



GO  *Durham*

BETTER BUS PROJECT

access. safety. reliability.

PIEDMONT TRANSPORTATION PROFESSIONALS
EXTENDED LUNCH AND LEARN

JUNE 28, 2023



TRANSPORTATION

CITY OF DURHAM

919.560.4366

DurhamNC.gov

Follow Us @CityofDurhamNC

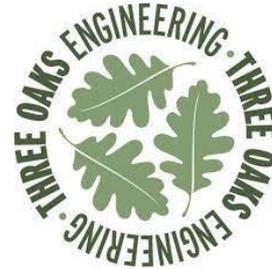


Agenda

- Project Overview and History
- Engagement Effect on Project Recommendations
- Safety Recommendation Development and Cost
- Project Examples



GoDurham Better Bus Project Partners



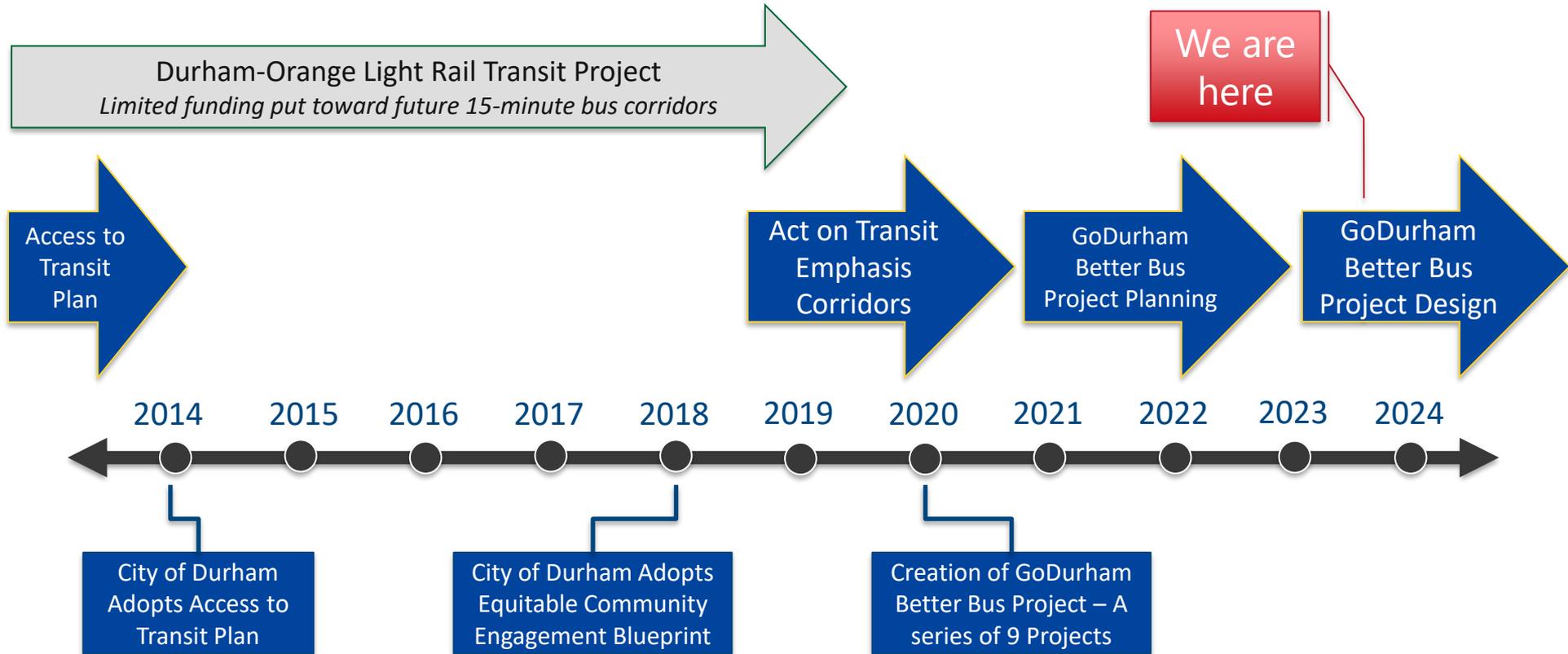
919.560.4366

DurhamNC.gov

Follow Us @CityofDurhamNC



GoDurham Better Bus Project Timeline





GO *Durham*

BETTER BUS PROJECT

access. safety. reliability.

Every Bus Trip has Three Phases



1. Your Trip to the Bus – Recommend and design sidewalks, crosswalks, curb ramps, and other pedestrian improvements that provide better access to bus stops for all people.



2. Your Bus Stop – Recommend shelters, benches, and other improvements at bus stops that make waiting for the bus more comfortable and convenient.



3. Your Bus Ride – Identify areas where the bus is often delayed and design bus priority projects such as changes to traffic signals, pavement markings, and signage that improve bus speed and reliability.



TRANSPORTATION
CITY OF DURHAM

"Please consider a seamless design between the bus stop and the multiuse path/sidewalks and avoid obstructing the proposed path/sidewalks with bus shelter and amenities."



TOP THREE IMPROVEMENTS TO MAKE BUS STOP ACCESS MORE CONVENIENT



Add/Repair Sidewalk



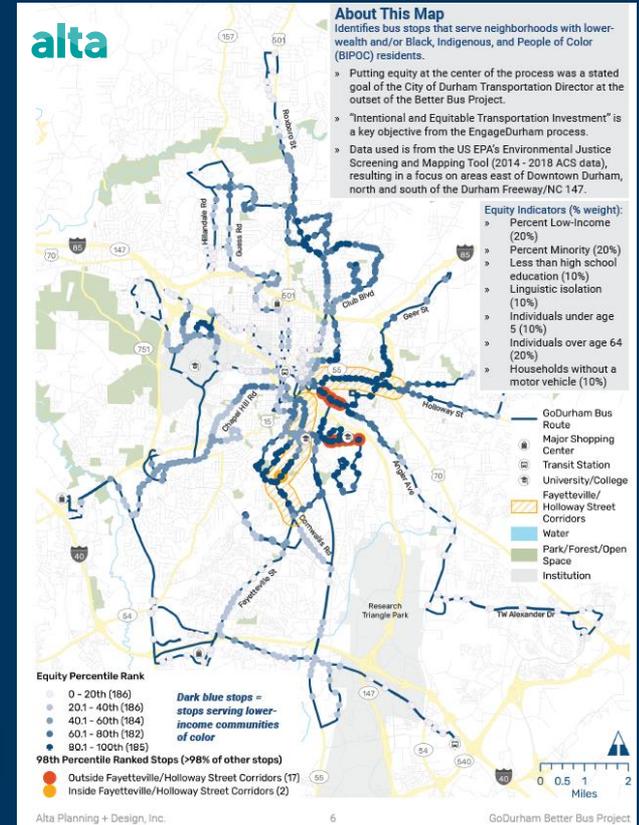
Add/Repair Crosswalk



Remove Dangerous Debris/
Obstacles

One Systemwide Project with Six Major Areas of Focus

1. Access to Transit
2. Fayetteville Street Transit Emphasis Corridor (TEC)
3. Holloway Street TEC + Village Transit Center
4. Bus Speed and Reliability
5. Durham Station Transit Emphasis Zone
6. Grant Funding Strategy, Applications, and Readiness



Community Engagement by the Numbers

Over **122** Different Opportunities for feedback throughout the process



Benefits of Community Engagement

Identifying equitable improvements through community engagement results in better planning outcomes that address local community needs, goals, and values



Understand the local community needs, goals, and values



Set goals for collecting more inclusive / representative data; monitor and adjust when underrepresented



Tailor outreach to “meet people where they are”



Learn key information not found in quantitative data and confirm observed patterns



Weight quantitative data using local factors identified through engagement to help prioritize improvements



Build trust and goodwill, demonstrate accountability, and better planning outcomes.



TRANSPORTATION

CITY OF DURHAM



Building Trust through Community Engagement

EMPOWER



COLLABORATE



INVOLVE



CONSULT



INFORM

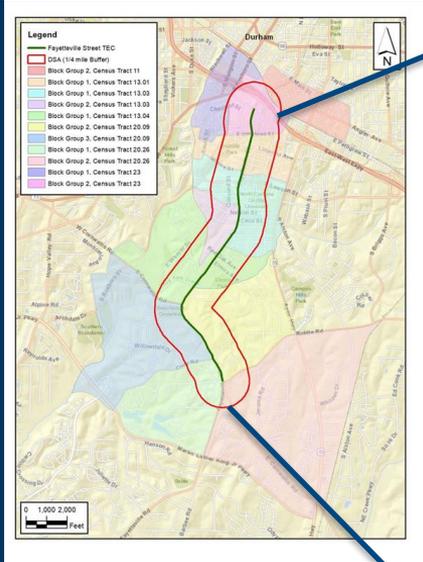


LISTEN



Increasing impact on the decision

Demographics Checkup

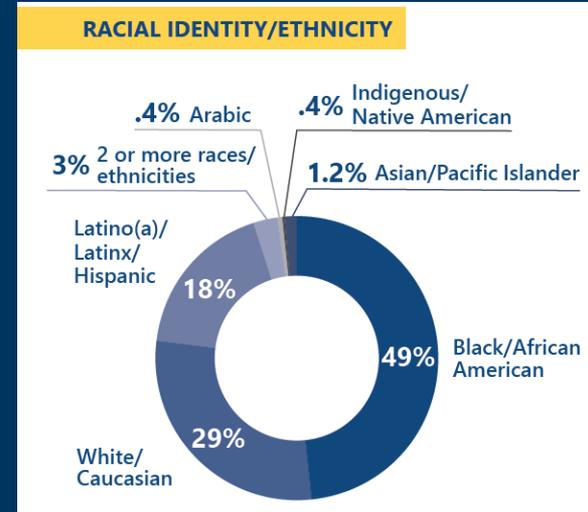


-  **48% African American**
-  **41% Hispanic**
- 37% White**
-  **43% Below Poverty**
-  **20% Have no vehicle**

-  **Below the Poverty Level: 43%**
- Near Poor: 22%**
- Very Poor: 20%**

FROM DEMOGRAPHICS SNAPSHOT OF TRANSIT EMPHASIS CORRIDOR NEIGHBORHOODS

ACTUAL RESULTS FROM SURVEY RESPONDENTS



What We Learned

TOP THREE IMPROVEMENTS TO MAKE BUS STOP ACCESS MORE CONVENIENT



Add/Repair Sidewalk



Add/Repair Crosswalk



Remove Dangerous Debris, Obstacles, and Trash

MOST IMPORTANT FACTORS WHEN CONSIDERING IMPROVEMENT LOCATION

25%



Most Used – Busiest

23%



Equity - Bus stops that serve lower-wealth neighborhoods and/or Black, Indigenous, and People of Color

20%



Youth, Services, and Persons with Disabilities – bus stops near services for youth, seniors, and persons with disabilities

19%



Safety – bus stops where most injuries are likeliest to occur

13%



Connections – bus stops in areas with the fewest direct paths



TRANSPORTATION

CITY OF DURHAM

Community Feedback: Existing Barriers



Trash blocking access to bus stop



Stop disconnected from sidewalk or curb ramp network



Stop location with improper drainage

"Often the "last mile" between a bus stop and a person's home/destination are what prevents them from using public transit. If they can't make it to/from the stop safely, they won't use it."



No Bus Pad, Bench, or Shelter



Mailbox blocks ADA



Unprotected storm drain



"All bus stops should be accessible, have trash cans, proper lighting, and a shelter when possible"

"Should not use ridership stop model to determine amenity level"

"Put more bus covers and benches in Black communities so people are not standing out in the sun and rain"



What will the project do?

Bus stops within the Transit Emphasis Corridors are recommended to be enhanced with shelters, lighting, seating, electronic signage, sidewalks, and landing areas for passengers. Bus stops will be recognizable with placemarking characteristics to emphasize transit throughout the corridor. Below is a concept drawing for Fayetteville and Holloway Street Corridor bus stops.

Where?

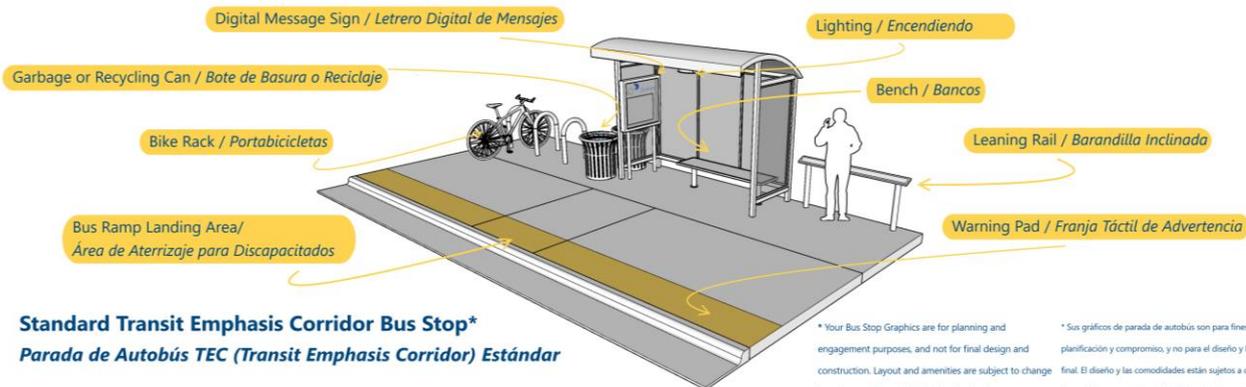
Corridors with the highest ridership.

¿Qué hará el proyecto?

Se recomienda que las paradas de autobús dentro de los Corredores de Énfasis de Tránsito (TEC) sean mejoradas con refugios, iluminación, asientos, señalización electrónica, aceras, y áreas de aterrizaje para pasajeros. Las paradas de autobús serán reconocibles mediante funciones de diseño que creen un sentido de identidad para identificar vecindarios y enfatizar el tránsito a lo largo del corredor.

¿Dónde?

Corredores de tránsito de alto uso



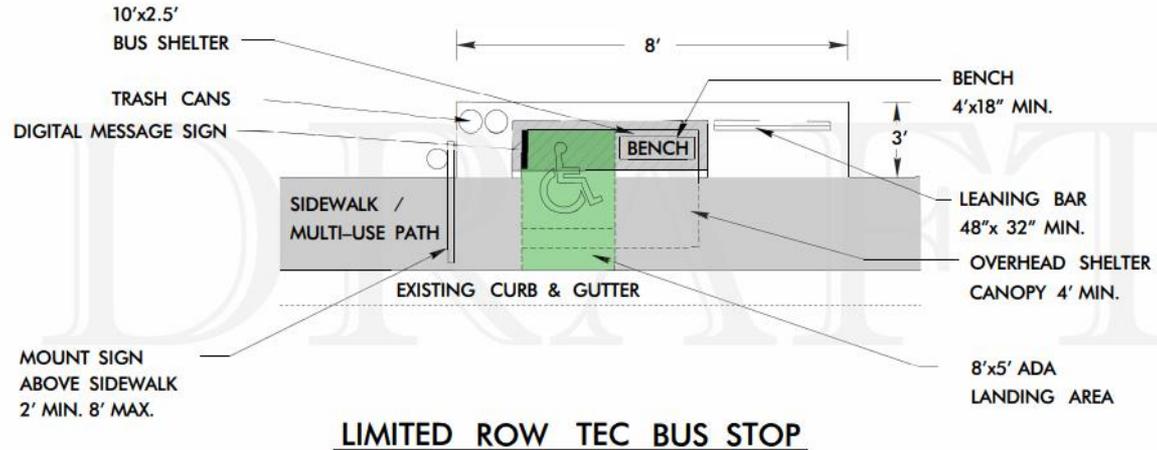
Standard Transit Emphasis Corridor Bus Stop*
Parada de Autobús TEC (Transit Emphasis Corridor) Estándar

* Your Bus Stop Graphics are for planning and engagement purposes, and not for final design and construction. Layout and amenities are subject to change based on public and stakeholder feedback.

* Sus gráficos de parada de autobús son para fines de planificación y compromiso, y no para el diseño y la construcción final. El diseño y las comodidades están sujetos a cambio en base de los comentarios del público y de las partes interesadas.

Your Bus Stop

Smaller Footprint



"All bus stops should be accessible, have trash cans, proper lighting, and a shelter when possible"

LIST OF STANDARD AMENITIES	LEGEND
<ul style="list-style-type: none"> SIGN SEAT OR SHAM-SEAT LEADING BAR LOW PROFILE SHELTER WITH LIGHT ROUTE INFORMATION BUS TRACK TRASH & RECYCLING CANS LIGHTING WHEELCHAIR NAVIGATION SPACE & WAITING AREA ADA ACCESSIBLE QR CODE CONTACT INFORMATION FOR MAINTENANCE 	<ul style="list-style-type: none"> EXISTING SIDEWALK ADA LANDING AREA
	<p>NOTE</p> <ul style="list-style-type: none"> 1. REAL TIME BUS INFORMATION WILL BE WALL MOUNTED 2. NEW CODES NOT RECOMMEND FREE STANDING LEADING BAR

BUS STOP AMENITIES

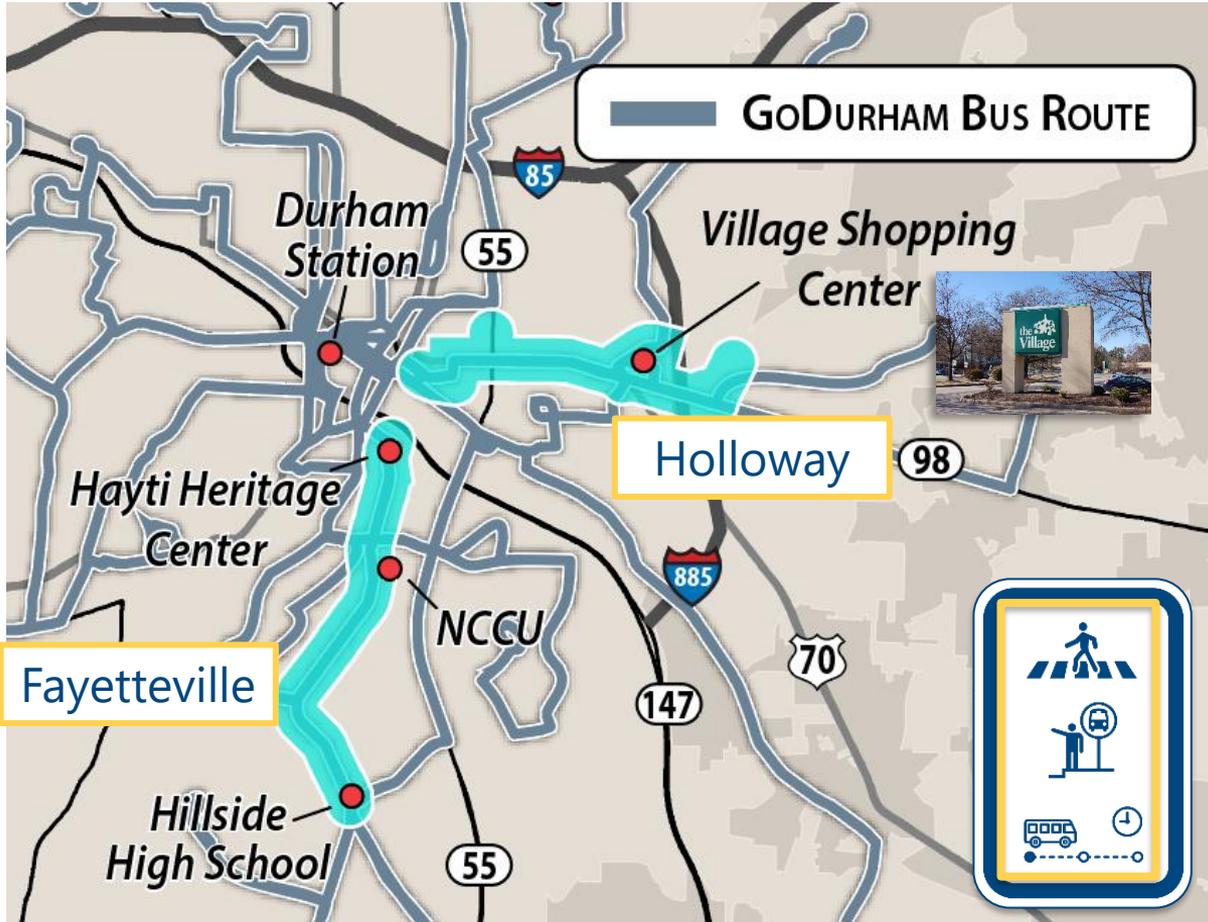
DURHAM BETTER BUS PROJECT
FAYETTEVILLE TEC DESIGN CONCEPTS

PREPARED BY:
wsp

MAY, 2022

SHEETS 2 OF 3

TRANSIT EMPHASIS CORRIDORS



What will the project do:

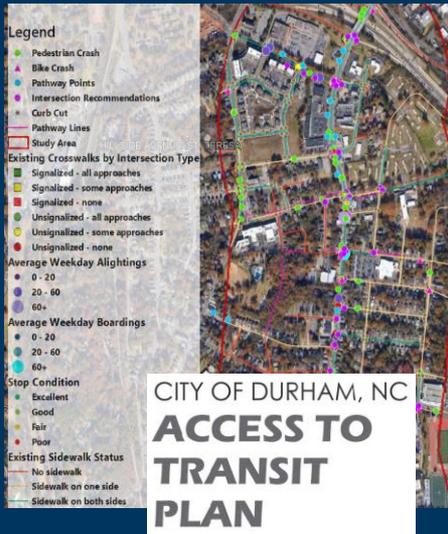
Prioritize improvements that help people get to jobs, work, school, and daily needs.

These recommendations will focus on removing barriers to transit - getting to the bus stop, individual bus stops, and the bus ride.

Where: South and East Durham

- Fayetteville St Transit Corridor (Route 5)
- Holloway St Transit Corridor (Route 3 Family)

Transit Emphasis Corridors: Delivery of Community Promises



+



=



- Bus Stop Improvement
- Transit Signal Priority
- New Bus Stop
- Bus Stop Removal
- Curb Ramp Upgrade
- Refuge Island
- Pedestrian Crossing Signage
- New Roundabout
- Parking Removal
- Shared Lane Markings
- Access Management
- Street Lighting Improvement
- Pedestrian Signal
- Intersection Improvements
- Hi-Vis Crossing
- Transverse Crossing
- Bike Lane
- Shared Bike / Bus Lane
- Pedestrian Crossing Upgrade
- Hi-Vis Crossing With Signal
- New / Improved Sidewalk
- Multi-Use Path
- Restriping
- Fencing / Railing
- Discontinued Route Alignment
- New Route Alignment
- BAT Lane
- Transit Priority Lane
- Curbside Management
- Raised Median
- Shared Cycle Track Stop
- Bus Stop Relocation
- Curb Radii Tightening
- Curb Radii Increase

**Better Bus Barrier Removal
Treatments**

**Utilize Previous Plans and
Existing Conditions Data**

Community Engagement and Walking Tours

When asked, community members identified the biggest existing barriers to transit are lack of existing or upgraded crosswalks, utility poles in street signs and other barriers in sidewalks, lack of sidewalks, and lack of curb ramps.



Transit Emphasis Corridor Community-Based Designs to Remove Barriers to Transit

Pedestrian Crossings

Pavement Marking Upgrades / Curb Management

Curb Adjustments and Radius Tightening

Bus Speed and Reliability Spot Improvements

Signal Improvements

Streetscaping, Corridor Art, and Wayfinding

Intersection Geometry Improvements

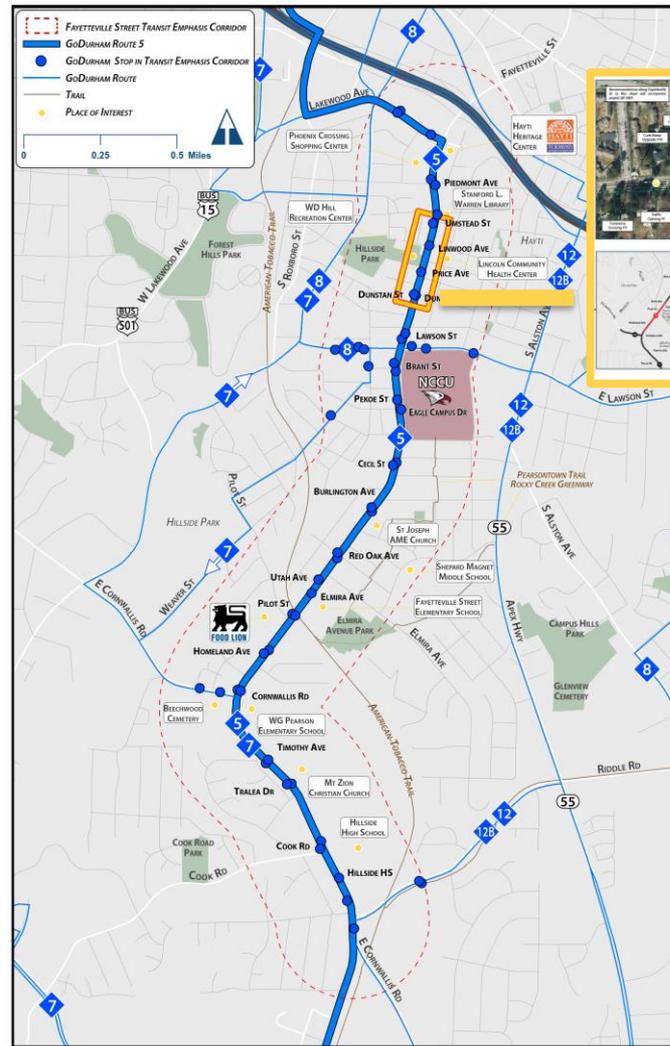
Incorporate Ongoing Corridor Projects

Placement of Bus Stops with Amenities and Landing Pad

New Curb & Gutter Construction

Multi Use Paths and Sidewalks

Placemaking



"I can't wait and see these improvements on the ground"



TRANSPORTATION
CITY OF DURHAM

Cost Comparisons (Estimates)

Project	Place	Scope	Approximate Length (Feet)	Estimated Cost Per Foot (2022)	Average System Weekday Ridership (APTA Q4 Ridership)
Fayetteville TEC	Durham, NC	Transit Emphasis	16,900	\$905	17,000
Holloway Street Phase 1 - N Dillard St to Junction Road			15,150	\$734	
Holloway Street Phase 2 - Durham Station to N Dillard St			7,400	\$572	
Summit Avenue Streetscape	Greensboro, NC	Streetscape	7,800*	\$984*	7,400
7 th Ave Streetscape	Hendersonville, NC	Streetscape	1,200*	\$1,167*	N/A

*Quantities Pulled from Publicly Available Sources – Subject to change



RAISE Grant

SAFE, EQUITABLE STREETS TO TRANSIT

Connecting Safe, Dignified and Healthy Multimodal Infrastructure in Historically Disadvantaged Communities



RAISE GRANT APPLICATION
2023 | URBAN AREA | FEBRUARY 22, 2023



3. Project Description

Submitted by the
City of Durham, North Carolina to the
United States Department of Transportation



- PROJECT STUDY AREA
- FUTURE VILLAGE TRANSIT CENTER
- GoDURHAM BUS STOP
- PARK
- GoDURHAM BUS ROUTE
- GREENWAY



GRANT SUCCESS METRICS TO DATE

Federal funding awarded to the City of Durham Transportation Department since strategy kickoff

- \$10.8M Downtown Durham Stations Improvements
- \$5.7M Funding for 6 Battery Electric Buses
- \$2.3M R. Kelly Bryant Bridge Construction Funding
- \$2.0M Joint Regional Zero Emission Bus Acquisition
- \$0.4M Regional Safety Action Plan

= \$21.2M

6

New Zero Emission Buses Purchased



43%

Federal Grant Application Success Rate



TRANSPORTATION
CITY OF DURHAM

NC 98 at Alston Avenue



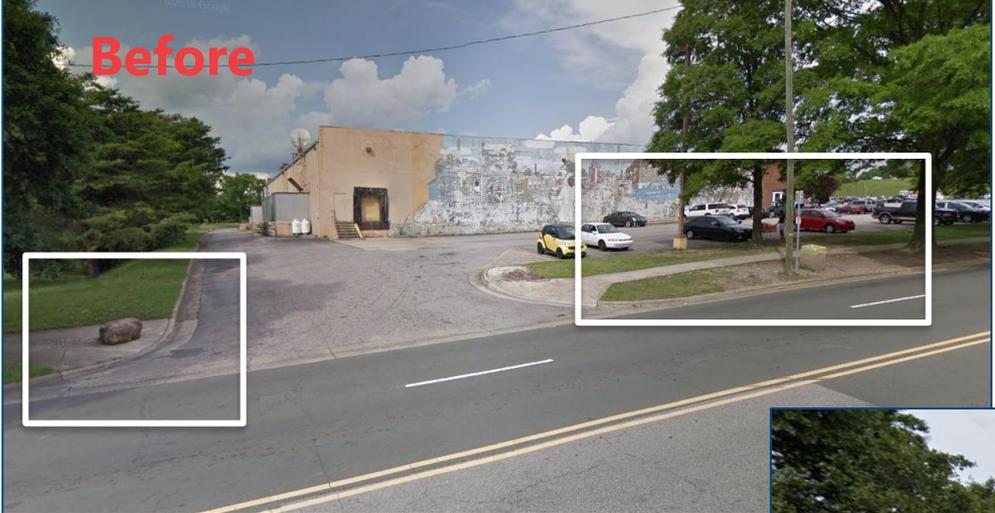
NC 98 at Alston Avenue



- Improved Sightlines
- High Visibility Crosswalks
- Pedestrian Signals
- Sidewalks and Curb Ramps
- Bus Stop Relocations

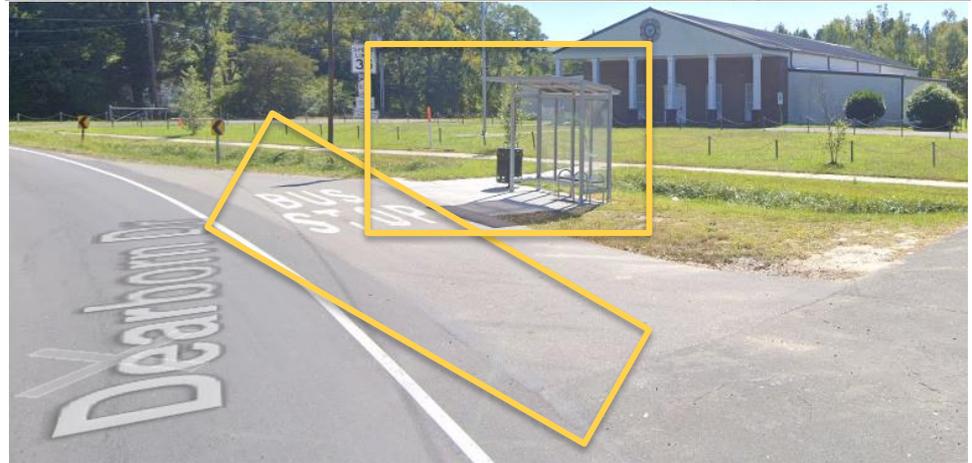
Lakewood Avenue in Hayti Neighborhood

- Object Removed from Sidewalk/Curb Ramp
- Complete Bus Stop with Landing Pad
- New ADA Curb Ramp



Old Oxford Road at Dearborne Drive

- Bragtown Neighborhood
- NCDOT Design Standards
- Completed 2021
- Adding 2nd Shelter





BETTER BUS PROJECT

access. safety. reliability.

Q&A



TRANSPORTATION
CITY OF DURHAM

919.560.4366

DurhamNC.gov

Follow Us @CityofDurhamNC



Thank You!



Questions or Comments

- Meghan Makoid (meghan.makoid@threeoaksengineering.com)
- Sam Green (Samuel.Green@wsp.com)
- City of Durham Contact: Evian Patterson (Evian.Patterson@durhamnc.gov)



Visit the website <http://bit.ly/godurhambetterbus>



TRANSPORTATION
CITY OF DURHAM

Recommendation Symbol Legend

SYMBOL RECOMMENDATION DEFINITION

	Bus Stop Improvement	Enhancement to bus stop amenities for all bus stops in the TECs. Amenities at each stop determined by potential ROW available. List of amenities presented below.
	Curb Ramp Upgrade	Curb ramps either need to be installed or upgraded to meet PROWAG-compliant requirements
	Refuge Island	Physical refuge to protect pedestrians at crosswalks, such as pork chops
	Pedestrian Signal	New pedestrian crossing signals
	Bike Box	New bike boxes at intersections to provide bicyclists priority and enhance visibility
	Turn Control	Restrictions on turning movements, such as right-in/right-out restriction or no right on red
	Traffic Calming	An intervention is recommended for traffic calming measures or changes to posted speed
	Resurfacing	Repairs to existing pavement
	Lighting Improvement	New or enhanced street lighting
	Hazard Removal	Removal of hazards to bicyclists and pedestrians, such as physical obstructions
	Intersection Improvements	This symbol represents the need for numerous interventions at an intersection. Improvements are described in the accompanying table, and in some cases, conceptually drawn on the map
	Hi-Vis Crossing	High visibility crosswalk (with associated ramp upgrades to meet ADA standards)
	Transverse Crossing	Standard parallel crosswalk (with associated ramp upgrades to meet ADA standards)
	Bike Lane	A marked bike lane, may be buffered
	Shared Bike / Bus Lane	A lane reserved for buses and bicyclists to share
	Hi-Vis Crossing With Signal	Standard high-visibility crossing, plus an RRFB or Pedestrian Hybrid Beacon (PHB)
	Marked Parallel Parking	Parallel parking along roadways with pavement markings
	New / Improved Sidewalk	New sidewalks or improvements to existing sidewalks to bring sidewalk up to base ADA standard, such as filling sidewalks gap and widening sidewalks
	Multi-Use Path	Creation of new multi-use paths or conversion of sidewalks to multi-use paths. Multi-use paths accommodate pedestrians and bicyclists
	Restriping	Restriping roadways to a new lane configuration
	Fencing / Railing	Physical barriers to impede access by pedestrians or prevent falling down steep grades
	Planted Median	Locations with greater opportunity for plantings or buffers to create more separation from traffic, prevent vehicle turning movements, provide shade, and improve user experience
	Floating Bus Island	Bus islands between an outside bike lane and a through lane
	Bus Stop Relocation	Relocation of bus stop to a far side location or closer to an intersection. Arrows point to the new bus stop location.
	Curb Radii Tightening	Use of curb extensions to increase pedestrian space and tighten vehicle turn radii

Transit Emphasis Corridor Community-Based Designs to Remove Barriers to Transit

- Pedestrian Crossings
- Pavement Marking Upgrades / Curb Management
- Curb Adjustments and Radius Tightening
- Bus Speed and Reliability Spot Improvements
- Signal Improvements
- Streetscaping, Corridor Art, and Wayfinding
- Intersection Geometry Improvements
- Incorporate Ongoing Corridor Projects
- Placement of Bus Stops with Amenities and Landing Pad
- New Curb & Gutter Construction
- Multi Use Paths and Sidewalks
- Placemaking

Hillsborough Rd at Cole Mill Rd

- Participatory Budget Project
- Completed 2021

