



# **Durham's Station Area Strategic Infrastructure Study:**

*An effort to identify infrastructure  
needs around regional rail stations.*



# Recent Transit Milestones

- **June 2011:** Durham Bus & Rail Investment Plan
- **November 2011:** Durham voters approved ½ cent sales tax referendum
- **February 2012:** Locally Preferred Alternative Adopted
- **November 2012:** Orange voters approved ½ cent sales tax referendum
- **December 2013:** Application for Federal New Starts Grant Submitted
- **February 2014:** FTA grants permission to enter project development
- **Present-2016:** “Project Development” (environmental & engineering studies)

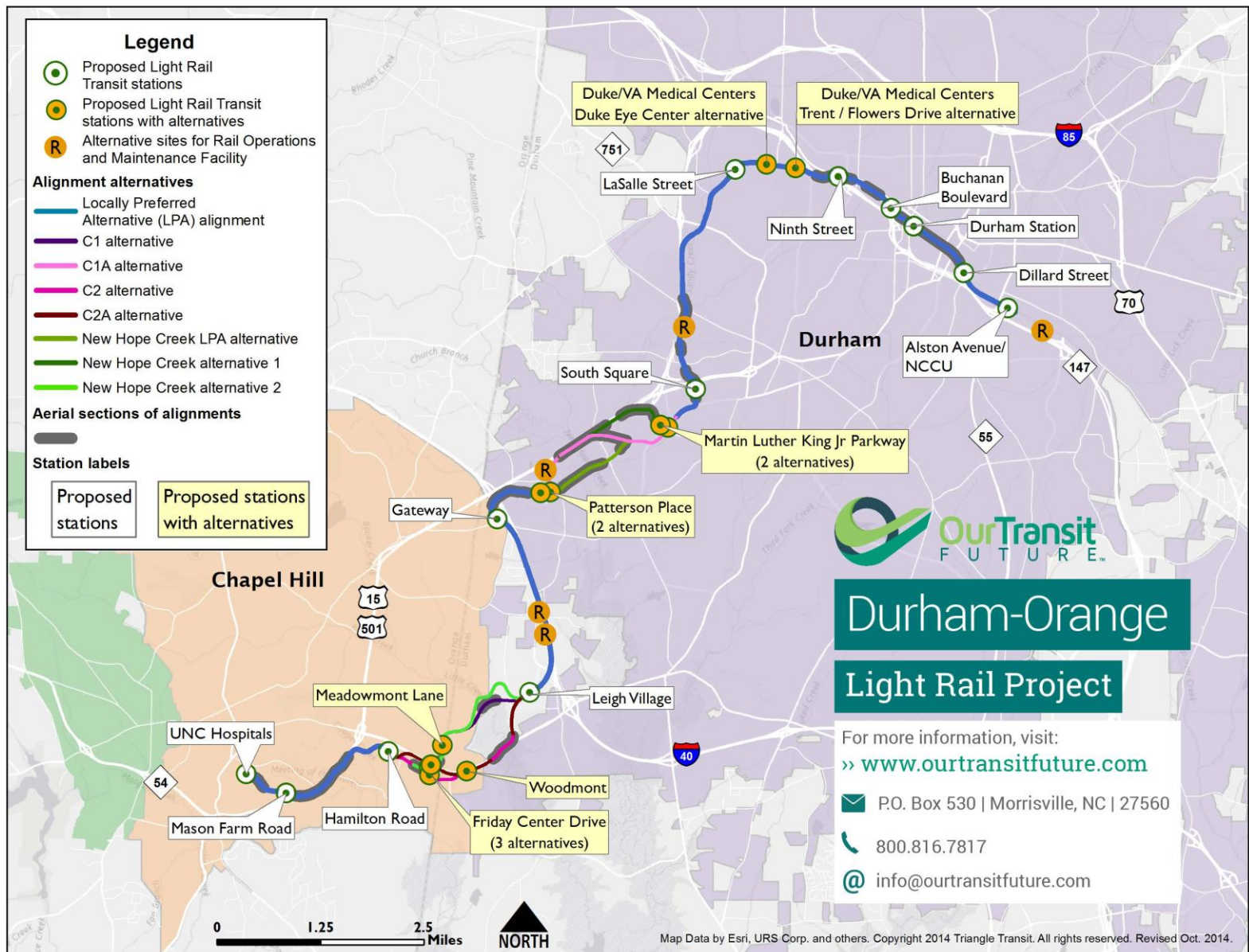
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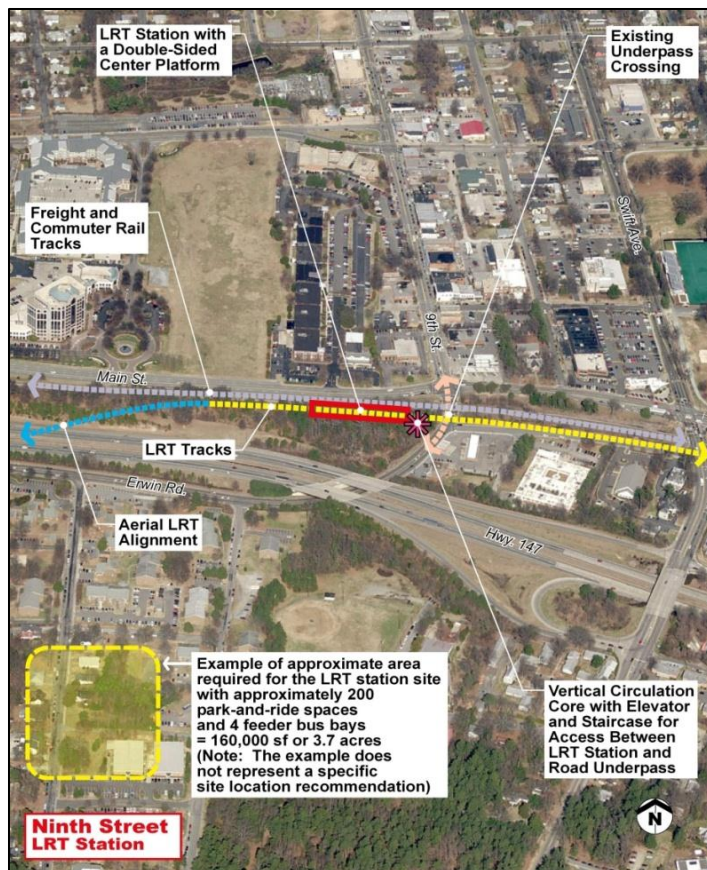
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# Station versus Station Area





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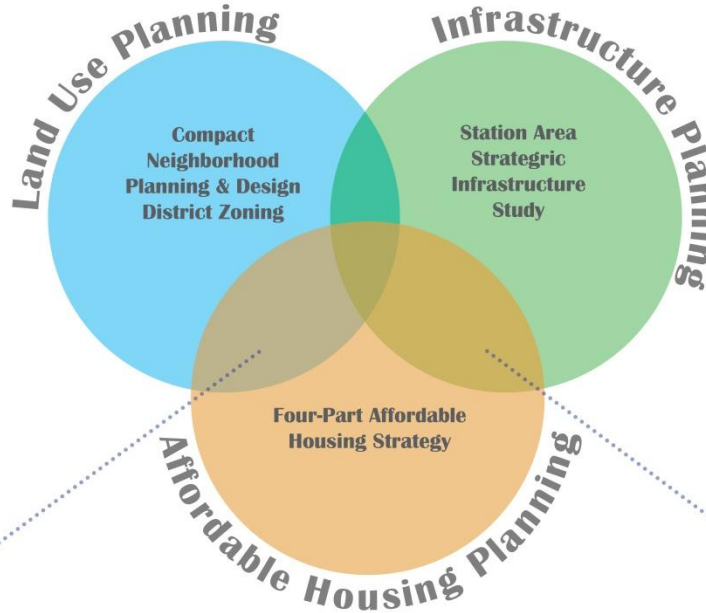


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# Station Area Planning Framework

## LAND USE

Compact Neighborhood Tiers are a policy tool that support infill, redevelopment and new development at densities and designs that promote walkability and transit use. The Planning Department is in early stages of re-evaluating Compact Neighborhood Tier boundaries established in the 2006 Comprehensive Plan to better align with the current Durham-Orange Light Rail Transit proposal. Establishing Compact Neighborhood Tiers are a first step toward implementing Design District zoning, which emphasizes the form of buildings and improvements to the public realm.



## INFRASTRUCTURE

Planning for improvements to sidewalks, bike facilities, streetscapes and underground utilities within future transit areas will be crucial to the long-term success of these neighborhoods as places to live, work, and play. The Planning Department is coordinating a multi-departmental planning process, the Station Area Strategic Infrastructure (SASI) study, to identify and prioritize public infrastructure projects that will promote access to transit and enhance neighborhoods and businesses around regional rail stations.

Implementing Design District zoning increases density allowing for more housing opportunities. Regulatory incentives will encourage affordable housing in these areas.

## AFFORDABLE HOUSING

The City and County Managers have authorized a four part strategy to encourage the development and/or retention of affordable housing in future rail station areas: (1) Develop a "toolbox" of financing options to fund affordable housing within transit areas; (2) Initiate amendments to the UDO that provide incentives for affordable housing through such measures as parking requirement reductions and improvements to the affordable housing density bonus; (3) Installation of Design Districts in future rail transit areas; and (4) Investigate the use of federal and state resources for affordable housing in future rail transit areas.

Providing infrastructure is a costly part of the development process. Publicly financed infrastructure could act as an incentive to build affordable housing.



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# Station Areas = Compact Neighborhoods

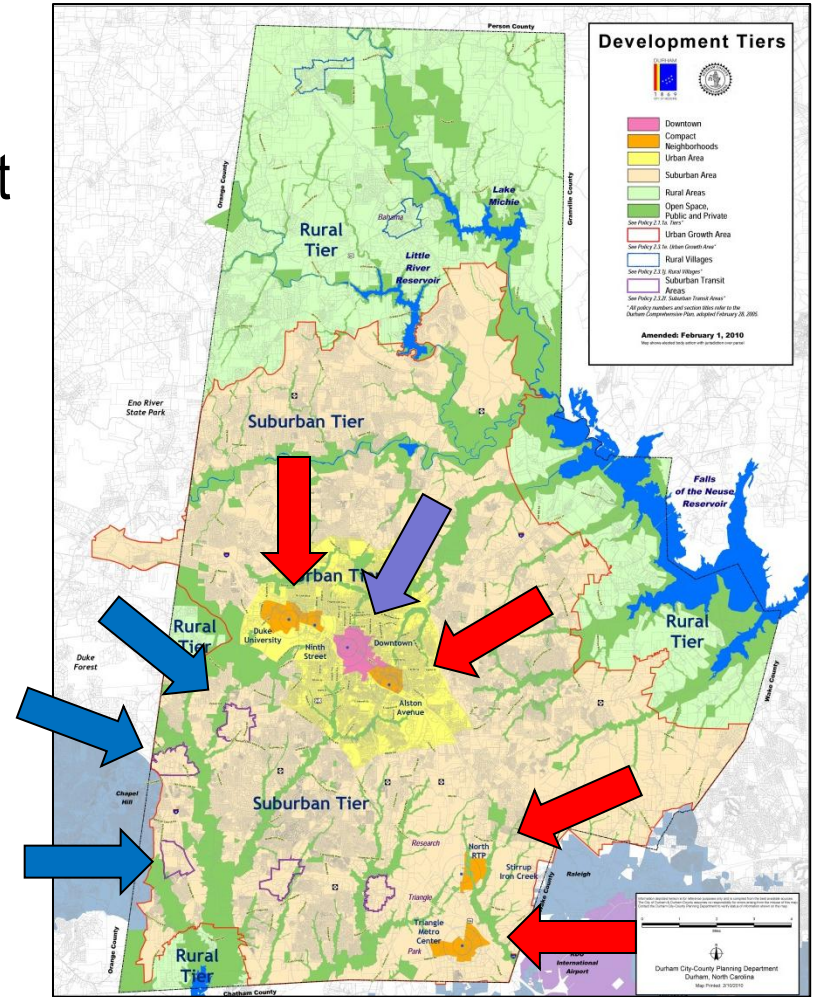
## Existing Compact Tiers

- Medical Center/Ninth Street
- Alston Avenue
- North RTP
- Triangle Metro Center

## Future Compact Tiers

- Leigh Village
- Patterson Place
- South Square/MLK

## Downtown





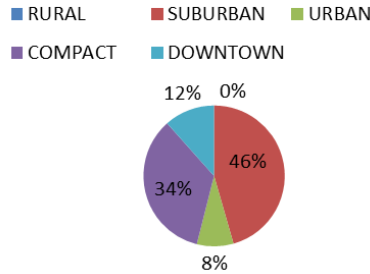
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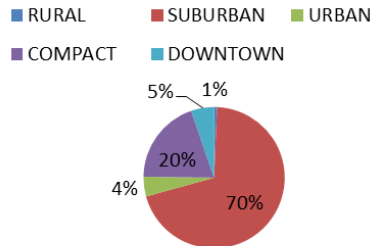
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# Compact Neighborhoods will absorb greater amounts of growth

Transit Scenario Employment Growth by Tier



Transit Scenario Household Growth by Tier



Tier	Job Growth
DOWNTOWN	13,475
COMPACT	40,110
URBAN	9,736
SUBURBAN	53,010
RURAL	0
TOTAL	116,331

Tier	Household Growth
DOWNTOWN	3,581
COMPACT	13,326
URBAN	3,086
SUBURBAN	47,774
RURAL	469
TOTAL	68,236

**34% of Employment Growth and 20% of New Households in just 1.6% of the total acreage of Durham County.**

*Data from Imagine 2040, Transit Scenario*



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# Will we be ready?

Will people be able to safely and conveniently access the transit stations?

Will there be adequate infrastructure capacity (above and below ground) to accommodate future growth?

Where will the money come from?





# Station Area Strategic Infrastructure Study Goals

To coordinate infrastructure projects and policy recommendations that:

- Improve access for all users to transit facilities;
  - Sidewalks, Bike Lanes, Intersections, Roadways
- Help catalyze investment;
  - Water and Sewer Capacity, Streetscape
- Finance recommendations.
  - Value Capture, Grants, Capital Improvement Program

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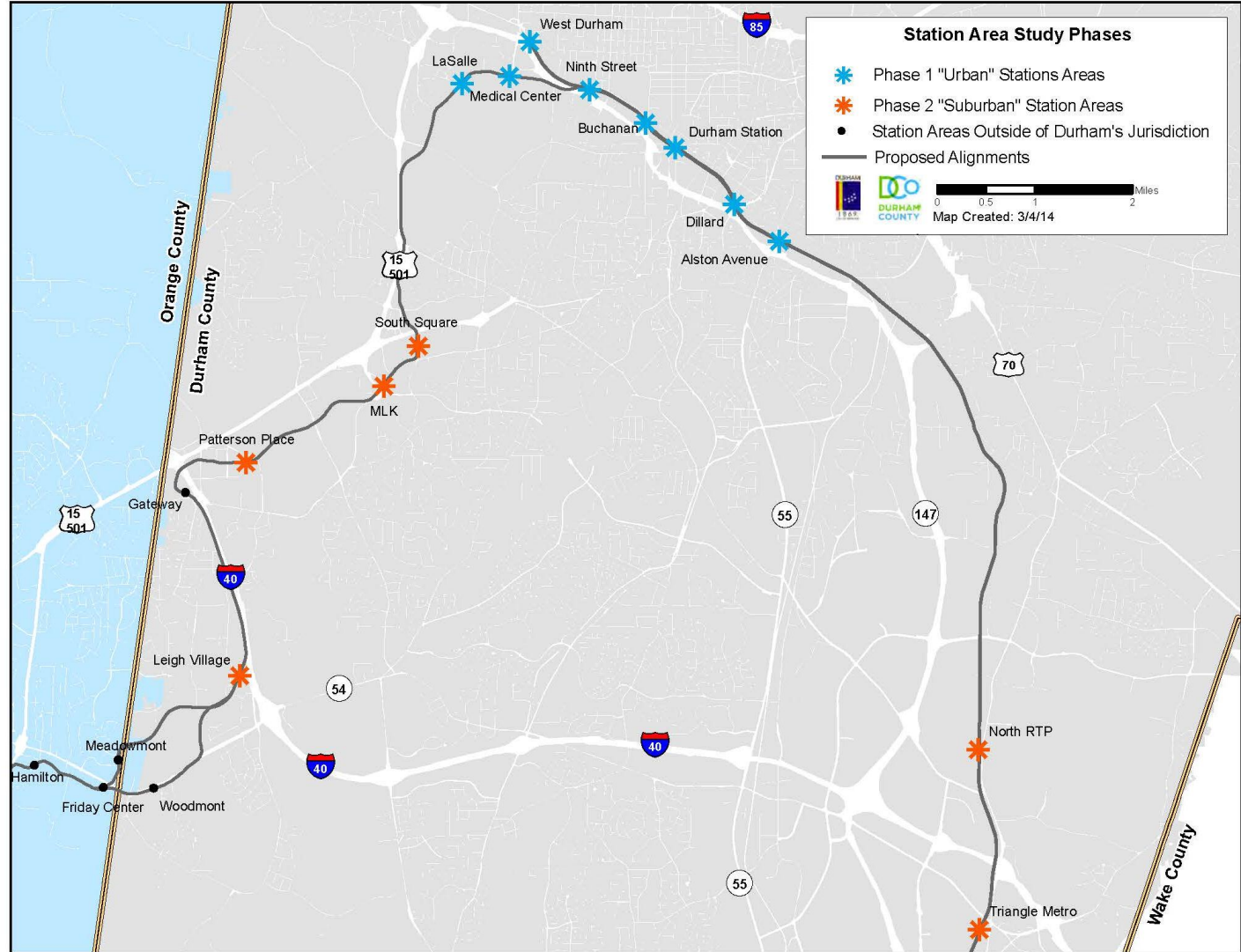


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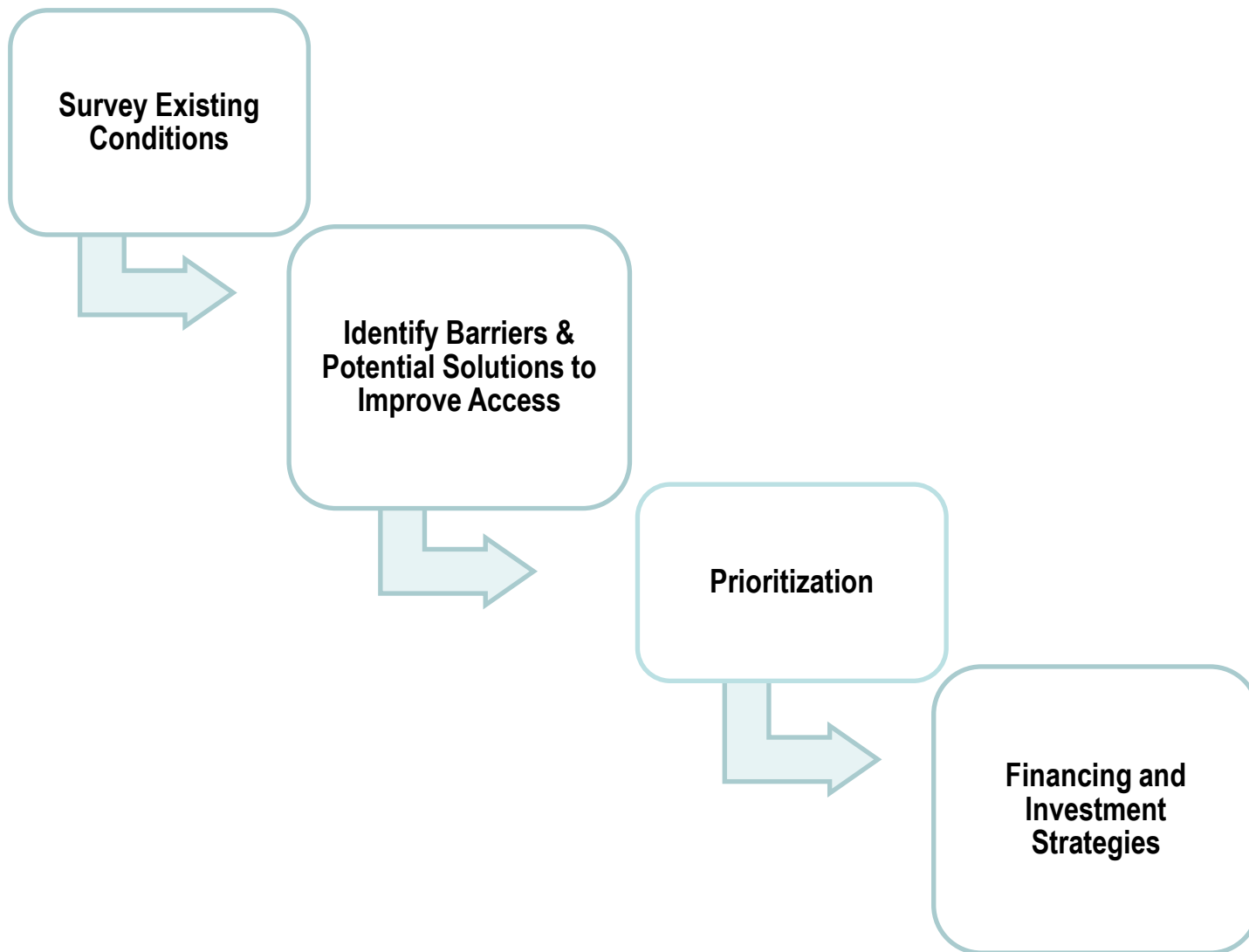
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# Planning Phases





# Planning Process

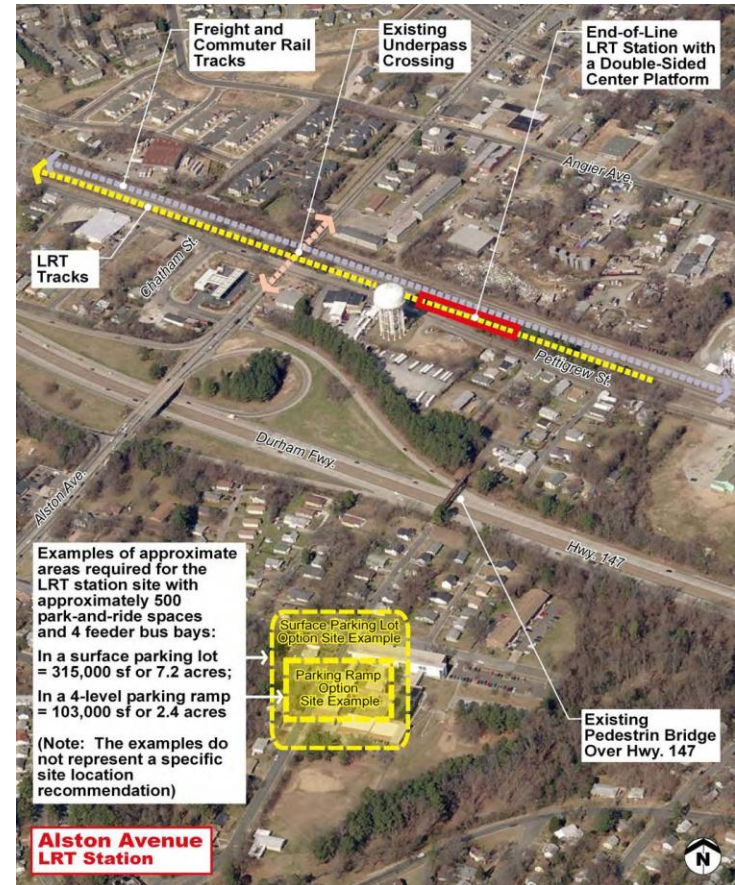
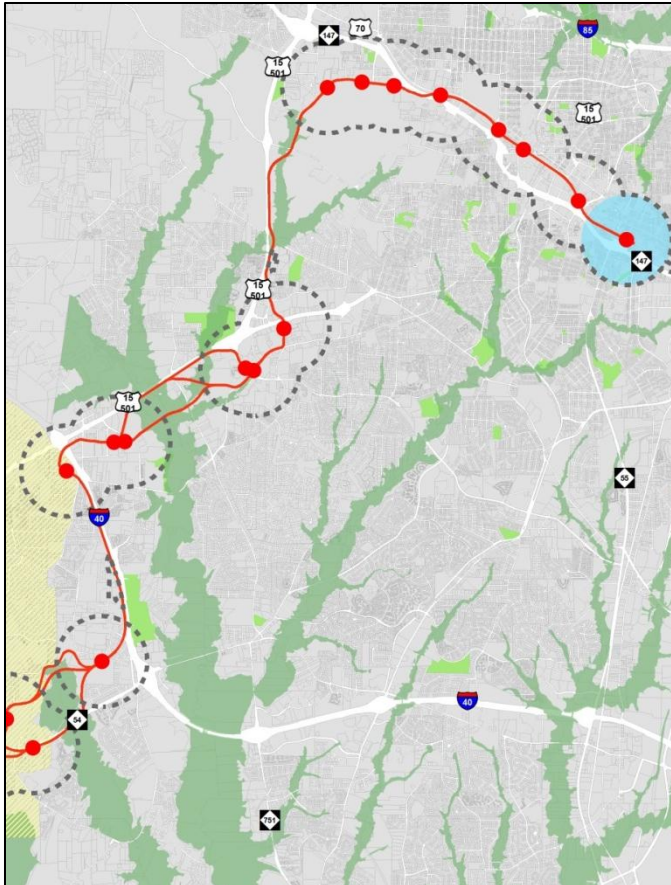




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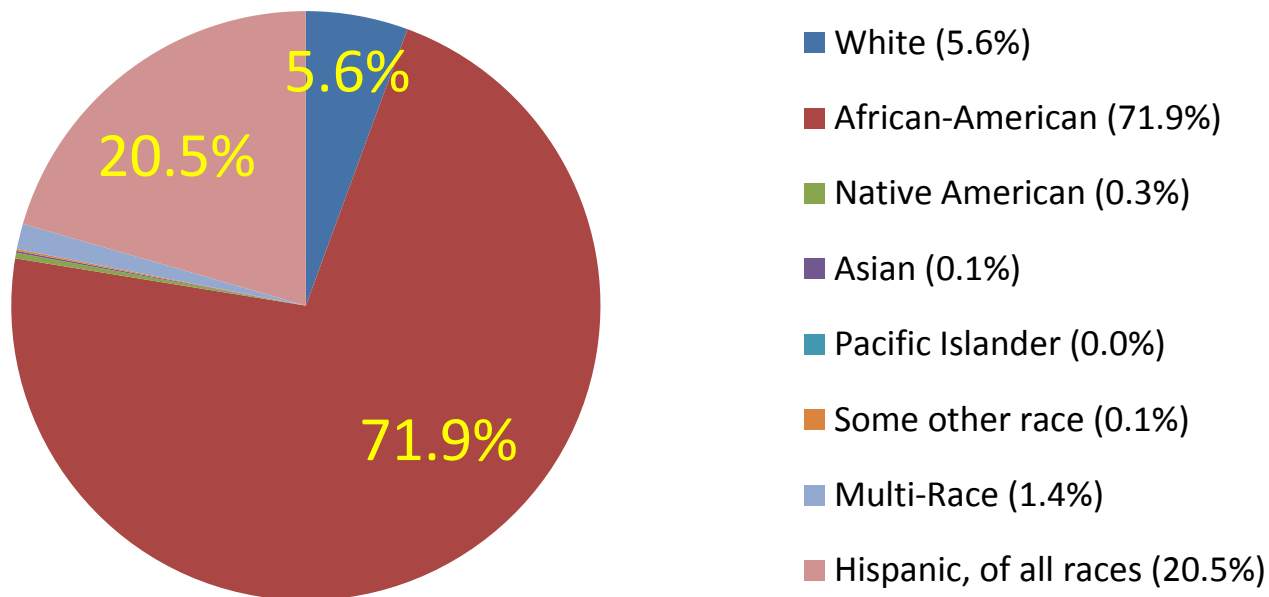
# Final Stop: Alston Avenue Station





# Alston Avenue Demographics

- **Minority Majority**
- Low Median Income
- High Poverty Rate
- Low Household Car Ownership Rates



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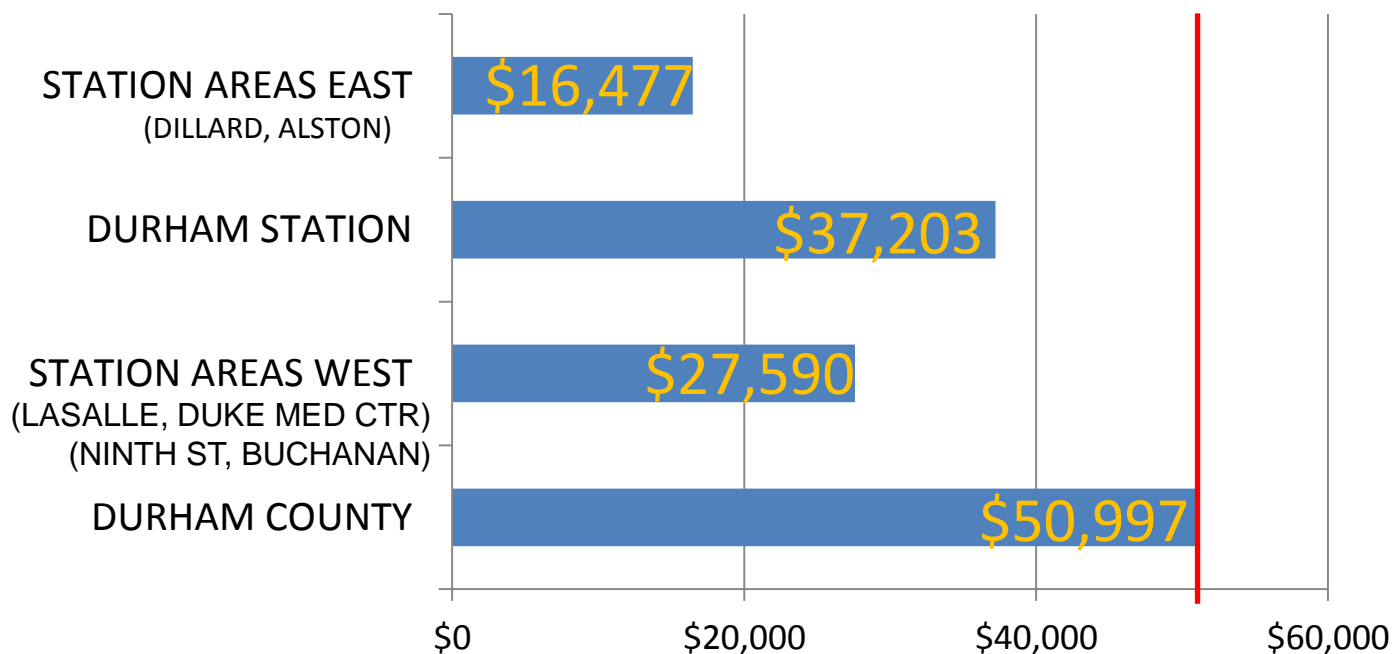


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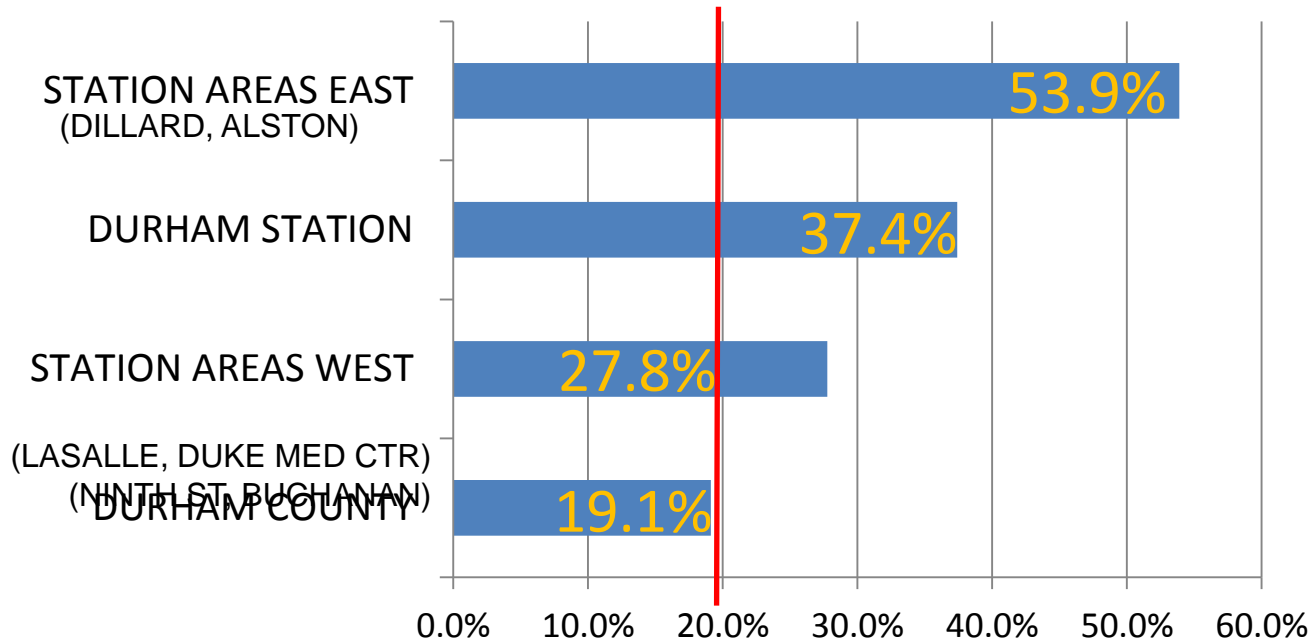
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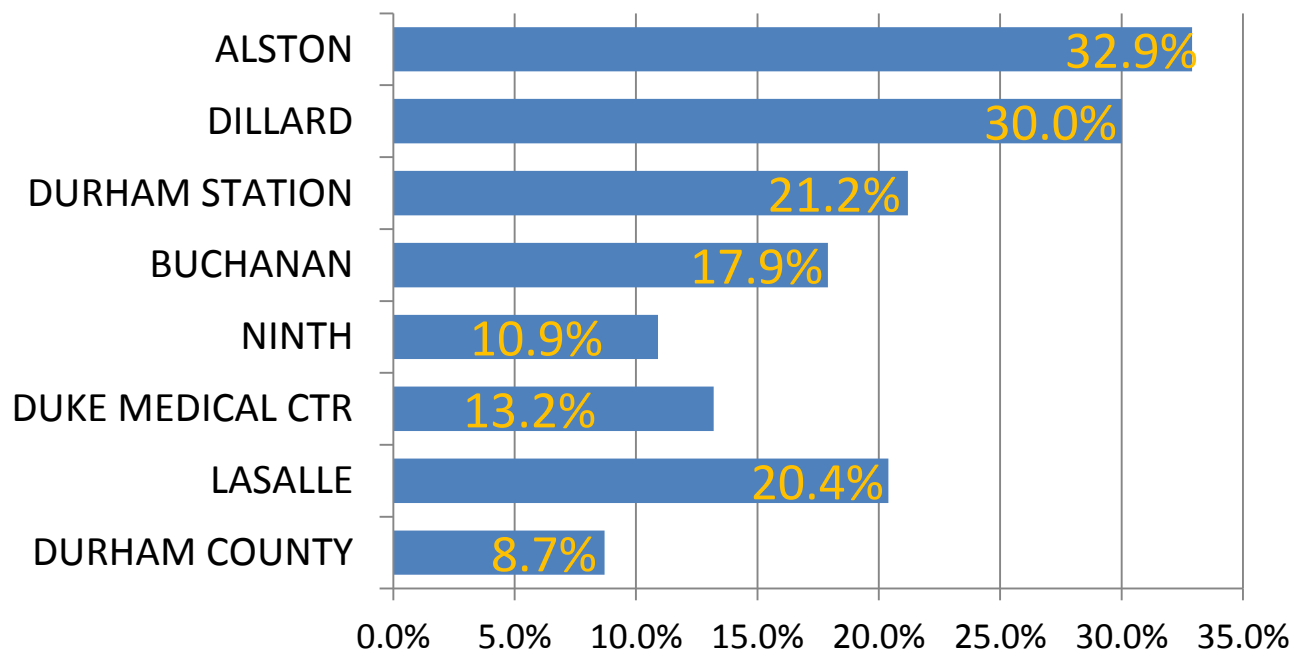
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# The Promises of LRT

- Connect people to jobs and other opportunities throughout the region.
- Bring investment to an area that has otherwise not seen strong economic activity.
- Construction of the Durham Freeway in the late 1960s tore through and divided this historically African American neighborhood. LRT should promote inclusivity and connectivity.





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# The Challenges of LRT

- Bifurcated by the Durham Freeway
- Split by the railroad corridor
- Industrial land uses
- Proposed road closures





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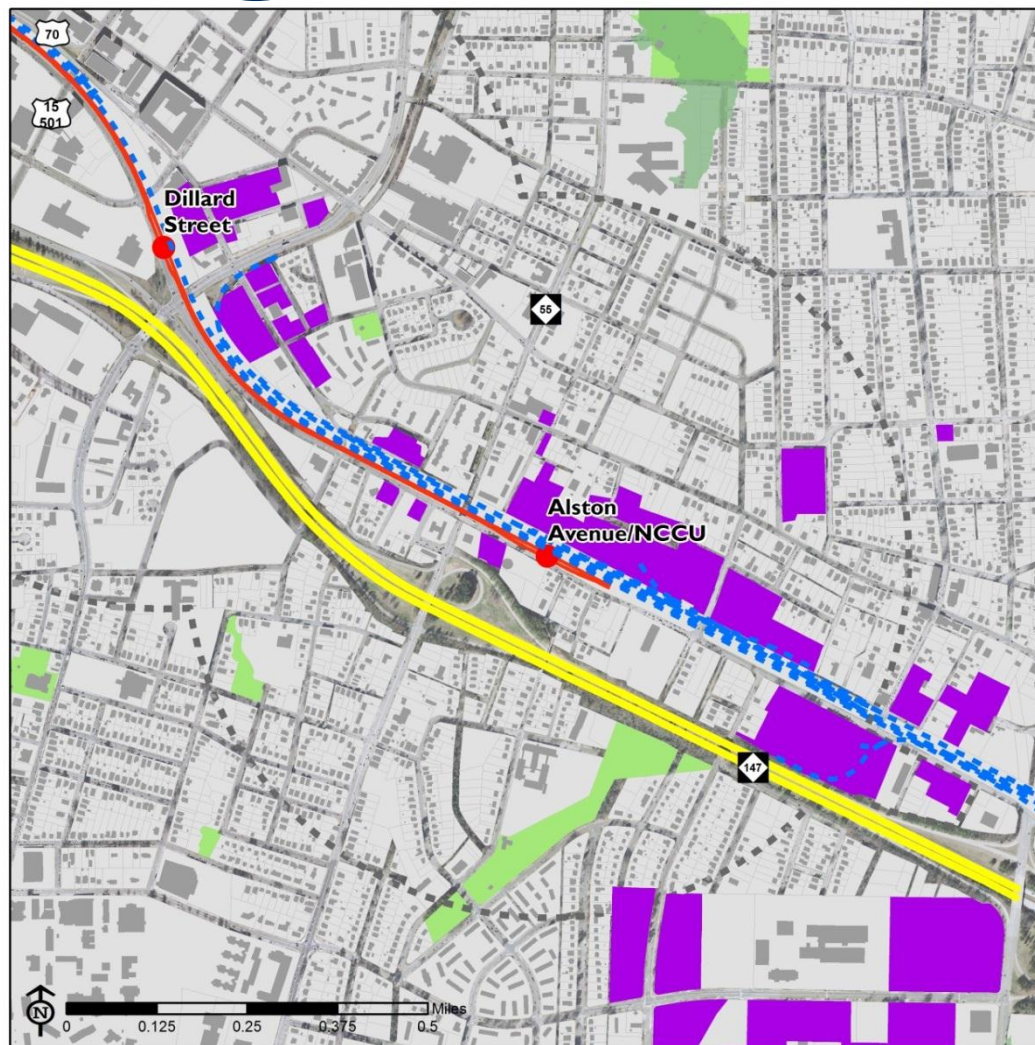
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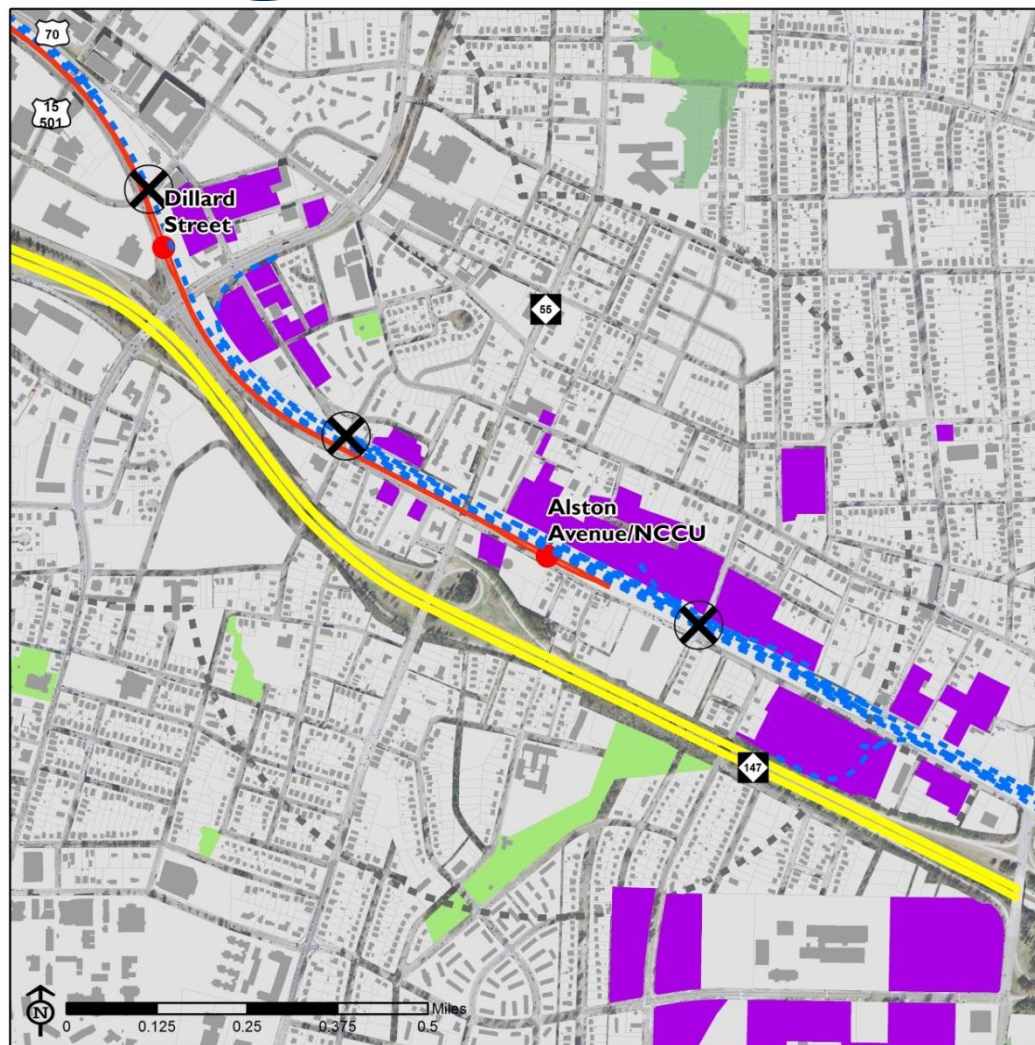
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# Breaking down barriers

- Major origins and destinations
- Primary corridors
- Barriers to access





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# Assembling the Team: Technical Oversight Group



- Planning
- Transportation
- MPO
- Public Works
- Water Management
- General Services
- Triangle Transit/DATA
- NC DOT
- County Engineering
- Finance
- Budget
- Economic & Workforce Development
- Neighborhood Improvement Services

# Brainstorming Projects

## Inventory of Potential Infrastructure Projects

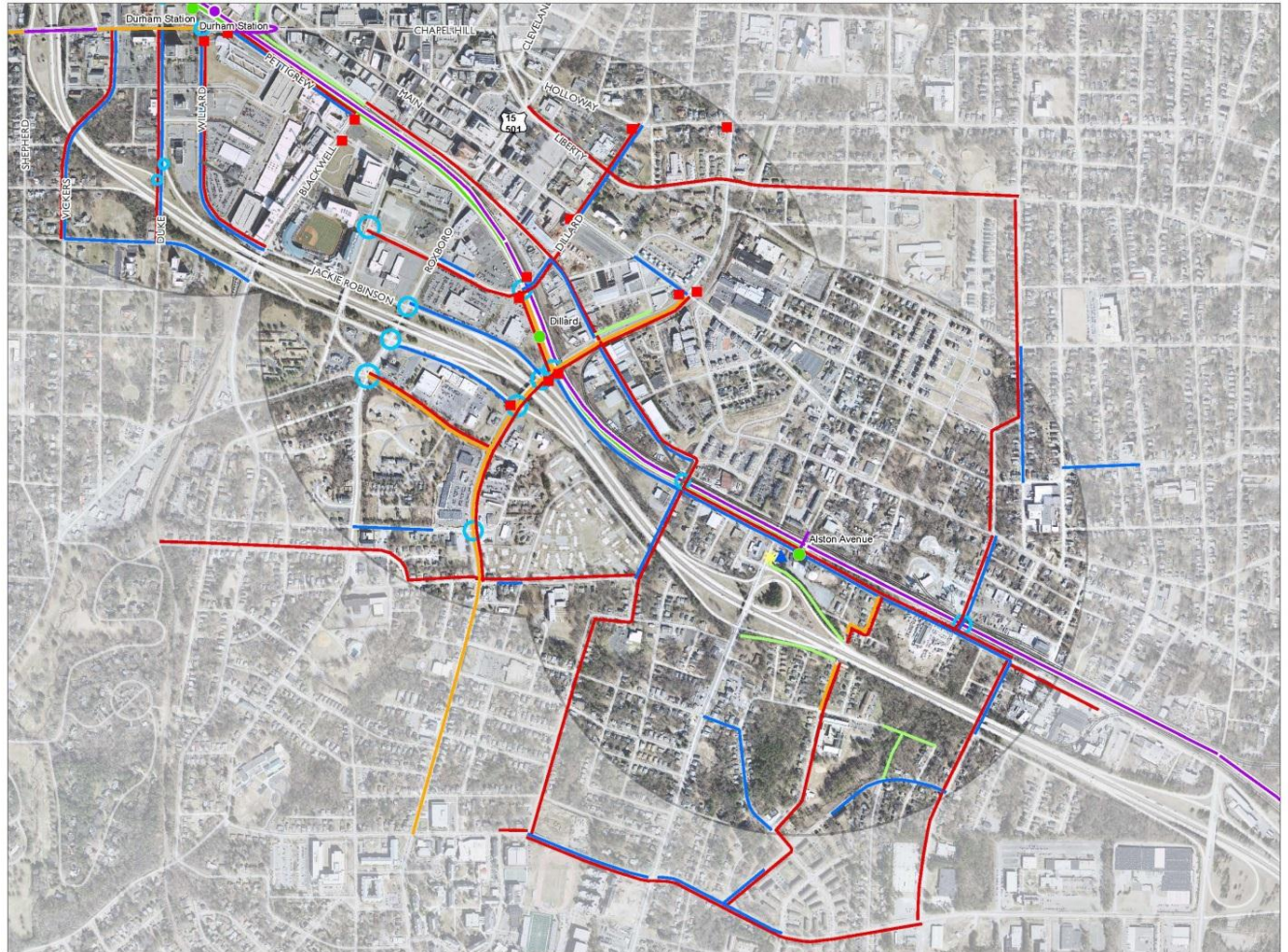
- Alley
- Bike Route
- Intersection
- Pedestrian Bridge
- Roadway
- Sidewalk
- Streetscape
- Trail
- Bus Stop
- ▲ Parking Deck
- Wayfinding
- Commuter Rail Station
- Light Rail Station
- Commuter Rail Line
- Light Rail Line

Map Created Spring 2014  
Durham Planning



0 0.125 0.25 Miles

The following projects were identified in a working session of the Technical Oversight Group. The potential projects have not yet been prioritized or evaluated for feasibility and cost effectiveness.





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# Defining Projects

## Existing Bike Facilities

### Bike Facilities

- Shared Roadways
- Bicycle Lanes
- Buffered Bicycle Lanes
- Bicycle Boulevards
- Shared Use Paths

### Applicability

- Average Daily Traffic
- Posted Speed Limit
- Transit Volume
- Land Use Context





# Defining Projects



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## Recommended Bike Network





# Scoring the Projects

- Scores reflect benefits and costs
- Models created using GIS for each type of infrastructure project
- Inputs vary depending on infrastructure type



Priority	Degree of Difficulty
Bike Comprehensive Plan	Available Pavement (Curb to Curb)
Proximity to Station	Roadway Ownership/Maintenance
Community Scoring	Curb and Gutter
Connected to Existing Facility	On-Street Parking
Primary Access Corridor	

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# Gathering Input

## 17. Hyde Park, Plum, and Bacon Street Corridor

Connecting to the Alston Avenue Station



**Station Location:**  
Pettigrew Street between Alston Avenue and Plum Street

**Length:** 8393 Feet (1.59 Miles)

**Corridor Type:** Pedestrian, Bicycle and Vehicles

**Station Context:**  
The Alston Avenue Station is the planned final stop for the Durham-Orange LRT. The station is well positioned to connect local communities to jobs throughout the region and to serve the needs of students and staff of nearby educational institutions.

**Major Origins/ Destinations:**  
North Carolina Central University, Durham Technical Community College, Holton Career & Resource Center, Edgemont Neighborhood, Old East Durham Neighborhood, Franklin Village, Golden Belt, Eastway Village

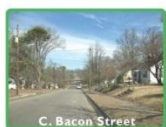


**Issues:** The sidewalks, pavement markings, and curb ramps crossing existing railroad tracks are insufficient and potentially unsafe. This intersection is proposed to be closed; however, is an important link between the the Alston Avenue station and neighborhoods to the north.

**Opportunities:** Improve safety of the at-grade crossing while still allowing Plum Street to remain open.

**Possible Solution:** Work with stakeholders to improve the curb ramps, sidewalks, and pavement markings across the tracks. Introduce streetscape amenities such as benches, trash receptacles, and decorative light poles. Add bicycle signage and pavement markings.

\$50

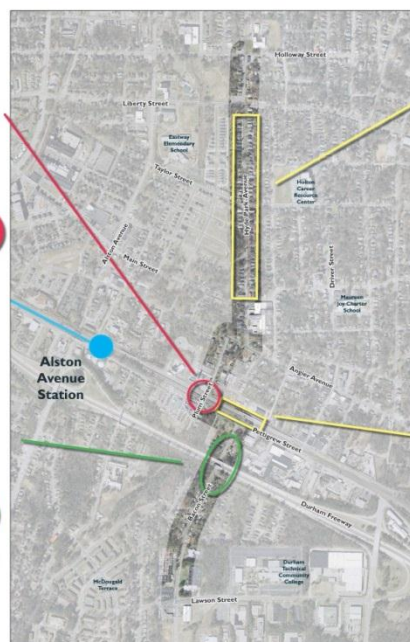


**Issues:** Bacon Street is one of few streets providing an easy connection underneath the Durham Freeway to the Alston Avenue Station; however, the sidewalks are discontinued on the north side of the highway. Poor lighting under the highway bridge makes pedestrians feel unsafe.

**Opportunities:** Create a continuous and seamless connection for bikes and pedestrians that crosses under the Durham Freeway, connecting neighborhoods to the south with the Alston Avenue station area.

**Possible Solution:** Construct sidewalks between the Durham Freeway and Pettigrew Street. Repair existing sidewalks as needed. Investigate additional lighting under the highway bridge. Add accommodations for bicycles.

\$10



**Issues:** Sidewalks in modest condition are present on one side of the street; building on both sides would jeopardize trees or residential on-street parking.

**Opportunities:** Take advantage of existing sidewalks and canopy street trees to create a primary route for bikes and pedestrians.

**Possible Solution:** Rebrand as a "bicycle boulevard" with added directional signage, traffic calming, and pavement markings. Repair sidewalks where necessary.

\$25



**Issues:** With vacant land and the railroad tracks on either side of the street, this segment of Pettigrew Street lacks "eyes on the street" which can promote a sense of safety. Pettigrew Street lacks sidewalks and bike accommodations as called for in the Comprehensive Bicycle Plan.

**Opportunities:** Create a link between Bacon Street and Plum Street which form a north-south spine through the Alston Avenue station area.

**Possible Solution:** Construct a sidewalk with lighting and street trees on the south side of Pettigrew Street. Add bicycle signage and pavement markings.

\$25

*A Monopoly-like game that challenges participants to decide what to fund with a limited amount of money (SASI Bucks)*





# Implementation

- “Value Capture” strategies
  - Tax Increment Financing
  - Special Assessment Districts
  - Other
- City and County Capital Improvements Program
- Federal and State Opportunities
- Inform engineering of the Light Rail Transit system





# Questions?