# **MERIT CRITERIA**

# **Snapshot**

**Location:** 15 North Carolina cities/ towns: Hamlet, Henderson, Kinston, Lumberton, Lexington, Oxford, Roanoke Rapids, Rockingham, Salisbury, Selma, Siler City, Smithfield, Washington, Weldon, Wilson

Urban or Rural: Rural

**Pedestrian Crash Rate:** 0.37 (Project Average) 0.23 (North Carolina)

**Pedestrian Fatality Rate:** 0.065 (Project Average) 0.046 (North Carolina)

**Estimated Completion Date:** Q3 of 2027

Project Cost: \$12,300,000

**RAISE Funding Request:** \$9,000,000

NCDOT Match Support: \$3,300,000

**Zero-Vehicle Households:** 14.2% (Project Average) 5.5% (North Carolina)

Areas of Persistent Poverty: 55 census tracts (See <u>the table on</u> <u>page 3 in Project Description</u> for full list)

**Historically Disadvantaged Communities:** 88 census tracts (See <u>the table on</u> <u>page 3 in section 1</u> for full list)

**Median Family Income:** \$37,107 (Project Average)

\$60,516 (North Carolina)

Project Website: https://connect.ncdot. gov/resources/RAISE2023\_ WALKNC/Pages/default.aspx

#### WALK NC Cities/Towns Supporting WALK NC:

City Manager of Hamlet

City Manager of Henderson

City of Lexington

City of Lumberton

City of Roanoke Rapids

Director of Community & Cultural Services for the City of Washington

Mayor of Kinston

Mayor of Oxford

Mayor of Rockingham

Mayor of Salisbury

Mayor of Selma

Mayor of Wilson

NCDOT Transportation Mobility & Safety Division

Planning Director of Smithfield

Town Administrator of Weldon

Town Manager of Siler City

Town Manager of Smithfield



Community engagement in Lumberton, NC



2023 RAISE GRANT 1



#### How WALK NC Addresses

# SAFETY

Pedestrian WALK traffic signal, crosswalks, and sidewalk creates safe travel for vulnerable road users

Reduces the likelihood of a pedestrian crash occurring in Areas of Persistent Poverty and Historically Disadvantaged communities

Pedestrian WALK traffic signal encourages safe and responsible behavior for roadway users

#### Creates conditions that prioritize vulnerable road users to reach their destination unharmed

WALK NC will create safer crossings for pedestrians at signalized intersections in underserved communities across North Carolina. The installation of pedestrian traffic signal heads, marked crosswalks, LPIs, sidewalk, and high-visibility crosswalks in select locations will reduce crashes for vulnerable roadway users. High-visibility crosswalks can reduce pedestrian injury crashes up to 40%.<sup>2</sup> WALK NC will install sidewalks where there are gaps in the network, which have been proven to reduce 65-89% of crashes involving pedestrians walking along a roadway.<sup>3</sup> LPIs have also been shown to reduce pedestrian-vehicle crashes

#### **by 13%**.<sup>5</sup> NCDOT calculated a combined **50% reduction in crashes where adding pedestrian WALK traffic signal, crosswalks, and LPIs at signalized**

**intersections.** High-visibility crosswalks, LPIs, and sidewalks are all Federal Highway Administration (FHWA) <u>Proven Safety</u> <u>Countermeasures</u> which have been shown to be effective in reducing roadway fatalities and serious injuries.

WALK NC is consistent with the USDOT's National Roadway Safety Strategy, specifically the Safe System approach in creating safer roads for vulnerable roadway users and encouraging road users to be safer as they travel through North Carolina communities.<sup>4</sup> This is critical for these 15 cities/towns as 13 of them rank higher than the State average for pedestrian crash and fatality rate (see the table on the next page, page 3). Four of the WALK NC communities (Henderson, Roanoke Rapids, Rockingham, and Kinston) have a pedestrian crash rate that is two-times higher than the statewide pedestrian crash rate and two communities (Lexington and Smithfield) have a fatality rate that is three times the statewide fatality rate.

The WALK NC locations in need of pedestrian signal heads are hot spots for non-motorized crashes across the State. Salisbury, Henderson, Wilson, and Kinston have had more than 10 pedestrian crashes occur each year within 250 ft of an NCDOTmaintained traffic signal. Kinston ranks the highest, with 20 pedestrian crashes occurring each year within 250 ft of a signalized intersection.

The RAISE grant will directly benefit vulnerable road users by creating safer crossings in communities that have little to no pedestrian improvements at signalized

<sup>2</sup> FHWA Proven Safety Countermeasures, Crosswalk Visibility Enhancements

- <sup>3</sup> FHWA Proven Safety Countermeasures, Walkways
- <sup>4</sup> USDOT National Roadway Safety Strategy: National Roadway Safety Strategy (transportation.gov)
- <sup>5</sup> FHWA Proven Safety Countermeasures, Leading Pedestrian Interval



intersections. As demonstrated in the table below, Selma, Rockingham, and Hamlet have no NCDOT-maintained pedestrian signalized intersections. If awarded, WALK NC will invest in areas that are disadvantaged and have not been able to provide safe routes for pedestrians to reach their destinations. This RAISE grant will create a safer transportation system for residents within these North Carolina communities.

Residents of the proposed 15 WALK NC communities need these safety improvements. The results of a public engagement survey about the project found that 85% of residents would be more likely to walk if these improvements were made. Eight-four percent (84%) also noted that it was important to them that safety is improved for people crossing at traffic signals in their community. Residents also shared problems they experience at signalized intersections, which included:

- Drivers not stopping for pedestrians
- Poorly marked locations that decrease pedestrian visibility to drivers
- Lack of pedestrian crossings in key destinations like downtown or in locations where children/young adults need to cross
- Gaps in the sidewalk network that make it unsafe to walk

Geographic Area / Division #	Pedestrian Crash Rate	Pedestrian Fatal and Serious Injury Rate	NCDOT-Maintained Signals without Pedestrian Head (%)
Kinston / 2	0.51	0.05	98%
Washington / 2	0.31	0.10	88%
<b>Roanoke Rapids</b> / 4	0.52	0.07	<b>91%</b>
Selma / 4	0.29	0.08	100%
Smithfield / 4	0.32	0.09	82%
Weldon / 4	0.46	0.06	100%
Wilson / 4	0.32	0.05	90%
Henderson / 5	0.64	0.07	98%
Oxford / 5	0.32	0.06	91%
Lumberton / 6	0.33	0.09	86%
Hamlet / 8	0.21	0.02	100%
Rockingham / 8	0.51	0.08	100%
Siler City / 8	0.20	0.01	95%
Lexington / 9	0.29	0.09	93%
Salisbury / 9	0.43	0.05	74%

#### Pedestrian Crash Statistics for WALK NC Cities/Towns.

NC Population	NC Pedestrian Crash Rate	NC Pedestrian Fatality Rate		
9,535,483	0.23	0.046		

This table uses NC crash data that is the annual average from 2011 to 2020.

3-times the NC	2-times the NC	Similar to the NC
Pedestrian Crash Rate	Pedestrian Crash Rate	Pedestrian Crash Rate

WALK NC improvements are expected to reduce pedestrian crashes by 50% and vehicle crashes by 15%.





# How WALK NC Addresses ENVIRONMENTAL SUSTAINABILITY

Encourages residents to choose walking as the preferred mode, which will reduce transportation-related air pollution by encouraging a mode-shift to walking

Implements transportation-efficient design and creates walkable patterns and access to jobs, neighborhoods, and city centers

# Reduces vehicle miles traveled with the mode-shift to walking

WALK NC will create new routes for pedestrians in selected communities to cross intersections. Where possible, crosswalks will be added on each intersection approach if the sidewalk exists. Sidewalk gaps will be filled where needed. In scenarios where no sidewalk exists, crossings will be added so pedestrians can cross in an "L" shape, accessing both sides of the intersection.

#### Reduce Greenhouse Gas Emissions

In North Carolina, transportation makes up 36% of gross greenhouse gas emissions.<sup>6</sup> These emissions decrease the air quality and are a health concern. WALK NC will provide alternatives to motor vehicle travel, create more connections for pedestrians and bicyclists, and reduce carbon emissions. NCDOT distributed a public engagement survey to the WALK NC cities/towns and **85% of residents shared that they would be more likely to walk if pedestrian crossing improvements were made**. With the increased number of safe pedestrian crossings, WALK NC will encourage residents in these communities to walk, which will shift mode travel from vehicles to foot traffic, also reducing the transportation-related air pollution.

## Transportation-Efficient Design

The new WALK NC pedestrian crossings will not only increase walking trips by 1.4%, it also creates a transportation-efficient design that creates walkable patterns for pedestrians to access jobs, neighborhoods, and city centers. These improvements, in particular the LPIs, will reduce the conflicts between pedestrians and vehicles and will increase the likelihood of motorists yielding to pedestrians.



Existing sidewalk conditions in Salisbury

<sup>6</sup> North Carolina Greenhouse Gas Inventory (1990-2030), released January 2022.





# How WALK NC Addresses QUALITY OF LIFE

Connects networks and increases affordable active transportation choices and access to housing, jobs, and recreation

Reduces vehicle dependence by connecting communities

Improves public health by adding new facilities that promote active transportation

#### Installs a systemic set of countermeasures in Areas of Persistent Poverty and Historically Disadvantaged Communities

WALK NC will provide crossings for pedestrians in communities across North Carolina and connect them to downtown areas, 55 parks, 105 grocery stores, 5 colleges/universities, 29 schools, and 5 nursing homes. It will also increase access to affordable active transportation, improve public health by encouraging a modeshift to walking, and invest in underserved communities.



Downtown event in Smithfield, NC

- <sup>7</sup> <u>https://www.census.gov/acs/www/about/why-we-ask-each-question/vehicles/</u>
- <sup>8</sup> Mayo Clinic

### Zero-Vehicle Households

Creating safer pedestrian crossings at intersections will also foster safety within a community where residents select walking as their preferred mode. In the United States there are 8.3% of zerovehicle households, and in North Carolina that number decreases to 5.5%.<sup>7</sup> While statewide, only 5.5% of households are zero-vehicle, the following WALK NC cities/towns are double, or even triple, the State rate of zero-vehicle households:

- Selma: 19.8%
- Rockingham: 18.1%
- Kinston: 17.2%
- Hamlet: 16.6%
- Washington: 16.3%
- Weldon: 16.0%
- Smithfield: 15.1%
- Henderson: 14.8%

With a high number of zero-vehicle households across the WALK NC cities/ towns, this project will connect pedestrians to key destinations and reduce vehicle dependence. It will also improve and provide safer access to those daily destinations in WALK NC communities like jobs, grocery stores, schools, and recreation.

### Improve Public Health

Increasing the number of residents in North Carolina who walk also brings health benefits. Walking can help prevent serious health conditions from occurring and improve mental health by reducing stress.<sup>8</sup> An Oxford resident noted on the WALK NC public engagement survey that they "live in town, however the lack of sidewalks and crosswalks makes it unsafe to walk." The WALK NC project will create new crossings and increase walking by 1.4%, which will also provide a public health benefit.



- Lexington: 13.4%
- Lumberton: 13.3%Salisbury: 12.1%
- Wilson: 11.6%
- Oxford: 10.7%
- Roanoke Rapids: 10.5%
- Roanoke Rapid
  Siler City: 8.5%

#### Invest in Underserved Communities

As previously mentioned within the *Project Description*, WALK NC communities are Areas of Persistent Poverty and Historically Disadvantaged communities. NCDOT's Transportation Disadvantage Index (TDI)<sup>9</sup>, which ranges in score from 6 to 18, was also used to identify those areas that have transportation disadvantages. **The WALK NC cities/towns scored high on the TDI**, **meaning there is a higher transportation disadvantage.** The average TDI score for the WALK NC cities/towns is 11.6.

- Henderson: 12.7
- Weldon: 12.6
- · Lumberton: 12.4
- Siler City: 12.1
- Selma: 12.1
- Roanoke Rapids: 12.0
- Rockingham: 11.7
- Kinston: 11.8
- <sup>9</sup> TDI is a relative statewide measure of 6 metrics of historic disadvantage. <u>https://connect.ncdot.gov/projects/planning/</u> Pages/EJ-TDI-maps.aspx

- Hamlet: 11.7
- Washington: 11.4
- Wilson: 11.4
- Smithfield: 10.9
- Lexington: 10.8
- Oxford: 10.7
- Salisbury: 10.4



"I have trouble accessing my college campus. It can be very unsafe to walk on my campus. If there were WALK signals, I would feel more safe getting around by campus." -Salisbury Resident via NCDOT's Pedestrian Safety Improvements Public Engagement Survey





# How WALK NC Addresses MOBILITY AND COMMUNITY CONNECTIVITY

Bridges gaps in the network by adding crosswalks and pedestrian traffic signal heads at signalized intersections

Installs treatments that increase accessibility for non-motorized road users

Implements countermeasures that communities identified, through public outreach, that they need

Connects the network and provides access to transit, micro-mobility, and mobility on-demand

### **Bridging Gaps**

An intersection is the joining of two roads that connect a community. WALK NC's pedestrian improvements at signalized intersections will bridge the gaps between neighborhoods and bring communities together. WALK NC will install approximately 240 pedestrian WALK traffic signals, 394 curb ramps, and 357 crosswalks. As previously demonstrated in the Project Description and Quality of Life sections, the WALK NC communities are transportation-disadvantaged communities. WALK NC communities also have high concentrations of persons with a disability (13 of the 15 WALK NC communities) and ages 65+ (12 of the 15 WALK NC communities). While the WALK NC improvements will benefit all residents, they will especially help those who need more time to cross.



#### Implementing Universal Design

NCDOT will not only follow the Americans with Disabilities Act (ADA) requirements when implementing WALK NC, but will go further to consider locations that support the National Disability Authority Universal Design principles.<sup>10</sup> NCDOT will make improvements that:

- Are useful and marketable to people with diverse abilities.
- Assist a wide range of individual preferences and abilities.
- Use a design that is easy to understand.



Example of proposed crosswalk in Kinston, NC

"Crosswalks are not properly identified, making it dangerous for pedestrians to walk across the road."-Oxford Resident via NCDOT's Pedestrian Safety Improvements Public Engagement Survey

<sup>10</sup> The 7 Principles of Universal Design



#### Access to Transit, Schools, Jobs, and Other Services

In total, the WALK NC project will connect residents across North Carolina to 678 new destinations. North Carolinians, with the WALK NC improvements, will now be able to access 105 grocery stores, 55 parks, 5 colleges/universities, 29 schools, 14 public libraries, 5 nursing homes, 357 restaurants, and 108 convenience stores.

Example WALK NC Community and its destination connections map. To see the complete set of destination maps for WALK NC Communities go to: <u>https://connect.ncdot.gov/</u> <u>resources/RAISE2023\_WALKNC/Pages/default.aspx</u>

#### Destination within 0.25 miles of Signals in Salisbury, NC 9 grocery stores, 10 parks, 3 colleges/universities, 2 schools, 1 public library, 2 nursing homes, 53 restaurants, and 8 convenience stores ( Restaurants Parks and Recreaction Salisbury Grocery Stores dge Colleges and Universities Esri, HERE, Garmin, SafeGraph, METI/NASA USGS, EPA, NPS, USDA, Esti, NASA, NGA, USGS, FEMA Convenience and Gas US 29:05 70:NC 150 (A) Non-Public Schools T Nursing Homes Public Libraries TI ( Schools Ψ1 (1) (1) ("1) Quarter Mile Buffer ۳ ("1 41 **"1** (1) ("1) (1) (1) (41) (**"1**) ۳I US 29;US 70;NC 150 41 ("1) Map data © OpenStreetMap contributors, Microsoft, Fac Inc. and its affiliates, Esri Community Maps contributors, Map layer by Esri ("1 0.05 0.1 0.2 0.3 0.4 0 Miles



# Incorporating Community Plans and Outreach

WALK NC considers input from the public and incorporates transportation and pedestrian plans from the 15 different cities/towns, demonstrated below. Eightyfive (85)% of residents shared they would be more likely to walk with the WALK NC improvements. Residents also shared their feedback on specific locations that have pedestrian safety concerns. NCDOT will coordinate with each NCDOT Division and City/Town, if awarded this grant, to confirm that updates are being made at State-owned intersections with the greatest need. The majority of these same communities have pedestrian transportation master plans that identified these important safety needs and engaged residents to prioritize improvements. The table below lists each of the pedestrian plans that support WALK NC.

9

GOALS	Create safer crossings for pedestrians in underserved communities	Connect pe jobs and	-	Expand and connect the pedestrian network		
•		Local				
PLANS	Lumberton Comprehensiv Transportation Plan	<u>City of Washington</u> <u>Comprehensive</u> <u>Pedestrian Plan</u>		<u>City of Salisbury</u> <u>Downtown and</u> <u>Mainstreet Plan</u>		
	<u>Town of Selma</u> Land Use Plan 2040	<u>Pedestria</u> <u>Final Re</u>		<u>Roanoke Rapids</u> <u>Pedestrian Plan</u>		
	Rocking County Bicycle and Pedestrian Plan	<u>Compreh</u> <u>Transportat</u> <u>Davidson</u>	tion Plan	<u>Smithfield</u> <u>Pedestrian Plan</u>		
	<u>City of Wilson</u> <u>Pedestrian Plan</u>	<u>Siler City Pe</u> <u>Master</u>		<u>Oxford</u> Pedestrian Plan		
	Weldon Comprehensive Transportation Plan	Kinston Pedestrian Plan (pending publication)				
	Statewide					
	WalkBikeNC: North Carolina Statewide Pedestrian Plan					
OUTCOMES	Pedestrian Safety	Reduced Emissions	Improved Health	Equitable Access		
	ስ			2023 RAISE GRANT		

#### WALK NC Community Plans.



# How WALK NC Addresses ECONOMIC COMPETITIVENESS AND OPPORTUNITY

Prioritizes Disadvantaged Business Enterprise (DBE) contractors to implement the improvements

Connects networks and increases access to areas for residents to travel to jobs

Supports tourism and travel within communities

#### **Reduces the burden of commuting**

WALK NC is economically competitive and provides opportunities for residents in their communities by prioritizing DBE contractors, connecting communities to retail which will increase spending, reducing crashes which have economic savings, and boosting tourism.

#### **Prioritizing DBE Businesses**

WALK NC will make systemic pedestrian improvements at State-owned, signalized intersections across 15 cities/towns in North Carolina. While NCDOT will administer the project, they will work with the Divisions and use contractors to install the traffic signals, crosswalks, and sidewalk gaps. NCDOT ensures all businesses have opportunities to participate in installing projects. NCDOT will consider businesses that are part of the DBE program, specifically Historically Underutilized Businesses, Veteran Owned Businesses, and Minority Businesses Enterprises/Women Business Enterprises. NCDOT regularly provides equal employment opportunities for these types of businesses.<sup>11</sup>

#### Increasing Access to Retail

WALK NC's pedestrian safety improvements will encourage more residents and visitors in the 15 cities/towns to walk to downtown areas and visit retail. With the completion of WALK NC, North Carolinians will be able to access 105 grocery stores, 14 public libraries, and 357 restaurants. It has been demonstrated across the United States that areas that provide safe walking are more economically productive.<sup>12</sup> The WALK NC safer pedestrian crossings coupled with an increase in pedestrian traffic will help revitalize rural main streets where residents can reinvest in their communities.

#### **Boost Tourism in Communities**

The WALK NC improvements will also support tourism in each of the 15 cities/ towns. The addition of pedestrian WALK traffic signals, crosswalks, and filling sidewalk gaps will help visitors access the downtown areas, retail, and attractions safely.



Downtown business in Roanoke Rapids, NC

<sup>12</sup> Quednau, R. (2018, Jan). <u>Why Walkable Streets are More Economically Productive</u>



<sup>&</sup>lt;sup>11</sup> NCDOT Small Business

#### **Crash Cost Savings**

Creating safer crossings for pedestrians will also reduce the number of pedestrianrelated crashes, which has an economic affect to society. One traffic-related fatality in a rural area costs North Carolina \$10,519,000.<sup>13</sup> These costs affect not only the greater society, but the family members and community. In rural, areas of persistent poverty and historically-disadvantaged communities a fatality not only equates to a significant loss of life, it's a loss of income for the family and a loss of someone who contributes to their community. "As a result of the lack of crosswalks and pedestrian signalized intersections, youth under the age of 18 have been struck by automobiles. There is little to no pedestrian safety in this town." -Siler City Resident via the NCDOT Pedestrian Safety Improvements Public Engagement Survey



Downtown Salisbury, NC

<sup>13</sup> 2019 Standardized Crash Cost Estimates for North Carolina





### How WALK NC Addresses STATE OF GOOD REPAIR

Modernizes the existing infrastructure by updating traffic signal design, loop detection, and traffic signal plans

Ties into statewide traffic signal programming system upgrades

#### Creates new infrastructure for disadvantaged communities

Improves the condition of existing transportation infrastructure by adding pedestrian traffic signal heads and closing gaps in the sidewalk network

The WALK NC pedestrian signalized improvements will include modernizing the traffic signal controllers, updating traffic signal design and components, traffic signal system upgrades, new crosswalks, ADA features, and sidewalks. This modernization will reduce maintenance costs, and when there is a failure of the traffic signal NCDOT headquarters will be notified immediately. The traffic signals in the WALK NC communities, currently do not notify NCDOT if a traffic signal is not functioning. A resident has to call in to complain before NCDOT knows to dispatch, and in WALK NC cities/towns, the traffic signal failures are not called in and can go unknown for weeks. These data modernizations enable maintenance and operations staff to provide quicker, more robust levels of service. Providing

that higher level of service translates into improved traffic signal coordination, which can reduce congestion, number of crashes and crash rates.

NCDOT is modernizing the traffic signals statewide, however the WALK NC communities, if awarded the RAISE grant, will be some of the first to receive the modernization and new traffic signal cabinets. The improvements will help keep the traffic signal and traffic signal control hardware maintained and in a state of good repair. The new software system installed will also allow the WALK NC communities to upgrade their traffic signal systems to the same platform at **no cost.** This will greatly enhance safety, while at the same time offering a low-cost option for the WALK NC communities to update other aging traffic signal infrastructure.

The addition of pedestrian WALK traffic signals at intersections, coupled with traffic signal improvements, creates new infrastructure for disadvantaged communities and improves the existing infrastructure. WALK NC will install approximately 240 pedestrian WALK traffic signals, 394 curb ramps, and 357 crosswalks. These improvements will close gaps in the sidewalk network and improve walking conditions for the WALK NC cities/towns.





2023 RAISE GRANT 12



# How WALK NC Addresses PARTNERSHIP AND COLLABORATION

Engages residents across North Carolina to gather their input into what these improvements could do for their community

Supports community plans to make roadways safer for pedestrians

#### Engages local, regional, and State staff

NCDOT conducted public outreach to each of the WALK NC cities/towns to get their feedback on whether the improvements would increase walking in their community and have them share their specific pedestrian safety concerns. Eighty-four (84)% of respondents emphasized that improving safety for pedestrian crossing at traffic signals in their community was very important. Eight-five (85)% also shared that if the WALK phases and marked crosswalks at signalized intersections improvements were made, they would be more likely to walk in their community. Residents in the WALK NC communities want these changes and need NCDOT to make pedestrian improvements. Respondents shared concerns with specific locations, but overall there was a common theme that there are a lack of pedestrian crossings and pedestrian traffic signals in their communities and that residents' safety is at risk because these improvements have not been made.

While there has been overwhelming support for the WALK NC improvements, the public engagement and work with the cities/towns does not stop here at grant writing. NCDOT will conduct a walk audit in each WALK NC city/town along the route of the traffic signals and identify safety concerns for future projects. NCDOT will also work with the NCDOT Divisions and local cities/towns to host public engagement meetings at local community centers such as parks and schools to inform residents about the project and hear any of their concerns. All handout materials for WALK NC will be printed in both English and Spanish. NCDOT will also work specifically with the Lumbee Tribe in Robeson County to provide feedback on the WALK NC project as many of the Lumbee call Lumberton home.



Intersection in Salisbury, NC with faded crosswalk markings

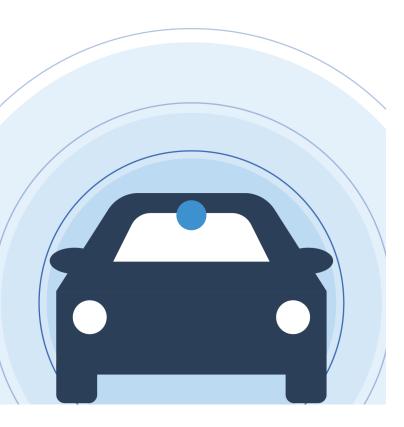




#### How WALK NC Addresses INNOVATION

Traffic signal updates provide opportunities for a future with connected vehicle technology

Systemic project delivery approach where NCDOT is applying treatments at high-risk locations across North Carolina



WALK NC takes an innovative approach with respect to project delivery, the systemic application of recent State-level safety research, modern traffic signal controllers, and future opportunities associated with connected vehicle technology. These approaches support key Federal policy initiatives.

#### Modern Traffic Signal Controllers

NCDOT, statewide, will be modernizing traffic signals over the next 7-10 years. If awarded the RAISE grant, the WALK NC Areas of Persistent Poverty and Historically Disadvantaged cities/towns will be some of the first communities to receive the modern traffic signal controllers.

NCDOT recently finalized statewide requirements for new and innovative traffic signal controllers along with a traffic signal system software. If awarded the RAISE grant, the WALK NC cities/towns receive the updates from 30-year-old technologies to new controllers and traffic signal software. These improvements will allow for innovation to take place including:

- Remote software updates, which eliminate the need for staff to be on-site for system upgrades.
- Enable support for connected and autonomous vehicles.
- Program LPIs and more efficient flashing yellow arrows, without the need for complex logic programming.
- Extending walk times to tailor crossing times based on community needs.
- Upgrade traffic signal systems at no cost, which will enhance safety by offering a low-cost avenue for municipalities to upgrade their aging traffic signal systems to modern software and hardware.



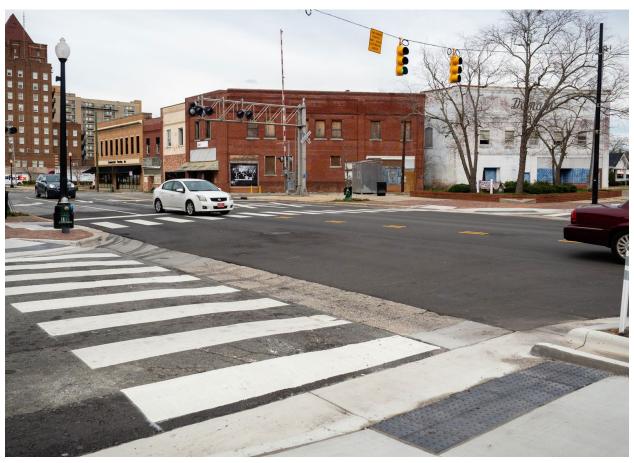
# Application of Systemic Safety and State Research

NCDOT evaluated several mid-size cities/ towns in North Carolina for potential pedestrian safety concerns. This systemic screening used pedestrian crashes, population estimates, socioeconomic profiles, and USDOT's historic disadvantage layer to identify 15 cities/towns selected for widespread pedestrian improvements. NCDOT further screened locations within each community based on pedestrian infrastructure and accessibility for potential traffic signal improvements. This provided a draft list of sites to be improved; however, NCDOT will prioritize improvements based on more detailed site review. NCDOT will use findings from the State's recently completed Quantification of Systemic Risk Factors for Pedestrian Safety in North

Carolina research project (October 2022) to further prioritize need based on risk factors mapped on the State's public road network.

#### **Project Delivery**

NCDOT will deliver the project by bundling the improvements across each Division and partnering with local agencies to coordinate on utility relocation, public education, and traffic control during construction. NCDOT will use contractors as part of the agency's DBE program, specifically Historically Underutilized Businesses, Veteran Owned Businesses, and Minority Businesses Enterprises/Women Business Enterprises. NCDOT will work with its Division offices to prioritize these contractors in the communities where the installation work will occur.



Crosswalk in Kinston, NC

