JUNE 2023

Wilmington Pedestrian Plan Update | 2023

Prepared for the City of Wilmington, North Carolina, in partnership with the Wilmington Urban Area Metropolitan Planning Organization (WMPO) and the NCDOT Integrated Mobility Division

Prepared by Alta Planning + Design

Acknowledgments

Thank you to the 1,000+ local residents, community leaders, and government staff that participated in the development of this plan through meetings, tabling outreach, interactive maps, comment forms, and plan review.

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Introduction

Walk Wilmington is an update to the City's 2009 pedestrian plan. The updated plan will build on the successes of the previous plan and continue to guide the City's prioritization of safe, healthy, and equitable pedestrian infrastructure projects, policies, and programs.

Background and Purpose

This updated plan provides a framework for prioritizing and implementing infrastructure, programs, and policies to make walking in Wilmington a safe, healthy, and equitable option.

Over the last 13 years, the 2009 pedestrian plan (also called Walk Wilmington) has guided the City through funding, design, and construction of more than 200 pedestrian projects, such as the Gary Shell Cross City Trail. The City has also implemented safety education programs for walking and driving, and revised its development policies to include pedestrian infrastructure.

Wilmington has successfully expanded and connected its sidewalks in areas like downtown and the University of North Carolina Wilmington (UNCW) campus. However, many roadway corridors throughout the city still lack complete sidewalks and adequate crossings, contributing to unsafe walking conditions in those areas.

Recognizing a need to update the 2009 pedestrian plan, the City of Wilmington requested and received funding from the North Carolina Department of Transportation (NCDOT). This plan update provided an opportunity to build on past successes while better aligning with current issues, including increases in crashes involving pedestrians and those who walk as a primary means of transportation, a desire for a greater focus on equity, and continued community support for pedestrian improvements.

Key Milestones

2009: Wilmington adopts the first Walk Wilmington Pedestrian Plan.

2012: The Moving Ahead for Progress in the 21st Century Act (MAP-21) is signed into law, providing federal funding opportunities for pedestrian projects through 2014.

2013: Wilmington adopts the Wilmington/New Hanover County Comprehensive Greenways Plan.

2014: Voters approve a City transportation bond that funds trails, sidewalks, bike lanes, and crosswalks.

2015: The Federal Fixing America's Surface Transportation (FAST) Act is signed into law, providing federal funding opportunities for pedestrian projects through 2020.

2019: Amid a nationwide increase in pedestrian crashes, injuries, and fatalities, Wilmington experiences the highest pedestrian crash rate among large cities in NC.

2021: Wilmington and NCDOT initiate a citywide pedestrian safety study; the City requests funding from NCDOT to update Walk Wilmington; the Infrastructure Investment and Jobs Act (IIJA) is signed into law, providing federal funding opportunities for pedestrian projects through 2026.

2023: Wilmington adopts the updated Walk Wilmington Pedestrian Plan.

Planning Process

The planning process included public engagement, participation and direction from a project committee, and a final presentation to City Council. The time frame for these and other steps is outlined below:

Public Engagement (May 2022-February 2023):
Project Website, Online Map, Public Comment Form, Open Houses, and Tabling at Local Events

Plan Vision, Goals, and Objectives

The Walk Wilmington vision, goals, and objectives guide every aspect of the plan. The framework provides a foundation for the plan's needs analysis, prioritization process, implementation strategies, and performance measures. The vision, goals, and objectives were developed with input from the project steering committee.

Plan Vision

The City of Wilmington will be a pedestrian-friendly environment where walking is a safe and comfortable mobility choice for residents and visitors of all ages and abilities.

Plan Goals & Objectives

These six goals guided the plan development process. Of these, three **Key Plan Goals** were identified as the most important priorities for the Walk Wilmington Pedestrian Plan based on feedback from the steering committee and public input.

KEY PLAN GOALS

Increase Safety

Reduce overall pedestrian crashes and improve safety for all users of the roadway network. Promote adherence to traffic laws through education and awareness campaigns.

Promote Equity

Prioritize investment in areas with a history of underinvestment in pedestrian infrastructure and with historically under-served populations such as people with disabilities, people of color, and low-wealth households.

Enhance Connectivity, Mobility, and Accessibility

Fill gaps in the pedestrian network, improve connections to destinations and essential services, and ensure accessibility for people of all ages and abilities.

Enhance Health

Improve the health of residents and the environment by getting more people walking as a means of transportation and recreation through policies, programs, and projects.

Improve Livability and Protect the Environment

Make walking an inviting, attractive, and enjoyable experience through sound design and pedestrian-friendly policies. Reduce traffic congestion and harmful emissions through a reduction in vehicle miles traveled (VMT).

Create a Positive Economic Impact

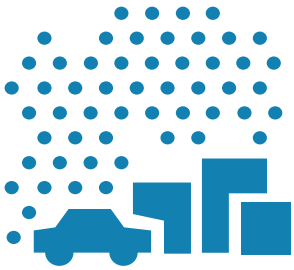
Continue to attract investment and tourism by enhancing walkability throughout Wilmington and providing more spaces to create economic returns. Establish a strategic prioritization process to fund improvements and maintenance.

Why Invest in Walking?

Increased rates of walking can help to improve people's health and fitness, enhance environmental conditions, and decrease traffic congestion. Infrastructure for walking, such as greenways and crosswalks, supports active lifestyles, resilient and sustainable transportation systems, and economic prosperity. Studies from the fields of public health, city planning, urban ecology, real estate, tourism, and transportation have demonstrated the value and benefits of creating more walkable communities. The following section presents findings from some of these studies that relate to Walk Wilmington's goals and objectives.

Environmental Benefits

Decreasing reliance on automobiles and reducing congestion by utilizing sidewalks and trails will lead to improved air quality. Trails and greenways serve as tools for conserving open space and preserving wetlands.



AIR QUALITY IN WILMINGTON

21 bad-air days in 2018

= NEARLY 1 MONTH/YEAR in which ground-level ozone and/or particulate pollution was **above the level** that the US Environmental Protection Agency has determined presents "little or no risk."

Environment North Carolina Research & Policy Center, "Trouble in the Air", 2020

If **8% more children** living within **2 miles of a school** were to walk or bike to school, the air pollution reduced from not taking a car would be **EQUIVALENT TO REMOVING 60,000 CARS** from the road for one year, nationally.

Pedroso, 2008, SRTS

Health Benefits

Sidewalks and greenways offer safe and accessible opportunities for physical activity. People who utilize pedestrian facilities are able to connect with places that they want or need to go.

32% **ADULT OBESITY** in New Hanover County (compared with 34% for the state of North Carolina)

23% of adults are **PHYSICALLY INACTIVE** in New Hanover County (compared with 26% for the state of North Carolina)

University of Wisconsin Population Health Institute, County Health Rankings, 2019

Every **0.6 MILES WALKED** **=5%** **REDUCTION** in the likelihood of obesity.

Frank, 2004

THOSE WHO ARE PHYSICALLY ACTIVE GENERALLY LIVE LONGER and have a lower risk for heart disease, stroke, type 2 diabetes, depression, some cancers, and obesity.

CDC, 2015

20 MINUTES walking or biking each day is associated with a

21% **LOWER RISK OF HEART FAILURE FOR MEN &**

29% **LOWER RISK FOR WOMEN**

Rahman, 2014 and 2015

Safety Benefits

Pedestrian infrastructure and traffic calming help save lives. Additionally, natural surveillance of trails and greenways occurs through increased numbers of trail users, creating a safer environment where behavior on trails is monitored by trail users themselves.

PEDESTRIAN-VEHICLE CRASH FACTS

From 2016-2020, Wilmington averaged

75 PEDESTRIAN-VEHICLE CRASHES / YEAR

3 PEDESTRIAN FATALITIES / YEAR

NCDOT, 2021

CRASH REDUCTION MEASURES

	% decrease in crashes
Install sidewalk to avoid walking in roadway	65-89
Increase enforcement to reduce vehicle speed	70
Install pedestrian refuge island	56
Add exclusive pedestrian phasing to signalized intersection	34

Federal Highway Administration, 2008

A PEDESTRIAN HIT BY A VEHICLE TRAVELING AT:

25 MPH

has an **89%** chance of survival

35 MPH

has a **68%** chance of survival

45 MPH

has a **35%** chance of survival

Rosén & Sander, 2009

Economic Benefits

Connected walkways and trails often yield high returns on investment through economic revitalization, recreational tourism, increased property values, and small business opportunities.

Building sidewalk and bicycle facilities creates **36% MORE JOBS** than building highways and **ALMOST 100% MORE** jobs than pavement improvements.

American Association of State Highway and Transportation Officials (AASHTO) Average Direct Jobs by Project Type (2012); Job in terms of full-time equivalents (FTE).

21%

of all trips made by a privately operated vehicle in the US are **1 MILE OR LESS**

NHTSA, 2017

DRIVING 4 MILES PER DAY COSTS

$905

per year in fuel and vehicle wear and tear

AAA, 2019

A 2018 study looking at the **ECONOMIC IMPACT OF FOUR GREENWAYS** in North Carolina (Brevard Greenway, Little Sugar Creek Greenway, American Tobacco Trail, and Duck Trail) found that every **$1.00 of initial trail construction supports $1.72 annually** from sales revenue, sales tax revenue, and benefits related to health and transportation. A one-time $26.7M capital investment in the four greenways supports:

$19.4M
Estimated annual sales revenue at local businesses along the four greenways

$684K
Estimated annual local and state sales tax revenue from businesses along the greenways

$25.7M
Estimated annual savings due to more physical activity, less pollution and congestion, and fewer traffic injuries from use of the greenways

$48.7M
Estimated business revenue from greenway construction

790 JOBS
Supported annually through greenway construction

NCDOT, Alta Planning + Design, and Institute for Transportation Research and Education, "Evaluating the Economic Impact of Shared Use Paths in North Carolina" 2018

\ 2 \

Existing Conditions

This chapter explores how Wilmington's recent history, community context, existing transportation network, and planned projects are shaping the future of walking in this growing city. Insight from stakeholders supplements safety- and equity-focused data analyses to examine the existing conditions through multiple lenses.

Overview and Local Context

Wilmington is a port city located along the Cape Fear River in New Hanover County, and is the economic center of Southeastern North Carolina's Cape Fear Region. The City's pedestrian network serves a diverse population of people walking for transportation, including youths, students, workers, retirees, tourists, and locals. Wilmington's flat topography and compact downtown grid are ideal for walking, but the city faces challenges with traffic safety, outward development, access to transit, and lack of walking infrastructure in areas outside of the downtown core.

The 2009 Walk Wilmington Plan identified 475 recommended pedestrian improvement projects—to date, 233 of these have been funded, designed, or completed, demonstrating the City's and the WMPO's commitment to serving the needs of pedestrians in the area. Wilmington has successfully expanded and connected its sidewalks in areas like downtown and the university campus. However, many roadway corridors throughout the city still have sidewalk gaps and inadequate crossings.

NCDOT owns and maintains many of Wilmington's high-capacity urban streets, where changes to the roadway design have great potential to improve pedestrian safety. The relationship between NCDOT, WMPO, and the City has helped fund pedestrian improvements through cost-sharing on NCDOT roadway projects; however, the City has limited power to influence modifications to NCDOT-owned and maintained streets.

Wilmington
QUICK FACTS

POPULATION*
115,451

8th
MOST POPULOUS CITY IN NC*

59,341
HOUSEHOLDS†

MEDIAN HOUSEHOLD INCOME†
$53,186

17.1%
OF RESIDENTS LIVING IN POVERTY†

RACE AND ETHNICITY*

HISPANIC OR LATINO	8.3%
NOT HISPANIC OR LATINO	91.7%
WHITE ALONE	70.9%
BLACK OR AFRICAN-AMERICAN ALONE	16.5%
ASIAN ALONE	1.6%
AMERICAN INDIAN OR ALASKA NATIVE ALONE	0.4%
NATIVE HAWAIIAN OR OTHER PACIFIC ISLANDER ALONE	0.1%
SOME OTHER RACE	3.9%
TWO OR MORE RACES	6.6%

Sources:
**2020 Decennial Census*
†2021 American Community Survey, 1-Year Estimates

Support for Walkability

The city's government, residents, and local organizations are broadly supportive of efforts to make walking safer and more convenient throughout Wilmington, in order to ensure sustainable growth for the city as well as the wider Cape Fear region. Voters approved a 2014 Transportation Bond, which funded trails, sidewalks, streetscapes, bike lanes, and crosswalks in high-priority locations.

The 2014 Transportation Bond included $12M for trails, $5M for sidewalks, $1.1M in bike/ped contingency funds, and $445K for crosswalks.[1]

Safety and Equity

Wilmington continues to experience a higher annual rate of pedestrian crashes and fatalities compared to similar-sized cities in NC. Seeking to understand the contributing factors, the City and NCDOT initiated a pedestrian safety study in 2021. Findings indicated that specific roadway characteristics are linked to more crashes and injuries, and showed that certain racial, age, and income groups are disproportionately affected—reiterating the need for equity considerations in project development and prioritization.

Wilmington consistently has one of the highest annual pedestrian crash rates in NC. From 2011-2020, the majority of crashes involving pedestrians occurred in areas with higher concentrations of minority residents and higher poverty rates compared to the county average.[2]

Tourism and Visitors

Tourism is a key part of Wilmington's economy. Recreational visitors are drawn to the beaches, rivers, parks, and gardens, while business travelers come for conferences, educational events, and business opportunities. After a record-breaking 2019, tourism spending declined all across the state in 2020 due to the Covid-19 pandemic, but early data for 2021 show a strong recovery.[3]

In 2020, visitors spent $598M in New Hanover County, the seventh highest amount in NC counties.[4] *The county supported 5,455 travel and tourism jobs, worth $186.5M in total.*[4]

Sources: 1) City of Wilmington, "Transportation Bond Update" February 7, 2020. 2) City of Wilmington, Wilmington Pedestrian Safety Study: 2011-2020 Crash Analysis Highlights, 2022. 3) NC Department of Commerce, "North Carolina announces total tourism spending at near recovery in 2021," May 3, 2022. 4) Economic Development Partnership of North Carolina, "The Economic Impact of Travel on North Carolina Counties," 2021.

Opportunities and Challenges

In recent years, Wilmington has made significant investments in pedestrian infrastructure, policies, and programs. The City seeks to build on its momentum by identifying potential opportunities and challenges related to pedestrian mobility in Wilmington, which are described below.

TABLE 1. *Opportunities and Challenges*

OPPORTUNITY/ CHALLENGE AREA	ASSESSMENT
Overall transportation network	The pedestrian experience varies dramatically in different parts of Wilmington. High density areas like the downtown have a strong pedestrian network with sidewalks, crosswalks, and signalized intersections. Other areas, such as along the City's major urban roadways, pedestrian infrastructure lacks connectivity and protected crossing locations, leading to increased pedestrian vulnerability. Wilmington is also a tourist destination and regional employment hub, and many of the users of these facilities are not familiar with the geography, further necessitating the need for connectivity, signage, and safe crossing locations along these roadways and at major intersections.
Current conditions for pedestrians & major infrastructure/ physical barriers to walking	Barriers faced are connectivity and the crossing of major corridors, especially increasing the number of midblock crossings for access to important destinations. High-capacity urban corridors have a patchwork sidewalk network that has yet to provide a solid string of connections vital for safe pedestrian traverse and crossing. Infrastructure is especially sparse in Wilmington's historically low-wealth communities, where people who have to walk out of necessity are most likely to encounter large gaps in the sidewalk network.
Existing side paths and greenways	There is a side path on the east side of Military Cutoff Road running from Drysdale Drive to Gordon Road for approximately 2.8 miles. The Park Avenue sidepath was recently completed. The Gary Shell Cross City Trail is a multi-use trail that runs for 15 miles through the City of Wilmington from Wade Park to the Heide-Trask Drawbridge at the Intracoastal Waterway, providing pedestrian and bicycle access to several city parks, the UNCW campus, and various cultural resources around the city. The Summer Rest Trail also connects to the Cross City Trail. Paved walking paths, ranging in length from 0.4 to 4.8 miles, exist in parks throughout the city. In addition, the Wilmington Downtown Riverwalk (pedestrian use only) is designated part of the East Coast Greenway and runs from Nutt Street to Nun Street along the Cape Fear River. Additional planned multi-use paths include Hooker Road, Hinton Avenue, South 17th Street, the Greensboro Loop Trail, and the Masonboro Loop Trail.

OPPORTUNITY/ CHALLENGE AREA	ASSESSMENT
Existing sidewalk network	As Wilmington becomes more suburban outside of the relatively well-connected downtown grid, the sidewalk network becomes more sporadic. Outside of downtown, much of the existing sidewalk infrastructure can be found in newer subdivisions, many of which are cut off from the City's broader pedestrian network.
Pedestrian network interaction with local transit system	The 2019 Road Safety Assessment identified the location of transit stops relative to the pedestrian network as an area-wide issue in Wilmington. Often, stops are located only on one side of a major road, with no safe and convenient way for riders to cross from the stop to the other side of the road.
Current walking rates	According to 2019 ACS data, nearly 3% (2.98%) of households in Wilmington walked to work.
Key generators/ attractors, origin and destination points	Key generators of pedestrian activity include greater downtown Wilmington, Sunset Park and Brookwood neighborhoods, UNC Wilmington, the hospital district, Mayfaire shopping center, Carolina Beach Road/US-421 business and commercial corridor, Market Street corridor, and Oleander Drive/US-17 corridor.
Special populations or user groups	The Wilmington area has a variety of special populations and user groups that utilize the pedestrian system differently and have specific needs. These include college students at both UNC Wilmington and Cape Fear Community College, retirees, and tourists visiting the nearby beaches, state parks, and historical destinations.
Roadway ownership and collaboration with NCDOT	NCDOT and the City of Wilmington have successfully used cost-sharing to add pedestrian improvements to roadway projects overseen by NCDOT. Examples include incorporating sidewalks and bike lanes into the widening of Kerr Ave and the future Independence Blvd Ext, and constructing multi-use paths along Military Cutoff Rd and Eastwood Rd. However, the City has limited power to initiate and influence modifications to NCDOT-owned and maintained streets. Within the hierarchy of Wilmington's streets, NCDOT owns many high-capacity urban streets that have been identified as needing pedestrian safety improvements, including Carolina Beach Road, Oleander Drive, Kerr Avenue, College Road, Market Street, Wooster Street, and Dawson Street. The map on page 19 shows roadway ownership in Wilmington.

OPPORTUNITY/ CHALLENGE AREA	ASSESSMENT
Local encouragement, educational, or enforcement programs and initiatives	The WMPO has a program called "Be A Looker" to encourage drivers to watch for pedestrians and bicyclists and to share the road. The WMPO and City of Wilmington have also participated in Watch for Me NC, a statewide program aimed at educating drivers, bicyclists, and pedestrians about safety. UNCW also prioritizes improving safety for students walking to campus, instructing all other modes to yield to pedestrians and providing students living on campus with information on how to safely navigate crossing the streets adjacent to campus. UNCW also has a policy of not issuing parking permits to students residing within 1 mile of campus, encouraging the use of walking, biking, and transit.
Existing plans, programs, and policies **See plan summary in Appendix D.*	Existing planning documents that are relevant to Wilmington include: ▶ Land Development Code Update (2021)* ▶ 2020 Biennial Data Report (2021) ▶ Cape Fear Change in Motion (2020)* ▶ Cape Fear Moving Forward 2045 (2020)* ▶ Congestion Management Process (CMP) (2020)* ▶ Wilmington Rail Trail Master Plan (2020)* ▶ Rail Realignment Plan (2017)* ▶ Comprehensive Transportation Plan (2016)* ▶ Create Wilmington Comprehensive Plan (2016)* ▶ US 17 Business (Market St) Corridor Study (2016)* ▶ River to Sea Bikeway Master Plan (2013)* ▶ Wilmington-New Hanover County Comprehensive Greenway Plan (2013)* ▶ Cross-City Trail Master Plan (2012)* ▶ Market Street Corridor Plan (2011) ▶ Wrightsville Sound Small Area Plan (2011)* ▶ Wrightsville Avenue 2030 (2010)* ▶ Southside Small Area Plan (2009)* ▶ Walk Wilmington: A Comprehensive Pedestrian Plan (2009)* ▶ Cape Fear Historic Byway Corridor Management Plan (2008)* ▶ Dawson & Wooster Corridor Plan (2007)* ▶ Seagate Neighborhood Plan (2007)* ▶ Carolina Beach Road Corridor Plan (2004)* ▶ College Road Corridor Plan (2004)* ▶ Oleander Drive Corridor Plan (2004)* ▶ Wilmington Vision 2020: A Waterfront Downtown (2004)* ▶ Northside Community Plan (2003)*

Steering Committee Comments on Existing Conditions

The following comments were provided by members of the steering committee. Members provided network-wide observations, and also wrote and drew on the base maps (provided by Alta) to indicate important destinations, issues, and dangerous crossings/intersections.

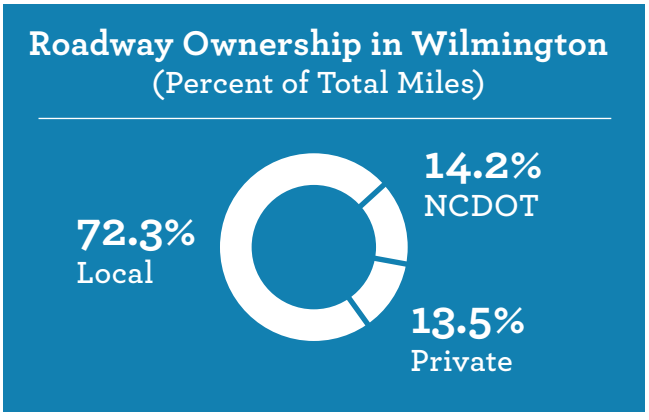
General Comments

- A general need for pedestrian connectivity to grocery stores, drugstores, dollar stores, social services, and medical facilities.
- In general, vehicle speeds are an issue around town. People tend to accelerate quickly after stops/through intersections.
- Connectivity with transit—important to have connections to sidewalks to increase transit utilization. More cons than pros in terms of transit connectivity—lots of crosswalks needed, especially in spots where buses only stop on one side of the street. Get WAVE ridership data.
- ADA improvements needed.
- Cultural change is a critical part of increasing safety for pedestrians. Many examples given of other US (west coast) communities where there is a "culture" of respect for people walking, particularly at intersections and crosswalks.
- "Be a Looker" program in conjunction with the Fire Department—first responders to many of the ped/bike crashes. UNCW, Oleander—"Stop, Look, Go" education program.

A WAVE Transit rider waits in the street at the South Front St and Ann St bus stop.

WMPO's "Be A Looker" educational program for bicyclists, pedestrians, and drivers.

- People crossing midblock often out of necessity. Example: 5th St—crosswalk gap.
- Fire Department and WMPO have given out bicycle helmets to people they see riding on the street.
- Minimum width for a residential sidewalk is 5 ft (wider for high-use areas); for shared-use paths 10 ft; up to 12 ft and wider becoming more common.
- Shared-use path materials: depends on guidelines used. Asphalt initially cheaper, but more maintenance. Recommend concrete for lower maintenance costs.
- It seems like many of our neighborhoods with the largest sidewalk gaps often have the most people who have to walk by necessity.
- Bike/ped committee has a list of priorities, much of it shared-use paths—take community input into account. The list of projects is in bike/ped element of the long-range plan (already digitized).
- Enforcement of traffic laws in pedestrian/vehicle interactions is important. Lighting issues for crashes, pedestrians crossing midblock. WPD participates in Governor's Highway Safety Program.
- For tourists: better signage, better crosswalks needed downtown. Overall need for promoting intermodal connectivity.
- 1-mile radius around UNCW—these students can't get parking passes, so shuttle runs. Heat map of population, ridership. Lots of foot traffic, bikeshare to get to campus.
- In-ground lights in the crosswalk are effective.
- Recent development code updates (as of Dec 1, 2021): Streetscape improvements downtown, connectivity/subdivision requirements, requiring midblock crossings, traffic calming. Looking at technical standards changes.
- Snow's Cut bridge is an example of where bike/ped facilities don't actually connect to the larger network.
- Inventory of worn foot paths? WMPO has an app that could be promoted to collect this info by crowdsourcing.
- General need for clear signage, wayfinding that will increase safe driving behavior.
- Sidewalk implementation question: Seems simple, why is it difficult? Many reasons: constrained public rights-of-way (City vs. NCDOT); utility lines (moving them very costly); drainage and cost of curb and gutter; coordinating with future roadway reconstruction plans or future land development plans.

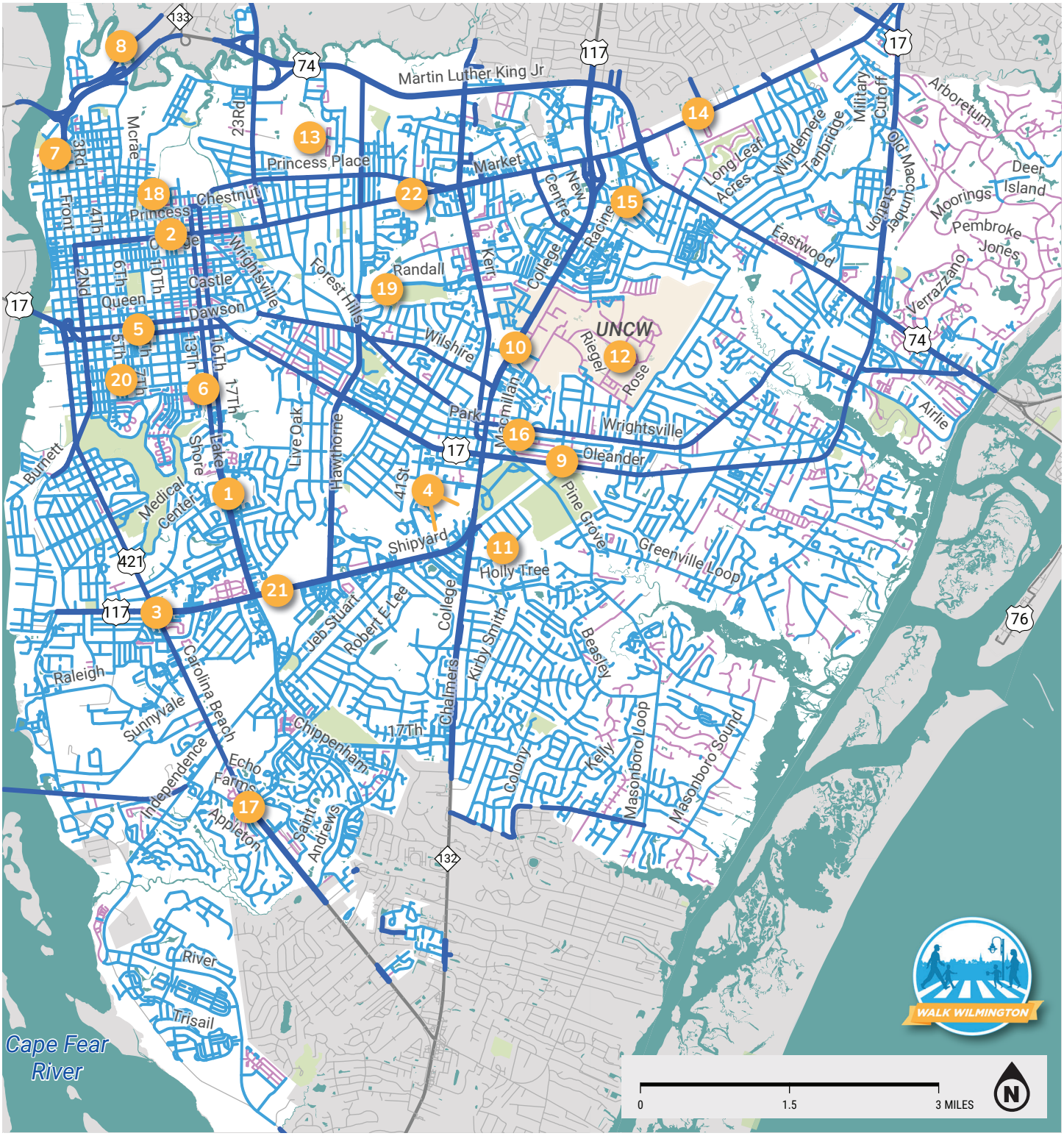


Roadway ownership determines maintenance responsibilities and the processes for making design changes, both of which influence the walking environment. **MAP 1 (page 19)** shows roadway ownership across Wilmington's network.

Location-Specific Comments

The following comments correspond to the numbered locations on **MAP 1 (page 19)**.

1. Public health—crosswalk put in for hospital access (from the parking deck).
2. Barriers to help direct pedestrian traffic towards safe crossings—successful at New Hanover High School.
3. Area around the intersection of Shipyard Boulevard and US-421/Carolina Beach Road is a high-volume pedestrian traffic area, with addiction rehab and other medical facilities present. Affordable housing is also planned for this area.
4. Students often cross Shipyard Boulevard to Hoggard High School, and College Road to Roland-Grise Middle School.
5. Wooster and Dawson/Cargo District: sidewalk is intermittent, with no crosswalks.
6. New affordable housing being put in at 16th Street/Greenfield Street. Lots of social services in this area, plus a planned grocery store.
7. N Front/Cowan/Harnett/N 3rd Street area: vehicles come into downtown quickly. Lots of ped traffic in this area, especially during events at Riverfront Park. Possibility of signage during events?
8. Castle Hayne Road bridge over Smith Creek to be reopened soon.
9. High pedestrian volume on Oleander Drive with few opportunities to cross.
10. Few crossings on College Road.
11. No sidewalks in Long Leaf Hills neighborhood.
12. Crosswalks needed on streets surrounding UNCW, including connections to Isaac Bear Early College High School.
13. New mixed-use development going in around the N 26th Street/Kornegay Avenue area.
14. Market Street between Kerr Avenue and Gordon Road is main corridor where serious pedestrian injuries/fatalities occur. Factors: impairment, dark clothing, time of day.
15. Racine Drive often used by college students to get to campus.
16. Parent/student circulation an issue around Winter Park Elementary School.
17. Ped/bike facilities needed at intersection of Carolina Beach Road/US-421 and George Anderson Drive.
18. Soda Pop District/New Hanover High School area: N 10th Street and Princess Street. Need more connectivity as area is developed more, and for safer walking/biking connections to high school.
19. Speeding on Randall Parkway.
20. On-street lighting needed on S 5th Avenue. Potential maintenance opportunities on S 5th Street.
21. No way to cross on Shipyard Boulevard between Carolina Beach Road and Independence Boulevard.
22. Frequent pedestrian traffic between motels and businesses on Market Street between N Kerr Avenue and 29th Street.



MAP 1:

Existing Conditions and Roadway Ownership

WALK WILMINGTON PEDESTRIAN PLAN

ROADWAY MAINTENANCE

- State Maintained
- Locally Maintained
- Private

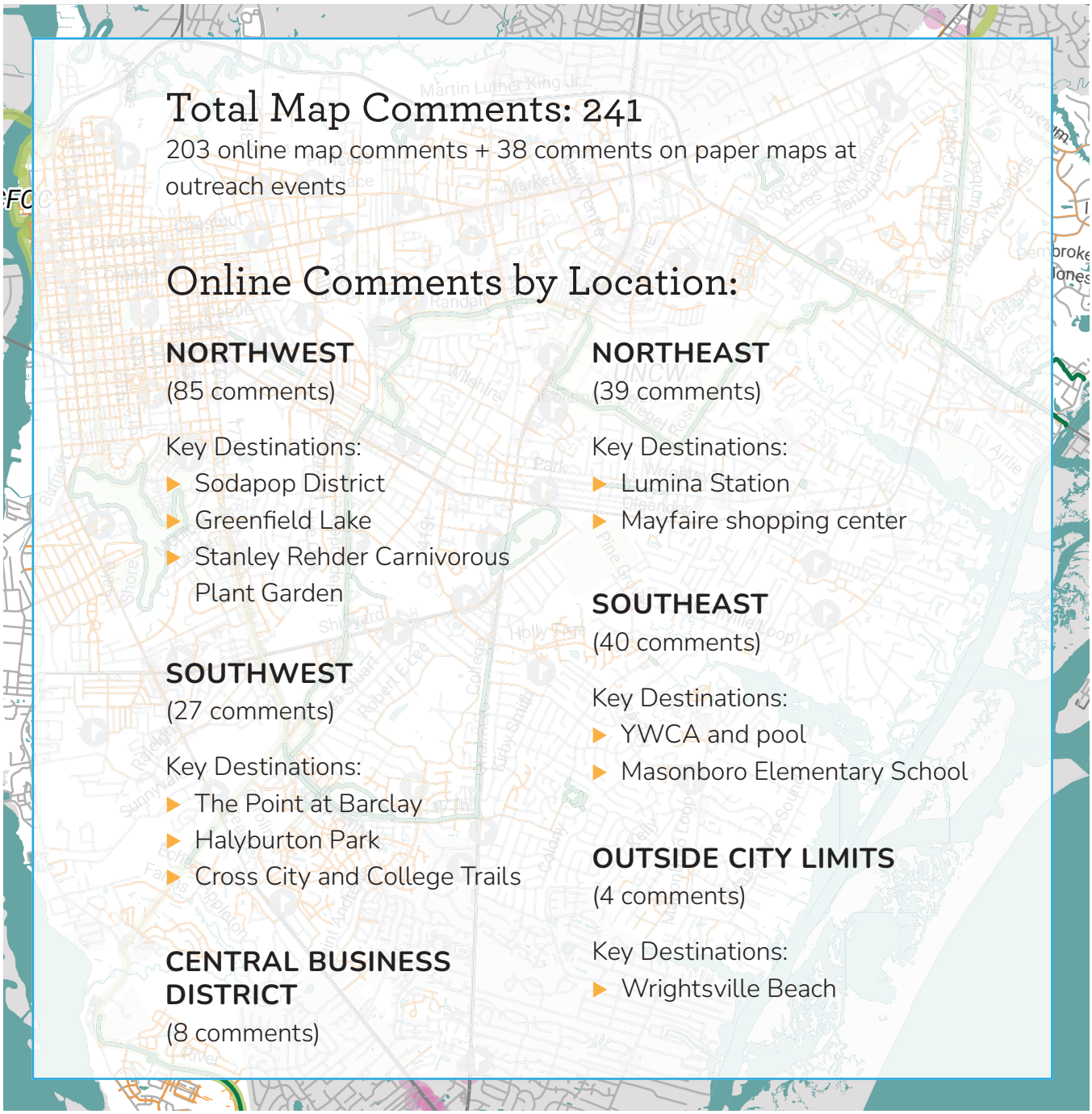
DESTINATIONS

- Parks

alta

Public Input on Existing Conditions

The project team invited community members to participate in plan development through an interactive virtual map where the public could comment on existing conditions for walking in Wilmington. This section highlights themes from the public input map comments.



Top Comments

These comments received the most "likes" from other users on the online input map.

"There are numerous restaurants and stores in **Lumina Station**, by Sweet and Savory, by the new ABC store, and by Ceviche's/Beach Bagels. Yet it is impossible to be a pedestrian and cross **Wrightsville Avenue** safely. There is no cross walk anywhere in this area. The speed limit is 35 but cars routinely travel at 45 mph or more. A crosswalk is needed to facilitate more pedestrian access to retail and restaurants in this area." (8 likes)

"Almost no safe way for pedestrians to cross from one side of **College Rd** to the other except for one crossing by the university." (8 likes)

"Last time I checked, there are no crosswalks to get from the mixed use trail along **Military Cutoff Rd** to major destinations like **Mayfaire** (movie theater). Although I added a point location, there need to be several signaled crosswalks along Military Cutoff Rd." (7 likes)

"The sidewalk/bike path ends without a way to **access the beach**. Cutting through the shopping center is dangerous with many moving cars/lots and difficult visuals." (6 likes)

Sidepath runs along Military Cutoff Road, but crossings of the major road are not provided at several intersections.

Main Corridor Inventory

This table describes the physical characteristics of Wilmington's major roadway corridors, as well as what conditions for pedestrians are like on them. Only corridors where pedestrian traffic is permitted were included in this inventory. "Map ID" corresponds to **MAP 2 (page 24)**.

TABLE 2. *Main Corridor Inventory*

MAP ID	ROADWAY NAME	PREDOMINANT ROADWAY WIDTH (LF)	NO. OF LANES	2021 AADT	SPEED LIMIT (MPH)	CURB & GUTTER	CONDITIONS FOR PEDESTRIANS
1	Bus 17/Market St (from College Rd to N 23rd St)	37-80	4-7	23,000-35,500	35	Varies	Sidewalks on both sides of the roadway in most of the corridor, with signalized crossings at major intersections.
2	Bus 17/Market St (West of N 23rd St)	57-75	4-5	8,600-21,000	35	Varies	Sidewalks on both sides of the roadway, but a lack of crosswalks at most intersections.
3	Bus 17/Market St (East of College Rd)	56-68	4-6	33,500-48,000	45	Varies	Some disconnected sidewalk segments on both sides of the roadway. Lack of safe pedestrian crossings throughout corridor.
4	Eastwood Rd/ US-74 (West of Military Cutoff Rd)	65-100	5-7	24,000-33,500	35-45	Yes	Sidewalks on most of the north side of the roadway and Cross City Trail on the south side. Lack of signalized crossings at many intersections.
5	Eastwood Rd/ US-74/US-76 (East of Military Cutoff Rd)	65-100	4-7	16,500-21,000	35-45	Yes	Cross City Trail sidepath on north side of roadway, with some sidewalk on the south side. Few signalized crossings.
6	N & S 3rd St (& Burnett Blvd north of US-421)	65-70	4-5	12,000-18,500	35	Varies	Corridor has sidewalks on both sides, but additional crosswalks are needed outside of the downtown core, especially on Burnett Blvd.
7	US-421/Carolina Beach Rd (from Burnett Blvd to Independence Blvd)	65-80	4-6	28,000-36,000	40-45	Yes	Sidewalks are present on both sides of the corridor until the Holbrooke Ave intersection, after which there are gaps on both sides. Signalized crossings appear at most major intersections throughout the corridor.
8	US-421/Carolina Beach Rd (from Independence Blvd to College Rd)	60-100	4-6	32,000-33,500	35-45	Varies	Several small, disconnected sections of sidewalk exist, but most of the corridor does not have sidewalks. Signalized crossings are present at most major intersections.

MAP ID	ROADWAY NAME	PREDOMINANT ROADWAY WIDTH (LF)	NO. OF LANES	2021 AADT	SPEED LIMIT (MPH)	CURB & GUTTER	CONDITIONS FOR PEDESTRIANS
9	US-117/ Shipyard Blvd (West of S 17th St)	68-120	4-8	6,900-16,000	35-45	Varies	Sidewalk is present on the south side of the roadway for much of the corridor, and more intermittently on the north side. Several major intersections lack signalized crossings.
10	US-117/ Shipyard Blvd (East of S 17th St)	78-100	4-8	22,500-27,500	35-45	Varies	Signalized crossings and sidewalks on both sides of the road present in the eastern part of the corridor near Hoggard High School.
11	US-17/ Oleander Dr	58-98	4-8	22,500-36,500	35-45	Varies	The western portion of Oleander near downtown has sidewalks on both sides, but few crosswalks. The more commercial section of the corridor has some sidewalk on both sides of the roadway, with few safe pedestrian crossings.
12	Military Cutoff Rd	68-100	4-8	19,500-39,000	35-45	Varies	There is a sidepath on the east side of the roadway north of Drysdale Dr, and sidewalk south of Eastwood Rd until the Wrightsville Ave intersection. There are a few crosswalks at major intersections, but overall, the corridor lacks safe pedestrian crossings.
13	Wooster St/ US-76 W/ US-17 S	40-46	3-4	15,000-18,500	35	Yes	Corridor contains intermittent sidewalk on both sides of the street. There are limited pedestrian crossing facilities, mostly at the major intersections at the east end of the corridor.
14	Dawson St/ US-76 E/ US-17 N	40-65	4-5	16,500-20,500	35	Yes	Corridor has sidewalk on both sides of the street. There are limited pedestrian crossing facilities, mostly at the major intersections at the east end of the corridor.
15	College Rd/ S College Rd (North of Oleander Dr)	72-130	6-10	38,000-51,500	35-45	Yes	There is intermittent sidewalk on both sides of the roadway, mostly between the Oleander Dr & Cedar Ave intersections, Safe pedestrian crossing facilities are present at many of the major intersections.
16	S College Rd (South of Oleander Dr)	65-72	4-7	34,500-47,000	35-45	Varies	Sidewalk is present on the west side of the corridor, and becomes a sidepath south of Holly Tree Rd. There are several crosswalks at side streets, but none crossing S College Rd.

MAP 2:

Main Corridor Inventory

WALK WILMINGTON PEDESTRIAN PLAN

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EXISTING FACILITIES

- Shared-Use Paths
- Existing Sidewalks
- East Coast Greenway Alignment

PEDESTRIAN-VEHICLE CRASHES, 2007-2020

- Fatal or Severe Injury

DESTINATIONS

- Schools
- Parks

Equity Analysis

Promoting equity is a goal of the Walk Wilmington plan update. By focusing on equity, we can begin to address barriers that contribute to disparities in our communities, and ensure that the benefits of our investments reach everyone.

The transportation planning practice has not always asked critical questions about whether the benefits and burdens of transportation investments are distributed equitably. Contemporary planning practice seeks to acknowledge harmful past actions by critically examining who benefits from investments, and reflect on the needs of socially vulnerable populations as part of the planning process.

Historic underinvestment and exclusionary policies have contributed to disparities in Wilmington's built environment. As a result, some communities and the people who live in them experience reduced access to transportation options, less pedestrian infrastructure, and higher instances of death and injury while walking. Looking through an equity lens to prioritize pedestrian infrastructure investments that serve areas and populations with greater need—including people of color, people with disabilities, and low-wealth households—Wilmington can develop a more equitable transportation system.

What is TRANSPORTATION DISADVANTAGE?

NCDOT defines **transportation disadvantage** as limited ability to reach necessary goods, services, and employment by people with limited access to transportation options. These barriers may occur from lack of access to a motor vehicle or transit, inability to drive or access transit, or other reasons.

Groups most likely to experience transportation disadvantage include:

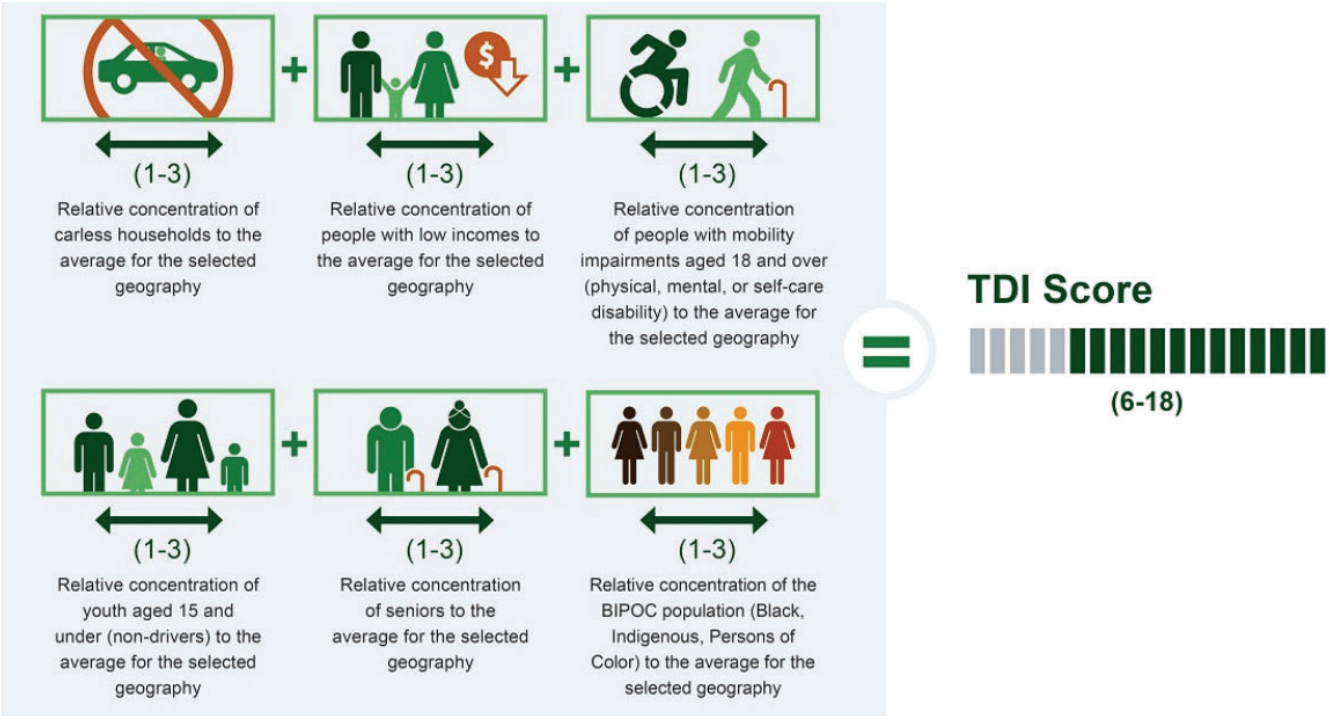
- Racial minorities
- People with low incomes
- Ethnic minorities, specifically of Hispanic or Latino origin
- BIPOC (Black, Indigenous, and Persons of Color)
- Households without access to a personal vehicle
- Youth aged 15 and under who are unable to drive
- Seniors (aged 65 years old or more)
- People with mobility impairments (physical, mental, or self-care disability)

Wilmington and NCDOT have already taken steps to understand conditions related to pedestrian safety and equity. Initial findings from the 2021 Citywide Pedestrian Safety study with NCDOT indicated that certain roadway characteristics coincided with more pedestrian crashes. The study also compared demographic data with crash locations and found that certain racial, age, and income groups were disproportionately affected by pedestrian crashes.

This equity analysis maps potential transportation disadvantage in Wilmington in conjunction with existing sidewalk data to help the planning team confirm and understand what other patterns exist in Wilmington. This analysis, along with findings from previous efforts, informed the development of plan recommendations and prioritization of the recommendations.

NCDOT Transportation Disadvantage Index (TDI)

NCDOT has developed a screening tool to provide information about transportation disadvantage and explain the patterns that occur throughout the state. By visualizing and talking about these patterns, we can start to address inequity through informed policy review, planning, and project development decision making. The NCDOT TDI screening tool provides a score at the Census block group level based on concentrations of six factors (shown in graphic below) compared to state-wide averages. **Higher TDI scores indicate areas with potentially higher transportation disadvantage.**



NCDOT's TDI scoring process assigns each Census block group a score between 6 and 18, based on six factors.

Analysis

METHODS

The Walk Wilmington equity analysis relies on the 2021 NCDOT TDI data and process and normalizes the TDI scores for block groups in Wilmington by calculating a percent rank score that is specific to the city and translates the raw scores of 6–18 to a relative scale of 0–100. The purpose of this calculation is to generate a measurement (a percentile ranking) that enables an understandable comparison between TDI scores for each block group to the distribution of all the TDI scores for Wilmington on a standardized scale.

FINDINGS

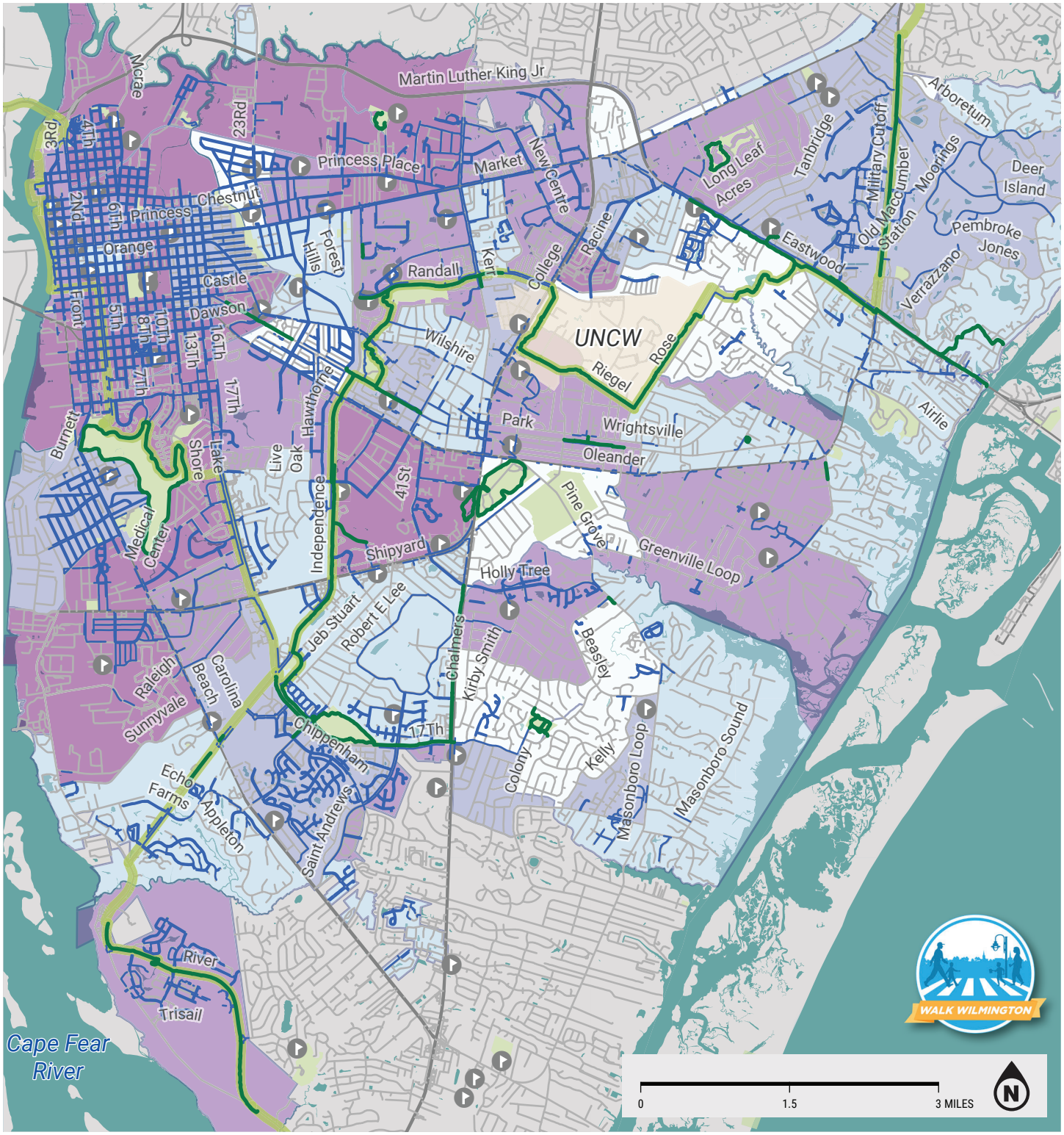
MAP 3 (page 28) shows TDI scores and sidewalk locations. The areas of greatest potential transportation disadvantage are centered around the downtown core, in the western half of Wilmington. The TDI scores in the eastern part of the city, near the North Carolina coast, are generally lower. The areas with the lowest TDI scores are in the center of Wilmington surrounding the municipal golf course, in the area surrounding James Wade Park, and along Eastwood Road to the northeast of the University of North Carolina Wilmington (UNCW) campus.

TABLE 3 shows the relationship between TDI scores and the percentage of the sidewalk network that has complete sidewalks. While it is common for roadways in Wilmington to lack complete sidewalks, there is a general correlation between areas with higher TDI scores and sidewalk completion. This is due in no small part to downtown Wilmington's complete sidewalk network and high TDI scores.

TABLE 3. *Census Block Group TDI Tier and Sidewalk Completion in Wilmington*

	TDI PERCENTILE RANK	MILES OF ROADWAY (ROADWAY CENTERLINE)	MILES OF SIDEWALK (ROADWAY CENTERLINE)	ROADWAY NETWORK COVERAGE (%)
Top Quantile (block groups with the highest need) →	80.1% - 100.0%	166	55	33%
	60.1% - 80.0%	175	45	26%
	40.1% - 60.0%	145	42	29%
	20.1% - 40.0%	190	31	16%
Bottom Quantile (block groups with the lowest need) →	0.0% - 20.0%	84	14	17%

Note: Census block groups contain approximately even populations and have different geographic sizes. This, in turn, impacts the miles of roadway included in each quantile bin.



MAP 3:

Equity Analysis

WALK WILMINGTON PEDESTRIAN PLAN

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EXISTING FACILITIES

- Shared-Use Paths
- Existing Sidewalks
- East Coast Greenway Alignment

DESTINATIONS

- Schools
- Parks

TDI PERCENTILE RANK

- 0.0% - 20.00%
- 20.01% - 40.00%
- 40.01% - 60.00%
- 60.01% - 80.00%
- 80.01% - 100.00%

EQUITY ANALYSIS KEY TAKEAWAYS

Considering the relationship of sidewalks to transportation disadvantage yields the following observations:

- Downtown Wilmington is an area with high potential transportation disadvantage, and also benefits from a relatively complete sidewalk network.
- Neighborhoods between the downtown core and UNCW have sporadic sidewalk coverage and moderate-to-high TDI scores.
- Areas along the eastern edge of Wilmington have both low TDI scores and little sidewalk coverage.
- Outside of downtown Wilmington, roadways classified as state routes or secondary routes are more likely to have complete sidewalk coverages than other roadways, such as non-system roadways.

The downtown area of Wilmington has the highest concentration of people who may experience transportation disadvantage, but also benefits from a relatively complete sidewalk network.

High Injury Network (HIN) Analysis

What is a HIN?

High Injury Networks (HINs) are the collection of roadways and intersections in a city where the most fatal or serious injury crashes occur. Frequently, the HIN analysis demonstrates that improving a small amount of the street network can address the majority of serious crashes. By identifying the HIN, Wilmington and NCDOT can focus their money and efforts to apply safety interventions in these areas, reducing the likelihood of serious crashes at these locations in the future.

The pedestrian HIN includes

74 out of **~760**

total miles of roads in Wilmington.

In other words, from 2010-2020,

50% of pedestrian crashes occurred on only

10% of Wilmington's roads *(shown on page 33).*

Wilmington's Pedestrian HIN

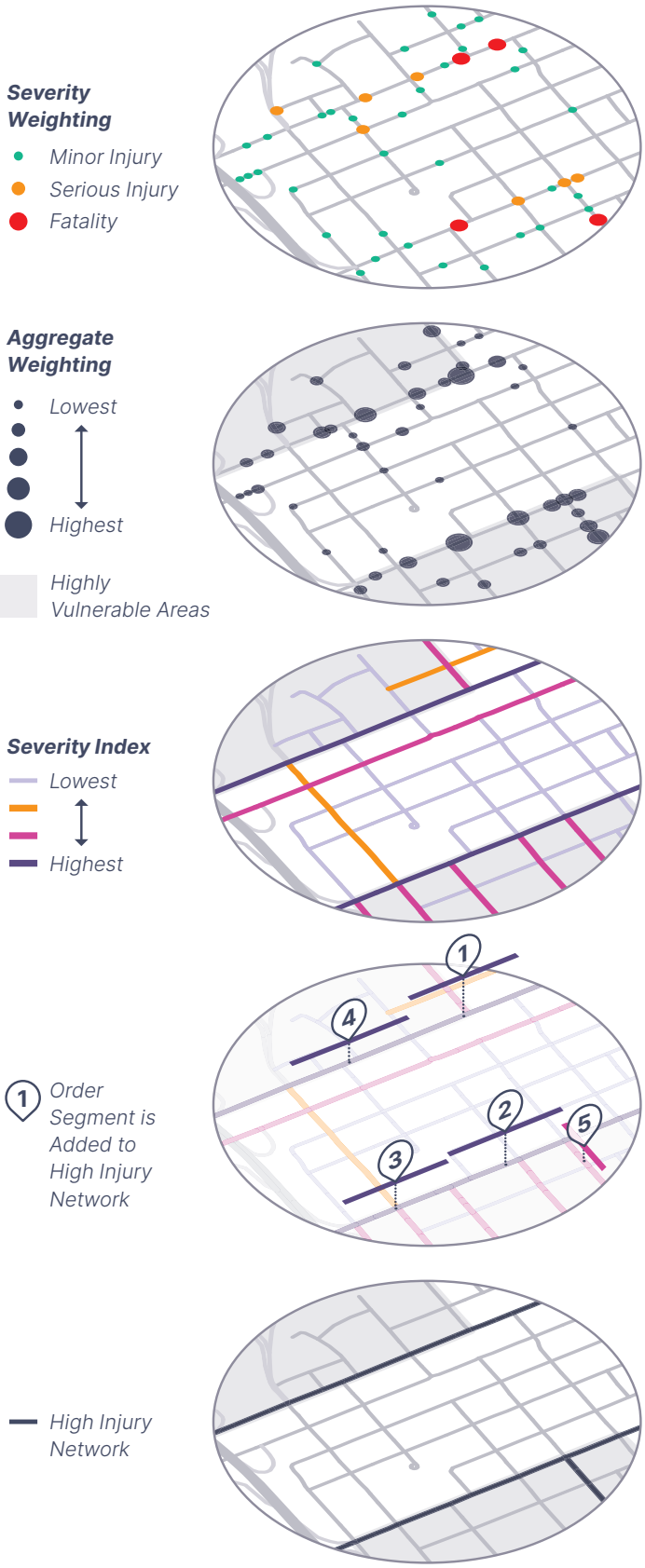
Crashes in the City of Wilmington from 2011 to 2020 were analyzed to identify the streets with the highest concentrations of pedestrian involved collisions. Crash data were obtained from NCDOT through the Connect NCDOT Business Partner Resources Website. To gain a more comprehensive understanding of the collision patterns present in Wilmington, the analysis assessed the following types of collisions:

- All reported pedestrian involved collisions
- All reported bicycle involved collisions
- Reported motor vehicle collisions resulting in a fatality or serious injury

Project consultants developed the pedestrian HIN for the City of Wilmington using roadway data provided by the City (see the process described on the following page). The collision scoring scheme, shown in **TABLE 4**, was used to score the roadway network, which was divided into segments approximately ¼ mile long.

TABLE 4. *Collision Weighting Scheme for HIN Development*

REPORTED INJURY SEVERITY	ASSIGNED WEIGHT BY COLLISION TYPE		
	PEDESTRIANS	BICYCLES	MOTOR VEHICLES
K - Killed	40	4	0.4
A - Suspected Serious Injury	10	1	0.1
B - Suspected Minor Injury	5	0.5	n/a
O - No Injury	1	0.1	n/a



Developing the HIN

Severity Weighting

One goal of a **High Injury Network (HIN)** is to identify an improvable subset of a community's streets that address the majority of collisions where a victim is **Killed or Severely Injured (KSI)**. To achieve this, KSI collisions are assigned higher scores so they have more "weight" relative to collisions with less severe outcomes.

Other Considerations

These scores can also be modified to include other considerations such as whether collisions involve pedestrians and bicyclists or occur in socially vulnerable communities. These factors can be directly incorporated into the weights associated with each collision.

Severity Index

After weights are developed, they are associated to the network, aggregated, and normalized so that we can understand the relative intensities of collisions of concern.*

Accumulated Collisions by Severity Index

Once an index is created, we progressively add segments to the HIN in the order indicated by the severity index. As more segments are added to the network, we look at KSI or other collisions of interest directly on the network, and track the percentage of collisions on the network relative to its length.

High Injury Network

A final HIN determination is made based on stakeholder feedback and qualitative review of when each new mile added to the HIN starts to see a decreasing rate of severe collisions.

**There are many methods available to develop a final index including kernel density estimation (Euclidian or network based), rolling window analysis, or aggregations to a segment normalized by network miles.*

HIN Corridor Profiles

To better understand the context and causes of collisions, it is important to identify the factors influencing these crashes, such as the number of lanes, speed limits, and facilities present. Following development of Wilmington's pedestrian HIN, a subset of priority corridors were selected for further review. These corridors include roadways with multiple pedestrian fatalities and high numbers of serious injury collisions. These corridors are typically high-to-mid capacity streets in proximity to areas of higher pedestrian demand.

These corridors were mapped to show the location of pedestrian, bicycle, and severe vehicle crashes. Additional charts and tables provide further information on the following:

- Collision summary tabulations
- Road context summary
- Factors causing pedestrian crashes
- Location of pedestrians at the time of the collision
- Traffic control devices present for collisions that occurred at intersections
- Racial demographics of pedestrian victims on that corridor compared to that of the City of Wilmington as a whole

Information from these corridor profiles can help inform the types of interventions required to address pedestrian safety concerns. **MAP 4 (page 33)** shows the HIN and priority corridors identified by numeric ID. Detailed HIN Corridor Profiles are found on pages 34-43 for the ten priority corridors (corridor numbering is for reference only and does not indicate a ranking):

1. Market St (23rd St to Darlington Ave)
2. Market St (Darlington Ave to Lullwater Dr)
3. Market St (Lullwater Dr to College Rd)
4. Kerr Ave S (Market St to Wilshire Blvd)
5. College Rd S (Oleander Dr to Jeff Gordon Dr)
6. 3rd St (Red Cross St to Wooster St)
7. Wooster/Dawson St (3rd St to Oleander Dr)
8. Oleander Dr (Independence Blvd to College Rd)
9. Oleander Dr (Forest Park Rd to Victory Gardens Dr)
10. Carolina Beach Rd (Northern Blvd to Sunnyvale Dr)

MAP 4:

Pedestrian High Injury Network (HIN) & Priority Corridors

WALK WILMINGTON PEDESTRIAN PLAN

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EXISTING FACILITIES

- HIN Focus Corridors
- High Injury Network

DESTINATIONS

- Grocery Stores
- Schools
- Healthcare Facilities
- Parks

Pedestrian HIN Corridor Profile

1 MARKET ST (23RD ST TO DARLINGTON AVE)

Collisions Summary

	All	KSI	At Intersection	Youth Victim
Pedestrian	6	2	1	0
Bicycle	8	0	4	1
Vehicle (KSI only)	--	3	--	--
Total	14	5	5	1

Collision data provided by NCDOT, 2011-2021.

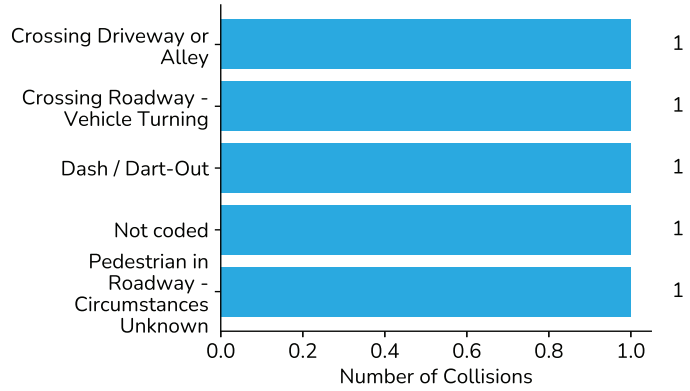
Context Summary

Speed Limit	30 - 35 MPH
Number of Lanes	4 lanes
Road Configuration	Two-Way, Not Divided
Pedestrian Volumes*	698
Bicycle Volumes*	193
Car Volumes*	68.5k

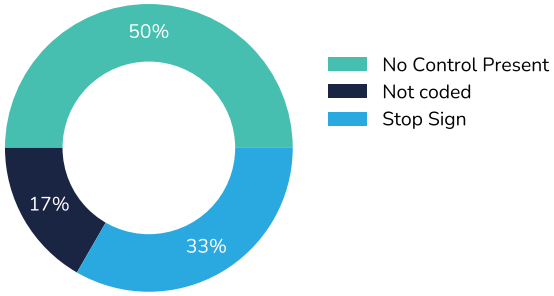
*Modeled weekday volumes from Replica Places

Pedestrian Crash Group

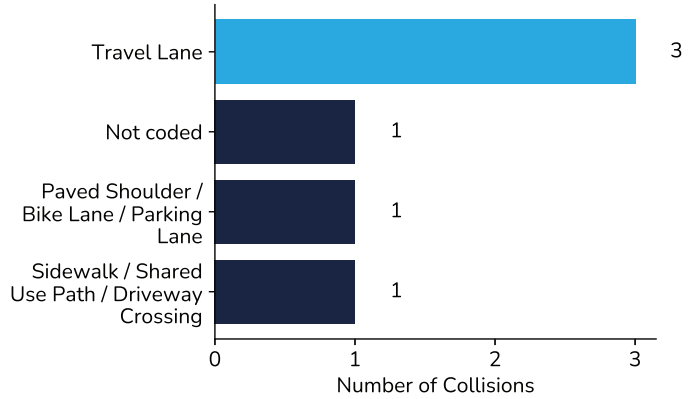
(Top Five Most Common Responses)



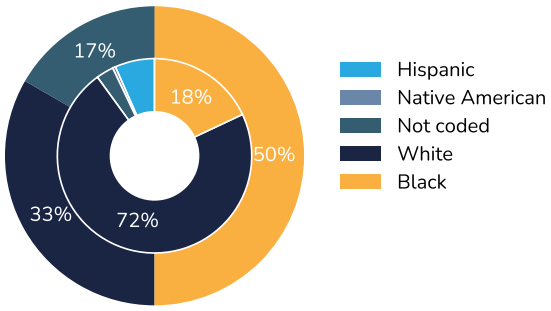
Traffic Control for Intersection Collisions



Pedestrian Location at Time of Collision



Race of Pedestrian Victim



*Inner ring indicates citywide racial demographics, ACS 2020 5-Year Estimates

Pedestrian HIN Corridor Profile

2 MARKET ST (DARLINGTON AVE TO LULLWATER DR)

Collisions Summary

	All	KSI	At Intersection	Youth Victim
Pedestrian	24	5	3	0
Bicycle	22	1	7	1
Vehicle (KSI only)	--	1	--	--
Total	46	7	10	1

Collision data provided by NCDOT, 2011-2021.

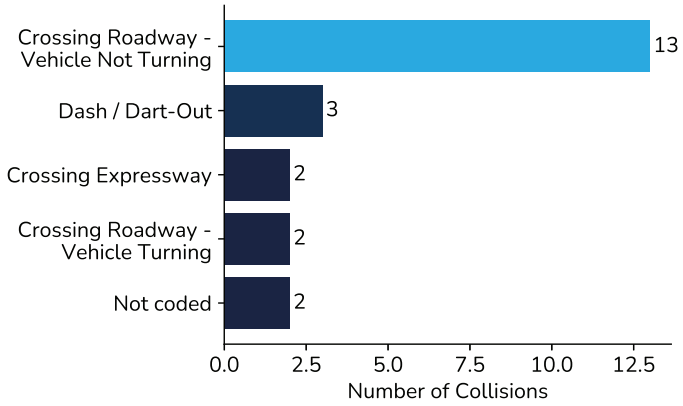
Context Summary

Speed Limit	40 - 45 MPH
Number of Lanes	5 lanes
Road Configuration	Two-Way, Not Divided
Pedestrian Volumes*	1290
Bicycle Volumes*	349
Car Volumes*	71.3k

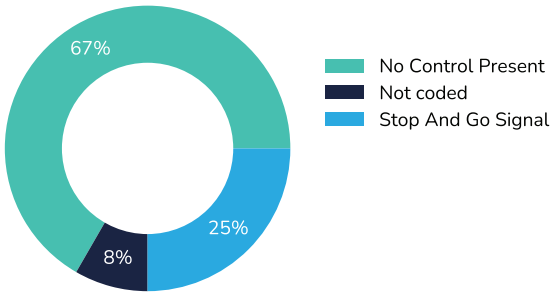
*Modeled weekday volumes from Replica Places

Pedestrian Crash Group

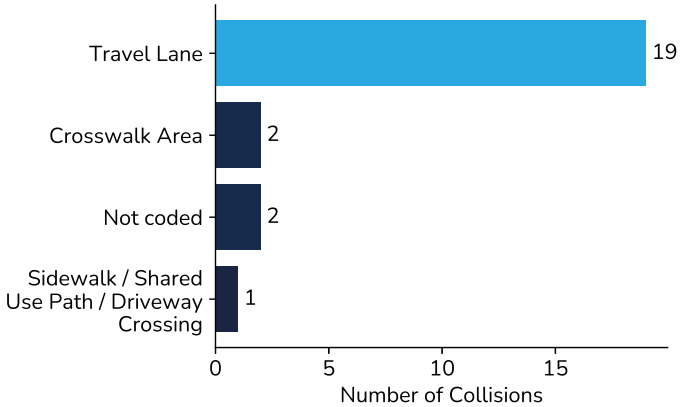
(Top Five Most Common Responses)



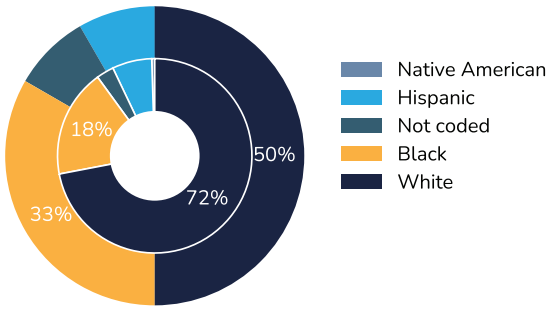
Traffic Control for Intersection Collisions



Pedestrian Location at Time of Collision



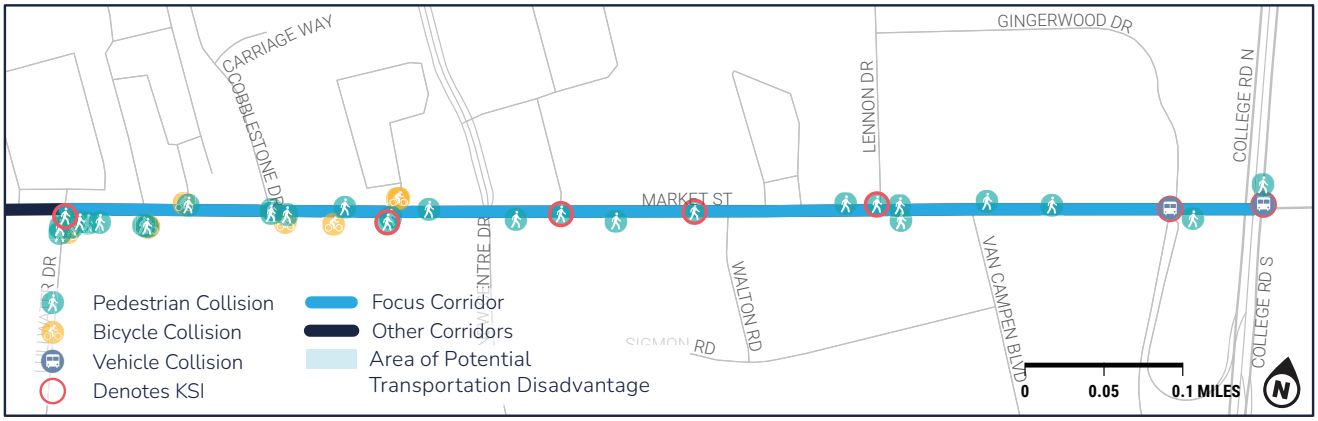
Race of Pedestrian Victim



*Inner ring indicates citywide racial demographics, ACS 2020 5-Year Estimates

Pedestrian HIN Corridor Profile

3 MARKET ST (LULLWATER DR TO COLLEGE RD)



Collisions Summary

	All	KSI	At Intersection	Youth Victim
Pedestrian	29	5	4	0
Bicycle	11	0	2	1
Vehicle (KSI only)	--	2	--	--
Total	40	7	6	1

Collision data provided by NCDOT, 2011-2021.

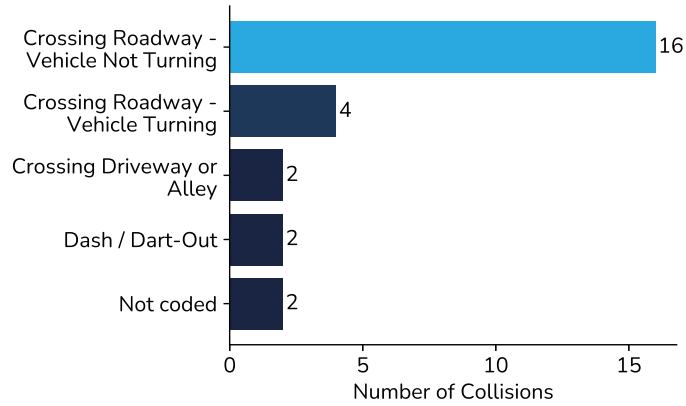
Context Summary

Speed Limit	40 - 45 MPH
Number of Lanes	5 lanes
Road Configuration	Two-Way, Not Divided
Pedestrian Volumes*	1990
Bicycle Volumes*	304
Car Volumes*	81.7k

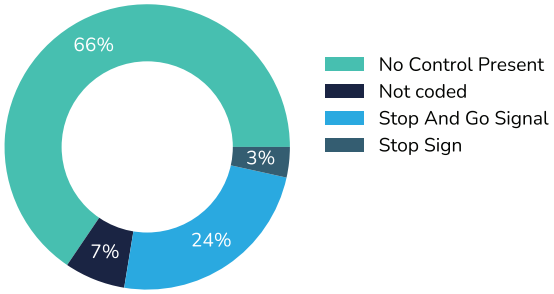
*Modeled weekday volumes from Replica Places

Pedestrian Crash Group

(Top Five Most Common Responses)

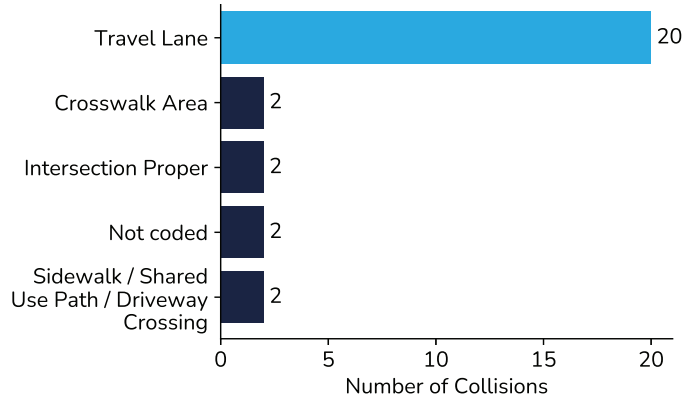


Traffic Control for Intersection Collisions

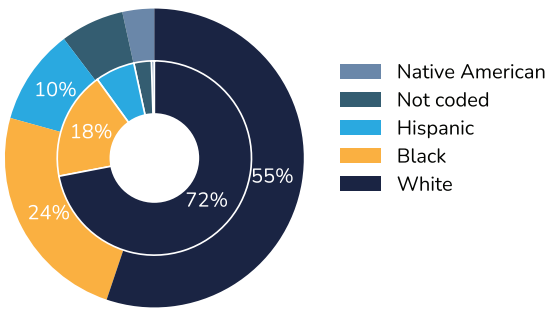


Pedestrian Location at Time of Collision

(Top Five Most Common Responses)



Race of Pedestrian Victim



*Inner ring indicates citywide racial demographics, ACS 2020 5-Year Estimates

Pedestrian HIN Corridor Profile

4 KERR AVE S (MARKET ST TO WILSHIRE BLVD)

Collisions Summary

	All	KSI	At Intersection	Youth Victim
Pedestrian	11	2	1	0
Bicycle	19	2	10	1
Vehicle (KSI only)	--	4	--	--
Total	30	8	11	1

Collision data provided by NCDOT, 2011-2021.

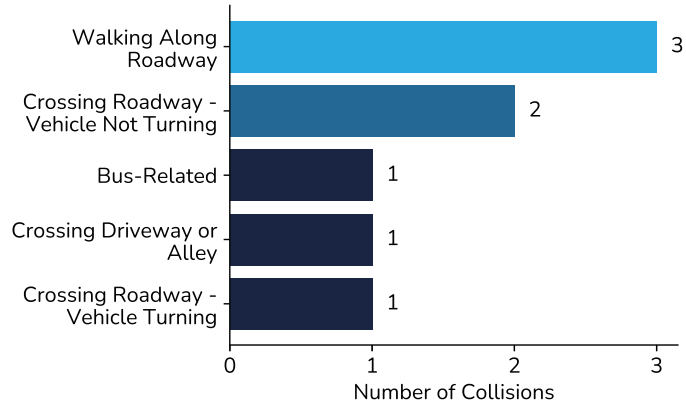
Context Summary

Speed Limit	30 - 35 MPH
Number of Lanes	3 lanes
Road Configuration	Two-Way, Not Divided
Pedestrian Volumes*	1540
Bicycle Volumes*	539
Car Volumes*	31.2k

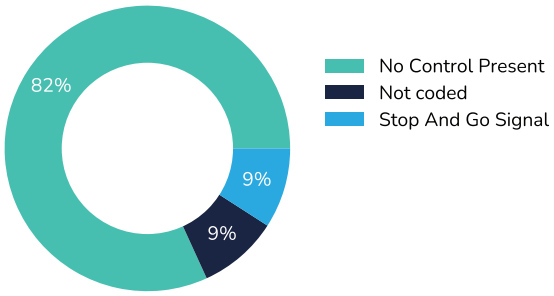
*Modeled weekday volumes from Replica Places

Pedestrian Crash Group

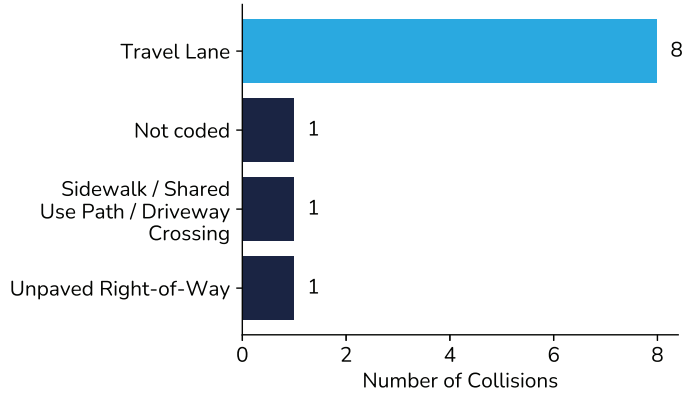
(Top Five Most Common Responses)



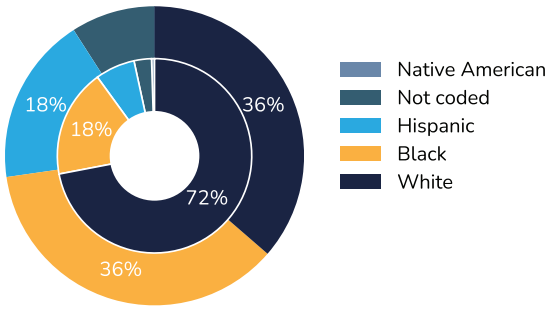
Traffic Control for Intersection Collisions



Pedestrian Location at Time of Collision



Race of Pedestrian Victim



*Inner ring indicates citywide racial demographics, ACS 2020 5-Year Estimates

Pedestrian HIN Corridor Profile

5 COLLEGE RD S (OLEANDER DR TO JEFF GORDON DR)

Collisions Summary

	All	KSI	At Intersection	Youth Victim
Pedestrian	28	5	12	0
Bicycle	28	2	13	4
Vehicle (KSI only)	--	11	--	--
Total	56	18	25	4

Collision data provided by NCDOT, 2011-2021.

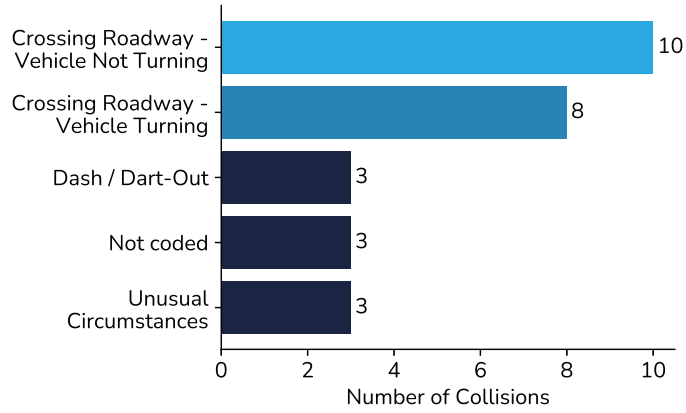
Context Summary

Speed Limit	40 - 45 MPH
Number of Lanes	7 lanes
Road Configuration	Two-Way, Divided, Unprotected Median
Pedestrian Volumes*	3870
Bicycle Volumes*	530
Car Volumes*	147k

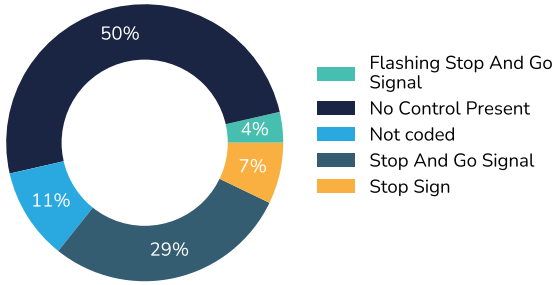
*Modeled weekday volumes from Replica Places

Pedestrian Crash Group

(Top Five Most Common Responses)

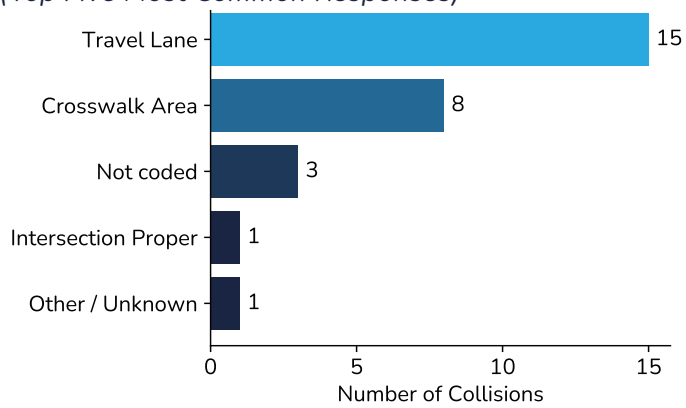


Traffic Control for Intersection Collisions

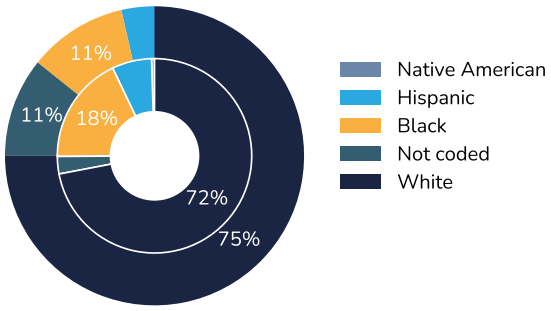


Pedestrian Location at Time of Collision

(Top Five Most Common Responses)



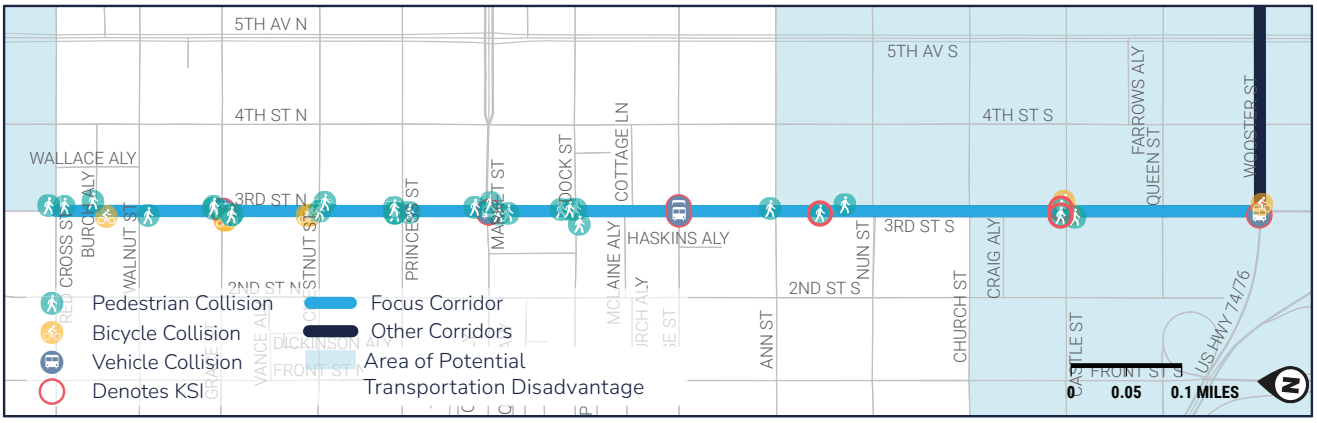
Race of Pedestrian Victim



*Inner ring indicates citywide racial demographics, ACS 2020 5-Year Estimates

Pedestrian HIN Corridor Profile

6 3RD ST (RED CROSS ST TO WOOSTER ST)



Collisions Summary

	All	KSI	At Intersection	Youth Victim
Pedestrian	28	3	19	0
Bicycle	8	0	6	2
Vehicle (KSI only)	--	6	--	--
Total	36	9	25	2

Collision data provided by NCDOT, 2011-2021.

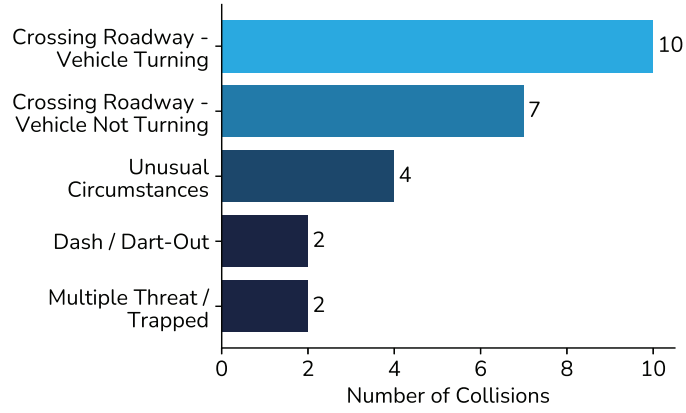
Context Summary

Speed Limit	30 - 35 MPH
Number of Lanes	4 lanes
Road Configuration	Two-Way, Not Divided
Pedestrian Volumes*	671
Bicycle Volumes*	123
Car Volumes*	35.9k

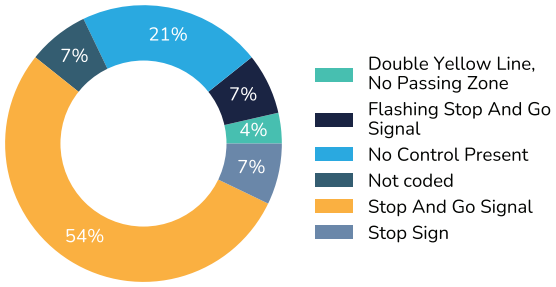
*Modeled weekday volumes from Replica Places

Pedestrian Crash Group

(Top Five Most Common Responses)

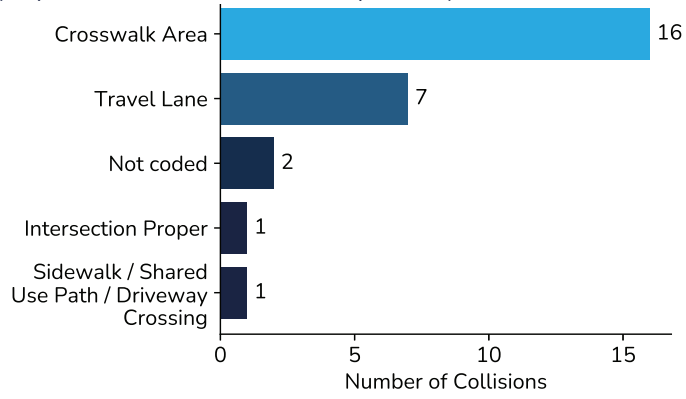


Traffic Control for Intersection Collisions

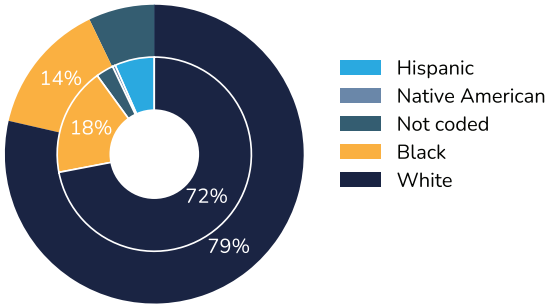


Pedestrian Location at Time of Collision

(Top Five Most Common Responses)



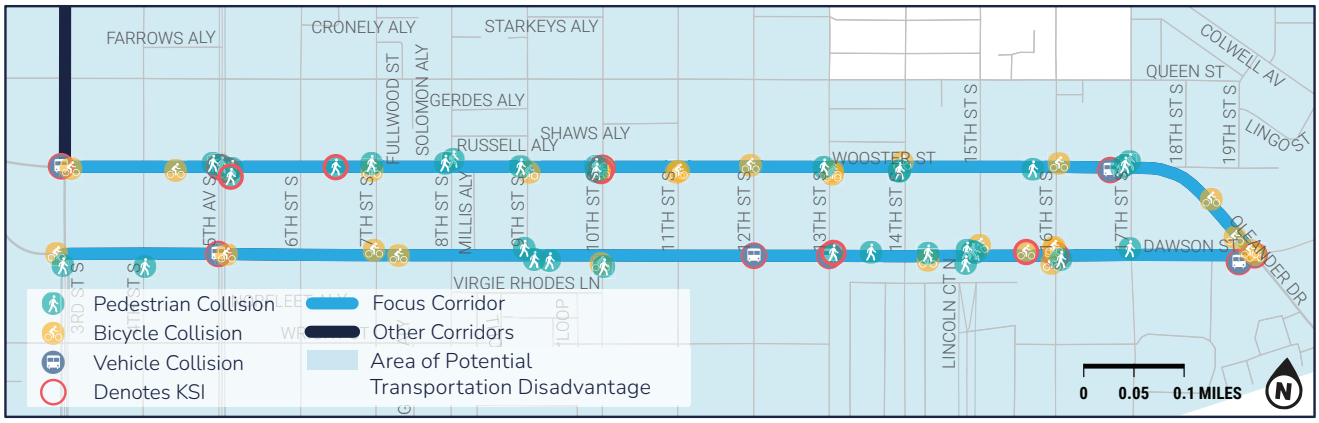
Race of Pedestrian Victim



*Inner ring indicates citywide racial demographics, ACS 2020 5-Year Estimates

Pedestrian HIN Corridor Profile

7 WOOSTER/DAWSON ST (3RD ST TO OLEANDER DR)



Collisions Summary

	All	KSI	At Intersection	Youth Victim
Pedestrian	33	3	16	0
Bicycle	29	3	18	4
Vehicle (KSI only)	--	11	--	--
Total	62	17	34	4

Collision data provided by NCDOT, 2011-2021.

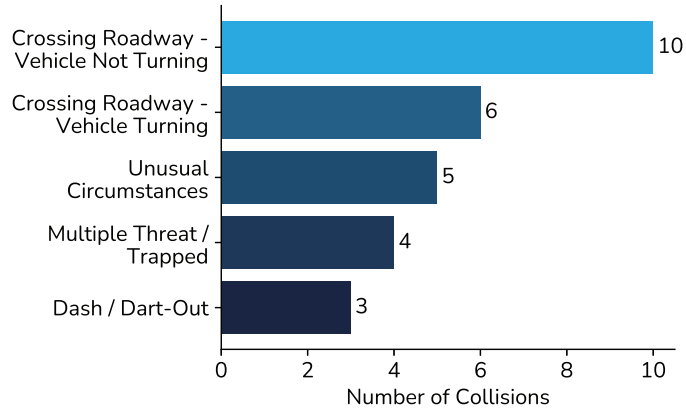
Context Summary

Speed Limit	30 - 35 MPH
Number of Lanes	4 lanes
Road Configuration	One-Way, Not Divided
Pedestrian Volumes*	560
Bicycle Volumes*	95
Car Volumes*	110k

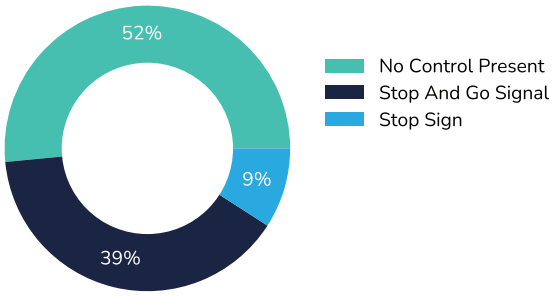
*Modeled weekday volumes from Replica Places

Pedestrian Crash Group

(Top Five Most Common Responses)

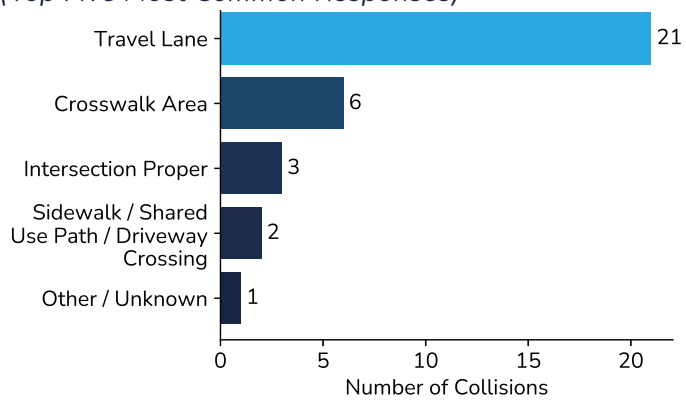


Traffic Control for Intersection Collisions

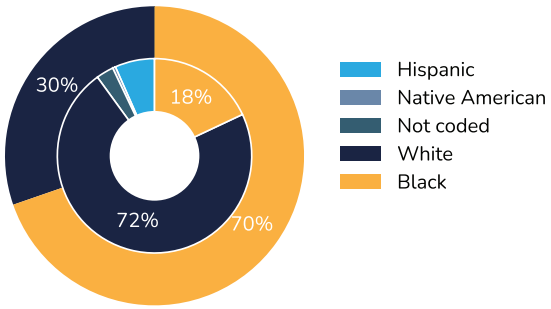


Pedestrian Location at Time of Collision

(Top Five Most Common Responses)



Race of Pedestrian Victim



*Inner ring indicates citywide racial demographics, ACS 2020 5-Year Estimates

Pedestrian HIN Corridor Profile

8 OLEANDER DR (INDEPENDENCE BLVD TO COLLEGE RD)

Collisions Summary

	All	KSI	At Intersection	Youth Victim
Pedestrian	10	1	3	0
Bicycle	9	1	3	0
Vehicle (KSI only)	--	5	--	--
Total	19	7	6	0

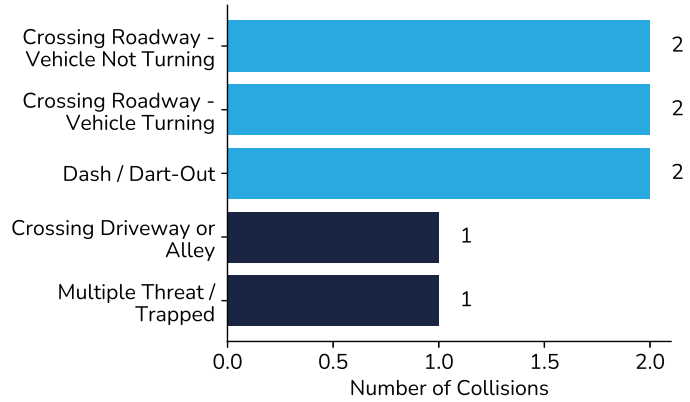
Collision data provided by NCDOT, 2011-2021.

Context Summary

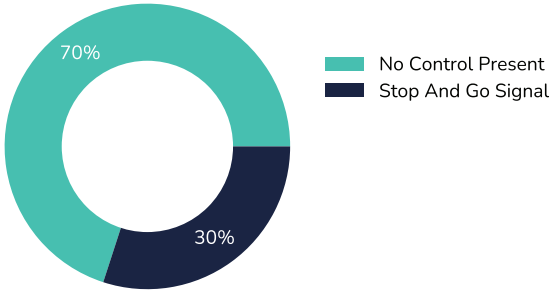
Speed Limit	40 - 45 MPH
Number of Lanes	7 lanes
Road Configuration	Two-Way, Divided, Unprotected Median
Pedestrian Volumes*	1500
Bicycle Volumes*	202
Car Volumes*	75.4k

*Modeled weekday volumes from Replica Places

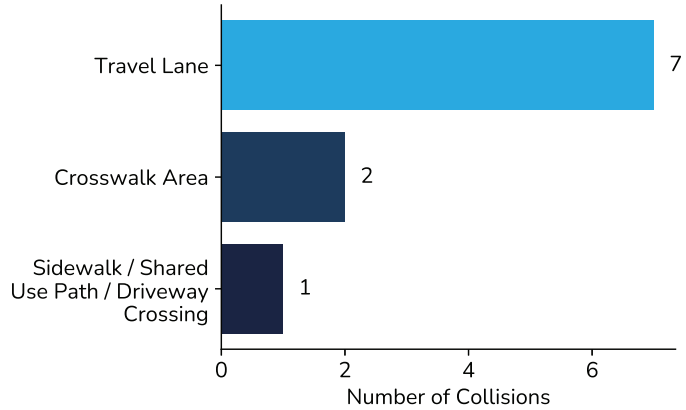
Pedestrian Crash Group
(Top Five Most Common Responses)



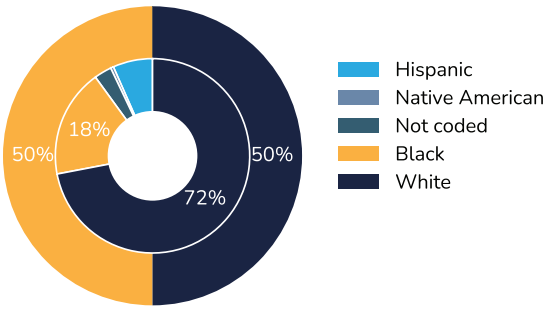
Traffic Control for Intersection Collisions



Pedestrian Location at Time of Collision



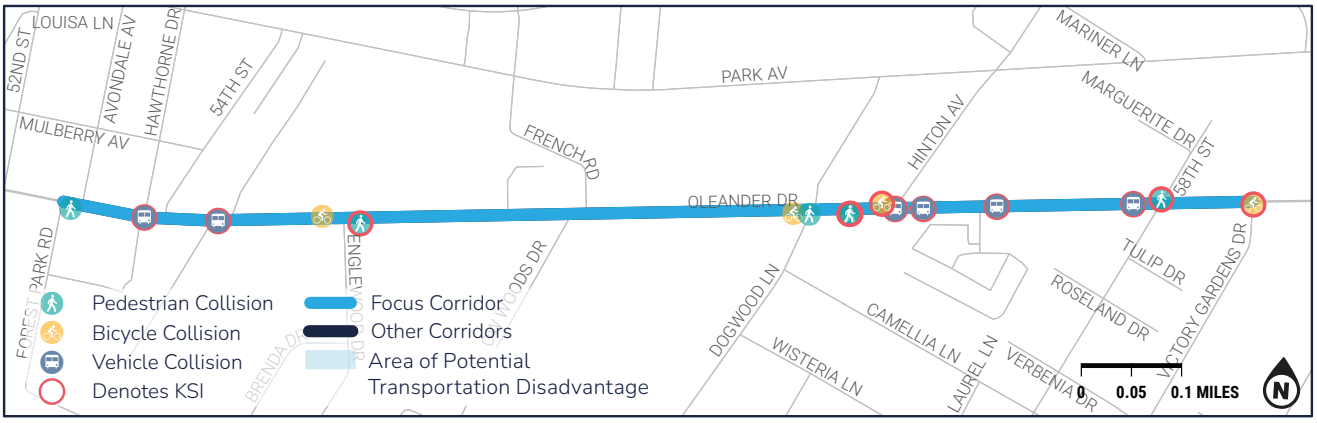
Race of Pedestrian Victim



*Inner ring indicates citywide racial demographics, ACS 2020 5-Year Estimates

Pedestrian HIN Corridor Profile

9 OLEANDER DR (FOREST PARK RD TO VICTORY GARDENS DR)



Collisions Summary

	All	KSI	At Intersection	Youth Victim
Pedestrian	6	4	2	0
Bicycle	4	2	1	0
Vehicle (KSI only)	--	6	--	--
Total	10	12	3	0

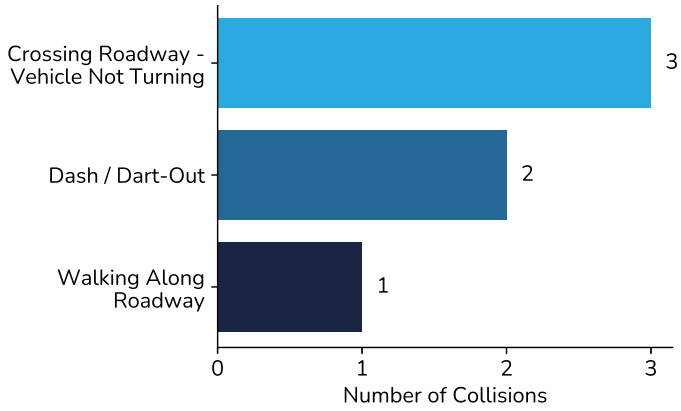
Collision data provided by NCDOT, 2011-2021.

Context Summary

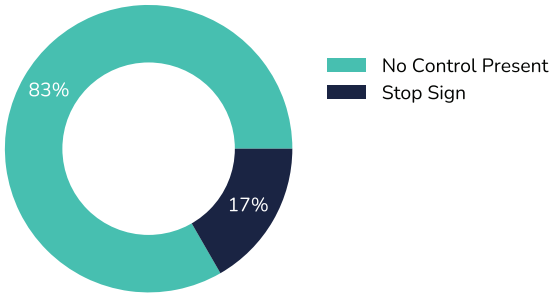
Speed Limit	40 - 45 MPH
Number of Lanes	5 lanes
Road Configuration	Two-Way, Not Divided
Pedestrian Volumes*	709
Bicycle Volumes*	92
Car Volumes*	44.6k

*Modeled weekday volumes from Replica Places

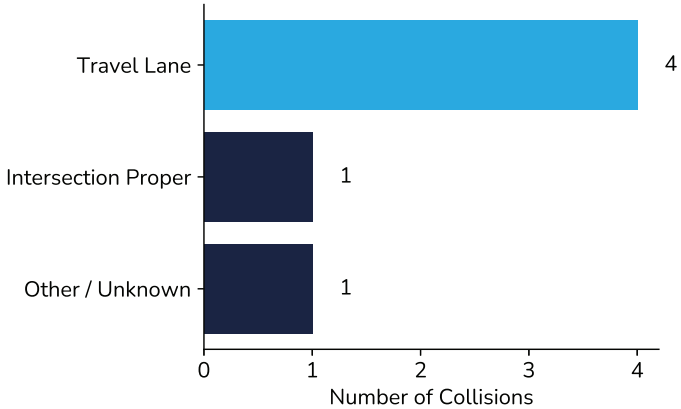
Pedestrian Crash Group



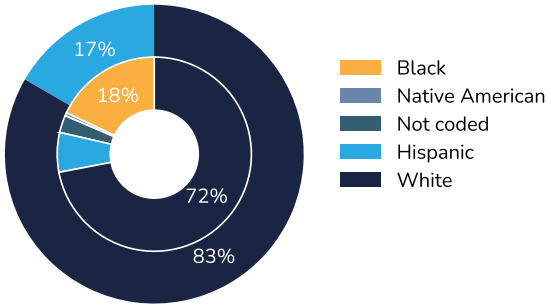
Traffic Control for Intersection Collisions



Pedestrian Location at Time of Collision



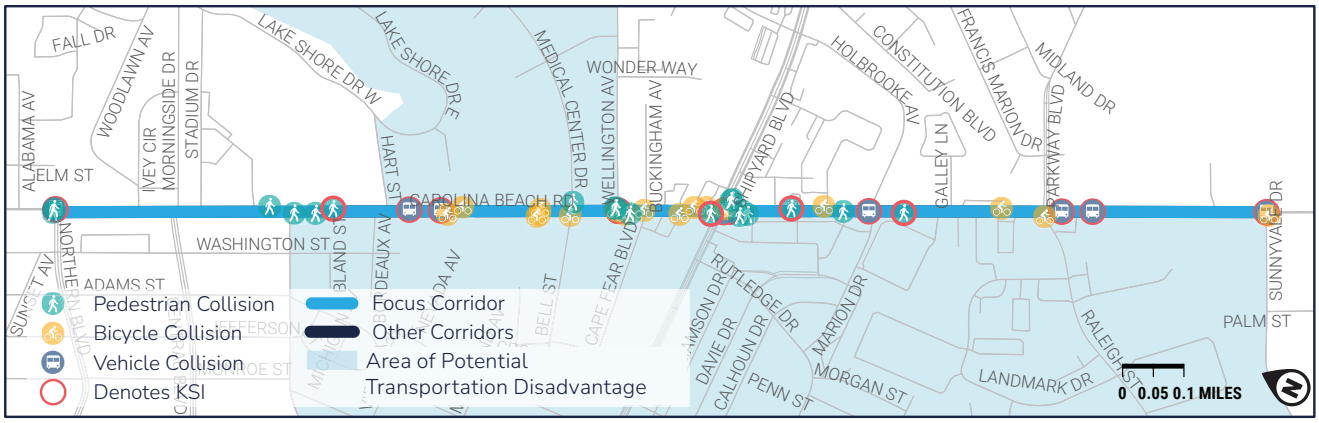
Race of Pedestrian Victim



*Inner ring indicates citywide racial demographics, ACS 2020 5-Year Estimates

Pedestrian HIN Corridor Profile

10 CAROLINA BEACH RD (NORTHERN BLVD TO SUNNYVALE DR)



Collisions Summary

	All	KSI	At Intersection	Youth Victim
Pedestrian	19	4	4	0
Bicycle	17	0	6	4
Vehicle (KSI only)	--	11	--	--
Total	36	15	10	4

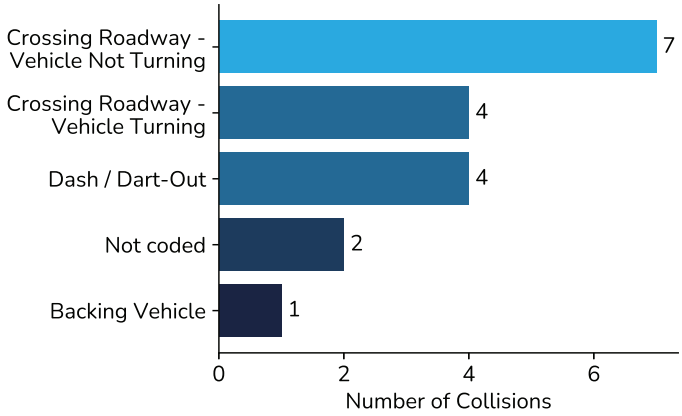
Collision data provided by NCDOT, 2011-2021.

Context Summary

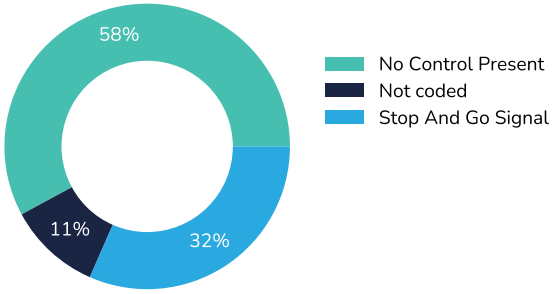
Speed Limit	40 - 45 MPH
Number of Lanes	5 lanes
Road Configuration	Two-Way, Not Divided
Pedestrian Volumes*	1360
Bicycle Volumes*	135
Car Volumes*	57.1k

*Modeled weekday volumes from Replica Places

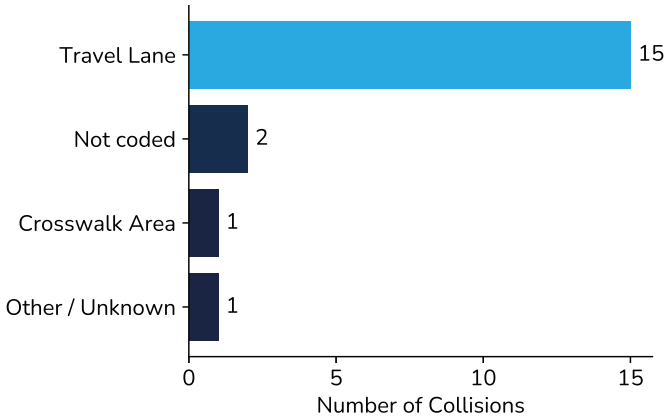
Pedestrian Crash Group
(Top Five Most Common Responses)



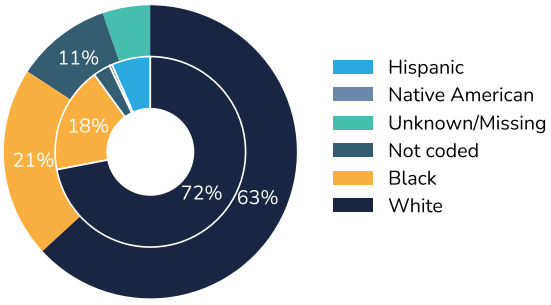
Traffic Control for Intersection Collisions



Pedestrian Location at Time of Collision



Race of Pedestrian Victim



*Inner ring indicates citywide racial demographics, ACS 2020 5-Year Estimates

2021-2022 Citywide Pedestrian Safety Study

The City of Wilmington and NCDOT undertook a pedestrian safety study in 2021-2022 to understand pedestrian crash and injury trends, patterns, and risk factors. These findings, in conjunction with the HIN analysis from this Walk Wilmington Pedestrian Plan update, will help the City and NCDOT prioritize and implement data-driven safety improvements where they will have the greatest impacts.

BACKGROUND

Wilmington and NCDOT completed this study as part of the pilot for NCDOT's Pedestrian Safety Improvement Program (PSIP), a comprehensive and data-driven program that uses multiple data sources and analysis methods to prioritize pedestrian safety improvements. PSIP projects are proactive, coordinated with state and local projects, and integrated with the state's Highway Safety Improvement Program (HSIP) and other existing plans and policies.

METHODS

The study analyzed crash data from 2011 to 2020 in Wilmington. The comprehensive approach identified specific locations where the most crashes occurred ("hot spots"), as well as systemic risk factors such as roadway type, land use, population density, seasonality/time of day, and demographics.

The study team also conducted two Road Safety Audits (RSAs) with City of Wilmington and NCDOT staff in 2022.

PEDESTRIAN CRASH KEY FINDINGS

Crash Hot Spots

- UNC-Wilmington campus
- Greater Downtown, Sunset Park, and Brookwood neighborhoods
- Carolina Beach Rd (US 421) Business & Commercial Corridor
- Oleander Dr (US 17) Corridor

Overall Crash Statistics

- Wilmington's pedestrian crash rate was 48 crashes per 100K residents in 2019 (the highest among NC large cities).
- Wilmington's K/A crash rate was 4th highest among NC large cities in 2019.
- Annual K/A crashes declined from 2015-2018 but increased in 2019.
- 51% of crashes occurred at intersections and 44% occurred at non-intersections.
- 50% of all K/A crashes occurred at non-intersections.

***K/A crashes** refer to crashes where a pedestrian was killed or severely injured, as defined by the KABCO injury severity scale.*

Lighting

- Dark conditions accounted for 47% of all crashes and 75% of all K/A crashes.

Signals

- 45% of all crashes occurred at or near a signalized intersection.
- 16% of crashes near signalized intersections were reported as K/A injuries.

Roadway Type

- 75% of K/A crashes occurred on NCDOT-maintained roadways.
- NCDOT-maintained roadways account for 15% of centerline miles in Wilmington but 82% of fatal pedestrian crashes and 65% of serious injury crashes.
- The highest percentage of K/A crashes occurred on 40-45 mph roads (62% of fatal and 39% of serious injury crashes).
- Two-lane and five-lane roadways had the highest share of pedestrian K/A crashes with 23% on two-lane and 23% on five-lane roadways.

Demographics

- 75% of all crashes and 80% of K/A crashes occurred in areas with minority populations higher than the New Hanover County average.
- 91% of all crashes and 92% of K/A crashes occurred in areas where the poverty rate is above the New Hanover County average.
- 31% of pedestrians in crashes were reported as Black/African American, despite that group accounting for only 18.4% of Wilmington's total population.
- 30-to-39 year olds had the highest share of all crashes (18%).
- 50-to-59 year olds had the highest share of K/A crashes (24%).

RECOMMENDATIONS

This study's implementation plan identified priority corridors, focus areas, and future HSIP intersections for 2022-2027. Key areas include:

- S 17th St/S 16th St (Elmore St to Shipyard Blvd)
- S Kerr Ave (McClelland Dr to Peachtree Ave)
- Wrightsville Ave (Kerr Ave to Oak Crest Dr)
- Carolina Beach Rd/Shipyard Blvd intersection area
- Carolina Beach Rd near Southside Park
- Wooster St/Dawston St area
- Market St downtown area
- Market St (23rd St to College Rd)
- College Rd (Oleander Dr to New Centre Dr)
- Oleander Dr/Greenville Loop Rd area
- Eastwood Rd/US 17 area

To view a map of the complete recommendations, visit:

https://vhb.maps.arcgis.com/apps/mapviewer/index.html?webmap=ea173b5b42084a74a11abc7830924747

Conclusion

Wilmington is actively improving walkability through infrastructure projects, planning efforts, pedestrian safety programs, and policy changes that support the objectives of safety, connectivity, and equity. The existing conditions analysis showed which parts of Wilmington's pedestrian network are working well and identified many areas where the city could focus its efforts to improve walkability even more.

Key Takeaways

- **Pedestrian activity** is concentrated around downtown, UNC-Wilmington, larger neighborhoods, and several business/commercial hubs.
- Existing shared-use paths and trails are well-utilized, but **maintenance and connections** to/from these facilities need to be priorities, based on public survey responses.
- **High-speed urban roadways** such as College Road, Market Street, Oleander Drive, and Carolina Beach Road are a safety concern and connectivity challenge for people walking. Of the ten HIN priority corridors, all have speed limits of **35mph or greater, and six have 45mph speed limits.**
- Seamless **integration between the WAVE Transit system and the pedestrian network** is a citywide issue, with many transit stops lacking sufficient walking infrastructure and amenities.
- High numbers of **tourists and visitors** in Wilmington represent an opportunity but also a challenge, as these groups may be willing to walk but are more likely to need **guidance on routes and directions.**
- Areas where TDI scores are highest have significant overlap with the pedestrian HIN. **In other words, many of the areas with the greatest potential for transportation disadvantage are also the least safe for walking in Wilmington.**
- Several of the HIN priority corridor detail sheets also indicate racial disparities in safety outcomes, showing that **pedestrian victims were disproportionately Black** compared to the overall proportion of Black residents in Wilmington.

Next Steps

The following chapters identify **specific projects at the nexus of the key plan goals (safety, equity, and connectivity) and feasibility.** By focusing on implementable projects, programs, and policies that will have the greatest impact, Wilmington can efficiently allocate resources in the near-term while planning and anticipating long-term needs to create a more walkable city.

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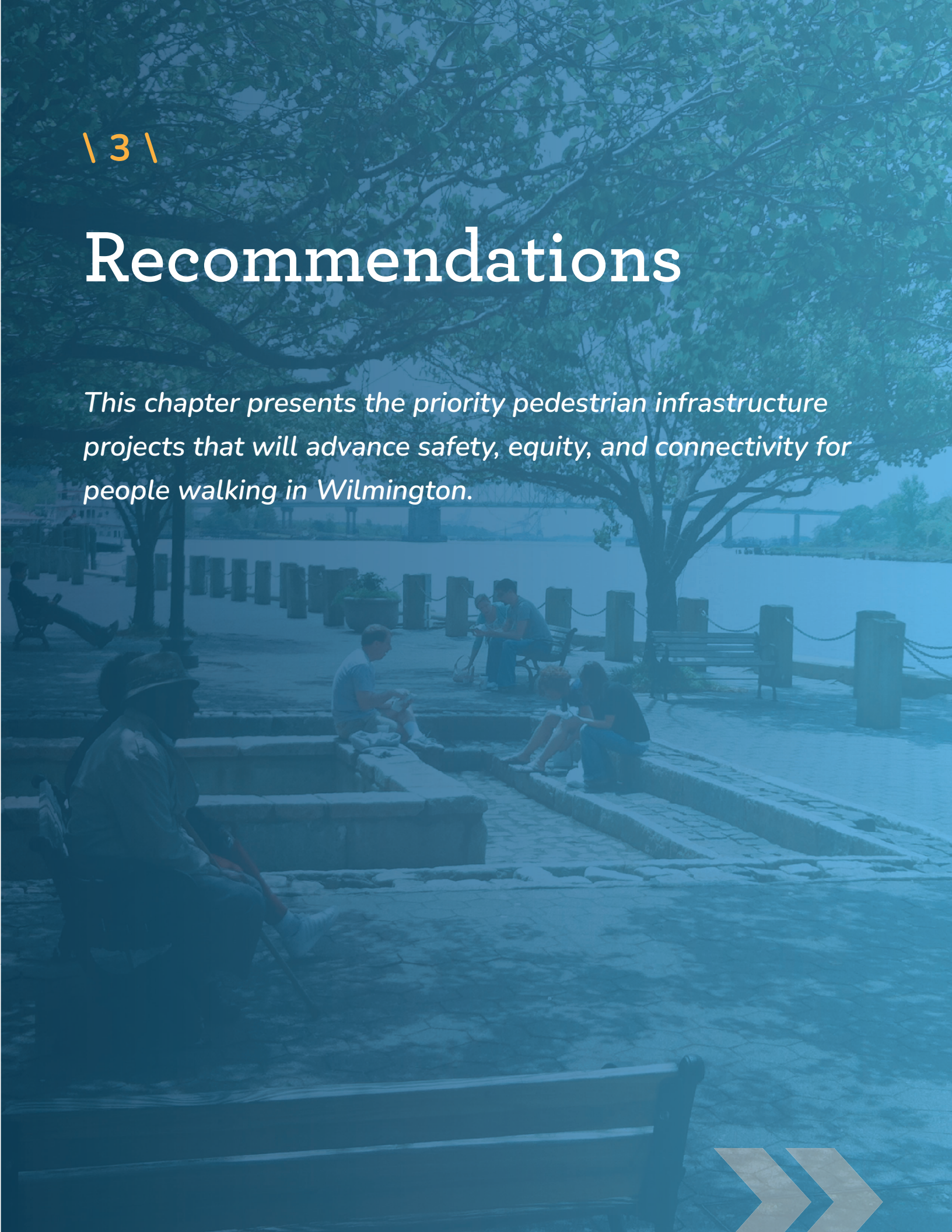
Recommendations

This chapter presents the priority pedestrian infrastructure projects that will advance safety, equity, and connectivity for people walking in Wilmington.



Overview

The projects in this chapter are recommended as the highest-priority infrastructure projects to support the goals of a more walkable Wilmington. This chapter describes how the project team developed a prioritization process that reflected community and steering committee goals, and describes the resulting priority project focus areas in detail.

From Plan Goals to Recommendations

KEY PLAN GOALS

Increase Safety

Promote Equity

Enhance Connectivity, Accessibility, and Mobility

KEY FACTORS FOR DEVELOPING RECOMMENDATIONS

Pedestrian High Injury Network
A comprehensive safety analysis showed which streets in Wilmington are the most dangerous for pedestrians. These streets comprise the pedestrian high injury network (HIN). Improving safety within the HIN can make a substantial impact on overall network safety. See page 30 for more detail about the HIN and safety analysis.

Transportation Disadvantage Index
The equity analysis used NCDOT's Transportation Disadvantage Index (TDI) to screen for areas with the greatest potential need for pedestrian projects, based on economic and demographic factors. See page 25 for more detail about TDI and the equity analysis.

Connections to Recreation
Pedestrian connections to trails and park entrances were especially important based on community feedback.

Connections to Employment and Housing
Projects that create or improve connections to employment centers and housing support the goal of connectivity, accessibility, and mobility.

Prioritization Factor Weighting

The main prioritization factors of safety, equity, and connectivity to recreation, housing, and employment were selected and given weights based on the results of the summer 2022 public input process. The raw results of the public survey related to priorities are shown below, along with filtered sets of responses by income and race of the survey participants (see Appendix A for more detail).

Results from over 1,000 responses to the question: "What factors are most important to you in prioritizing improvements for walking in Wilmington? (Please select up to three)"

All Results	Responses
Projects to reduce pedestrian injuries and fatalities	634
Connections to parks, greenways, and recreation centers	571
Connections to homes, jobs, and entertainment	356
Projects serving lower income areas	348
Connections to schools, libraries, colleges, and universities	273
Public input (map comments, stakeholder interviews, surveys, past plans)	173
Connections to bus stops and routes	154

Filtered by Household Income $50,000 or Below	Responses
Projects to reduce pedestrian injuries and fatalities	87
Projects serving lower income areas	72
Connections to parks, greenways, and recreation centers	72
Connections to homes, jobs, and entertainment	53
Connections to bus stops and routes	49
Connections to schools, libraries, colleges, and universities	40
Public input (map comments, stakeholder interviews, surveys, past plans)	30

Filtered by Black, Indigenous, and people of color (BIPOC)	Responses
Projects to reduce pedestrian injuries and fatalities	66
Projects serving lower income areas	50
Connections to parks, greenways, and recreation centers	45
Connections to homes, jobs, and entertainment	35
Connections to schools, libraries, colleges, and universities	31
Connections to bus stops and routes	28
Public input (map comments, stakeholder interviews, surveys, past plans)	19

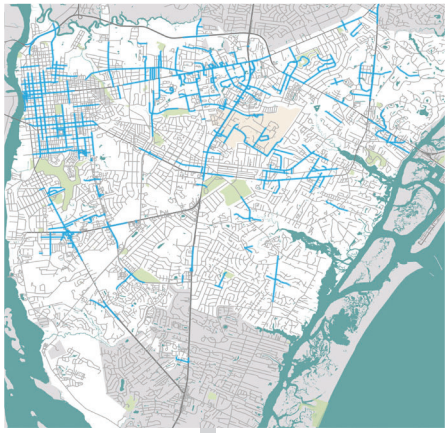
Applying Prioritization Weights & Creating Priority Focus Areas

Based on the results of the survey, each prioritization factor was given a weight to reflect the priorities of Wilmington residents.

KEY FACTORS, BASED ON PUBLIC INPUT

Safety

Based on a High Injury Network Analysis

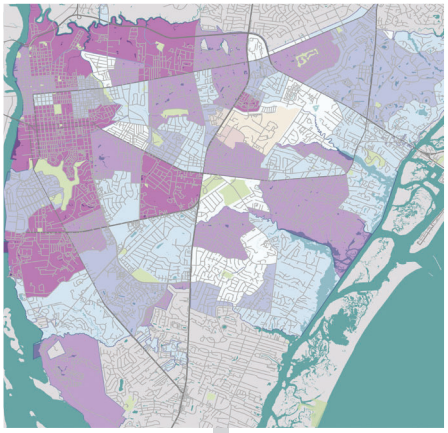


35% of score

+

Equity

Based on NCDOT's Transportation Disadvantage Index (TDI)

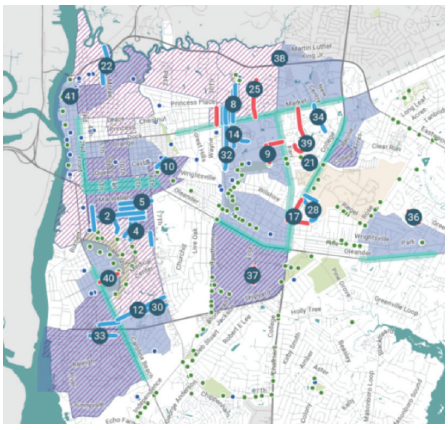


30% of score

+

=

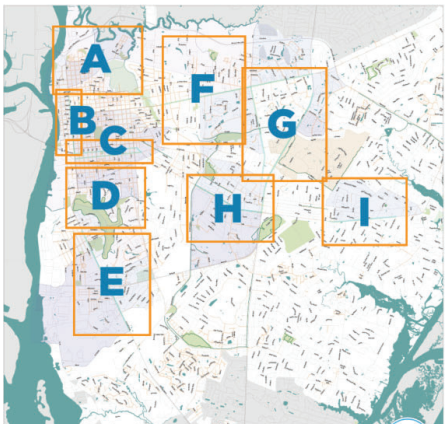
IDENTIFY HIGH SCORING PROJECT CLUSTERS



Top 5% highest scoring projects shown here.

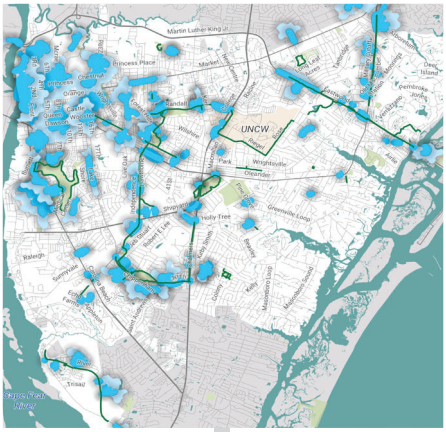
→

USE RESULTS TO DEFINE PRIORITY FOCUS AREAS



Connections to Recreation

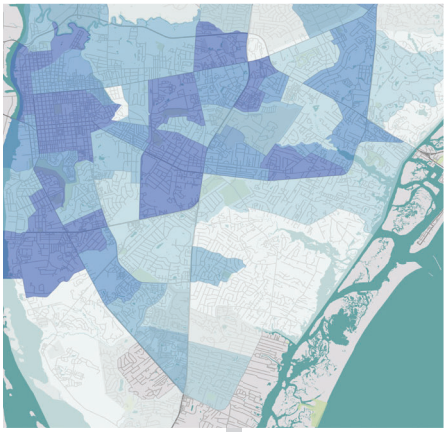
Based on Park Entrances and Trail Locations



20% of score

Connections to Homes and Jobs

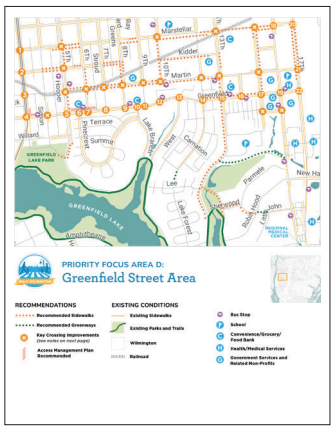
Based on the EPA Smart Location Database



15% of score

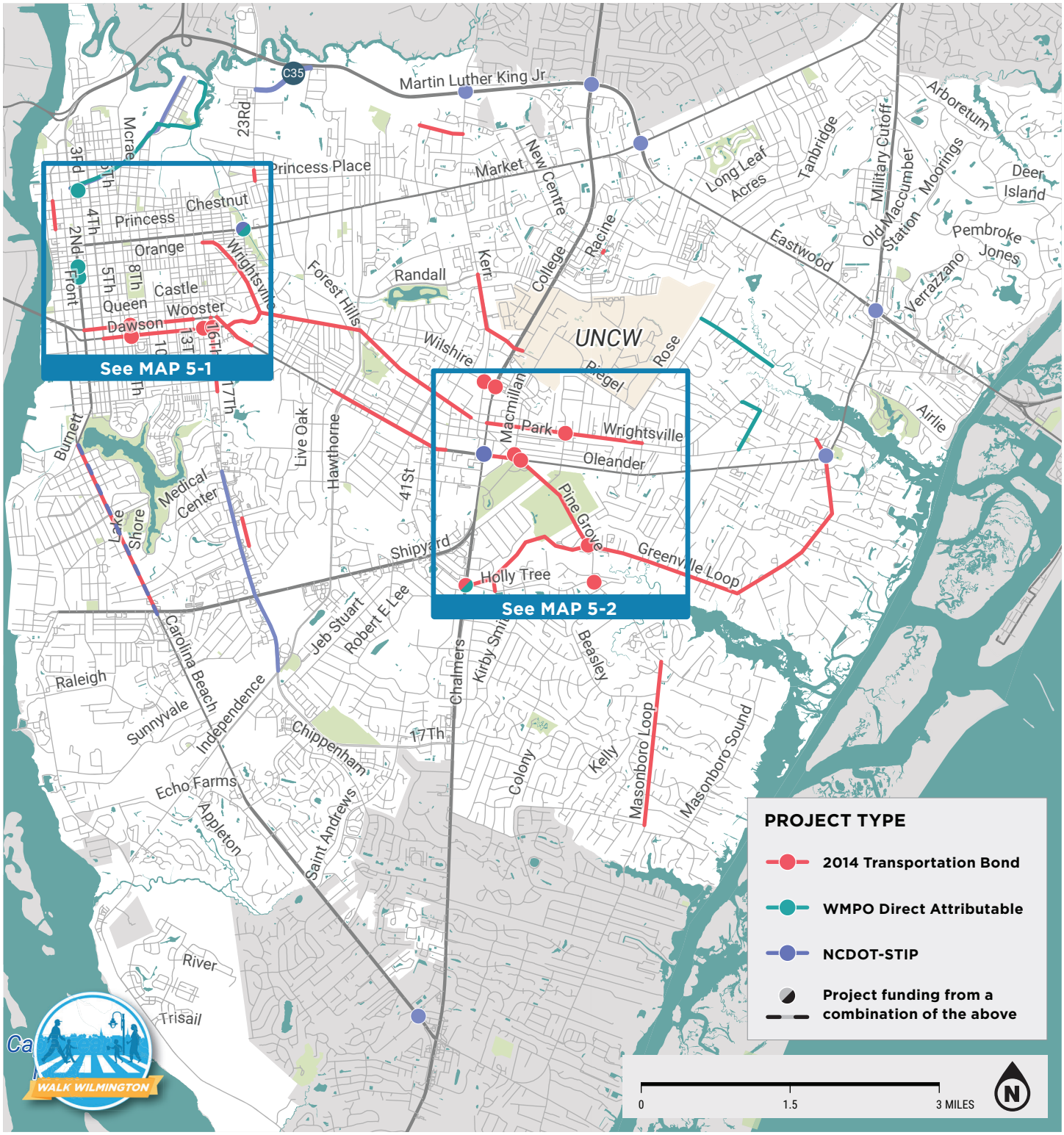
% Weight assigned to each factor, based on public comment form results

DEVELOP RECOMMENDATIONS FOR PRIORITY AREAS



Example for project area "D" shown here.

COORDINATE WITH PROJECTS ALREADY IN DEVELOPMENT (BOND, WMPO, STIP)



MAP 5:

Projects in Development

WALK WILMINGTON PEDESTRIAN PLAN

This map shows pedestrian projects in Wilmington that are in development, including projects funded by the 2014 Transportation Bond, WMPO Direct Attributable projects, and projects in NCDOT's 2020-2029 State Transportation Improvement Program (STIP).

Projects in Development

MAP 5 (page 52) and **MAP 5-1** and **5-2** reflect a snapshot in time, and do not show every pedestrian project in development in Wilmington. The the projects shown will continue to change and evolve as they advance towards completion. The resources below provide current information about funded pedestrian projects and projects in development.

NCDOT STIP

2020-2029 STIP:
https://connect.ncdot.gov/projects/planning/STIPDocuments1/NCDOT%20Current%20STIP.pdf

Interactive STIP Map:
https://connect.ncdot.gov/projects/planning/pages/state-transportation-improvement-program.aspx

Contact the NCDOT STIP Eastern Division Manager: https://apps.ncdot.gov/dot/directory/authenticated/UnitPage.aspx?id=10086

WILMINGTON 2014 TRANSPORTATION BOND PROJECTS

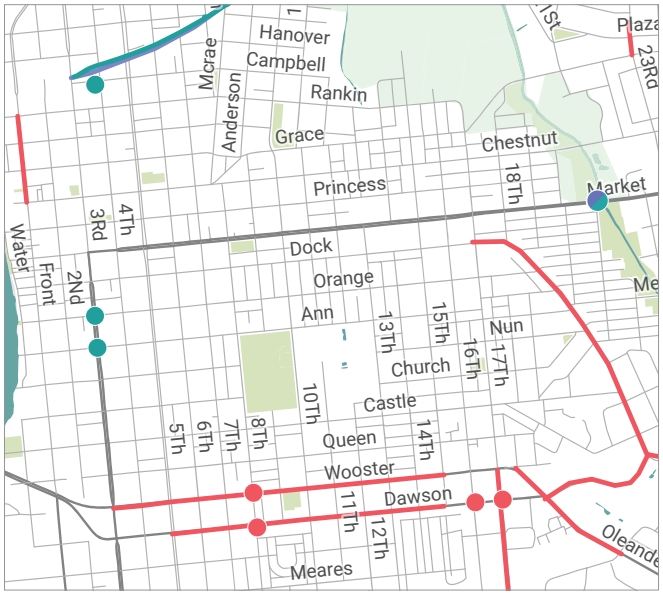
Bond Project Information:
https://www.wilmingtonnc.gov/departments/major-construction-projects/2014-transportation-bond

WMPO METROPOLITAN TRANSPORATION PLAN (MTP)

Cape Fear Moving Forward 2045:
https://www.wmpo.org/mtp/

Contact the WMPO Executive Director or Deputy Director: https://www.wmpo.org/contact/

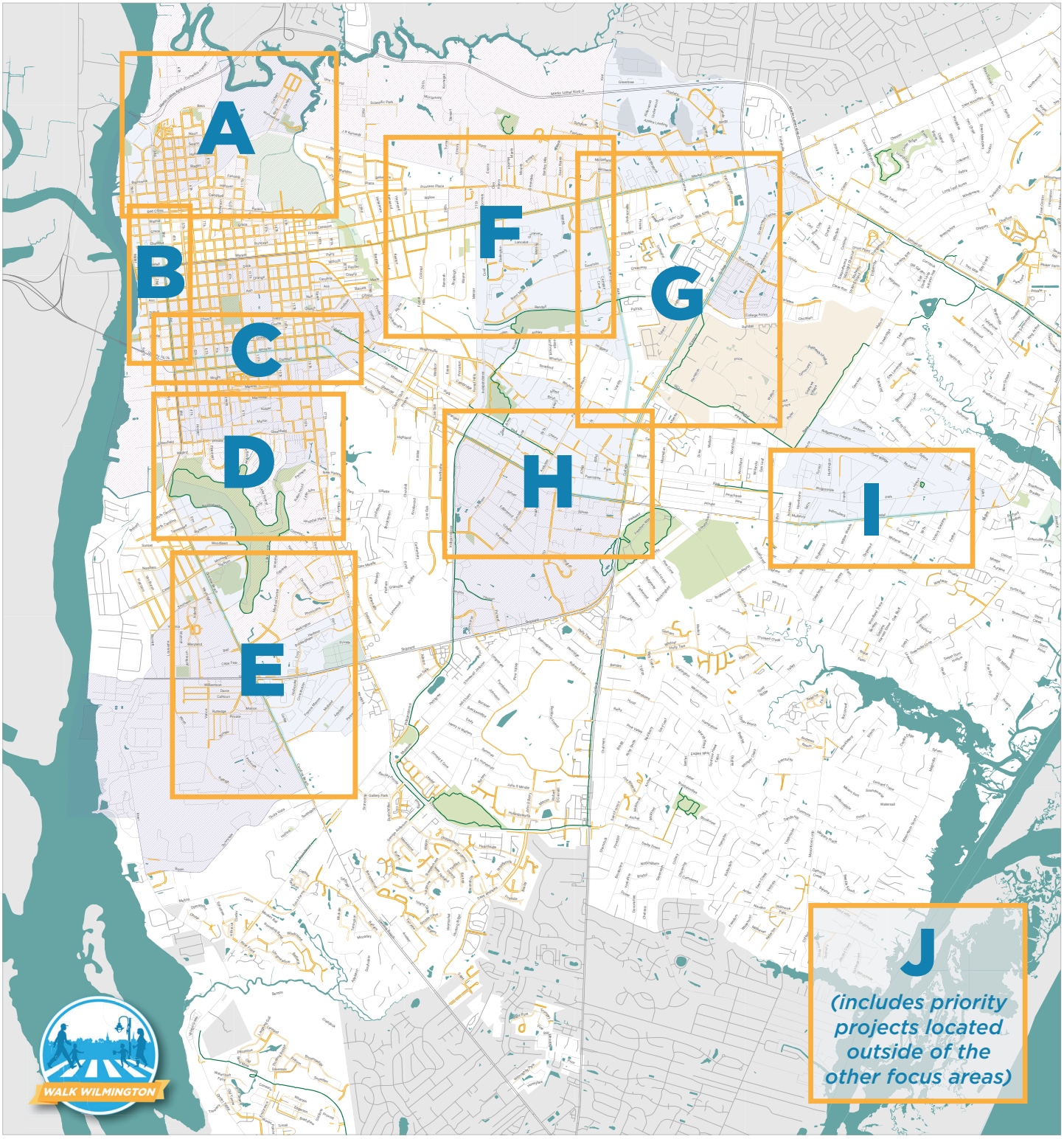
MAP 5-1: Projects in Development (Downtown Area)



MAP 5-2: Projects in Development (University/Oleander Area)

PROJECT TYPE

- 2014 Transportation Bond
- WMPO Direct Attributable
- NCDOT-STIP
- Project funding from a combination of the above



MAP 6:

Priority Focus Areas for Safety, Equity, Connectivity

WALK WILMINGTON PEDESTRIAN PLAN

Refer to the priority focus area cutsheets in this chapter for project details.

- Safety Focus (High Injury Corridors)
- Connectivity: Parks and Shared-Use Paths
- Connectivity: Jobs & Homes (EPA Smart Location Database)
- Equity Focus (Transportation Disadvantage Index)
- Connectivity and Equity Focus Overlap
- Priority Focus Areas
- UNCW
- Wilmington
- County/outside Wilmington

Priority Focus Areas for Safety, Equity and Connectivity

The priority focus areas, shown in **MAP 6 (page 54)**, are the emphasis of the infrastructure recommendations in this plan. The following pages provide a detailed look at each focus area:

A: Northside & Downtown Trail (including Wilmington Rail Trail)

B: 3rd Street

C: Wooster and Dawson

D: Greenfield Street Area

E: Carolina Beach Road

F: Market Street

G: Market Street/S Kerr Avenue/College Road

H: Oleander Drive (Independence Boulevard to College Road)

I: Oleander Drive (Avondale Avenue to Victory Gardens Drive)

J: Additional Priority Projects

Note about terminology: Throughout this report, **shared-use path** refers to any separate facility (besides a sidewalk) for use by people walking, biking, skating, or using other non-motorized transportation. In the recommendations sections that follow, a distinction is made between **sidepaths** (shared-use paths in a shared roadway right-of-way) and **greenways** (shared-use paths in an independent right-of-way). Sidepath terminology is used in NCDOT project development and Complete Streets policies.

WALK WILMINGTON

PRIORITY FOCUS AREA A:

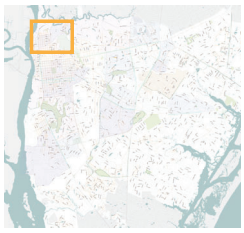
Northside & Downtown Trail (including Wilmington Rail Trail)

RECOMMENDATIONS

- Recommended Sidewalks
- Recommended Greenways
- Key Crossing Improvements *(see notes on next page)*

EXISTING CONDITIONS

- Existing Sidewalks
- Existing Parks and Greenways
- Wilmington
- Railroad
- Bus Stop
- School
- Convenience/Grocery Store
- Police Station
- Health/Medical Services
- Government Services and Related Non-Profits



PRIORITY FOCUS AREA A:

Northside & Downtown Trail (including Wilmington Rail Trail)

For the purposes of this plan, the Northside area is generally bound by 3rd Street, Red Cross Street/Rankin Street, Oakdale Cemetery, and Martin Luther King Jr Parkway. This downtown Wilmington residential area is bordered by major downtown destinations, several parks, recreation centers, and schools, and a network of bus routes. Several sidewalk and greenway recommendations would fill key gaps in the pedestrian network, but the bulk of improvements recommended for this area are focused on improving crossings at bus stops and key destinations.

CROSSING IMPROVEMENTS

- All key intersections marked "X" in Focus Area A are recommended for crosswalks and stop bars* for all legs of the intersection that have existing sidewalks on both sides; signalized crossings should also include pedestrian signals.

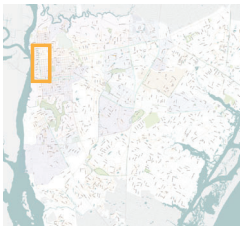
The future Downtown Trail, which includes the Wilmington Rail Trail, will be a key pedestrian feature in this area, providing a connection from the residential areas it runs through to the downtown area where people work, shop, go to school, and recreate. The project is partially funded through WMPO's Coronavirus Response and Recovery Supplemental Appropriations Act (CRRSAA) funds, and a full master plan outlines the key opportunities, constraints, and recommendations for the corridor (see images below from the Wilmington Rail-Trail Master Plan (2020), prepared by Kimley Horn for the WMPO, City of Wilmington, and The Arts Council of Wilmington & New Hanover County). To see the full plan, visit: www.wilmingtonrailtrail.com

**The term "stop bars" is used throughout this report to refer to the rectangular white pavement markings that indicate where drivers should stop at an intersection (signalized or stop-controlled). These markings are important in relation to pedestrian crossings, as they help keep vehicles clear of the crossing space and maintain sight lines for pedestrians and drivers.*

Images from the Wilmington Rail-Trail Master Plan (2020), prepared by Kimley Horn.

WALK WILMINGTON

PRIORITY FOCUS AREA B: 3rd Street



RECOMMENDATIONS

Key Crossing Improvement
(see notes on next page)

EXISTING CONDITIONS

Existing Sidewalks

Existing Parks and Greenways

Wilmington

Bus Stop

School or Library

Convenience/Grocery Store

Government Services and Related Non-Profits

High Injury Network (HIN) Priority Corridor *(see section starting on page 32 for HIN corridor profiles)*

PRIORITY FOCUS AREA B:
3rd Street

This focus area is along 3rd Street from Red Cross Street to Highway 17/Wooster Street. The northern half of this street segment has seen many improvements for pedestrian safety in the past decade, including an entirely new streetscape design with wider sidewalks, clear crosswalks, pedestrian countdown signals, and other safety measures.

However, even with these improvements, this segment of 3rd Street was identified in Chapter 2 as a High Injury Network (HIN) Priority Corridor, with 28 pedestrian collisions (plus eight bicyclist collisions) reported by NCDOT from 2011-2021. Of the 28 pedestrians involved in collisions with motor vehicles, three were killed or sustained serious injuries (two at 3rd Street & Castle Street and one on 3rd Street between Nun Street and Anne Street).

Part of this corridor also scores high on NCDOT's Transportation Disadvantage Index, which measures the disproportionate impact transportation barriers have on Black, Indigenous, and persons of color; lower income communities; households without personal vehicle access; people with mobility impairments; the elderly; and youths.

EXISTING CONDITIONS

3rd Street:

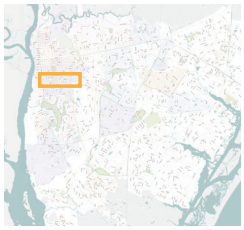
35mph
Posted Speed

12,000-18,500
AADT (2021)

CROSSING IMPROVEMENTS

1. Hardened centerlines.
2. Hardened centerlines; turn calming wedges.
3. Hardened centerlines; turn calming wedges.
4. Hardened centerlines; turn calming wedges.
5. Hardened centerlines.
6. Hardened centerlines; median refuge island.
7. None; intersection was recently improved,
8. Crosswalks; median refuge islands; consider signalization or pedestrian wayfinding signage indicating nearest signalized crossing; crosswalks across Orange St/along 3rd St at minimum.
9. Existing RRFB crossing to be updated to fully signalized intersection.
10. Crosswalks; median refuge islands; consider signalization or pedestrian wayfinding signage indicating nearest signalized crossing; crosswalks across Nun St/along 3rd St at minimum.
11. Crosswalks; median refuge islands; consider signalization or pedestrian wayfinding signage indicating nearest signalized crossing; crosswalks across Church St/along 3rd St at minimum.
12. Hardened centerlines; median refuge islands.
13. Crosswalks; median refuge islands; consider signalization or pedestrian wayfinding signage indicating nearest signalized crossing; crosswalks across Queen St/along 3rd St at minimum.
14. See Focus Area C.

PRIORITY FOCUS AREA C:
Wooster and Dawson



RECOMMENDATIONS

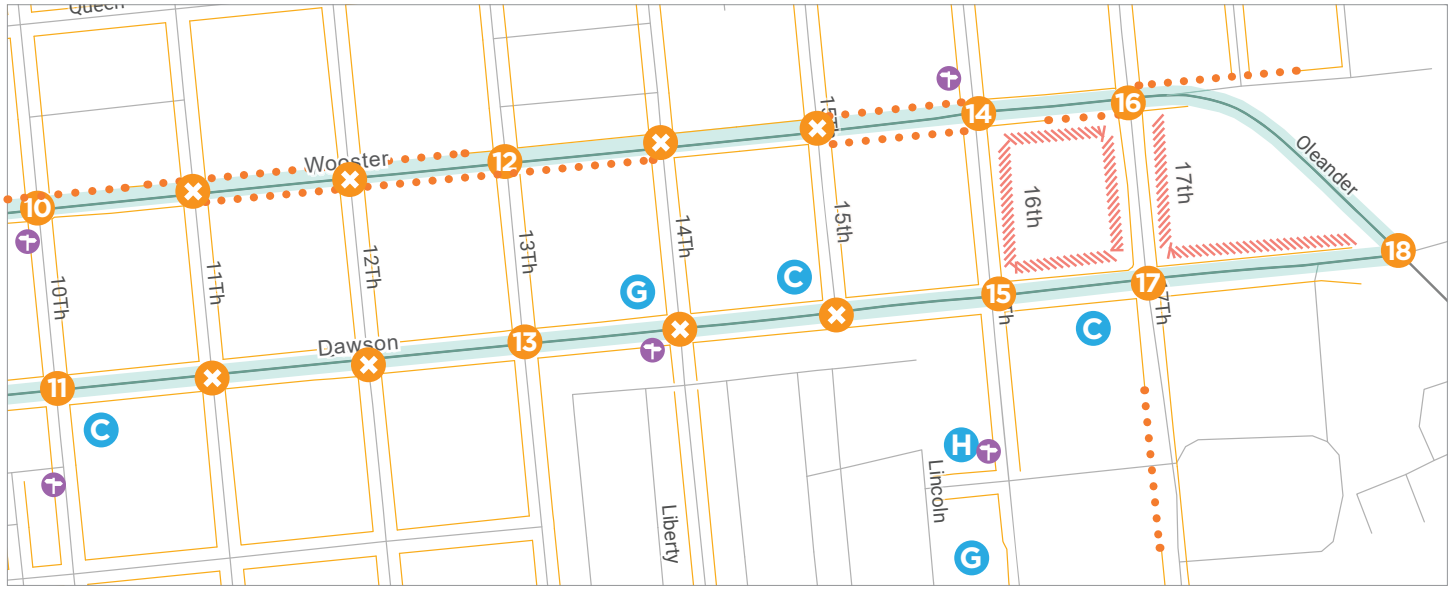
- Recommended Sidewalks
- Recommended Sidepaths
- Key Crossing Improvements *(see notes on next page)*
- Access Management Plan Recommended

EXISTING CONDITIONS

- Existing Sidewalks
- Existing Parks
- Wilmington
- Bus Stop
- Convenience/Grocery Store
- Health/Medical Services
- Government Services and Related Non-Profits
- High Injury Network (HIN) Priority Corridor *(see section starting on page 32 for HIN corridor profiles)*

This focus area is along Highway 17 (Wooster Street and Dawson Street) from 3rd Street to Oleander Drive. These are two one-way pairs with heavy volumes of traffic, serving as a barrier to connectivity and safety for pedestrians.

This area was identified in Chapter 2 as a High Injury Network (HIN) Priority Corridor, with 33 pedestrian collisions (plus 29 bicyclist collisions) reported by NCDOT from 2011-2021, including three pedestrians who were killed or sustained serious injuries. The entire focus area also scores high on NCDOT's Transportation Disadvantage Index.



EXISTING CONDITIONS

Wooster St:

35mph
Posted Speed

15,000-18,500
AADT (2021)

Dawson St:

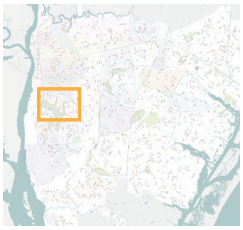
35mph
Posted Speed

16,500-20,500
AADT (2021)

CROSSING IMPROVEMENTS

- All key intersections marked "X" in Focus Area C are recommended for east-west crosswalks and stop bars only; consider pedestrian wayfinding signage indicating nearest signalized crossing.
- 1 See Focus Area B.
- 2 Crosswalks, median refuges, countdown signals.
- 3 Crosswalks, median refuges, countdown signals.
- 4 No intersection/4th Street does not cross.
- 5 East-west crosswalks only.
- 6 None; intersection was recently improved.
- 7 None; intersection was recently improved.
- 8 Crosswalks, curb ramps, countdown signals.
- 9 Crosswalks, curb extensions, countdown signals.
- 10 None; intersection was recently improved.
- 11 None; intersection was recently improved.
- 12 None; intersection was recently improved.
- 13 None; intersection was recently improved.
- 14 Crosswalks and countdown signals.
- 15 Crosswalks and countdown signals.
- 16 Crosswalks and countdown signals.
- 17 Crosswalks and countdown signals.
- 18 Intersection study needed.

PRIORITY FOCUS AREA D:
Greenfield Street Area



RECOMMENDATIONS

- Recommended Sidewalks
- Recommended Greenways
- Key Crossing Improvements *(see notes on next page)*
- Access Management Plan Recommended

EXISTING CONDITIONS

- Existing Sidewalks
- Existing Sidepaths
- Existing Parks
- Wilmington
- Railroad

- Bus Stop
- School
- Convenience/Grocery/ Food Bank
- Health/Medical Services
- Government Services and Related Non-Profits

PRIORITY FOCUS AREA D:

Greenfield Street Area

This priority focus area is roughly bound by Marstellar Street, S 17th Street, E Lake Shore Drive, and S 3rd Street. It is characterized by a mix of residential, industrial, and recreational land uses. Located at the southern end of downtown Wilmington, this focus area is a transition point to both Greenfield Lake and many medical destinations and jobs in and around the regional medical center.

Other key destinations include New Hanover County Department of Social Services, Social Security Administration, Wilmington Housing Authority, a food bank, Greenfield Lake Park, and dozens of medical/health services that support the regional medical center.

EXISTING CONDITIONS

Greenfield Street:

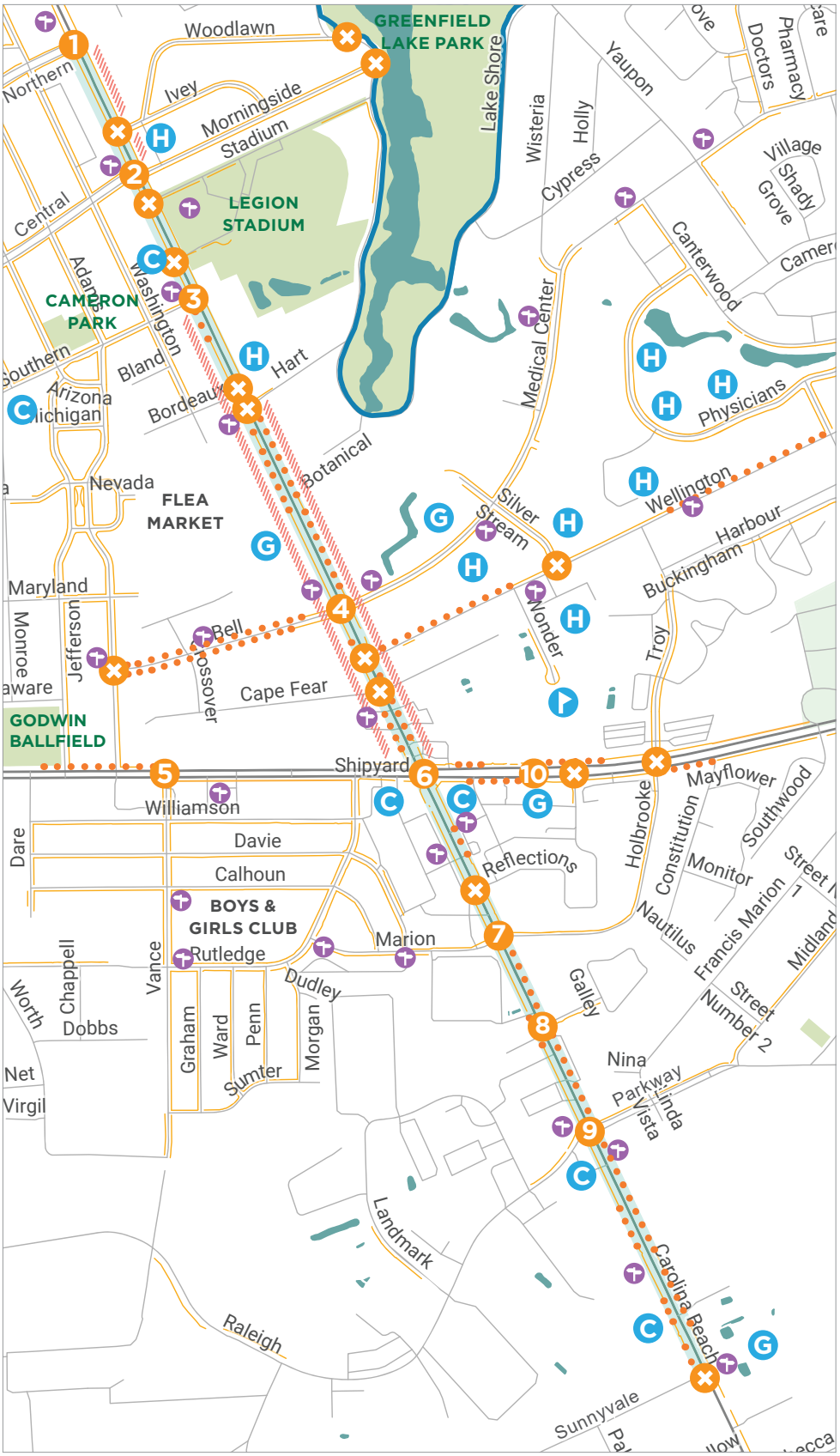
25-35mph	4,200-4,500
Posted Speed	AADT (2021)

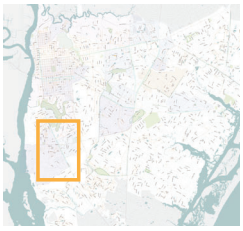
CROSSING IMPROVEMENTS

- All key intersections marked "X" in Focus Area D are recommended for crosswalks in all directions, with stop bars and curb ramp improvements as needed, and median refuge islands as feasible.
- 1 PHB signal crossing with median refuge island recommended; this is the midpoint between the nearest signalized intersections on 3rd Street, which are both 1,380 ft away in either direction (at Highway 17 to the north and Greenfield Street to the south); north-south crosswalks and stop bars also recommended.
- 2 North-south crosswalks and stop bars.
- 3 North-south crosswalks and stop bars.
- 4 Countdown signals and additional crosswalks.
- 5 Countdown signals and crosswalks on all approaches.
- 6 East-west crosswalk and stop bar; consider Greenfield St crosswalk to convenience store and bus stop.
- 7 East-west crosswalk and stop bars.
- 8 East-west crosswalk and stop bars.
- 9 East-west crosswalk and stop bars.
- 10 Consider crosswalk and/or PHB signal across Greenfield Street to convenience store and bus stop; the nearest signalized crossings are 1,380 ft west to 5th Street and 1,760 ft east to 13th Street; east-west crosswalk and stop bar also recommended.
- 11 East-west crosswalk and stop bars.
- 12 East-west crosswalk and stop bars.
- 13 East-west crosswalk and stop bars.
- 14 East-west crosswalk and stop bars.
- 15 Intersection was recently improved; still needs curb ramp on one corner; consider countdown signals.
- 16 East-west crosswalk and stop bars.
- 17 East-west crosswalk and stop bars.
- 18 North-south crosswalk and stop bars.
- 19 None; intersection was recently improved.
- 20 North-south crosswalk and stop bars.
- 21 North-south crosswalk and stop bars.
- 22 None; intersection was recently improved.

PRIORITY FOCUS AREA E:

Carolina Beach Road





RECOMMENDATIONS

- **Recommended Sidewalks**
- **Key Crossing Improvements** *(see notes on next page)*
- **Access Management Plan Recommended**

EXISTING CONDITIONS

- **Existing Sidewalks**
- **Existing Sidepaths**
- **Existing Parks**
- **Wilmington**
- **Bus Stop**
- **School or Library**
- **Convenience/Grocery Store**
- **Health/Medical Services**
- **Government Services and Related Non-Profits**
- **High Injury Network (HIN) Priority Corridor** *(see section starting on page 32 for HIN corridor profiles)*

PRIORITY FOCUS AREA E:

Carolina Beach Road

This focus area is along Carolina Beach Road from Northern Boulevard to Sunnyvale Drive. The corridor lined with highway commercial development, with primarily residential areas to the west of the main corridor, and health/ medical destinations to the east/northeast.

This segment of Carolina Beach Road was identified in Chapter 2 as a High Injury Network (HIN) Priority Corridor, with 19 pedestrian collisions (plus 17 bicyclist collisions) reported by NCDOT from 2011-2021. Of the 19 pedestrians involved in collisions with motor vehicles, four were killed or sustained serious injuries (just north of Hart Street, at Shipyard Boulevard, just south of Shipyard, and just south of Holbrooke Avenue). Several cross streets in this focus area are also part of the HIN, such as Morningside Drive, Bell Street, Wellington Street, Shipyard Boulevard, and Williamson Street, and Vance Street.

Most of this corridor also scores high on NCDOT's Transportation Disadvantage Index.

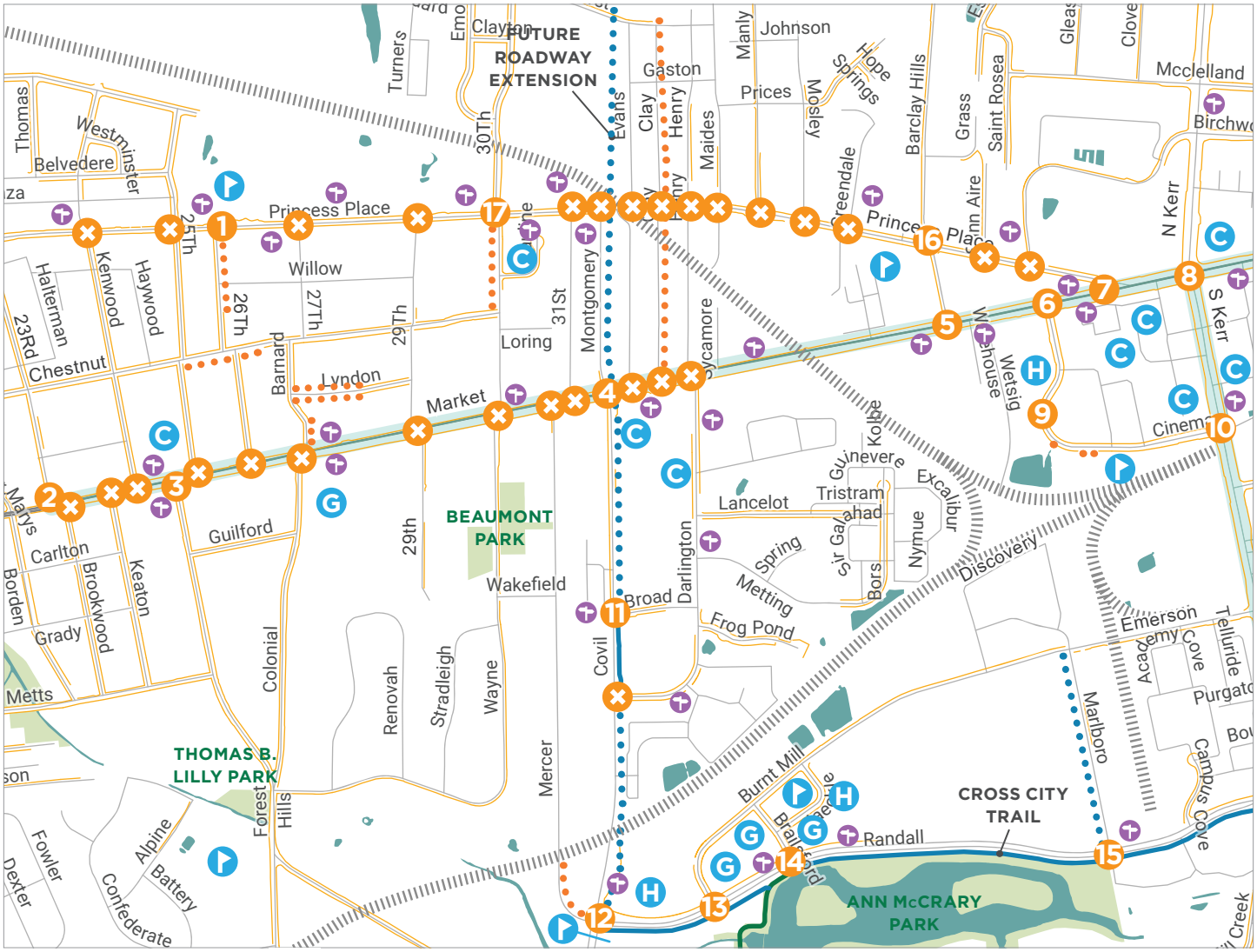
EXISTING CONDITIONS

Carolina Beach Road:

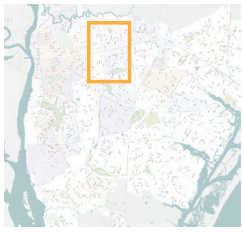
40-45mph	28,000-36,000
Posted Speed	AADT (2021)

CROSSING IMPROVEMENTS

- ✖ All key intersections marked "X" in Focus Area E are recommended for crosswalks and stop bars on the minor road legs of the intersection only; consider pedestrian wayfinding signage indicating nearest signalized crossing.
- 1 Add crosswalk and median refuge island across Northern Boulevard.
- 2 Add median refuge island across Central Boulevard.
- 3 Add crosswalk across Southern Boulevard.
- 4 Add crosswalk across west side of Bell Street.
- 5 New full signalization of Shipyard Boulevard and Vance Street with crosswalks, pedestrian signals and median refuge islands. This intersection includes two intersecting streets on the HIN; connects residential areas on both sides of the street; connects to a ball field and Boys & Girls Club on opposite sides of the street, and most importantly, it would offer a connection to allow north-south pedestrian travel along residential streets, avoiding Carolina Beach Road altogether,
- 6 Add crosswalks and pedestrian signals to two legs of intersection where missing; include a pedestrian refuge island on the western Shipyard Boulevard crossing that is designed to protect pedestrians from left turning truck movement.
- 7 Crosswalks, stop bars, and median refuge islands crossing Marion Drive and Holbrooke Avenue.
- 8 None; intersection was recently improved.
- 9 Crosswalks and pedestrian signals in all directions with median refuge islands on minor street legs of the intersection.
- 10 Consider a signalized mid-block crossing such as a PHB in this area; coordination with nearby fire station would be required.



PRIORITY FOCUS AREA F: Market Street



RECOMMENDATIONS

- Recommended Sidewalks
- Recommended Sidepaths
- Key Crossing Improvements *(see notes on next page)*
- Access Management Plan Recommended

EXISTING CONDITIONS

- Existing Sidewalks
- Existing Sidepaths
- Existing Parks and Greenways
- Wilmington
- Railroad

- Bus Stop
- School
- Convenience/Grocery/ Food Bank
- Health/Medical Services
- Government Services and Related Non-Profits
- High Injury Network (HIN) Priority Corridor *(see section starting on page 32 for HIN corridor profiles)*

PRIORITY FOCUS AREA F:

Market Street

This segment of Market Street is a commercial and residential corridor connecting historic downtown neighborhoods to commercial areas around Kerr Avenue. Key destinations include shopping centers near Kerr Avenue; the development on Randall Parkway, which has a concentration of government services (including the Wilmington Veterans Service Center, New Hanover County Child Support, NC Deaf and Hard of Hearing Service–Wilmington Regional Center, and Internal Revenue Service (IRS) Taxpayer Assistance Center); and the Cross City Trail. North of Market Street, Princess Place Drive is primarily residential and has two school entrances.

Market Street and S Kerr Avenue are HIN priority corridors. Nearby streets in the HIN include Princess Place Drive, 30th Street, 31st Street, Evans Street, Montgomery Avenue, Henry Street, Darlington Avenue, Mercer Avenue, Covil Avenue, Cinema Drive, Westig Road, Marlboro Street, Randall Parkway, and Emerson Street. The neighborhoods north of Market Street scored high on NCDOT's Transportation Disadvantage Index, and could benefit from traffic calming, especially where right-of-way is constrained.

EXISTING CONDITIONS

Market Street:

35mph
Posted Speed

23,000-35,500
AADT (2021)

Princess Place Drive:

25-35mph
Posted Speed

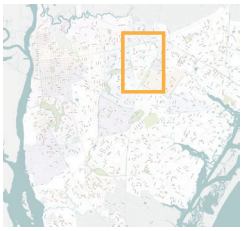
4,100-12,500
AADT (2021)

CROSSING IMPROVEMENTS

- ✕ All key intersections marked "X" in Focus Area F are recommended for crosswalks and stop bars across the minor road legs of the intersection only; consider pedestrian wayfinding signage indicating nearest signalized crossing.
- 1 Convert to a signalized intersection with crosswalks and pedestrian countdown signals at all approaches. Presently the nearest signalized crossings of Princess Place Drive are ~0.5 miles east and west at 23rd Street and 30th Street; additional crossing here would serve the elementary school and improve connectivity for surrounding residential areas.
- 2 Crosswalks and pedestrian countdown signals on all approaches.
- 3 Crosswalks and pedestrian countdown signals on all approaches.
- 4 Crosswalks and pedestrian countdown signals on all approaches.
- 5 Crosswalks and pedestrian countdown signals on all approaches.
- 6 Crosswalks and pedestrian countdown signals on all approaches.
- 7 None; recently improved (verify crosswalks and stop bars were added)
- 8 See Priority Focus Area F cutsheet.
- 9 Crosswalk visibility enhancements.
- 10 See Priority Focus Area F cutsheet.
- 11 Crosswalk and stop bars on Broad Street approach. There is no crossing from the bus stop on the west side of Covil Avenue; consider adding stop control and crosswalks on Covil Avenue, or add nearby midblock crossing of Covil Avenue (RRFB or PHB).
- 12 Crosswalks and pedestrian countdown signals on all approaches.
- 13 Crosswalk, stop bars, and signage across Randall Parkway (similar to existing crossing at Brailsford Drive)
- 14 None; recently improved
- 15 Consider conversion to signalized intersection with crosswalks and pedestrian countdown signals.
- 16 Consider conversion to signalized intersection with crosswalks and pedestrian countdown signals or pedestrian-friendly roundabout due to offset intersection.
- 17 Pedestrian countdown signals on all approaches.

PRIORITY FOCUS AREA G:

Market Street/S Kerr Avenue/ College Road



This priority focus area is bounded by three HIN priority corridors: Market Street, S Kerr Avenue, and College Road. This section of College Road serves as a gateway into Wilmington and UNCW from I-40. The area contains many neighborhoods of single family and multifamily housing developments and a concentration of retail, restaurants, and services.

While the three HIN priority corridors comprise the most pedestrian fatalities and serious injuries in this focus area, other nearby streets also show up on the HIN. These roads can be improved for pedestrians by providing sidewalks to separate pedestrians from traffic, crossing opportunities at desired destinations, traffic calming to control speeds, and pedestrian-scale lighting.

One residential area north of UNCW's campus scored high on NCDOT's Transportation Disadvantage Index.

EXISTING CONDITIONS

Market Street:

35mph Posted Speed

23,000-35,500 AADT (2021)

S Kerr Avenue:

30-35mph Posted Speed

12,500-23,000 AADT (2021)

College Road:

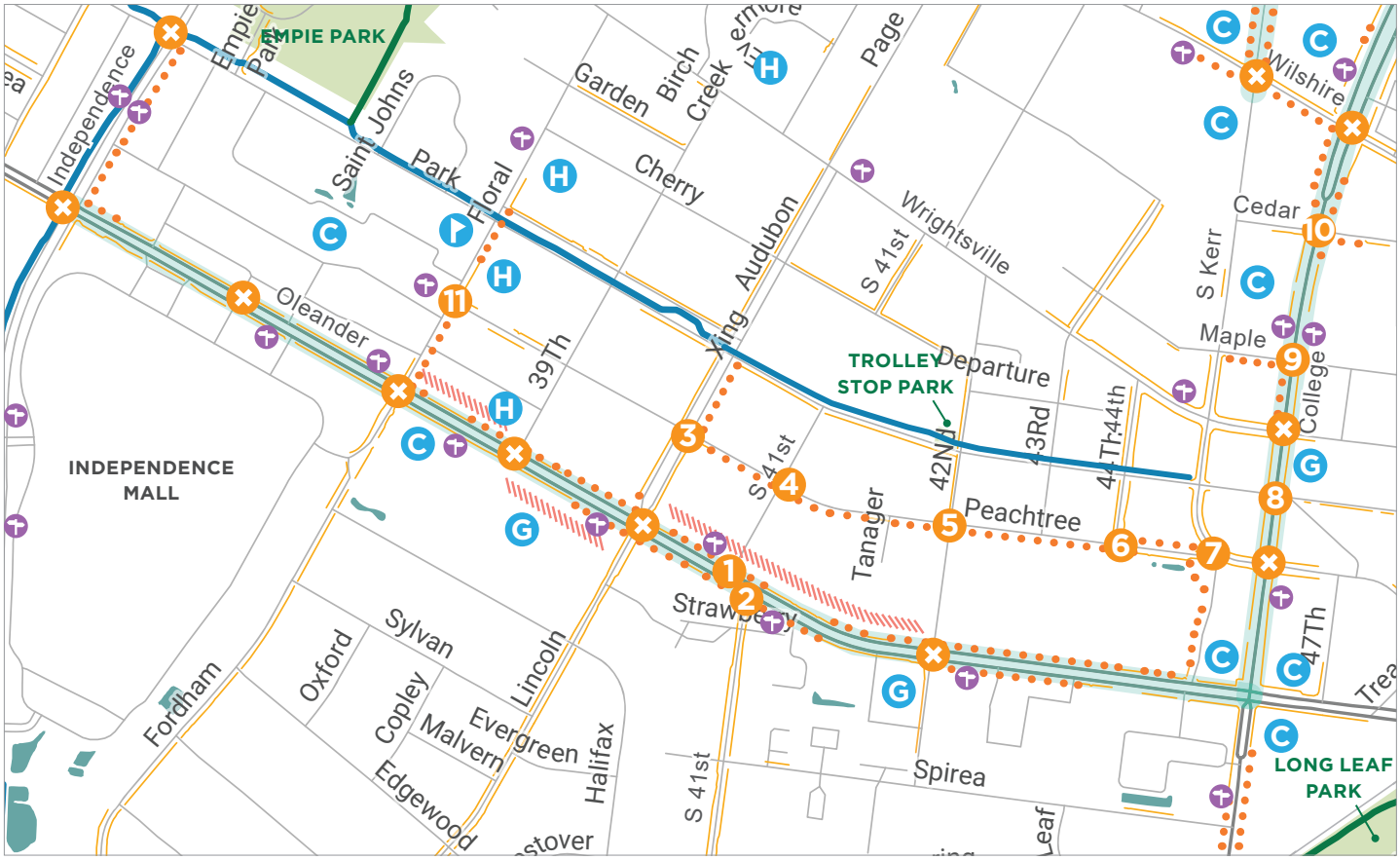
35-45mph Posted Speed

38,000-51,500 AADT (2021)

CROSSING IMPROVEMENTS

- All key intersections marked "X" in Focus Area G are recommended for crosswalks and stop bars across the minor road legs of the intersection only; consider pedestrian wayfinding signage indicating nearest signalized crossing.
- 1 None; recently improved.
- 2 Crosswalks and pedestrian countdown signals on all approaches.
- 3 Crosswalks and pedestrian countdown signals on all approaches; consider centerline hardening.
- 4 Crosswalks and pedestrian countdown signals on all approaches.
- 5 Crosswalks and pedestrian countdown signals on all approaches.
- 6 None; recently improved.
- 7 Crosswalks and pedestrian countdown signals on all approaches.
- 8 None; recently improved.
- 9 Consider PHB or RRFB nearby. Presently no safe crossing between neighborhoods on west side of S Kerr Avenue and bus stop on east side.
- 10 Convert to signalized intersection or add PHB/RRFB nearby. Presently no safe crossing between neighborhoods on west side of S Kerr and bus stop on east side.
- 11 – 20 Crosswalks and pedestrian countdown signals on all approaches.
- 21 Consider conversion to signalized intersection. This intersection is roughly halfway between the nearest signalized crossings of Randall Parkway, ~0.5 miles east and west. A safer crossing here would improve connectivity between the neighborhoods and commercial areas to the north and south, and connect to the Cross City Trail.
- 22 Crosswalks and pedestrian countdown signals on all approaches.


WALK WILMINGTON
RECOMMENDATIONS
Recommended Sidewalks
Recommended Sidepaths
Key Crossing Improvements
(see notes on adjacent page)
EXISTING CONDITIONS
Existing Sidewalks
Existing Sidepaths
Existing Parks
Wilmington
UNC Wilmington
Railroad
Bus Stop
School
Convenience/Grocery/ Food Bank
Health/Medical Services
Government Services and Related Non-Profits
High Injury Network (HIN) Priority Corridor (see section starting on page 32 for HIN corridor profiles)
UNIVERSITY CENTRE
UNIVERSITY OF NORTH CAROLINA WILMINGTON
CROSS CITY TRAIL
Mcclelland
Birchwood
Noke
Cobblestone
Dunlea
Carriage
New Centre
Market
Sigmon
Van Campen
Walton
College
Government Center
Jeff Gordon
Bob King
Wilmington
Jacksonville
New Bern
Kinston
Lamppost
Hunt Club
Dapple
Cinema
Playa
Thompson
Havelock
Franklin
Vineyard
Durango
Lullwater
Amy
Cedar Branch
Greenway
Red Bud
Emerson
Academy
Telluride
Cove
Purgatory
Boulder
Kerr
Kubeck
Campus Drive
Collegiate
Dove
Drake
Grouse
Pheasant
Thrasher
Randall
Patrick
Pepys
Clemson
Crete
Capri
Mill Creek
Sequoia
Kimberly
Hoggard
Fillmore
Tulane
Purdue
Yale
University
Wagoner
Kenan Hall
Alumni
Eaton
Crews
Union
Hamilton
Plum Nearly
Cedarwood
Varsity
Fraternity
Winterberry
Morton
Kerry
Saint James
Fountain
College
Seahawk
MacMillan
Montclair
Kenan
Bear
Atlantis
Seabury
Seabrook
Barefoot
Racine
Red Wing
Black Wing
Oriole
Thrush
Alicia

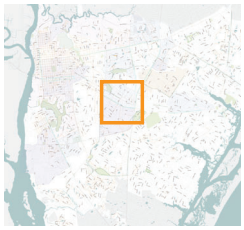


WALK WILMINGTON

PRIORITY FOCUS AREA H:

Oleander Drive

(Independence Boulevard to College Road)



RECOMMENDATIONS

- **Recommended Sidewalks**
- **Key Crossing Improvements** *(see notes on next page)*
- **Access Management Plan Recommended**

EXISTING CONDITIONS

- **Existing Sidewalks**
- **Existing Sidepaths**
- **Existing Parks and Greenways**
- **Wilmington**
- **Bus Stop**
- **School**
- **Convenience/Grocery/ Food Bank**
- **Health/Medical Services**
- **Government Services and Related Non-Profits**
- **High Injury Network (HIN) Priority Corridor** *(see section starting on page 32 for HIN corridor profiles)*

PRIORITY FOCUS AREA H:

Oleander Drive

(Independence Boulevard to College Road)

This section of Oleander Drive is a bustling commercial corridor surrounded by several large neighborhoods. The corridor contains many destinations including grocery stores, restaurants, retail, general services, employment agencies and job skills training, and social services (in particular, several organizations serving veterans).

Both Oleander Drive and College Road are HIN priority corridors. NCDOT recorded 10 pedestrian and 9 bicyclist crashes on this segment of Oleander Drive between 2011-2021. College Road from Oleander Drive to Jeff Gordon Road (to the north, not shown on this map), had 28 pedestrian and 28 bicyclist crashes during the same time period. Peachtree Avenue is also part of the HIN.

The area south of Oleander Drive scored high on NCDOT's Transportation Disadvantage Index.

EXISTING CONDITIONS

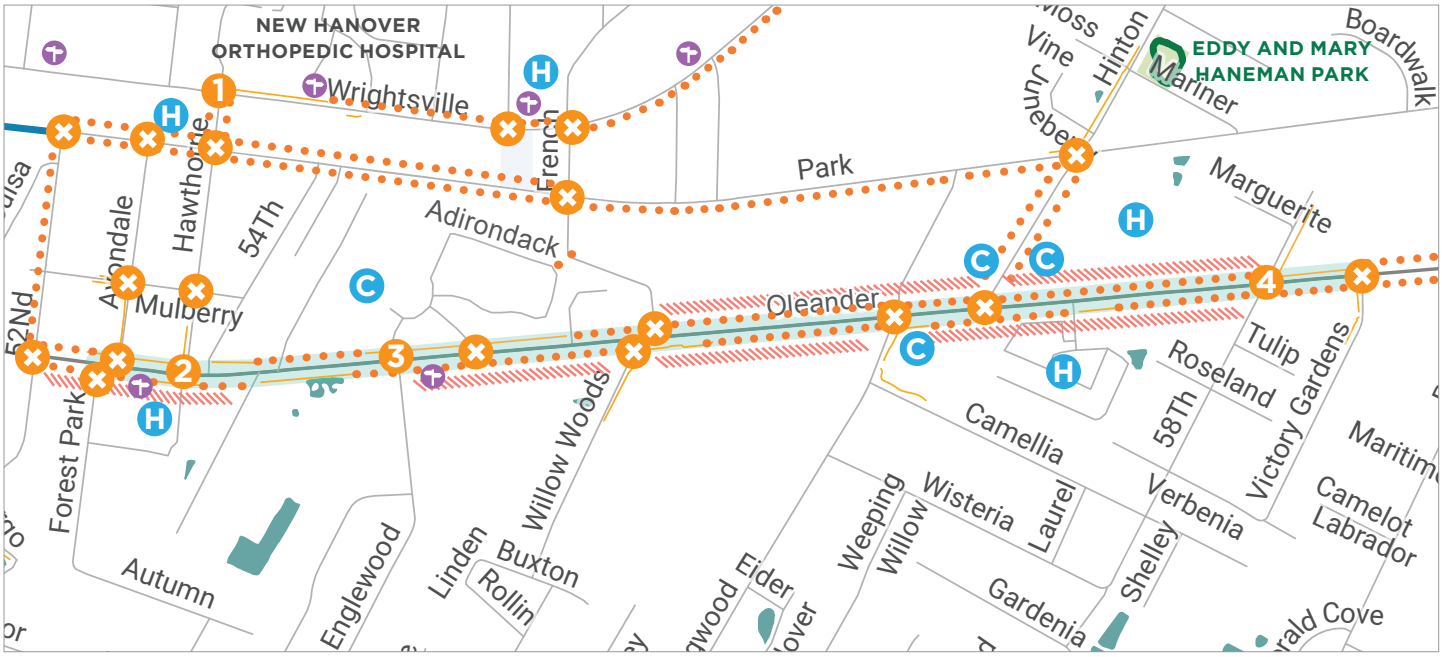
Oleander Drive:

35-45mph
Posted Speed

22,500-36,500
AADT (2021)

CROSSING IMPROVEMENTS

- ✖ All signalized intersections marked "X" in Focus Area H are recommended for crosswalks and pedestrian countdown signals on all approaches (some currently have crosswalks/signals only on select approaches).
- 1 Signalize intersection with crosswalks and pedestrian signals.
- 2 Signalize intersection with crosswalks and pedestrian signals.
- 3 Crosswalks in all directions; Audubon Boulevard is divided with a large landscaped median; include a large pedestrian refuge (34 feet of sidewalk) across the median.
- 4 East-west crosswalk and stop bar on the southern approach.
- 5 Add crosswalks and stop bars on southern and western approaches.
- 6 Consider stop control on Peachtree Avenue and north-south crosswalk on western approach.
- 7 Crosswalk and stop bar on Peachtree Avenue approach.
- 8 North-south crosswalks and stop bars; signage to direct pedestrians to nearest signalized crossings of College (Wrightsville and Peachtree/S Kerr) and wayfinding for the River to Sea Bikeway, which crosses College at Peachtree/S Kerr intersection.
- 9 North-south crosswalks and stop bars.
- 10 North-south crosswalks and stop bars.
- 11 North-south crosswalk and stop bar; consider PHB or RRFB on Floral Parkway to provide safer connection to the bus stop and shopping center from neighborhoods to the east.

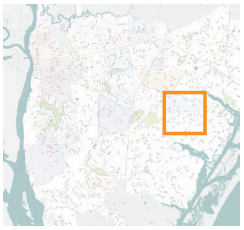


WALK WILMINGTON

PRIORITY FOCUS AREA I:

Oleander Drive

(Avondale Avenue to Victory Gardens Drive)



RECOMMENDATIONS

- **Recommended Sidewalks**
- **Key Crossing Improvements** *(see notes on next page)*
- **Access Management Plan Recommended**

EXISTING CONDITIONS

- **Existing Sidewalks**
- **Existing Sidepaths**
- **Existing Parks and Greenways**
- **Wilmington**
- **Bus Stop**
- **School**
- **Convenience/Grocery/ Food Bank**
- **Health/Medical Services**
- **High Injury Network (HIN) Priority Corridor** *(see section starting on page 32 for HIN corridor profiles)*

PRIORITY FOCUS AREA I:

Oleander Drive

(Avondale Avenue to Victory Gardens Drive)

This focus area covers the Oleander Drive corridor from Avondale Avenue to Victory Gardens Drive. The main corridor is primarily commercial with residential areas to the north and south. UNC Wilmington's campus is less than 0.5 mi north, while the Novant Health New Hanover Orthopedic Hospital entrance is on Wrightsville Avenue.

This segment of Oleander Drive is a HIN Priority Corridor, with six pedestrian and four bicyclist crashes reported by NCDOT between 2011-2021. The nearby sections of Park Avenue and Wrightsville Avenue (primarily residential) are also part of the HIN.

Oleander Drive presently has many driveways and stop-controlled intersections, with few sidewalks and no marked crosswalks across Oleander Drive. There are few signalized intersections on the corridor, limiting opportunities for pedestrians to cross Oleander Drive where vehicles are fully stopped. Redevelopment along the corridor is improving walkability through the construction of sidewalks and signalized intersections, along with other connectivity requirements in Wilmington's Land Development Code.

EXISTING CONDITIONS

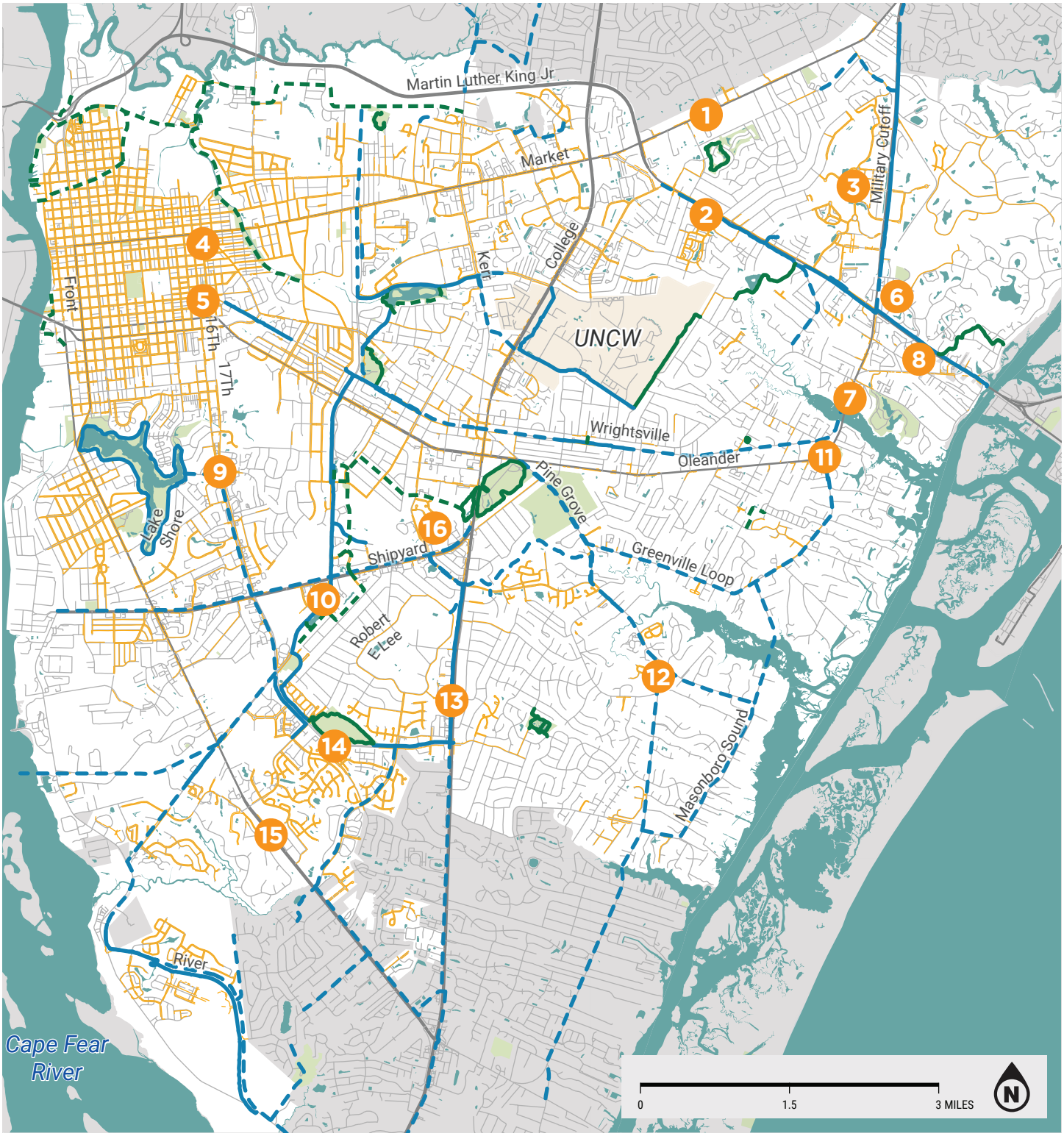
Oleander Drive:

35-45mph
Posted Speed

22,500-36,500
AADT (2021)

CROSSING IMPROVEMENTS

- All key intersections marked "X" in Focus Area I are recommended for crosswalks and stop bars across the minor road legs of the intersection only; consider pedestrian wayfinding signage indicating nearest signalized crossing.
- 1 Crosswalks and pedestrian countdown signals on all four approaches; consider centerline hardening.
- 2 Crosswalks and pedestrian countdown signals on all four approaches; consider centerline hardening.
- 3 Recently improved; add crosswalks and pedestrian countdown signals on all four approaches; consider centerline hardening.
- 4 Recently improved; add crosswalks and pedestrian countdown signals on all four approaches; consider centerline hardening.



WALK WILMINGTON

PRIORITY FOCUS AREA J:
Additional Priority Projects

RECOMMENDATIONS

- **Additional Priority Projects**
- **Recommended Greenways** *(from 2013 Comprehensive Greenway Plan)*
- **Recommended Sidepaths** *(from 2013 Comprehensive Greenway Plan)*

EXISTING CONDITIONS

- **Existing Sidewalks**
- **Existing Sidepaths**
- **Existing Parks and Greenways**
- **UNC Wilmington**
- **Wilmington**

Priority Focus Area J includes all areas in the City of Wilmington outside of the other focus areas. The projects listed are representative of where there were higher levels of public input through the online public input map and public survey, calling for specific improvements.

While many of these projects are located outside of the higher tiers of the equity-based Transportation Disadvantage Index (TDI) analysis, they are still very important from a safety perspective, as they align with and are supported by the High Injury Network (HIN) analysis.

MAP ID	PUBLIC COMMENT	RECOMMENDATION	RELATED PROJECTS IN DEVELOPMENT
N/A	N/A	Continue to implement proposed facilities from the 2013 Wilmington/New Hanover County Comprehensive Greenway Plan.	N/A
N/A	N/A	Implement sidewalks on local streets in residential areas, prioritizing areas within one mile of key pedestrian generators and destinations.	N/A
1	Pedestrian safety and access improvements needed along Market St from Eastwood Rd to Gordon Rd	This area of Market St (Eastwood Rd to Gordon Rd) has more than 140 intersecting driveways and roadways. Each one presents a potential conflict between turning vehicles and pedestrian travel. In addition to the funded crossing improvements for Market St and North Green Meadows Dr, this plan recommends: 1. Sidewalks along Green Meadows Dr to nearby residential streets (south to Athens Ln and north to Spicewood St). 2. Crosswalks and pedestrian signals across Market St at Cardinal Dr and Blair School Rd. 3. Crosswalks along Market St where existing sidewalks cross driveways and intersecting roadways. 4. Fill gaps in the intermittent existing sidewalks. 5. An access management plan.	N/A
2	Pedestrian connectivity needed to Inland Green Park from Cross City Trail	Connect Cross City Trail to N Cardinal Dr with crosswalk and pedestrian signal across Eastwood Rd. Add approximately 950 ft of sidewalk along west side of N Cardinal Dr from Eastwood Rd to existing sidewalk at George Task Dr. Include crosswalks for N Cardinal Dr and George Task Dr intersection, as well as the N Cardinal Dr and Inland Greens Dr intersection.	N/A
3	Crosswalks needed to access Mayfaire from Military Cutoff Trail	Add crosswalks and pedestrian signals across Military Cutoff Rd at Main St/Sir Tyler Dr. Extend existing sidewalks on both sides of Main St by approximately 150 feet to the intersection of Military Cutoff Rd; extend existing sidewalk on south side of Sir Tyler Dr by approximately 125 feet to the intersection of Military Cutoff Rd and Military Cutoff Trail.	N/A
4	Pedestrian crossing improvements needed at S 16th St and Dock St	This is a signalized intersection; crosswalks and pedestrian signals recommended; Consider curb extensions to align with on-street parking; sidewalk repair needed on SE corner; nearby bus stop for this intersection is reportedly frequently used by people with disabilities; add bus stop amenities that include seating.	N/A
5	More pedestrian crossings needed in vicinity of S 16th St, S 17th St, Castle St, and Queen St (Cargo District).	1. S 16th St/Castle St: This is a signalized intersection; crosswalks and pedestrian signals recommended; consider curb extensions to align with on-street parking; consider reducing S 16th St to 2 lanes. 2. S 17th St/Castle St: This is a signalized intersection with existing crosswalks; pedestrian signals recommended; consider curb extensions to align with on-street parking. 3. S 16th St/Queen St and S 17th St/Queen St: These are unsignalized intersections. Consider PHB signal crossings.	N/A

MAP ID	PUBLIC COMMENT	RECOMMENDATION	RELATED PROJECTS IN DEVELOPMENT
6	Connect Military Cutoff Trail to Cross City Trail	Extend Military Cutoff Trail from current southern terminus for approximately 660 ft along the north side of Drysdale Dr. Cross Drysdale Dr with a crosswalk and median refuge island to the utility corridor that runs north-south behind the Food Lion shopping center. Extend trail along utility corridor for approximately 1,800 feet and connect to Cross City Trail at Eastwood Rd. Add signage at both ends of the new connection.	N/A
7	Pedestrian access and safety improvements needed in vicinity of Airlie Rd	1. Sidewalk recommended along west side of Oleander Dr between north and south segments of Wrightsville Ave. 2. Crosswalks and pedestrian signals recommended at Wrightsville Ave and Military Cutoff Rd intersection. 3. Crosswalks and pedestrian signals recommended to connect existing sidewalks at opposite sides of Wrightsville Ave and Oleander Dr intersection. 4. Separated pedestrian (and bicycle) access should be provided across Bradley Creek when the Oleander Dr bridge is updated or improved.	N/A
8	Pedestrian access and safety improvements needed in vicinity of Lumina Station and Eastwood Road	1. Add PHB signal crossing along Wrightsville Ave near Pavilion Pl, connecting sidewalks on both sides of Wrightsville Ave. Locate PHB crossing where the center turn lane is underused to allow for a median refuge. The bus stop near Pavilion Pl would also be served by a safe pedestrian crossing. 2. Separated pedestrian (and bicycle) access should be provided across the Intracoastal Waterway when the Causeway Dr bridge is updated or improved. 3. Provide crosswalks, pedestrian signals, and median refuges to cross Eastwood Rd at Landfall Business Park and Lion's Gate; upgrading these two signalized intersections would connect neighborhoods and retail (Lumina Station) on the south side of Eastwood to the Cross City Trail and Summers Rest Trail on the north side.	N/A
9	Pedestrian safety and access improvements needed across S 17th St to medical services on both sides of the street	1. S 16th St and S 17th St at Hospital Plaza Dr/Ambulance Dr: This is a signalized crossing with sidewalks on both sides; add crosswalks and pedestrian signals; use existing large landscaped medians as pedestrian refuge islands. 2. S 17th St at Medical Center Dr: This is a signalized intersection with an existing crosswalk and pedestrian signal; add crosswalk to east leg of the intersection and consider adding a hardened centerline extending from the raised median at the existing crosswalk across S 17th St. 3. S 17th St at Glen Meade Rd: This is a signalized crossing with sidewalks on all sides; add crosswalks and pedestrian signals in all directions; use existing large landscaped medians as pedestrian refuge islands.	S 17th St shared-use path
10	Crosswalks needed between offices, services, and residential areas along Independence Blvd	There is one existing crosswalk for approximately 5,000 feet along Independence Blvd between Shipyard Blvd and S 17th St. Add crosswalks and signage at Independence Blvd/Commons Dr and Independence Blvd/Croquet Dr, similar to the existing crossing at Independence Blvd/Ashton Dr.	N/A

MAP ID	PUBLIC COMMENT	RECOMMENDATION	RELATED PROJECTS IN DEVELOPMENT
11	Pedestrian crossing needed at Greenville Loop Road and Oleander Dr	This intersection is signalized with sidewalk on the north side and nearby sidewalk on the south side. Add crosswalks and pedestrian signals; consider a turn radius reduction or crossing islands in the wide turn angles; extend existing sidewalk along west side of Greenville Loop Rd north to the intersection (approximately 260 feet) with a crosswalk across the gas station driveway entrance.	Greenville Loop Trail
12	Pedestrian connectivity needed for Masonboro Loop	Masonboro Loop Trail is a 2014 Bond Project that will connect residential street network with one another, while providing space for walking and bicycling that is separated from motor vehicle traffic.	Masonboro Loop Trail
13	Multiple crosswalks needed on S College and the Cross City Trail to connect residential areas to the commercial businesses and destinations along College Rd.	1. College Rd and Pine Valley Rd: This is a signalized intersection with a trail and sidewalk on the west side and no sidewalk on the east side; Sidewalk should be added to Pine Valley Dr between College Rd and at least Chalmers Dr. Add crosswalks and pedestrian signals to intersection. 2. College Rd and Bragg Dr: This is a signalized intersection with a trail and sidewalk on the west side and no sidewalk on the east side; Sidewalk should be added to Bragg Dr between College Rd and at least Chalmers Dr. Add crosswalks and pedestrian signals to intersection. 3. All trail/driveway crossings in this vicinity should be marked with a crosswalk. 4. Waltmoor Rd at CVS and Aldi: A crosswalk could be provided to connect the Cross City Trail to Aldi, about 400 feet east of College Rd; this would allow trail users from the residential areas to the east to access Aldi without going to College Rd to cross Waltmoor Rd.	N/A
14	Safe crossing needed between Halyburton Park and the Cross City Trail on the north side of S 17th St and large residential areas on the south side.	1. S 17th St and George Anderson Dr: This is a signalized intersection with existing an crosswalk and pedestrian signal; enhance this long distance crossing by not allowing right turns on red while pedestrians are present; consider adding a hardened centerline extending from the raised median at the existing crosswalk across S 17th St; add crosswalks to the George Anderson Dr legs of the intersection, connecting existing sidewalks and trails on each side. 2. Add sidewalk and/or trail on south side of S 17th St between George Anderson Dr and Steeplechase Rd (about 1,530 feet); include signage at north end of Steeplechase Rd directing pedestrians to cross at George Anderson Dr.	N/A
15	Safe crossing needed for Carolina Beach Rd near Echo Farms Park and Codington Elementary.	Carolina Beach Rd and George Anderson Dr/Echo Farms Blvd: This is a signalized intersection with sidewalk that stops short of the intersection on both sides; extend existing sidewalks along north sides of George Anderson Dr (about 160 feet) and Echo Farms Blvd (about 320 feet) to the intersection at Carolina Beach Rd; add crosswalk, pedestrian signal, and median refuge island across Carolina Beach Rd.	N/A
16	Improvements needed near Hoggard High School	1. Complete the sidewalk on north side of Shipyard from Pickard Rd to 41st St/Hoggard High School entrance (about 2,200 ft). Worn footpath along roadway indicates heavy pedestrian use in this area. 2. Add crosswalks and pedestrian signals on signalized intersections at Shipyard and 41st St and Shipyard and Long Leaf Mall entrance.	N/A

Countermeasure Toolbox

USDOT *encourages* the widespread implementation of proven safety countermeasures to accelerate safety goals. To maximize return on investment, implementing countermeasures with proven success enables Wilmington to begin reaping safety benefits early and effectively; thereby gaining additional public support and momentum. The implementation of countermeasures can occur through different delivery, material, and installation methods. This allows some of the countermeasures to be installed as a quick build or more permanent implementation.

The countermeasures in this section are broken down into operational and design safety improvements. They are intended to serve as a menu of options that Wilmington and NCDOT can tap into to reduce and ultimately eliminate severe crashes. Additional audits and analysis may be needed to identify the appropriate locations for installing some of these improvements. Nonetheless, a systemic, widespread application of these improvements is recommended to create a consistent and systemwide safer environment. Lastly, while this menu of options is not an exhaustive list, it represents the recommended improvements that best address the specific needs of Wilmington.

Operational Safety Countermeasures

LEADING PEDESTRIAN INTERVAL (LPI)

LPI gives pedestrians a 3-7 second head start to enter an intersection before any vehicles get the green light. LPIs have shown to *reduce pedestrian-involved crashes by 13%* at intersections. They are most suitable at intersections with both high pedestrian and bicyclist demand, and heavy right and/or left turning vehicle movements.

PEDESTRIAN PHASING AND CYCLE LENGTHS

Every new traffic signal installation and upgrade should strongly consider using pedestrian phasing and signal heads. Additionally, in urban areas, traffic signal full cycle lengths at intersections with crosswalks and pedestrian phasing should ideally be limited to *60-90 seconds*. This reduces pedestrian wait times and side street delay. On wider streets with medians and pedestrian refuge areas, consider two-stage pedestrian phasing. In some cases, signal cycles may be adjusted throughout the day based on pedestrian demand and vehicular peak travel times. Furthermore, the benefits of LPIs as a proven safety countermeasure should also be considered when updating pedestrian phasing at signalized intersections.

COORDINATED SIGNAL TIMING

Synchronizing traffic signal timing across closely spaced traffic signals (0.25 miles or less) facilitates vehicular traffic flow during peak times. However, it can also be optimized to control vehicular speeds and facilitate bicycle travel along bike routes, as well as along transit routes to maximize transit efficiency.

VARIABLE SPEED LIMIT (VSL) SIGNS

VSLs have been shown to reduce severe crashes *by over 50%*, especially on high-speed roadways (>40 mph) such as arterials. They are relatively inexpensive, and can be applied at either particular locations or along a corridor, in either an advisory or a regulatory capacity.

TRANSPORTATION SYSTEMS MANAGEMENT & OPERATIONS (TSM&O)

TSM&O is a set of operational strategies that improve the transportation system's performance, ideally for all road users, through operational improvements rather than physical capacity. TSM&O can be integrated systemwide to manage traffic congestion and competing demands, or it can be dedicated to specific traffic incidents and circumstances such as work zones, special events, and road incident management. TSM&O should also be used to enhance transit and freight operations through techniques such as transit signal priority and traffic signal preemption at railroad crossings.

NO RIGHT TURN ON RED (RTOR) SIGNS

Permitting vehicles to turn right when the corresponding traffic light is red can have significantly adverse impacts on pedestrians and cyclists attempting to cross. The practice, which was introduced in the 1970s as a way to save fuel, was shown to *increase pedestrian and bicyclist crashes*. Prohibiting RTORs at specific intersections, (which could be evaluated and prioritized based on pedestrian and bicycle demand) is a low-cost treatment with significant benefits, and can be implemented in a number of different ways: post-mounted sign, overhead sign, or a variable blank out sign. If needed, "No RTOR" treatments can be implemented on a part-time basis during the day.

Design Safety Countermeasures

The scope of this Plan allowed for limited site-specific recommendations which are featured in the this Plan's Focus Area maps. Additional countermeasures should also be considered in the design process when addressing pedestrian safety within the Focus Area corridors and crossings. These additional countermeasures are described in this section, followed by cost estimates.

SIDEWALKS

Sidewalks are the foundational component of the walking network, providing a designated walking area separated from vehicles. Providing a sidewalk along a roadway can *reduce pedestrian crashes by 89%*. Sidewalks should be continuous and unobstructed by

driveways, poles, and street furniture to be accessible, especially to those using wheelchairs and assistive mobility devices. When retrofitting gaps in the sidewalk network, locations near transit stops, schools, parks, public buildings, and other areas with high concentrations of pedestrians should be the highest priority.

CURB EXTENSIONS

Curb extensions are often installed at intersections or midblock locations to increase pedestrian visibility. They are also sometimes installed with LPIs to improve their effectiveness. They are especially useful when there is on-street parking. Installed to provide either just a visual (through colored pavement) or physical intrusion into the vehicular path, curb extensions are also effective in reducing vehicle turning speeds. If curb extensions pose drainage issues, they can be installed as a "floating" island, with a 1-2 foot gap from the original curb or drainage structure.

TRUCK APRONS

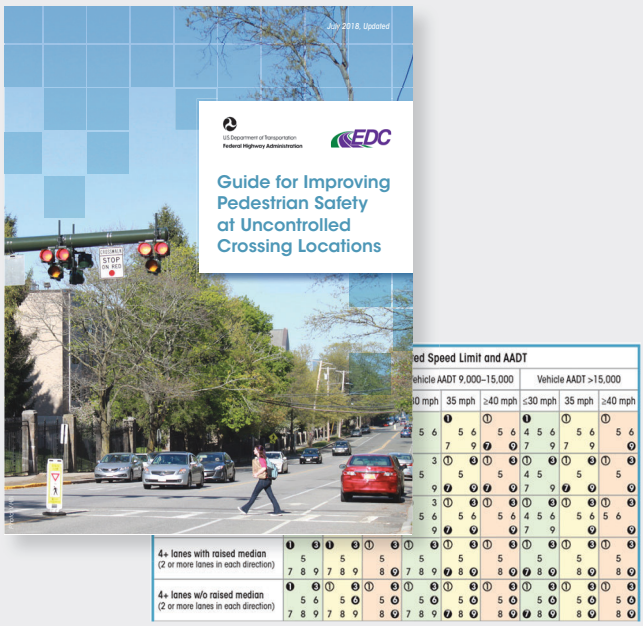
As an expansion of the curb extension countermeasure, evaluating intersection corners for all users involves also considering freight turning movements along arterials. Truck aprons present a solution where large trucks have a little more space than other vehicles to turn, without allowing them to turn at high speeds. To further protect pedestrians at those installations, truck aprons are often accompanied by bollards at the intersection corner. Truck aprons are also common at roundabouts.

SIGNALIZED PEDESTRIAN CROSSINGS

Pedestrian crossings at midblock and uncontrolled crossings present a high percentage of the locations where pedestrian fatalities and severe injuries are occurring in Wilmington. Therefore, a systemic safety approach is needed to deploy additional protection (i.e., signalized crossings) for pedestrians crossing at these locations, especially along high-speed roadways. The MUTCD includes specific warrants that must be applied to determine the type of signalization control based on roadway characteristics and conditions. These signalization options include Pedestrian Hybrid Beacons (PHB), pedestrian signals, and full traffic signals. PHBs have been shown to reduce pedestrian crashes by *more than 55%*, and offer an option when a full traffic signal is not warranted if vehicular volumes are not high enough. A practice highly supported by FHWA, widespread implementation of PHBs should be accompanied with public education since they are considered a relatively new technology.

PROTECTED LEFT TURNING MOVEMENTS

Intersections often pose a conflict point for pedestrians and cyclists. Vehicular left-turning movements pose a particular threat, as left-turning vehicles are usually focused on oncoming vehicles to try to find a gap to turn, and may not pay attention to pedestrians crossing the intersection. A countermeasure that requires analysis but one that has been often used to regulate left-turning vehicles is a protected left turn, which means that vehicles turning left turn only when the green arrow appears. While providing left turning cars a separate traffic signal phase may impact other vehicular movements, it is important to weigh the benefits of installing it to pedestrians and cyclists.



FHWA's *Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations* contains guidelines for the application of various safety countermeasures based on roadway characteristics (lane configuration, traffic volume, and posted speed).

MINI MEDIANS, MEDIANS, AND PEDESTRIAN REFUGE ISLANDS

Pedestrian fatalities and severe injuries in Wilmington are prevalent along multilane, high-speed arterial roadways. Installing hardscape medians provides an opportunity for pedestrians and cyclists to cross wide roadways more safely, and in stages if needed. Medians with marked crosswalks, have been shown to *reduce pedestrian crashes by 46%*. Additionally, if a pedestrian refuge island with ADA-compliant ramps is installed in the median, pedestrian crashes have been reduced by 56%. For quick build or location-based applications, a mini median may be installed to break up a two-way left turn lane, managing vehicular access and furnishing a crossing opportunity for pedestrians.

RAISED CROSSWALKS

Raised crosswalks can *reduce pedestrian crashes by 45%*. They are most effective on local and collector streets, where the roadway cross section is typically 2 to 3 lanes wide, speed limits are 30 mph or less, and AADT is below 9,000. Raised crosswalks may not be appropriate for bus transit routes, primary emergency vehicle routes, and high-traffic, high-speed streets.

LIGHTING

Many pedestrian fatalities and severe injuries occur at night or other low light conditions. Intersection lighting *can reduce pedestrian crashes by 40%*.