

# Opportunity Analysis

A descriptive evaluation  
of the Greater Triangle Commuter Rail Corridor

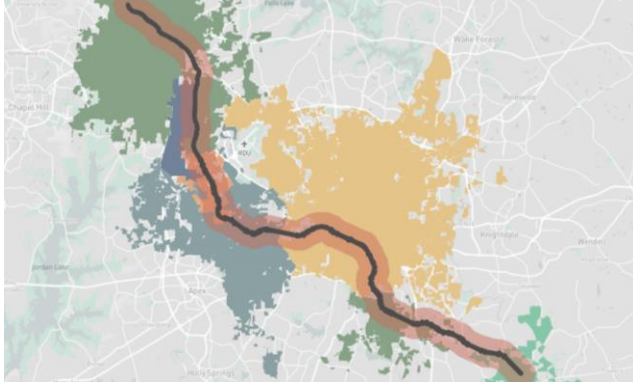


Triangle J Council of Governments

March 2022

# Two Types of Rail Corridor Technical Analysis: Service Analysis and Opportunity Analysis

Service Analysis: What Will It Take To Build?



- Staff work by STV Consultant Team
- What can happen **within** the corridor
- Capital Investments: track, structures, maintenance facilities, vehicles, etc.
- Service Patterns – stops, schedule, etc.
- Capital and Operating Costs
- Ridership
- Operational & Environmental Considerations

Opportunity Analysis: What **Might** We Get If We Build?

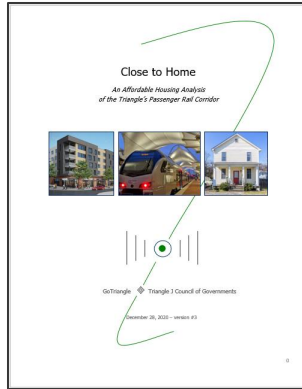


- Staff work by TJCOG and HR&A
- What can happen **along** the corridor
- Travel Markets (TJCOG)
- Land Use (TJCOG)
- Affordable Housing (TJCOG)
- Economic Impact (HR&A)



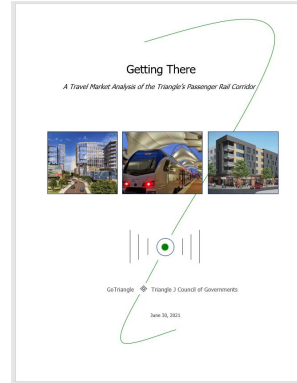
# Passenger Rail Corridor Analysis: Region-Corridor-Station Study Areas

## Affordable Housing Analysis



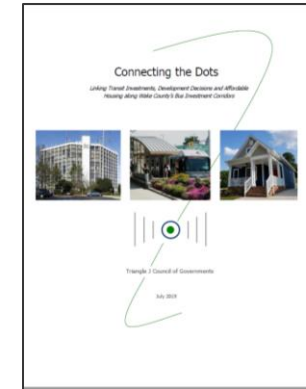
- Key Metrics
- Existing types and locations: legally-binding/affordability-restricted & naturally occurring affordable housing
- Planned additional affordable housing
- FTA CIG scoring calculation
- Opportunity sites & segments

## Travel Market Analysis



- Where workers live
- Where residents work
- Connecting Workers to Jobs
- Emphasized areas:
  - Travel *to* Key Hubs
  - Travel *from* Key Neighborhoods
    - Race/Ethnicity
    - Income
    - Vehicle availability
    - Affordable Housing

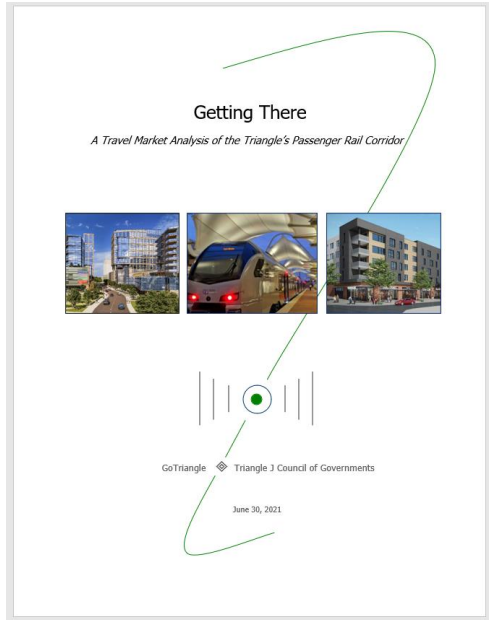
## Land Use Analysis



- Place types & development status
- Existing population & jobs
- Capacity for added jobs and residents
- Emphasized topics:
  - Anchor Institutions
  - HR&A Market Analysis Results
  - Community ROW setbacks
  - FTA Joint Development



# Passenger Rail Corridor Analysis: Why Travel Markets and Land Use Matter



- **The importance of starting with a focus on travel markets and land use, within a connected system**

- **Author of *Trains, Buses, People*:** *"A good transit corridor is one with high density where multiple centers line up, perhaps resulting in a bottleneck....A good corridor must be reasonably straight: people do not want to move in "U"s or circles or zig-zags. It is critical when identifying corridors to think about land use, not existing transportation infrastructure."*
- **Author of *Better Buses, Better Cities*:** *"I don't think that buses are superior to trains. We need a lot of investment in trains. We need new subway extensions, commuter rail improvements and more light rail. We also need a lot more bus service to complement that. **We need a strong spine of high-capacity transit**, and then we have great arteries and bus lines running to many more neighborhoods than have good service today. It's all connected."*
- **Author of *Walkable City Rules*:** *"Transportation systems beget land use patterns. Then land use patterns beget transportation systems. **If they are not addressed together...mobility and quality of life suffer.**"*
- **Author of *Human Transit*:** *"Density is still an overwhelming force for determining the possibilities and outcomes of transit, and we can't begin to make good transit decisions until we understand it."*

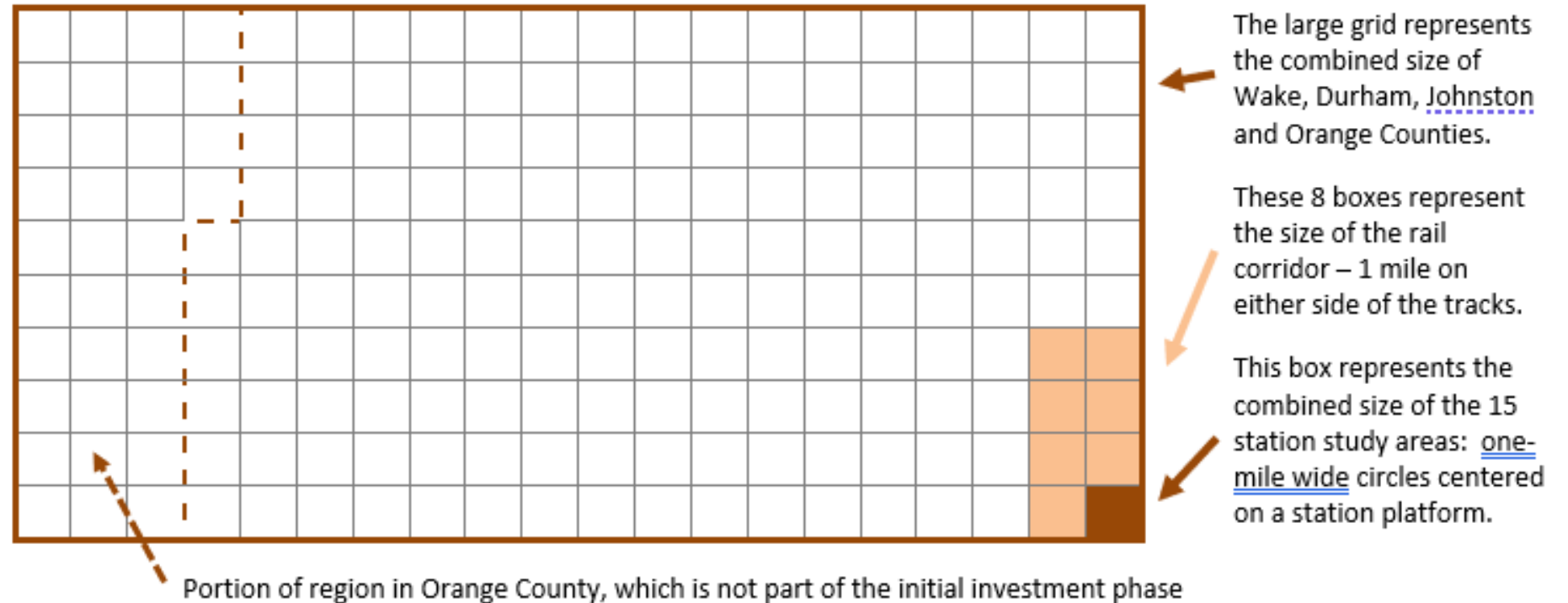


# Opportunity Analysis Framework: Region-Corridor-Station Study Areas

❖ The analysis focuses on three areas:

- ❑ A four-county region through which the rail corridor passes (Orange, Durham, Wake, Johnston)
- ❑ The “rail corridor:” an area within one-mile of the railroad tracks for the planned initial investment
- ❑ “Station study areas:” ½-mile radius circles at 15 locations from the Phase I Study\*

*Relative Size of The 4-County Region, The 2-Mile Wide Rail Corridor, and the 15 Station Study Areas*



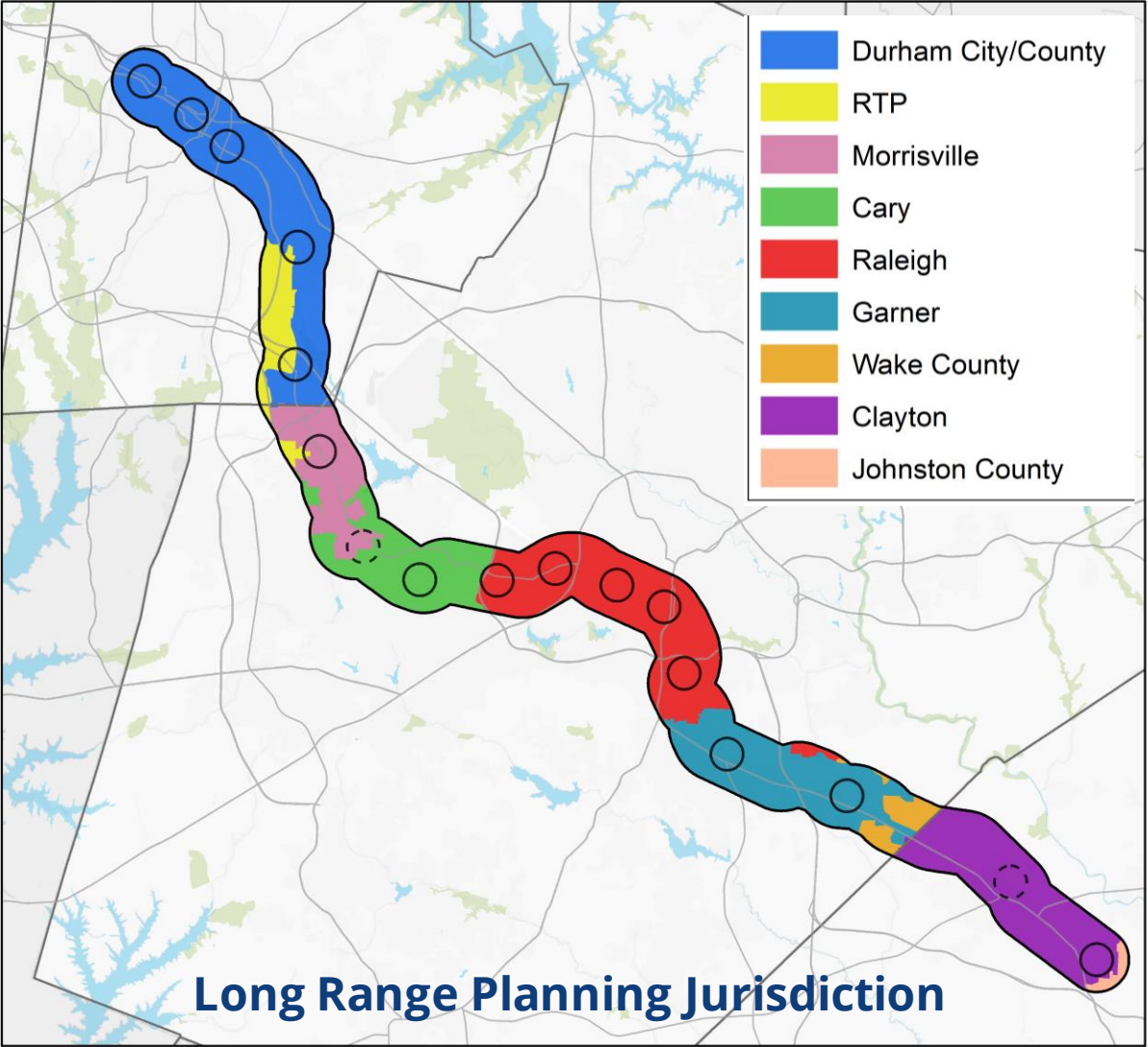
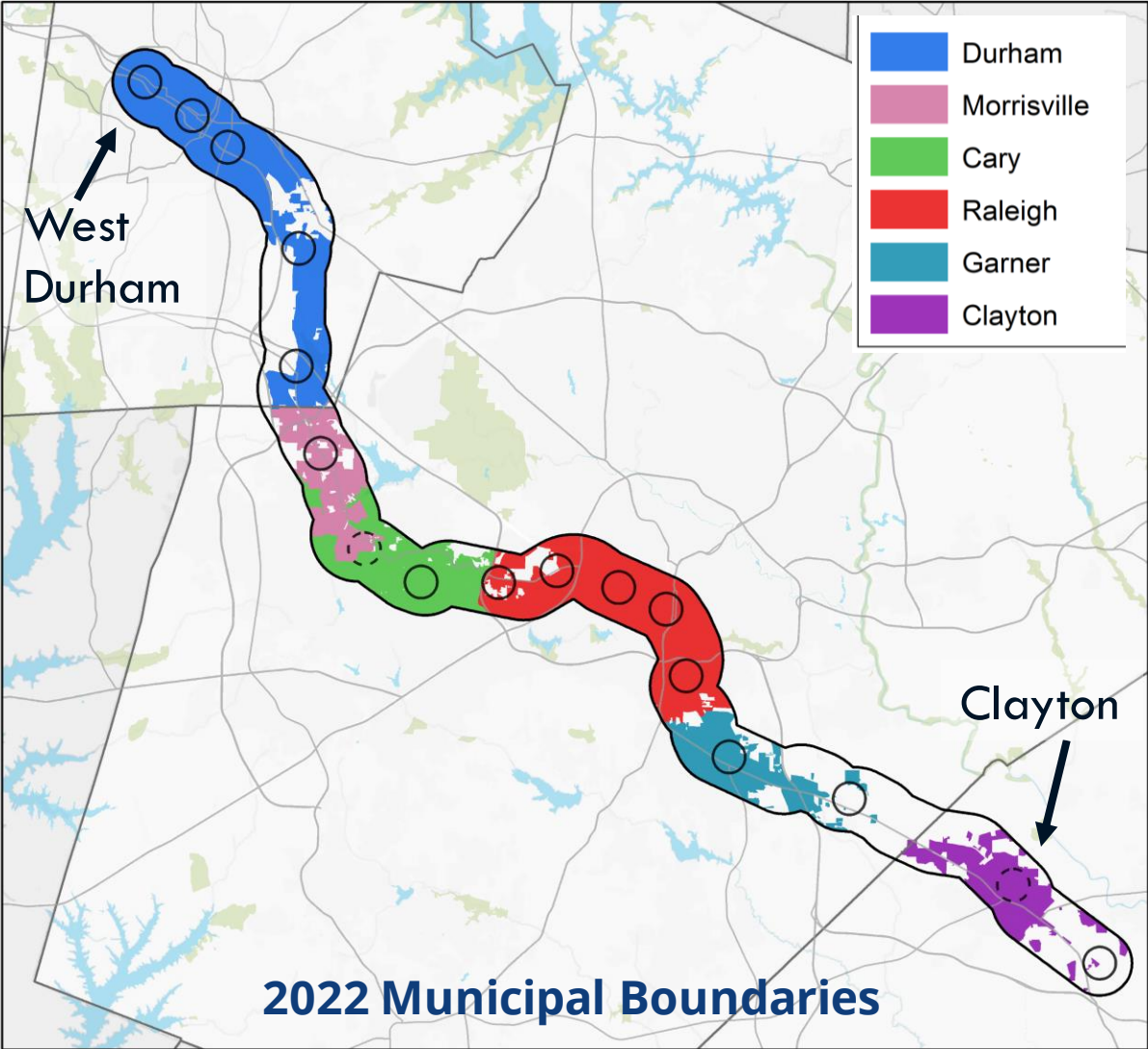
\* In addition to the 15 initial station study areas, this analysis also looked at 2 “infill” sites based on potential:

- downtown Clayton
- Morrisville Parkway





# Passenger Rail Corridor Analysis: Land Use & Affordable Housing – Who’s in Charge?



# Passenger Rail Corridor Analysis: Key Concepts

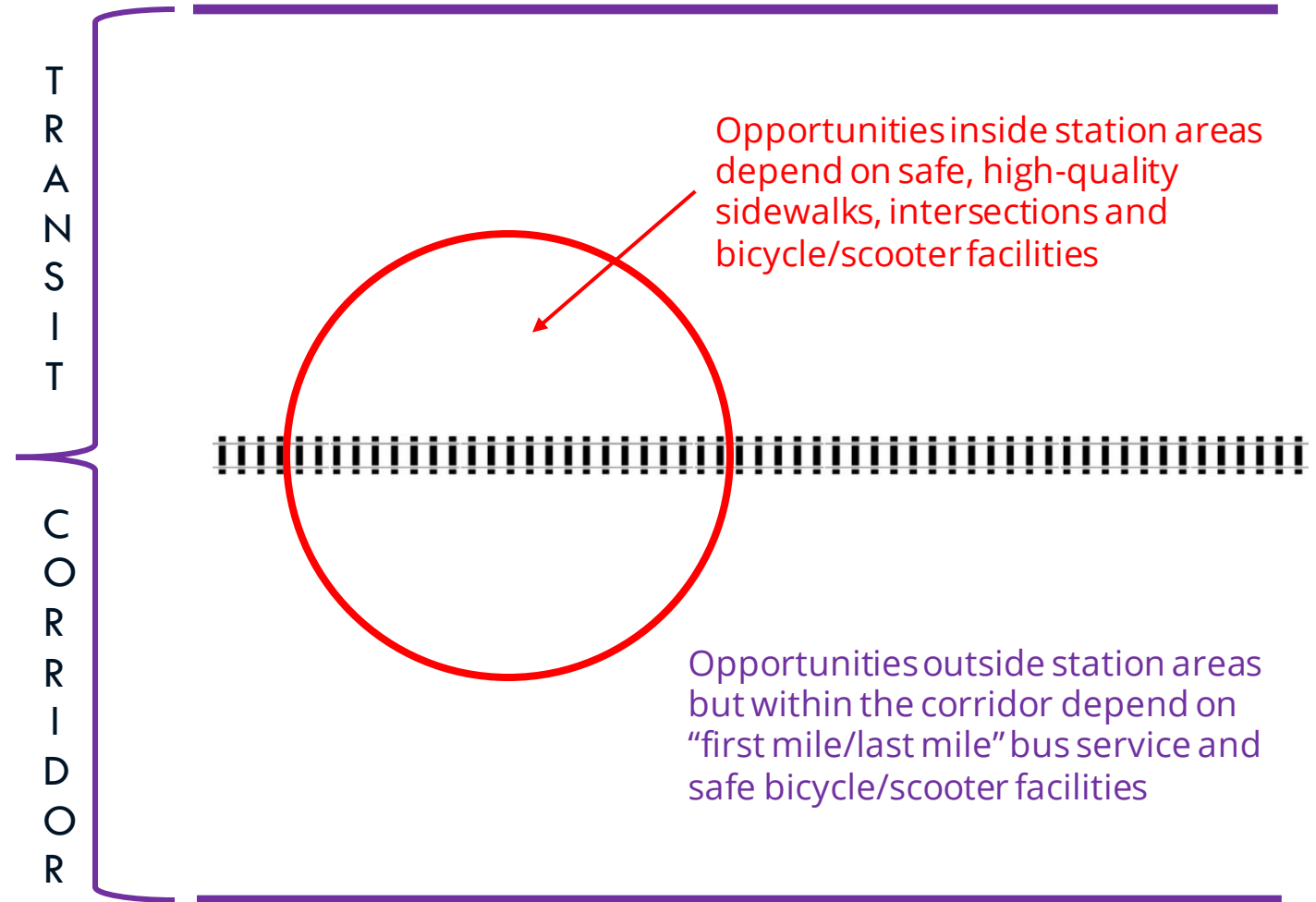
- **Opportunity**

- Opportunity is NOT benefit
- Opportunity + actions can lead to benefits
- Rail corridor opportunities and the actions that can transform them into benefits will differ in different station areas and along different segments of the corridor

- **Descriptive Analysis**

- seeks to understand evidence, not recommend decisions
- Most useful if paired with engagement

Opportunities, no matter the location, depend on the transit service being able to serve a user's travel needs.



Opportunities outside the corridor depend on park and ride access and intersecting bus lines. These are part of the **Service Analysis**.

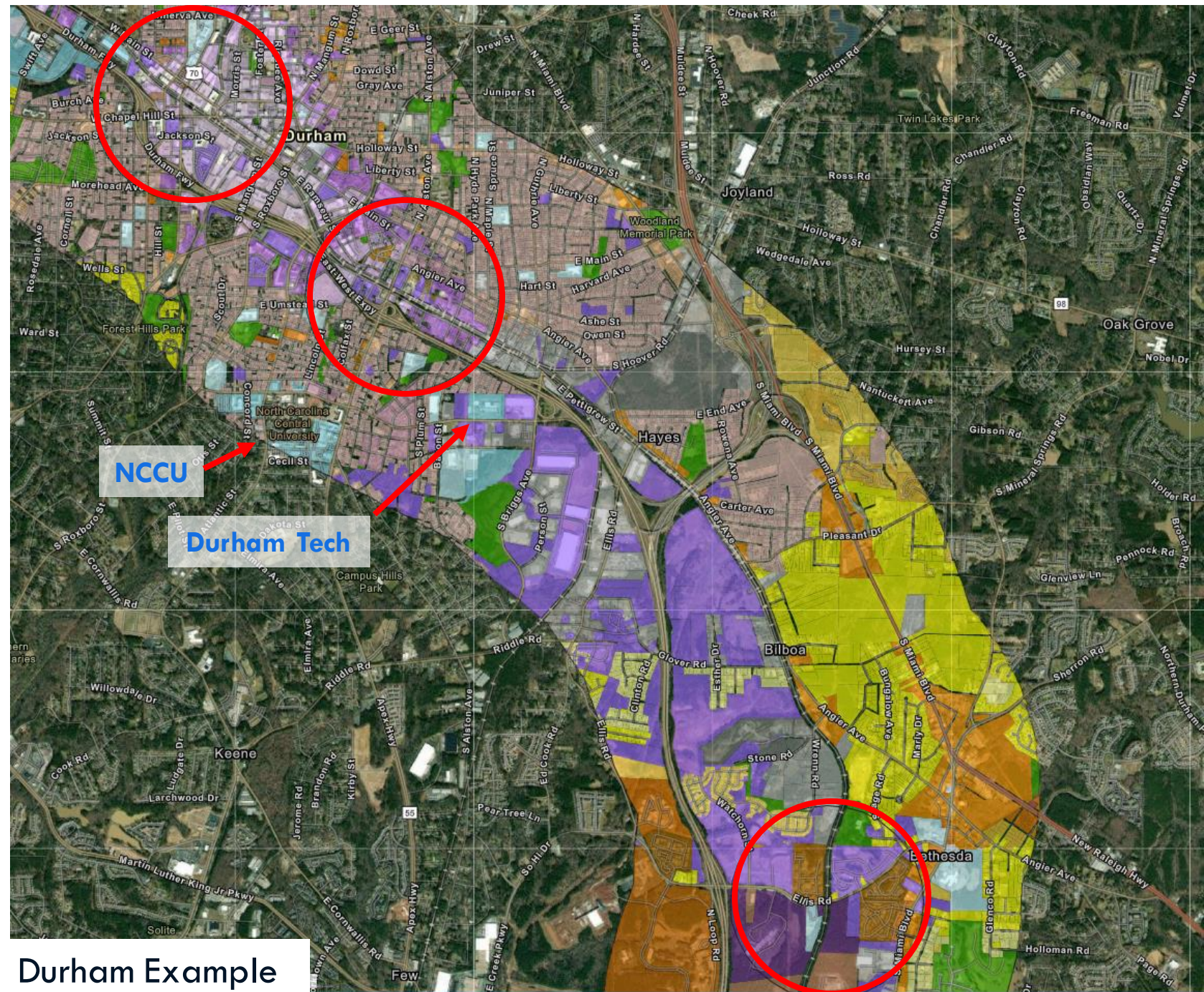




# Passenger Rail Corridor Analysis: Land Use

- **Station Areas (red circles)**
- **Corridor (highlighted area)**

As a couple of important examples, both NCCU and Durham Tech are within the corridor, but not within a “rule of thumb” walking distance of the East Durham Station, so transit, shuttle, and active transportation connections will influence access



Durham Example

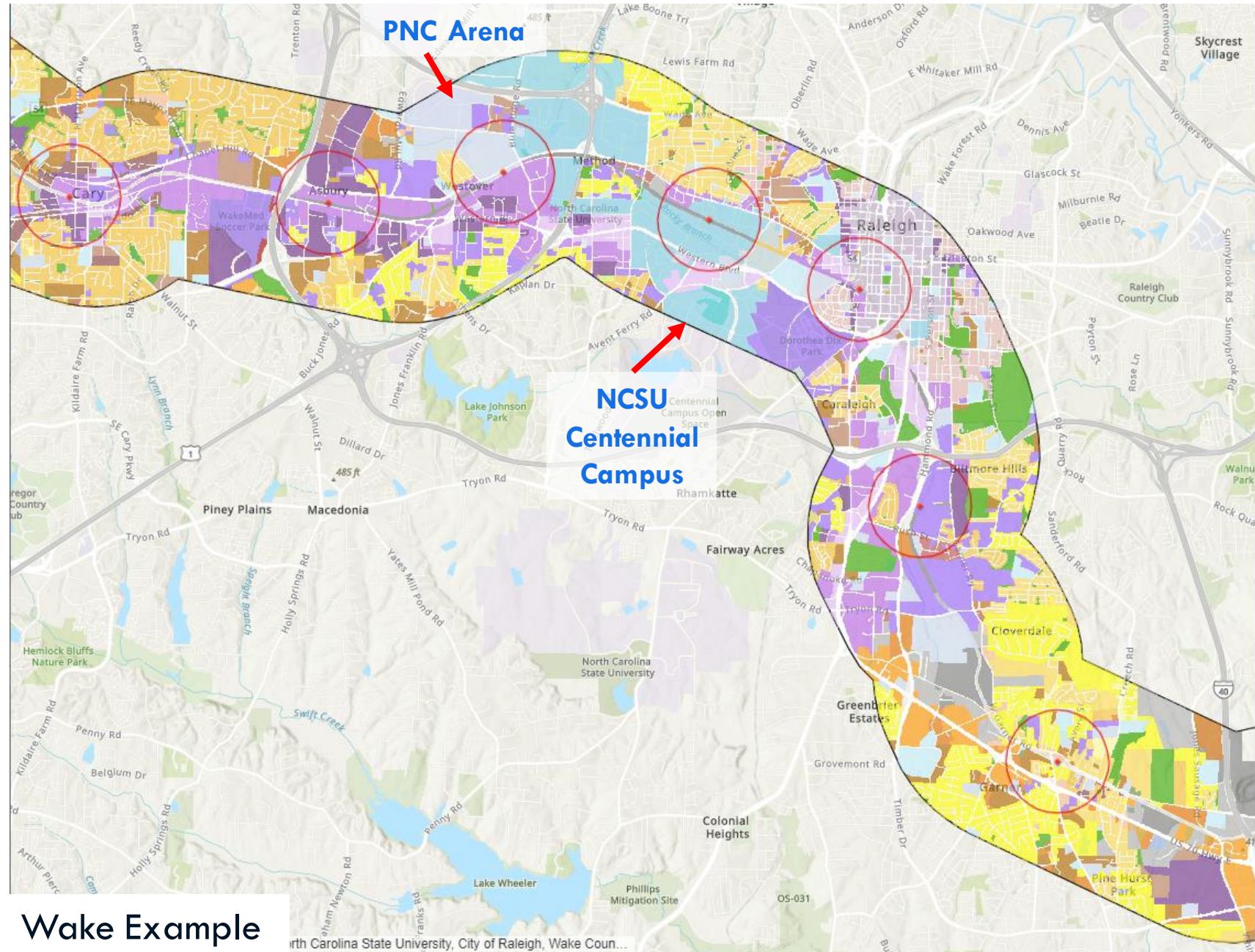




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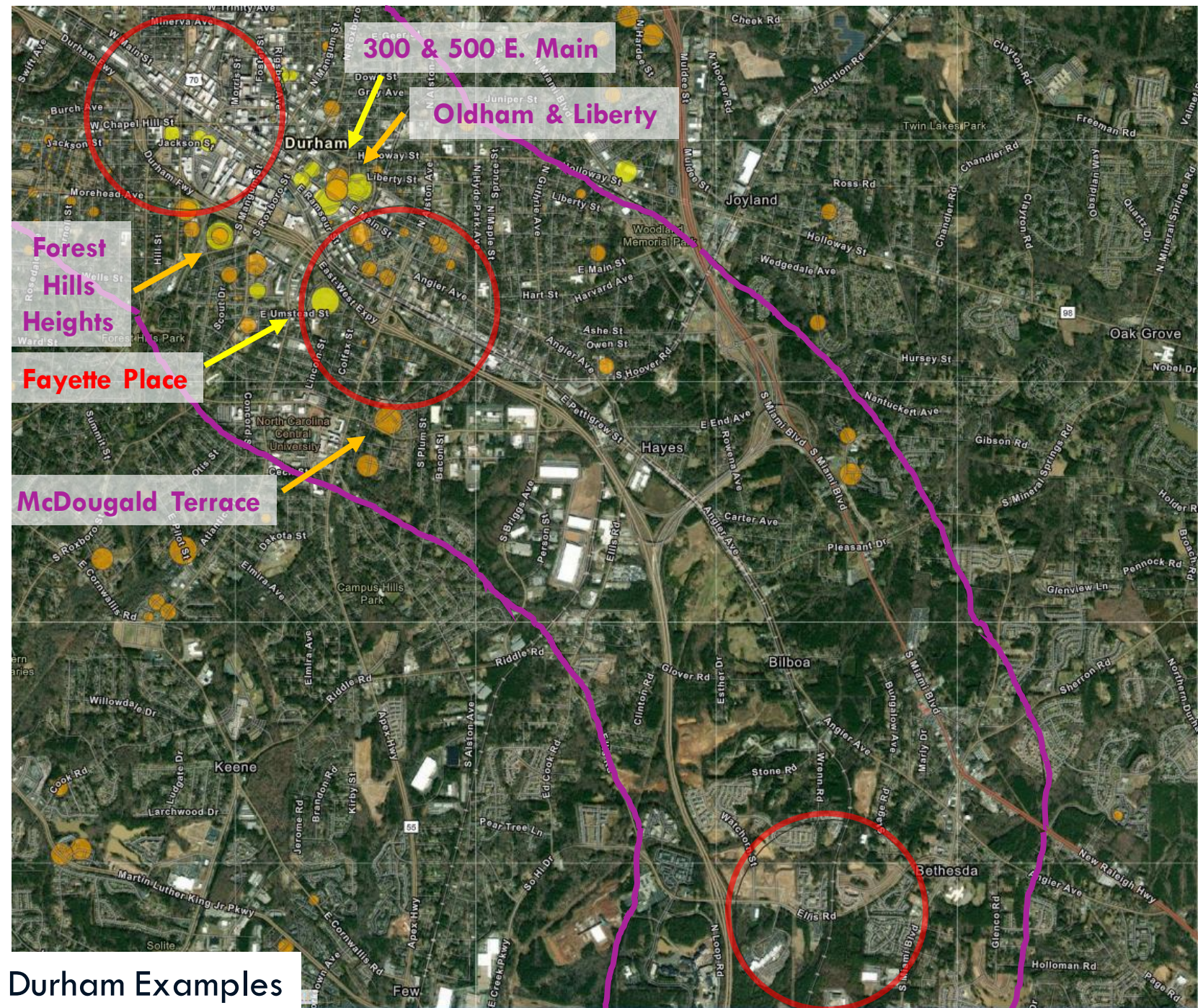
# Passenger Rail Corridor Analysis: "LBAR" Housing

- **Station Areas (red circles)**
- **Corridor (purple lines)**

Similarly, many existing and planned affordable housing units are within station areas, but many others are in the corridor, but more than a short walk away.

## Legally Binding, Affordability-Restricted (LBAR) Housing

- Existing "LBAR" units
- Planned "LBAR" units



Durham Examples



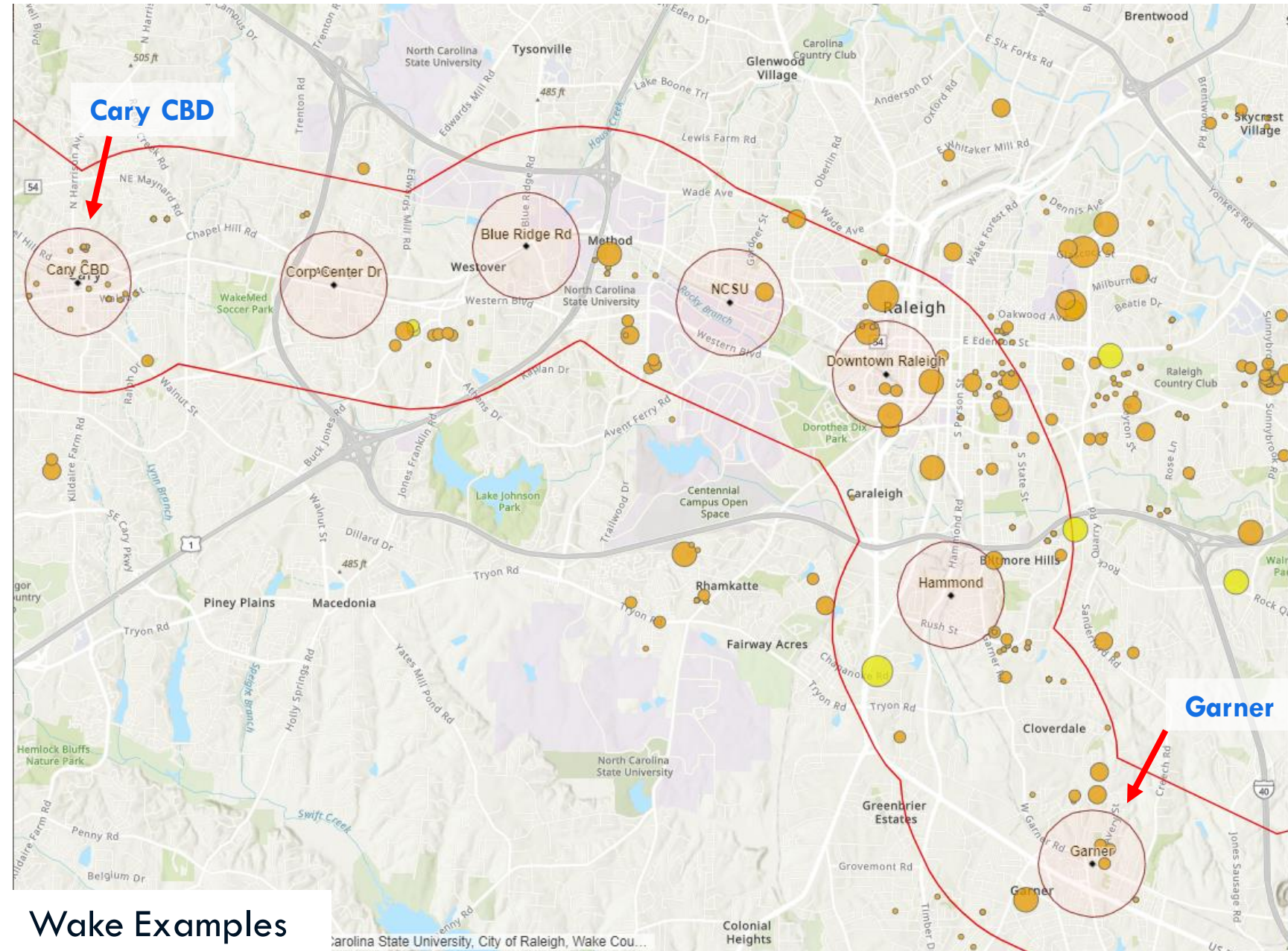
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Similarly, many existing and planned affordable housing units are within station areas, but many others are in the corridor, but more than a short walk away.

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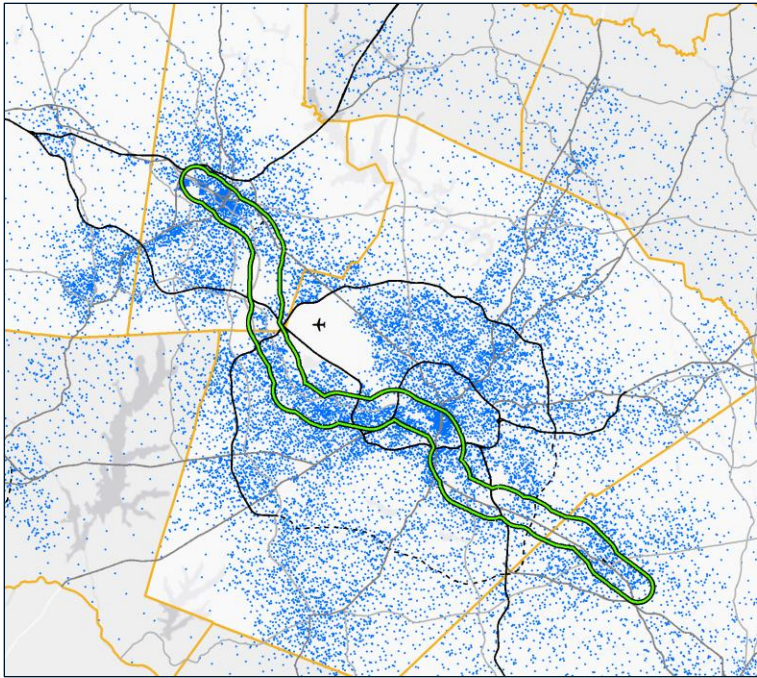
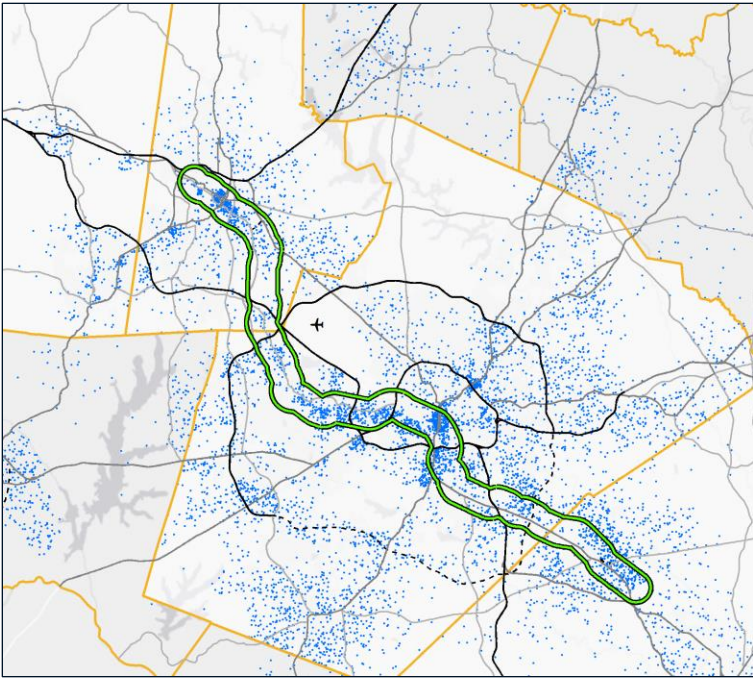
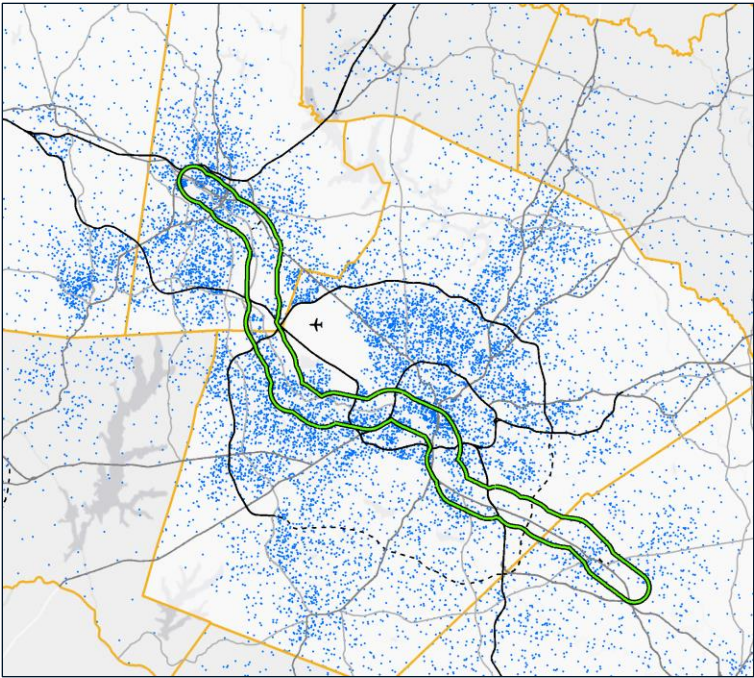


# Passenger Rail Corridor Analysis: Land Use Analysis – Households

2020

2020-2050  
growth

2050



Station Areas: 14,000

Station Areas: + 38,000

Station Areas: 52,000

Corridor: 89,000

Corridor: +105,000

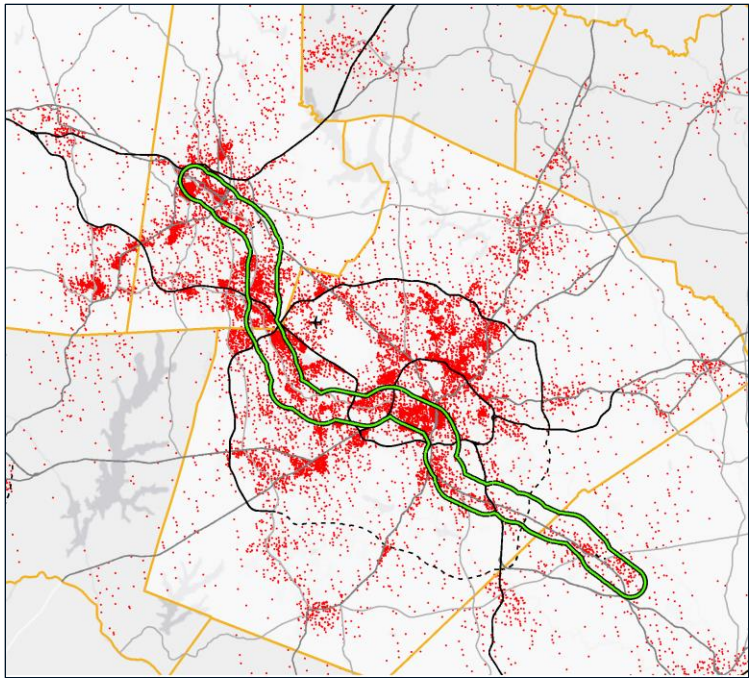
Corridor: 194,000





# Passenger Rail Corridor Analysis: Land Use Analysis – Jobs

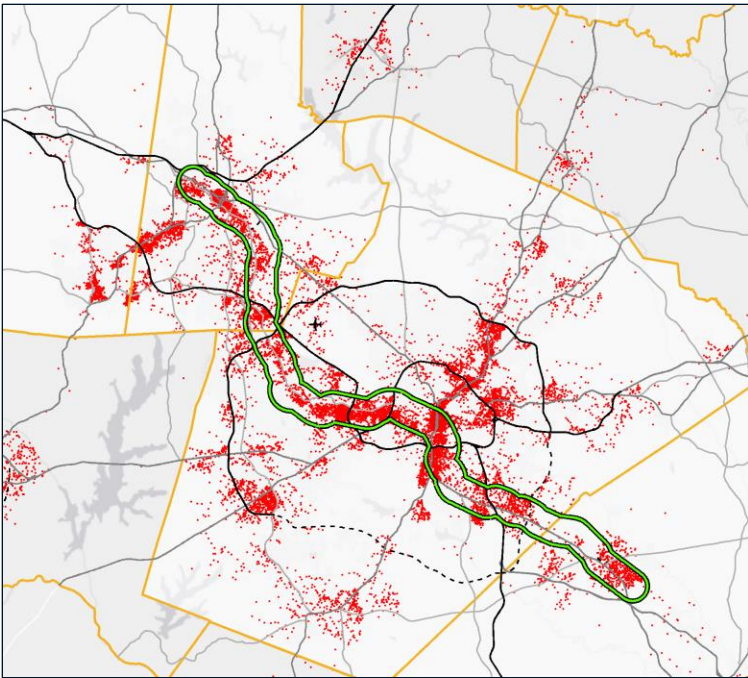
2020



Station Areas: 95,000

Corridor: 295,000

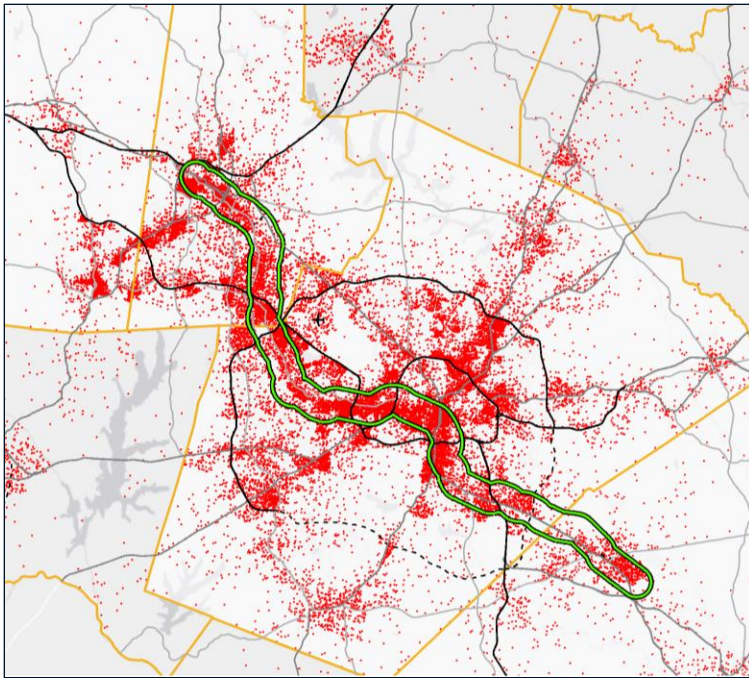
2020-2050  
growth



Station Areas: +150,000

Corridor: +373,000

2050



Station Areas: 245,000

Corridor: 668,000



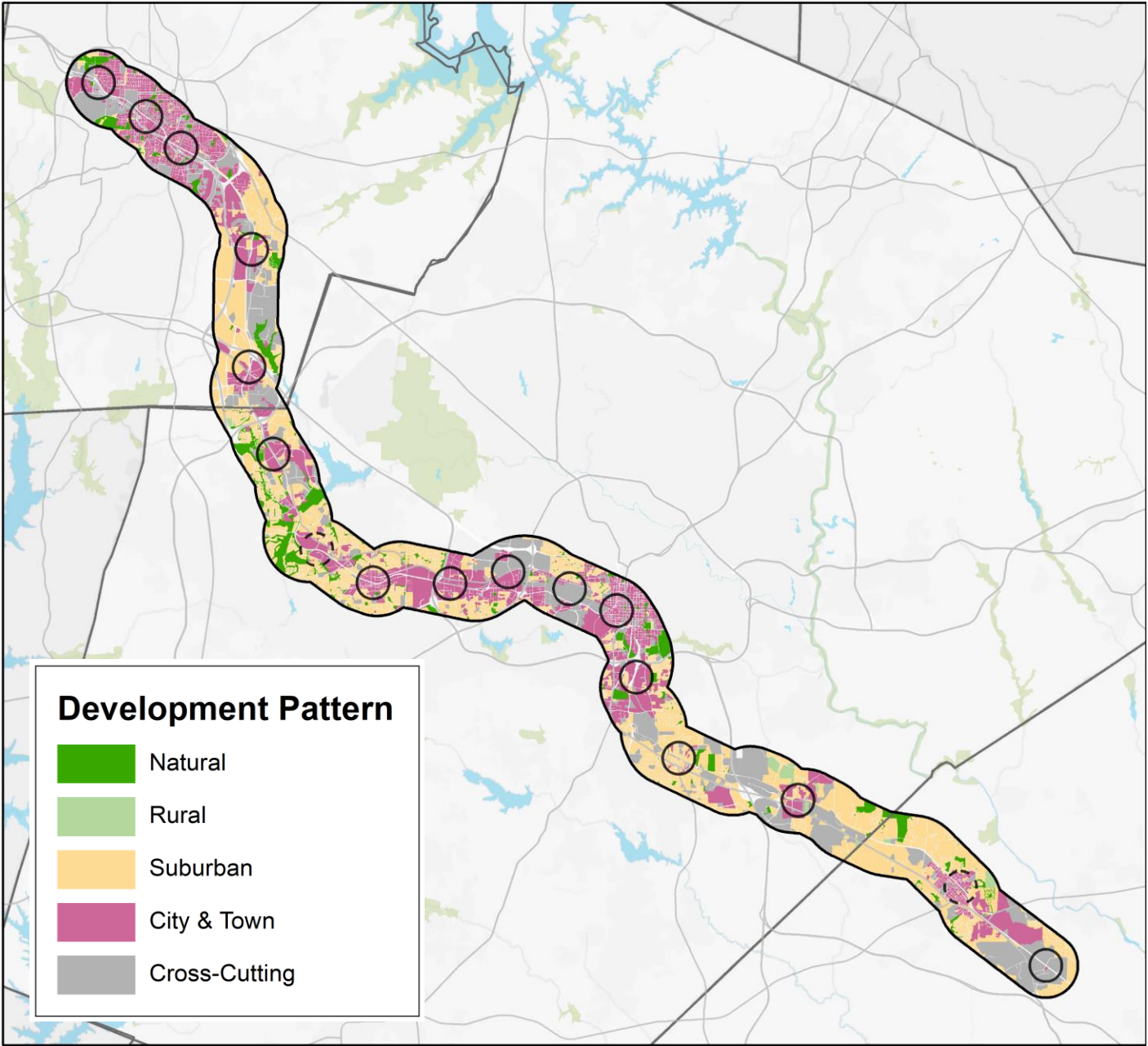
# Passenger Rail Corridor Analysis

- Corridor Development Pattern

➤ The more “urban” a transit corridor, especially in station areas, the more likely it is to generate high ridership

Acres in Corridor*	Developed	Undeveloped or Not Fully Developed	Total
Natural	--	--	3,806
Rural	163	307	469
Suburban	13,670	7,724	21,395
City & Town	4,661	9,676	14,338
Cross-Cutting	7,347	5,356	12,703
Total	29,561	23,150	52,711

\* Excluding rights-of-way

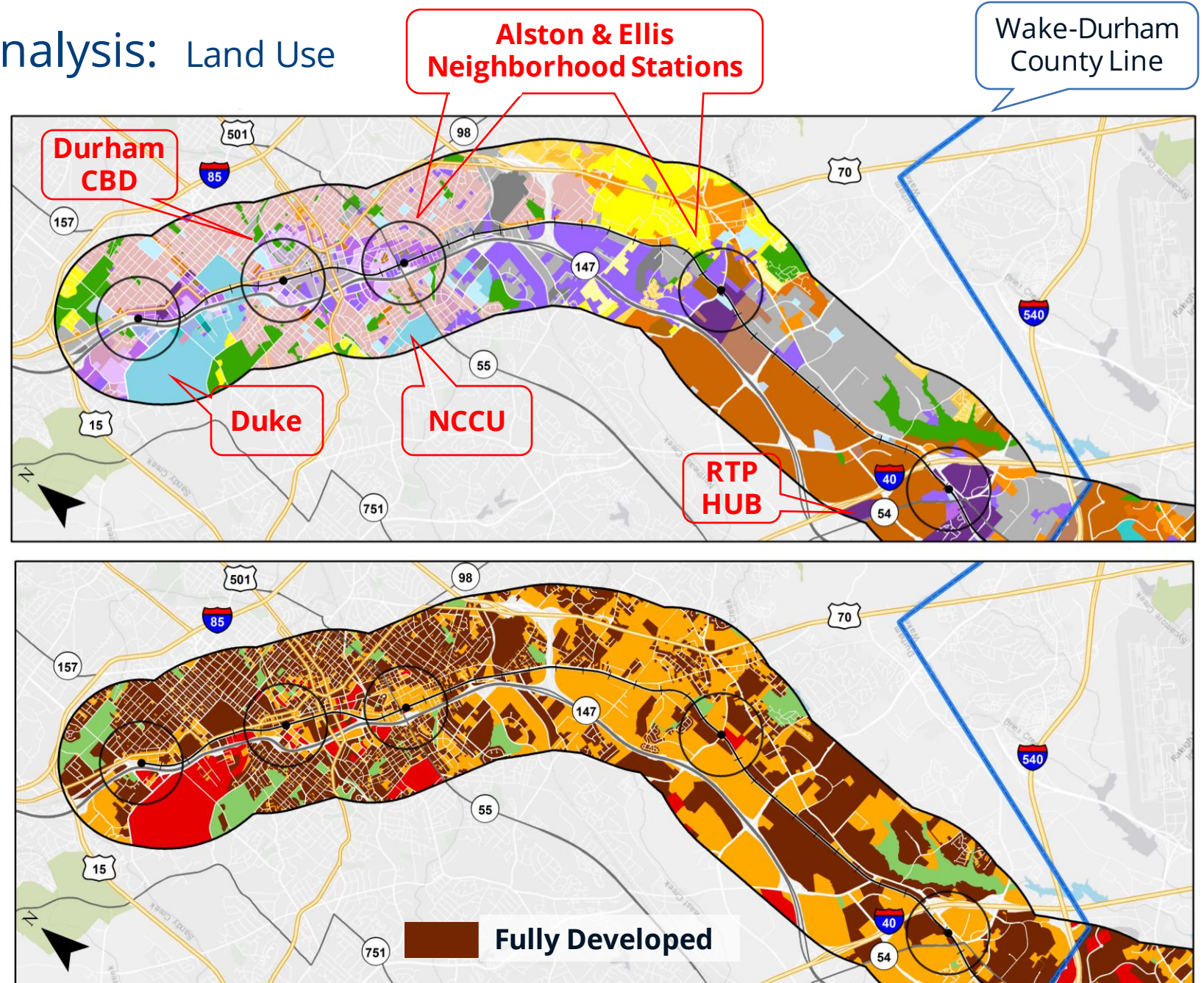




# Passenger Rail Corridor Analysis: Land Use

## • West Durham-RTP

- Centers: 2 universities, Durham CBD, RTP Hub
- Key neighborhoods near stations:
  - Alston (established)
  - Ellis (developing)
- Opportunities between East End Connector and I-40
- NCCU and Durham Tech within “first mile-last mile”
- Key transit connectors:
  - Durham Transit Center
  - Relocated Regional Transit Center @ RTP station

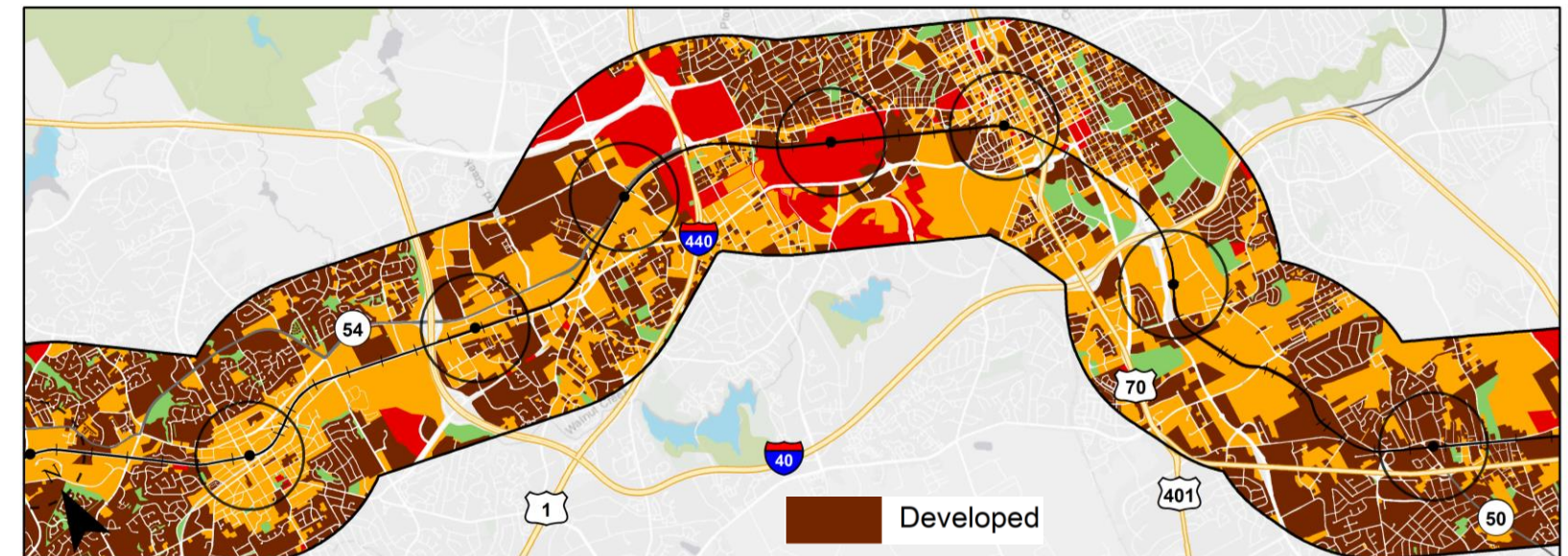
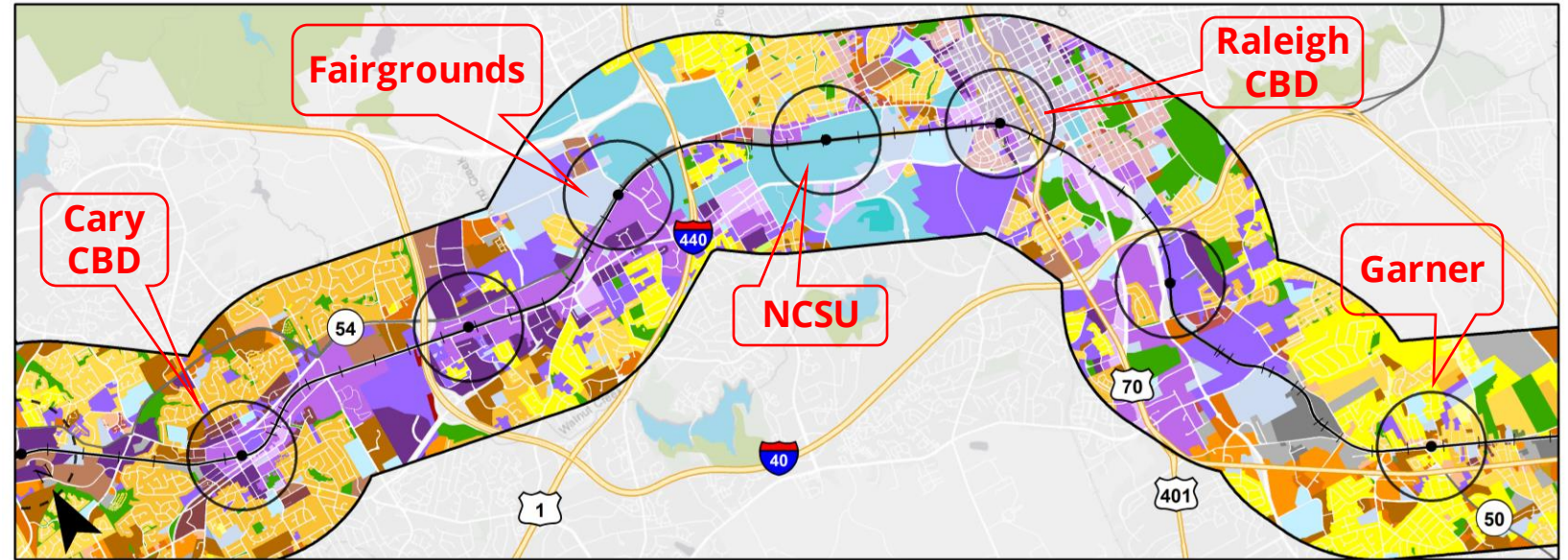




# Passenger Rail Corridor Analysis: Land Use

## • Cary CBD - Garner

- Centers: Raleigh CBD & NCSU
- Anchor Institutions:
  - NCSU
  - Shaw University
  - State Government/Fairgrounds
- Places going from low transit to substantial transit; both rail and BRT:
  - Raleigh/Cary edge
  - Hammond Road
  - Garner
- Key transit connectors:
  - Raleigh Union Station
  - Intersecting BRT lines





# Passenger Rail Corridor Analysis: Housing Analysis

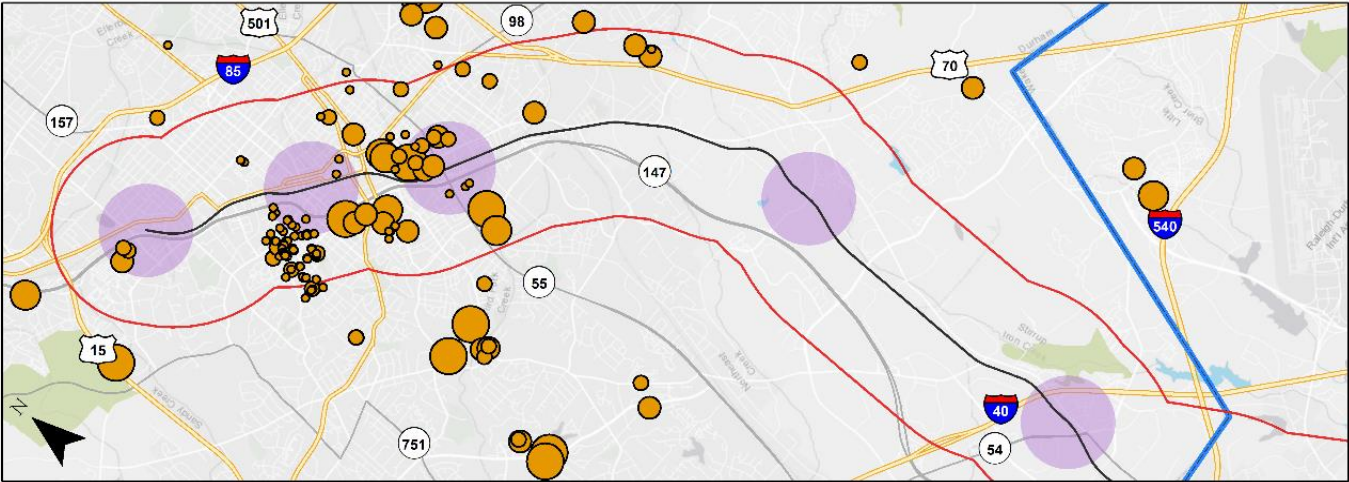
## Existing types and locations:

- legally-binding/affordable-restricted (LBAR)
- naturally occurring affordable housing (NOAH)

County	LBAR Units in Station Areas	LBAR Units in Corridor	% LBAR Units in Corridor
Durham	801	2,758	37% (of 7,425)
Johnston	104	202	8% (of 2,446)
Wake	743	3,321	25% (of 13,211)
TOTAL	1,648	6,281	27% (of 23,082)

County	NOAH Units in Corridor	Total NOAH Units	% of NOAH Units in Corridor
Durham	5,648	30,607	19%
Johnston	976	2,188	45%
Wake	15,420	88,591	17%
TOTAL	22,044	121,386	18%

Stations (left-to-right): W. Durham, Downtown Durham, East Durham, Ellis Rd, RTP



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-  LBAR housing units
-  NOAH Multifamily units



# Passenger Rail Corridor Analysis: Housing Analysis

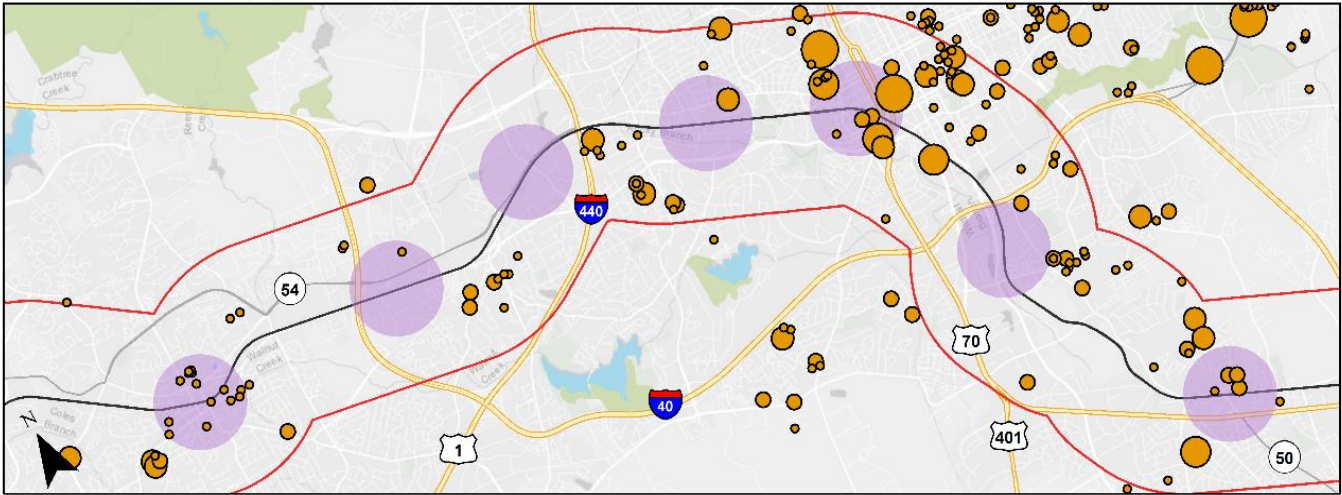
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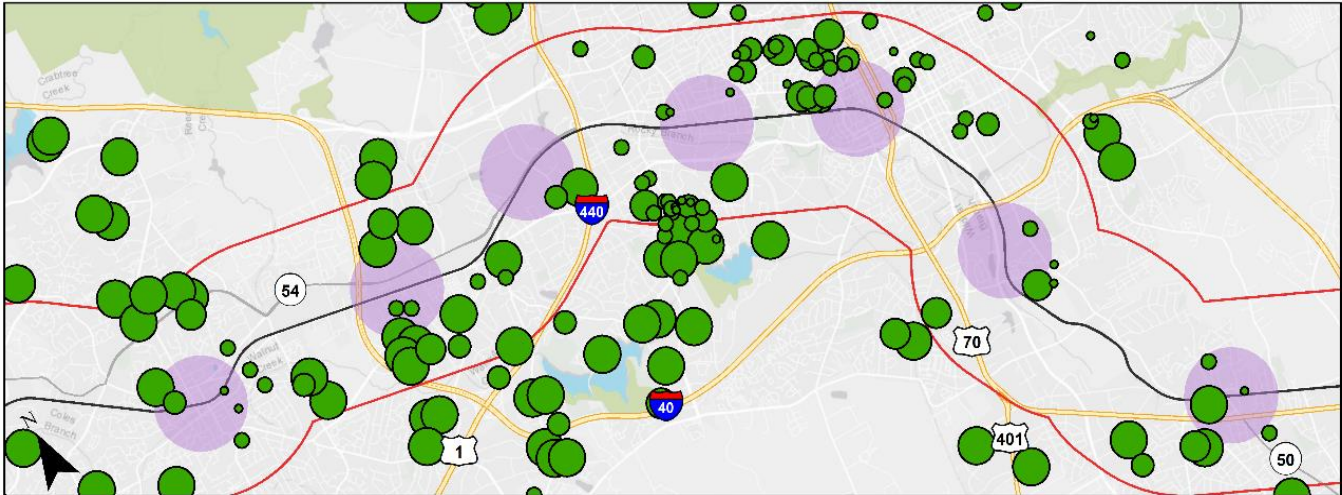
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Stations (left-to-right): DT Cary, Corp Center Dr, Blue Ridge Rd, NCSU, DT Raleigh, Hammond, Garner



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Orange circle: LBAR housing units

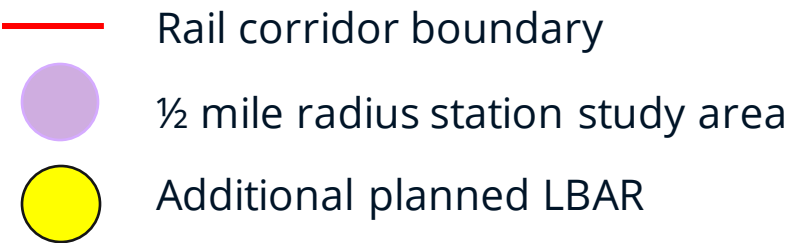
Green circle: NOAH Multifamily units

Red line: Rail corridor boundary  
Purple circle: 1/2 mile radius station study area

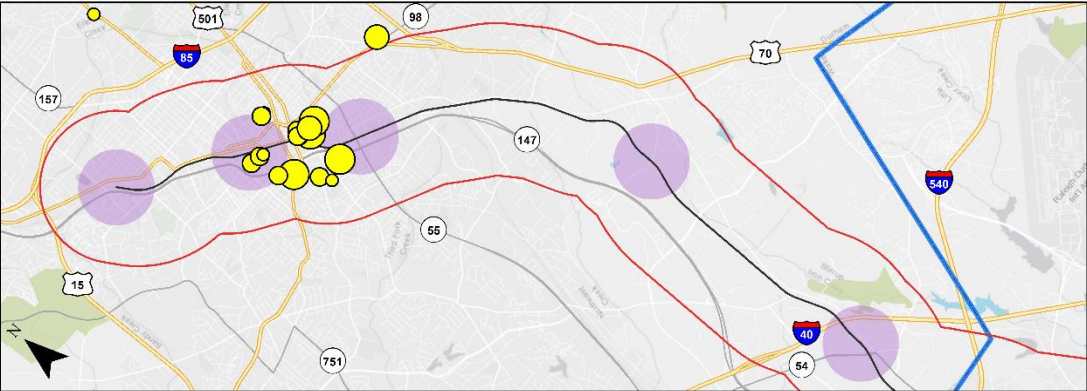


# Passenger Rail Corridor Analysis: Housing Analysis

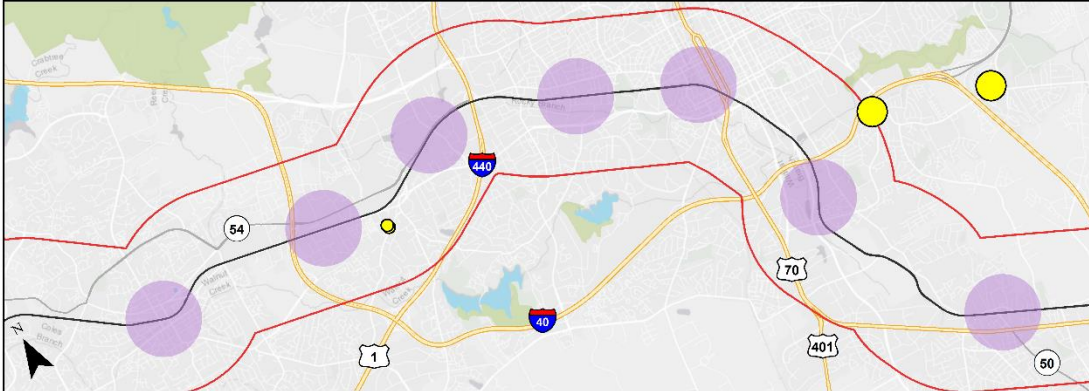
- Planned additional LBAR including LIHTC and Durham Housing Authority Downtown redevelopment sites



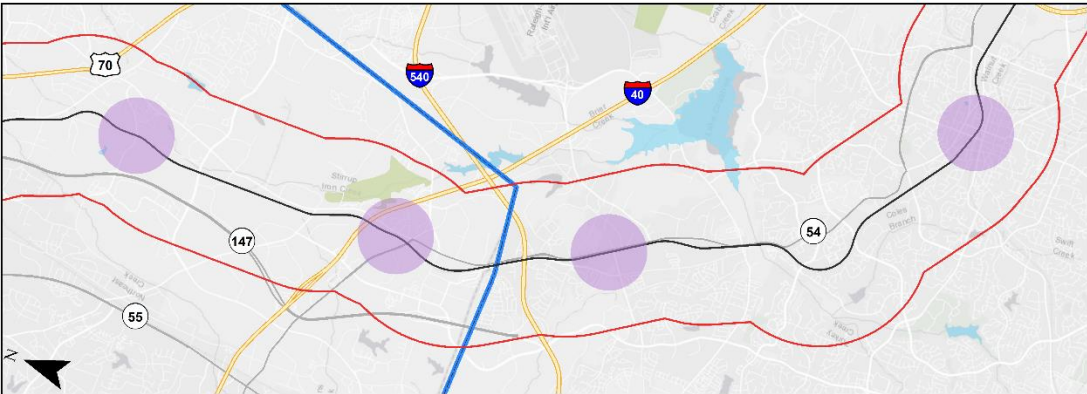
Stations (left-to-right): W. Durham, Downtown Durham, East Durham, Ellis Rd, RTP



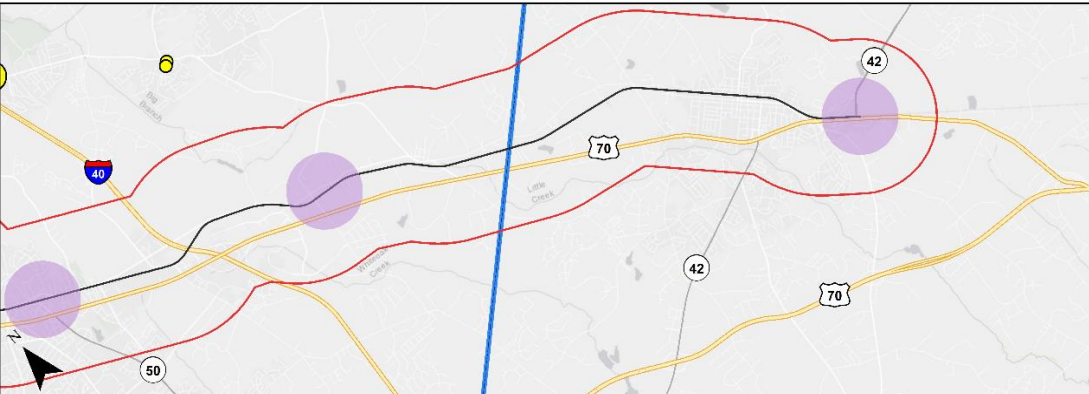
Stations (left-to-right): DT Cary, Corp Center Dr, Blue Ridge Rd, NCSU, DT Raleigh, Hammond, Garner



Stations (left-to-right): Ellis Rd, RTP, Morrisville, Downtown Cary



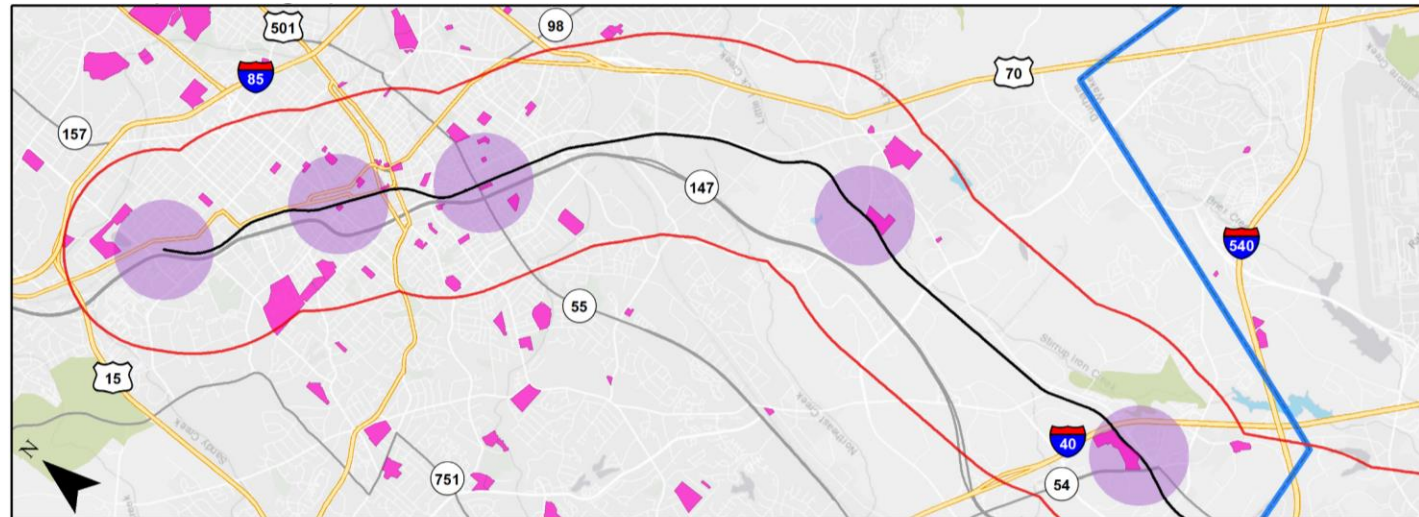
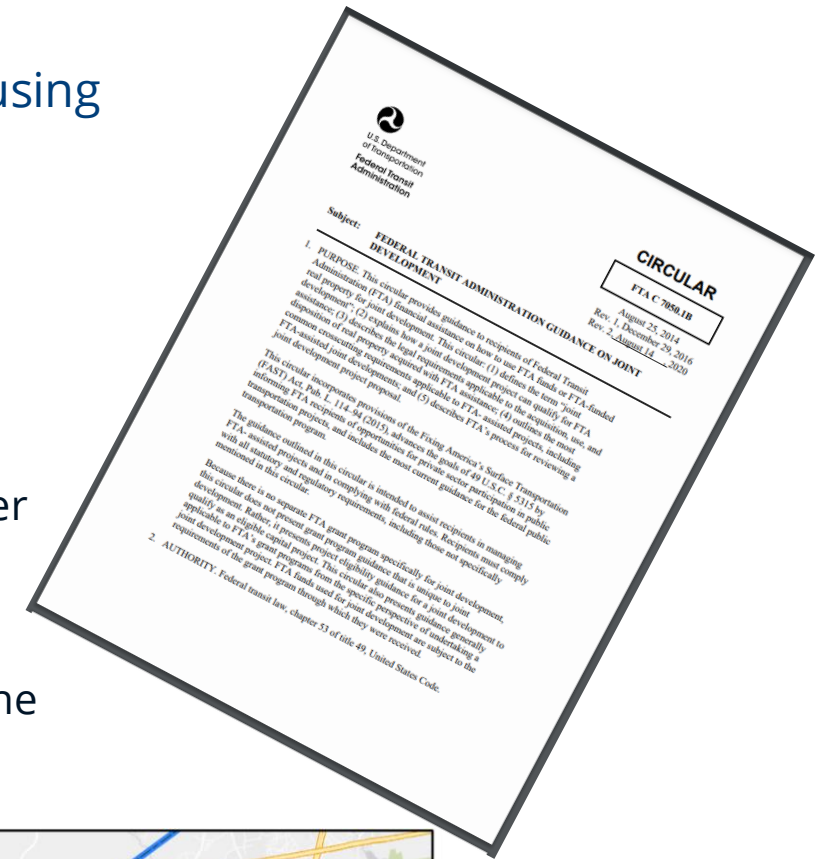
Stations (left-to-right): Garner, Auburn, Clayton



# Passenger Rail Corridor Analysis: Land Use & Affordable Housing

## • Equitable TOD

- There are significant public land assets along the corridor, including in or close to many station study areas
- The Federal Transit Administration (FTA) Joint Development program can be used to support use of public land at stations for affordable housing or other community services without transit project costs associated with joint development counting against a project's cost effectiveness score.
- Legally-binding, affordability-restricted housing in a station area improves the competitiveness of transit projects in the consideration of federal funding.

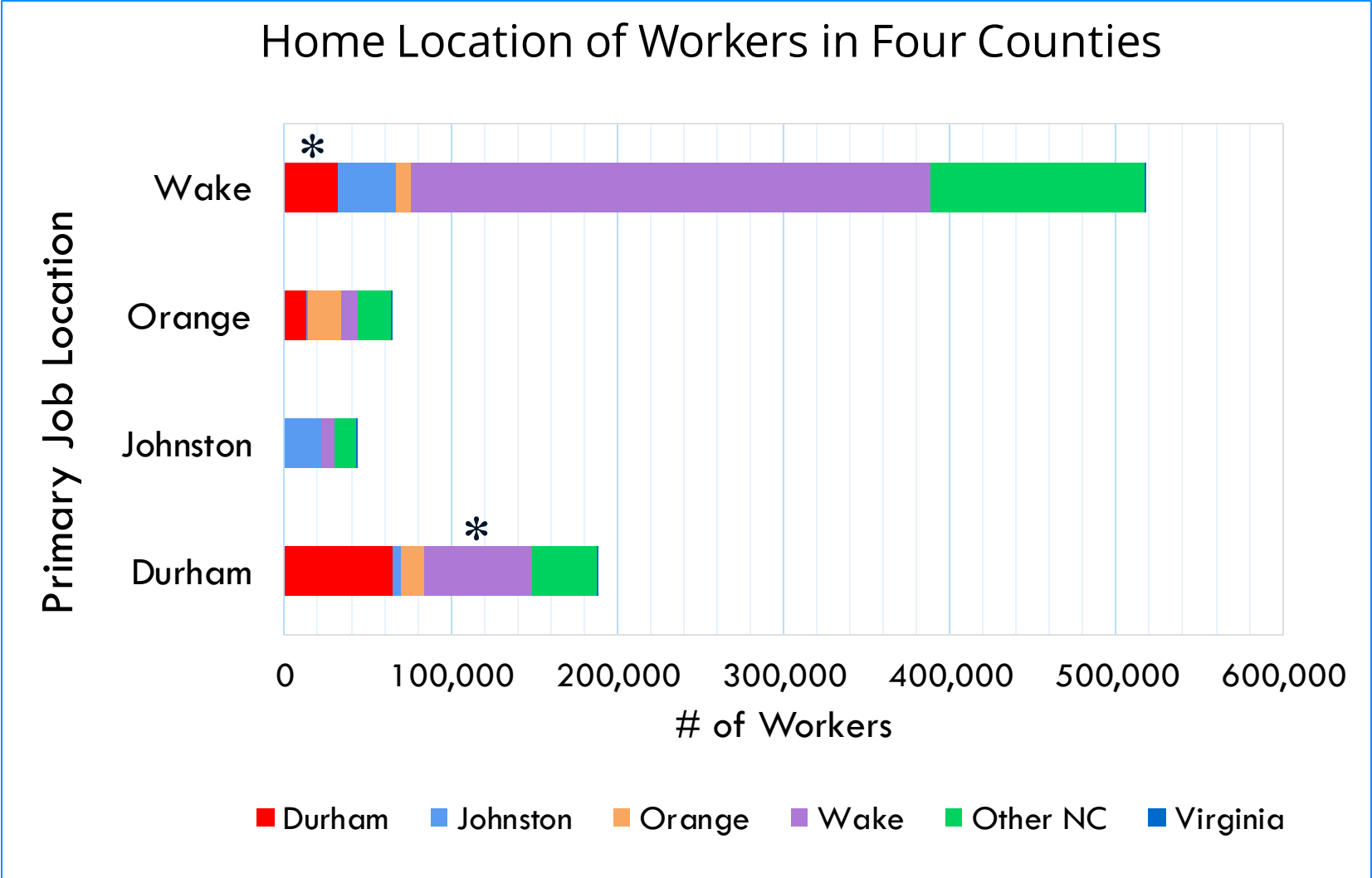




# Passenger Rail Corridor Analysis: Travel Analysis – primary jobs

- **County-to-County Flows**

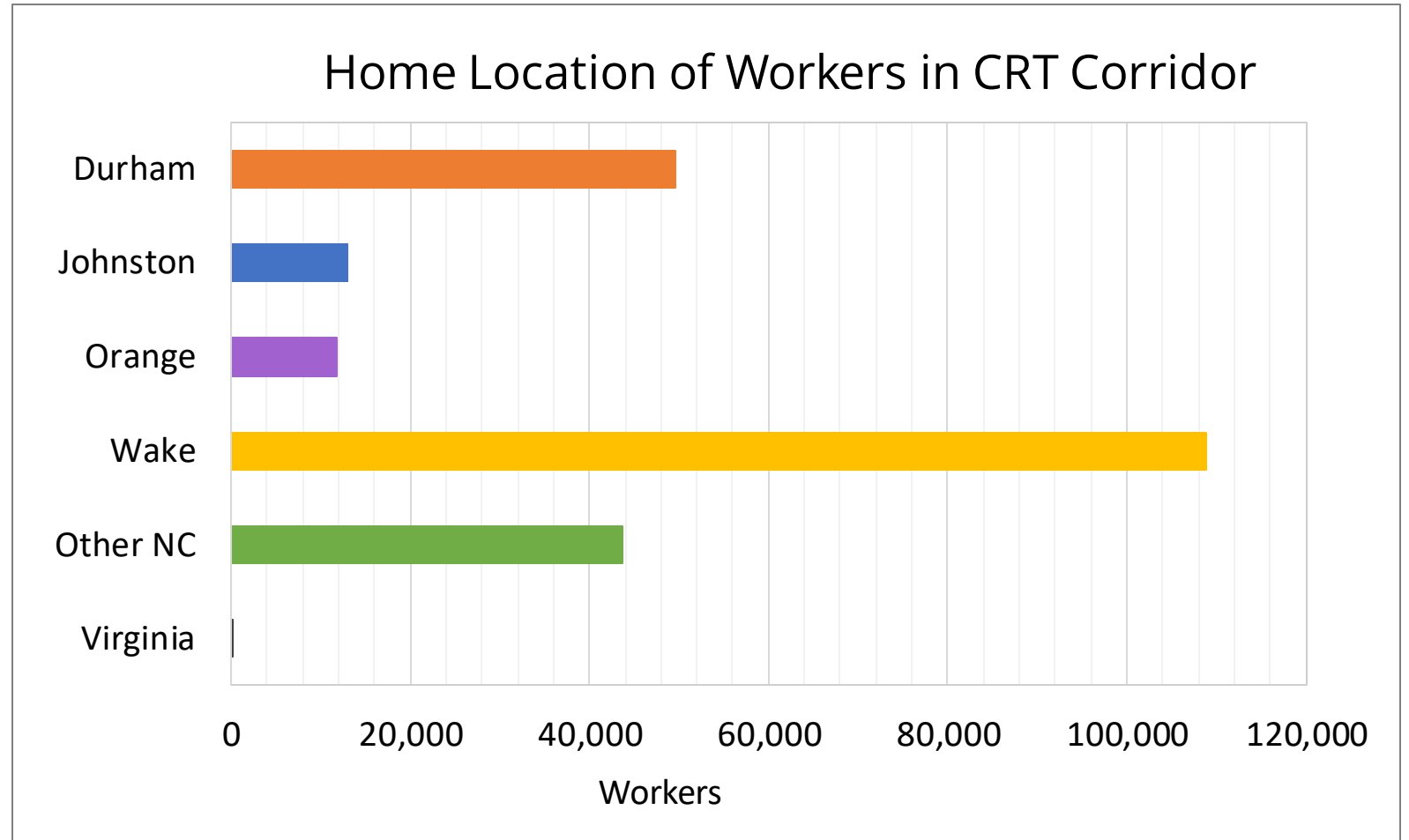
- 45% of workers who live in Wake, Durham, Orange & Johnston Counties have employers in another county
- The Wake-Durham flows are prominent: 96,000 workers have employers in the other county \*
- About an equal number of Johnston and Durham workers have primary job employers in Wake County
  - 32,000 in Durham
  - 35,000 in Johnston



# Passenger Rail Corridor Analysis: Rail Corridor Travel Markets

- **Where People With Primary Jobs in the Corridor Live**

- 180,000 people live in Wake, Durham, Johnston and Orange County and have their primary job in the rail corridor
- 70,000 of these people live in one county and have their workplace in the corridor in another county
- 56,000 people both live and work in the corridor

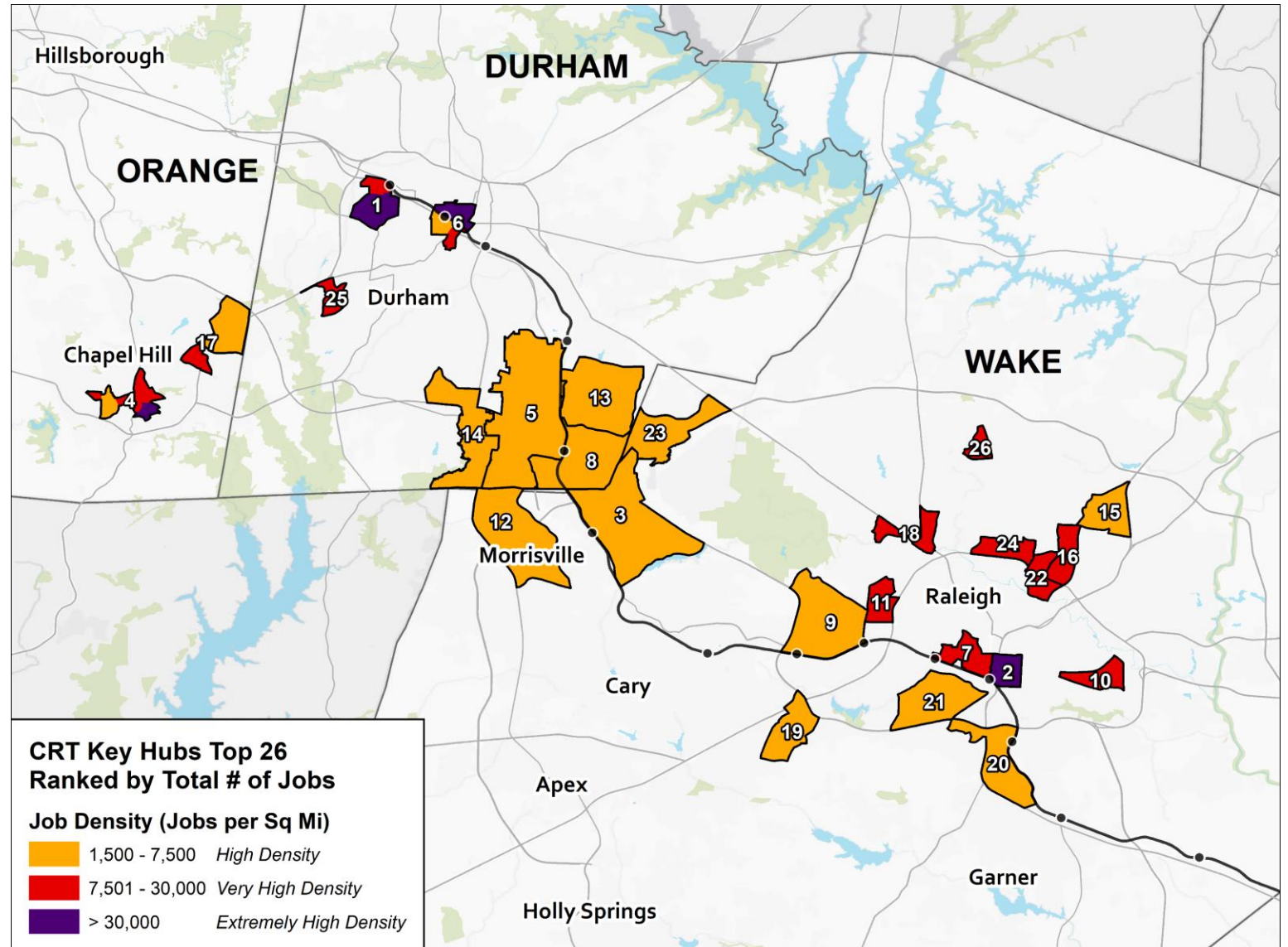




# Passenger Rail Corridor Analysis: All Jobs

## • Jobs in Key Hubs

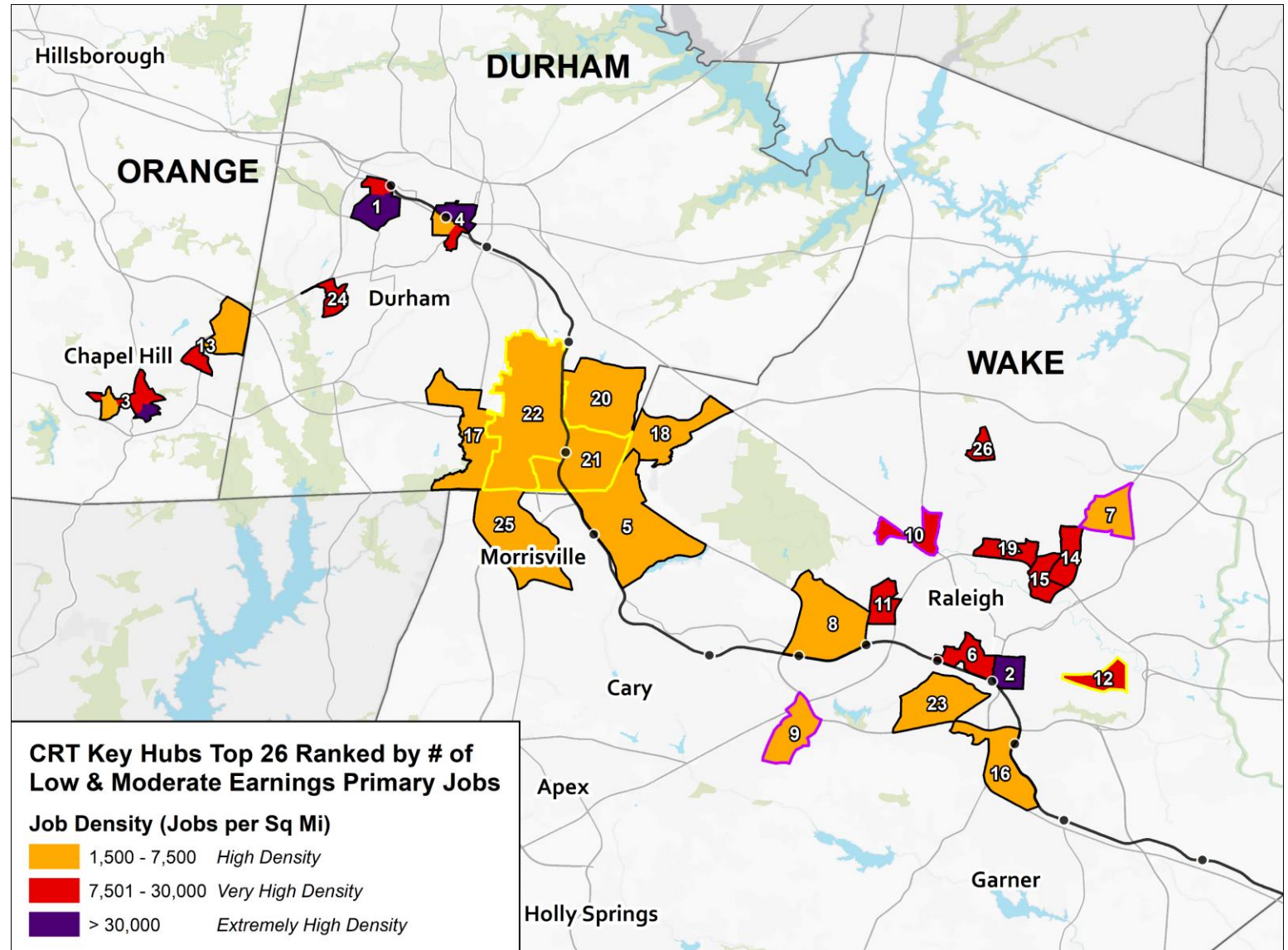
- Top hubs have 40% of the region's jobs on <3% of the region's land
- The rail line runs through 8 of the largest 10 job hubs
- These 8 hubs have 200,000 jobs



# Passenger Rail Corridor Analysis: Low & Moderate Earnings Jobs

## • Jobs in Key Hubs

- Top hubs have 40% of the region's jobs on <3% of the region's land
- The rail line runs through 8 of the largest 10 job hubs
- These 8 hubs have 200,000 jobs
- 7 of the top 10 job hubs for total jobs are also in the top 10 for low & moderate earnings jobs
  - ↓ 2 hubs around RTP and ...
  - ↓ ... 1 hub at WakeMed fall out of the top 10 for low & moderate earning jobs
  - ↑ 3 Wake County hubs move into the top 10: Crossroads, Crabtree and NE Raleigh

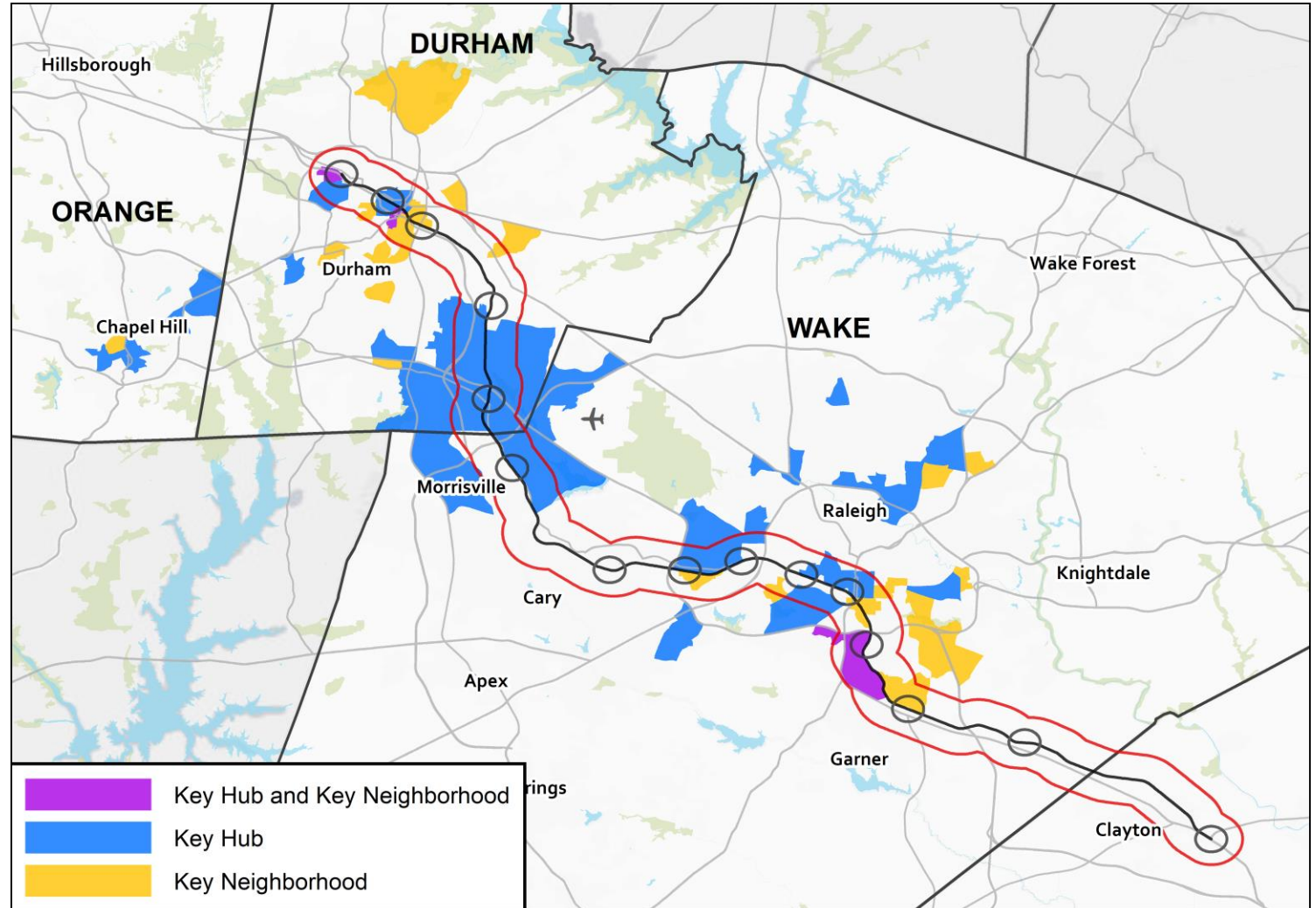




# Passenger Rail Corridor Analysis: Travel Analysis “Top-Tier” Key Hubs & Neighborhoods

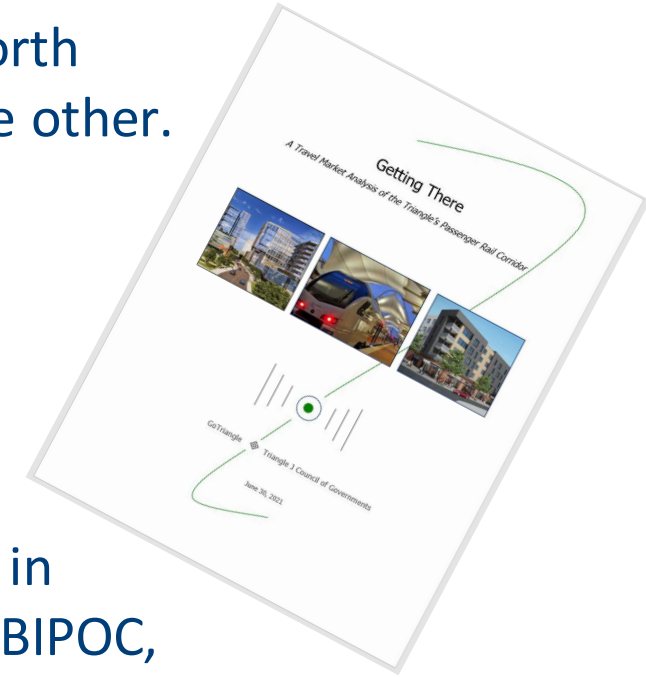
- **Composite Map**

- 41% of the corridor is high, very high, or extremely high job density today
- Neighborhoods were mapped based on Race/Ethnicity, Income, Vehicle availability and LBAR Status (REINVEST)
- 12 of the 15 initial station study areas overlap a key hub, a top-tier REINVEST Neighborhood, or both



# Travel Market Analysis Take-Aways

1. The rail corridor is only 4% of the area of Orange, Durham, Wake and Johnston Counties, but has ~30% of the region's primary jobs: 280,000 jobs.
2. 23% of the region's jobs with earnings below \$40,000 per year are located in the rail corridor.
3. The Wake County-Durham County regional connection is the largest in North Carolina, with over 96,000 workers living in one county and working in the other.
4. 8 of the top 10 job hubs in the region are along the rail corridor, including the city centers of Raleigh and Durham, Duke University and Medical Center, North Carolina State University and the Research Triangle Park.
5. 56,000 workers both live and work in block groups along the rail corridor.
6. Almost 70,000 people live in neighborhoods that are completely or partly in the corridor and achieve thresholds for the amount and concentration of BIPOC, lower income and zero-car households, and legally-binding, affordability-restricted housing units.
7. Safe and seamless "first-mile/last-mile" connections are key to serving these neighborhoods.





# Land Use Analysis Take-Aways

1. The rail corridor is only 4% of the area of Orange, Durham, Wake and Johnston Counties, but is forecast to hold 20% of the region's households and 45% of the region's jobs by 2050.
2. The corridor is forecast to add 100,000 housing units and 370,000 jobs by 2050. Even more corridor housing and commercial demand may be market-realistic.
3. With this growth, there will still be room for another 100,000 housing units and 330,000 jobs beyond 2050 based on the 2050 Transportation Plan.
4. Because much of the land in the corridor is beyond walking distance of a station, high-quality transit and active transportation connections to stations will be influential for household and job access.
5. If corridor land use is to serve a spectrum of users, then sustained, deliberate efforts to create equitable Transit-Oriented Development seem needed. Leveraging public land, federal Joint Development rules, and anchor institution collaboration may be impactful



# Affordable Housing Take-Aways

1. There is a substantial amount of legally-binding, affordability restricted (LBAR) housing along the rail corridor, especially in Wake & Durham Counties, which can be linked to major job hubs by CRT
2. There is a substantial amount of multi-family naturally occurring affordable housing (NOAH) along the rail corridor, including a large percentage of Johnston County multi-family NOAH units
3. Housing Authority plans and LIHTC awards would add more than a thousand LBAR affordable housing units within station study areas
4. Existing affordable housing would earn a “medium-high” score in federal funding competition; future affordable housing would likely raise this score
5. Based on a “first pass” analysis, there are opportunities for more affordable housing using public and anchor institution land along the rail corridor, should communities and partners wish to pursue this option
6. Safe and seamless “first-mile/last-mile” connections will be important to serve affordable housing





# Issues to Consider

The opportunity analysis was *descriptive*, not *prescriptive*, but the evidence suggests that the following issues might warrant particular attention:

- ❖ Involving institutional landowners, including GoTriangle, Cities, Counties, Universities, Housing Authorities, and the State in development and housing strategies in the corridor
- ❖ Ensuring land use & transit are given equal weight and planned together, and using equitable TOD as the framework for future planning
- ❖ Developing a compelling regional vision for the future growth this analysis looked at, not just in this corridor, but along a network of high-quality transit investments in the region
- ❖ Placing special emphasis on multi-family housing development in the corridor, through local efforts, leveraging public land, and using the FTA Joint Development program
- ❖ A collaboration on first-mile, last-mile investments to connect stations to destinations



## Available Resources

- ❖ A detailed *Analysis Report* for each topic
- ❖ A four-page *Executive Summary* for each topic
- ❖ PowerPoint Presentations for each topic, plus a combined presentation
- ❖ More detailed data and mapping for each topic, by corridor segment and station study area

-- all materials will be available at [ReadyForRailNC.com](https://ReadyForRailNC.com) --

