

# A Better Place

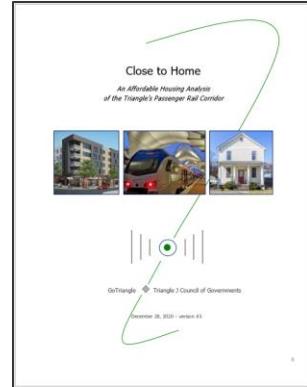
## A Land Use Analysis of the Greater Triangle Commuter Rail Corridor



Triangle J Council of Governments  
February 2022

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

## Affordable Housing Analysis

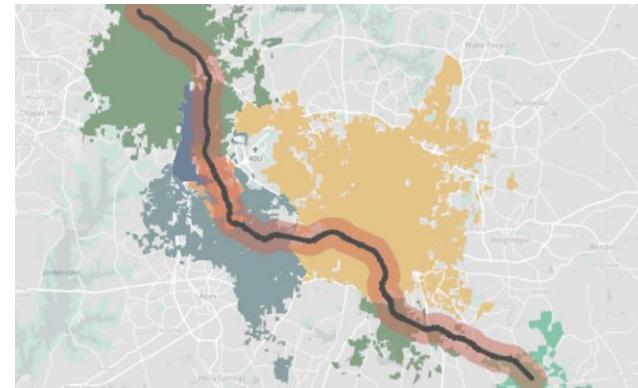


- Key Metrics
- Existing types and locations: legally-binding/affordability-restricted & naturally occurring affordable housing
- Planned additional affordable housing
- FTA CIG scoring calculation
- Opportunity sites & segments



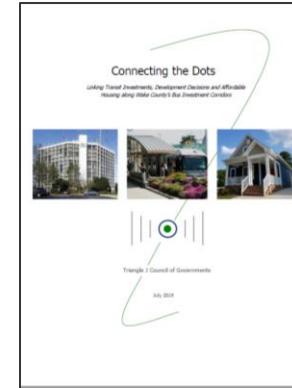
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## Travel Market Analysis



- 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

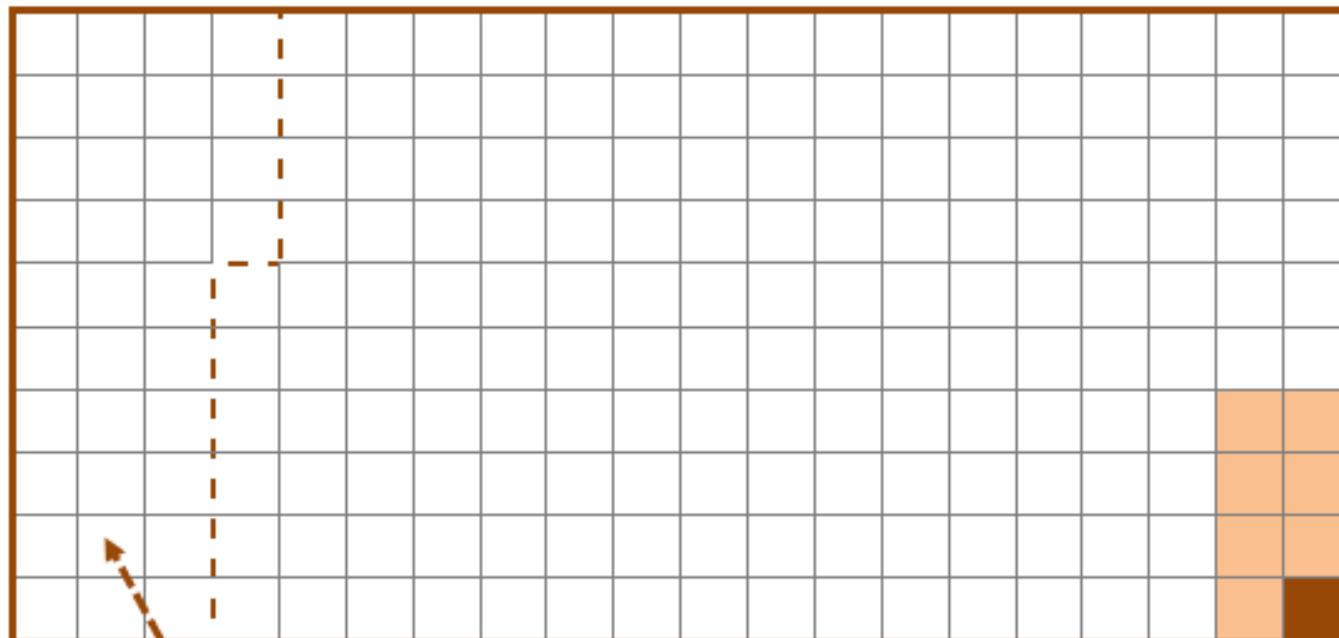


- Place types & development status
- Existing population & jobs
- Capacity for added jobs and residents
- Emphasized topics:
  - Anchor Institutions
  - HR&A Market Analysis Results
  - Community ROW setbacks
  - FTA Joint Development

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

- ❖ The analysis focuses on three areas:
  - A four-county region through which the rail corridor passes (Johnston, Wake, Durham, Orange)
  - The “rail corridor:” an area within one-mile of the railroad tracks for the planned initial investment
  - “Station study areas:”  $\frac{1}{2}$ -mile radius circles at 15\* locations initially looked at for station feasibility

*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, the housing and travel market analyses showed 2 “infill” sites should be considered: downtown Clayton & Morrisville Parkway.

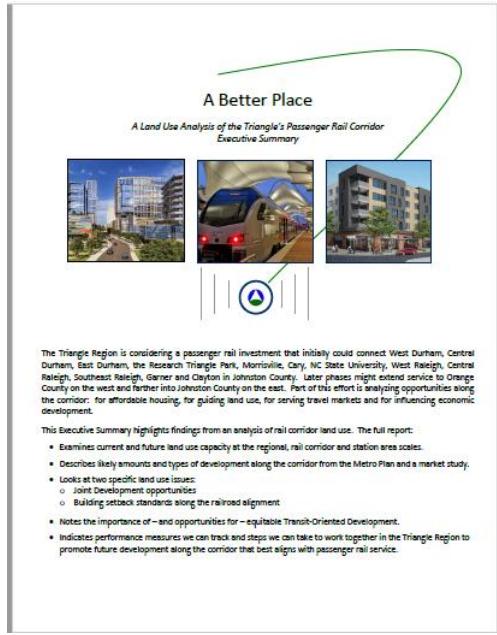
The large grid represents the combined size of Wake, Durham, Johnston and Orange Counties.

These 8 boxes represent the size of the rail corridor – 1 mile on either side of the tracks.

This box represents the combined size of the 15 station study areas: one-mile wide circles centered on a station platform.



# Passenger Rail Corridor Analysis: Key Terms for Land Use Analysis



## • Key Terms

- **Place Types:** Forty different kinds of land uses that reflect what a parcel of land may become in the future based on the “Opportunity Places” development foundation of the 2050 Metropolitan Transportation Plan.
- **Key Hubs:** Places where the combination of the number and concentration of jobs indicate they are of great importance for current commuting.
- **Growth Capacity:** The amount of housing units and jobs that can occur based on place type, development status and housing and job space ratios.
- **REINVEST Neighborhoods:** Places that score the highest for both the number and concentration of households with Black/Indigenous/People of Color (BIPOC) residents, with lower income residents, without cars and residing in legally binding, affordability restricted (LBAR) housing units.
- **Growth Allocation:** The number of housing units and jobs assigned to locations by 2050 from the region’s CommunityViz growth allocation model.
- **Market Demand:** the number of housing units and non-residential square footage that is “market-realistic” based on market analysis by HR&A.



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# Passenger Rail Corridor Analysis: Land Use Analysis

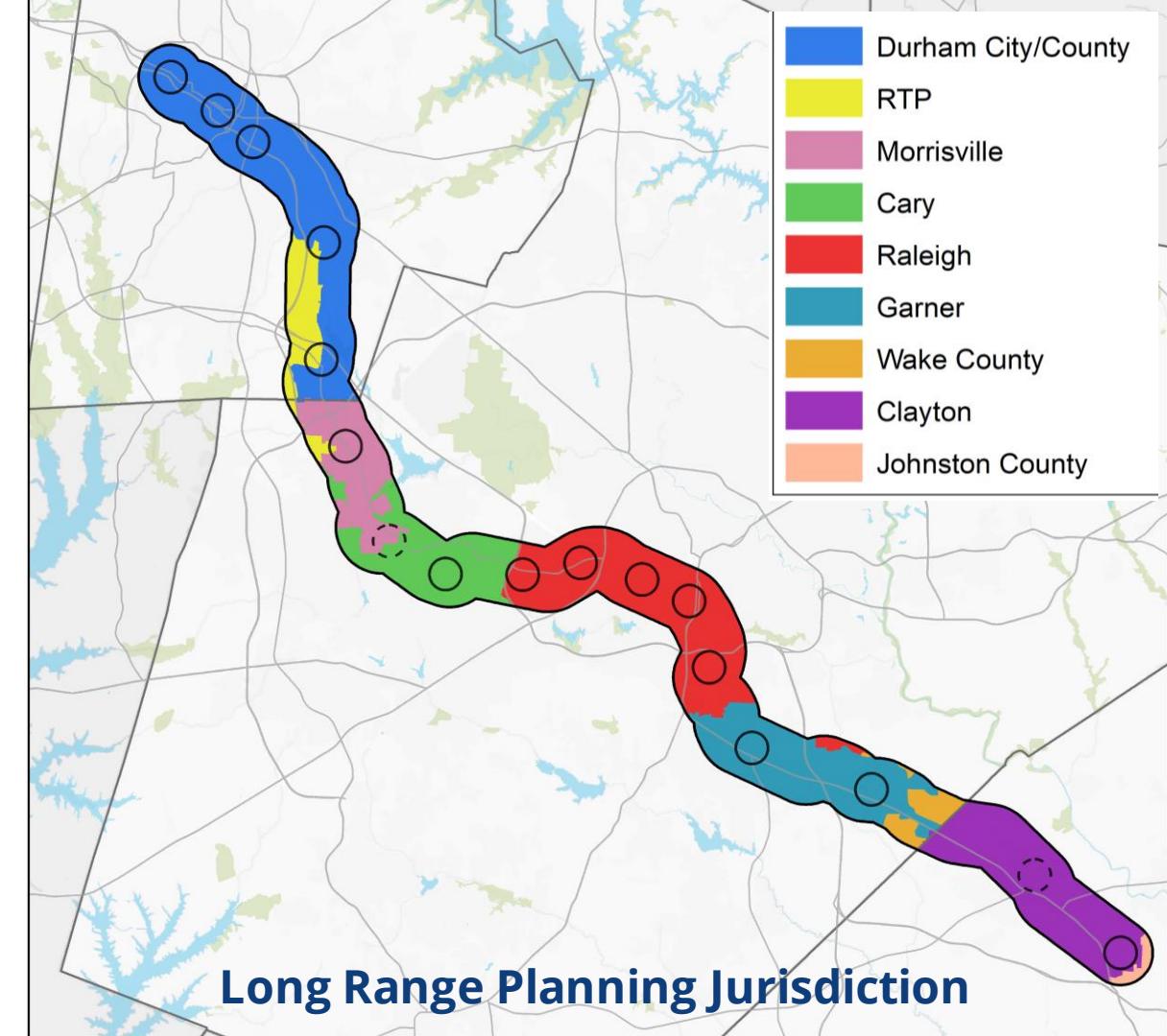
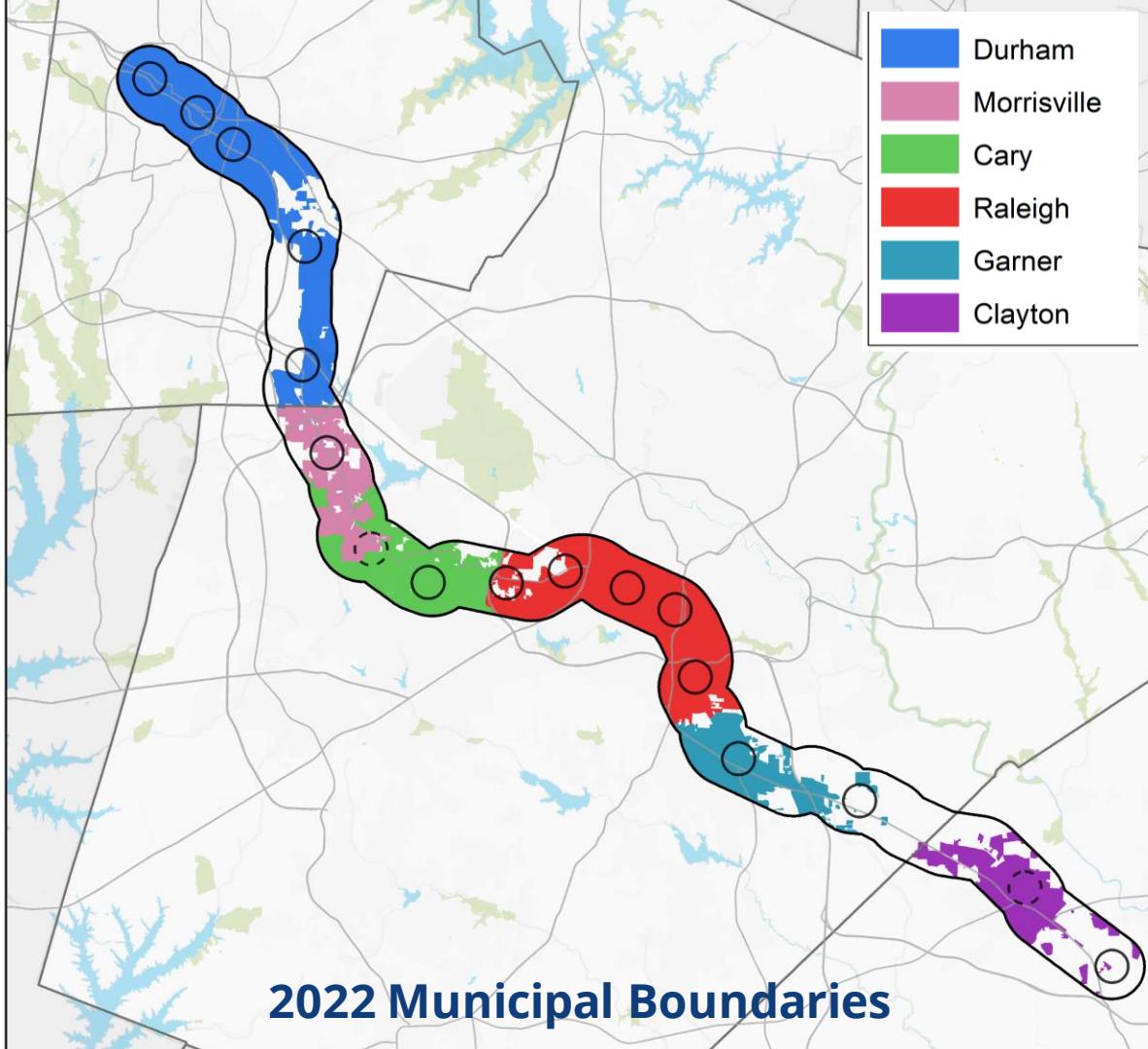


- **The importance of considering land use and transit networks together**

- **Author of *Trains, Buses, People***: “It is critical when identifying corridors to ***think about land use, not existing transportation infrastructure***. A congested freeway might be a sign that transit is needed, but that doesn’t mean that freeway is a strong transit corridor. We need to think about where people are going, not what path they are currently taking.”
- **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.”
- **Author of *The Affordable City***: “Multifamily housing is almost universally more affordable than single-family....***Any policy that seeks to improve affordability in urban areas will require a much greater emphasis on multifamily housing***, and large-scale zoning changes will be necessary.”
- **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.***”



# Passenger Rail Corridor Analysis: Land Use Analysis – Who's in Charge?



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# Passenger Rail Corridor Analysis: Land Use Analysis



The Triangle Region is considering a passenger rail investment that initially could connect West Durham, Central Durham, East Durham, the Research Triangle Park, Morrisville, Cary, NC State University, West Raleigh, Central Raleigh, Southeast Raleigh, Garner and Clayton in Johnston County. Later phases might extend service to Orange County, west and further into Johnston County on the east. Part of this effort is analyzing opportunities along the corridor for affordable housing, for guiding land use, for serving travel markets and for influencing economic development.

This Executive Summary highlights findings from an analysis of rail corridor land use. The full report:

- Examines current and future land use capacity at the regional, rail corridor and station area scales.
- Describes likely amounts and types of development along the corridor from the Metro Plan and a market study.
- Looks at two specific land use issues:
  - Joint Development opportunities
  - Building setback standards along the railroad alignment
- Notes the importance of – and opportunities for – equitable Transit-Oriented Development.
- Indicates performance measures we can track and steps we can take to work together in the Triangle Region to promote future development along the corridor that best aligns with passenger rail service.

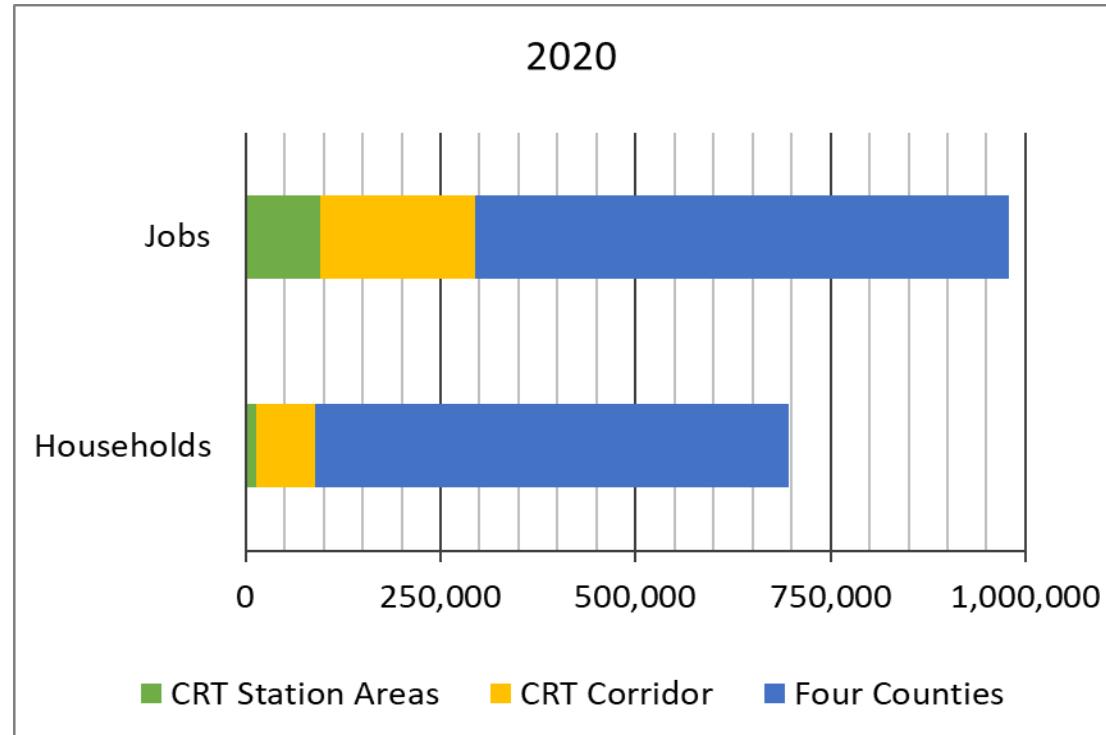
## • Key Metrics

### 2020 Households and Jobs

- 2020 Census and Metro Transport Plan
- Region: 4 counties
- Corridor: 2-mile wide, Durham-Clayton
- 17 Stations:  $\frac{1}{2}$  mile radius (includes “infill” stations)



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2020	Households	Jobs
Station Areas	14,000	95,000
Rest of Corridor	75,000	200,000
Total Corridor	89,000	295,000

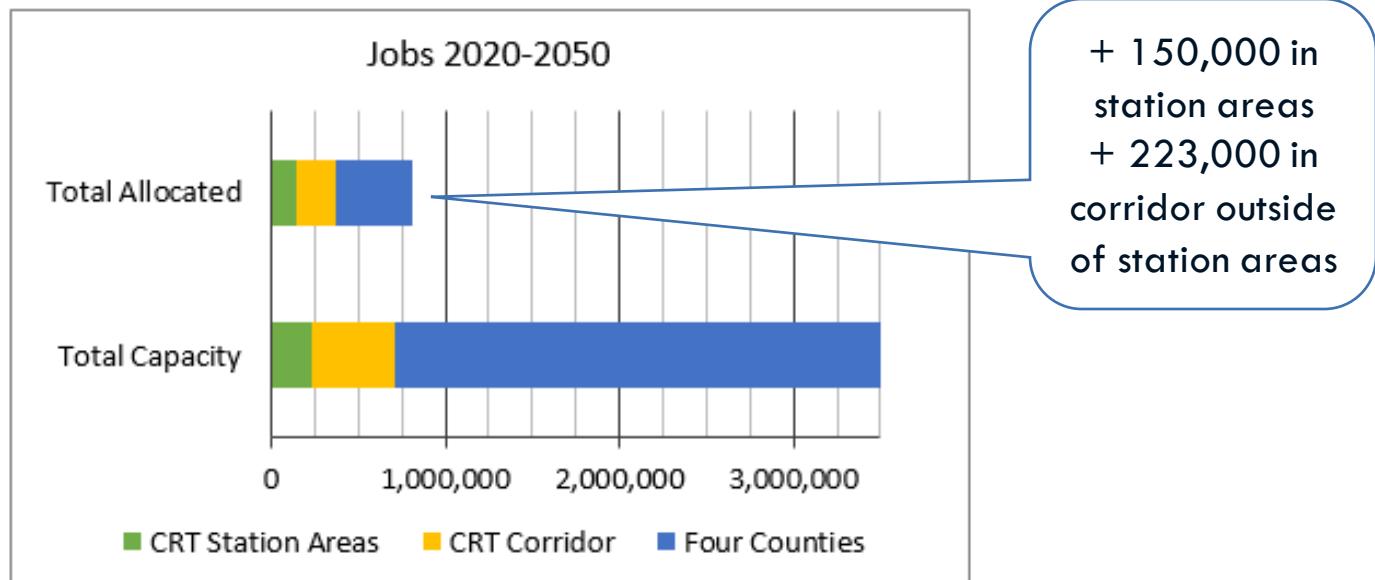
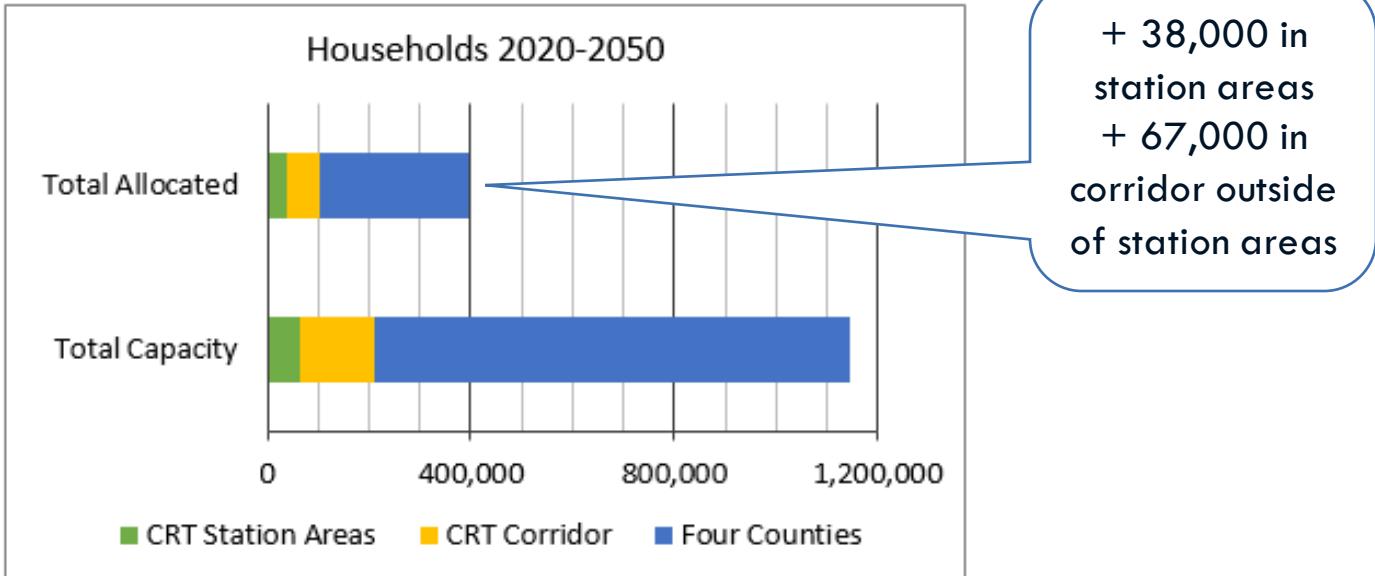
# Passenger Rail Corridor Analysis: Land Use Analysis



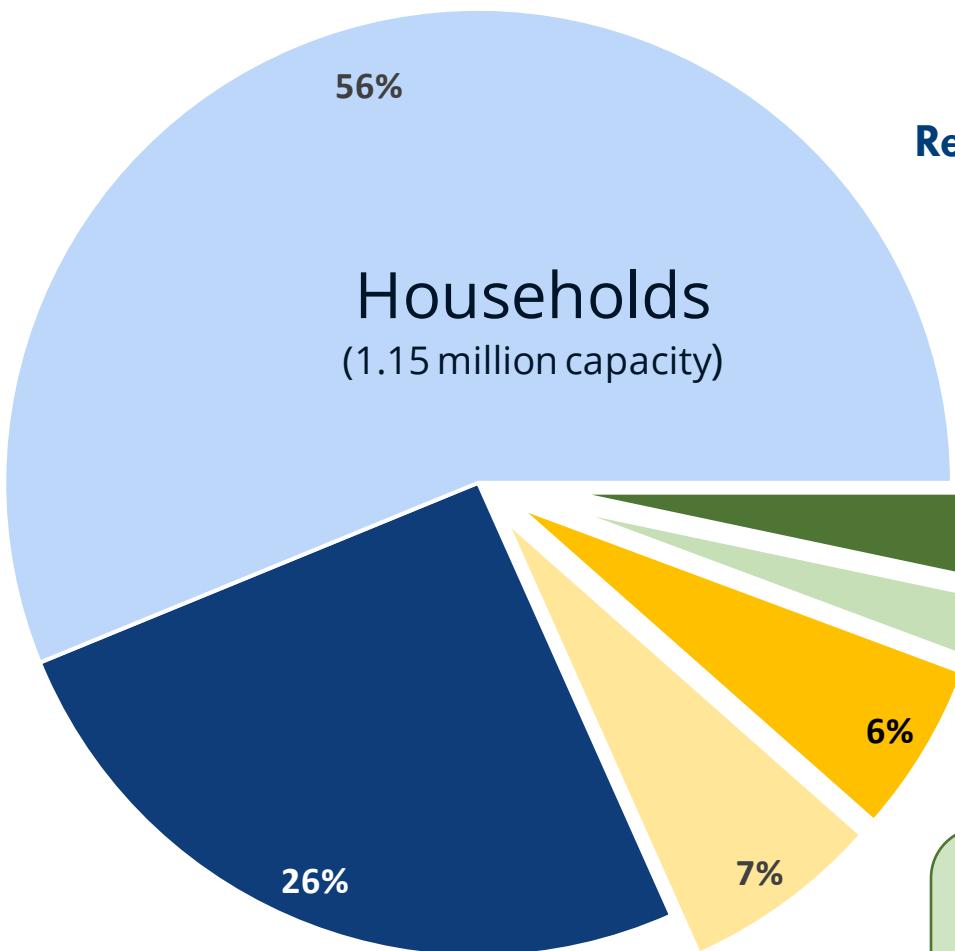
## • Key Metrics

### Future Growth Capacity & Allocation

- Connect2050 "Opportunity Places" Land Use
- Region: 4 counties
- Corridor: 2-mile wide, Durham -Clayton
- 17 Stations: ½ mile radius



# Passenger Rail Corridor Analysis: Land Use Analysis – Capacity and 2020-50 Development

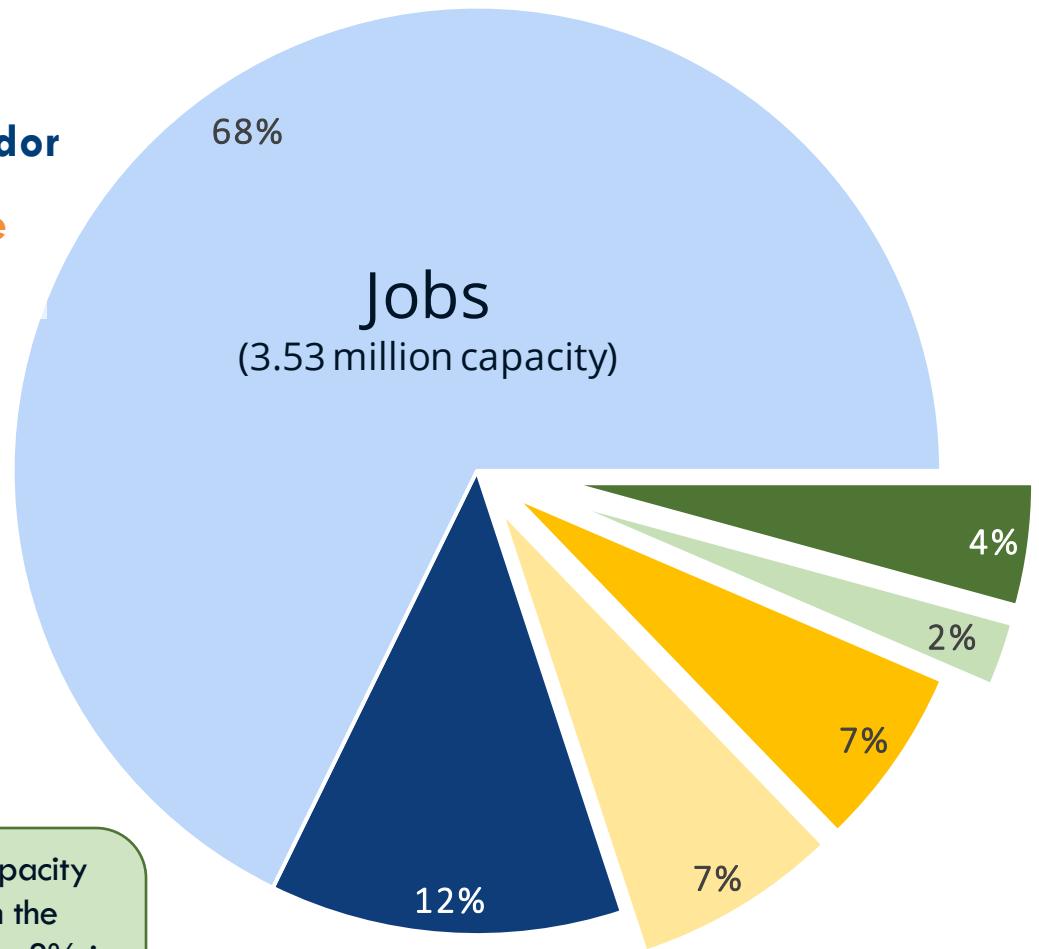


**Region outside corridor**

**Corridor outside stations**

**Stations**

Example: 5% of the capacity for added households in the region is in station areas; 3% is estimated to develop by 2050 and 2% will be available for development after 2050.



Darker colored slices are development between 2020 and 2050; lighter colored slices are remaining capacity for additional development beyond 2050.



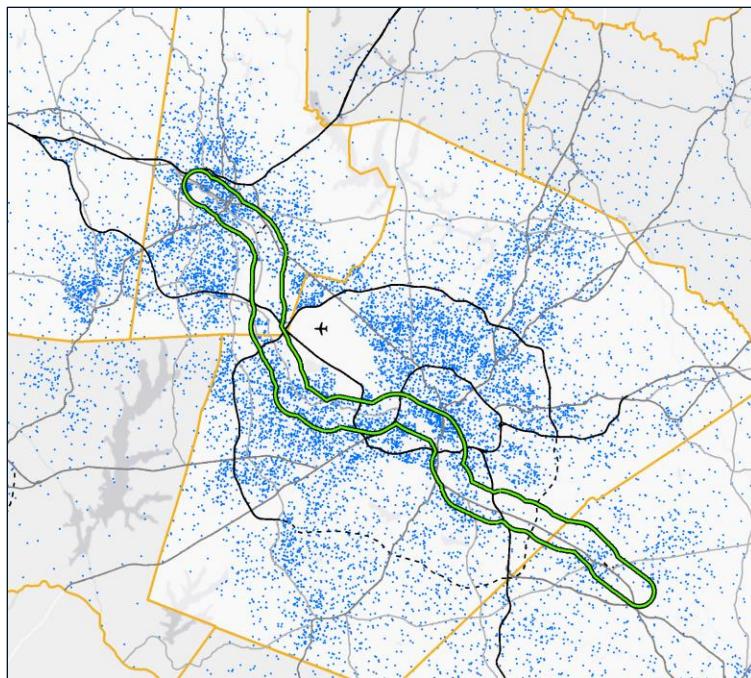
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# Passenger Rail Corridor Analysis: Land Use Analysis – Households

2020

2020-2050  
growth

2050



Station Areas: 14,000

Corridor: 89,000

Station Areas: + 38,000

Corridor: +105,000

Station Areas: 52,000

Corridor: 194,000



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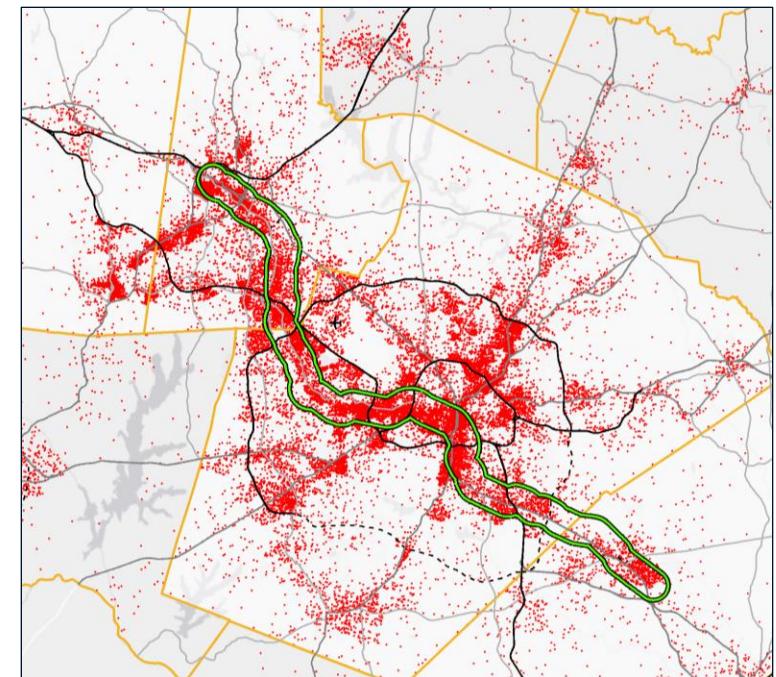
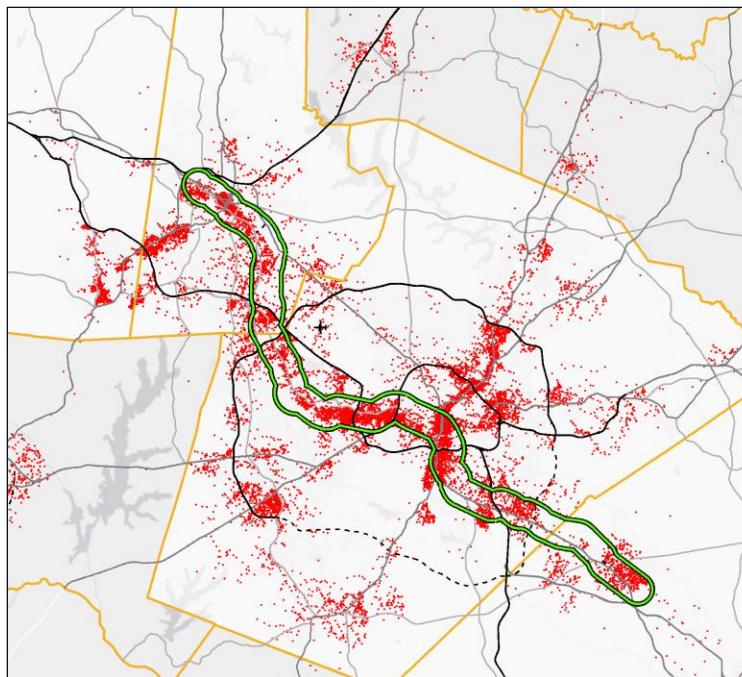
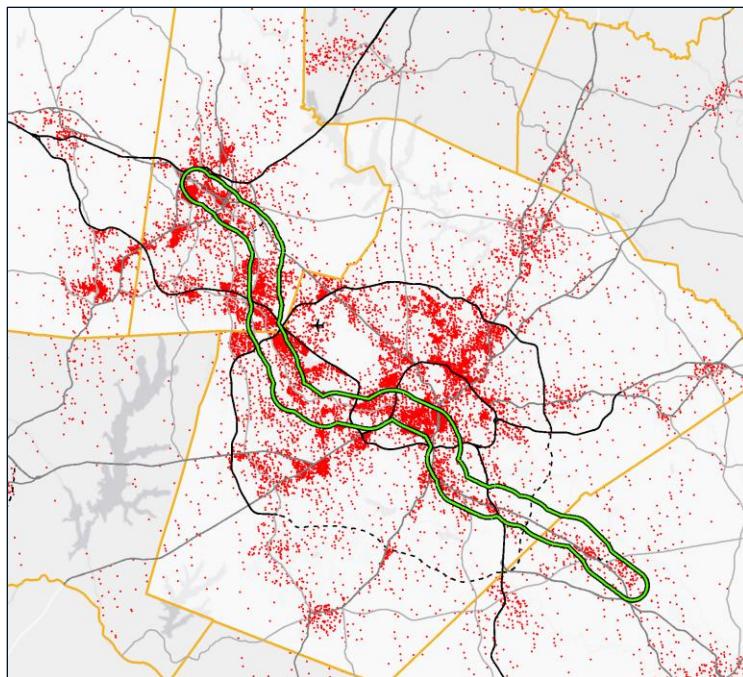
1 Dot = 50 Households

# Passenger Rail Corridor Analysis: Land Use Analysis – Jobs

2020

2020-2050  
growth

2050



Station Areas: 95,000

Station Areas: +150,000

Station Areas: 245,000

Corridor: 295,000

Corridor: +373,000

Corridor: 668,000



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1 Dot = 50 Jobs

# Passenger Rail Corridor Analysis: Land Use – Place Types

- From **Connect2050**, the region's newly adopted Metropolitan Transportation Plan

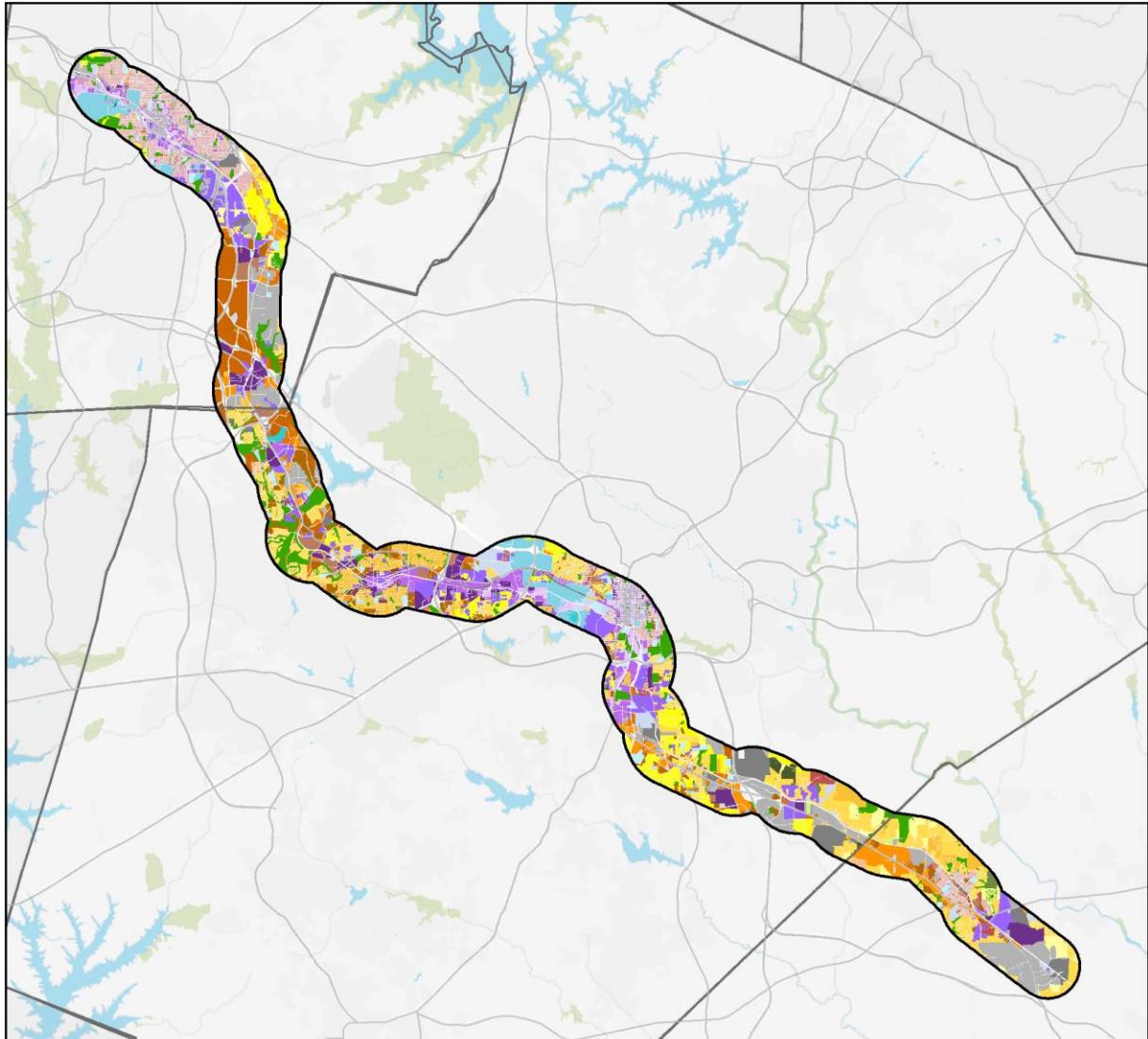
- 40 different place types across 5 “development patterns”
- Each place type has jurisdiction-specific values for density or intensity or development mix

Pattern	Natural	Rural	Suburban	City & Town	Cross-Cutting
Place Types	Protected Green Space	Farms & Forestland	Larger Lot Residential	Urban Neighborhood	Light Industrial
		Rural Living	Midsized Lot Residential	Mid-Rise Residential	Heavy Industrial
		Rural Crossroads	Smaller Lot Residential	Urban Residential	Airport
		Conservation Neighborhood	Mixed Density Residential	High Rise Residential	Civic & Institutional
		Mobile Home Neighborhood	Multi-family Residential	Mixed Use Neighborhood	K12 Campus
			Office Center	Mixed Use Center I	Health Care Campus
			Lodging	Mixed Use Center II	University Campus
			Neighborhood Scale Commercial Center	TOD Type I	University Campus - Residential
			Community Scale Commercial Center	TOD Type II	University Campus - Neighborhood
			Regional Employment Hub	TOD Type III	Special Type
				TOD Neighborhood	
				Urban Commercial/Office	
				Town Center	
				Metropolitan Center	



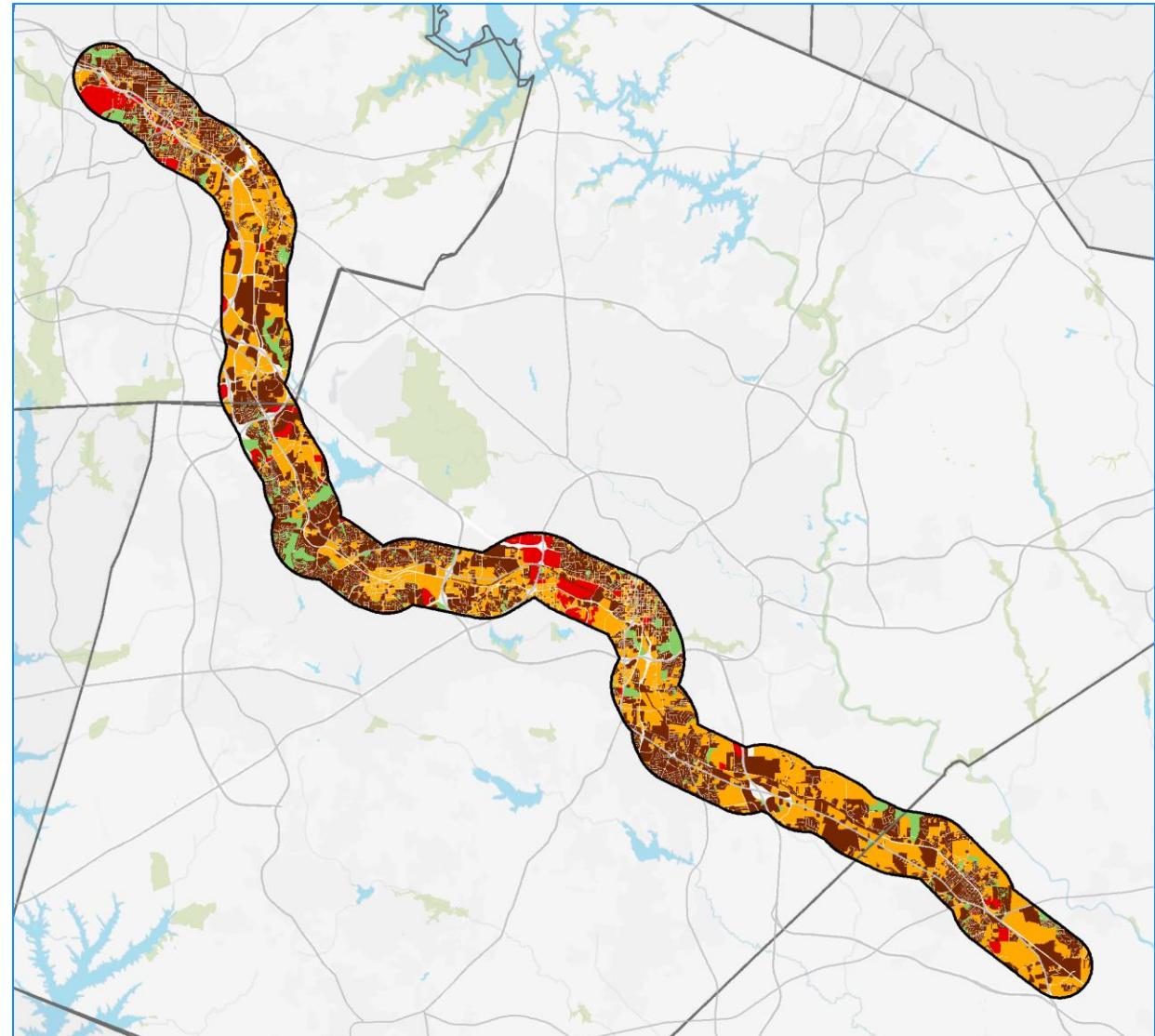
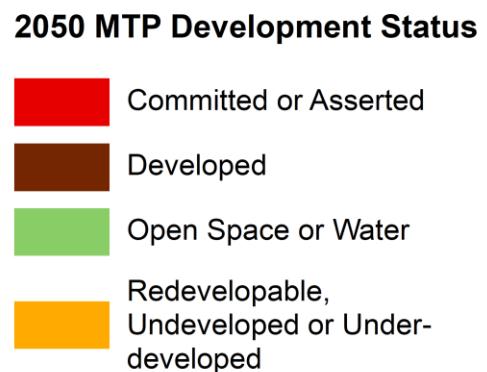
# Passenger Rail Corridor Analysis: Land Use – Place Types

- From **Connect2050**, the region's newly adopted Metropolitan Transportation Plan
  - 40 different place types
  - Each place type has jurisdiction-specific values for density or intensity or development mix
  - Top 10 place types in the corridor (by acres):
    - Smaller Lot Residential Neighborhood – 13%
    - Light Industrial Center – 11%
    - **Transit-Oriented Development, Neighborhood** – 8%
    - Protected Green Space – 7%
    - Midsized Lot Residential Neighborhood – 6%
    - Urban Neighborhood – 6%
    - Mixed-Density Residential Neighborhood – 5%
    - Regional Employment Center – 5%
    - University Campus – 4%
    - Community Commercial Center – 4%



# Passenger Rail Corridor Analysis: Land Use - Development Status

Parcel Development Status	Acres in Corridor	%
Committed/Asserted	3,036	6%
Developed	25,900	49%
Protected Green Space/Water	3,660	7%
Undeveloped, Redevelopable and Underdeveloped	20,114	38%
<b>Total (excluding ROW)</b>	<b>52,711</b>	



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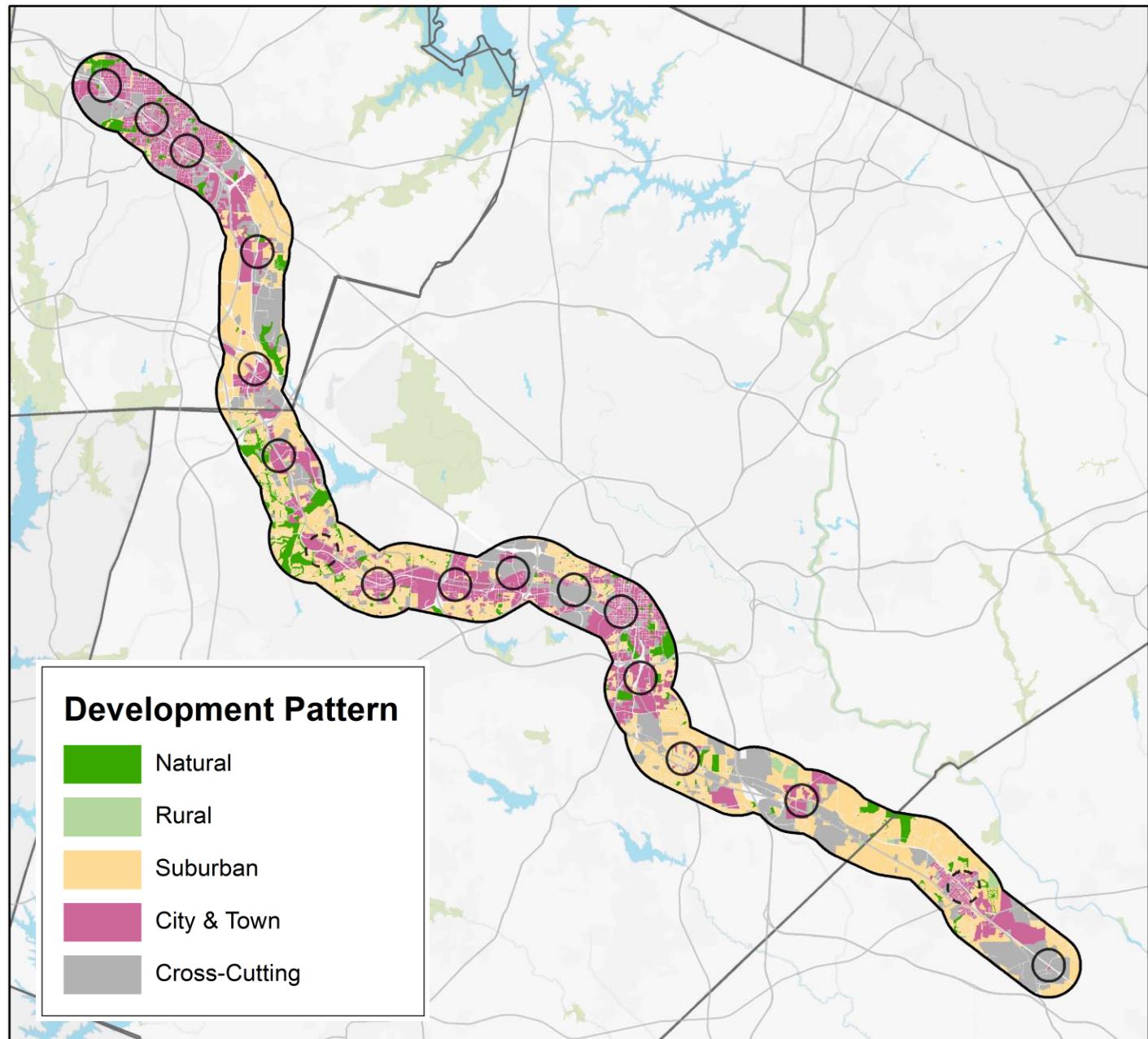
# Passenger Rail Corridor Analysis

- **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	--	--	<b>3,806</b>
Rural	163	307	<b>469</b>
Suburban	13,670	7,724	<b>21,395</b>
City & Town	4,661	<b>9,676</b>	<b>14,338</b>
Cross-Cutting	7,347	5,356	<b>12,703</b>
<b>Total</b>	<b>29,561</b>	<b>23,150</b>	<b>52,711</b>

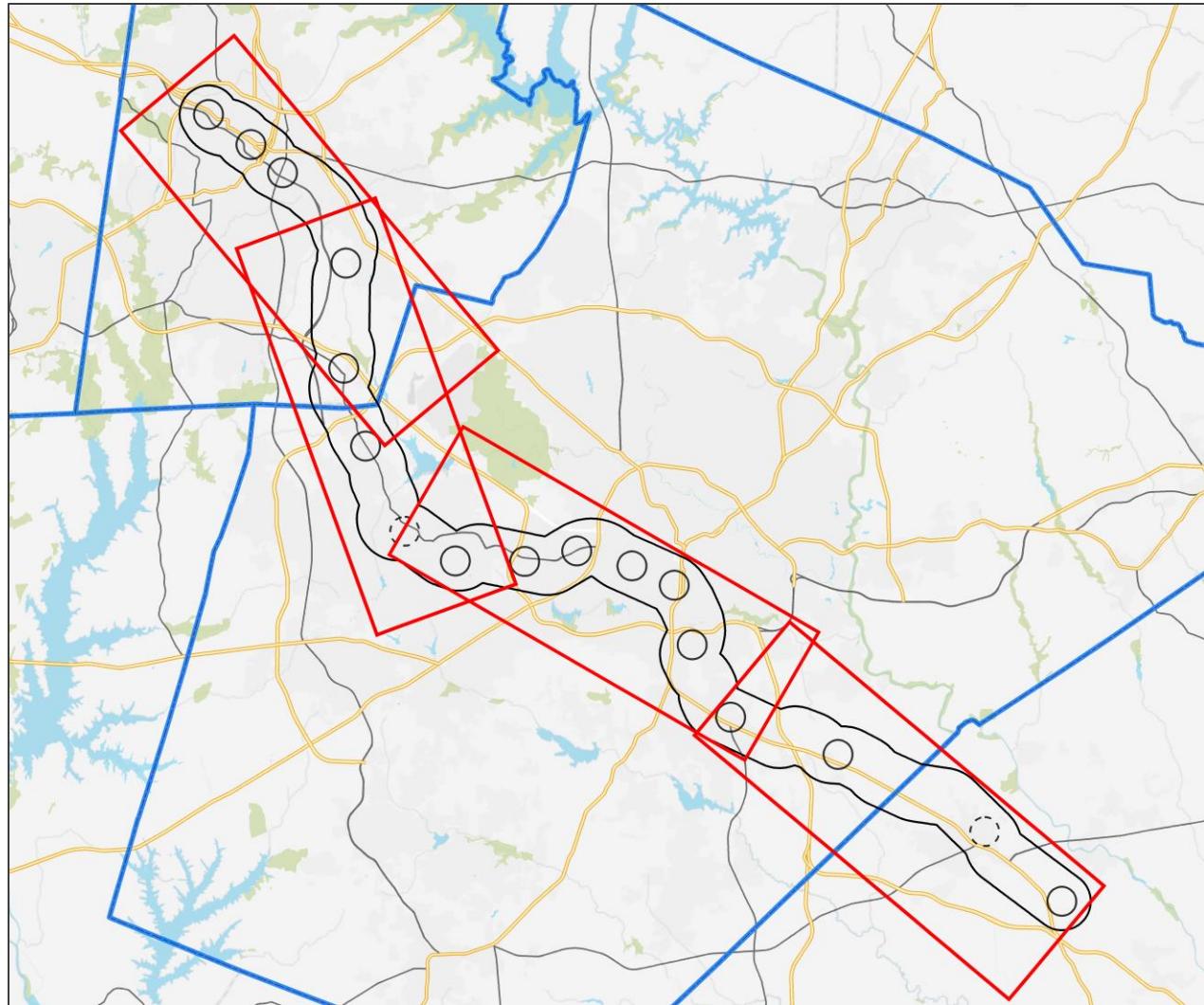
\* Excluding rights-of-way



# Passenger Rail Corridor Analysis: Land Use

- **Corridor Segments**

- To show more detail, the report divides the corridor into 4 overlapping segments, shown by the red boxes on the map.
- The next set of slides looks at place types and development status in each of these segments, with some notes on key features in each segment.

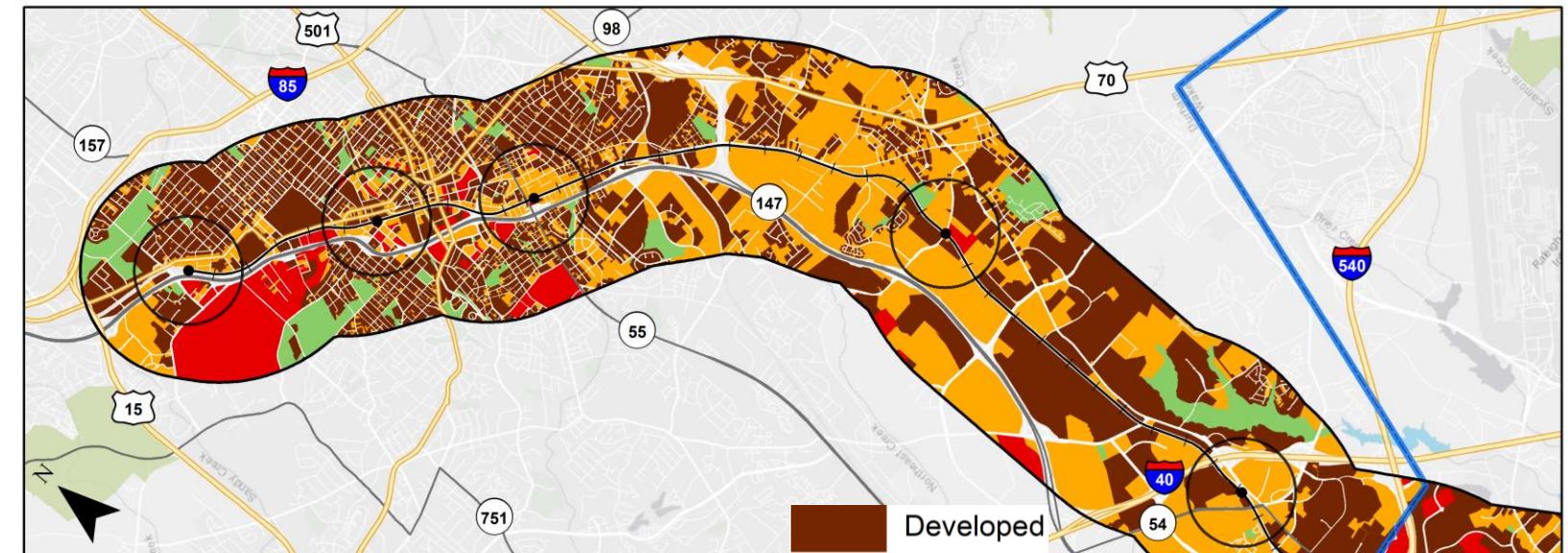
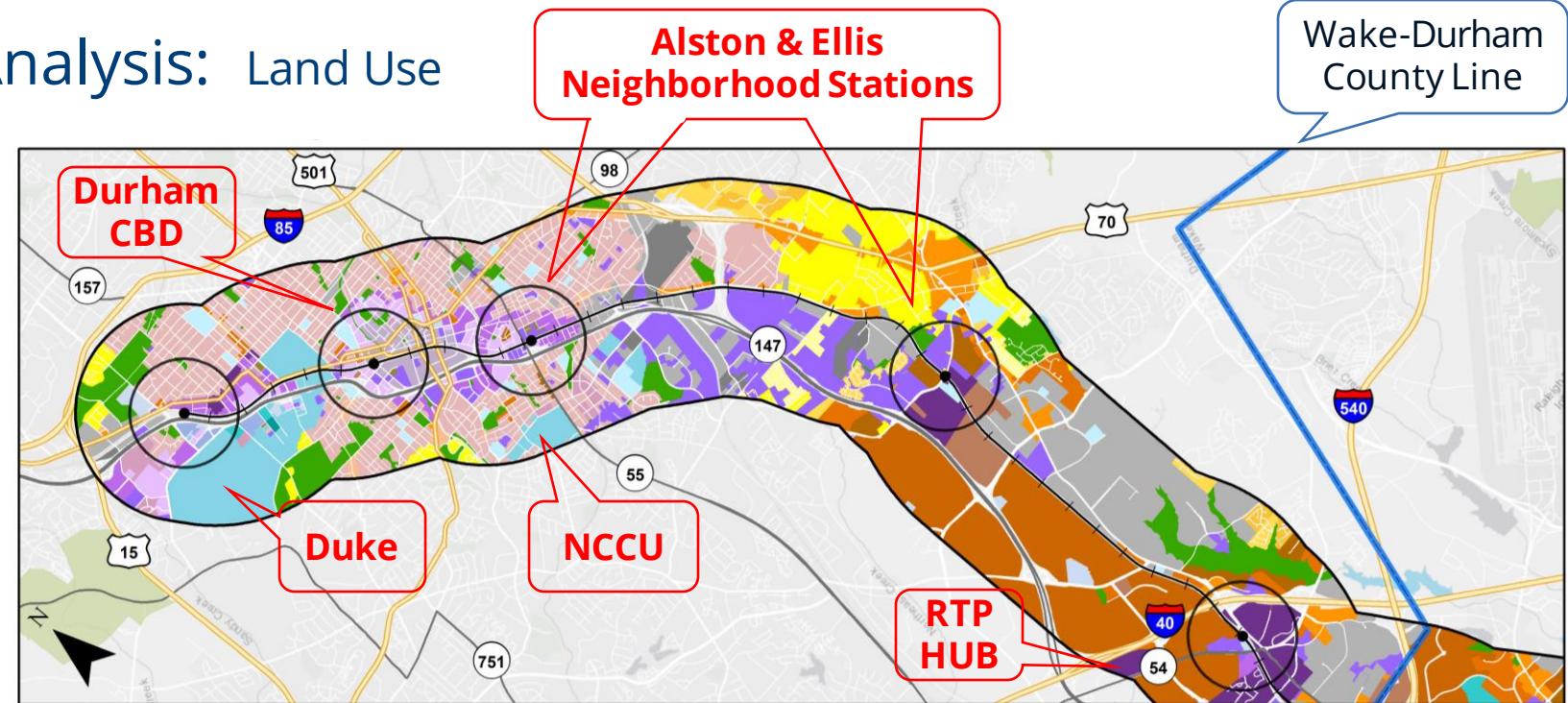


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# Passenger Rail Corridor Analysis: Land Use

## • 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

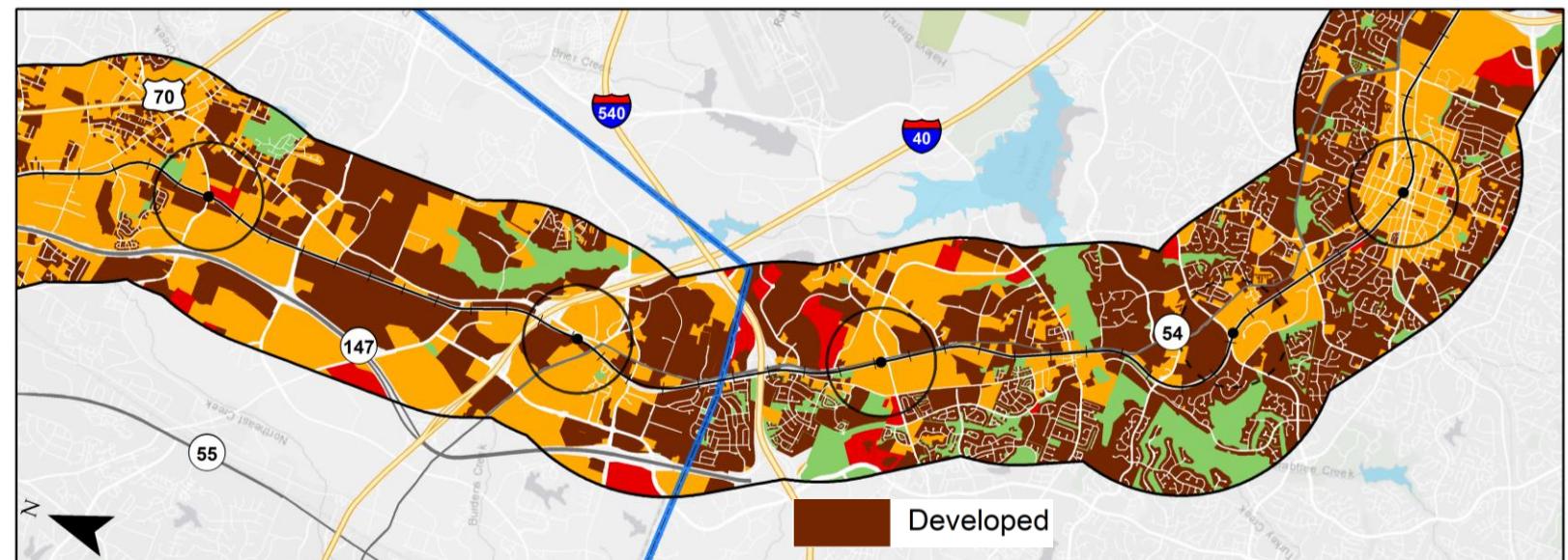
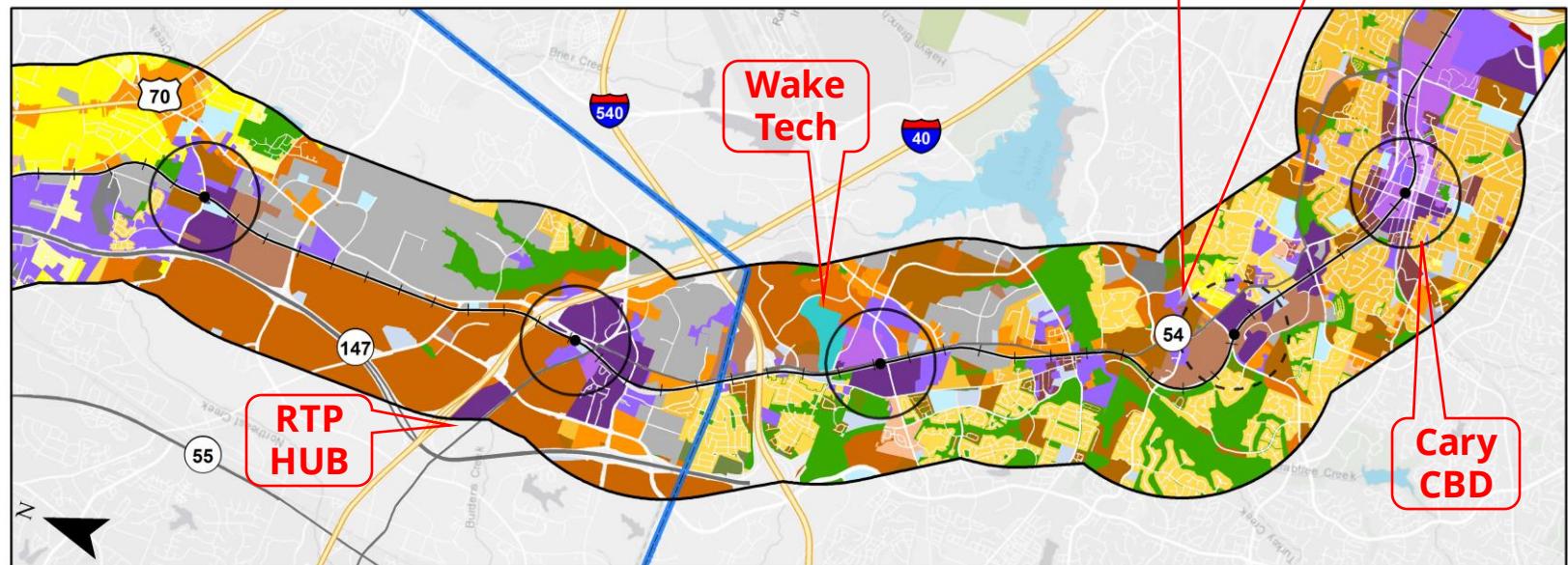


# Passenger Rail Corridor Analysis: Land Use

## • Ellis Road – Cary CBD

- Like previous segment, opportunities for residential end of trips
- 3 stations serving northern, central and southern portions of RTP: Ellis, RTP, McCrimmon
- Infill station opportunity near Park West Village – included in the 2050 Metro Transport Plan
- Key transit connector: Cary CBD, RDU connector
- Wake Tech Campus

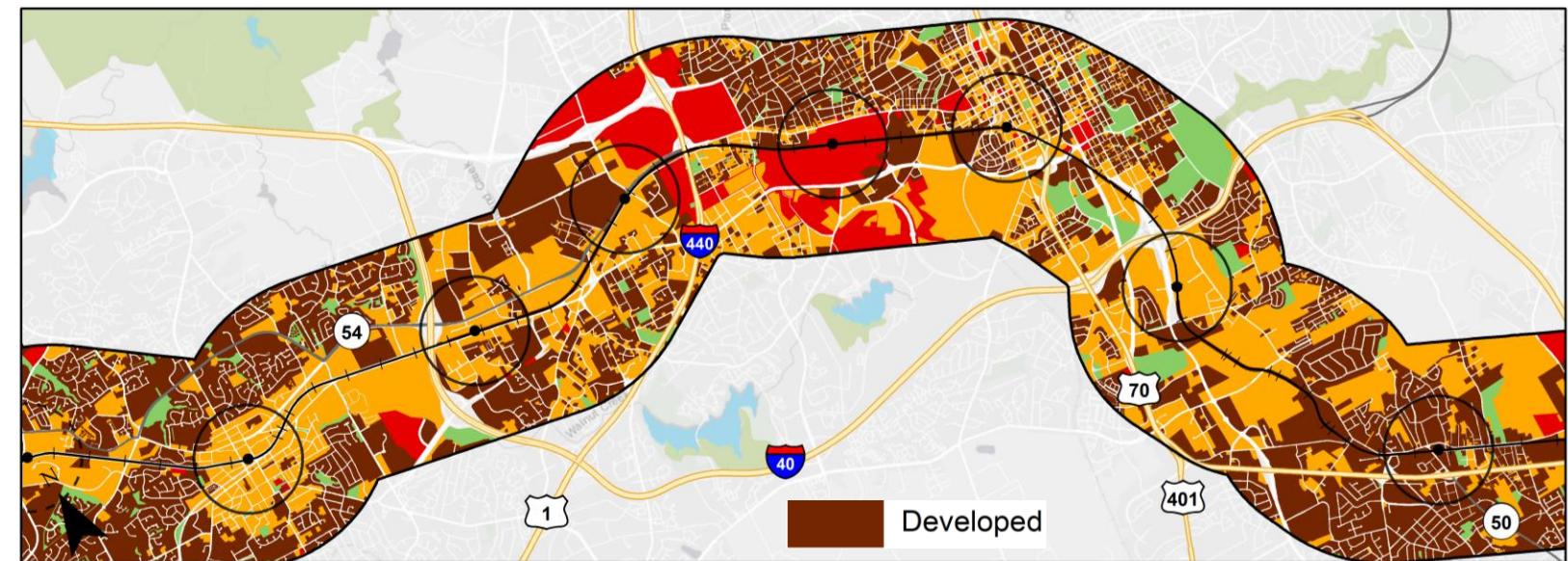
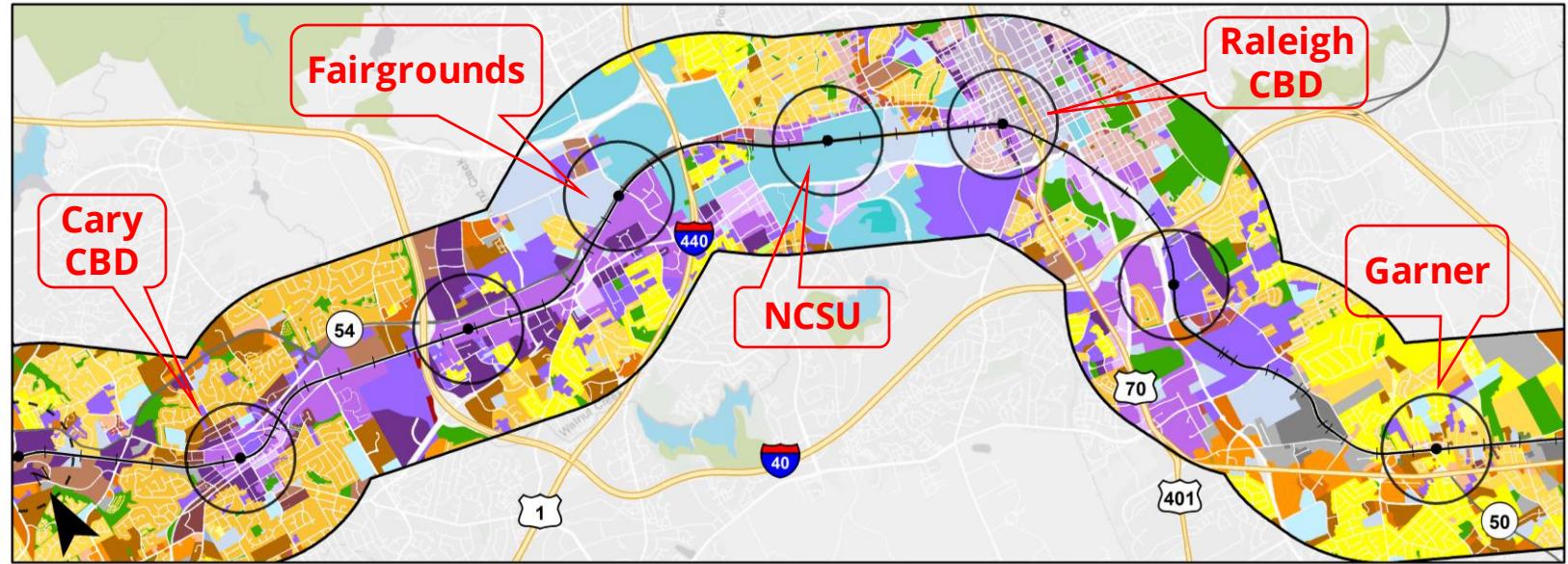
Infill station opportunity  
based on land use and  
station spacing



# Passenger Rail Corridor Analysis: Land Use

- **Cary CBD - Garner**

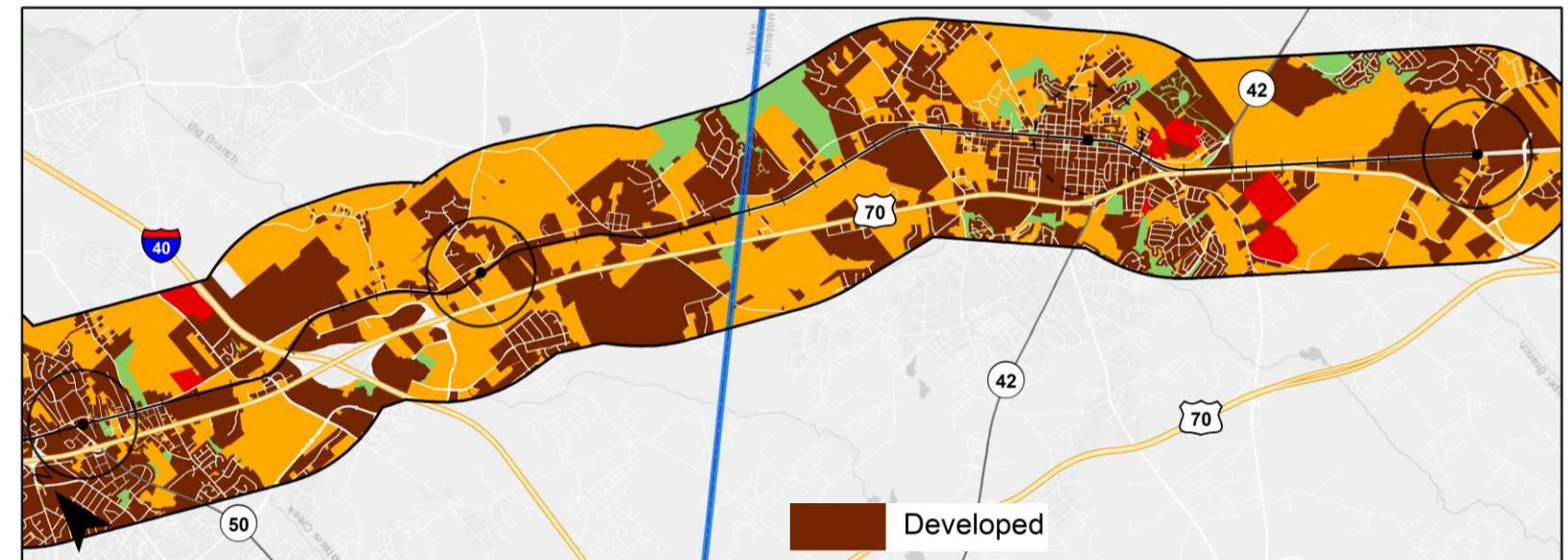
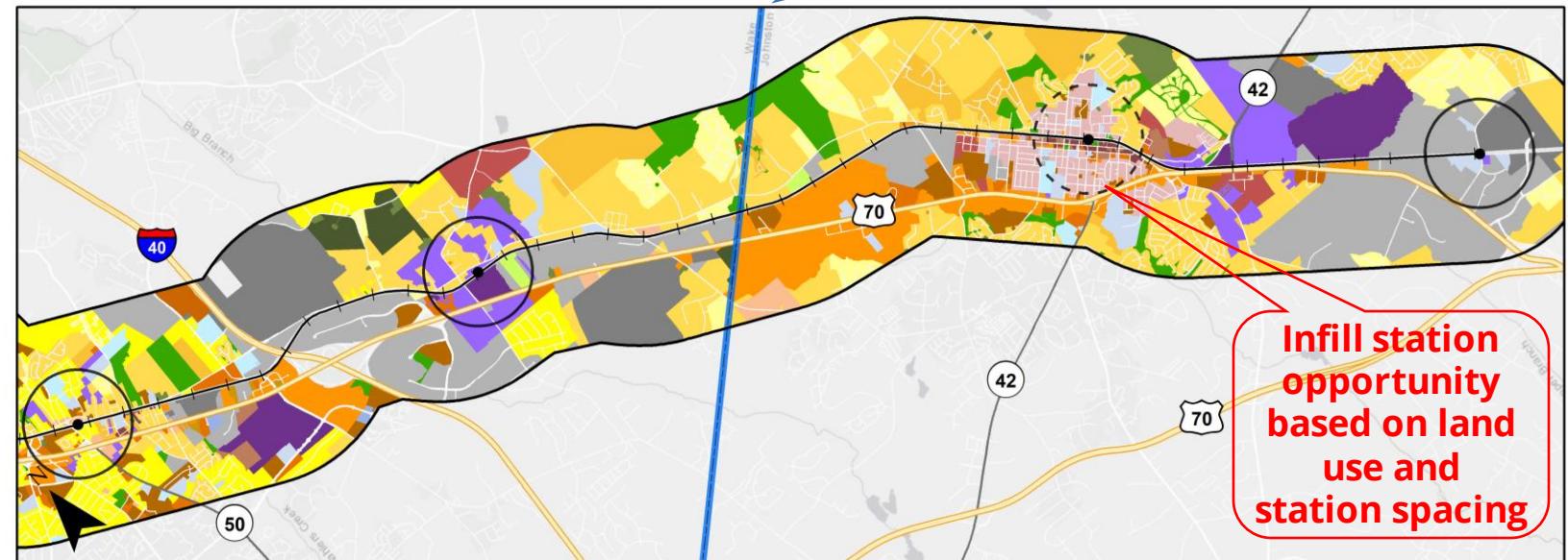
- Centers: Raleigh CBD & NCSU
- Anchor Institutions:
  - NCSU
  - Shaw University
  - State Government/ Fairgrounds
- Places going from low transit to substantial transit; both rail and BRT:
  - Raleigh/Cary edge
  - Hammond Road
  - Garner
- Key transit connectors:
  - Raleigh Union Station
  - Intersecting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



# Passenger Rail Corridor Analysis: Land Use

## • Garner-Clayton

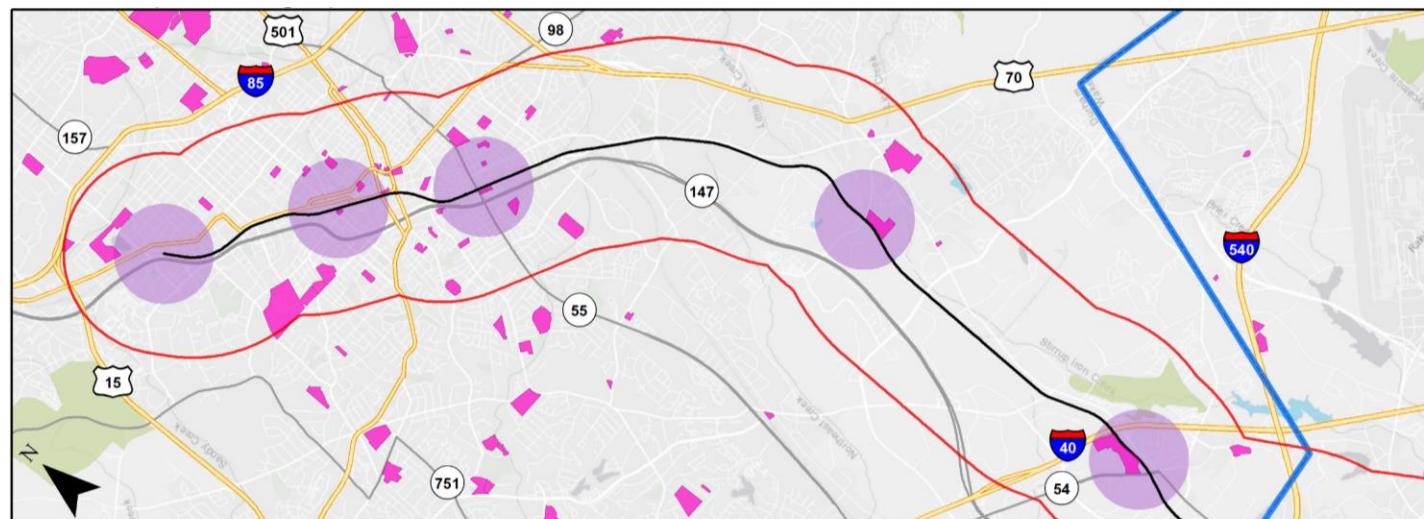
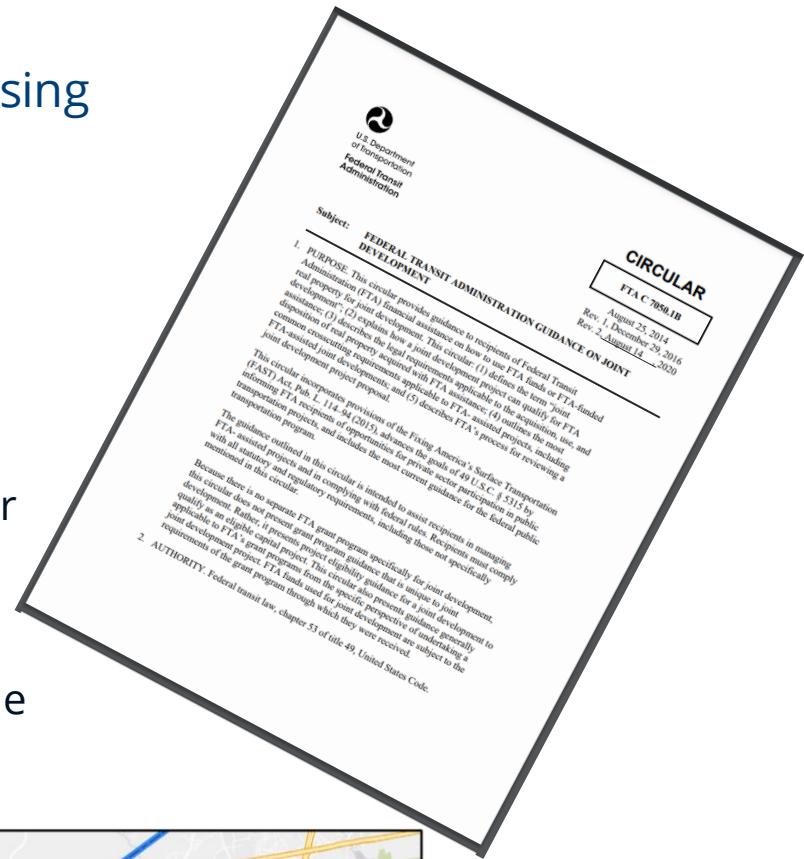
- Segment most like typical commuter rail corridor: lower density, car-oriented.
- Infill station opportunity in downtown Clayton
- I-40 access treatment for Auburn station park and ride could also support economic development of nearby sites
- Atypical terminus opportunity: large employers @ Powhatan contributes to “2-way” travel
- Key transit connector: BRT for short trips, rail for longer trips



# 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.



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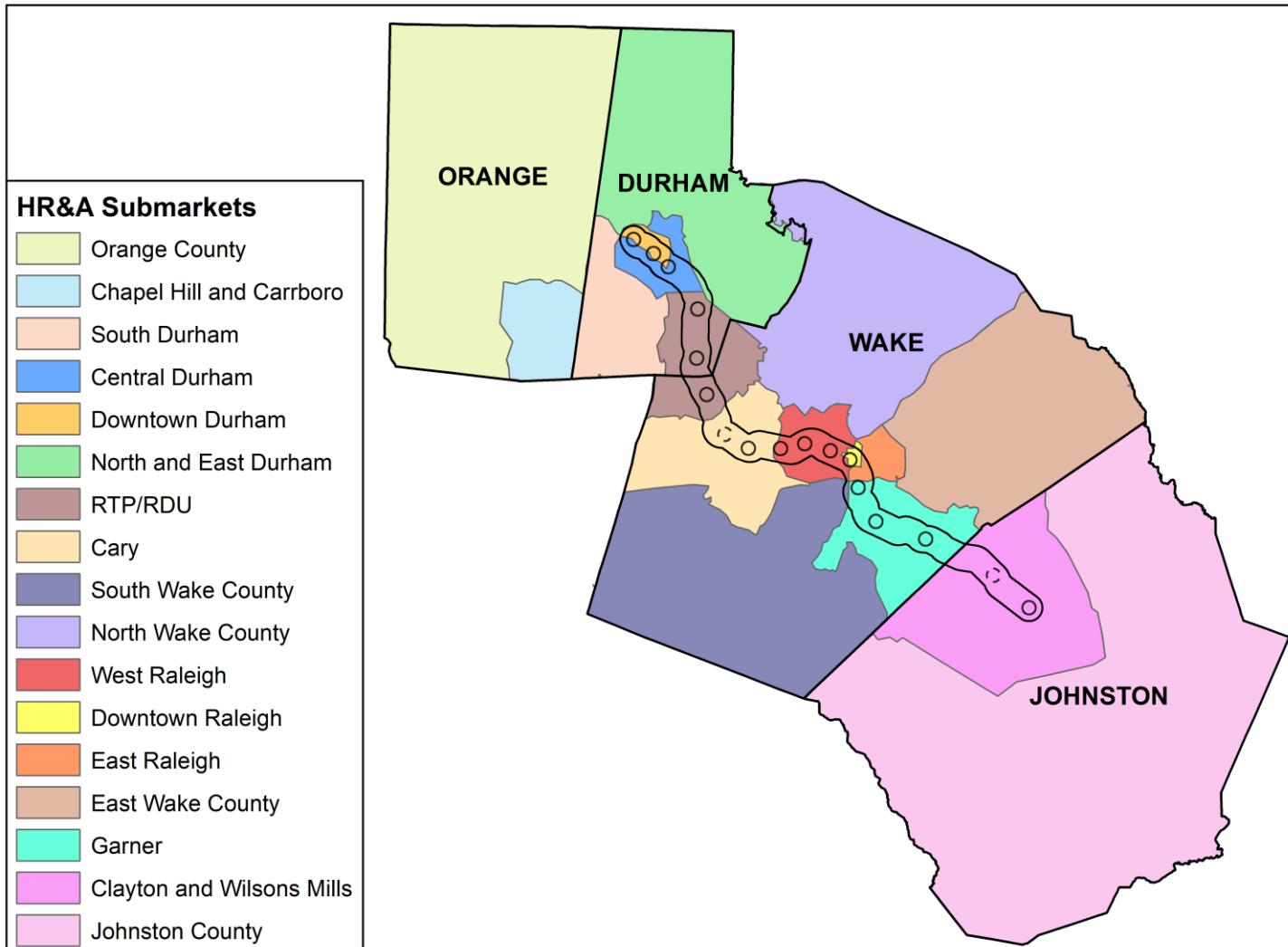
# Passenger Rail Corridor Analysis: Land Use

- **Market Assessment & Growth Allocation**

- HR&A looked at 17 areas for 6 product types:
  - Multi-family housing (rental & condo)
  - Office
  - Retail
  - Hotel rooms
  - Industrial/Lab Space
- 9 of the areas have a significant presence within the corridor

Downtown Durham	Central Durham	Downtown Raleigh
Cary	West Raleigh	RTP/RDU
East Raleigh	Garner	Clayton & Wilson's Mills

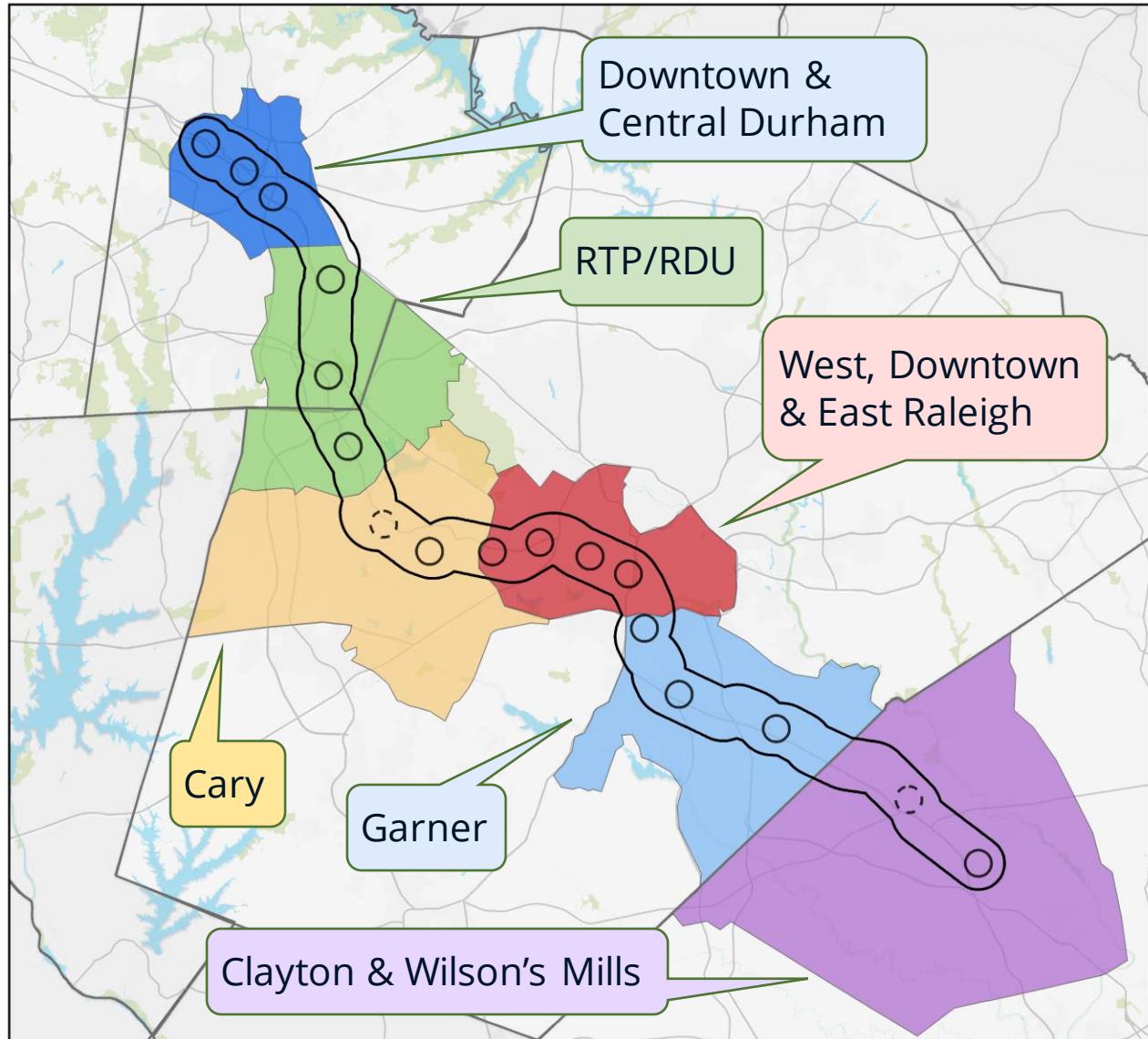
- These 9 submarkets total 257,000 acres, of which 61,000 acres are within the corridor.



# Passenger Rail Corridor Analysis: Land Use

- **Market Assessment & Growth Allocation**

- We grouped the 9 corridor-oriented submarkets into 6 districts, shown on this map
- Relating the 2020-50 growth allocations shown earlier to 2020-50 submarket demand is a bit “apples-to-oranges,” but some insights emerge:
  - HR&A indicates there could be even stronger multifamily residential demand in the corridor than forecast in the 2050 Transport Plan, especially in the RTP/RDU, Raleigh and Clayton/Wilson’s Mills districts
  - Similarly, HR&A indicates stronger office and industrial/lab space demand in the corridor, especially in the RTP/RDU district
  - The HR&A demand forecasts are within the 2050 Plan capacities, so a key take-away is that the corridor districts may develop more quickly than the 2050 MTP envisions, especially around RTP



# Land Use Analysis Key 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 will be needed. Leveraging public land, federal Joint Development rules, and anchor institution collaboration may be impactful.
6. Most communities treat the railroad right-of-way as they do any privately owned land, rather than as they would a roadway. This means there might not be building setbacks to provide safe access.



## Issues to Consider

The land use 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 optimizing development along the corridor
- ❖ Ensuring land use & transit are given equal weight and planned together
- ❖ Developing a compelling vision for the future growth this analysis examined, 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
- ❖ Establishing consistent building set-back standards from railroad rights-of-way to ensure safe access to both buildings and the corridor



# Available Resources

- ❖ A detailed *Land Use Analysis Report*
- ❖ A four-page *Executive Summary*
- ❖ PowerPoint Presentation
- ❖ More detailed Place Type, Development Status, job and housing growth capacity and 2050 allocation mapping, by corridor segment and station study area

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

