DURHAM REPAIR

DURHAM RAIL-CROSSING ENGAGEMENT, PLANNING, AND INNOVATIVE REVITALIZATION

2022 Rail Crossing Elimination Program Grant Application

Submitted:

October 11, 2022

Funding Opportunity #

FR-RCE-22-001

Funding Opportunity Title:

FY 2022 Railroad Crossing Elimination Grant Program

Prepared for:

U.S. Department of Transportation, Federal Railroad Administration

In Partnership With

DURHAM COUNTY · GO Triangle · CITY OF DURHAM · NORTH CAROLINA RAILROAD COMPANY

Brenda Howerton, *Chair*
3325 Tarleton West
Durham, NC 27713
Email: bhowerton@dconc.gov

Wendy Jacobs, *Vice-Chair*
4308 Rivermont Road
Durham, NC 27712
Email: wjacobs@dconc.gov

COUNTY OF DURHAM
BOARD OF COMMISSIONERS

Nida Allam
104 Wellwater Ave
Durham, NC 27703
Email: nallam@dconc.gov

Nimasheena Burns
1727 Great Bend Drive
Durham, NC 27704
Email: nburns@dconc.gov

Heidi Carter
31 Falling Water Drive
Durham, NC 27713
Email: hcarter@dconc.gov

October 5, 2022

Administrator Amit Bose
Federal Railroad Administration
United States Department of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590

Dear Administrator Bose,

On behalf of the Durham County Board of Commissioners, I am pleased to submit this FY22 Railroad Crossing Elimination (RCE) Program Grant Application for the Durham Rail-crossing Engagement, Planning, And Innovative Revitalization (Durham REPAIR) (the "Project"). Durham REPAIR calls for a fresh look at three railroad grade crossings in East Durham at Plum Street, Driver Street, and Ellis Road. Over the past 25 years, there have been nineteen crashes causing three fatalities and nine injuries at these crossings.

Since the three crossings are adjacent to each other and are the connecting passages to both sides of the railroad, they should be studied jointly as a system. In addition, these crossings are critical connections for East Durham and support the economic vitality, neighborhood cohesiveness, and mobility options for our residents. These crossings are in a USDOT Historically Disadvantaged Community and thus should be prioritized for needed safety improvements while also being acutely sensitive to and providing mitigation for any impacts of the project. Durham REPAIR will support planning, community engagement, and environmental review to define the build alternatives, and preliminary engineering design for the selected alternative. Durham REPAIR will plan for a holistic network and community solution that improves safety while also enhancing economic, social, and mobility goals.

We are confident this project will help mitigate systemic safety issues. Additional anticipated benefits include improved air quality from reduced idling emissions, quicker emergency services response, enhanced trip reliability, and boosted community economic drivers.

I appreciate your consideration of this critical infrastructure Project. Should you have any questions regarding our application, please do not hesitate to contact Durham County Transportation Manager, Ellen Beckmann, at (984)439-9328 or via email at ebeckmann@dconc.gov.

Sincerely,

Brenda Howerton

Brenda Howerton, Chair
Durham Board of County Commissioners

Table of Contents

Application Snapshot

Project Title: Durham Rail-crossing Engagement, Planning, and Innovative Revitalization (Durham REPAIR)

Applicant: Durham County

Application Contact: Ellen Beckmann, Transportation Manager
(C) (984) 439-9328, (E) ebeckmann@dconc.gov

Employer Identification Number (EIN): 566000297

Unique Entity Identifier (UEI): LJ5BA6U2HLM7

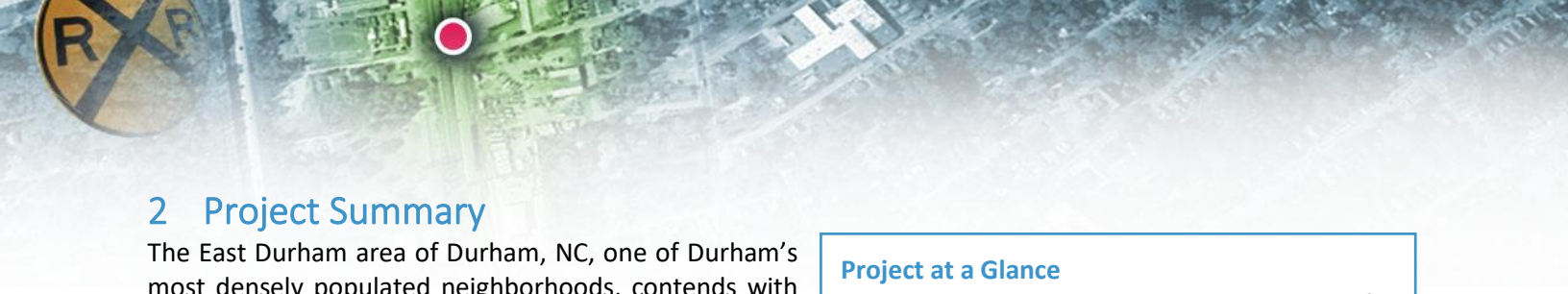
Location of Supplemental Materials: https://www.dconc.gov/repair

List of Figures

List of Tables

1 Cover Page

Project Title	Durham Rail-crossing Engagement, Planning, and Innovative Revitalization (Durham REPAIR)
Applicant	Durham County
Federal Funding Requested Under this NOFO	$1,220,000
Proposed Non-Federal Match	$305,000
	In-Kind: $0
Does some or all of the proposed Non-Federal Match for the total project cost consist of preliminary engineering costs incurred before project selection?	No
Other Sources of Federal funding, if applicable	Source: N/A
	$: N/A
Was a Federal Grant Application Previously Submitted for this Project?	No
City(-ies), State(s) Where the Project is Located	Durham County, North Carolina
Congressional District(s) Where the Project is Located	North Carolina 4th Congressional District
Is this project identified in:	
The freight investment plan component of a State freight plan, as required under Section 70202(b)(9)	Yes, includes grade separation of Ellis Road (735236Y)
A State rail plan prepared in accordance with Chapter 227; or	
A State highway-rail grade crossing action plan, as required under section 11401(b) of Passenger Rail Reform and Investment Act of 2015 (title XI of Public Law 114-94)	During the analysis period of the plan, train-vehicle crashes were recorded at Plum Street and Driver Street.
Is the Project Located in a Rural Area or on Tribal Land?	No
Is the project eligible for a funding set-aside in Section B.1?	Yes, for Planning Projects
If the Project is located in a Rural Area or Tribal Land, is the Project Located in a county with 20 or fewer residents per square mile, according to the most recent decennial census	N/A
U.S. DOT Crossing Number(s) (if applicable)	630472K , 735236Y, 630471D
Is the Project located on real property owned by someone other than the applicant?	Yes, North Carolina Railroad Company (NCRR) owns the railroad ROW.



2 Project Summary

The East Durham area of Durham, NC, one of Durham's most densely populated neighborhoods, contends with several challenges to safety and mobility, including an active rail line with all-day freight and intercity movements; residential, commercial, and civic uses interspersed with rail-served industries; freight switching activities over wide at-grade crossings; and a street network that has not kept pace with evolving automobile and active transportation needs. The predominantly Black and Hispanic neighborhood continues to struggle with the legacy of construction of the Durham Freeway (NC 147) in the 1960's and 1970's, which divided East Durham, and there is an opportunity to meaningfully improve safety and mobility in the area, starting with attention to three at-grade railroad crossings.

The Durham Rail-crossing Engagement, Planning, And Innovative Revitalization (Durham REPAIR) Project (the "Project") will take a fresh look at studying alternative options for separation or closure of three adjacent railroad crossings in Durham County. The crossings located at Plum Street, Driver Street, and Ellis Road require action due to the historic and anticipated roadway and rail traffic levels and their crash histories. Freight switching operations occur over these wide, complex crossings, which have six, four, and three tracks, respectively. These three crossings work together as a network and need to be studied together to determine the best mix of solutions to improve safety while not limiting mobility.

Project at a Glance

Durham REPAIR will study alternative options for separation or closure of three adjacent at-grade railroad crossings in East Durham.

Purpose and Need

The rail crossings at Plum Street, Driver Street and Ellis Road require action due to the historic and anticipated roadway and rail traffic levels and their crash histories. Freight switching operations occur over these wide, complex crossings which have six, four, and three tracks, respectively.

Goals

- Support planning, community engagement, and environmental review to define the build and preferred alternatives
- Preliminary engineering design for the selected alternative.

Potential Benefits from Future Implementation

Crashes Avoided

Closure and/or grade separated crossings will reduce incidents between trains and vehicles, trucks, school buses, pedestrians and bikers

Community Booster

A safer, more connected neighborhood will improve community cohesiveness and expand mobility options

Economic Growth

Improvements will unify the areas into a gateway that encourages commerce

Emergency Services Response Time

First responders will address emergencies quicker

Reliability and Travel Time Savings

Travelers will be able to plan their trips not accounting for potential delays due to train traffic

Idling Emission Reduction

The reduction in vehicle idling at the crossing will diminish additional fuel at the at-grade crossings

3 Project Funding

Durham County is requesting RCE funds to assist in the planning, community engagement, preliminary engineering, and environmental review of the Project estimated at $1,525,000. The Project funding table is presented in Table 1 and the Project funding sources are presented in Table 2. Additional budget information is included in Attachment C. Federal funding is needed to deliver this critical Project and without the assistance of the FRA, these crossings will remain a dangerous safety issue in this historically neglected community.

Local funding is committed to provide a 20% non-federal match totaling $305,000. This local match funding for the study will be provided by project partner GoTriangle. This non-federal match will leverage FRA's contribution of federal dollars from the RCE program to deliver the project's significant benefits in a more efficient manner for the benefit of the region and nation. These funds were allocated to this study effort by the GoTriangle Board of Trustees on September 28, 2022 in anticipation of this grant application and do not have a sunset date, so there will be no challenges providing the specified non-

federal match for Durham REPAIR. Documentation is included in this application demonstrating commitment of the local match (see Letter of Financial Commitment in Attachment E). The Project has not received any specifically allocated federal funding.

Table 1: Project Funding Table

Task #	Task Name	Federal (FRA) Contribution	Non-Federal Contribution	Total Cost	Percentage of Total Project Cost
1	Detailed Project Work Plan, Budget, and Schedule	$0	$25,000	$25,000	2%
2	Community Engagement	$0	$150,000	$150,000	10%
3	Planning – Over/Under Study (with Closing Options)	$120,000	$130,000	$250,000	16%
4	Preliminary Engineering of Selected Alternative (30%)	$550,000	$0	$550,000	36%
5	Environmental Review	$550,000	$0	$550,000	36%
Total Project Cost		$1,220,000	$305,000	$1,525,000	100%

Note: Budget allocates 8% of total cost for contingencies.

Table 2: Project Funding Sources

Funding Source	Project Contribution Amount	Percentage of Total Project Cost
Federal Contribution (Amount of FRA Grant)	$1,220,000	80%
Non-Federal Contribution (GoTriangle)	$305,000	20%
Total Project Cost	$1,525,000	100%

4 Applicant Eligibility

As a unit of local government, Durham County meets the applicant eligibility criteria outlined in Section C of the Notice of Funding Opportunity (NOFO). Durham County is one of the State's 100 counties as established in the North Carolina General Statues Chapter 153A.[1]

5 Detailed Project Description

5.1 Project History

Durham REPAIR is located in the City of Durham within Durham County, North Carolina. The City of Durham is the County's only municipality. Services are coordinated between the City and the County, including the Durham City-County Planning Department, which is the joint planning agency for Durham County and the City of Durham. Guided by the City's Strategic Plan and the joint City-County Comprehensive Plan, the department helps to ensure that the city has connected, engaged, and diverse communities by enhancing housing quality and affordability for Durham residents.

5.1.1 Establishment

The City of Durham was founded in 1869 as a rail and tobacco town. Durham County was formed on April 17, 1881, from portions of land transferred into the county from surrounding Wake and Orange Counties. Transportation in Durham has evolved over the years. Durham adopted an electric streetcar network in 1902 that was shortly replaced by a bus system in 1930. People generally walked to reach transit then, much as they do today.

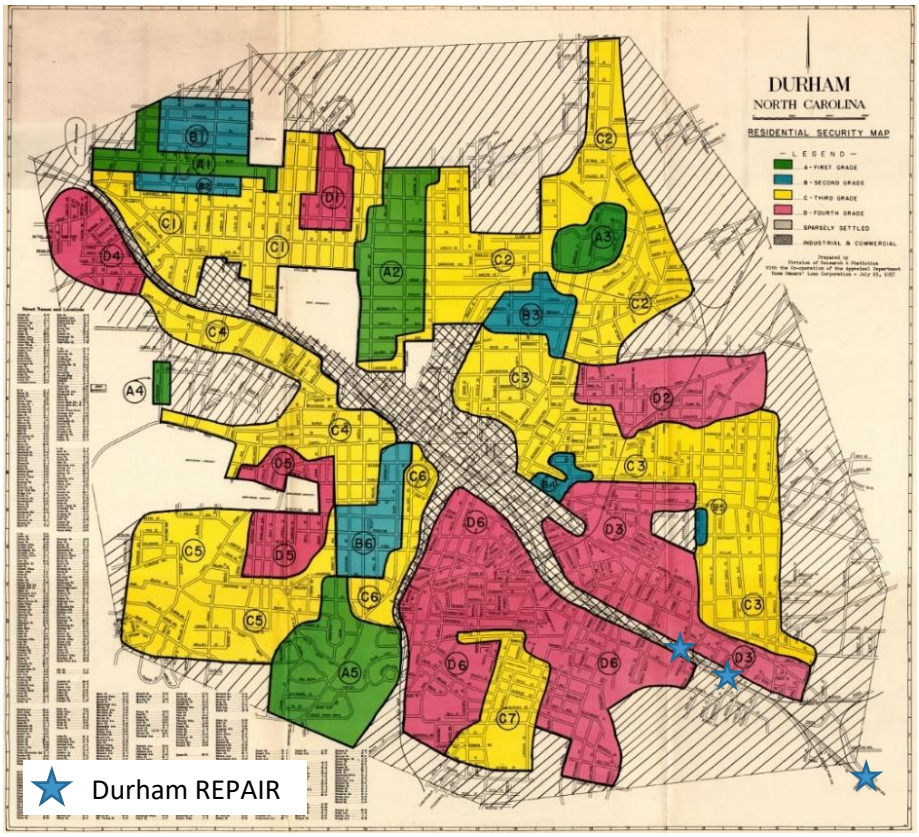
[1] https://www.ncleg.net/EnactedLegislation/Statutes/PDF/ByChapter/Chapter_153A.pdf

The East Durham neighborhood is one of Durham's most densely populated neighborhoods. The neighborhood evolved in the mid-19th Century from larger farmsteads and presently, many of these moderately-sized houses are being purchased by residents who desire affordable housing convenient to their places of employment.

5.1.2 1930's Redlining

Starting in the 1930s, "redlining" had a profound impact on East Durham including the area surrounding the Durham REPAIR project crossings, and the effects are still felt today. The use of Residential Security Maps, as shown in Figure 1, developed by the Home Owners' Loan Corporation (HOLC), were meant to indicate the level of risk of real estate investments in more than 200 surveyed cities across the country. Based on input from local brokers and appraisers, neighborhoods were assigned letter grades, with FHA guaranteed loans made almost exclusively in the A and B zones. C zones were considered to be in decline and D zones high risk, due in large part to their racial composition, and "obsolete" housing stock. These areas were outlined in orange and red on the HOLC maps, or "Redlined." It was nearly impossible to get a residential mortgage in a C or D Zone. In Durham, the D neighborhoods were often the lowest lying areas topographically, the poorest, and almost exclusively African American. Investment in these areas between 1934 and 1968 was almost nonexistent due to the scarcity of capital. Although the use of Security Maps became illegal with the Civil Rights Act of 1968, many of the redlined areas in Durham—including the area surrounding the Durham REPAIR project crossings—continue to display significantly lower property values, lower rates of home ownership, lower credit scores, and higher rates of economic and racial segregation that their neighbors.

Figure 1: Durham Residential Security Map, 1937



Source: https://www.opendurham.org/tours/2019-preservation-durham-home-tour

5.1.3 1970's Urban Renewal

The East Durham neighborhood contains higher concentrations of Hispanic populations and also includes the Hayti Neighborhood, which is a historically Black neighborhood that was severely impacted by the construction of the Durham Freeway (NC 147).

During the 1970's, as part of Durham's Urban Renewal program, NC 147 was built to provide a high-speed vehicle connection from Research Triangle Park (RTP) to Central Durham. NC 147's entire length is classified as a limited access freeway, linking NC 540 in Morrisville with RTP, Downtown Durham, and Interstates 40, 85, and the recently-designated 885. NC 147's path through Durham destroyed well-established African American communities, like the Hayti community. As a result of NC 147's construction, African American businesses, homes, and places of worship were demolished and residents were permanently displaced, as shown in Figure 2. Figure 3 illustrates the vicinity of the Hayti area to Durham Repair.

Figure 2: Transformation of the Hayti Area between 1950 and 1972

Source: Move Durham: Central Durham Transportation Study (2020)

Figure 3: Proximity of Hayti Area to Durham REPAIR

Source: https://www.bullcity150.org/portfolio_page/aerial-photos-of-hayti-before-urban-renewal-map/

5.1.4 Durham County Today

Today, NC 147 serves as a primary route through Durham County with between 60,000 and 80,000 vehicles driving the corridor every day. However, the impact on adjacent communities can still be felt, and NC 147 represents a significant barrier to access for many Durham residents, particularly for those without access to a vehicle. In the four Census block groups surrounding the subject crossings, 20% of households have zero vehicles available and 45% of households have only one vehicle available. The number of zero vehicle households in the study area is significantly higher than in Durham County as a whole (countywide, 7% of households have no vehicles available) and the State of North Carolina (statewide, 5% of households have no vehicles available).

5.2 Trip Purpose

As shown in Table 3, around the three railroad crossings, the primary trip mode is private auto, followed by auto passenger. At Plum Street, 6.0% of trips are pedestrians and 2.3% of the trips are bikers. It should be noted, bicycle trips increased at all three locations from 2019 to 2021. Attachment H describes in further detail the trip patterns in the study area.

Table 3: Trip Mode at Each of the At-Grade Rail Crossings (Percentage, 2021)

Trip Mode	Plum Street	Driver Street	Ellis Road
Private auto[1]	58.0%	67.5%	72.6%
Auto passenger[2]	25.3%	24.5%	24.4%
Commercial vehicle (freight)	8.5%	5.5%	1.9%
Taxi/Ride-hailing service	0.1%	0.5%	0.4%
Walking	6.0%	1.0%	0.4%
Biking	2.3%	0.6%	0.3%
TOTAL	100.0%	~100%	100.0%

Source: Replica

Notes:

[1] Private auto: Trips made by drivers in private auto vehicles. This is equivalent to the number of private auto vehicle movements.

[2] Auto passenger: Trips made by passengers in private auto vehicles. Combine this number with the number of private auto trips to get the number of people who traveled in private autos.

School buses are not captured in this analysis.

The crossings serve as a connector between each side of the railroad. Table 4 and Table 5 describe how the majority of the trips are local. Most of the trips are less than 16 miles long and last for 10 to 20 minutes.

Table 4: Trip Distance at Each of the At-Grade Rail Crossings (Percentage, 2021)

Travel Distance	Plum Street	Driver Street	Ellis Road
Under 0.5 mi	1.9%	0.1%	0.1%
0.5-1 mi	3.0%	0.8%	0.3%
1-2 mi	12.3%	3.2%	0.7%
2-4 mi	19.7%	9.5%	4.3%
4-8 mi	26.9%	18.2%	28.9%
8-16 mi	15.1%	33.9%	49.7%
16-32 mi	12.1%	20.3%	12.5%
32-64 mi	7.5%	8.5%	2.4%
Over 64 mi	1.4%	5.5%	1.0%
TOTAL	**100.0%**	**100.0%**	**100.0%**

Source: Replica

Table 5: Trip Travel Time at Each of the At-Grade Rail Crossings (Percentage, 2021)

Travel Time	Plum Street	Driver Street	Ellis Road
Under 5 min	14.3%	3.0%	1.2%
5-10 min	21.9%	14.3%	10.3%
10-20 min	36.3%	41.4%	58.4%
20-40 min	17.8%	27.4%	26.1%
40-80 min	8.7%	9.0%	3.1%
Over 80 min	1.1%	4.9%	0.9%
TOTAL	**100.0%**	**100.0%**	**100.0%**

Source: Replica

5.3 Prior Studies

Almost 10 years ago, NCDOT conducted a larger study that included these crossings. The study recommended closure of one crossing and separation of another, but the recommendations have not moved forward because there was insufficient public involvement. Since that study, the crossings have continued to be identified as safety problems and barriers to mobility in locally-driven studies with more purposeful community engagement.

Durham REPAIR calls for a fresh look to identify community-supported solutions. It will support planning, community engagement, and environmental review to define the build alternatives, and preliminary engineering design for the selected alternative. Durham REPAIR will be a comprehensive study with robust equitable public engagement at every step of the way, to increase community trust, to consider the holistic transportation network and community goals, and to develop a community-supported solution. Anticipated benefits include avoidance of vehicle and bike/ped crashes, improved air quality from reduced idling emissions, improved emergency services response, and improved trip reliability, among other benefits.

Relevant previous studies include:

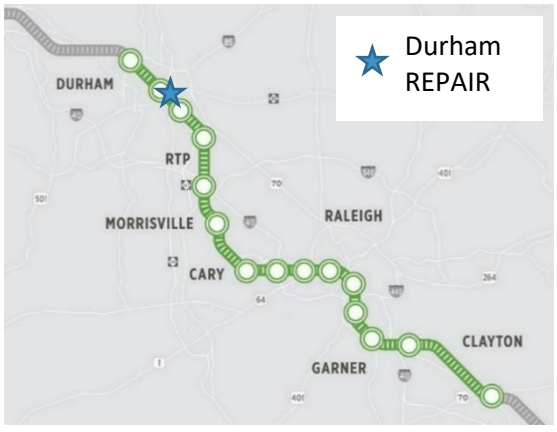
- **North Carolina Department of Transportation, City of Durham Traffic Separation Study (2014)** – This study of 18 at-grade crossings within the City of Durham identified significant safety concerns at the Plum Street, Driver Street, and Ellis Road crossings. During the study vehicles were observed queuing over the tracks and getting hit by the gates at all three locations. This study recommended closure of Plum Street, extension of Briggs Avenue, east of Driver Street, to create a new grade separated crossing, and grade separation of Ellis Road. All of the recommendations of this study were not endorsed by the City Council due to insufficient community support. However, some of the recommendations of this study were supported and have been incorporated into the Durham -Chapel Hill-Carrboro Metropolitan Planning Organization's Comprehensive Transportation Plan, including the new grade separated crossing at Briggs Avenue and the grade separation of Ellis Road.
- **City of Durham, Durham Bike+Walk Implementation Plan (2017)** – This plan proposes improved pedestrian and bicycle infrastructure along the south side of the tracks on Pettigrew Street adjacent to the Plum and Driver Street crossings. Public involvement highlighted in this study identified a specific need for improved pedestrian and bicycle infrastructure to cross the railroad corridor at Driver Street.
- **City of Durham, Move Durham: Central Durham Transportation Study (2020)** – Throughout both phases of Move Durham outreach, users consistently identified the Durham Freeway and the railroad corridor as a barrier of connectivity. The Plum Street, Driver Street, and Ellis Road crossings were identified as among the lowest-quality locations in the study area. The study recommended prioritizing bicycle and pedestrian crossings of the Durham Freeway and the railroad corridor to increase neighborhood connectivity and mobility options.

Durham REPAIR will build upon these past planning efforts but will provide a fresh perspective. By focusing on a smaller project scope (three crossings) than prior studies, Durham REPAIR will plan for a holistic network and community solution that improves safety while also enhancing economic, social, and mobility goals. Community engagement will be a vital part of Durham REPAIR to build trust with the local community and make sure that the residents most affected by projects have influence on the outcomes. A detailed Statement of Work is included in Attachment A.

5.4 Planned Commuter Rail

The Durham REPAIR crossings are also located within the corridor of planned commuter rail service that would run in the existing North Carolina Railroad corridor as shown in Figure 4 and add more than 40 train movements per day. A feasibility study to identify implementation options is currently

Figure 4: Proposed Commuter Rail Stations



underway, with schedules estimating that service could begin as early as 10-12 years from now. Funding to begin implementation is included in the Durham and Wake County transit plans, and the project is included in the 2050 Metropolitan Transportation Plans adopted by the region's two metropolitan planning organizations.

6 Project Location

The Project is located in Durham County, North Carolina and is in North Carolina Congressional District 4, as shown in Figure 5. A description of each of the individual crossing locations is described below. Geospatial data for the Project is presented in Table 6. Additional site photos are included in Attachment K.

Figure 5: Project Map

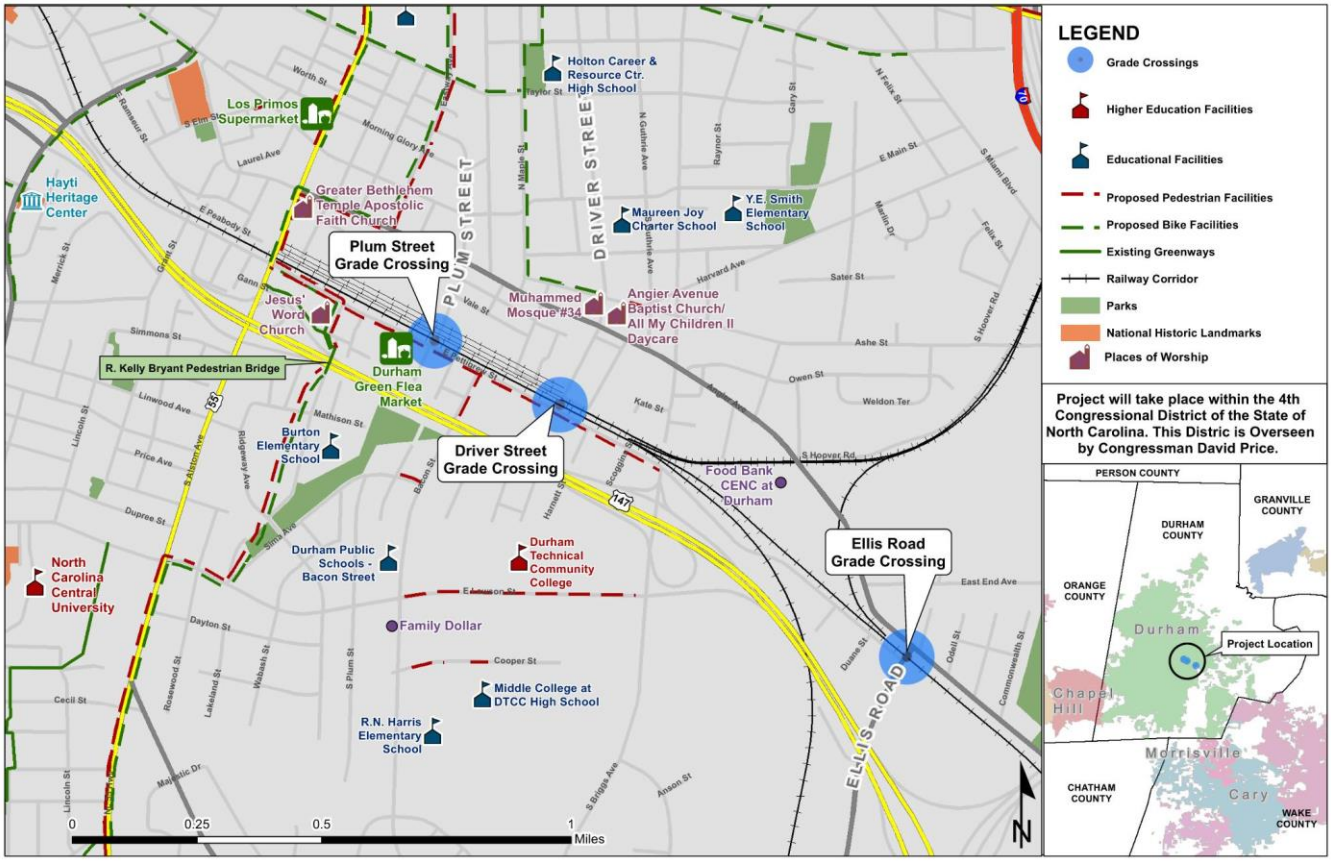


Table 6: Project Geospatial Data

Crossing #	Crossing Location	Latitude	Longitude	Milepost	Subdivision
630472K	Plum Street	35.981753	-78.883657	0056.430 NC	Danville
630471D	Driver Street	35.979861	-78.879236	0056.710 NC	Danville
735236Y	Ellis Road	35.972535	-78.866857	0057.580	Danville

6.1 Plum Street

Plum Street, shown in Figure 6, crosses mainline tracks and freight switching and storage tracks. Trains move back and forth across Plum Street slowly and frequently. Pedestrians and bicyclists cross the railroad tracks on Plum Street and there are no sidewalks across the tracks. Plum Street north of Pettigrew Street is a shared bike roadway. This crossing is most frequently used by pedestrians on the weekends, when the Durham Green Flea Market is open. The Durham Green Flea Market ("La Pulga de Durham") is in the southwest quadrant and is an important business in the neighborhood. Minority and low-income neighborhoods are located further north and

south of the tracks. The East Durham Historic District is northeast of the crossing, bound by Vale Street on the south and Plum Street on the west.

Figure 6: Plum Street Crossing

6.2 Driver Street

Driver Street, shown in Figure 7, also crosses mainline tracks and freight switching and storage tracks. Trains move back and forth across Driver Street slowly and frequently. Peabody Street is parallel with the tracks to the north, and Pettigrew Street is parallel with the tracks to the south. Both streets intersect with Driver Street with traffic signals. Driver Street crosses through a small commercial area north of the tracks before transitioning to primarily residential. South of the tracks, Driver Street tees into Pettigrew Street. Land uses adjacent to the crossing are primarily commercial and light industrial, with residential in the surrounding neighborhoods.

Figure 7: Driver Street Crossing

Historically, there have been problems with the traffic signal at this crossing, including vehicles getting trapped over the railroad tracks. NCDOT has installed new signal equipment that is functioning correctly and has helped mitigate the problems. However, it is likely that vehicles stop on the tracks because of the short distance between the southbound stop sign and the four tracks. Pedestrians and bicyclists use this crossing constantly. Sidewalks are on both sides of Driver Street north of Peabody Street (but none across the tracks) and Driver Street is a shared bike roadway. Durham County school buses transporting students use this crossing 16 times each day and noted existing issues with clearing the railroad tracks because of the proximity of the Driver Street/Pettigrew Street intersection.

6.3 Ellis Road

Figure 8: Ellis Road Crossing

The Ellis Road crossing, shown in Figure 8, is on the mainline and is adjacent to a Norfolk Southern storage yard and switching stations, which results in trains slowly and frequently crossing Ellis Road. Ellis Road has gates on all four quadrants. Angier Avenue is parallel with the tracks to the north, and Pettigrew Street is parallel to the south, both approximately 100 feet from the tracks. Both intersect Ellis Road with a traffic signal which was installed in August 2010. Ellis Road tees into Angier Avenue on the north. On the south, it crosses under NC 147, parallels NC 147 before crossing NC 147 with an interchange further south, crosses the railroad again, and then tees into Miami Boulevard. Land uses on the south side are commercial, industrial, or related to the railroad, and land uses on the north are a combination of residential, church, and small businesses.

Bicyclists and pedestrians utilize this crossing, although no sidewalks or bike lanes are available. The Durham bike map[2] identifies that Ellis Road between Angier Avenue and Miami Boulevard is often used by experienced cyclists, but it is not a designated route. Durham County school buses transporting students use this crossing 54 times each day, and school district officials have noted existing issues with clearing the railroad tracks because of the proximity of the Ellis Road/Angier Road intersection. Backups on Ellis Road because of the rail yard can cause delay, so emergency vehicles may avoid this crossing.

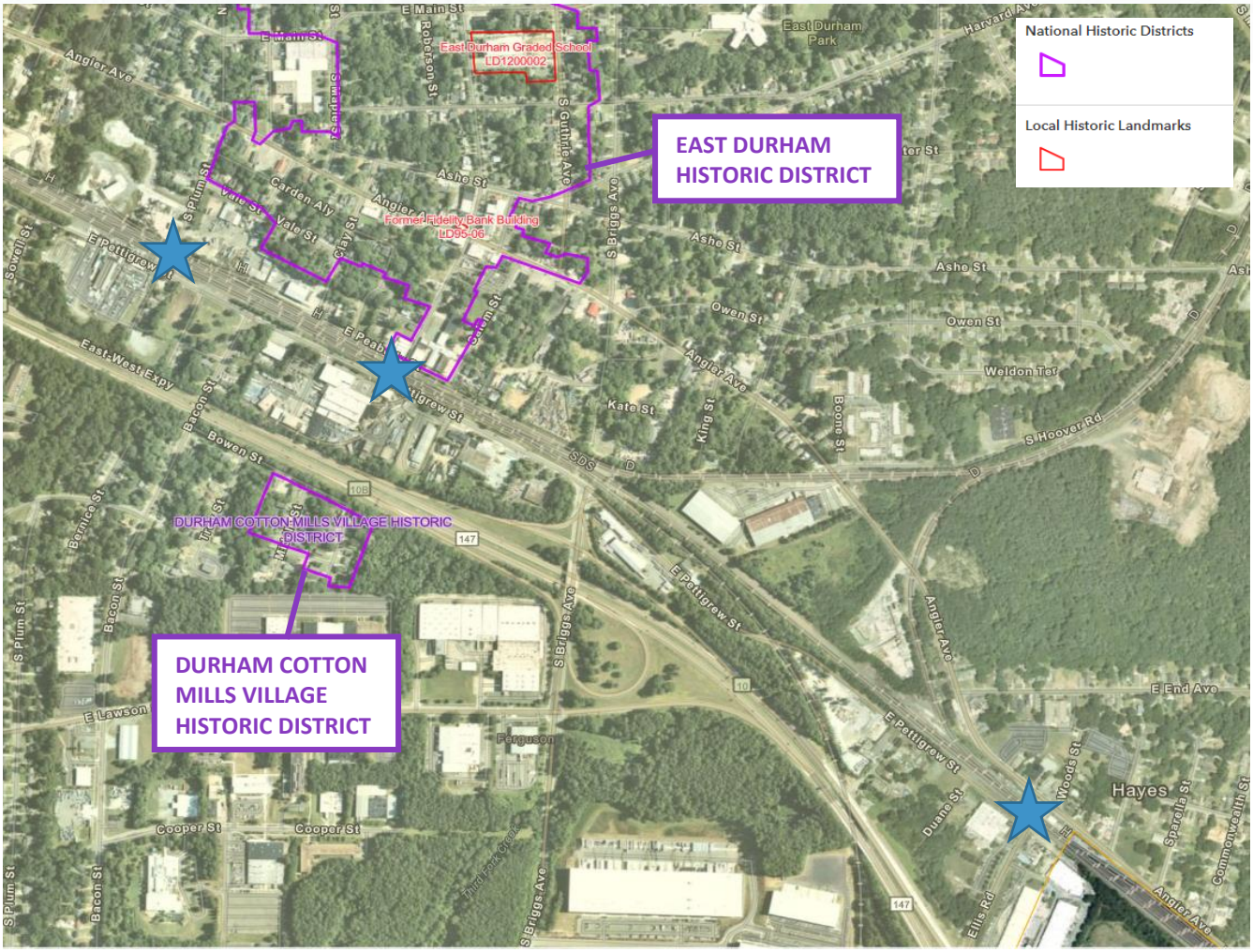
6.4 Historic Districts and Landmarks

There are two National Historic Districts and Local Historic Landmarks in the project area, as shown in Figure 9. The East Durham National Historic District (DH2184) in on the north part of the Durham REPAIR area. The district encompasses 731 contributing buildings and 1 contributing site (Barbee Graveyard). The buildings primarily date between about 1890 and 1955 and include notable examples of Classical Revival and Queen Anne architecture. Notable buildings include the Holloway Street School, East Durham Junior High School, Advent Christian Church, John Cheek House, Community Groceries, George Brown Grocery Store, Seagroves Grocery Store, and The People's Bank.

Also, the Durham Cotton Mills Village National Historic District (DH1709) is located to the south, on the other side of NC 147. The district is a set of historic mill village houses that encompasses 15 contributing residential buildings built by the Durham Cotton Manufacturing Company. They are 1+1⁄2-story, "story and a jump" gable end frame dwellings dated to the mid-1880s.

[2] https://www.durhamnc.gov/1031/Durham-Bike-Hike-Map

Figure 9: Historic Districts



Source: https://maps.durhamnc.gov

6.5 Schools

Five elementary schools located in the vicinity of the project area are shown in Figure 11, and three high schools are shown in Figure 12. More than 90% of the students at these elementary schools are Black, Hispanic, or multiracial, and more than 99% of the students qualify for free or reduced price meals.[3] As noted above, Durham County school buses use the Driver Street and Ellis Road crossings 16 times and 54 times each day respectively (Figure 10).[4] Durham REPAIR will improve the safety of children and teens walking, biking, and riding the bus to and from school in East Durham.

Figure 10: Bus Crossing at Driver St.

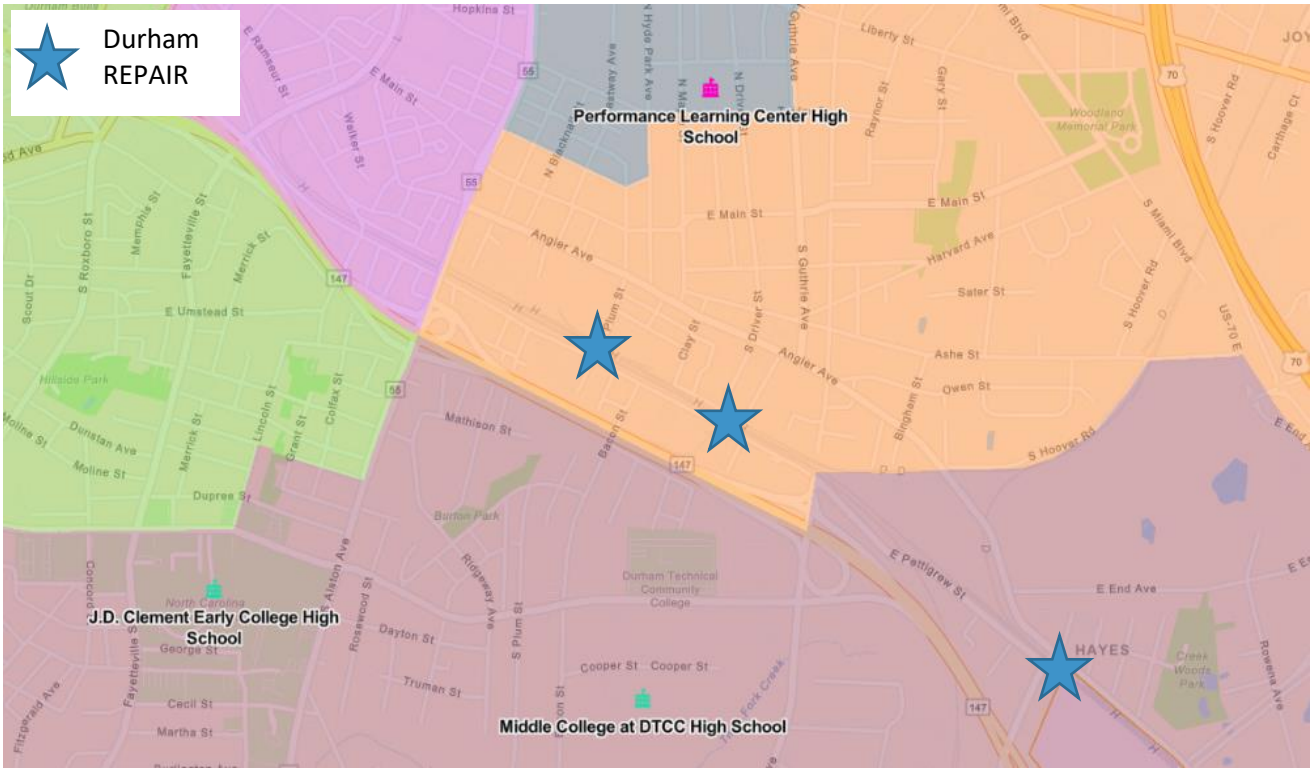
[3] https://www.dpsnc.net/site/handlers/filedownload.ashx?moduleinstanceid=5333&dataid=56093&FileName=Enrollment%20Month%201%2010-25-2021.pdf; https://www.dpsnc.net/site/handlers/filedownload.ashx?moduleinstanceid=5334&dataid=45749&FileName=2020-2021%20Free%20and%20Reduced%20Statistics%20-%20State%20Report.pdf

[4] North Carolina Department of Transportation, City of Durham Traffic Separation Study (2014)

Figure 11: Elementary Schools and Zones

Source: https://maps.durhamnc.gov

Figure 12: High Schools and Zones



Source: https://maps.durhamnc.gov

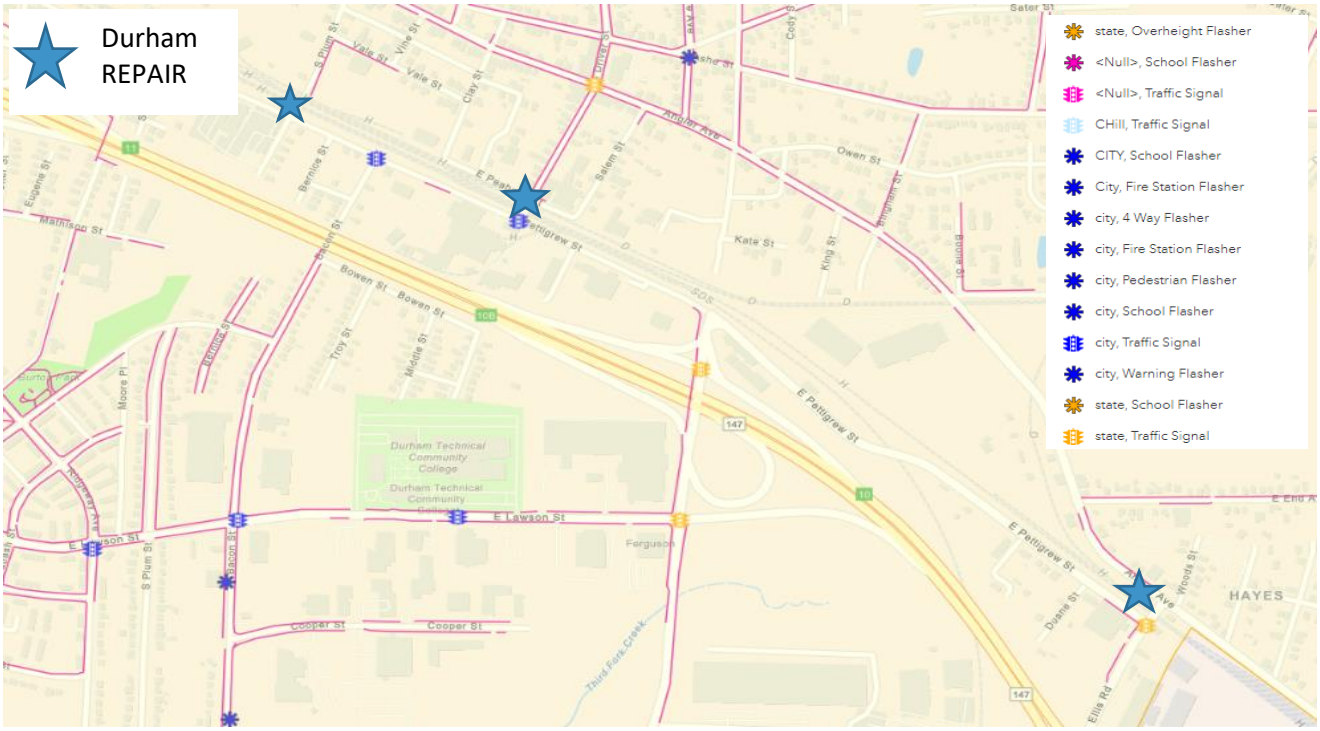
6.6 Bike-Ped Connectivity

Bicyclists and pedestrians utilize these three crossings, although no sidewalks or bike lanes are available over the tracks resulting in dangerous situations and potential crashes (Figure 13). Sidewalk connectivity and traffic signaling in the project area is illustrated in Figure 14 and bicycle facilities are illustrated in Figure 15.

Figure 13: Bicyclist at Plum St. Crossing

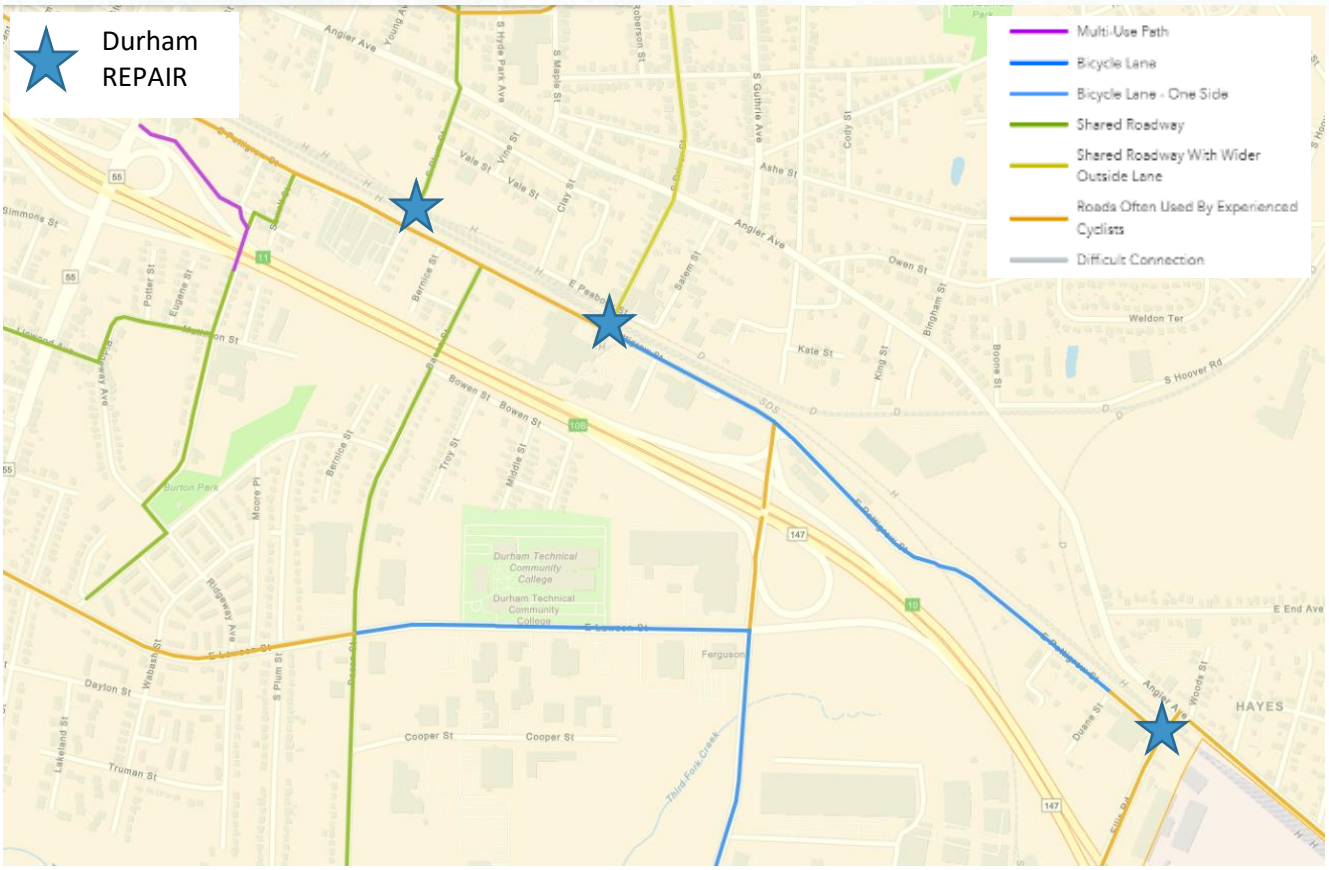
The R Kelly Bryant Bridge Trail, named for an African American community member in recognition of his life of service and civil rights activism, provides a greenway connection over NC 147 (but not the rail corridor) and is located ¼ mile from the Plum Street crossing. In addition, the City of Durham has initiated design on a project to construct sidewalk on Pettigrew and Bacon streets. Durham REPAIR will include developing a safe connection across the railroad tracks, connecting to these greenway and sidewalk facilities, and completing this gap in the sidewalk and bicycle network.

Figure 14: Sidewalk Connectivity and Signals



Source: https://maps.durhamnc.gov

Figure 15: Bike Facilities



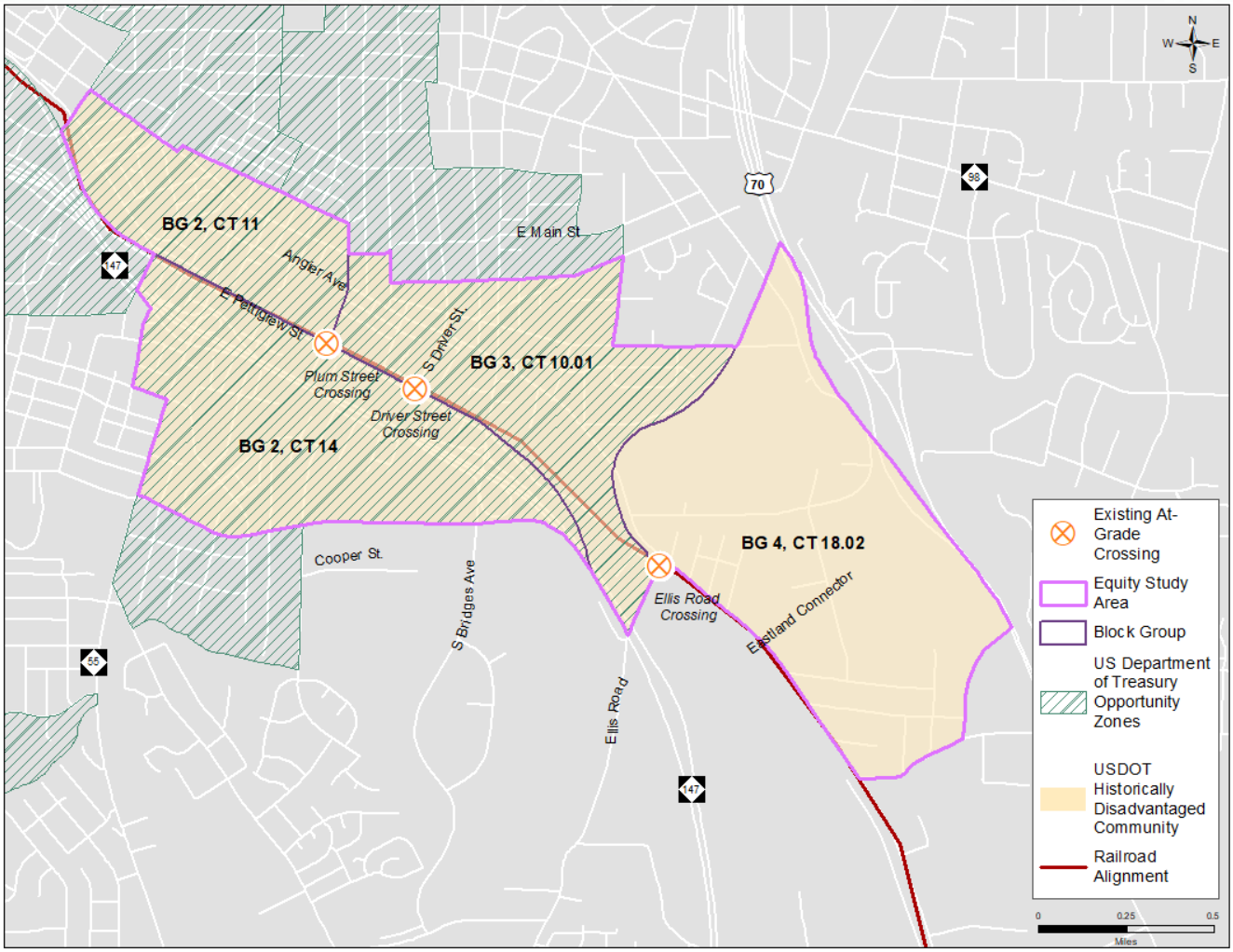
Source: https://maps.durhamnc.gov

6.7 Historically Disadvantaged Communities

According to the USDOT's Areas of Persistent Poverty and Historically Disadvantaged Communities tool, the Project is located within two Federally Designated Opportunity Zones (37063001100, 37063001001), as shown in Figure 16. This is a classification that serves as an economic development tool allowing and encouraging people to invest in economically distressed low-income communities, especially those that have suffered from disinvestment over many years. By improving safety, reducing delays in vehicle traffic, enhancing reliability, and improving community connectivity, the Project increases the area's attractiveness as a place to do business and improves the quality of life for nearby residents, which directly aligns with the goals of the opportunity zone. Additionally, the three crossings are located in Census Tracts designated as a Historically Disadvantaged Community (Census Tract 11, 14, 10.01, and 18.02). More details are described in Attachment G.

Durham REPAIR will deliver equitable transportation access by safeguarding the community from potential crashes. Closing or grade separating a railroad crossing will improve safety for motorists, bicyclists, and pedestrians. Enhancing the quality of life for residents, visitors, and businesses will improve the economic attractiveness and competitiveness of East Durham creating jobs for the community.

Figure 16: Historically Disadvantaged Communities and Opportunity Zones in the Project Area



7 Grade Crossing Information

US DOT National Grade Crossing Inventory information is presented in Table 7 and Table 8. US DOT Crossing Inventory Forms for the three crossings are included in Attachment L.

Table 7: DOT National Grade Crossing Inventory Information

Crossing #	630472K	630471D	735236Y
State	NC	NC	NC
Railroad	NS	NS	NS
Type	Public	Public	Public
Position	At Grade	At Grade	At Grade
Status	Open	Open	Open
Milepost	0056.430 NC	0056.710 NC	0057.580 NC
County	Durham	Durham	Durham
City	Durham	Durham	Durham
Division	Blue Ridge	Blue Ridge	Blue Ridge
Sub Division	Danville	Danville	Danville
Street	Plum Street	Driver Street	Ellis Road

Table 8: Railroad Ownership and Operators

Crossing #	Street	Primary Operating Railroad	Railroads that Operate a Separate Track at the Crossing	Other Railroads that Operate Over the Owner's Track at the Crossing
630472K	Plum Street	Norfolk Southern Railway Company (NS)	CSX	Amtrak (ATK)
630471D	Driver Street	NS	CSX	ATK
735236Y	Ellis Road	NS	N/A	ATK

8 Evaluation and Selection Criteria

8.1 Potential Durham REPAIR Benefits

Depending on the preferred alternative selected, implementing the recommendations from Durham REPAIR delivers a distinctive set of benefits. Attachment I summarizes the potential benefits associated with each Build scenario in a detailed technical memorandum. Understanding that the No Build scenario is defined as all at-grade crossings remain as-is, Table 9 describes the potential benefits of implementing the project.

Table 9: Potential Future Benefits

Selection Criteria	Scoring	Language from the NOFO	Benefit Description
Safety	HIGH	Improves safety at Highway-Rail or Pathway Rail Grade Crossings	Crashes avoided: personal and commercial vehicles and trains
			Crashes avoided: pedestrians/bikers and trains
			Crashes avoided: school buses and trains
			Avoided potential hazardous material incidents
Equitable Economic Strength and Improving Core Assets	HIGH	Provides economic benefit	Property premium
			Trip not taken
			Job creation
Equity and Barriers to Opportunity	HIGH	Improves the mobility of both people and goods	Travel time savings
			Reliability
		Improves access to communities	Delay avoided at crossings
			Improve bike/ped facilities for residents who do not drive
		Improves access to emergency services	Emergency Vehicle Response
		Provides community benefit	Health for bike/ped
			Improve aesthetics and quality of the crossings
Climate Change and Sustainability	MEDIUM	Reduces emissions, protects the environment, and provides community benefit	Idling emissions avoided
Transformation of Our Nation's Transportation Infrastructure	MEDIUM	Provides economic benefit	O&M costs avoided
			Residual value

Selection Criteria	Scoring	Language from the NOFO	Benefit Description
Eliminating Crossings and Making Corridor-Wide Improvements	HIGH	Assess whether the project results in the elimination of one or more grade crossings through grade separations, closing crossings through track relocation, and corridor-wide grade crossing improvements	Alternatives for closure or grade separation at three existing at-grade crossings
Geographic Diversity	HIGH	Considers geographic diversity, diversity in the size of the systems receiving funding, and the applicant's receipt of other competitive award	Minority population Planning grant Durham County

8.2 Safety

Durham REPAIR will study alternative options for separation and/or closure of three adjacent at-grade railroad crossings, which will improve safety in East Durham.

8.2.1 Crashes Avoided

Figure 17: Transit Bus Hit by Train in 2006 at Driver St.

The potential elimination and grade separation of the at-grade crossings at Plum Street, Driver Street, and Ellis Road will eliminate safety incidents between personal and commercial vehicles and trains. These crossings all have flashing signals, bells, and gate arms; and Driver Street and Ellis Road have a four-quad gate system.

As part of the 2014 Durham Traffic Separation Study, it was noted that vehicles were observed queuing over the tracks and getting hit by the gates at Plum Street, Driver Street, and Ellis Road crossings. Historically, there have been problems with the traffic signal at the Driver Street crossing, including vehicles getting trapped over the railroad tracks. However, NCDOT has installed new signal equipment, which appears to be functioning correctly and seems to have helped mitigate the problems. It is likely that vehicles stop on the tracks because of the short distance between the southbound stop sign and the four tracks. Ultimately, these crossings will be safest with either closure or separation.

On May 16, 2006, a freight train struck the back end of a Durham Area Transit Authority (DATA) bus at the Driver Street grade crossing, shown in Figure 17. There were no passengers on board the bus at the time of the crash, but the driver was injured and sent to the hospital.

Fencing off the grade crossing will deter pedestrians and bikers from walking across the active railroad or trespassing on the railroad, reducing the number of safety incidents.

Table 10: Crossings Flagged from Traffic Analysis

TRAIN CROSSING INFORMATION - DELAY/LOS SUMMARY							
MP	NS/CSX	STREET NAME	FYNB LOS	FYB LOS	Crash Information (20 crashes or greater for 5 year period, 2015 - 2019)	Crash Information (Fatal and Serious Injury crashes for 10 year period, 2010 - 2019)	Notes
DURHAM COUNTY							
56.71	NS	S Driver Street	B	B		1 serious injury crash involving train: April 2018	
57.58	NS	Ellis Road	A	B	20 crashes at intersection south of crossing; 22 crashes at intersection north of crossing		Phase I Risk Register comment: "Ellis Road in Durham likely warrants grade separation but would be impactful to surrounding development."

Source: GTCR Corridor Screening Report

The Move Durham Study identified these three crossings as "lowest quality crossing (no sidewalks, no crosswalks, etc.)," as shown in Figure 18. The study evaluated the existing condition of the crossings of NC 147 and the railroad corridor and ranked the quality of the crossing experience. Metrics such as the presence of sidewalks, bikeways, street trees, and the distance between an existing sidewalk from the roadway was used to determine the quality of the crossing, in order to prioritize bicycle and pedestrian crossing improvements to increase neighborhood connectivity and mobility options.

Figure 18: Move Durham Crossing Barrier Analysis

Source: Move Durham

8.2.2 Student Safety

These crossings also pose a safety issue for local students. As previously mentioned, around 70 school buses travel every day through the subject crossings (Figure 19). In addition, with several elementary and high schools in the vicinity of the project area, students who walk to school likely walk across the tracks at these crossings, posing a significant safety issue.

Figure 19: Bus at Plum St. Crossing

8.2.3 Hazardous Materials

Chemical companies in the study area, including Brenntag which has a rail-served chemical plant adjacent to the Driver

Street crossing, transport their products through the studied crossings increasing the likelihood of a hazardous material incident.

8.3 Equitable Economic Strength and Improving Core Assets

8.3.1 Property Premium

With the removal of grade crossings, trains will no longer be required to blow a whistle to signal they are approaching the crossing. Properties in close proximity to these crossings will realize a one-time property premium benefit for the value of their property due to this reduction in noise.

In addition, the aesthetics of the current crossings negatively affects property values near the railroad tracks. The project will include opportunities to add streetscaping, street trees, lighting, etc., to make the area more attractive for business and residents.

8.3.2 Trips Not Taken

Making the area safer will induce vehicles, bike/ped trips in the community strengthening the area economy. Residents who walk or bike are particularly affected by the poor quality of the existing crossings and the lack of safe sidewalks or bike facilities.

8.3.3 Job Creation

Improving area connectivity, safety, and aesthetics will make the project area more attractive to business creating more jobs.

8.4 Equity and Barriers to Opportunity

8.4.1 Travel Time Savings

The decrease in VHT for vehicles due to less signalization and waiting for trains that are blocking the roadway will generate travel time savings.

8.4.2 Better Reliability

Reliability due to elimination of at-grade crossing and grade separation – with the elimination of the possibility of a train blocking vehicles, there is an increase in trip reliability for these grade separated crossings.

8.4.3 Delay Avoided

Delay avoided at crossings – with the elimination of a train blocking vehicles, there is a decrease in vehicle delay.

8.4.4 Emergency Vehicle Response

Emergency vehicle response improvement – removing the probability of a train blocking the roadway will decrease emergency vehicle response time to an incident.

8.4.5 Health for Bike/Ped

A safer grade separated crossing will induce more people to walk or ride a bike if they aren't crossing the railroad, improving the health of the community. The crossings will help fill in a gap in the City's sidewalk and bicycle facility network.

8.4.6 Public Engagement

The City of Durham's Equitable Community Engagement Blueprint (2018) was developed to advance equitable community engagement across the City of Durham by offering specific guidelines that can be adapted and replicated across City initiatives.[5] It prescribes intentional engagement methodologies and procedures to ensure historically underrepresented communities are included in the City's planning and decision-making processes. The Blueprint includes recommendations for prioritizing the expenditure of engagement resources in underrepresented communities, specifically residents that will be most impacted by City initiatives. The goal of this Blueprint is measurable equitable engagement, increased awareness of City initiatives, minimized adverse effects and maximized benefits for low-wealth communities and communities of color.

[5] Equitable Engagement - City of Durham NIS Community Engagement (durhamcommunityengagement.org)

The Blueprint is centered around a five-step approach, which is designed to help project teams develop a coordinated plan for equitably engaging the community. The steps include:

- Step 1: What level of engagement should we use?
- Step 2: Who should we engage?
- Step 3: How should we engage?
- Step 4: How will we measure successful engagement?
- Step 5: How will we build for the long-term?

Since not all initiatives require the same level of engagement, the efforts in the Blueprint differ based on the impact in residents' lives, see Figure 20. For example, closing a rail crossing impacts a resident differently from developing a new master plan for parks in the city. Durham REPAIR will involve collaboration with the community during the project timeline, from the very beginning and throughout the process.

Figure 20: Blueprint Levels of Engagement

	✓	Indicators for Engagement Level
Communicate		Project **would not** interrupt service and/or traffic for an extended period of time (typically < one month)
		Residents and/or businesses **would not** be disrupted for an extended period (typically < 6 months)
		Project is a direct replacement of infrastructure, materials or other in the same location
	✓	**Indicators for Engagement Level**
Communicate & **Consult**		Project addresses a public health and/or safety concern
		Project **would not** cause loss of or significant** change to facility, program or service to community
		Project changes may be triggered by legislative, regulatory or policy requirements.
	✓	**Indicators for Engagement Level**
Communicate, Consult & **Involve**		Project included in approved County Plan (e.g., Master, Sector, Corridor, CIP)
		Project **would** fundamentally change the size, capacity, and/or intensity of use of space, roadway, etc.
		Project **would** cause loss of or significant** change to a facility/program/service for broader Arlington
		Project could have significant** impacts on nearby residents and/or businesses (e.g., health/safety, traffic, parking, loss of mature trees, adverse construction impacts)
		Strong community interest (support, concern, differing views, opposition) anticipated for project
	✓	**Indicators for Engagement Level**
Communicate, Consult, Involve & **Collaborate**		Project **not** a capital maintenance or operations project
		Multiple commissions and/or advisory boards would typically provide input on this type of project
		Project did **not** originate from a previously approved County Plan (e.g., Master, Sector, Corridor, CIP)
		County Board/County Manager has provided high-level direction (e.g., construction of public buildings, studies)

* *Levels of engagement are adapted from the IAP2 spectrum published by International Association of Public Participation; see www.iap2.org.*
** *Significance can be assessed, in part, by answering context questions in Step 1.*

The Equitable Engagement Blueprint has been used to guide the engagement process for many recent City and County planning efforts such as the Move Durham Study, the Durham County Transit Plan, and the Durham Comprehensive Plan. This approach has been invaluable as a guide for how to engage the community and make sure that the residents most affected by projects have influence on the outcomes. Following this engagement approach will ensure that this planning effort will be supported by the community, and Durham County staff have extensive experience implementing the blueprint on many recent projects.

8.5 Climate Change and Sustainability

8.5.1 Idling Emissions Avoided

Currently, cars and trucks waiting to cross the tracks at each of the three crossings idle when a train goes by. The removal of trains blocking vehicles from crossing the railroad (through grade separation or/and closure) will result in less idling emissions.

8.6 Transformation of our Nation's Transportation Infrastructure

8.6.1 Cost Avoided

The elimination of grade crossings through grade separation or/and closure will eliminate operations and maintenance (O&M) costs of crossing gates, lights, etc. New bridges/underpasses are assumed to have minimal

maintenance and residual value, with an infrastructure service life equal to 100 years. The period of analysis is either 20 or 30 years. The remaining value of the capital investment for the years the bridges are still in use after the period of analysis is over is the residual value.

8.7 Eliminating Crossings and Making Corridor-Wide Improvements

The Project will study alternative options for grade separation or/and closure of three adjacent railroad crossings at Plum Street, Driver Street and Ellis Road. These three crossings work together as a network, and changes to any single crossing will impact the other two. Studying these three crossings together in one planning study will allow for the consideration of holistic and efficient solutions that address impacts and concerns for the East Durham community. It will also deliver a corridor-wide improvement for the railroad.

8.8 Geographic Diversity

As previously mentioned, the Project is located within two Federally Designated Opportunity Zones (37063001100, 37063001001) and the three crossings are located in Census Tracts designated as a Historically Disadvantaged Community (Census Tract 11, 14, 10.01, and 18.02).

The project area is home to a high concentration of minority populations (93.7%), significantly higher than the County (57.5%) and the North Carolina (36.9%) average minority populations. Approximately 32% of the population in the Project area are Hispanic/Latino and 61% are low-income. An equity analysis of the study area is included in Attachment G.

9 Safety Benefit

9.1 FRA Crossing Incident Data

Using data from the FRA crossing incident dashboard, over the past nearly 50 years, there have been 29 incidents at the Durham REPAIR crossings, resulting in 4 fatalities and 11 injuries (shown in Table 12Table 11). Most of these incidents, fatalities, and injuries have occurred within the past 25 years (shown in Table 12). FRA Incident Reports for the three crossing are included in Attachment J.

Table 11: FRA Incidents, 1975-2022

Crossing Name	Crossing #	Incidents	Killed	Injured	PDO	Average PDO	Period (Past 47 years)
Plum St.	630472K	6	1	2	$219,500	$36,580	1975-2022
Ellis Rd.	735236Y	12	3	4	$26,875	$2,240	1975-2022
Driver St.	630471D	11	0	5	$280,800	$25,530	1975-2022

Source: FRA Incidents Log

Table 12: FRA Incidents, 1997-2022

Crossing Name	Crossing #	Incidents	Killed	Injured	PDO	Average PDO	Period (Past 25 years)
Plum St	630472K	5	0	2	$19,500	$3,900	1997-2022
Ellis Rd.	735236Y	7	3	3	$22,750	$3,250	1997-2022
Driver St .	630471D	7	0	4	$278,500	$39,790	1997-2022

Source: FRA Incidents Log

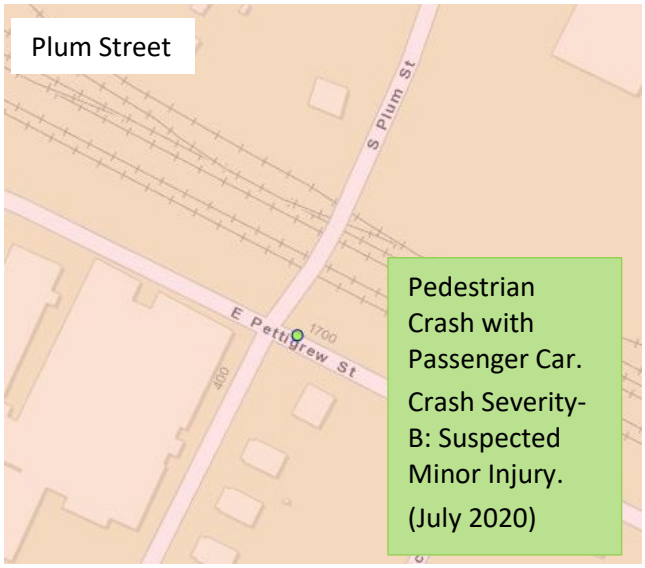
In addition, the Greater Triangle Corridor Screening Report identified that there were 20 crashes at the intersection south of the Ellis Road crossing and 22 crashes at intersection north of the Ellis Road crossing. The state's Highway-Railway Grade Crossing Safety Action Plan identified Durham as having the most grade crossing incidents of anywhere in the state.

9.2 NCDOT Bicyclist and Pedestrian Crash Data

The North Carolina Department of Transportation (NCDOT) maintains a database of bicyclist and pedestrian crashes that occurred in North Carolina from 2007-2021. Incidents occurring in the vicinity of the Plum Street

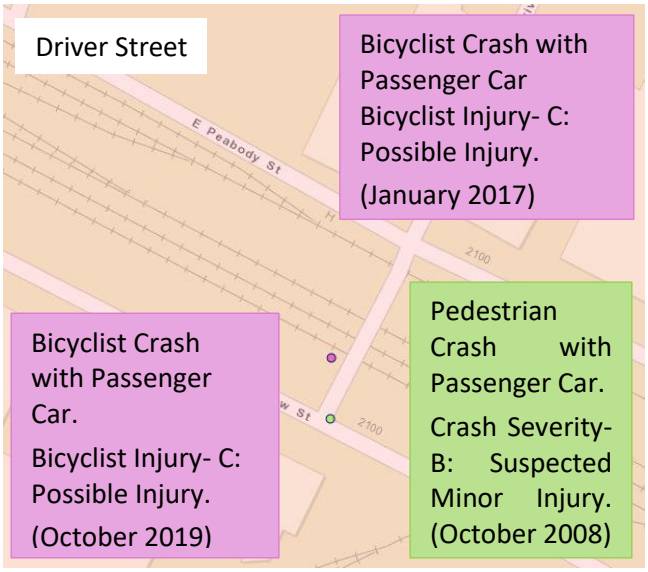
crossing are shown in Figure 21 and incidents occurring in the vicinity of the Driver Street crossing are shown in Figure 22. No incidents were reported in the vicinity of the Ellis Road crossing, although as demonstrated by the photos in Figure 23 and Figure 24, the built environment in this area is hostile to walking and biking.

Figure 21: Plum Street Bike/Ped Crash Incidents



Source: NCDOT, NCDOT Bicyclist and Pedestrian Crash Map (arcgis.com)

Figure 22: Driver Street Bike/Ped Crash Incidents



Source: NCDOT, NCDOT Bicyclist and Pedestrian Crash Map (arcgis.com)

Figure 23: Ellis Road Crossing – Looking North

Figure 24: Ellis Road Crossing – Looking South

9.3 Exposure Index

The Exposure Index (EI) is one factor NCDOT uses to determine if a grade-separated crossing is warranted. It is calculated by multiplying the number of trains per day by the number of vehicles per day at that specific crossing. Grade separations may be considered in urban areas when the exposure index is 30,000 or more. The future Average Daily Traffic (ADT) growth rate was estimated by county population projections. The average number of trains per day included freight, intercity, and commuter trains. Table 13 summarizes the EI calculations for each of the study area crossings. As shown, all three crossing locations exceed the threshold under both the existing and future year conditions, thus triggering action at all three locations. At the time of the 2014 Durham Traffic Separation Study, all three crossings were over the EI 30,000 threshold, illustrating the longevity of the problem.

Table 13: Exposure Index

Crossing #	Milepost	Street	Existing ADT	Future ADT	ADT Growth	Existing Trains per Day^	Existing Exposure Index
630472K	56.43	Plum St.	1,300	1,671	29%	32	41,600
630471D	56.71	Driver St.	6,100	7,843	29%	32	195,200
735236Y	57.58	Ellis Rd.	6,400	8,229	29%	32	204,800

Note: ^ Total of 20 Freight and 12 Amtrak trains per day.
Source: GTCR Corridor Screening Report

10 DOT Strategic Goals

Durham REPAIR aligns with DOT's Strategic Goals in improving equity and reducing barriers to opportunity in project planning. The construction of NC 147 as part of Durham's Urban Renewal program during the 1970's destroyed well-established African American communities, like the Hayti community, in East Durham. As a result of NC 147's construction, African American businesses, homes, and places of worship were demolished, and residents were permanently displaced. Durham REPAIR is located within two Federally Designated Opportunity Zones (37063001100, 37063001001) and the three crossings are located in Census Tracts designated as a Historically Disadvantaged Community (Census Tract 11, 14, 10.01, and 18.02). The project area is home to a high concentration of minority populations (93.7%), Hispanic/Latino populations (61%), and low-income individuals (32%). Durham REPAIR also considers climate change and sustainability impacts thru the reduction in idling emissions from the removal of trains blocking vehicles from crossing the railroad. The project is committed to advancing good-paying, quality jobs and workforce programs and hiring policies that promote workforce inclusion. The goal of the Project will be to maximize opportunities for historically Disadvantaged Business Enterprises (DBEs) including Small Businesses (SBEs), Minority Businesses (MBEs), and Women-Owned Businesses (WBEs).

11 Project Implementation and Management

11.1 Project and Grant Management

Durham County will lead the Project. Durham County is currently managing the development of the Durham County Transit Plan and the Transit Plan Governance Study. These are both planning studies that involve extensive coordination among multiple agencies in Durham including many of the partner agencies anticipated in the Durham REPAIR project such as the City of Durham, GoTriangle, and the Durham-Chapel Hill-Carrboro Metropolitan Planning Organization. The Durham County Transit Plan has included a significant public engagement process that has followed the Equitable Engagement Blueprint approach and utilized community partners for engagement with traditionally underrepresented communities – an approach that is also anticipated on the Durham REPAIR project to manage stakeholder risk and develop local buy-in for the project. Durham County also expects to partner with the North Carolina Department of Transportation on the engineering and design aspects of the Durham REPAIR project. As a County Government that is both very attuned to the needs and desires of local residents and businesses, as well as aware of the significance of this project for regional and statewide rail initiatives, Durham County is prepared to facilitate a comprehensive and coordinated planning study that will deliver a solution that best meets local and state goals.

Durham County Transportation staff currently manage state and local grants that support County transit services, planning studies, and staffing. In addition, Durham County government has extensive experience managing federal and state grants that support a wide variety of services such as public health, social services, environmental services, and sustainability, etc. Additionally, Durham County has access to joint procurement resources through the Durham-Chapel Hill Carrboro Metropolitan Planning Organization, which regularly carries out USDOT-funded planning studies. As a result, Durham County has the technical capacity and capability to

carry out this FRA-funded study, including complying with procurement and contracting requirements, oversight and control of project contractors, change management, risk management, and compliance with progress reporting requirements. Performance measures for this project are included in Attachment D.

To move forward with the results of this study, Durham County intends to enter into an agreement with NCDOT for future project final design and construction. NCDOT has the technical capacity and capability to carry out FRA-funded capital improvements, including complying with procurement and contracting requirements, oversight and control of project contractors, change management, risk management, and compliance with progress reporting requirements.

11.2 Partners

Durham County shall perform all tasks required for Durham REPAIR through a coordinated process, which will involve affected railroad owners, operators, and funding partners, including:

- City of Durham
- North Carolina Department of Transportation
- North Carolina Railroad Company (NCRR)
- Norfolk Southern (NS)
- CSX
- GoTriangle (funding partner)
- Emergency Services
- School Administration
- Durham Chapel Hill Carrboro Metropolitan Planning Organization
- Federal Railroad Administration

Letters of support are included in Attachment F.

11.3 Schedule

Figure 25 describes Durham REPAIR schedule. Total project will be completed in 21 months from obligation. Attachment B describes the projected deliverables.

Figure 25: Project Schedule

		2023				2024				2025				
Task #	Task Name	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Due Date	Duration
1	Detailed Project Work Plan, Budget, and Schedule												Sep-23	3 months
2	Community Engagement												Sep-25	Ongoing
3	Planning – Over/Under Study (with Closing Options)												Jun-23	1 year
4	Preliminary Engineering of Selected Alternative (30%)												Mar-24	15 months
5	Environmental Review												Sep-25	18 months
	Award	★											Dec-22	
	Obligation		★										Jul-23	

12 Environmental Readiness

Durham REPAIR funding is being conducted in order to complete the National Environmental Policy Act (NEPA) planning activities and necessary NEPA documentation for grade crossing eliminations at the subject locations. This study will result in environmental readiness for a future capital grant application.

It is assumed that the proposed project will involve both FHWA and FRA and depending on which the proposed improvements will be road over rail versus rail over road. Either agency could lead or could enter into a cooperating agreement to jointly lead. Depending upon the complexity of the proposed project, and the number of alternatives to be carried over for detailed study in the NEPA phase, the environmental document could be a Categorical Exclusion (CE) or an Environmental Assessment/Findings of Non-Significance Impact (EA/FONSI). If multiple concepts from the planning phase are carried forward as Detailed Study Alternatives (DSAs) into NEPA,

further alternatives analysis would need to be done as part of the environmental document. Natural systems field investigations for Threatened and Endangered Species and wetland and stream delineations would occur, permits identified, and a preliminary Jurisdictional Delineation package would be prepared. The Plum Street/Driver Street area is primarily minority and low income. Socioeconomic analysis would be conducted to identify Environmental Justice (EJ) Populations and determine whether there will be an adverse or disproportionate impacts to EJ populations. Noting that the Driver Street National Historic District is located just north of the Plum St and Driver Street crossings, a historic architecture/archeology screening will need to be conducted to identify National Register (NR) properties, and if impacted directly or whether proximal impacts may require Section 106 Consultation. Traffic diversion will be a concern for any proposed closure or maintenance of traffic during construction. A capacity analysis would need to be conducted, and additional improvements (signalization, turning lanes, storage lanes) may be recommended. Conceptual costs estimates would be prepared for the NEPA detailed study alternatives, which including utility and right of way (ROW) costs.

Additional Application Materials

Please visit https://www.dconc.gov/repair to review Durham REPAIR full application package including the following documents:

A. Attachment 2: Statement of Work
B. Attachment 3: Schedule
C. Attachment 4: Budget
D. Attachment 5: Performance Measures
E. Letter of Financial Commitment
F. Letters of Support
G. Equity/EJ Analysis Tech Memo
H. Trip Purpose Tech Memo
I. Potential Benefits Tech Memo
J. FRA Incident Reports
K. Site Photos
L. USDOT Crossing Inventory Forms
M. FRA F 251

Relevant Studies:

N. North Carolina Department of Transportation, City of Durham Traffic Separation Study (2014)
O. City of Durham, Durham Bike+Walk Implementation Plan (2017)
P. City of Durham, Move Durham: Central Durham Transportation Study (2020)
Q. City of Durham, Draft Equitable Community Engagement Blueprint (2018)

Greater Triangle Commuter Rail (GTCR) studies, including:

R. GTCR Phase II Feasibility Study, Appendix I: Corridor Screening Report (2022)
S. GTCR Phase II Feasibility Study, Downtown Durham Feasibility Report (2022)
T. GTCR Phase II Feasibility Study, Appendix P: Evaluation of Norfolk Southern Infrastructure Recommendations (2022)
U. GTCR Phase II Feasibility Study, Community Evaluation Memorandum (2022)
V. GTCR Phase II Feasibility Study, GTCR Phase 2 Feasibility Study Summary Report (2022)


Plum St.


Driver St.


Ellis Rd.