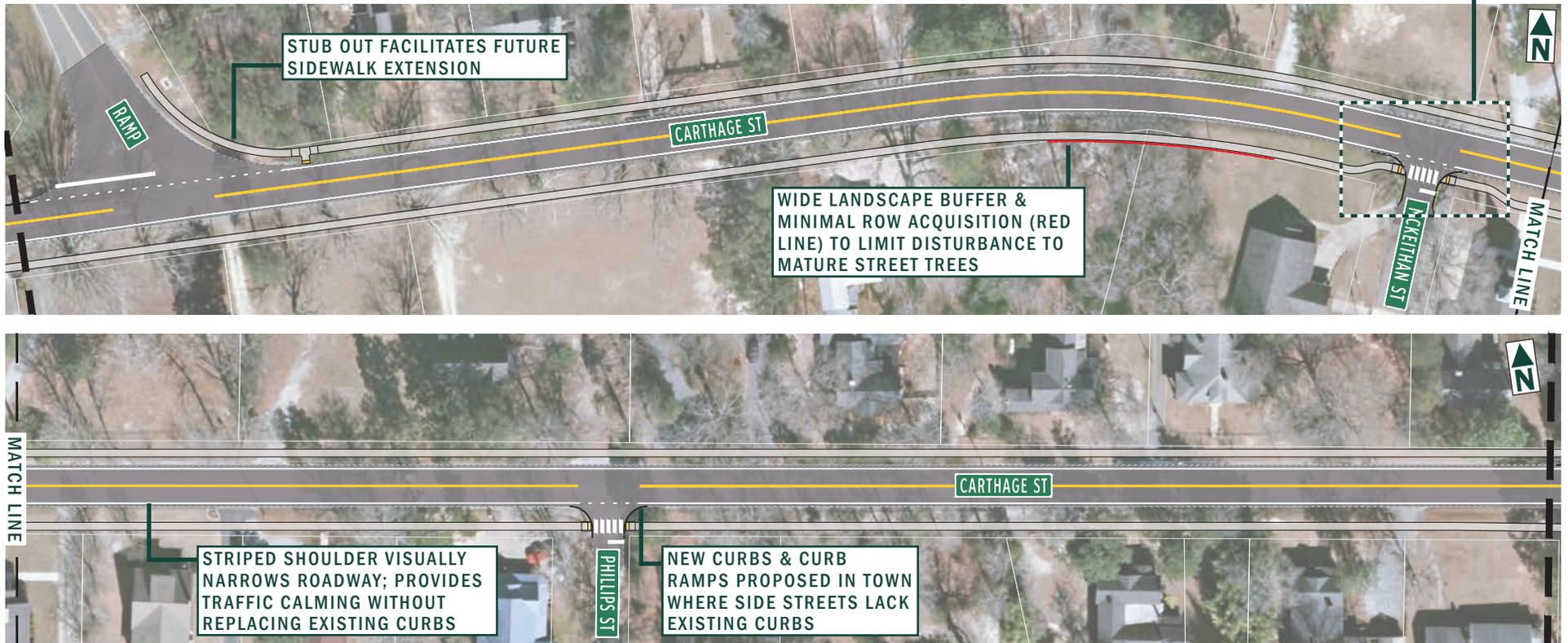


FIGURE 12: DESIGN DETAIL: EXAMPLE OF SIDEWALK ALIGNMENT RESPONDING TO EXISTING CONDITIONS (1"=40')



4. Downtown Cameron Sidewalk Project



PROJECT OVERVIEW

- Length: 0.21 miles
- Extents: Carter Street to CSX railroad

This is a two-lane section of road with ~60' ROW, 14' wide lanes, curbs, and several segments of sidewalk that vary in width and material. In addition to 5' wide sidewalks on both sides of the street, the project includes:

- A high-visibility mid-block crossing with rectangular rapid flash beacons (RRFB) just west of the railroad track
- Striped shoulders
- Side street crossings with curb ramps, tighter corner radii, and high-visibility crosswalks

Considerations

As this area includes the National Register Historic District, minimizing impact to historic structures and using context-appropriate materials (e.g., brick or stamped concrete) will be key, but will require additional funding.

CONSTRAINTS

- The CSX railroad crossing will require significant time and resources
- Topography that creates relatively steep slopes in certain locations
- Frequent and overly wide commercial driveways increase the risk of conflicts

OPPORTUNITIES

- Generally, enough ROW to place sidewalks behind many of the mature trees
- Project provides a chance to bury utilities and update stormwater infrastructure

Cost Estimate

TABLE 7: DOWNTOWN CAMERON SIDEWALK PROJECT PROBABLE COST

ITEM	TOTAL
Design	\$340,000
ROW Acquisition	\$5,000
Utility Relocation	\$45,000
Construction	\$405,000
TOTAL COST	\$795,000

* ESTIMATE DOES NOT INCLUDE BETTERMENT COST FOR BRICK OR STAMPED CONCRETE

Implementation

Most facilities will require new construction with retrofit of existing sidewalk segments. Striped shoulders can be installed through regular maintenance cycles. This is the highest priority project and should be implemented first. The railroad crossing may need to be implemented separately.

LEAD AGENCIES

- NCDOT
- TARPO
- Town of Cameron

KEY PARTNERS

- Business owners and churches
- CSX Corporation

POTENTIAL FUNDING

- NCDOT STIP
- Powell Bill Funds (for changes to all side streets)
- Railroad Grade Crossing Elimination Program, CDBG-NR, AARP

Concept Graphics

The following page contains the recommended typical section. Due to project length, the plan view rendering is split into two frames. A photo-realistic rendering is also included to help visualize the project's value and generate momentum for implementation.

FIGURE 13: DOWNTOWN CAMERON SIDEWALK CROSS SECTION VIEW FACING EAST

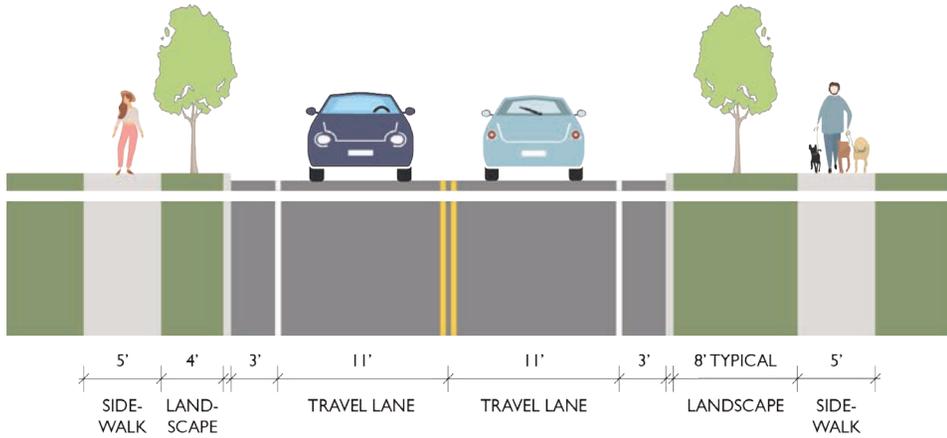


FIGURE 14: DOWNTOWN CAMERON SIDEWALK PROJECT RENDERING



FIGURE 15: DOWNTOWN CAMERON SIDEWALK CONCEPT (1" = 70')

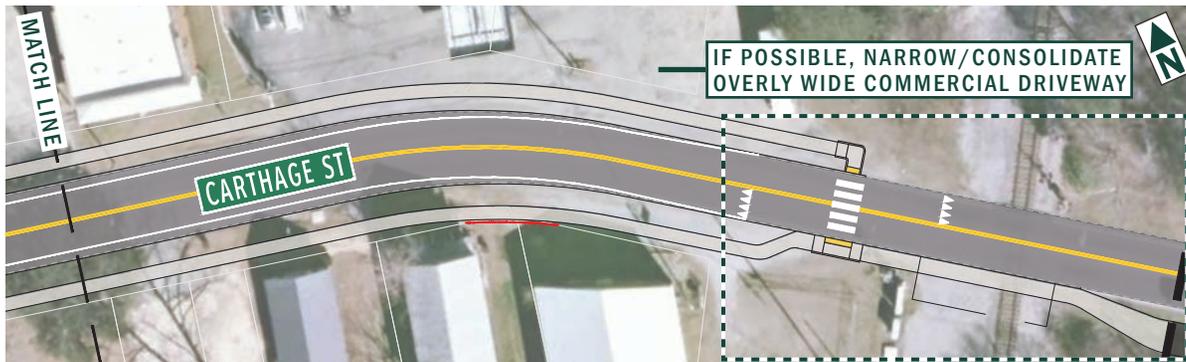
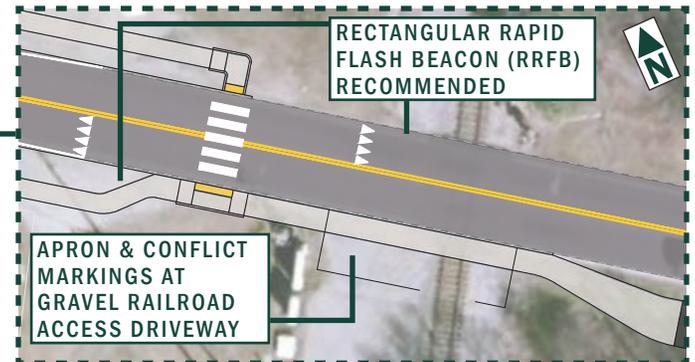


FIGURE 16: DESIGN DETAIL: SIDEWALK TRANSITION TO SIDEPATH WITH MID-BLOCK CROSSING (1" = 50')



5. Phillips Memorial Park Sidepath Project



PROJECT OVERVIEW

- Length: 0.36 miles
- Extents: CSX railroad to Phillips Memorial Park entrance

This is a two-lane section of road with ~60' ROW, 12' wide lanes, no curb or gutter, and a bridge over Little Cane Creek. The project includes a 10' wide sidepath with 6.5' landscape buffer on the south side of the street and a pedestrian- and bicycle-only bridge over the creek. The design also narrows corner radii and adds high-visibility crosswalks.

Considerations

The primary constraint in this section is Little Cane Creek. If a pedestrian- and bicycle-only bridge is not feasible, shifting the centerline on the existing vehicular bridge could create enough space for a sidewalk with minimal separation from vehicles. In this constrained scenario, signage would instruct bicyclists to dismount and walk their bikes over the bridge.

CONSTRAINTS

- Existing bridge over Little Cane Creek is too narrow for a sidepath
- Shallow drainage ditch in the ROW
- A few mature trees conflict with the sidewalk alignment

OPPORTUNITIES

- The pedestrian- and bicycle-only bridge could be an asset to Town and provide a chance to interact with Little Cane Creek

Cost Estimate

TABLE 8: PHILLIPS MEMORIAL PARK SIDEPATH PROJECT PROBABLE COST

ITEM	TOTAL
Design	\$265,000
ROW Acquisition	\$5,000
Utility Relocation	\$35,000
Construction	\$1,065,000
TOTAL COST	\$1,370,000

Implementation

This project requires new construction for the sidepath and pedestrian- and bicycle-only bridge. The Park entrance and side street crossing require retrofit. This project scored highly during prioritization and should be implemented on a medium- to long-term timeframe.

LEAD AGENCIES

- NCDOT
- TARPO
- Town of Cameron

KEY PARTNERS

- Moore County
- NC Department of Environmental Quality

POTENTIAL FUNDING

- NCDOT STIP
- Powell Bill Funds (for changes to Pineywood Church Road)
- RTP, PARTF, CDBG-NR, AARP

Concept Graphics

The following page presents the proposed typical section. Due to length of the project, the plan view rendering is split into two frames. Two concepts are shown for the crossing over Little Cane Creek with the preferred option showing a pedestrian- and bicycle-only bridge.

FIGURE 17: PHILLIPS MEMORIAL PARK SIDEPATH CROSS SECTION VIEW FACING EAST

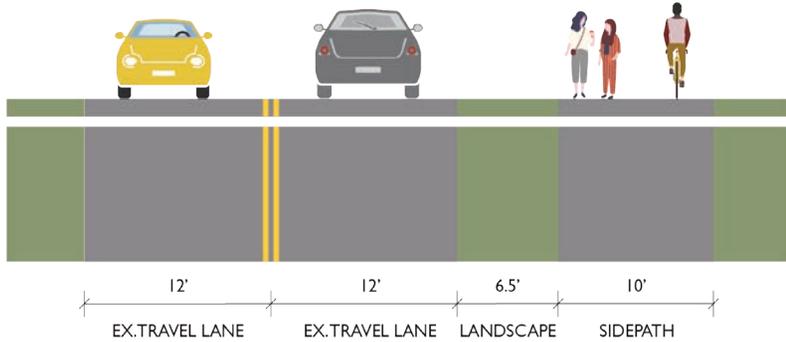


FIGURE 18: PHILLIPS MEMORIAL PARK SIDEPATH CONCEPT (1"=160')

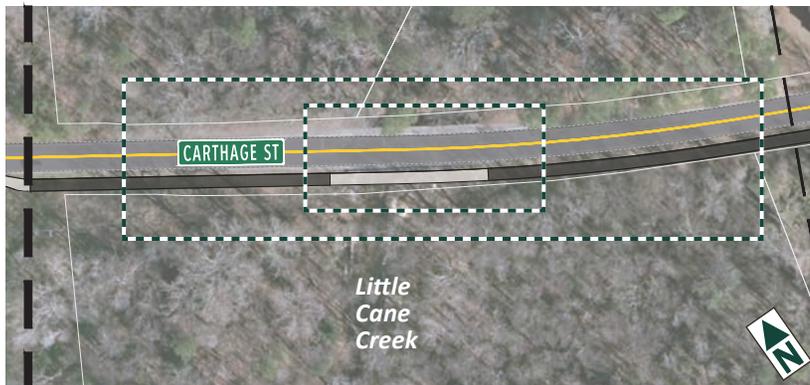


FIGURE 19: DESIGN DETAIL: PREFERRED CREEK CROSSING: PEDESTRIAN- AND BICYCLE-ONLY BRIDGE (1"=50')



FIGURE 20: ALTERNATE DESIGN DETAIL: CONSTRAINED CREEK CROSSING: TRANSITION TO SIDEWALK ON BRIDGE (1"=100')

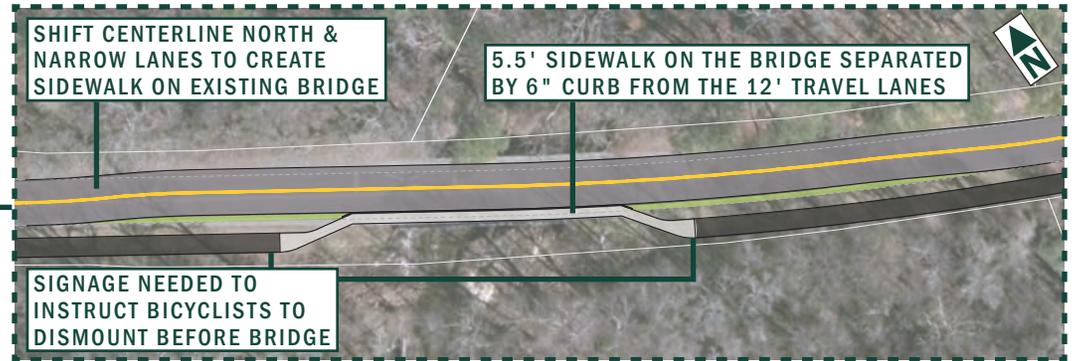


FIGURE 21: PEDESTRIAN- AND BICYCLE-ONLY BRIDGE



6. Eastern Gateway Sidewalk Project



PROJECT OVERVIEW

- Length: 1.04 miles
- Extents: Phillips Memorial Park entrance to Bass Road

This is a multi-lane section of road with a highly variable ROW, 12' wide lanes, no curb or gutter, and a bridge over US-1. Recommendations include:

- A 5' wide sidewalk and ~8' wide landscape buffer on the south side of NC 24/27
- A 5.5' wide sidewalk with a 2' concrete buffer on the bridge
- High-visibility crosswalks and tighter corner radii

Considerations

This is the longest recommended project. Though not included in the design, adding wayfinding and landscaping can help create a sense of place and increase user comfort. High vehicular speeds are also a concern as the posted speed limit is 55 MPH.

CONSTRAINTS

- The bridge over US-1
- Shoulders on the bridge approach would require moderate grading
- Truck turning movements at ramps and the gas station
- Narrowing width and tightening corner radii at the gas station driveway may not be feasible

OPPORTUNITIES

- Possibility for the sidewalk to be constructed via private development of vacant parcels

Cost Estimate

TABLE 9: EASTERN GATEWAY SIDEWALK PROJECT PROBABLE COST

ITEM	TOTAL
Design	\$270,000
ROW Acquisition	\$5,000
Utility Relocation	\$95,000
Construction	\$1,305,000
TOTAL COST	\$1,675,000

Implementation

Most of the proposed facilities require new construction. Re-stripping can be carried out through regular maintenance cycles, but should coincide with retrofit of the bridge, highway ramps, and guardrails. This project received the lowest prioritization score and should be implemented on a long-term timeframe as development occurs.

LEAD AGENCIES

- NCDOT
- TARPO
- Moore County

KEY PARTNERS

- Town of Cameron
- Private developers

POTENTIAL FUNDING

- NCDOT STIP
- Powell Bill Funds (for changes to Atkins Road)

Concept Graphics

The following page presents typical sections for both the roadway and bridge segments. Due to the length of the project, the plan view rendering is split into multiple frames.

FIGURE 22: EASTERN GATEWAY SIDEWALK PROJECT CROSS SECTION VIEW FACING EAST

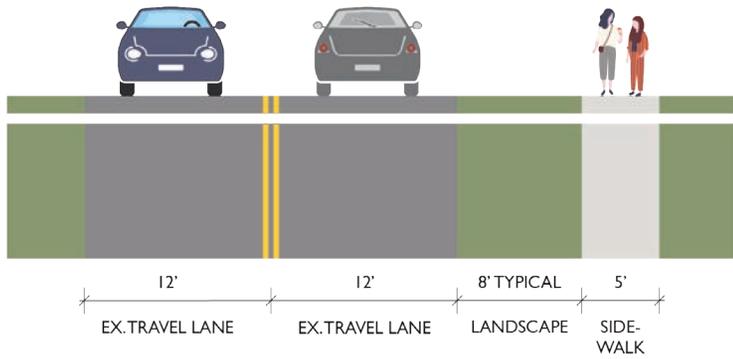


FIGURE 23: EASTERN GATEWAY SIDEWALK PROJECT: US-1 BRIDGE CROSS SECTION VIEW FACING EAST

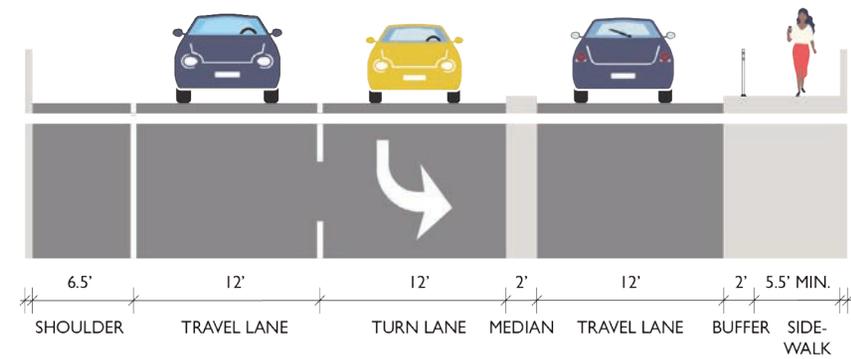


FIGURE 24: EASTERN GATEWAY SIDEWALK PROJECT PLAN VIEW CONCEPT (1"=200')

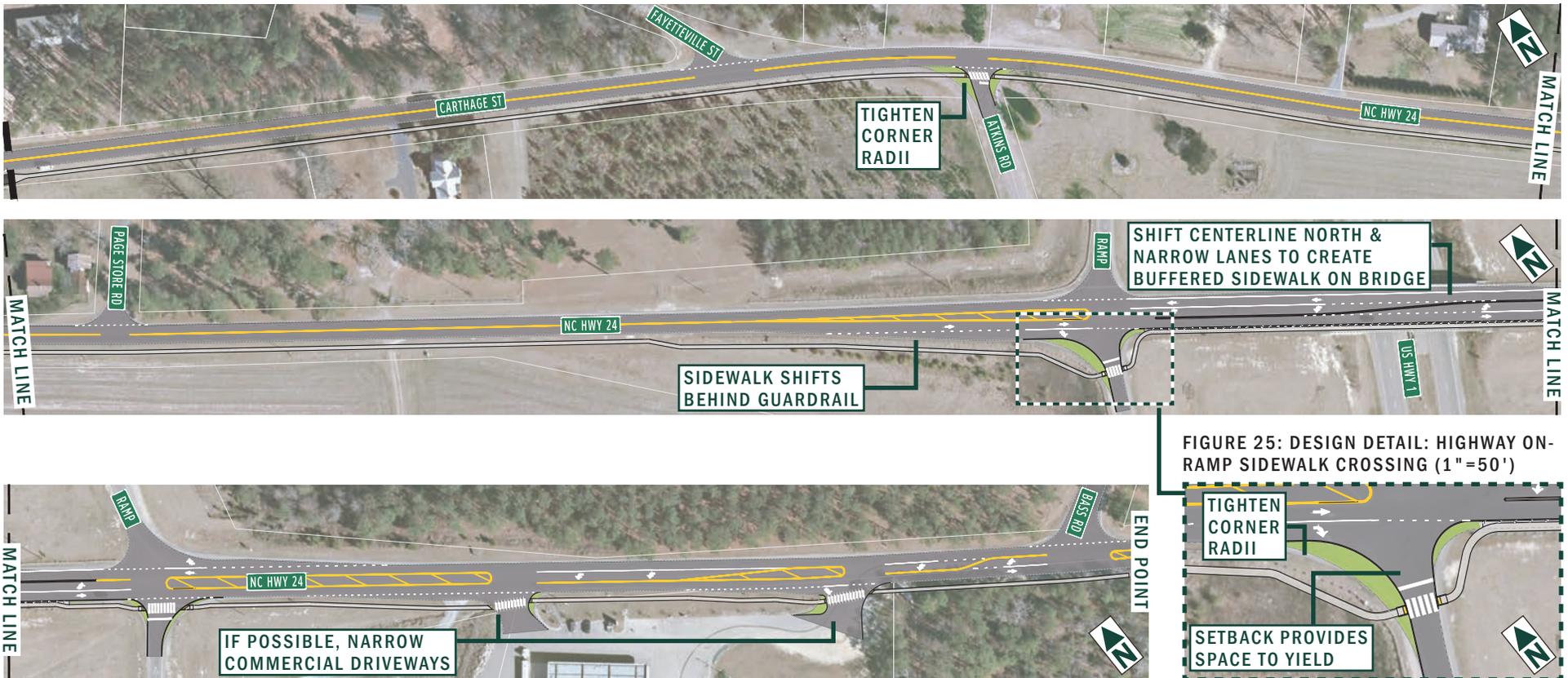


FIGURE 25: DESIGN DETAIL: HIGHWAY ON-RAMP SIDEWALK CROSSING (1"=50')



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NEXT STEPS

5

Overview

The following actions will help support a pedestrian- and bicycle-friendly atmosphere in Cameron while generating momentum for advancing the pedestrian and bicycle projects proposed in this plan. Given Cameron's small size and limited budget for capital improvements, collaboration and partnerships will be key to implementation.

ACTION ITEMS

Pursue NCDOT STIP Projects

The Town can partner with the Triangle Area Regional Planning Organization (TARPO) to ensure the pedestrian bicycle facilities recommended in this Plan are added to existing and future highway projects along Carthage Street/NC 24-27.

Document Pedestrian and Bicycle Activity

Being able to demonstrate a demand for nonmotorized infrastructure by documenting pedestrian and bicycle activity in town will help Cameron be competitive for grants. This should include collecting data on the number of tourists visiting Cameron during annual events and on weekends. Outreach to local bicycling clubs should also be considered.

Create a Budget Line Item for Pedestrian and Bicycle Facilities

The Town's budget includes a line item for "Transportation-Streets" and for "Cultural and Recreation-Park/Street Fair/Beautification". Adding a line item specifically for pedestrian and bicycle facilities will help set-aside funding for matching funds or betterment funds (i.e., to cover the increased cost of brick sidewalks compared to the NCDOT standard concrete sidewalk for the West Town Sidewalk Project and the Downtown Cameron Sidewalk Project). The Town could also earmark Powell Bill funds for pedestrian- and bicycle-related projects.

Update Development Regulations to Build Out a Nonmotorized Network

Connectivity of facilities is critical for walking and bicycling conditions. Once adopted, the Town Board of Commissioners should update the local subdivision regulations to ensure new development is required to connect to or extend existing pedestrian bicycle facilities.

Plan for Concurrent Infrastructure Investments

The Town of Cameron and Moore County should collectively determine needs and timelines associated with anticipated public utility updates along Carthage Street/NC 24-27 to identify opportunities for concurrent implementation of utility and nonmotorized transportation projects. Coordinating the implementation of utility updates with pedestrian and bicycle infrastructure investments can provide a cost savings and limit disturbance to street trees.

Conduct Early Outreach to Property Owners and Businesses

Reaching out to property owners and businesses early and often can help address concerns and identify opportunities to turn project critics into project champions. Buy-in from property owners is particularly crucial where facilities may require ROW acquisition or impact driveways.

Educate the Community on Pedestrian and Bicycle Safety

The Town should conduct a multi-faceted educational campaign to increase awareness of roadway safety for all users. Encouraging compliance with posted speed limits is particularly important along Carthage Street as vehicles do not have to stop at any of the intersections in town. The Town can disseminate this information through the Town's website, social media outlets, and signs posted around town. NCDOT's Watch for Me NC program is a great opportunity to receive training and educational materials for a pedestrian and bicycle safety campaign.

Bring Safe Routes to School Activities to Cameron Elementary

The Triangle J Council of Governments provides educational pedestrian and bicycle activities for Kindergarten through 8th Grade. Encouraging Cameron's youngest residents to walk and bicycle can help foster a culture of active transportation.

Consider flexibility in enforcing "no riding on sidewalk" laws

State law requires bicycles to follow the same rules of the road as vehicles. While bicyclists are technically prohibited from riding on the sidewalk and doing so poses a particular risk when cars pull out of driveways, the sidewalk may be the safest place to ride.

Establish a Historical Preservation Advisory Committee

An advisory committee focused on historic preservation can help craft ordinances to protect historic structures and encourage context-sensitive development in the Historic District. This committee can also help develop a materials palette for landscape, hardscape, and street furnishings to strengthen the identity of downtown Cameron. Visual interest contributes to a high-quality pedestrian experience.

Foster a Friends of Cameron Non-Profit

A non-profit entity that partners closely with the Town of Cameron would offer greater access to additional funding sources. A "Friends Of" non-profit can help leverage private donations and grants that may not be available to government agencies. Monies raised through the non-profit can help fund pedestrian and bicycle projects as well as private projects, such as facade improvements and landscaping, that would make the public realm more engaging and comfortable for people who walk or bicycle.

Develop a Walking Tour of Cameron

A walking tour of Cameron is a great way to showcase the Town's historic assets. As a form of cultural tourism, a walking tour can make the connection between economic development and the need for pedestrian facilities. The walking tour may be facilitated by a local resident or self-guided through the use of wayfinding, historical markers, and QR codes to link people directly to historical content online.



WALKING TOUR IN DOWNTOWN CHAPEL HILL

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APPENDIX OF RESOURCES

A

Resources by Agency

NCDOT

- WalkBikeNC: The Statewide Pedestrian and Bicycle Plan
 - » <https://www.ncdot.gov/divisions/bike-ped/Pages/statewide-bike-ped-plan.aspx>
- Glossary of North Carolina Terminology for Active Transportation
 - » https://connect.ncdot.gov/projects/planning/TransPlanManuals/acronyms_glossary.pdf
- NCDOT Complete Streets, including the Complete Streets Planning and Design Guidelines
 - » <https://connect.ncdot.gov/projects/BikePed/Pages/Complete-Streets.aspx>
- Evaluating Temporary Accommodations for Pedestrians
 - » https://connect.ncdot.gov/resources/safety/Teppi/TEPPL%20All%20Documents%20Library/W30_Eval.pdf
- NC Local Programs Handbook
 - » <https://connect.ncdot.gov/municipalities/Funding/Pages/LPM%20Handbook.aspx>
- Watch for Me NC Program
 - » <https://www.watchformenc.org/>
- NCDOT Safe Routes to School Policy Initiative
 - » <https://www.ncdot.gov/initiatives-policies/safety/safe-routes-school/Pages/default.aspx>

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)

- Guide for the Development of Bicycle Facilities, 2012
 - » <https://nacto.org/references/aashto-guide-for-the-development-of-bicycle-facilities-2012/>
- Guide for the Planning, Design, and Operation of Pedestrian Facilities, 2011 Update
 - » <https://transportationops.org/research/update-aashto-guide-planning-design-and-operation-pedestrian-facilities>
- A Policy on Geometric Design of Highways and Streets, 7th Edition
 - » <https://aashtojournal.org/2018/09/28/aashto-releases-7th-edition-of-its-highway-street-design-green-book/>

AMERICANS WITH DISABILITIES ACT (ADA)

- United States Access Board. Public Rights of-Way Accessibility Guidelines (PROWAG)
 - » <https://www.access-board.gov/prowag/>
- US Department of Justice. ADA Standards for Accessible Design.
 - » https://www.ada.gov/2010ADASTandards_index.htm

MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)

- 2009 MUTCD
 - » https://mutcd.fhwa.dot.gov/htm/2009/html_index.htm
- 2009 NC Supplement to MUTCD
 - » <https://connect.ncdot.gov/resources/safety/trafficsafetyresources/2009%20nc%20supplement%20to%20mutcd.pdf>
- Part 4E: Pedestrian Control Features
 - » <https://mutcd.fhwa.dot.gov/htm/2009r1r2/part4/part4e.htm>
- Part 7: Traffic Controls for School Areas
 - » https://mutcd.fhwa.dot.gov/htm/2009/part7/part7_toc.htm
- Part 9: Traffic Controls for Bicycle Facilities
 - » https://mutcd.fhwa.dot.gov/htm/2009/part9/part9_toc.htm

FEDERAL HIGHWAY ADMINISTRATION (FHWA)

- Small Town and Rural Multimodal Network Design Guide, 2017
 - » <http://ruraldesignguide.com/>

- Achieving Multimodal Networks: Applying Design Flexibility and Reducing Conflicts, 2016
 - » https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/multimodal_networks/
- Safe Transportation for Every Pedestrian (STEP)
 - » https://safety.fhwa.dot.gov/ped_bike/step/resources/
- Separated Bike Lane Planning and Design Guide, 2015
 - » https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/separated_bikelane_pdg/page00.cfm
- Incorporating On-Road Bicycle Networks into Resurfacing Projects, 2016
 - » https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/resurfacing/
- NC Department of Commerce's NC Main Street and Rural Planning Center
 - » <https://www.nccommerce.com/about-us/divisions-programs/rural-economic-development/nc-main-street-rural-planning-center>
- BikeWalkNC
 - » <https://www.bikewalknc.org/>

NATIONAL ASSOCIATION OF CITY TRANSPORTATION OFFICIALS (NACTO)

- Urban Street Design Guide
 - » <https://nacto.org/publication/urban-street-design-guide/>
- Urban Bikeway Design Guide
 - » <https://nacto.org/publication/urban-bikeway-design-guide/>
- Don't Give Up at the Intersection
 - » <https://nacto.org/publication/dont-give-up-at-the-intersection/>

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION (MASSDOT)

- Separated Bike Lane Planning & Design Guide
 - » <https://www.mass.gov/lists/separated-bike-lane-planning-design-guide>

OTHER

- Pedestrian and Bicycle Information Center
 - » <https://www.pedbikeinfo.org/>
- America Walks
 - » <https://americawalks.org/>
- Highway Safety Research Center
 - » <https://www.hsrc.unc.edu/>
- National Center for Safe Routes to School
 - » <http://www.saferoutesinfo.org/>
- National Partnership for Safe Routes to School, Resources
 - » <http://www.saferoutespartnership.org/safe-routes-school/resources>

2022 PEDESTRIAN & BICYCLE PROJECT ACCELERATION PLAN

