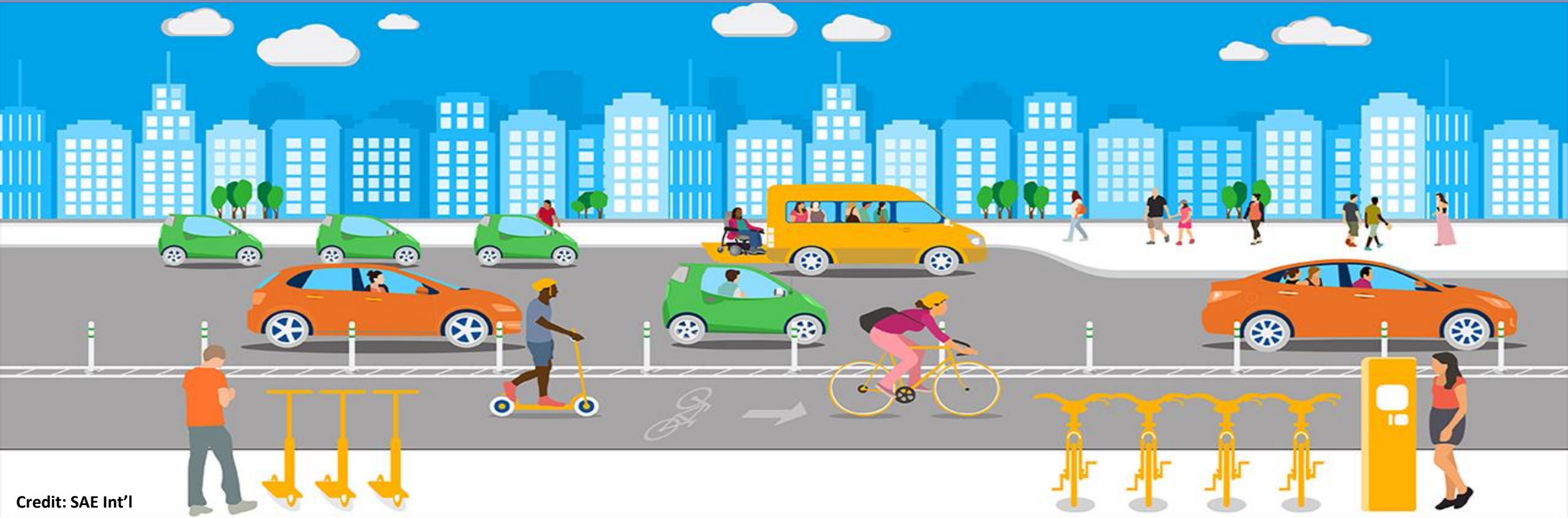


Electrification Planning in the Atlanta Region

Joint Study Committee of Electrification on Transportation

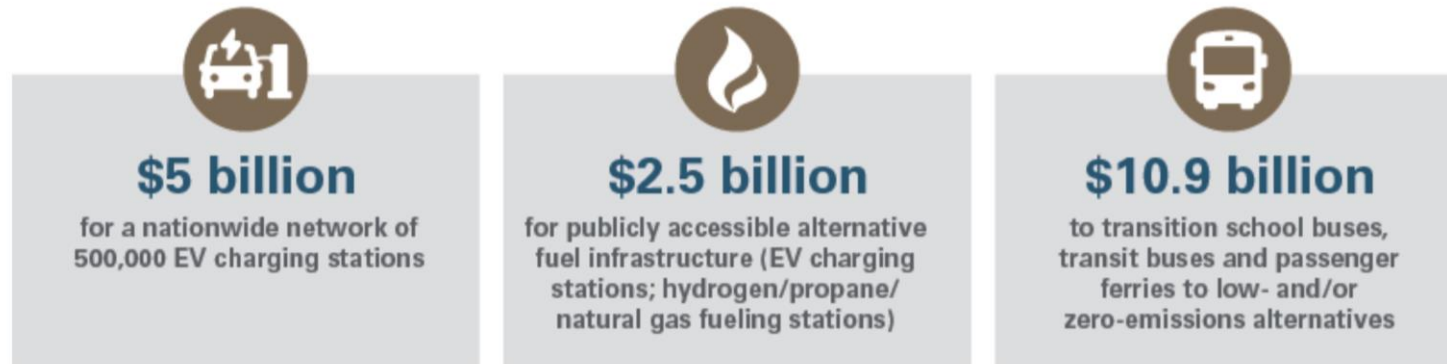


Credit: SAE Int'l

Mike Alexander, ARC Chief Operating Officer
John Orr, ARC Transportation Planning Manager

The Electric Vehicle (EV) Revolution Creates Opportunities for Georgia

Infrastructure and Jobs Act (IIJA) includes \$18.6 billion focused on new and existing EV-related programs



Source: White House IIJA guidebook, May 2022 edition

Implications for Georgia and Atlanta Region

- EVs rapid introduction is supported by trends from 1) the private sector (automobile manufacturers) and 2) the public sector (funding support and tax policy)
- The long-term shift to EVs requires the State and local communities to strategically plan now so that future benefits are maximized:
 - Working with stakeholders to deploy the needed EV infrastructure in coming years
 - Preparing the State's communities, including those in rural and disadvantaged areas, for an EV future

New Federal Tax Policy Will Increase Future Rates of EV Adoption

The Inflation Reduction Act (IRA) Significantly Impacts Georgia and the Atlanta Region

EV Tax Credits

- Up to **\$7,500** for a qualifying new vehicle
- Tax Credit extended through **December 31, 2032**
- Prior manufacturer cap of 200,000 vehicles removed

Income Limits

- **\$300,000** for married filing joint and surviving spouse
- **\$225,000** for heads of household
- **\$150,000** for others, including single filers

Estimated % of Georgia Tax Filers Eligible for EV Credits*



*Estimated using 2019 IRS Data

Georgia's Emergence as an EV Manufacturing Center

The Inflation Reduction Act (IRA) Requires a Significant Commitment to Domestic Manufacturing

The final assembly of EVs **must occur** within North America. Approximately **700,000** future EV's will be manufactured annually in Georgia, based on 2022 announcements alone.



Rivian: **400,000** vehicles per year



Hyundai Motor Group: **300,000** vehicles per year

100% of battery components must be manufactured or assembled in **North America** by **2029**

2025: **No** critical battery minerals can be sourced from a “Foreign Entity of Concern”



2027: **80%** of all critical battery minerals must be extracted or processed in a country the US has a free trade agreement

2029: **100%** of all battery components must be manufactured or assembled in North America.

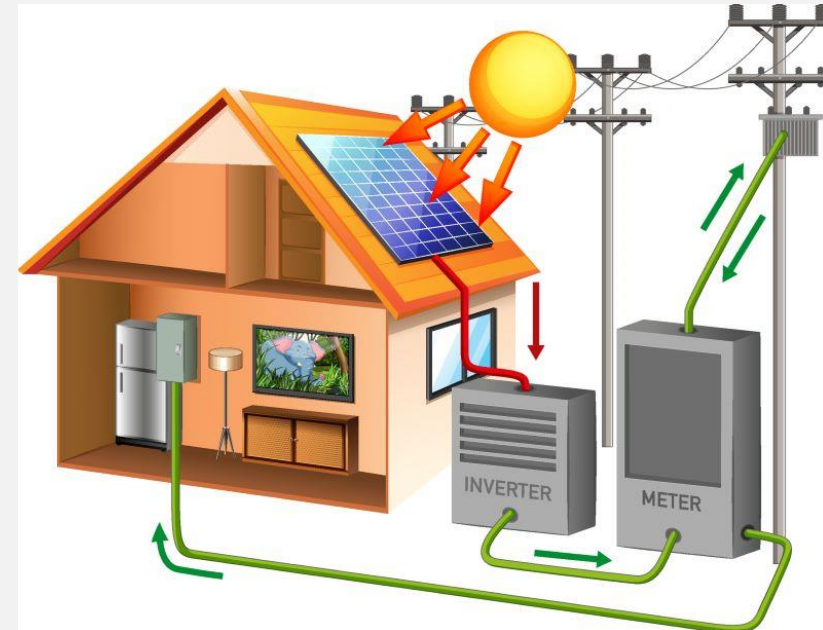
Federal Incentives for Installing Home Solar Complement Home EV Charging

The Residential Clean Energy Credit in the IRA Provides Strong Incentives for Home Solarization

Solar Tax Credits

- 30% tax credit for the cost of installing solar, electricity generation, and other solar home products
- No dollar limit on expenses
- No income limit to be eligible
- Tax Credit effective through December 31, 2032

Wider adoption of home solar has the potential to ease consumer concerns about the ability to charge vehicles at home in the event of major power outages



<https://www.hahasmart.com/blog/3143/how-home-solar-ties-to-the-grid>

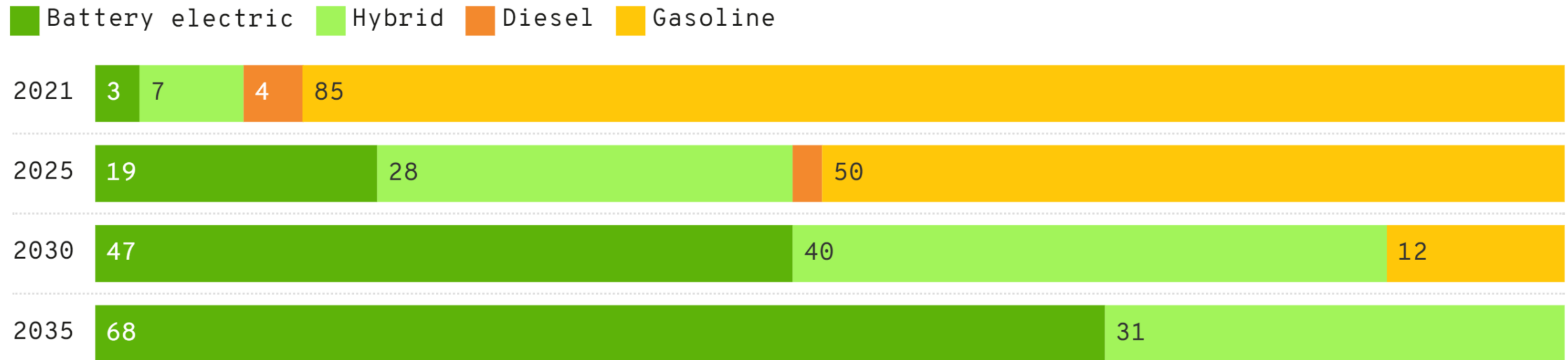
State Figures: 2021 Light-Duty Vehicle Registration Counts by Fuel Type														
State	Electric (EV)	Plug-In Hybrid Electric (PHEV)	Hybrid Electric (HEV)	Biodiesel	Ethanol/Flex (E85)	Compressed Natural Gas (CNG)	Propane	Hydrogen	Methanol	Gasoline	Diesel	Total	Share EV	Share EV. PHEV, HEV
California	563,100	315,300	1,355,900	163,600	1,343,200	12,600	1,500	11,800	0	30,512,600	710,500	34,990,100	1.6%	6.4%
Hawaii	14,200	4,500	28,800	2,800	42,200	100	0	0	0	968,200	15,700	1,076,500	1.3%	4.4%
District of Columbia	3,700	2,500	16,100	300	17,400	100	0	0	0	278,900	2,100	321,100	1.2%	6.9%
Washington	66,800	24,300	240,000	59,000	359,700	600	100	0	0	5,792,000	283,600	6,826,100	1.0%	4.9%
Oregon	30,300	16,900	123,200	43,900	193,700	300	100	0	0	3,094,700	217,800	3,720,900	0.8%	4.6%
Nevada	17,400	6,300	50,200	21,300	133,600	300	100	0	0	2,140,700	84,700	2,454,600	0.7%	3.0%
Colorado	37,000	16,100	113,600	53,800	346,700	600	100	0	0	4,456,600	208,400	5,232,900	0.7%	3.2%
New Jersey	47,800	18,500	121,500	23,900	412,200	500	100	0	0	6,346,100	86,400	7,057,000	0.7%	2.7%
Arizona	40,700	15,500	132,200	51,000	460,400	900	900	0	0	5,395,300	191,800	6,288,700	0.6%	3.0%
Vermont	3,400	3,200	15,800	5,600	42,000	100	0	0	0	511,900	15,000	597,000	0.6%	3.8%
Utah	16,500	7,500	58,500	51,600	190,200	2,600	700	0	0	2,428,900	153,800	2,910,300	0.6%	2.8%
Massachusetts	30,500	22,200	138,800	17,500	306,900	400	0	0	0	4,816,400	59,700	5,392,400	0.6%	3.6%
Florida	95,600	32,200	287,000	129,300	1,154,600	600	100	0	0	15,595,900	336,900	17,632,200	0.5%	2.4%
United States	1,454,400	786,800	5,491,800	2,194,100	21,244,900	40,800	7,600	11,800	0	240,699,500	7,110,300	279,042,000	0.5%	2.8%
Maryland	25,600	17,200	130,900	27,700	347,200	400	0	0	0	4,380,600	89,500	5,019,100	0.5%	3.5%
Connecticut	13,300	9,200	55,400	8,800	140,700	400	0	0	0	2,578,400	44,300	2,850,500	0.5%	2.7%
New York	51,900	44,600	221,600	43,000	663,700	900	100	0	0	10,116,400	152,400	11,294,600	0.5%	2.8%
Virginia	30,700	15,800	176,500	35,300	506,600	600	100	0	0	6,661,000	154,300	7,580,900	0.4%	2.9%
Illinois	36,500	18,300	214,300	48,100	822,300	800	100	0	0	8,657,800	169,900	9,968,100	0.4%	2.7%
Georgia	34,000	13,600	128,200	70,200	745,200	700	300	0	0	8,123,100	203,200	9,318,500	0.4%	1.9%
Delaware	3,000	2,000	16,700	4,100	67,400	100	0	0	0	796,400	14,600	904,300	0.3%	2.4%
Texas	80,900	30,600	304,700	376,300	2,422,300	2,200	1,600	0	0	20,599,100	765,100	24,582,800	0.3%	1.7%
New Hampshire	4,000	3,500	27,000	11,300	102,800	200	0	0	0	1,187,400	29,300	1,365,500	0.3%	2.5%

County	Passenger Vehicles	Trucks	Buses	Total	Electric Vehicles	% Electric Vehicles
Barrow	58,216	25,984	289	84,489	187	0.22%
Carroll	75,358	34,965	398	110,721	166	0.15%
Cherokee	181,369	53,526	599	235,494	1,394	0.59%
Clayton	165,355	37,632	753	203,740	339	0.17%
Cobb	501,958	103,351	1,962	607,271	5,750	0.95%
Coweta	94,524	33,503	523	128,550	538	0.42%
Dawson	21,324	9,975	102	31,401	111	0.35%
DeKalb	440,687	62,999	1,939	505,625	5,460	1.08%
Douglas	87,931	25,109	490	113,530	369	0.33%
Fayette	86,285	25,327	397	112,009	981	0.88%
Forsyth	168,194	43,080	648	211,922	2,872	1.36%
Fulton	662,010	88,774	4,330	755,114	12,471	1.65%
Gwinnett	612,129	126,470	3,019	741,618	5,368	0.72%
Henry	154,194	41,255	645	196,094	701	0.36%
Newton	81,460	26,447	312	108,219	210	0.19%
Paulding	103,130	34,761	476	138,367	386	0.28%
Pike	13,359	8,930	106	22,395	19	0.08%
Rockdale	56,033	17,245	353	73,631	204	0.28%
Spalding	45,302	17,153	232	62,687	81	0.13%
Walton	66,996	30,433	319	97,748	193	0.20%
Subtotal: 20 Counties	3,675,814	846,919	17,892	4,540,625	37,800	0.83%

While electric vehicles are a small percentage of the registered fleet in the Atlanta Region in 2022, this will grow rapidly in the future

Variability in National EV Sales Forecasts Require Flexibility in Planning

Under more aggressive forecasts, battery electric vehicle sales will make up 47% of new cars sold in the U.S. by 2030



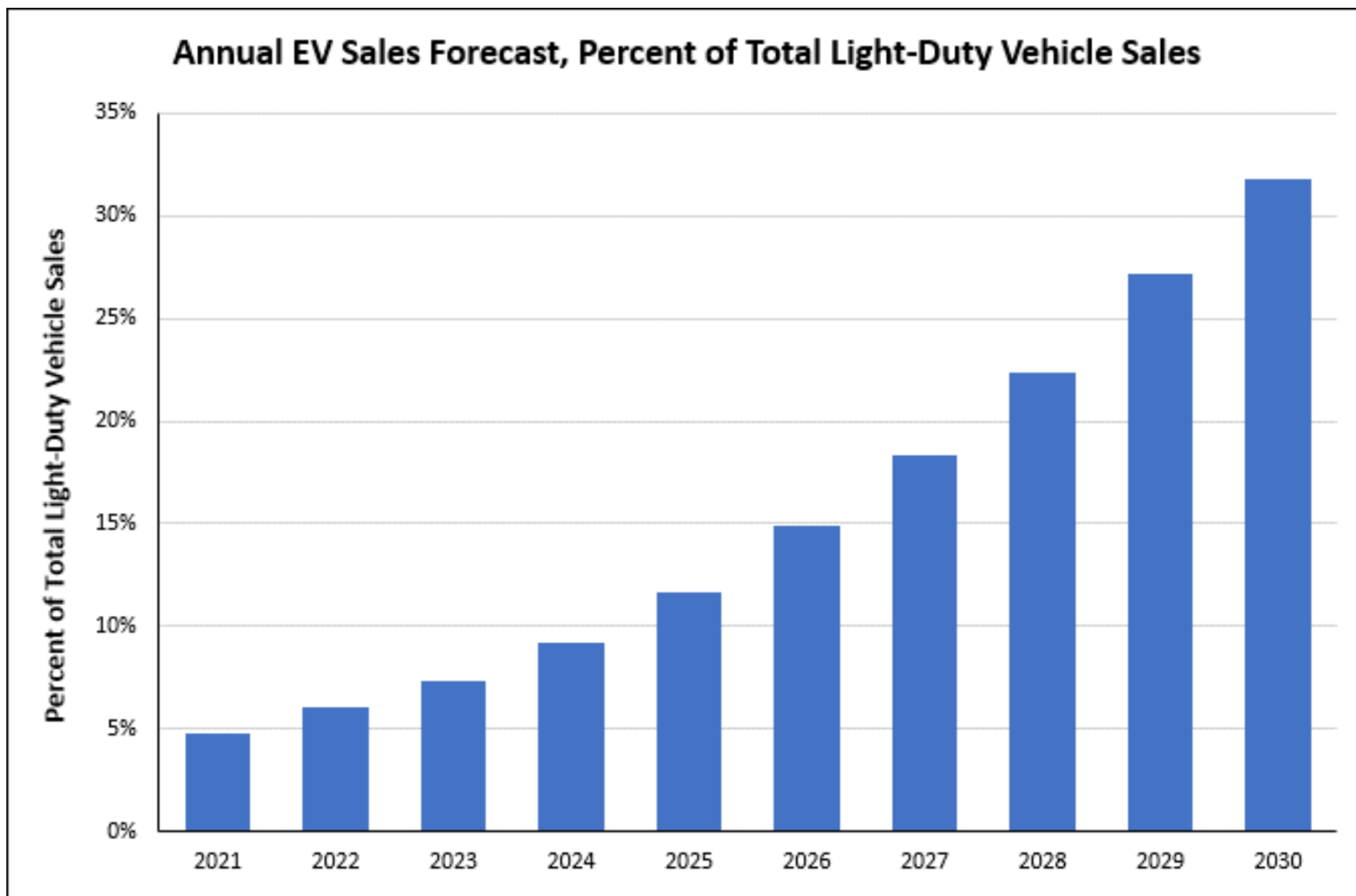
Note: Less than 1% of vehicles sold are projected to be fuel cell electric.

Source: BCG • Created with [Datawrapper](#)

protocol

Variability in National EV Sales Forecasts

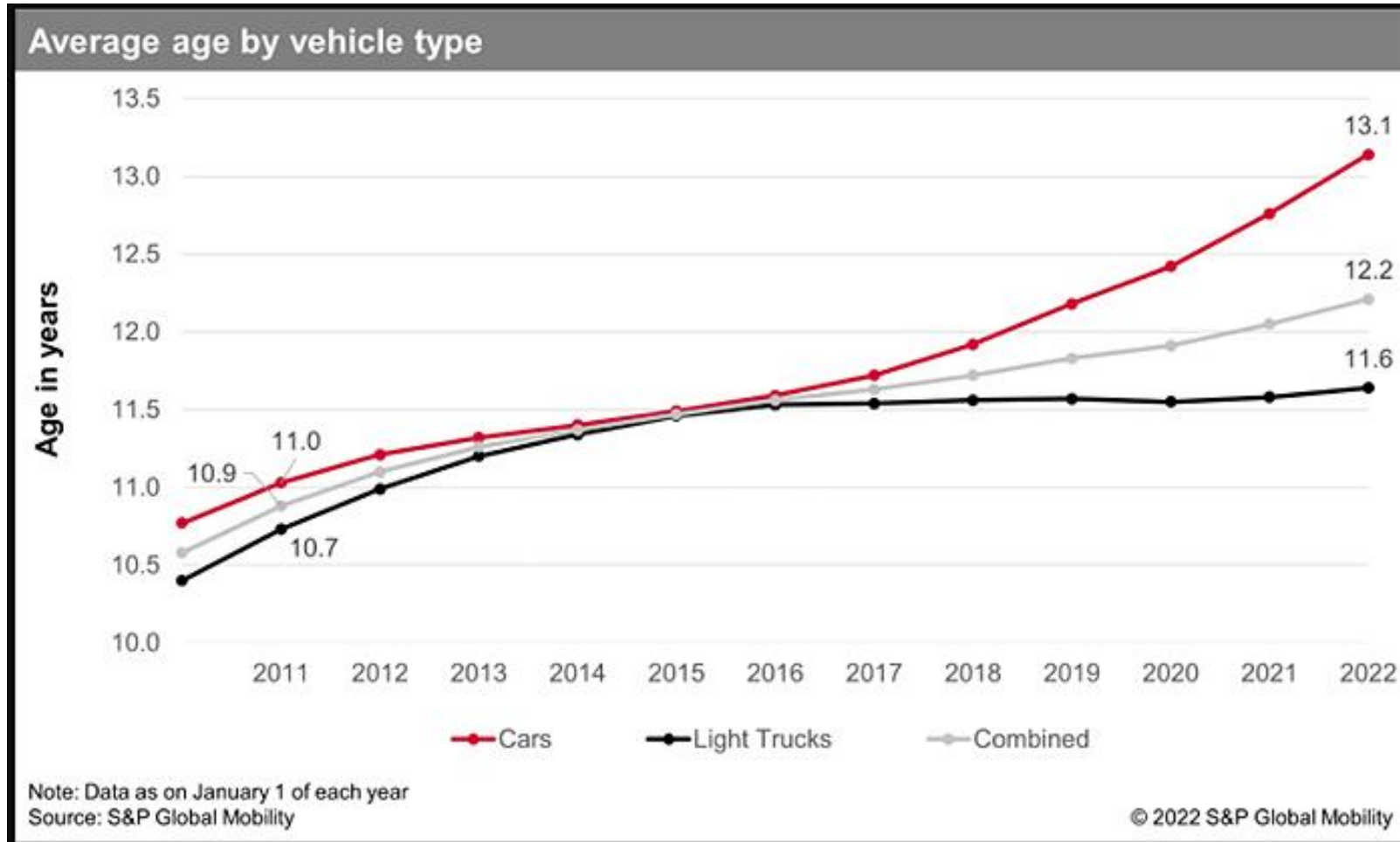
Under more conservative forecasts, electric vehicle sales make up 32% of new cars sold by 2030



Source: EEI, <https://www.eei.org/-/media/Project/EEI/Documents/Issues-and-Policy/Electric-Transportation/EV-Forecast--Infrastructure-Report.pdf>

The Average Age that a Vehicle Remains in the Fleet is over 12 Years

Requiring decades for the fleet to be fully alternative fuel



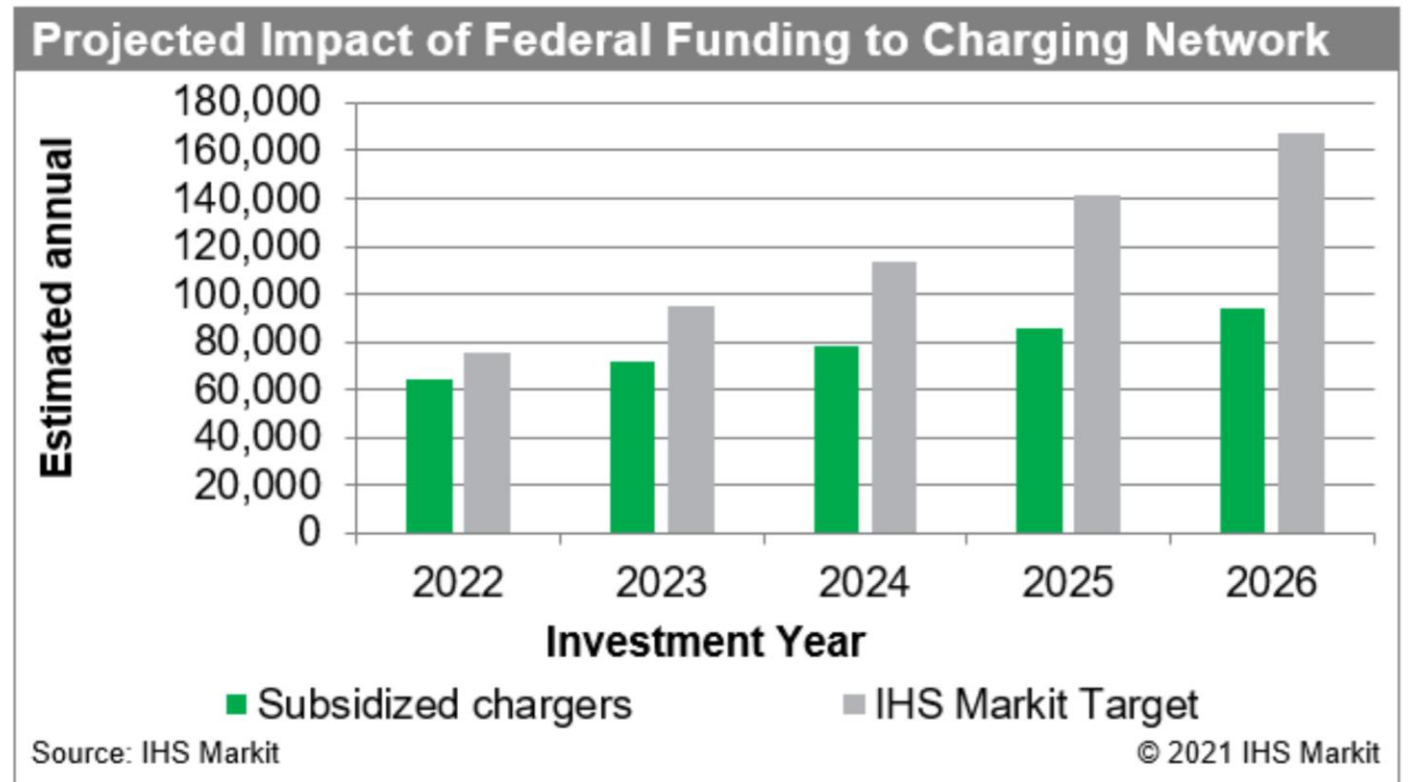
If 32% of the new vehicle fleet sales are battery electric by 2030, it is unlikely that all gasoline-powered vehicles will be out of the fleet by 2050

Federal IIJA Funds Provide Funding for 400,000 EV Chargers

But an additional 600,000 public chargers are needed by 2026

■ Needed EV Charging Infrastructure by 2026

- Federal investment contributes to the construction of approximately **400,000** Level 2 AC and Level 3 DC Fast chargers
- Need for about **600,000** additional chargers installed at another **100,000** public locations by 2026
- Figures do not include **3.2 million** domestic, private Level 2 chargers to be installed in residential homes - mostly in garages



Atlanta Regional Commission Responses to the EV Revolution...

Focus on Preparing Communities to Take Advantage of Quality of Life and Economic Opportunities



**Atlanta Regional Transportation
Electrification Plan**



Atlanta Regional Freight Plan


Upcoming Atlanta Regional Transportation Electrification Plan

Consultant to Begin Work Activities in Q1 2023 and Be Complete by End of 2023




Conduct Engagement and Assess Needs

- Land use and travel patterns
- Older populations
- Public transportation
- Freight & supply chain needs
- Grid capacity
- **Industry/market conditions, including an overview of the existing state of EV charging, current and projected EV ownership**



Prepare a Regional Transportation Electrification Vision

- Support federal goal of accelerating equitable adoption of EVs
- Enhance quality of life and economic competitiveness
- Reduce transportation-related ozone precursors and greenhouse gas emissions
- **Position the region's workforce to support future investments**
- Establish regional performance targets



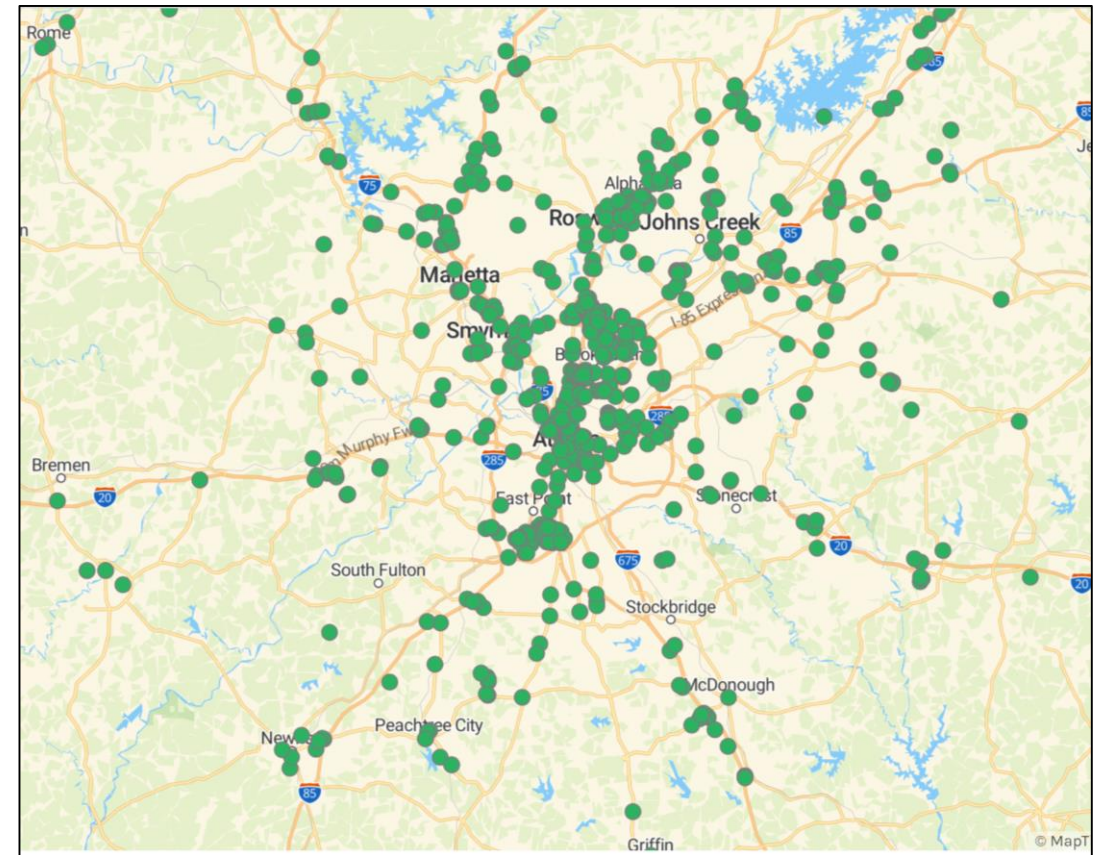
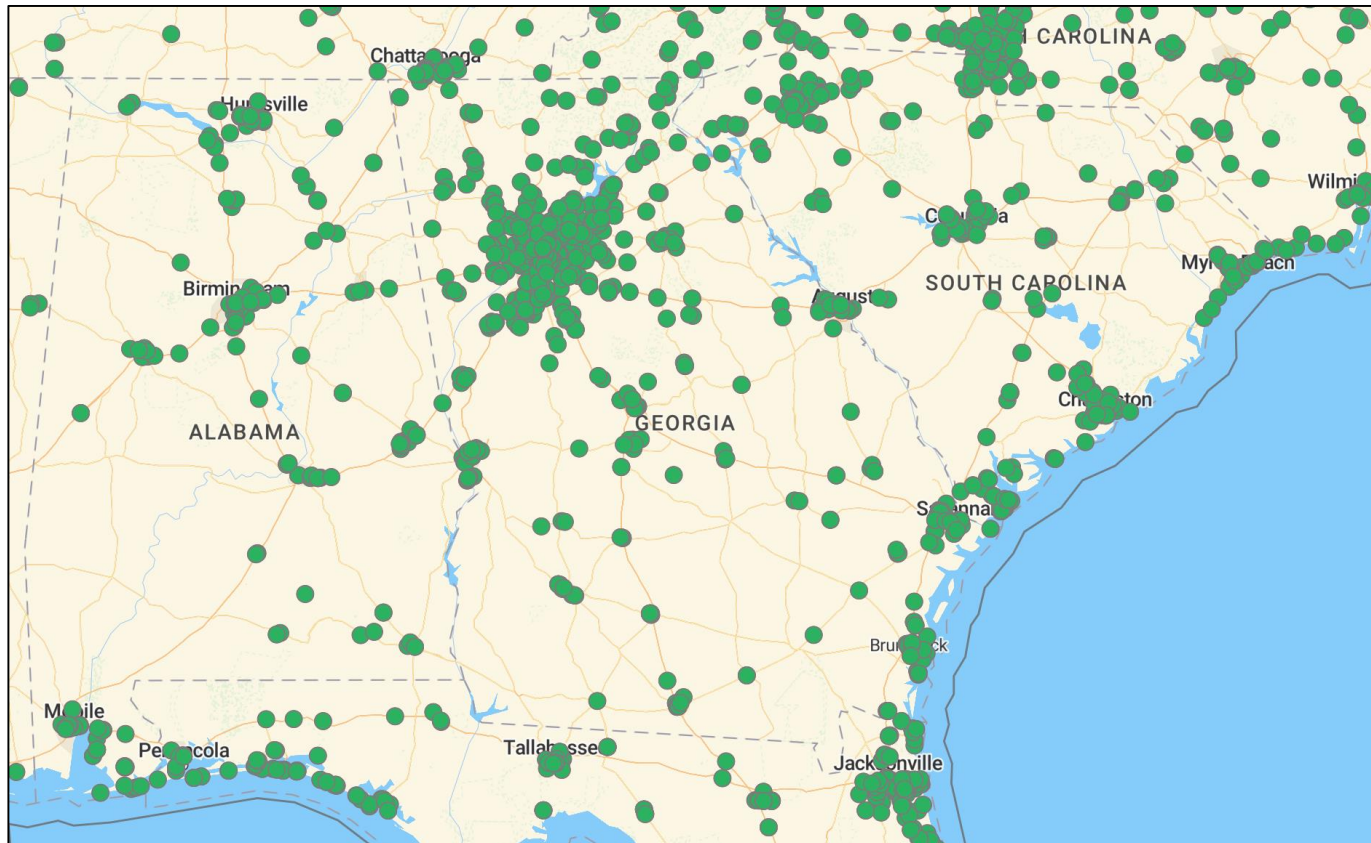
Detail and Pursue Implementation Strategies

- **Implementation strategies and guidance for local communities**
- Develop a corridor network, including planned new charging location types, as well as existing charging locations planned for upgrade or expansion
- Develop tools to help identify and prioritize charging locations in the future

Atlanta Regional Transportation Electrification Plan Questions...

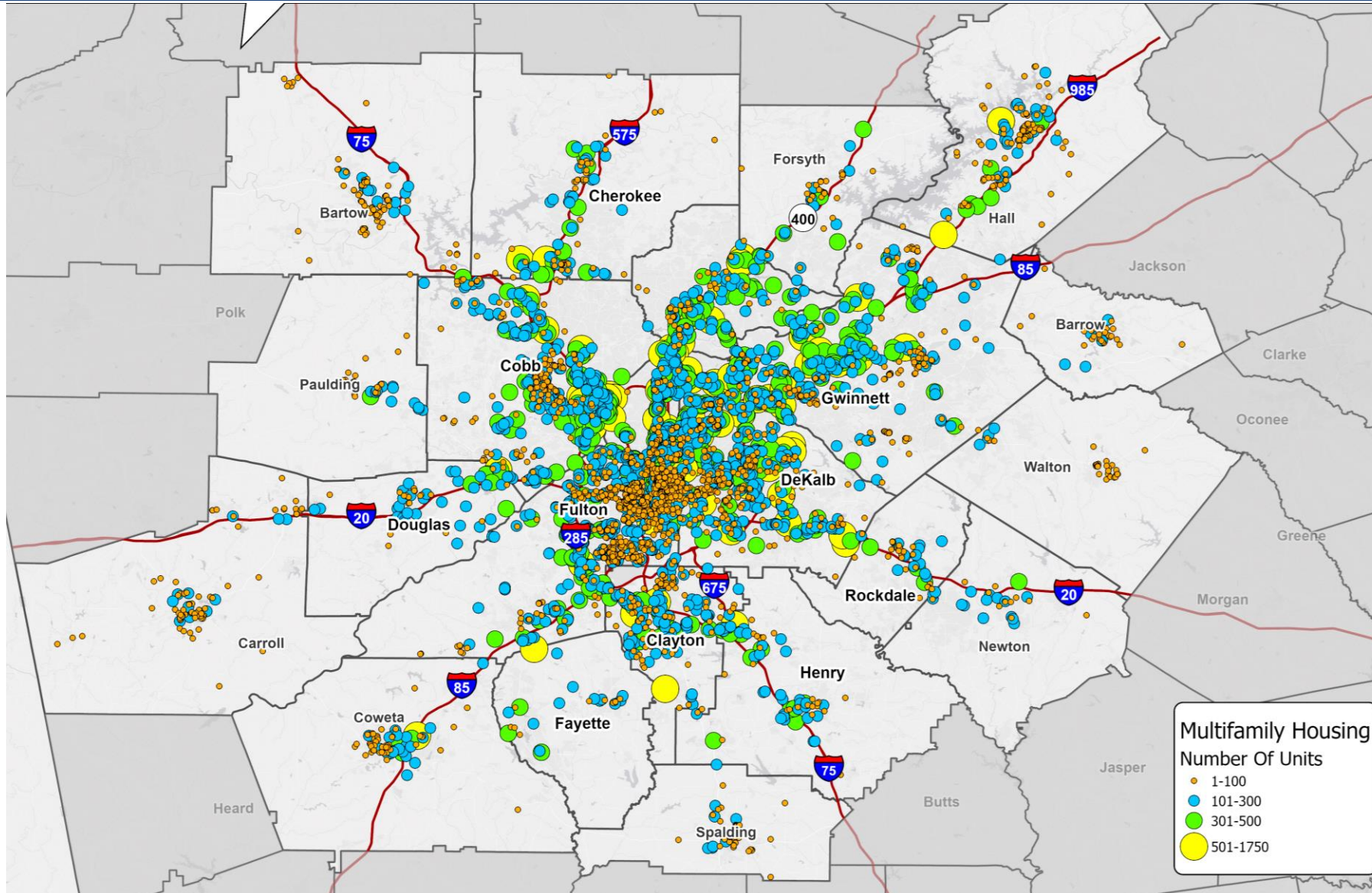
How can underserved and rural areas be served with electric charging infrastructure?

The Atlanta region has the heaviest concentration of electric charging stations in the Southeast, but 1) large gaps exist both south of I-20 and 2) outside of the larger employment centers



Atlanta Regional Transportation Electrification Plan Questions...

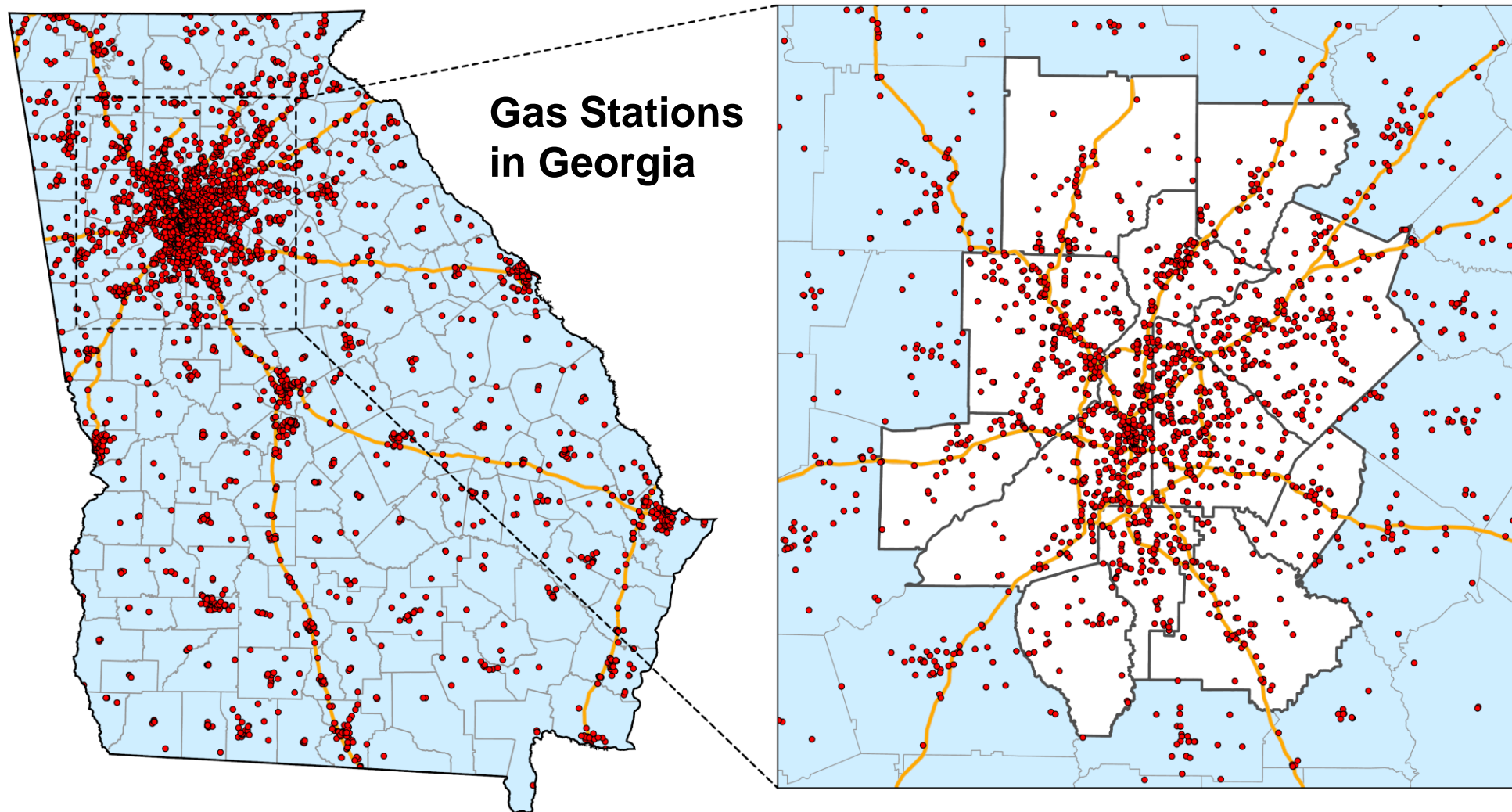
How will people that do not own their home or apartment access charging infrastructure?



Between 2010 and 2020 the Atlanta region added the **4th most people** of any region in the nation. Over **30%** of the population currently rents homes or apartments.

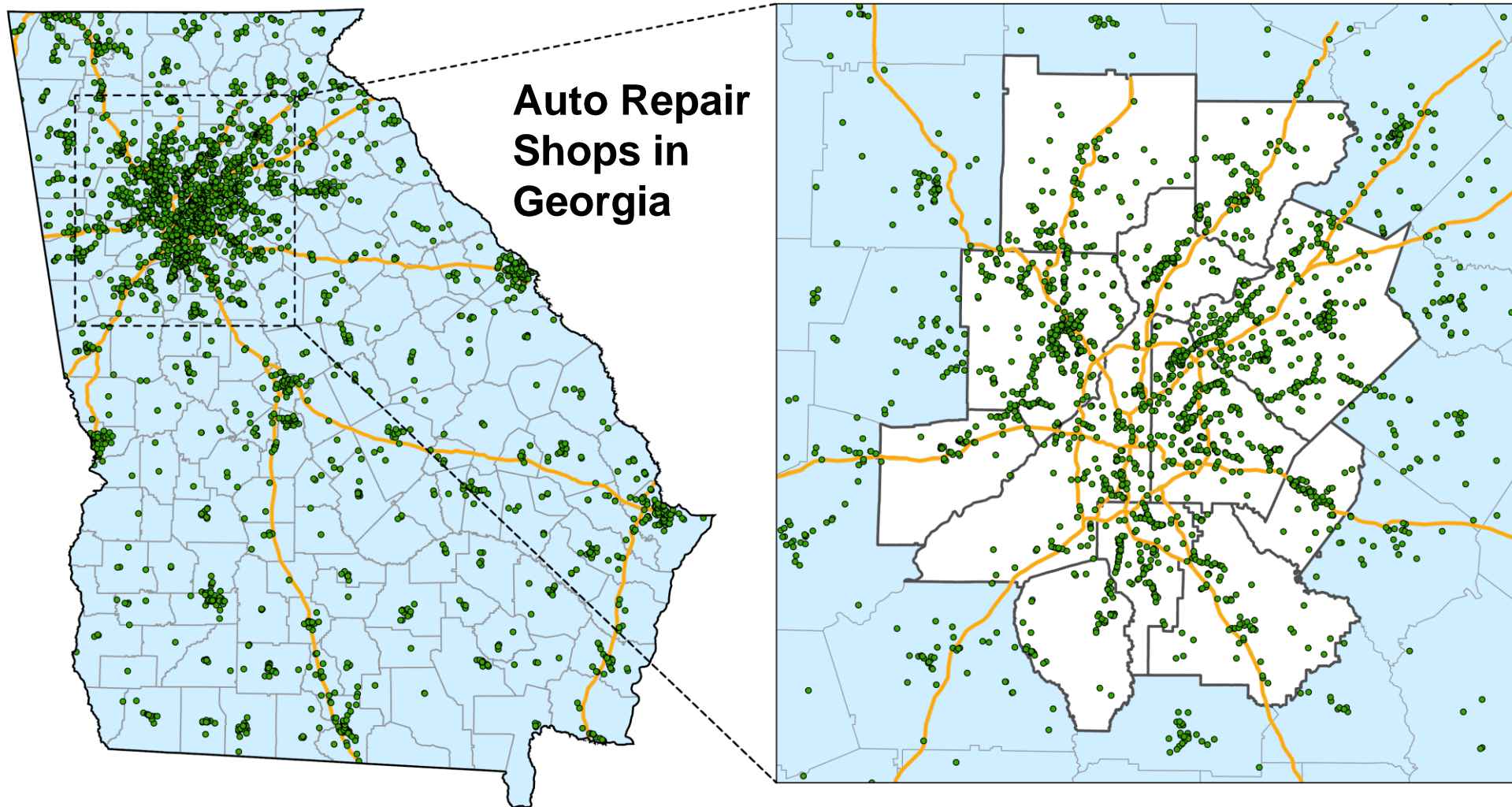
Atlanta Regional Transportation Electrification Plan Questions...

What is the long-term impact to gas stations?



Atlanta Regional Transportation Electrification Plan Questions...

What is the future of auto repair shops?



Atlanta Regional Freight Plan Includes an Analysis of the Impacts of Electrification on Freight Clusters and Industrial Areas

Plan is underway and will be complete in 2024

Technology and Alternative Fuels Analysis

- Quantify expected deployment of electric trucks in the region
- Determine the associated fueling/charging infrastructure needs
- **Distinguish between charging infrastructure that is likely to be installed at private truck depots vs. public charging**

Land Use Assessment and Industrial Analysis

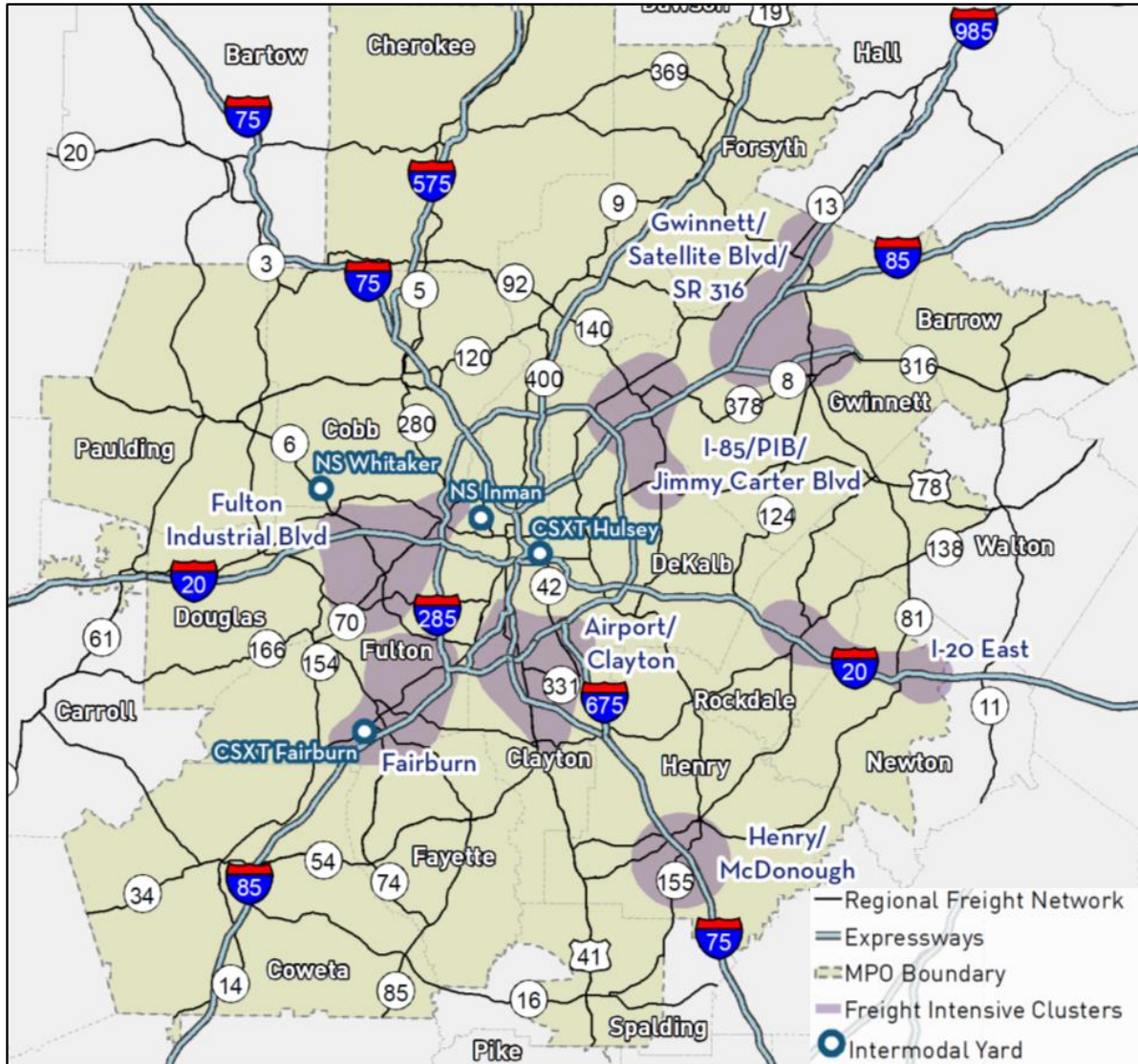
- Support the growth of the freight industry
- **Identify trends that may influence the development of future industrial uses**
- Review recent and planned industrial developments to assess changes in building and site design, tenant or end user needs

Design Guide and Model Truck Parking Ordinance

- Design concepts for lane widths, turn radii, sidewalk access
- Model ordinance framework that includes location and design recommendations;
 - **Site amenities (restroom facilities, electric charging)**
 - Safety and security considerations (lighting, security)

The Atlanta Region's Freight Clusters are Among the Nation's Largest

Industrial and warehousing areas will require adequate truck charging facilities in the future

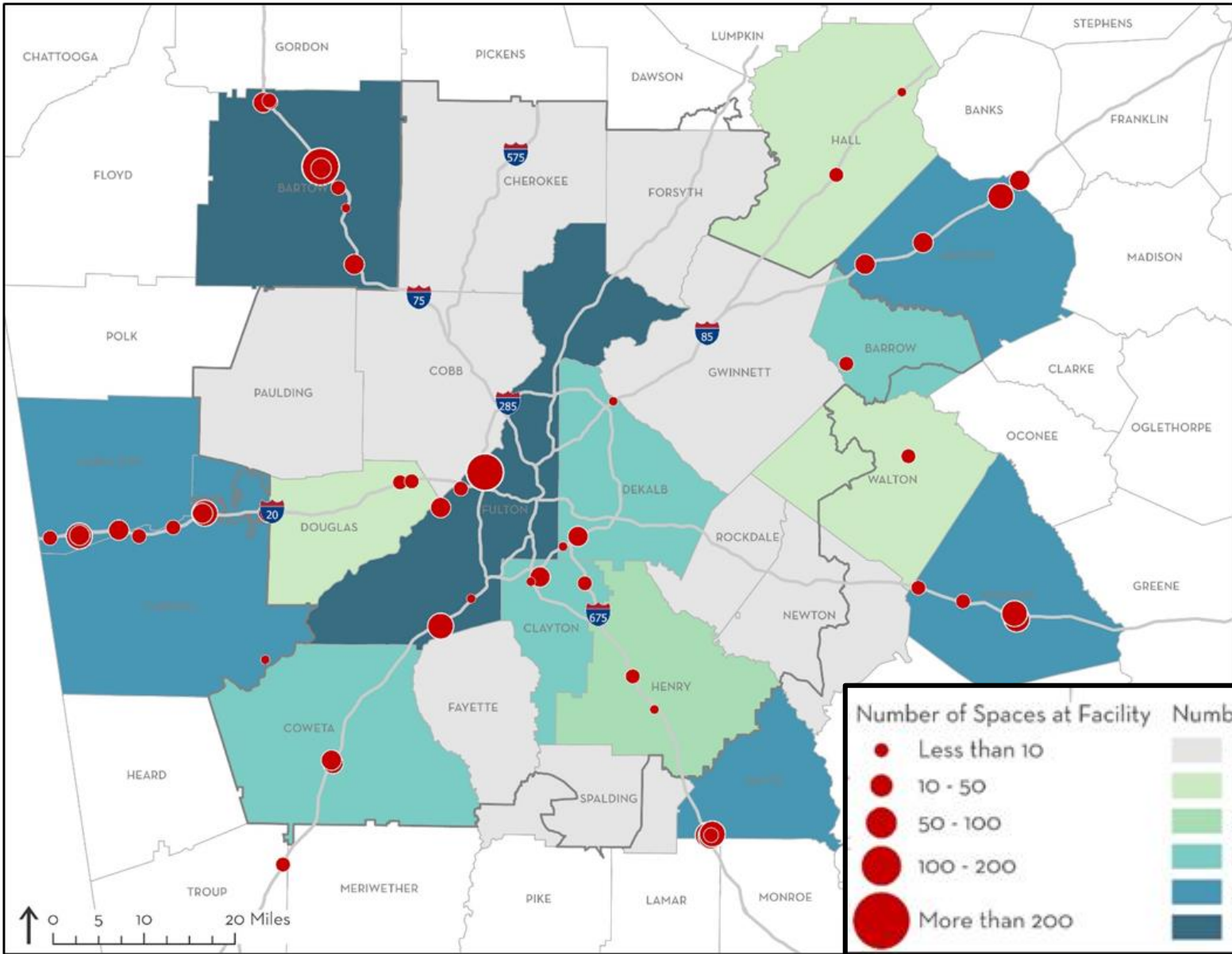


The Atlanta Region's Industrial Development is Growing Rapidly

- **National leader in space absorption rate in Q2 2022, 11.7 million square feet***
- Average industrial rents climbing; **\$6.77** per square foot
- Industrial vacancy rates in Q2 fell below **3%** for the first time in market history

*Data sources: Cushman & Wakefield

Adequate Truck Parking, Including Access to Future EV Charging, is Essential For Economic Competitiveness



A lack of truck parking is a regional issue, with an inventory of approximately 3,600 spaces (2016). Major interstate segments lack truck parking.



FOR ADDITIONAL INFORMATION

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