ATLANTA-REGION TRANSIT LINK AUTHORITY

ATL REGIONAL TRANSIT PLAN (2022)

Transit Network Analysis Findings
TOG Update

October 15, 2021

TODAY'S AGENDA

- **Transit Network Analysis Framework**
- **Preliminary Findings and Takeaways**
  - Mobility & Connectivity
  - Equity
  - Economic Development
  - Safety, Efficiency, and Resiliency
- **Next Steps**
  - Composite Network Gaps and Needs
  - Service Typology, Infill Network, Regional Priority Network

NETWORK ANALYSIS APPROACH

Consistency with Governing Principles and Vision

- Setting the stage for project and plan evaluation

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Comprehensive analysis of transit needs and gaps

- Build on State of System
- Geographic and service gaps
- Compatibility with regional transportation investments

→

Basis for priority regional network

- Service typology
- Infill network
- Call for projects

ANALYSIS MEASURES

Governing Principles & Vision	Analysis Categories	Measures to Determine Gaps and Needs
Mobility and Connectivity	Travel Demand	Unserved regional connections by comparing major OD pairs/travel flows to level of service (coverage, frequency, span, transfers)
	Transit Propensity	Local service gaps by comparing transit propensity (medium, medium-high, and high) to level of service (coverage, frequency, span)
	Geographic Equity	Urban/suburban/rural (UGPM) distribution of service to identify regional patterns of coverage, span, frequency
Equity	ARC's Protected Populations	• Nine populations protected under Title VI of the Civil Rights Act and considered within the Executive Order on Environmental Justice (ARC Protect Class model) without access to frequent all-day service • EJ residents without access to healthcare, grocery stores, and education within 30 minutes by transit
	Low Wage Jobs	Low- and mid-wage jobs that pay $3,333 per month or less without access to frequent all-day service
	Housing affordability	Households who pay more than 30% of income on mortgage or rent without access to frequent all-day service
Economic Development	Activity Centers	Level of service (coverage, frequency, span) and transit connectivity to ARC's 13 major activity centers
	Economic Development Zones	Alignment with economic development zones (e.g., TADs, Empowerment Zones, Opportunity Zones, CIDs)
Safety, Efficiency, and Resiliency	Pedestrian/Bike Safety	• Alignment with ARC's high-risk corridors for pedestrians and bikes
	Regional Transportation Investments	• Alignment with managed lane system • Alignment with ITS/TSMO/ATMS/RTOP infrastructure

Mobility & Connectivity

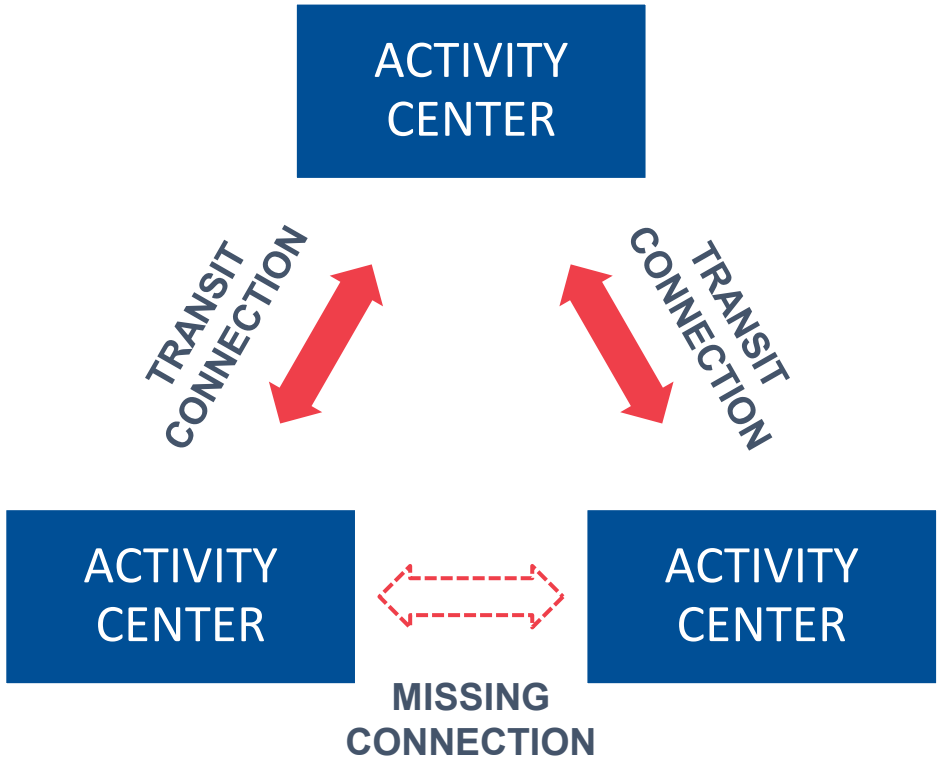
Travel Demand

Transit Propensity

Geographic Equity

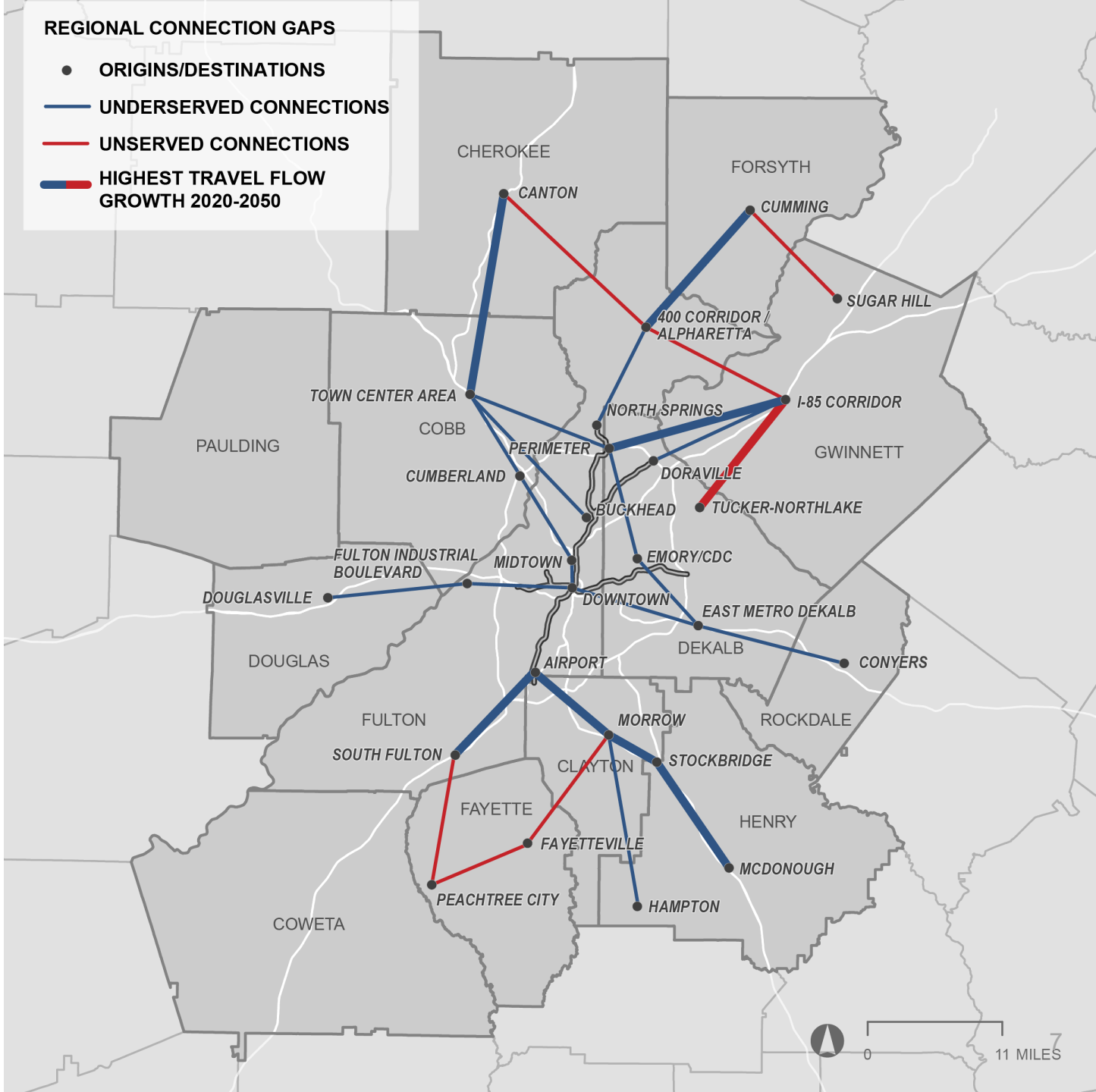
TRANSIT DEMAND GAP ANALYSIS

- Purpose: Identify unserved or underserved origin and destination zone pairs by comparing travel flows to existing service
  - 2020 all-day flows vs. current all-day transit service
  - 2020 peak flows vs. current peak service
  - 2020 vs. 2050 all-day and peak flows
- Guiding questions for areas with high all-day trip flows:
  - Is there a direct transit connection?
    - If not, can the trip be made at all on transit?
    - If yes, what is the type and quality of service? (connections, span, frequency)
  - If a gap is identified, what is the quantity of all-day trip demand?
  - What are the characteristics?
    - Is the gap between distinct activity centers, corridors, subregions?



TRANSIT GAPS SUMMARY

- Analysis results: Significant transit gaps exist throughout the region
- Many are underserved connections, that is they have some service (local or commuter), but flows indicate potential for more (span, frequency)
- There also exist many completely unserved connections throughout the region, typically between counties on the periphery
- Thicker lines indicate connections with highest travel flow growth for 2020-2050.
- Note: Gaps identified are between activities centers. Flows to/from areas with widely dispersed land use were not considered.



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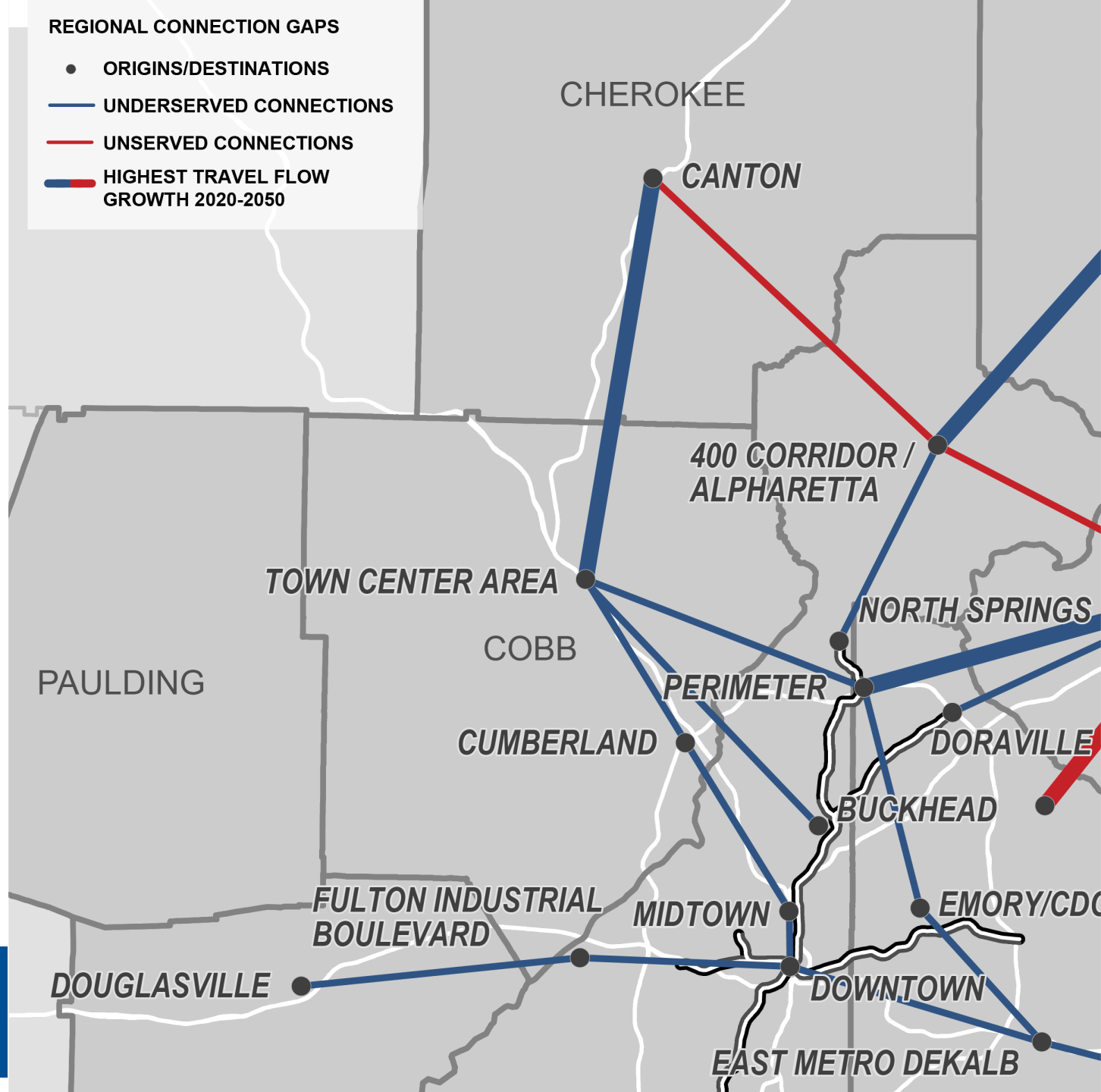

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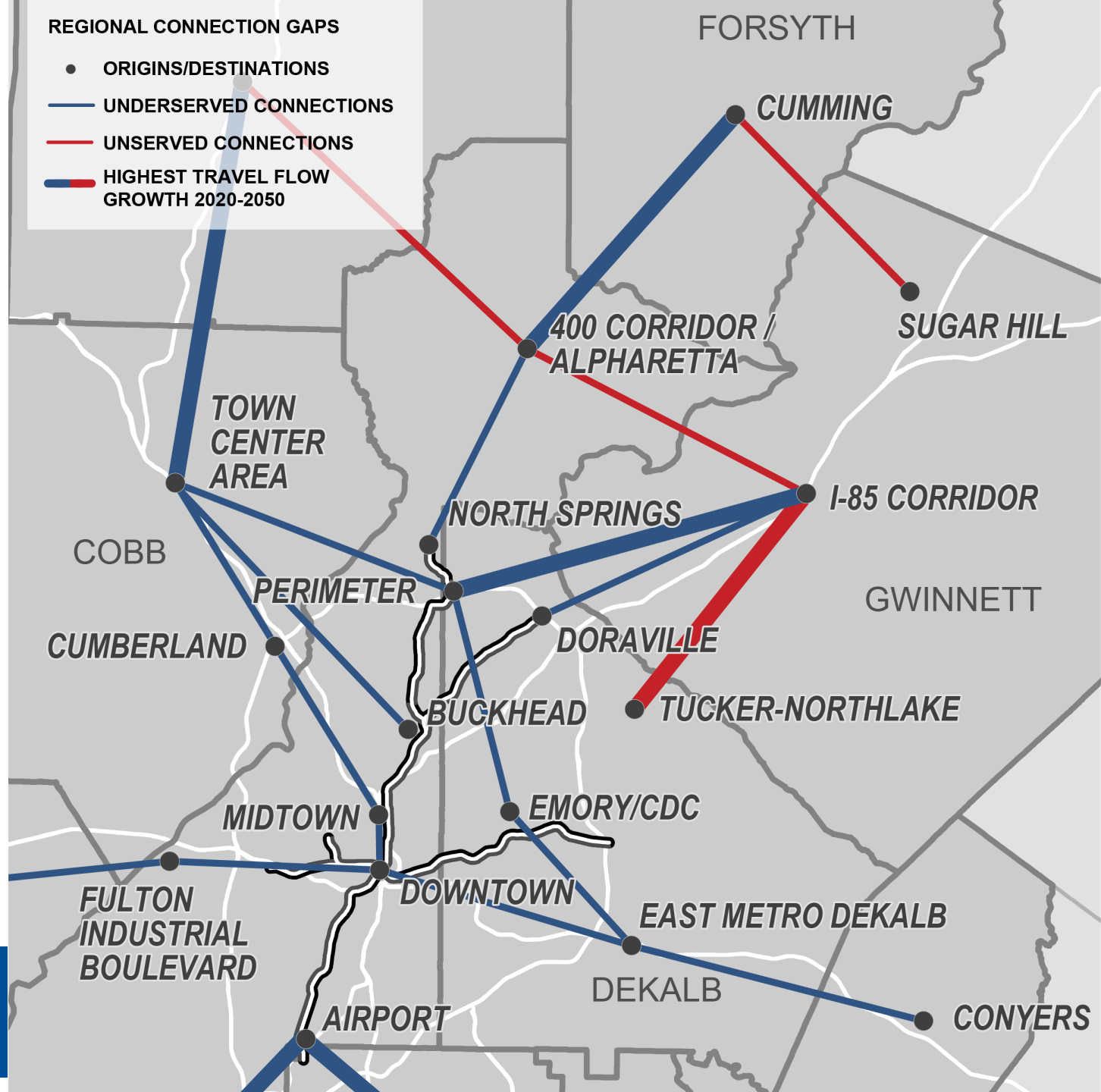

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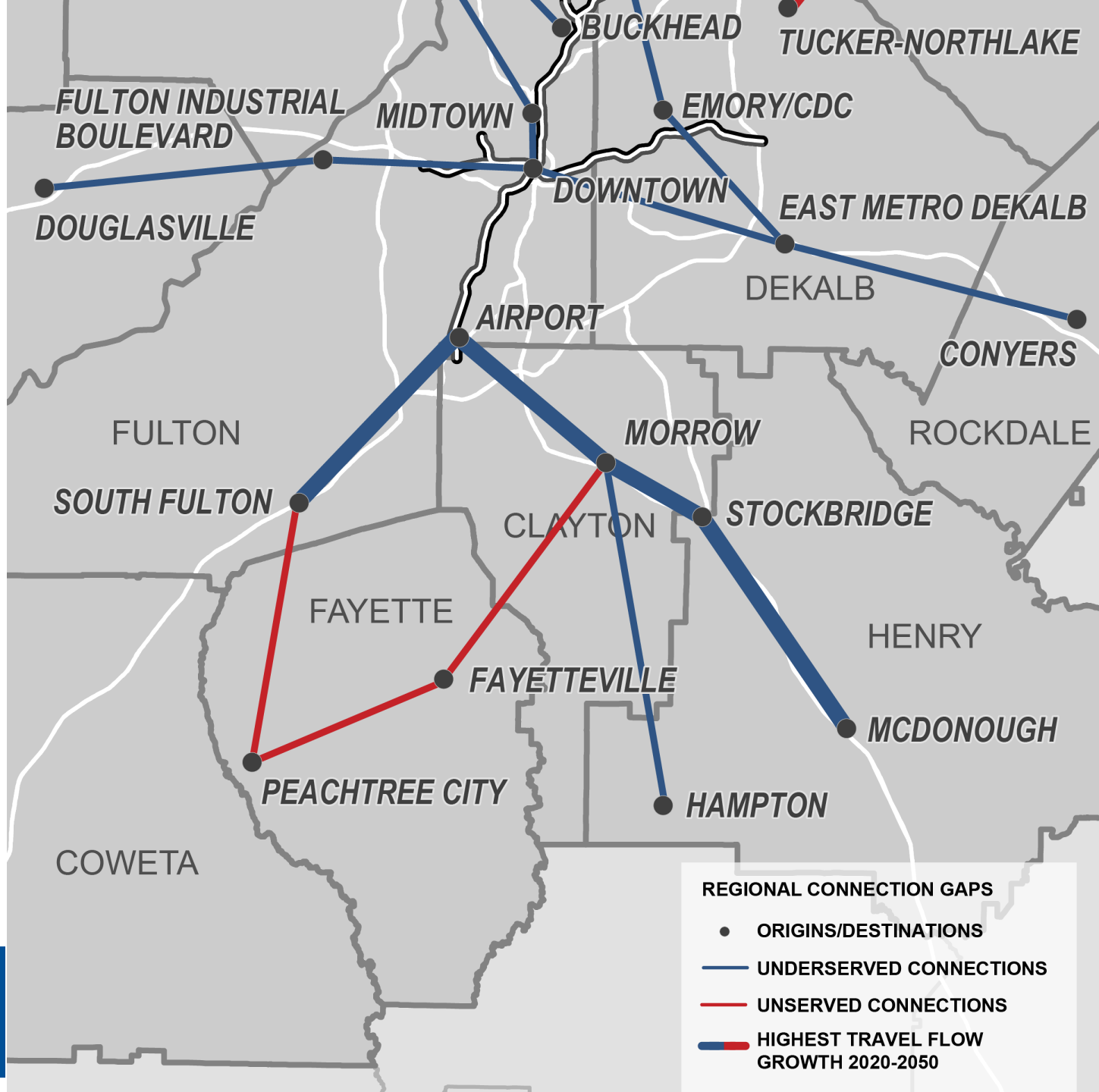


TRANSIT PROPENSITY GAP ANALYSIS

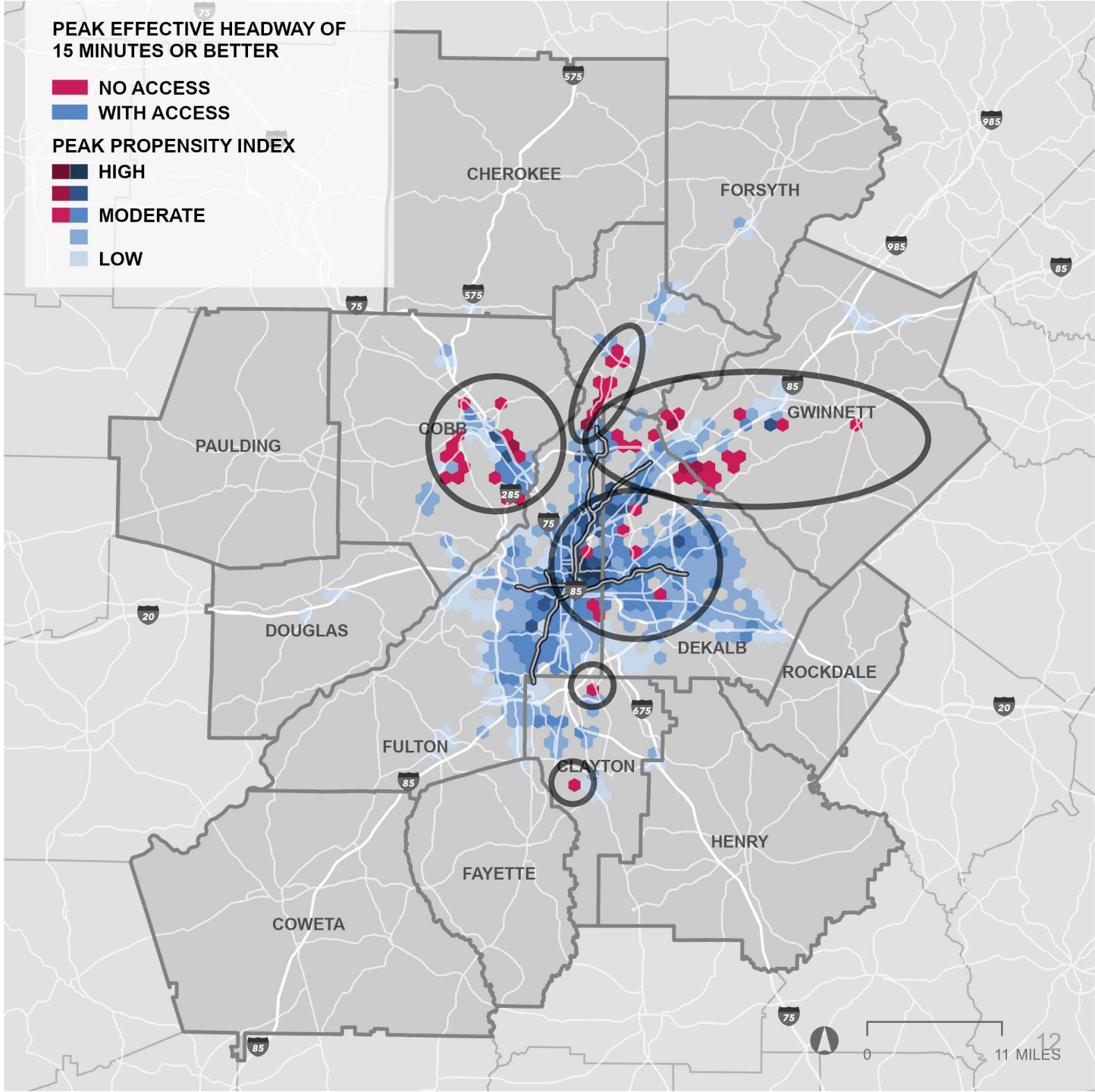
- Purpose: Compare high propensity areas to various service characteristics (coverage, span, frequency)
  - Peak Propensity Index vs. peak frequency
  - All-Day Propensity Index vs. all-day frequency
  - All-Day Propensity Index vs. span of service (by day of the week)
- Helps identify three types of gaps:
  - Geographic (locations of high need with no transit)
  - Level of Service (locations of high need without enough transit)
  - Transit Mode or Type (locations of high need with limited types of transit)

All-Day Index represents areas that can serve as origins or destinations at all times of day and thus would benefit from service throughout the day

Peak Index identifies areas that serve as the origin or destination for home-to-work trips, which are most concentrated during the traditional peak morning and evening commute hours

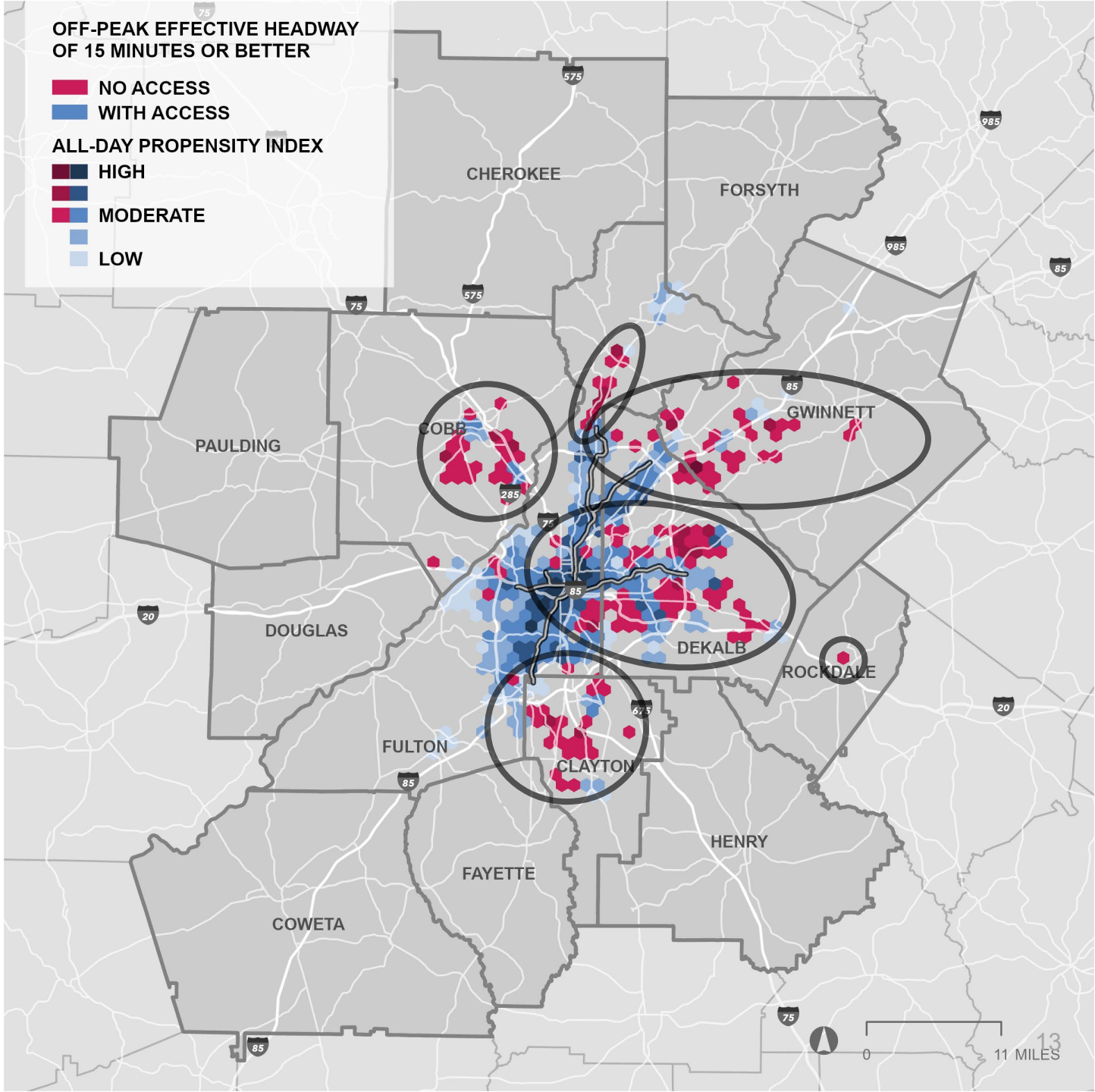
PEAK FREQUENCY VS. PEAK PROPENSITY

- Analysis: Peak frequency of 15 minutes or better vs. Peak Propensity
- Gaps:
  - Central and eastern Cobb
  - North Fulton along 400
  - Gwinnett along I-85
  - Areas in Fulton, DeKalb and Clayton counties
- Even during peak periods, some high demand areas are lacking high-frequency transit.



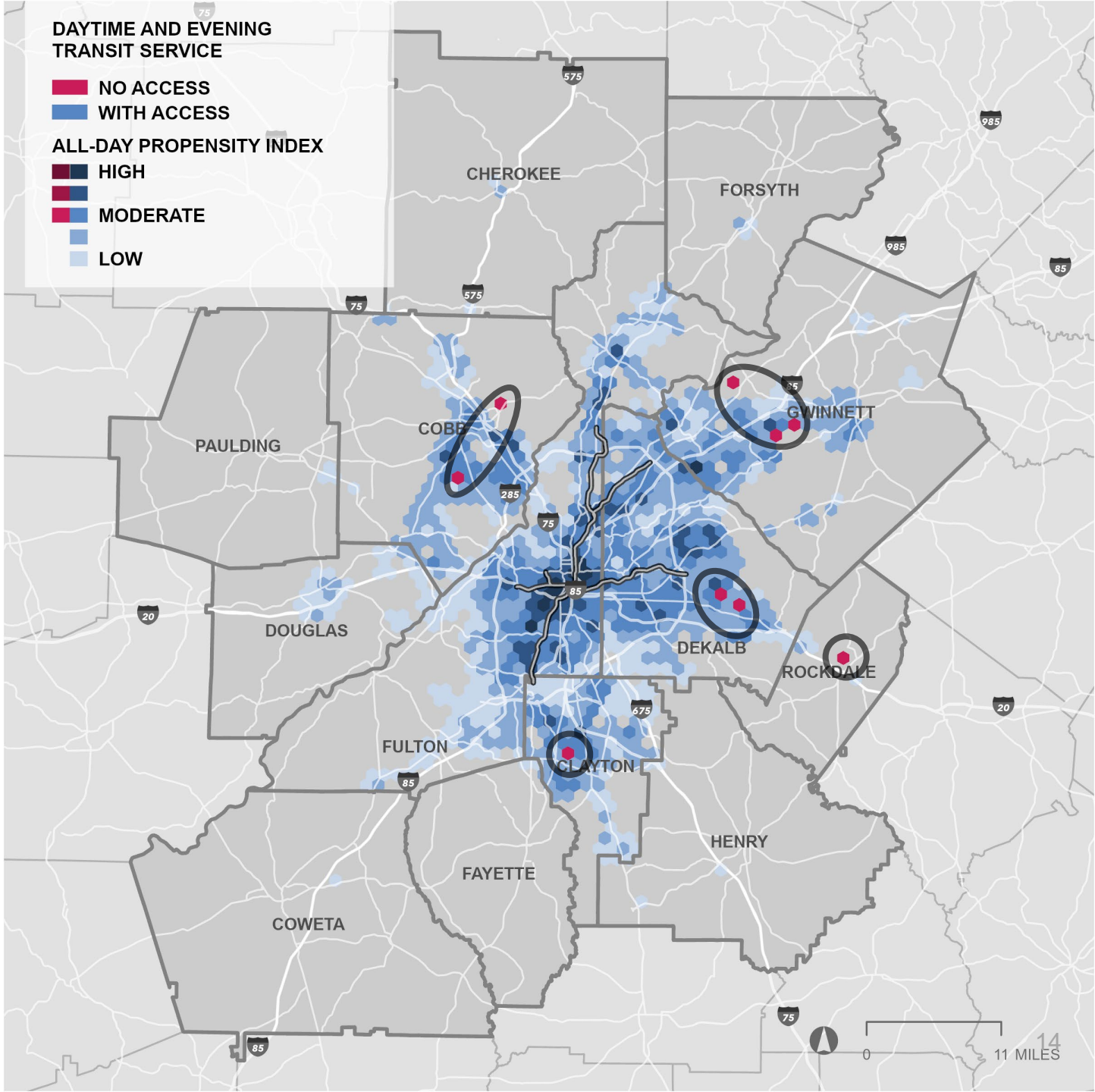
ALL-DAY FREQUENCY VS. ALL-DAY PROPENSITY

- Analysis: All-day (7am-7pm) frequency of 15 minutes or better vs. All-Day Propensity
- Similar gaps as peak plus:
  - Large portions of DeKalb and Clayton Counties
  - More locations in Gwinnett County along I-85 and US 29
  - More extensive gaps in Cobb County
  - City of Conyers, Rockdale County
- Relatively few areas with moderate to high propensity have high all-day frequency.



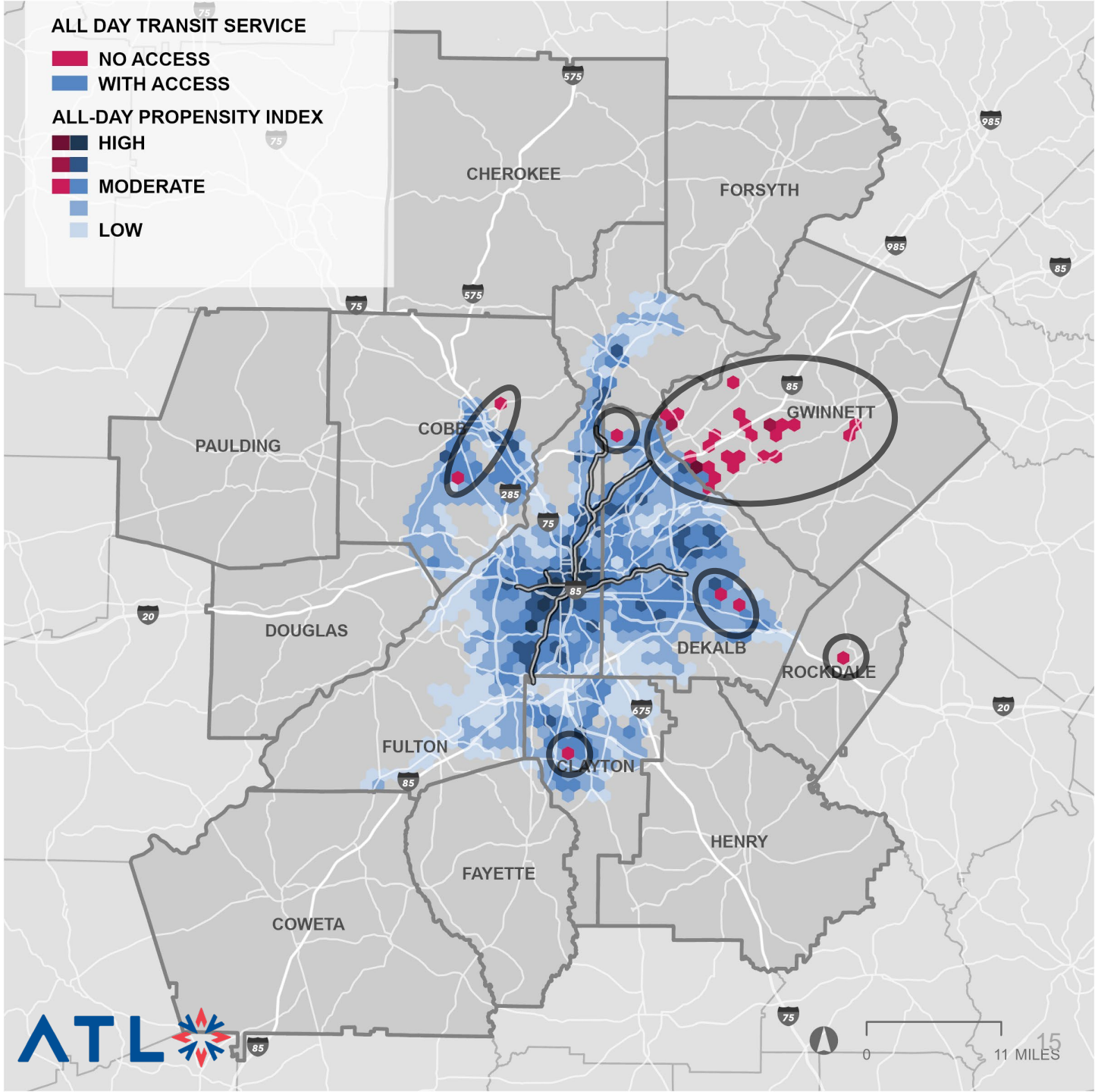
SPAN OF SERVICE VS. TRANSIT PROPENSITY

- Analysis: Day and Evening (13-18 hour) span of service vs. All-Day Propensity
- Most of the areas of moderate to high propensity have service.
- However, City of Conyers in Rockdale County and certain parts of Clayton, Cobb, DeKalb, and Gwinnett counties have moderate to high propensity or need for longer spans of service than what is currently provided.



SPAN OF SERVICE VS. TRANSIT PROPENSITY

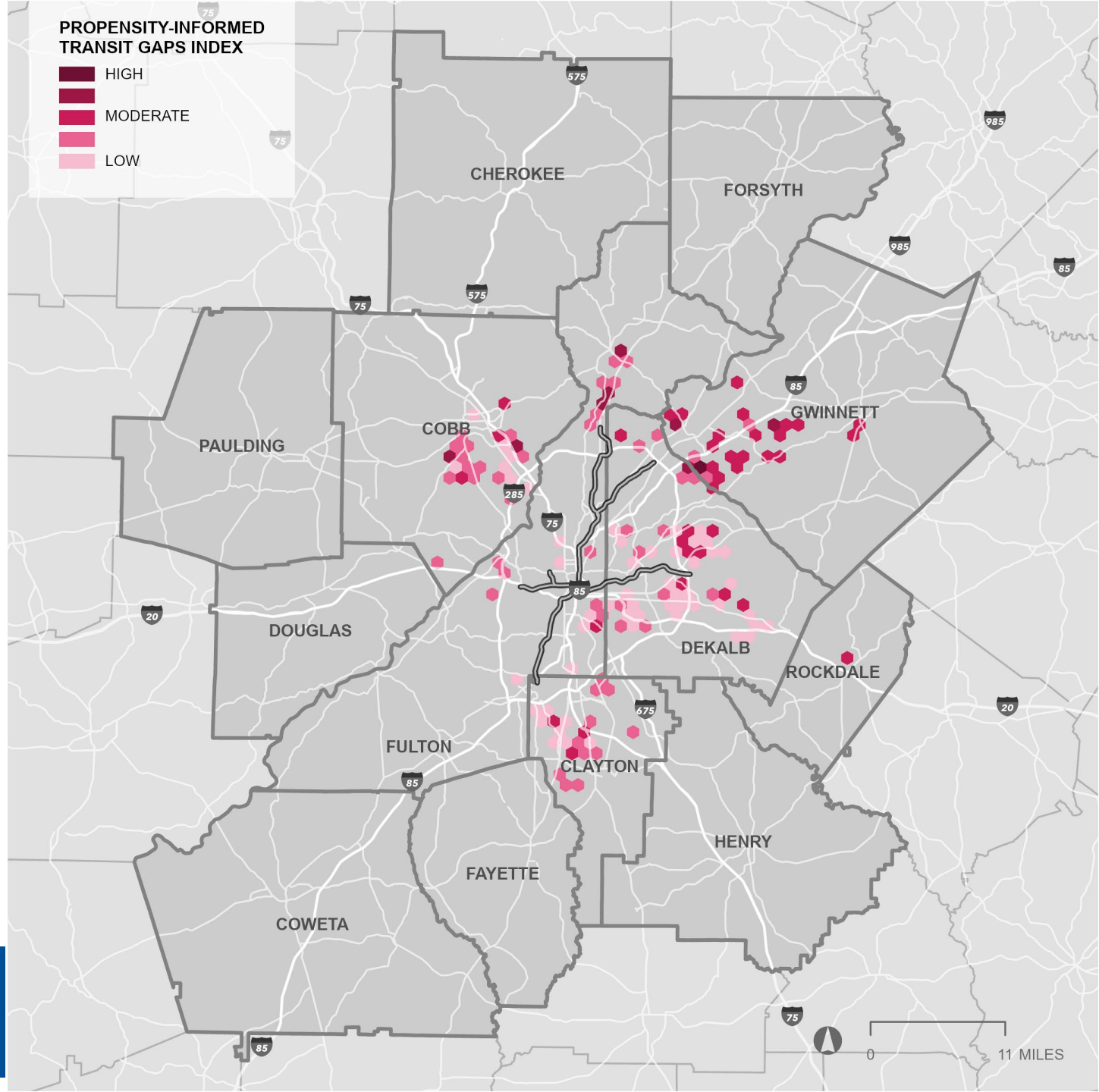
- Analysis: All-day (18+ hours) span of service vs. All-Day Propensity
- Similar results to 13-18-hour span
- Significant increase in areas of high need without service in Gwinnett



PROPENSITY TAKEAWAYS

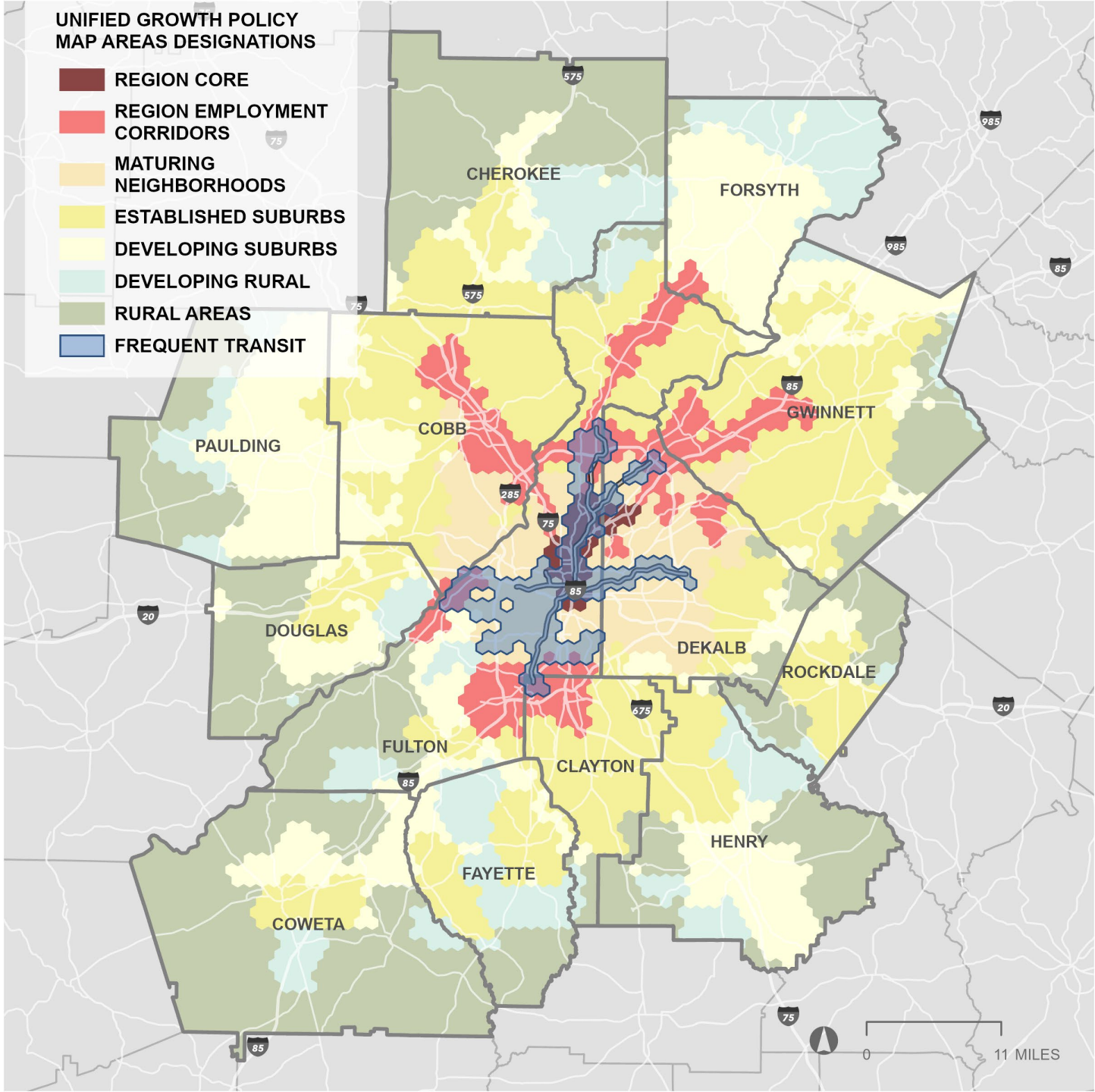
- Under or unserved areas with moderate to high propensity include:
  - Central/Southern Cobb
  - North Fulton
  - Central/Western Gwinnett
  - Parts of central DeKalb
  - Central Rockdale
  - North Clayton
- Gaps in those areas are related to service hours (limited late-night and early-morning service) and service quality (low frequency)

Do these findings align with your understanding of the transit needs in your community?



GEOGRAPHIC EQUITY

- Analysis: Population, employment, and density versus transit service availability by Unified Growth Policy Map Areas Designations
- Most of the Region Core, Region Employment Corridors, and Maturing Neighborhoods are served by fixed-route service.
- All-day, frequent transit service, however, covers most of the Region Core but only small portions of Region Employment Corridors and some Maturing Neighborhoods near MARTA's Blue and Green metro lines and the southwest of the City of Atlanta.



GEOGRAPHIC EQUITY

UGPM Categories	2020 Share* of the Region's		2020 Density	Jobs Served by Transit		
	Population	Employment	Pop+Jobs/ Acre	Frequent	Fixed Route	General Public Demand Response
Region Core	4%	15%	28.55	90%	100%	-
Region Employment Corridors	12%	34%	10.24	20%	97%	1%
Maturing Neighborhoods	17%	12%	6.78	30%	93%	-
Established Suburbs	41%	27%	4.43	-	42%	10%
Developing Suburbs	15%	9%	2.10	-	18%	52%
Developing Rural	4%	2%	0.80	-	10%	54%
Rural Areas	7%	2%	0.48	-	8%	48%

**Percent numbers indicate the share of the population and employment in each UGPM area, arrows indicate if the share is increasing, decreasing, or remaining stable.*

GEOGRAPHIC EQUITY

UGPM Categories	2020 Share* of the Region's		2020 Density	Population Near Transit		
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Region Employment Corridors	12%	34%	10.24	10%	95%	1%
Maturing Neighborhoods	17%	12%	6.78	27%	92%	-
Established Suburbs	41%	27%	4.43	-	31%	11%
Developing Suburbs	15%	9%	2.10	-	9%	50%
Developing Rural	4%	2%	0.80	-	5%	59%
Rural Areas	7%	2%	0.48	-	3%	48%

**Percent numbers indicate the share of the population and employment in each UGPM area, arrows indicate if the share is increasing, decreasing, or remaining stable.*

Equity

Protected classes

Low and mid-wage jobs

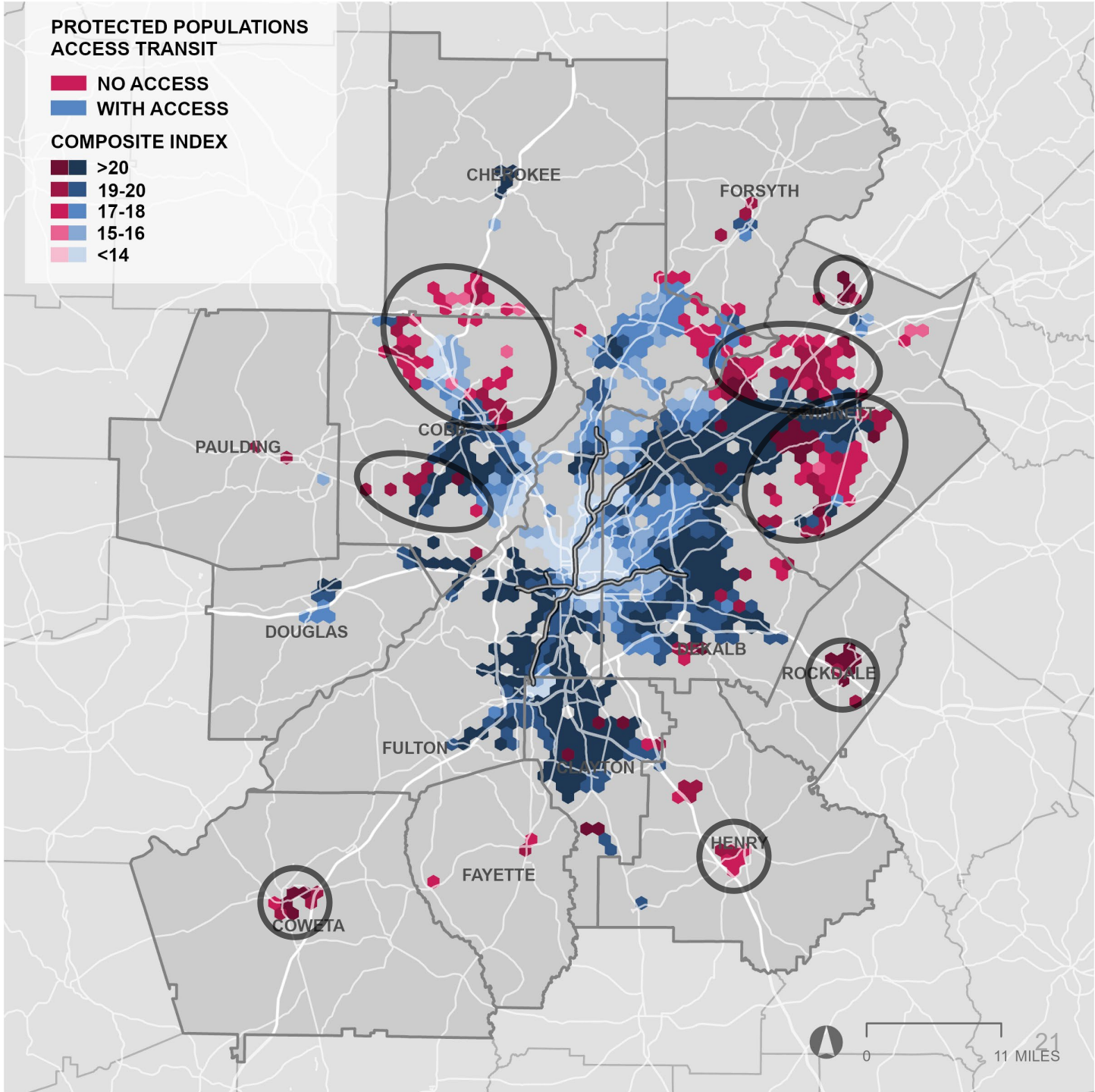
Housing affordability

Access to essential services

TRANSIT COVERAGE FOR PROTECTED POPULATIONS

- Analysis: Concentration of nine protected populations* without **access to fixed-route service**
  - Focus on areas with over 5 people and/or jobs per acre (minimum threshold supportiveness for fixed-route transit)
- There are significant concentrations of protected populations without access to fixed-route transit. Particularly in:
- Large portions of Gwinnett and Cobb
  - Smaller areas in Coweta, Henry,
  - Rockdale, Forsyth, and Cherokee

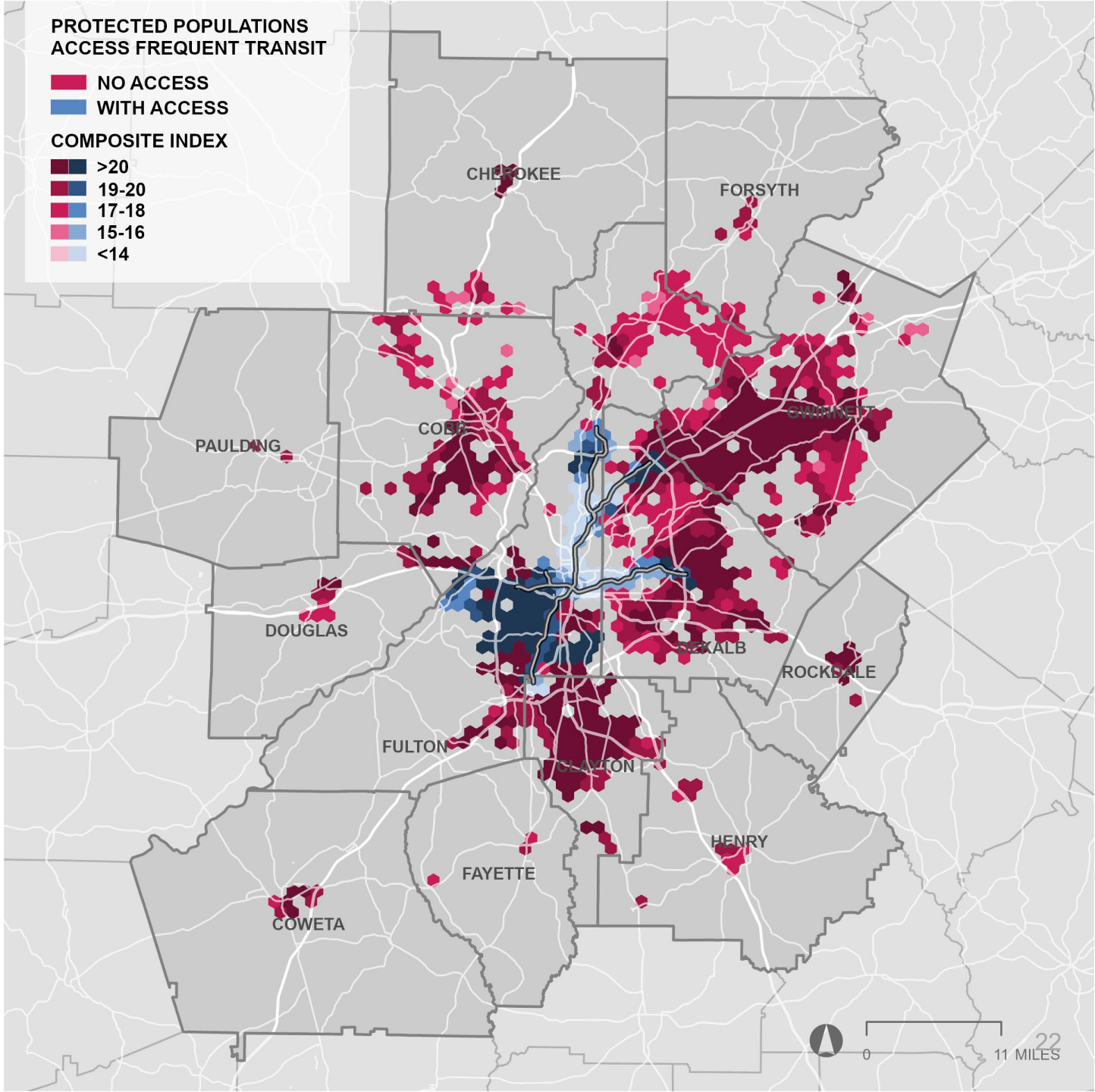
*Includes racial minority, ethnic minority, people with disabilities, low-income, national origin, limited English proficiency, women, older adults, youth



TRANSIT COVERAGE FOR PROTECTED POPULATIONS

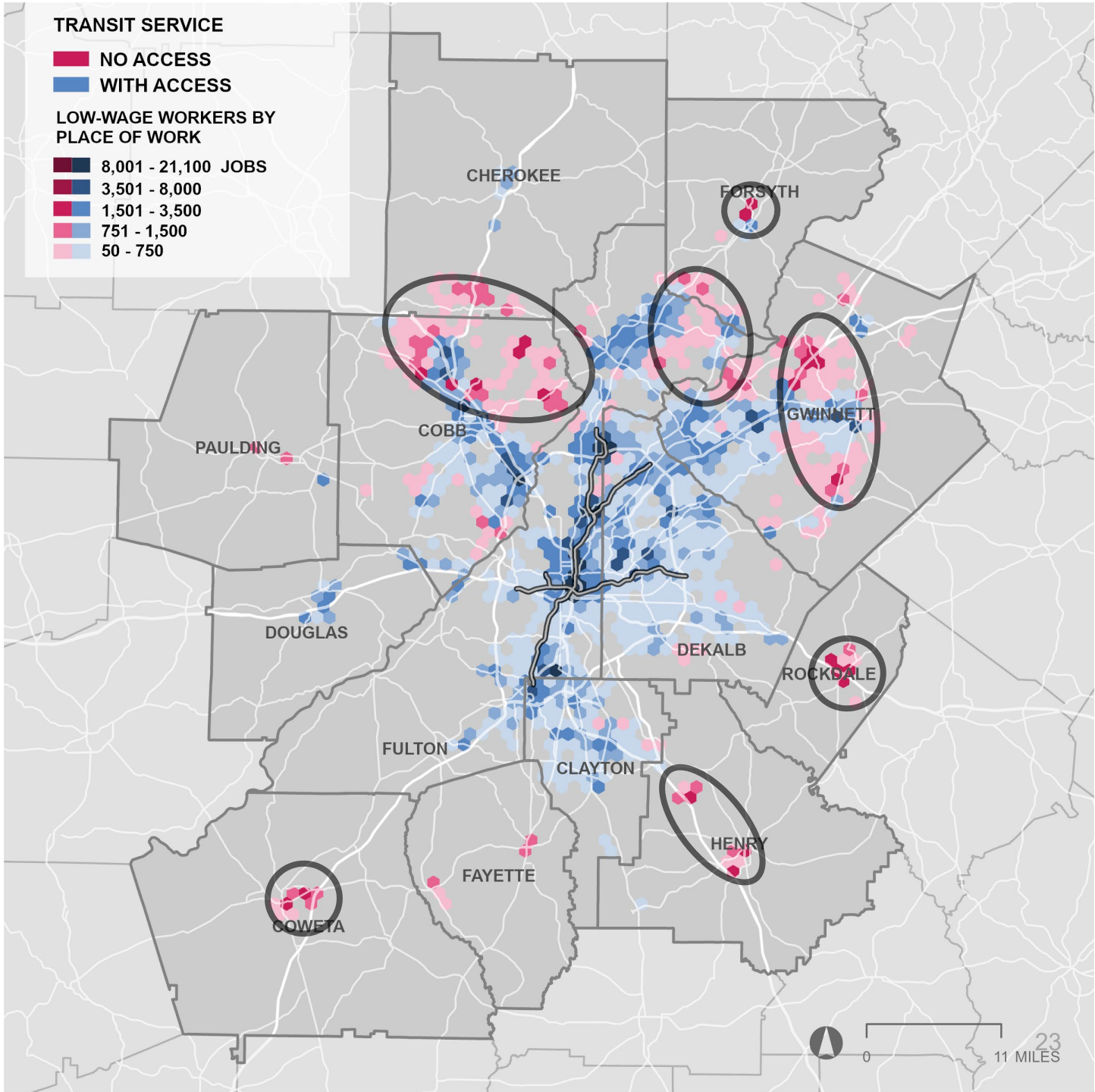
- Analysis: Concentration of nine protected populations* without **access to frequent all-day service**
  - Focus on areas with over 5 people and/or jobs per acre
- Outside of the central parts of Fulton and a few smaller areas (e.g., around rail lines), most concentrations of protected populations have no access to frequent, all-day transit.

*Includes racial minority, ethnic minority, people with disabilities, low-income, national origin, limited English proficiency, women, older adults, youth



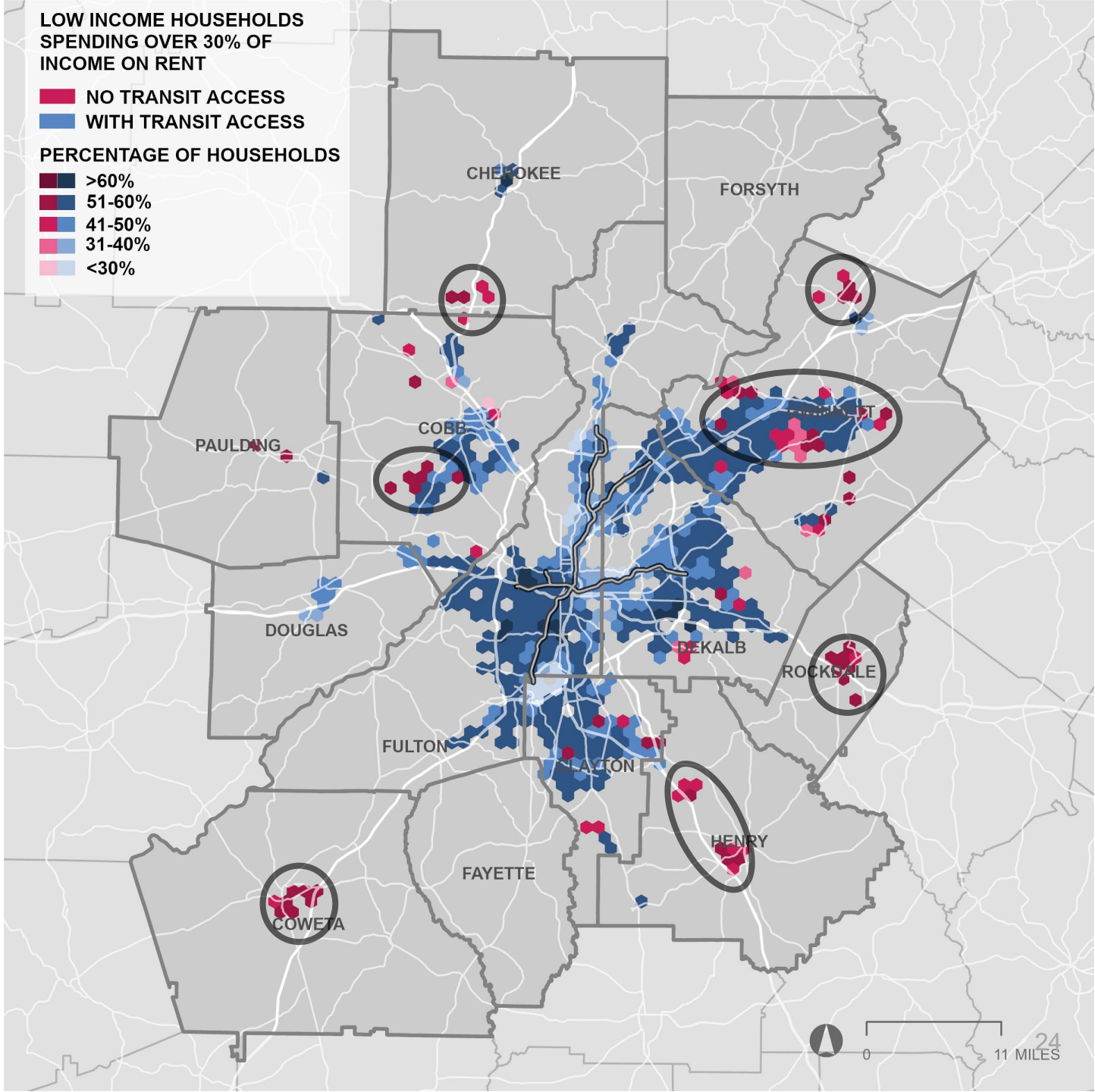
TRANSIT COVERAGE – LOW- AND MID-WAGE JOBS

- Analysis: Concentrations of low- and mid-wage jobs not **accessible by fixed-route transit**
  - Focus on areas with over 5 people and/or jobs per acre
- Highest concentration of low- and mid-wage jobs without access to transit service is seen:
  - Northern Cobb and southern Cherokee Counties
  - In Sugarloaf and areas along Scenic Highway in Gwinnett County
  - City of Conyers in Rockdale County
  - McDonough and Stockbridge in Henry County
  - Newnan in Coweta County
  - Parts of northern Fulton County



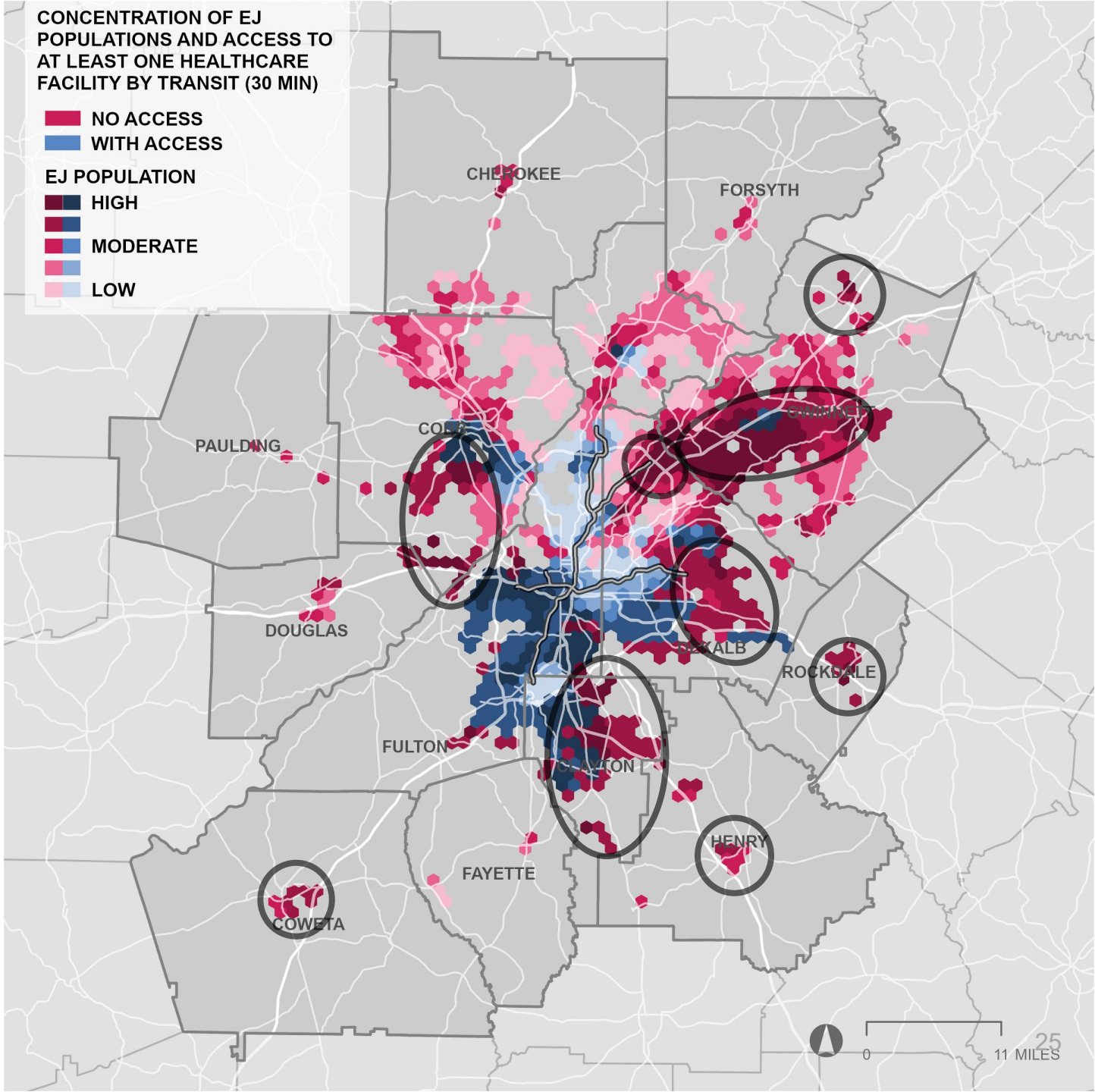
TRANSIT ACCESS FOR LOW-INCOME RESIDENTS WITH HIGH HOUSING COST BURDENS

- Analysis: **Above average concentrations of low-income populations and households spending >30% of income on rent**
  - Focus on areas with over 5 people and/or jobs per acre
- Areas with high concentrations of low-income households spending over 30% of their income on rent include:
  - Southern Cherokee County
  - Scattered areas in Cobb County
  - Dallas (Paulding County)
  - Newnan (Coweta County)
  - McDonough and Stockbridge (Henry County)
  - Conyers (Rockdale County)
  - Scattered areas in Gwinnett County



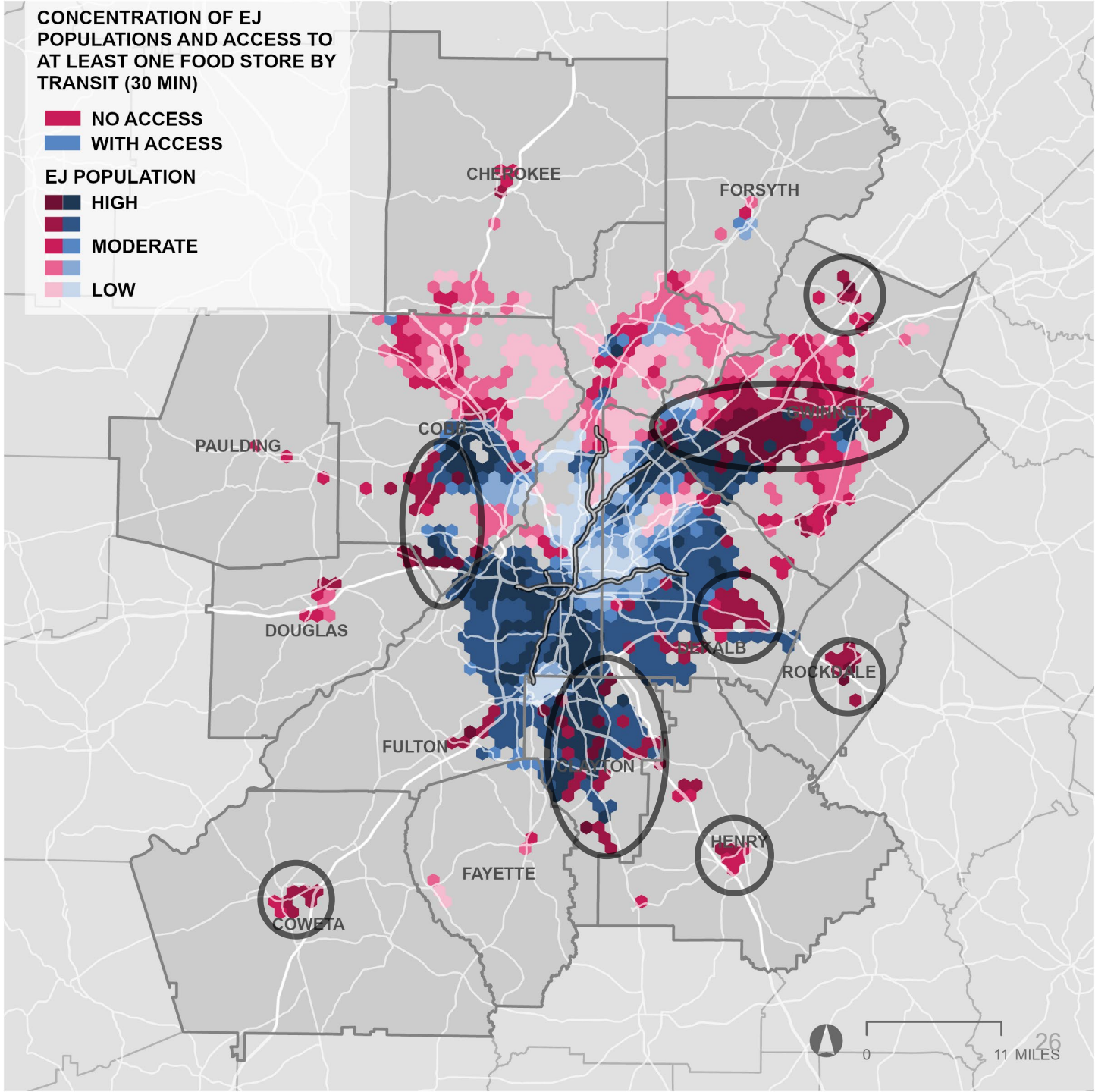
ACCESS TO HEALTHCARE

- Analysis: EJ residents (racial minority, ethnic minority, low-income) without access to **healthcare (hospitals, urgent care, and emergency services)** within 30 minutes by fixed-route transit
  - Focus on areas with over 5 people and/or jobs per acre
- Moderately constrained to urban core - transit & healthcare geographic distribution
- Gaps in access to healthcare for EJ residents:
  - Western/Central Gwinnett
  - Northern/Eastern Dekalb
  - Northern/Central Clayton
  - Southern/Central Cobb
  - Scattered clusters in peripheral county centers



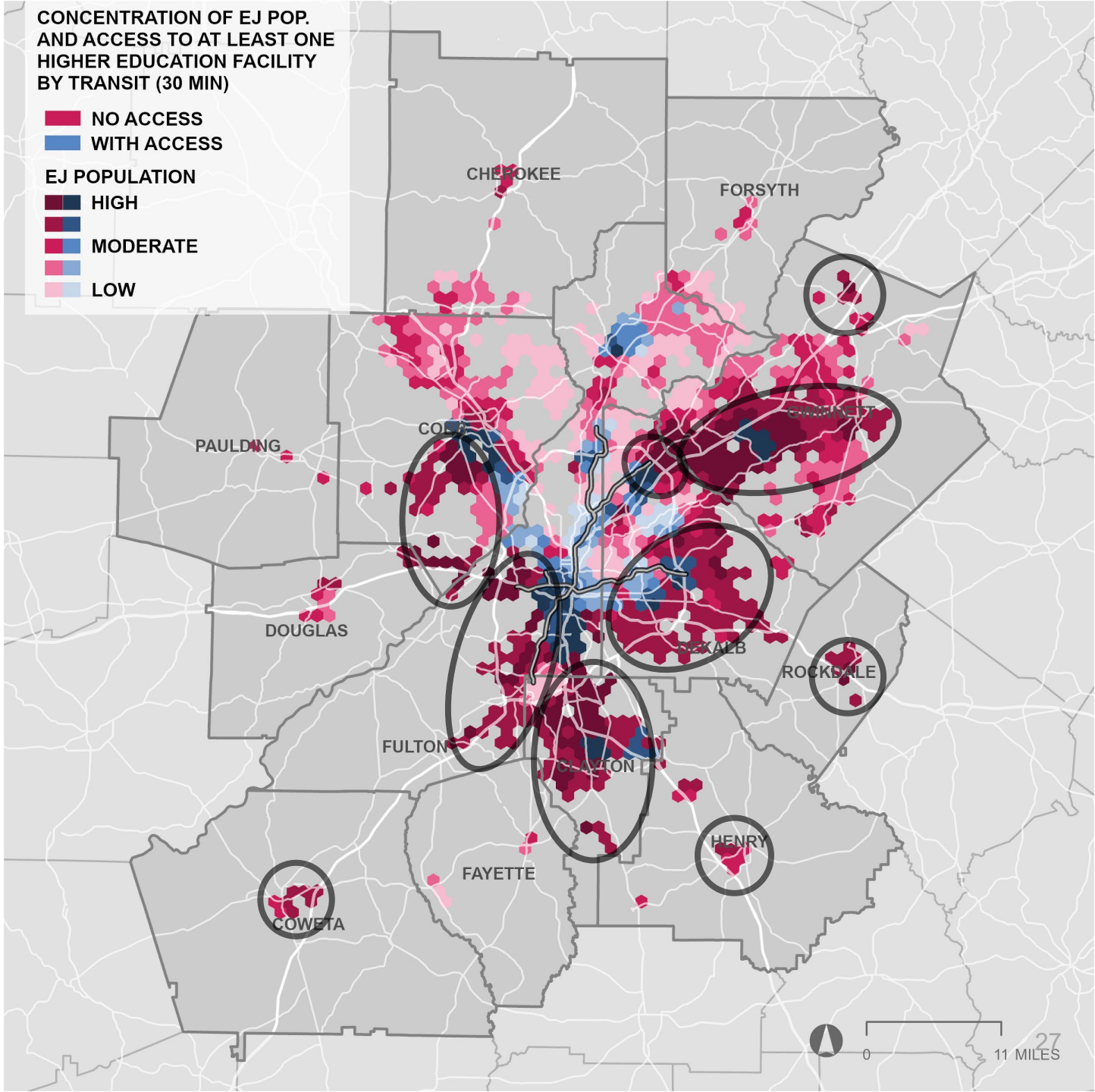
ACCESS TO GROCERY STORES

- Analysis: EJ residents without access to **food stores (grocery and convenience stores)** within 30 minutes by fixed-route transit
  - Focus on areas with over 5 people and/or jobs per acre
- Relatively less constrained to urban core than health care due to greater food store geographic distribution
- Gaps in access to food stores for EJ residents:
  - Western/Central Gwinnett
  - Eastern Dekalb
  - Northern/Central/Southern Clayton
  - Southern/Central Cobb
  - Scattered clusters in peripheral county centers



ACCESS TO HIGHER EDUCATION

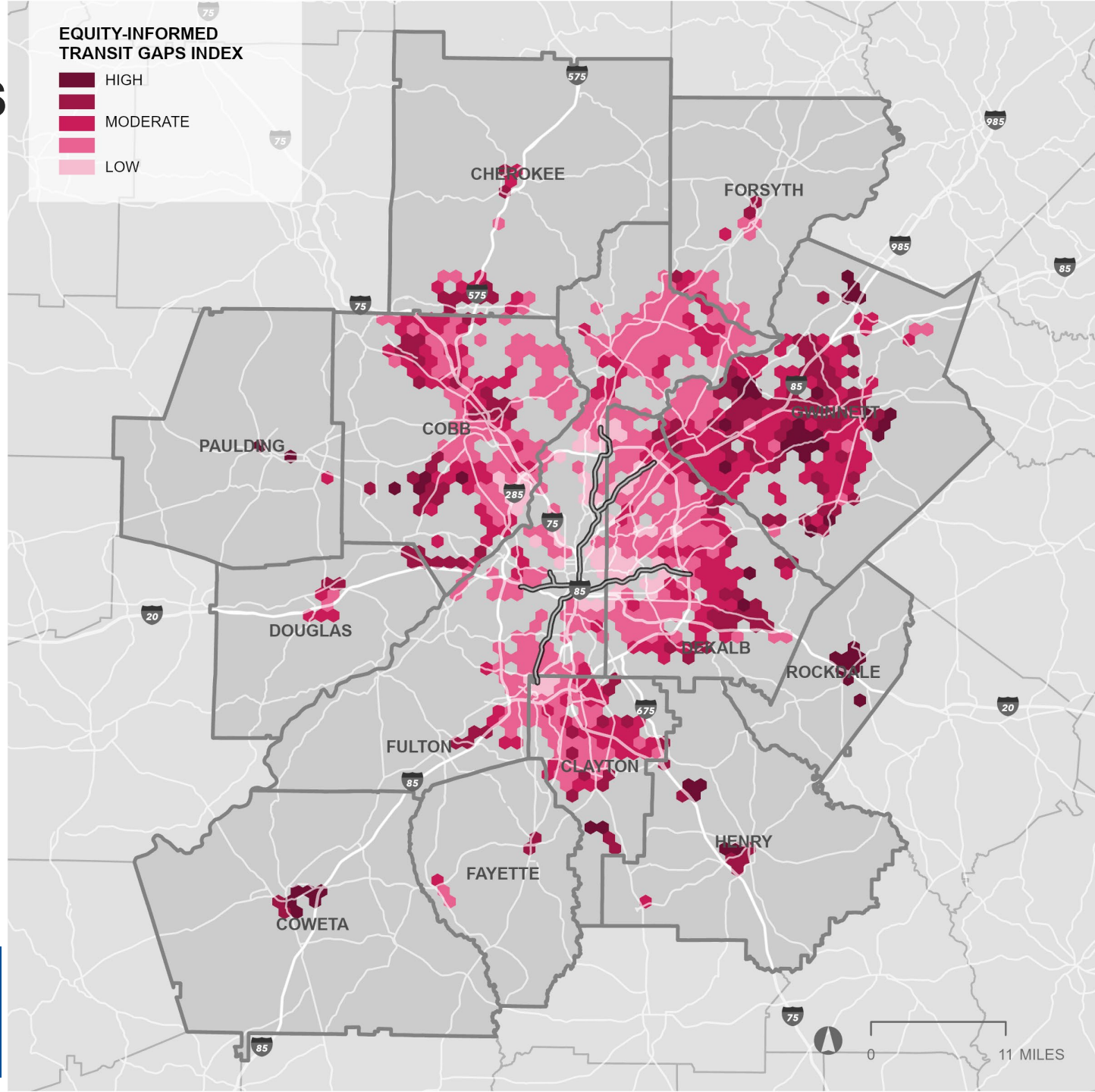
- Analysis: EJ residents without access to **higher education (colleges and technical schools)** within 30 minutes by fixed-route transit
  - Focus on areas with over 5 people and/or jobs per acre
- Greatly constrained to urban core due to higher education geographic distribution
- Gaps in access to higher education for EJ residents:
  - Western/Central Gwinnett
  - Northern/Central/Eastern Dekalb
  - Northern/Central Clayton
  - Southern/Central Cobb
  - Southern/Central Fulton
  - Scattered clusters in peripheral county centers

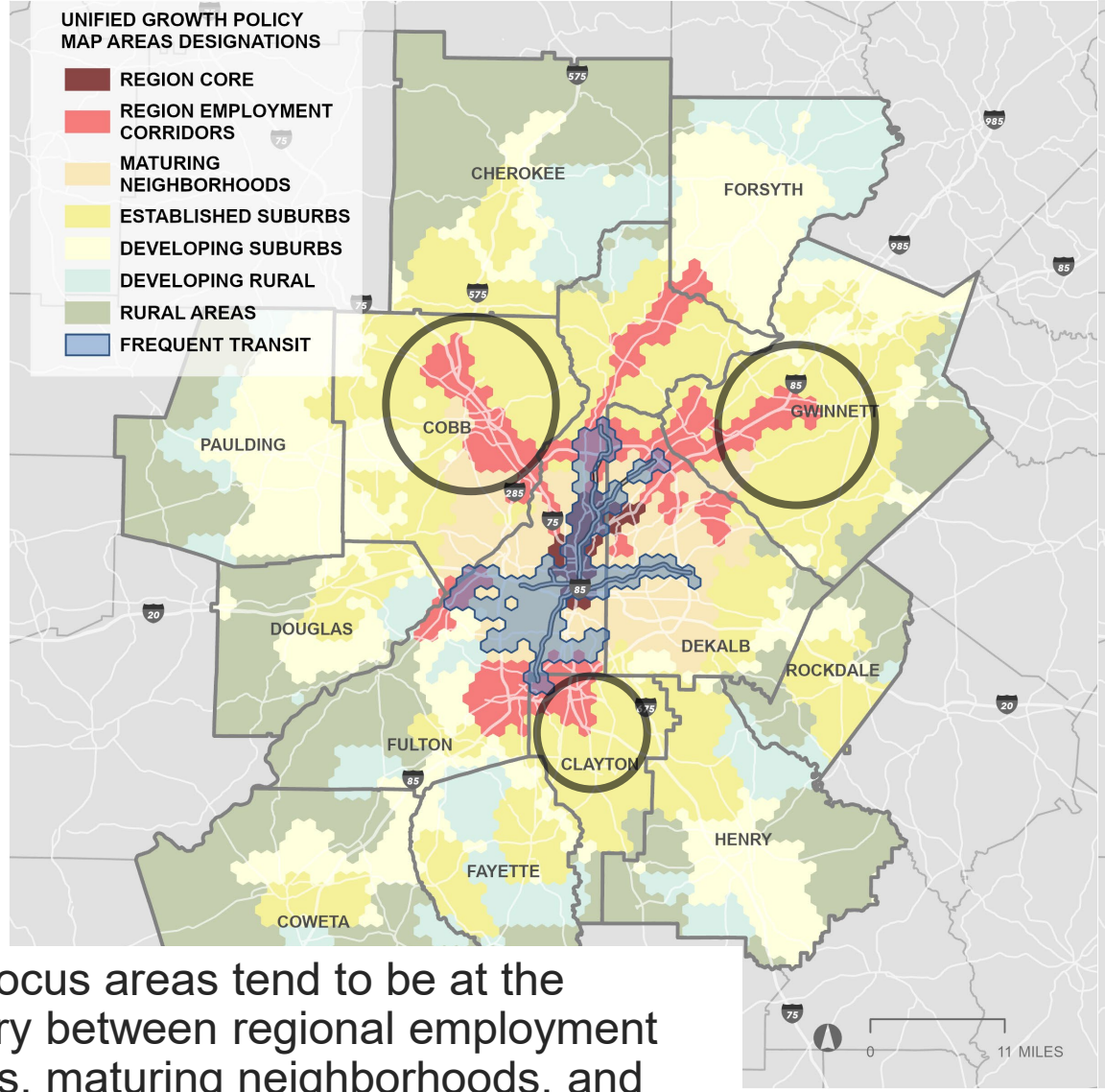


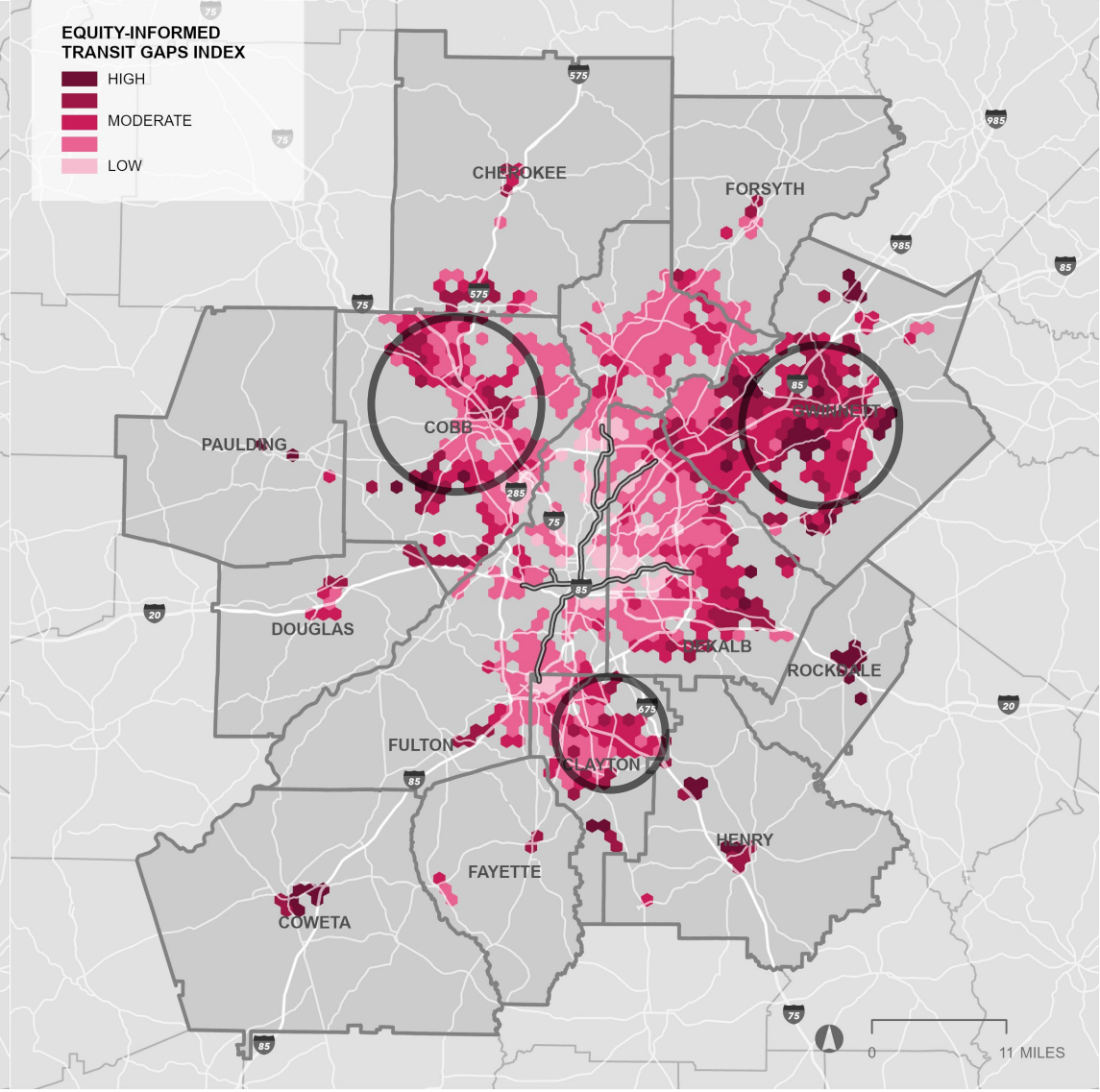
EQUITY – KEY TAKEAWAYS

- Equity focus areas with low fixed-route transit coverage and/or accessibility:
  - Central/Western Gwinnett
  - Clusters within Cobb
  - Clayton
  - Peripheral counties' urban centers (e.g., Coweta, Henry, Rockdale)
- Low access areas adjacent to higher access areas suggest a transit service halo or threshold effect (e.g., Clayton, Cobb, DeKalb)
- Demand Response service may be addressing some of these needs

Do these findings align with your understanding of the transit needs in your community?







- Equity focus areas tend to be at the boundary between regional employment corridors, maturing neighborhoods, and established suburbs on the ARC UGPM
- They represent focal points for the region's growth and development transitions

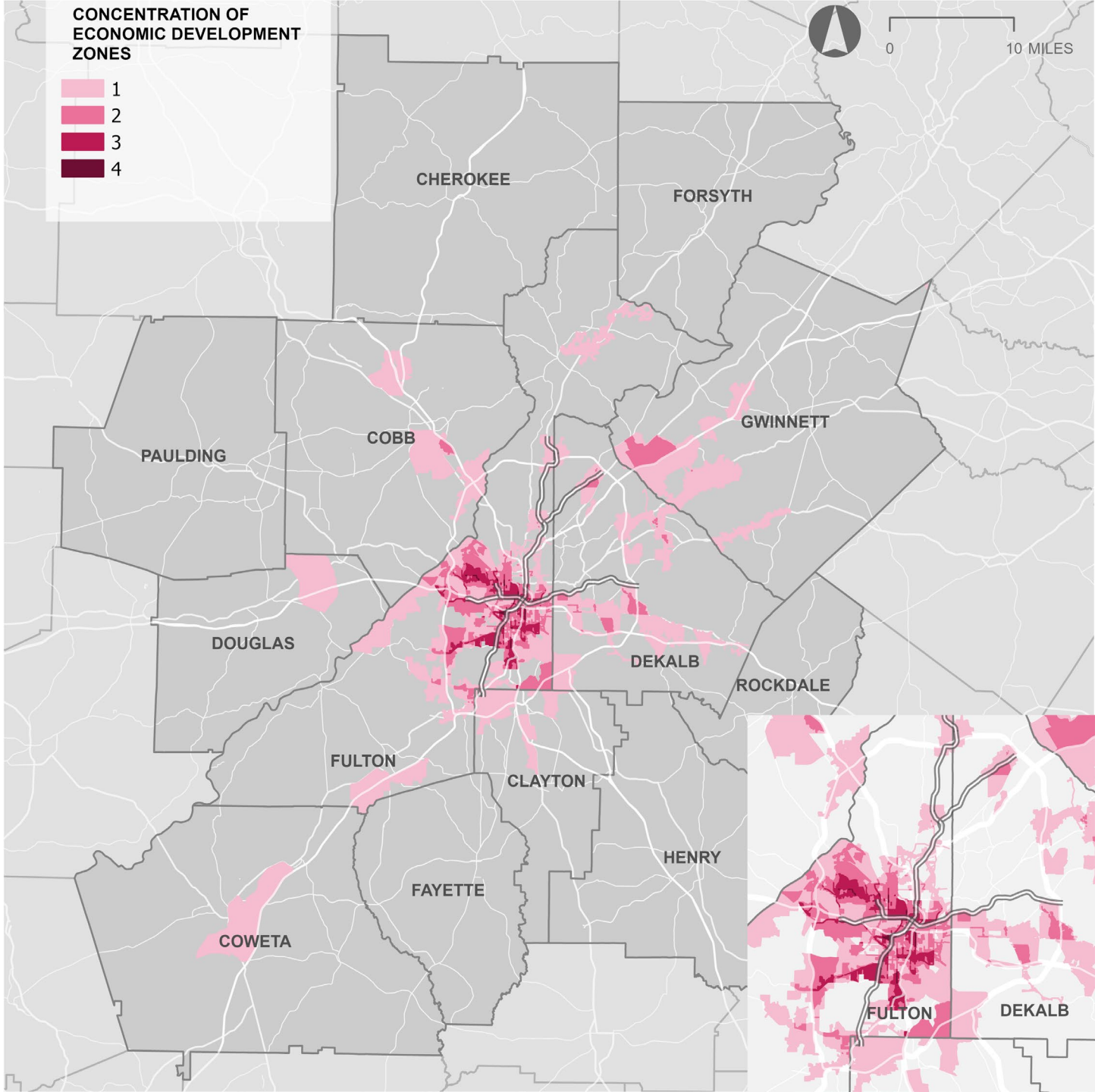
Economic Development

Economic Development Zones

Activity Centers

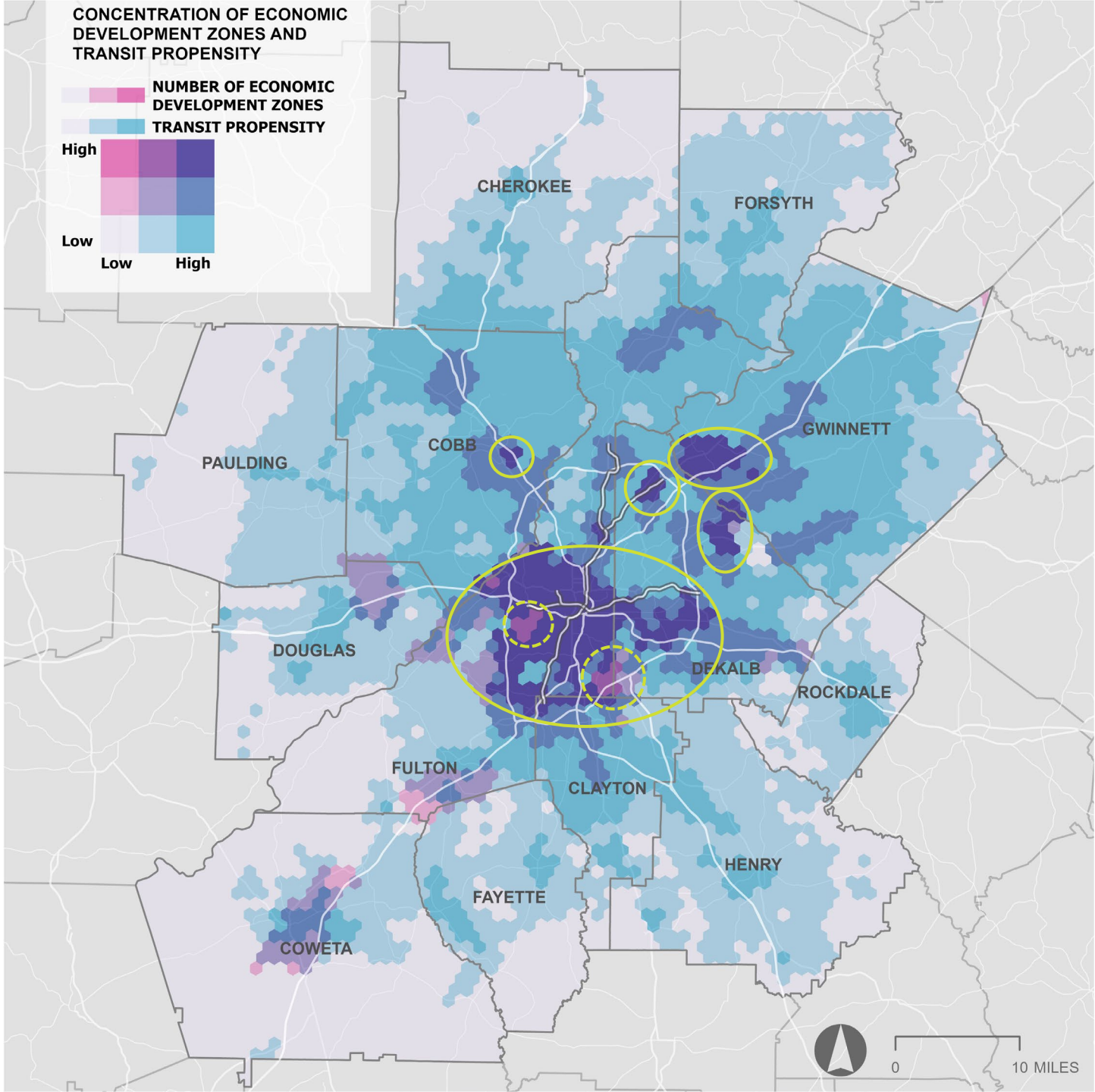
ALIGNMENT WITH ECONOMIC DEVELOPMENT ZONES

- Analysis: Understand geographic relationship of economic development zones to existing transit and future opportunities. Use propensity to further understand relation to transit need.
- Economic Development Zones analyzed:
  - Community Improvement Districts (27)
  - Tax Allocation Districts (10)
  - Federal Opportunity Zones (56 in 7 Counties)
  - Empowerment Zone (1)
- Transit inventory within ED Zones:
  - 46% of transit stops
  - 43% of transit alignment
  - 63% of heavy rail alignment



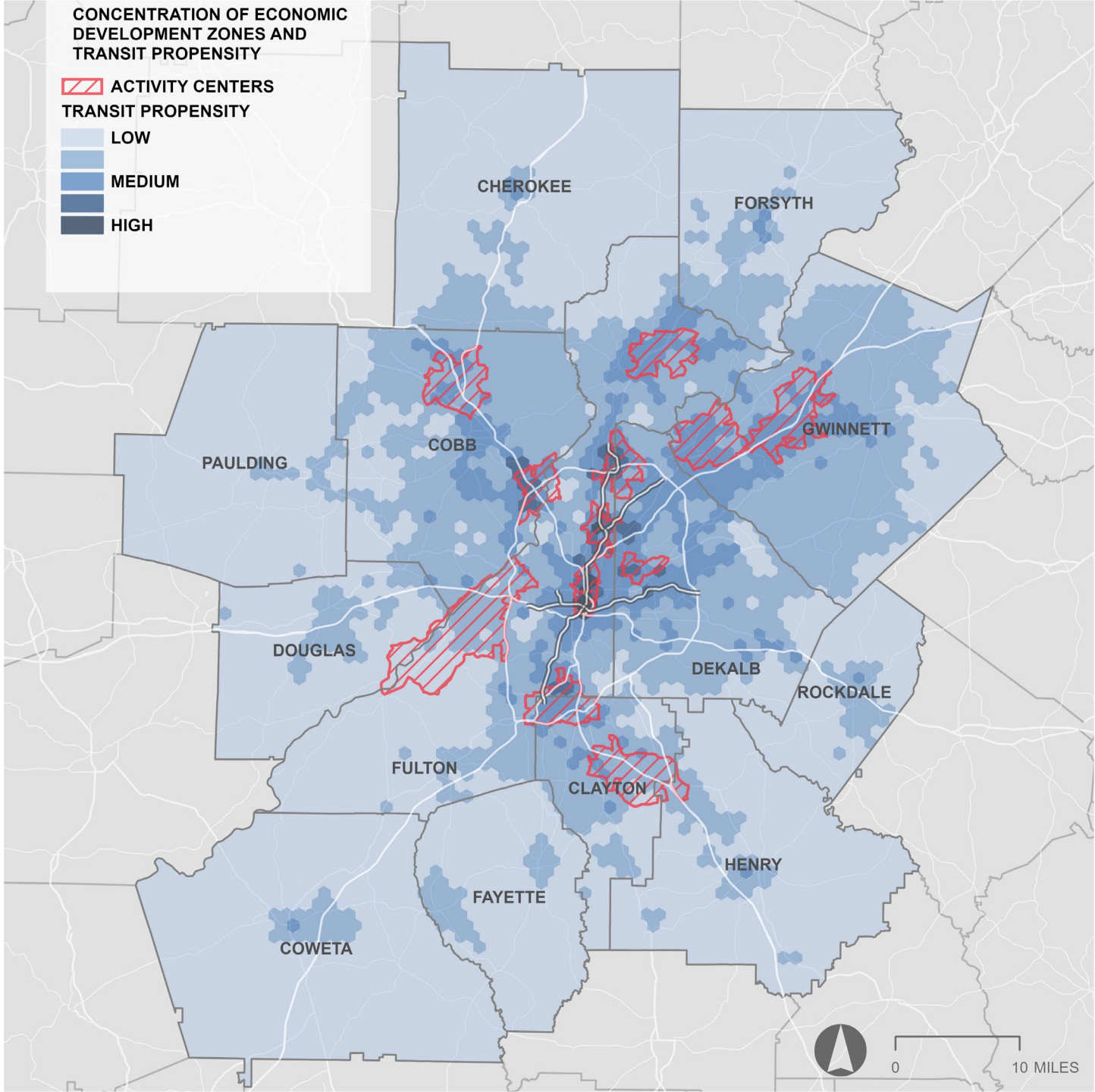
PROPENSITY VS ECONOMIC DEVELOPMENT ZONES

- Analysis: Understand geographic relationship of economic development zones to transit propensity to further understand transit need
- Findings:
  - Generally, economic development zones overlap with higher levels of transit propensity
  - High propensity and high economic development zones:
    - South Gwinnett
    - North DeKalb
    - South Fulton
    - South Cobb



PROPENSITY VS. ACTIVITY CENTERS

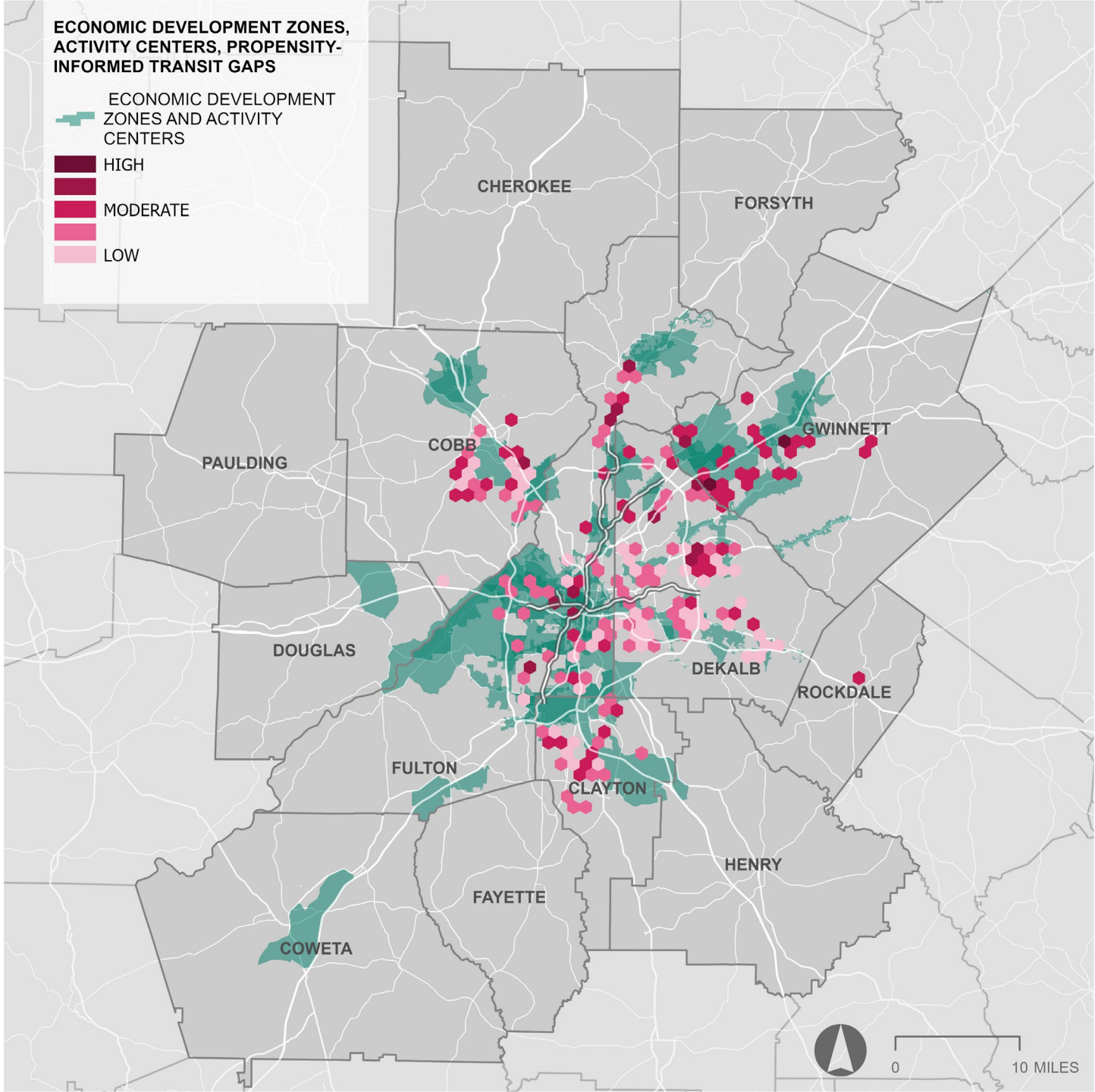
- Analysis: Understand geographic relationship between Major Activity Centers* and transit propensity
- Findings:
  - Gwinnett Place, Cumberland, Emory have higher propensity levels with limited transit access
  - Midtown, Downtown, Buckhead have higher propensity levels with high transit access



*Major Activity Center districts used in the ARC's Travel Demand Model

PROPENSITY-INFORMED TRANSIT GAPS INDEX

- Analysis: Understand geographic relationship between Economic Development Zones, Activity Centers and propensity-informed transit gaps index
- Findings: General overlap between propensity-informed transit gaps and economic development zones / activity centers in:
  - South Fulton County
  - Clayton County
  - Gwinnett County
- More transit gaps than economic development zones / activity centers in DeKalb County



KEY TAKEAWAYS

- Generally, many of the region's economic development zones align with the region's fixed-route transit network.
- Alignment/overlap of economic development areas and priority corridors may indicate greater competitiveness for future funding (federal priority for funding, especially for areas of historic disinvestment in empowerment zones and federal opportunity zones).
- Activity centers that are not currently highly covered by transit display higher levels of transit propensity (Gwinnett Place), while few activity centers have low coverage and low propensity (FIB and Southlake)
- When project prioritization takes place, this data can be used to identify greater transit need and financial opportunity for investment in areas that have an activity center, economic development zone, service gaps (high propensity but low service)

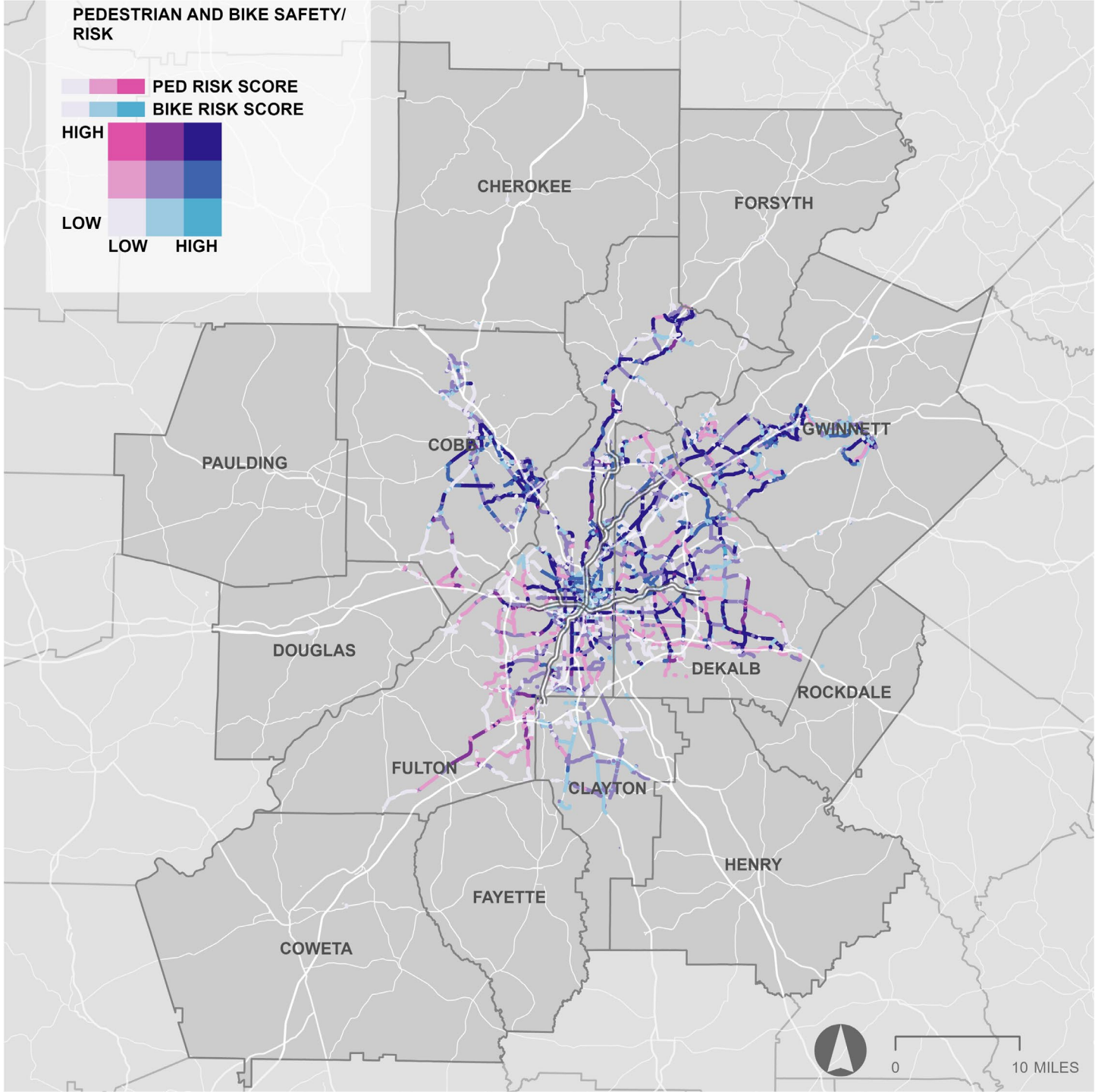
Safety, Efficiency, and Resiliency

Pedestrian/Bike Safety

Regional Transportation Investments

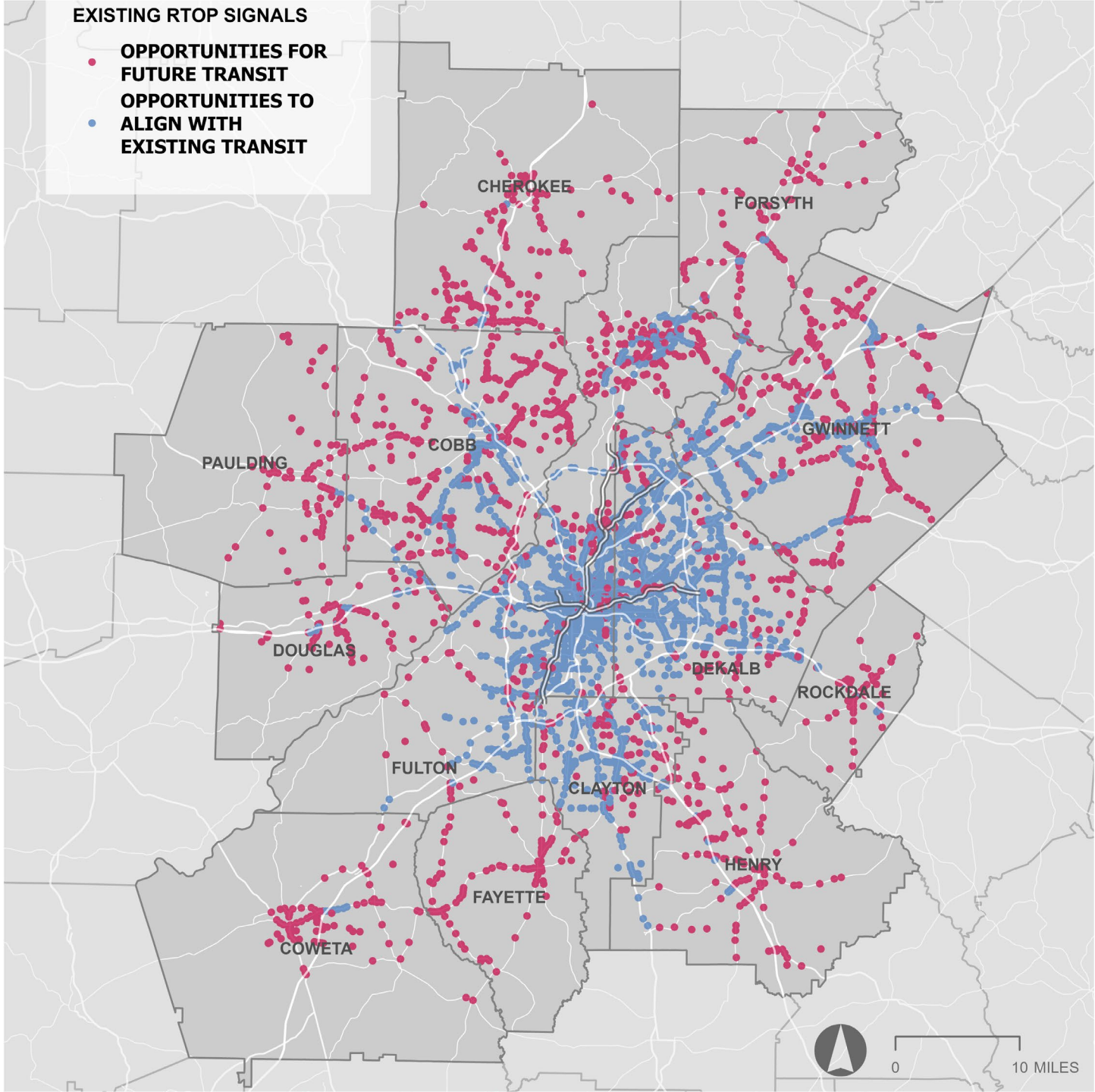
PEDESTRIAN / BIKE SAFETY/ RISK

- Analysis: Leverage ARC's *Safe Streets for Walking and Bicycling* regional risk score to understand walking and bicycling risk in relation to existing transit infrastructure. The higher the score, the higher the risk (out of 20).
- Findings: When looking at the score's relation to transit stops, the risk score increases by 15% within 0.25 mi of transit stops (9.0, pedestrian; 9.3, bike)
  - Map shows scores greater than 10 that are within 0.25 mi of transit stop
  - Will look for areas that have risk scores increasing the greatest as priority for transit projects



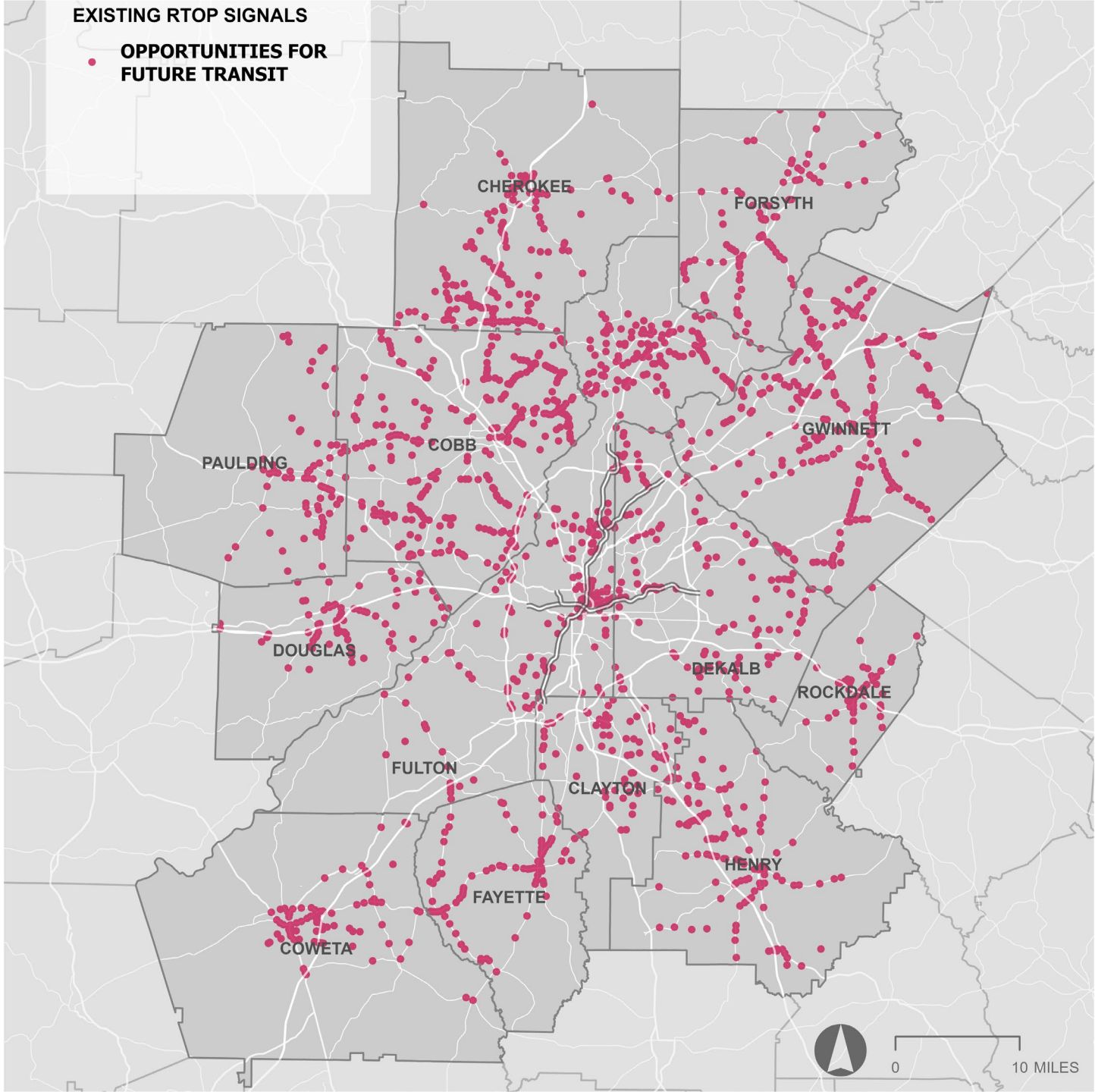
REGIONAL TRANSPORTATION INVESTMENTS

- Analysis: Understand where RTOP signals exist in the region and where the infrastructure could be leveraged for existing or future potential service.
- Findings: Of the 4,406 signals in the ATL service area, 58% are within 250 feet of current transit alignments.
- Opportunities: 1,849 RTOP signals currently existing outside current transit corridors that may be able to be leveraged for both existing routes or future services.
- It is difficult for RTOP to quickly identify if signals can be used for transit coordination – this may be an opportunity for improved coordination.



REGIONAL TRANSPORTATION INVESTMENTS

- Analysis: RTOP signals that do not align with current transit may serve as an opportunity to either improve existing transit service or to leverage for future identified service.
  - 167 in Central Metro (ITP)
  - 316 in Southwest Metro (Coweta, Fayette, Henry)
  - 337 in North Metro (Forsyth, Cherokee, Paulding)
  - 420 in East Metro (DeKalb, Gwinnett, Rockdale)
  - 609 in West Metro (Clayton, Fulton (OTP), Douglas, Cobb)
- Next task will include identifying proposed projects that have existing RTOP within the alignment.

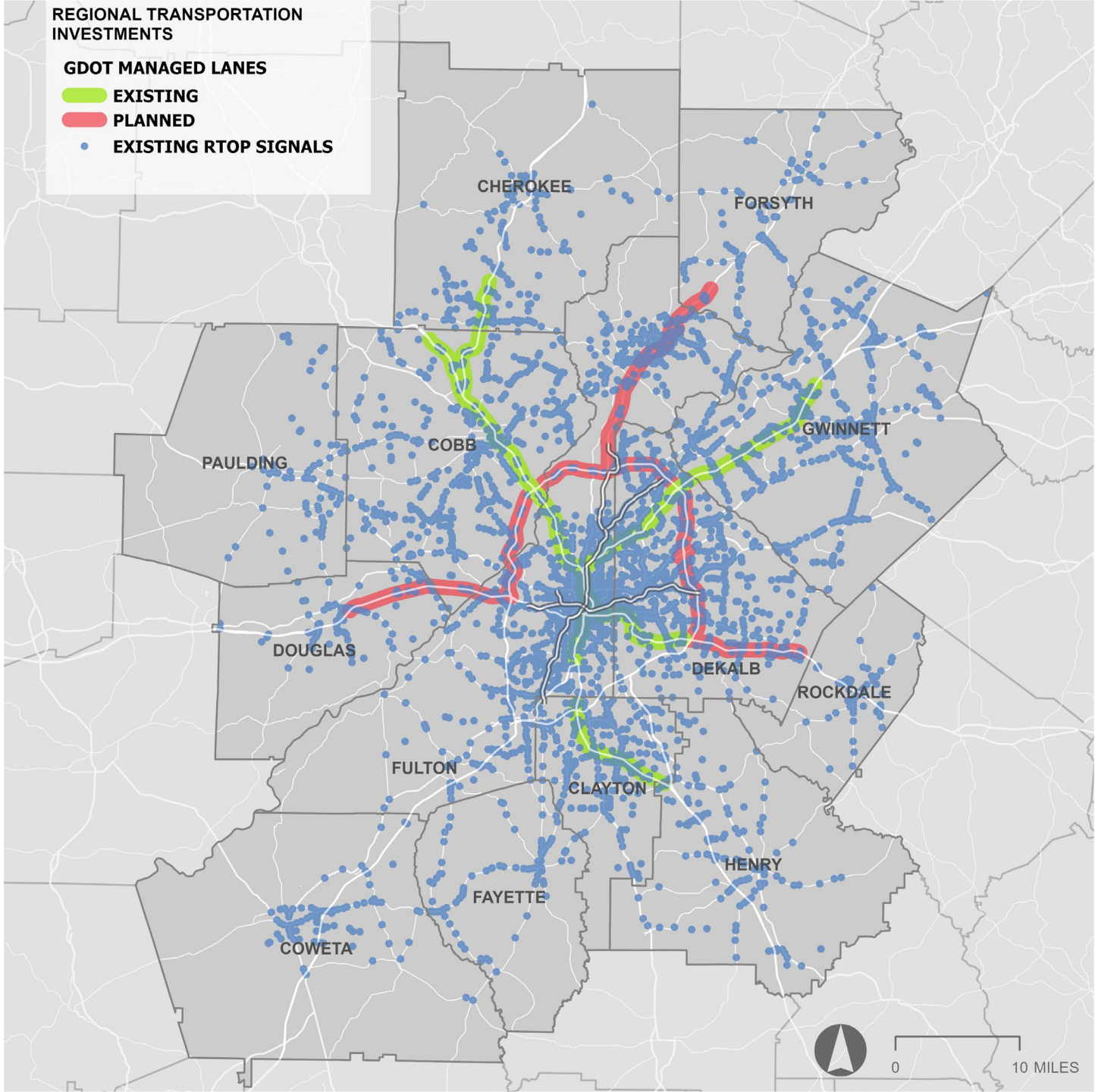


REGIONAL TRANSPORTATION INVESTMENTS

- Analysis: Understand how major roadway projects (like managed lanes) can be leveraged for improving transit travel time
- Xpress Bus observed ~15 minutes travel time savings on routes along I-75 corridor

Route	Managed Lane Project	Predicted Average Deadhead Time Reduction	
		AM	PM
401	SR 400	17%	25%
417	I-285 Top End	21%	24%
428	I-285 Eastside, I-285 Top End, I-285 Westside	17%	20%
482	I-285 Top End	9%	8%
483	I-285 Westside	8%	5%
490	I-285 Westside	6%	4%

*Sourced: Xpress Bus Managed Lanes Study (2018)



KEY TAKEAWAYS

POLICY

- Safe and high-quality connections for first and last mile are critical for transit, and data shows that these areas are higher risk for bike/ped users
- Certain roadway improvements benefit transit; Coordination for benefitting both could be considered.

INFRASTRUCTURE

- There appears to be significant opportunity to coordinate roadway and transit investments in the region - "corridor dollars" vs. "roadway dollars"/"transit dollars"
  - For example: RTOP / ITS signals leveraged for future transit could result in lower start-up costs
  - Leveraging major roadway investments (like managed lane projects) to reduce transit capital costs

Looking Ahead

TYING IT TOGETHER

Travel Demand +

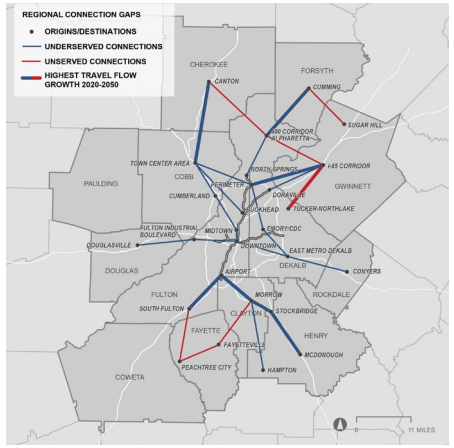
Propensity +

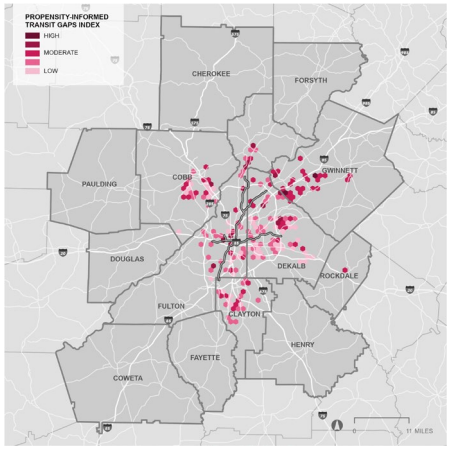
Equity +

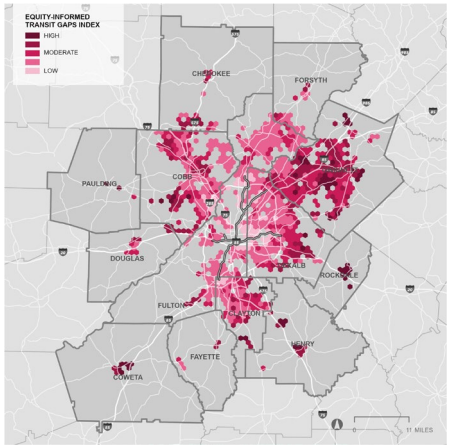
Economic Development +

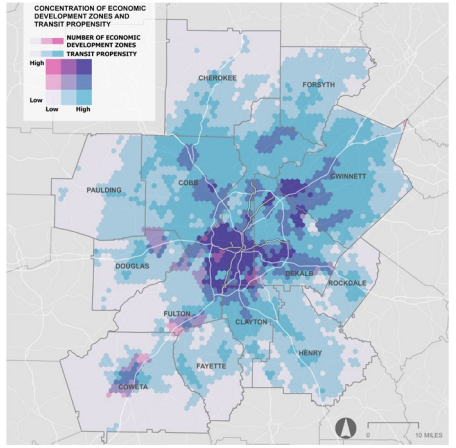
Regional Transportation Investments =

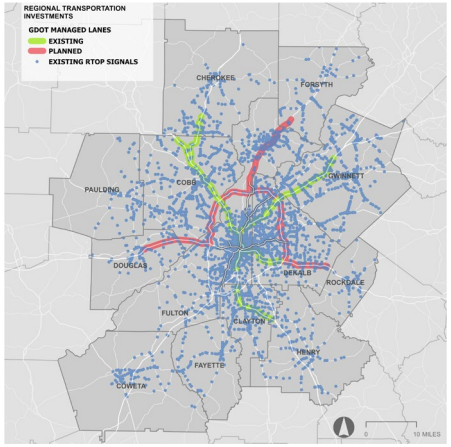
“Composite Gaps & Needs”







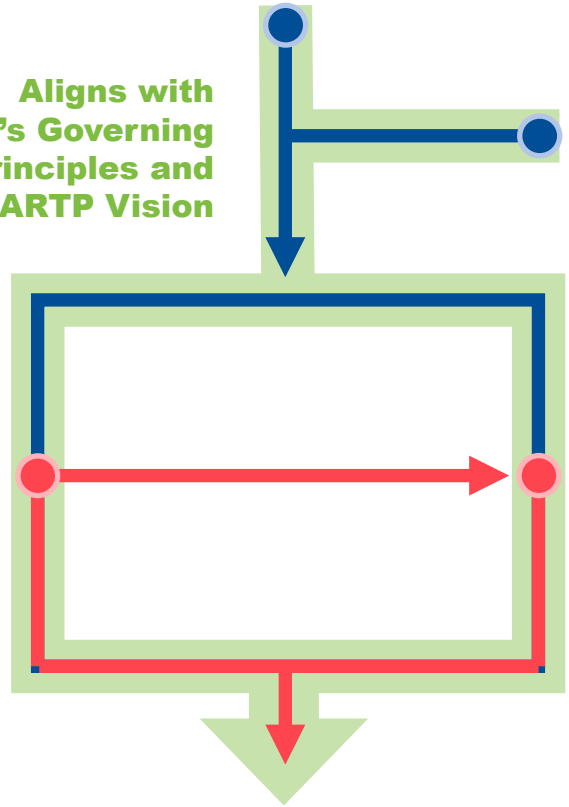




Network Analysis

Comprehensive analysis of existing transit network to identify gaps and needs

Aligns with ATL's Governing Principles and ARTP Vision



Service Typology

- Guidelines for service intensity based on transit supportive conditions (land use, demand)
- Inform recommendations to close gaps and address needs

Infill Network

- Represents unconstrained need-based network
- Incorporates existing network + gaps/needs + service typology
- Baseline for priority regional network

Priority Regional Network

- A policy framework to guide phased investment and implementation strategy
- Based on ATL Board input and defined criteria:
  - Building upon utility of prior studies and efforts
  - Promoting regional connectivity and address transit need
  - Reducing overall timeframe for project delivery

2022 Call for Projects

Network Analysis, Infill Network, and Priority Regional Network to be shared with project sponsors