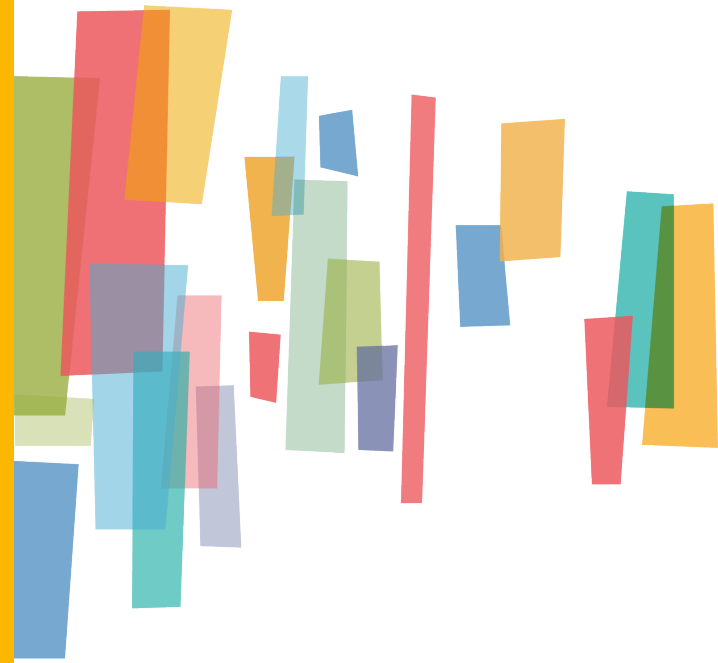


# Regional Transportation Electrification Plan

Transportation Coordinating  
Committee Meeting

January 19, 2024



ONE  
**great**  
REGION



# Today's Agenda

## Welcome and Introductions

## Project Overview and Updates

- Engagement Summary
- Project Vision and Goal Areas
- Technical Work and Draft Findings
- Breakout Discussions and Feedback

## Closing and Next Steps

# Meeting Objectives

- Present overview and project updates of the Regional Electrification Transportation Plan
- Capture TCC feedback on all work to-date
- Gather Input and Feedback to guide Implementation Strategies, Actions, and the Final Plan





# Project Overview


# Background

## Purpose Statement:


The Regional Transportation Electrification Plan will provide a clear and concise strategy to equitably accelerate the adoption of EVs, reduce transportation-related greenhouse gas emissions, and position the region's workforce to support resulting investments




# Project Overview



Recently there has been substantial advancements in federal transportation electrification policy and funding



ARC is leading by creating a Regional Transportation Electrification Plan (RTEP) to inform ARC's planning, policies, and practices related to supporting more electric vehicles (EVs) in the region



The project study area is comprised of the MPO area, consisting of all of parts of twenty counties



The RTEP will identify the vision and goals, and create an implementation strategy and policies to meet the vision

# Project Completion Snapshot

## Summer:

- Project Initiation and Setup
- Presented to Transportation Coordinating Committee (TCC) and ARC Board

## Fall:

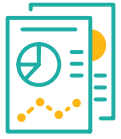
- Created project website and a Stakeholder Advisory Committee (SAC)
- Conducted key stakeholder meetings to assist with existing conditions work and data
- Began the Needs Assessment

## Winter:

- Finalized project vision and goals to inform future work
- Drafting implementation strategies and the final plan into the spring



# Project Timeline



**Summer  
2023**

Project Initiation &  
Existing Conditions  
Analysis



**Fall 2023/  
Winter 2024**

Refining Analysis;  
Defining the  
Plan's Vision &  
Goals



**Winter/  
Spring 2024**

Developing the  
Plan's  
Implementation  
Strategies



**Spring/  
Summer 2024**

Prioritizing the  
Action-Oriented  
Implementation  
Strategies





# Engagement Summary

# Stakeholder Engagement Plan Goals

## **Outcome-Oriented Engagement Process:**

Implement an outcome-focused approach that ensures the public and stakeholders are integral to the decision-making process, aligning with the overarching objectives of the RTEP.

## **Enhanced Communication and Feedback Collection:**

Cultivate open lines of communication among a diverse array of agencies, stakeholders, and the Project Management Team (PMT), fostering an environment for the exchange of valuable feedback that will play a pivotal role in shaping the RTEP.

## **Stakeholder Education and Empowerment:**

Develop educational initiatives that empower stakeholders with comprehensive knowledge about electric vehicles, charging infrastructure, and the broader benefits of electrified transportation, enabling informed contributions to the RTEP process.

## **Transparent Expectation Management:**

Provide clear guidance on how stakeholder input will be utilized in the decision-making process, establishing realistic expectations for the role and impact of feedback within the context of the RTEP.

# Stakeholder Outreach and Engagement

Entity	ARC Committees	Stakeholder Advisory Committee	Listening Session Groups
<b>Membership</b>	Comprises members from existing ARC Committees.	Composed of key stakeholders who are not currently represented on existing ARC Stakeholder Committees.	Consists of stakeholders with potential interests or impacts related to electrification infrastructure.
<b>Role</b>	Provide guidance and strategic direction to inform decision-making and planning processes within the ARC framework.	Assist in prioritizing technical work related to the RTEP process.	Contribute valuable insights that inform decision-making processes.
<b>IAP2 Engagement Goal</b>	Engage in consultation with community members and stakeholders to gather their input and perspectives, enhancing the inclusivity of decision-making.	Collaborate with stakeholders in order to incorporate a diverse range of perspectives, fostering a cooperative approach to transportation and electrification planning.	Involve stakeholders in meaningful discussions and dialogues to ensure that their perspectives are considered during planning and decision-making related to electrification infrastructure.

# What we've heard so far



**20 STAKEHOLDER  
SESSIONS**



**8 UTILITY MEETINGS**



**100+ STAKEHOLDERS  
ENGAGED**

- ▮ Strategic Placement of EV Charging Stations
- ▮ Funding, Policy, and Community Engagement for EV Infrastructure
- ▮ Coordination and Market Alignment
- ▮ Recruitment and Workforce Development
- ▮ Integration and Challenges of EV Infrastructure
- ▮ Economic Development and Small Business Engagement in EV
- ▮ Infrastructure Needs and Challenges in EV Adoption
- ▮ Public Awareness, Education, and Regional Coordination

# Stakeholder Advisory Committee Members



**Atlanta Region Transit Link Authority**  
Abby Marinelli, Transit Funding Manager

**Fulton County Government**  
Jessica Lavender, Energy & Sustainability Manager

**Metro Atlanta Chamber**  
Cynthia Curry, Senior Director of Clean Tech and Smart Cities

**Southern Environmental Law Center**  
Brian Gist, Senior Attorney

**City of Atlanta**  
John Seydel, Deputy Chief Sustainability Officer

**Gateway85 Community Improvement District**  
Carolyn Bourdeaux, Special Projects

**Natural Resources Defense Council**  
Patrick King, Transportation Advocate

**Town Center Community Improvement District**  
Alisha Smith, Director, Projects & Planning

**Clean Cities Georgia**  
Frank Morris, Executive Director

**Georgia Department of Transportation**  
Beatrice Shakal, Policy Planning Coordinator

**Partnership for Southern Equity**  
Lavonya Jones, Just Energy Director

**Uber**  
Michele Blackwell, Senior Public Policy Manager

**Cox Automotive**  
Stephanie Valdez-Streaty, Director of Mobility Research and Development

**Georgia Green Energy Services**  
Gavin Ireland, CEO

**Peachtree Corners**  
James Nguyen, Transportation Engineer

**UGA-Carl Vinson Institute of Government**  
Shana Jones, Public Service Faculty

# Recent Listening Sessions

## Workforce Development

- Tuesday, December 5, 2023

## Community Improvement Districts

- Wednesday, December 6, 2023

## Chambers of Commerce

- Tuesday, December 19, 2023



# Project Vision and Goal Areas



## Project Vision Statement

### **Establish a Regional EV Ecosystem**

Lead the southeast in the electrification of our transportation sector by creating a robust and widespread regional EV ecosystem. Our approach will accelerate the equitable adoption of EVs and inform regional EV infrastructure investments to guide the region and meet the needs of the future.



# Project Goal Areas

## 1 Coordinate Infrastructure Investments

Coordinate regional infrastructure investments to advance and maximize growth of the EV ecosystem for all modes of transportation, reduce transportation-related greenhouse gas emissions, support long term sustainability, and create a resilient and actionable planning tool to advance EV adoption.

## 2 Accelerate Equitable Adoption

Promote the equitable adoption of EVs and ensure equitable outcomes through robust partner engagement and measurable investments in historically disadvantaged communities.

## 3 Expand Access and Reduce Barriers

Reduce barriers to accessing e-mobility options and EV charging, incentivize EV use and adoption growth, and prioritize policy actions that share the benefits of electrification with those who need the most assistance.

## 4 Rapidly Boost Workforce Development and Economic Competitiveness

Position the region's workforce to leverage economic investments in EV related industries, expand career path opportunities, and support a prosperous region for coming generations.

## 5 Support Electric Grid Stability

Support electric utility grid stability through active and meaningful utility partner collaboration and thoughtful, cooperative planning to anticipate and support EV growth.



# Questions

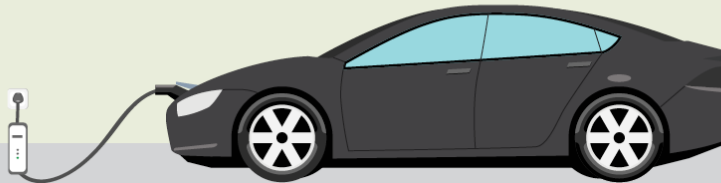


# Electrification Fundamentals

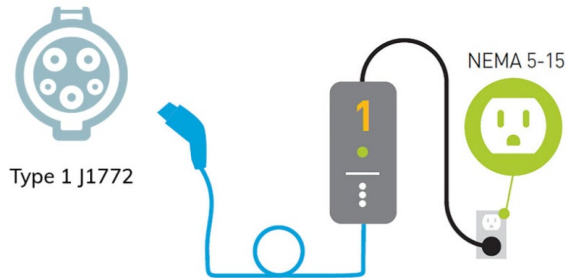
# EV Charging Stations

Image Source: [www.carolinacountry.com](http://www.carolinacountry.com)

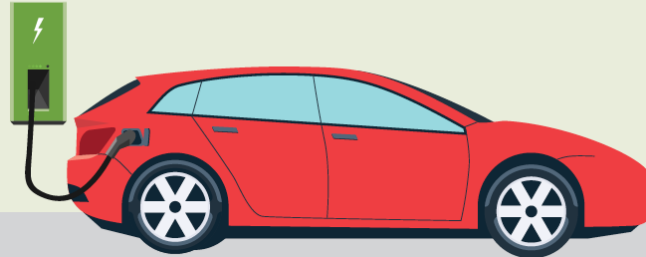
## AC Level One



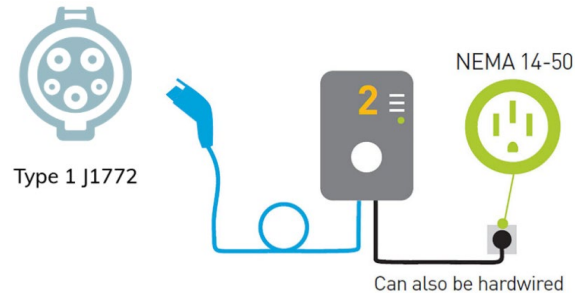
- **1.9kW Maximum**
- **Standard Outlet**
- **Slowest Charging**
- **250 miles in 48-72 hrs**



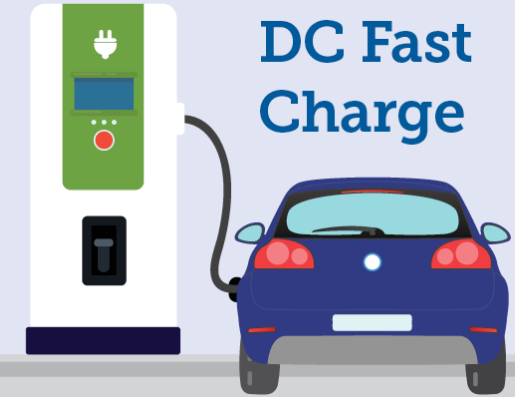
## AC Level Two



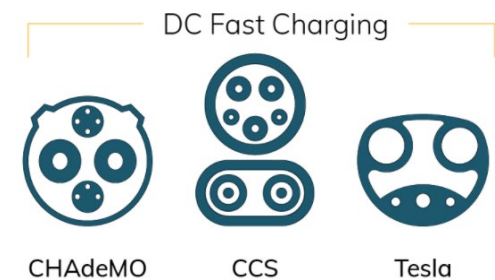
- **19kW Maximum**
- **“Dryer Outlet”**
- **Slow Charging**
- **250 miles in 10 hours**



## DC Fast Charge



- **50-350kW**
- **Direct Current Fast Charging**
- **Fastest Charging**
- **250 miles in +/- 20 minutes**



# Level 2 Chargers



# DCFC (Level 3) Chargers



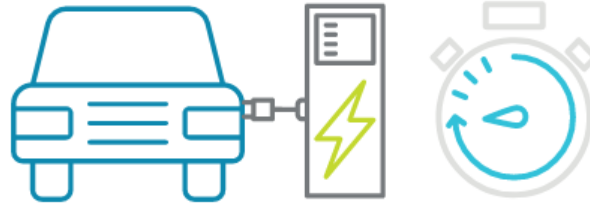
# Barriers



## EV Adoption Barriers



Range Anxiety for Long Trips



Long Recharging Times



Lack of Charging Infrastructure

## EVSE Implementation Barriers



Low Customer Base



Infrastructure Gaps in Rural and Under-Represented Communities



Weather and Temperature Extremes



# Technical Work and Findings



# Bumps in the road since October...

10/5/2023 3:00:00 AM [Share This Episode](#)

## Rivian Is Burning Billions to Build the Ultimate EV Pickup

Rivian's goal to sell the [ultimate electric pickup](#) truck attracted a lot of investors when the company went public. But it's losing money on every EV it builds, raising questions about its future. WSJ reporter [Sean McLain](#) joins host Zoe Thomas to discuss Rivian's plans to bring costs down.

GENERAL MOTORS

## Honda, General Motors end partnership to develop affordable EVs together



[Jamie L. LaReau](#)  
Detroit Free Press

TECHNOLOGY | PERSONAL TECHNOLOGY: JOANNA STERN

## I Visited Over 120 EV Chargers: Three Reasons Why So Many Were Broken

Our columnist's Los Angeles power struggle featured out-of-order signs, payment errors and connection problems

AUTOS

## Ford will postpone about \$12 billion in EV investment as buyers become more cautious

Electric vehicles [+ Add to myFT](#)

## 'The early adopters have adopted': US carmakers slow their EV growth plans

Consumer appetite for battery-powered cars and trucks has fallen short of industry expectations

HOME > TRANSPORTATION

## Ford is losing dealers' trust after a rocky year for the EV transition

Nora Naughton Nov 7, 2023, 3:13 PM EST



## ...But 2023 was still a record year

### Data Point

A Record 1.2 Million EVs Were Sold in the U.S. in 2023, According to Estimates from Kelley Blue Book

Tuesday January 9, 2024

# Planning for Uncertainty is Essential

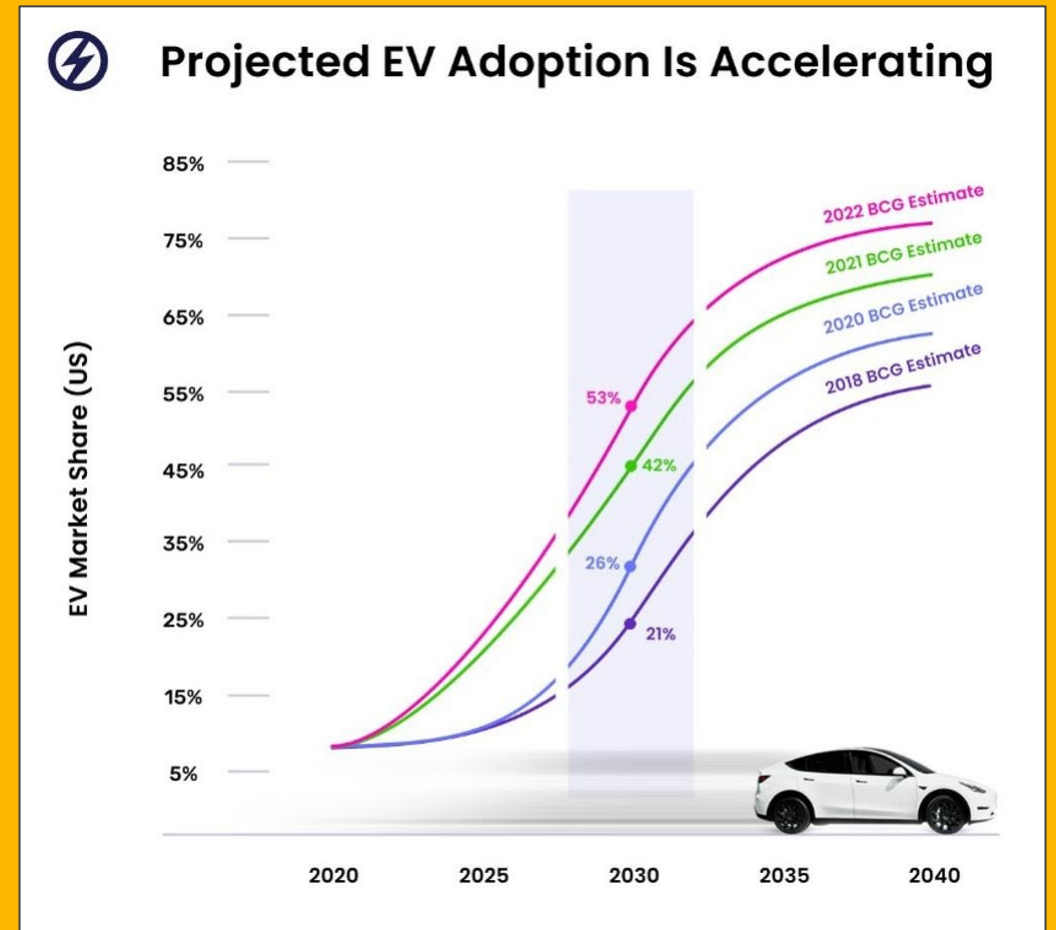
- Developed a Private Adoption forecast to model potential EV growth across the 20-County region.
  - Four different growth scenarios allow for the uncertainty and unpredictability in the market.
- Adoption forecast will inform an estimate of regional charging infrastructure needs.
- Coordination across and within governments, workforce, site hosts, utilities and others will be critical.



# Private Adoption of EVs are Forecasted to Grow Exponentially

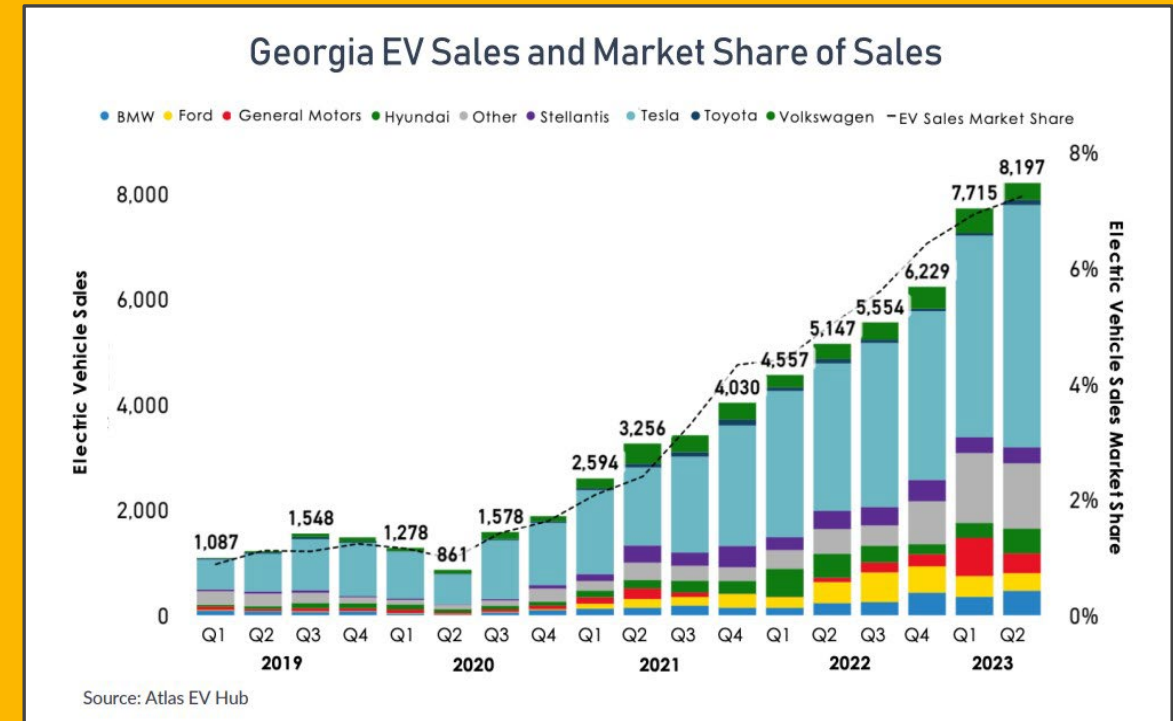
- EV adoption tends to accelerate when EVs represent 5% of new vehicle sales in a market.
- The S-Curve approach is utilized by Boston Consulting Group, Rocky Mountain Institute, and the International Energy Agency, to model EV growth.

Sources: Alliance for Automotive Innovation, Boston Consulting Group



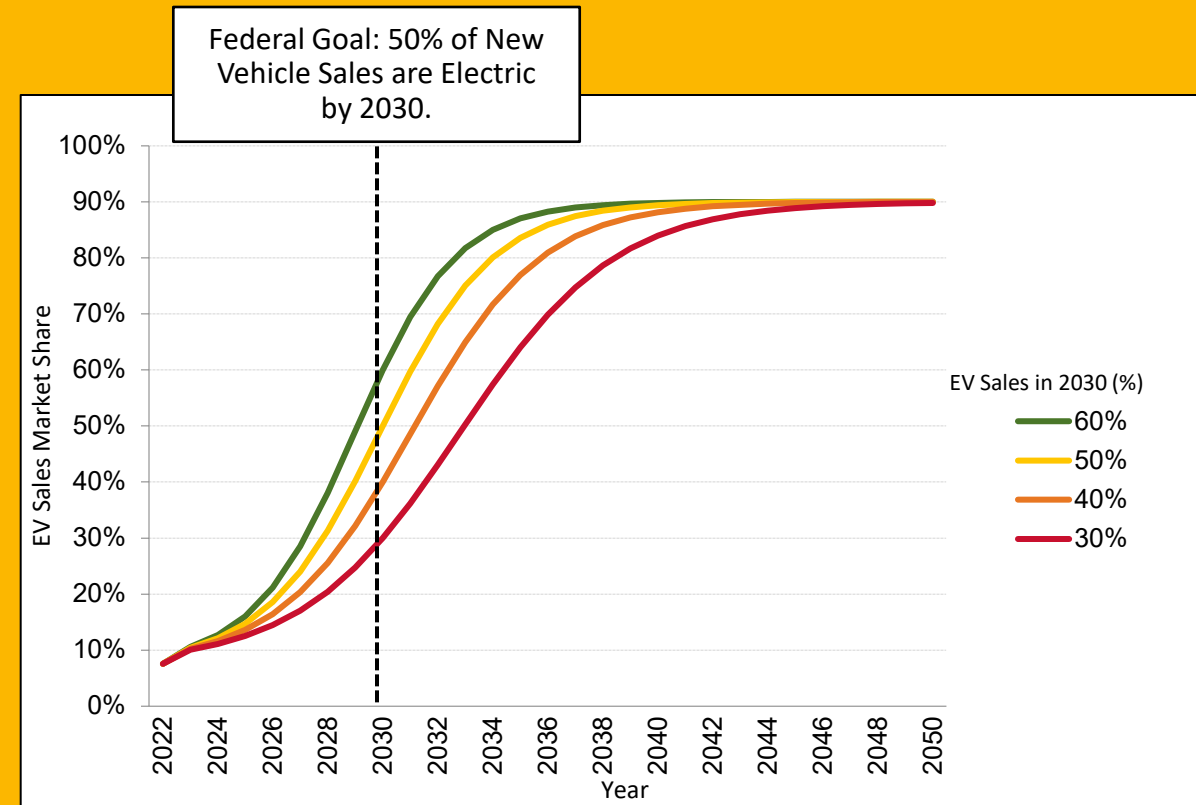
# Current State of EVs in Georgia and the ARC region

- EV Market Share in Georgia mirrors U.S. trends
- 84% of registered EVs in Georgia are in the ARC region. Internal forecast results should align closely with statewide projections.
- 2023 Metro Atlanta Speaks: 1 in 3 respondents plan to buy an EV in the next 5 years.



# ARC EV Adoption Model

- EV Market Share – the % of new vehicle sales that are EVs.
- Benchmark year is 2030, in alignment with public goals and private industry sales targets.
- Four scenarios:
  - 30% EV Market Share by 2030
  - 40% EV Market Share by 2030
  - 50% EV Market Share by 2030
  - 60% EV Market Share by 2030

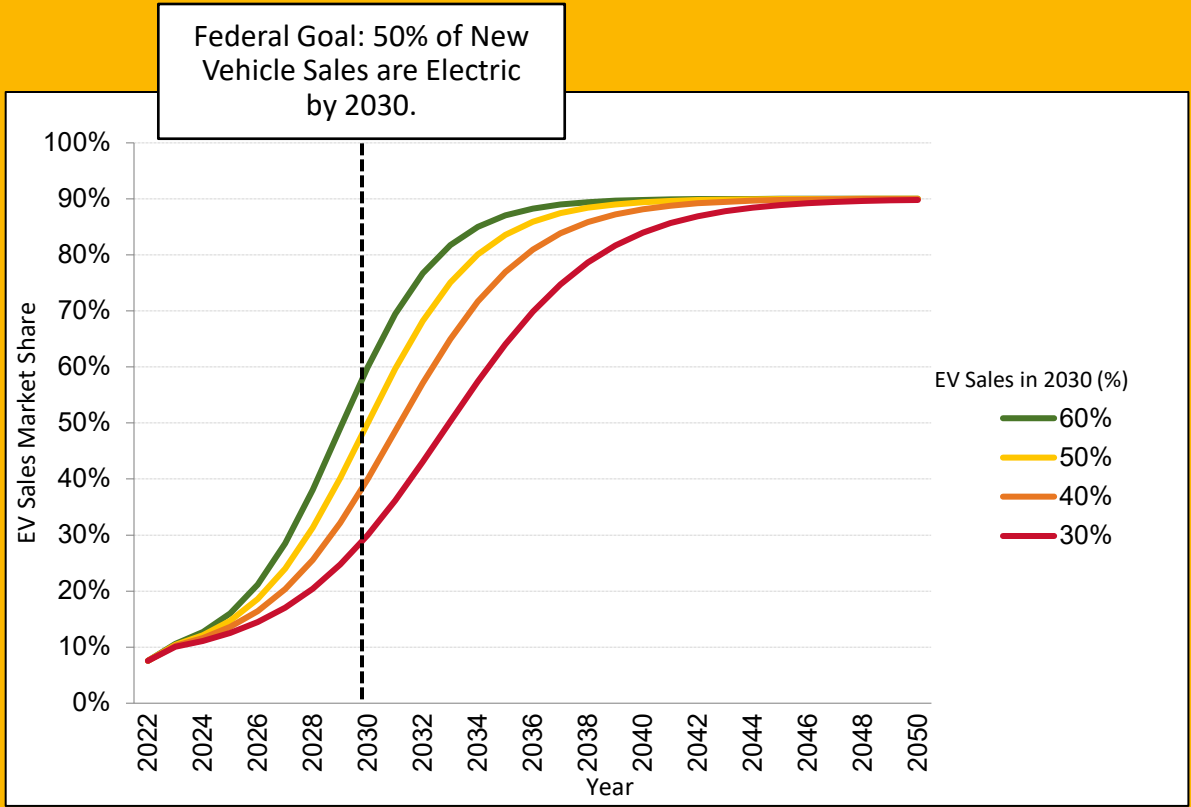


# ARC EV Adoption Model: New EV Sales

Estimated New EV Sales by EV Market Share Scenario				
Year	30%	40%	50%	60%
2022*	18,000	18,000	18,000	18,000
2030	84,000	112,000	140,000	168,000

*\*Estimated for the ARC region based on statewide sales data*

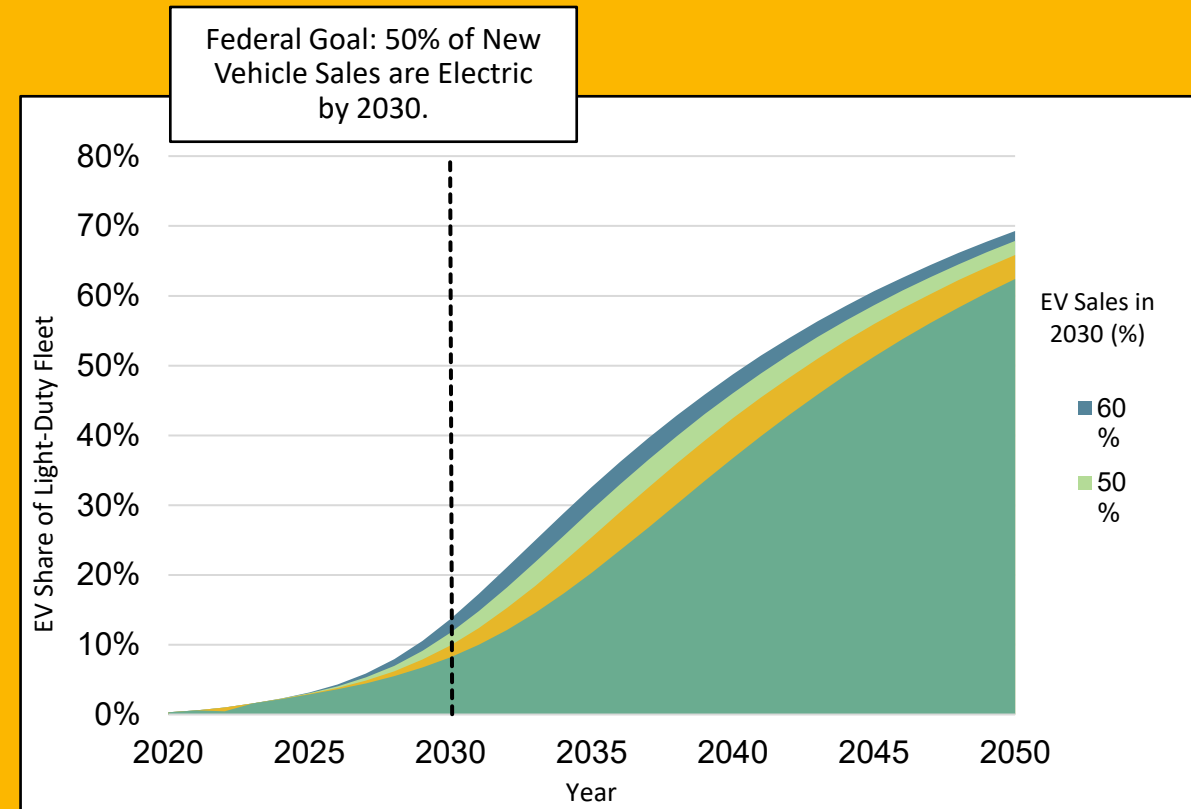
**If trends continue, ARC region may experience a 5-9x growth in EV sales over the next 6 years.**



# ARC EV Adoption Model: EVs as a % of Vehicles on the Road

EVs as a % of Overall LD Vehicles on the Road, by EV Market Share Scenario				
Year	30%	40%	50%	60%
2030	8%	10%	12%	14%

Despite potential rapid growth in sales, EVs will remain a small percentage of the overall fleet on the road.





# Approach to Modeling Charging Infrastructure

Projected # of EVs on the Road (2030)	30% Adoption Forecast	40% Adoption Forecast	50% Adoption Forecast	60% Adoption Forecast
# of EVs on the road	360,000	436,000	515,000	603,000

*As of September 2023, there were 60,000 EVs registered in the ARC region.*

- Utilized the **National Renewable Energy Laboratory's EVI-Pro Lite tool** has a total to model EV Charging Infrastructure.
- Strong approximation for regional charging needs.
- Results include needs based on:
  - Single-Family Residential
  - Shared-Private Charging
  - Public Charging: Level 2 and DCFC.



# How many charging ports does the ARC region need?

# Approach to Modeling Charging Infrastructure

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# Charging Port Demand

## 50% EV Market Share Results by 2030

323,007

Single Family Charging Ports



22,062

Shared Private Charging Ports



24,754

Public Level 2 Charging Ports



2,421

Public DC Fast Charging Ports



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Strong approximation for regional charging needs.

Results include needs based on:

- Single-Family Residential
- Shared-Private Charging
- Public Charging: Level 2
- Public Charging: DCFC.

# Charging Port Demand: Single Family

## Key Considerations

- Most EV Charging currently takes place at home.
- This ratio is likely to decrease as non-single-family homeowners and renters become EV owners.

**323,007** Single Family Charging Ports



**241,545** Single Family Home Level 2 Charging Ports ⓘ

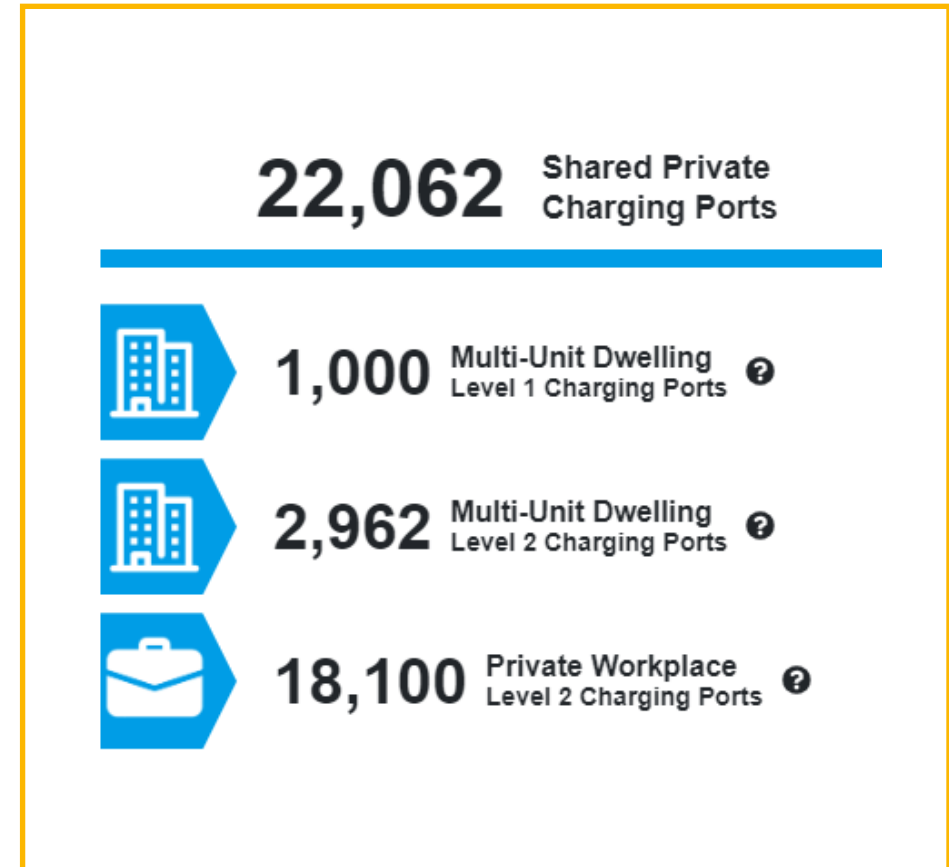


**81,462** Single Family Home Level 1 Charging Ports ⓘ

# Charging Port Demand: Multi-family and Private Workplace

## Key Considerations

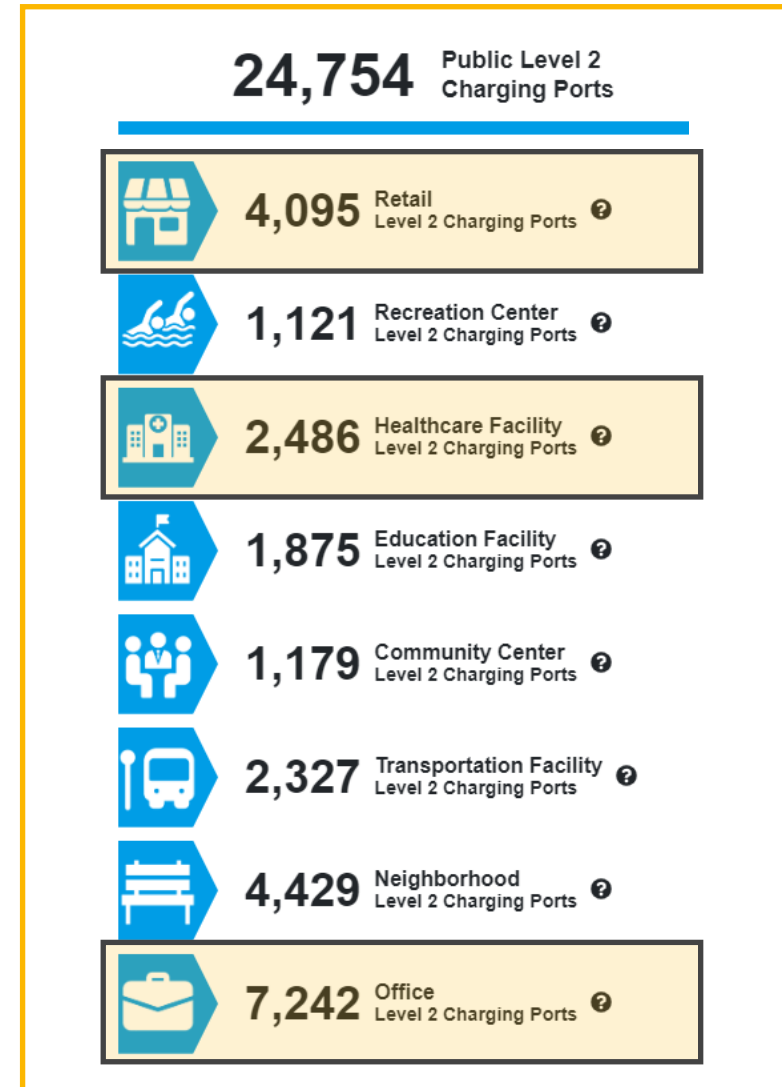
- Shared private charging ports will be necessary to promote EV adoption in non-single family residential populations.
- Workplace charging is popular, even amongst those who have access to at-home charging.



# Charging Port Demand: Public Level 2

## Key Considerations

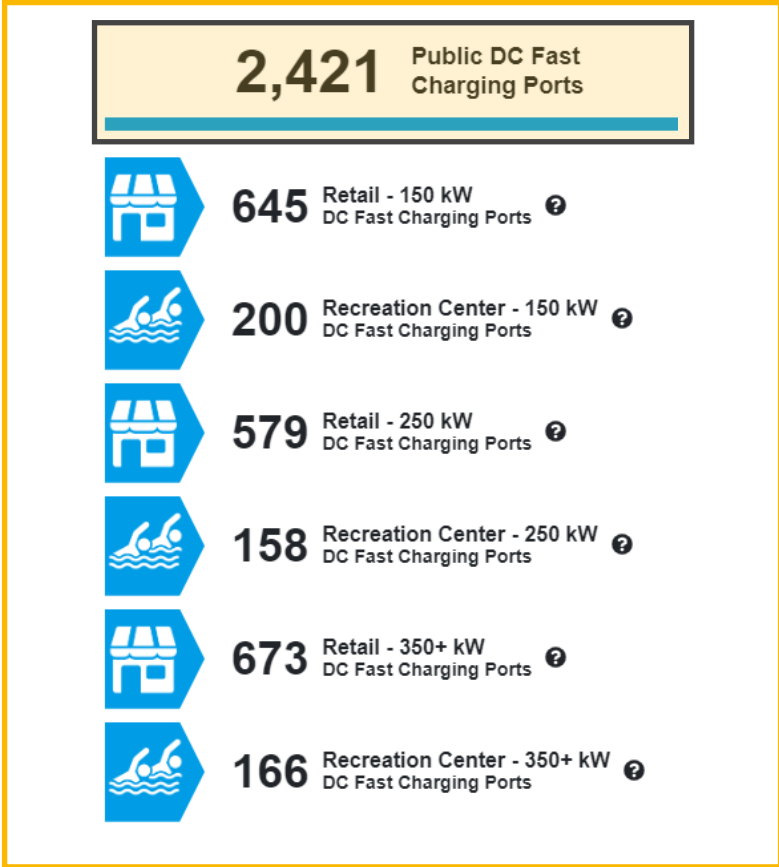
- Publicly accessible level 2 chargers offer an important opportunity to:
  - Improve equitable access to charging across the region.
  - Support additional regional goals (such as supporting small businesses with charging).
  - Require continued coordination between private landowners, private charging manufacturers, and local governments.



# Charging Port Demand: Public DCFC

## Key Considerations

- Infrastructure required is expensive (\$1,000 to \$2,000 per kW)
- DCFC is akin to today's fueling stations





# Shared Private and Public Charging Needs, ARC Region

Port Charging Level*	Number of Existing Ports**	Number of Ports Needed by 2030	Additional Ports Needed***
Level 2	2,900	47,000	44,100
DCFC	600	2,400	1,800
<b>Total</b>	<b>3,500</b>	<b>49,400</b>	<b>45,900</b>

\* Existing and required ports are rounded.

\*\*Charging infrastructure is tracked via Alternative Fuels Data Center (AFDC) database

\*\*\*Doesn't include single-family residential charging





# Questions



# Where do EV charging ports need to go?

# Locating EV Charging Stations in the ARC Region

**Developing an EV Tool to identify charging demand around the region.**

- ▮ Purpose: Identify key clusters and corridors in the ARC region where EV charging is likely to occur



# Locating EV Charging Stations in the ARC Region

## Key Assumptions for the EV Tool

- Those with access to at-home charging prefer to charge at home.
- Modeling where likely EVs will be parked throughout the day is one, but not the only, consideration for charger placement.
- The presence of EV Chargers can help drive adoption.



# Example: EV Charging Station Locations



EV charging stations' locations can support additional regional objectives...



## Example Objective

## Suggested Location for EV Charging Stations

**High Utilization of Chargers**

- Locate EV charging stations where vehicles w/o access to charging are likely to be parked for long periods of time.

**Ensure Equitable Access to EV Charging**

- Locate charging in both residential and workplace locations.

**Improve Air Quality**

- Locate EV charging on heavily polluted corridors.

**Support Local Businesses**

- Locate Level 2 or DC Fast Charging stations at restaurants, businesses, and shopping centers.



# Building the EV Ecosystem

Breakout Discussions

# Building the EV Ecosystem



## Mission & Vision

What we are trying to achieve



## Goals

How we will measure success



## Strategic Roadmap

What we need to build to get there





# Discussion Prompts

## Challenges and Opportunities in EV Charging:

- Discuss the main challenges and opportunities you face regarding funding and installing EV charging in your area.

## Zoning and Regulatory Updates for EV Charging:

- What changes are needed in zoning, building codes, permitting, or land use to support EV charging growth?

## Improving Collaboration for EV Transition:

- How can we enhance collaboration to support the transition to electric vehicle (EV) transportation?

## Strategies for EV Adoption and Infrastructure:

- What are the key short-term and long-term strategies for boosting EV adoption and charging infrastructure?

## Clarifying Roles in EV Adoption and Infrastructure:

- How can our plan define roles between different jurisdictions and ARC to promote EV adoption and charging infrastructure?

## ARC's Role in Supporting EV Transition:

- What specific gaps can ARC fill to assist communities in transitioning to EVs?

# Project Goal Areas

## 1 Coordinate Infrastructure Investments

Coordinate regional infrastructure investments to advance and maximize growth of the EV ecosystem for all modes of transportation, reduce transportation-related greenhouse gas emissions, support long term sustainability, and create a resilient and actionable planning tool to advance EV adoption.

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Position the region's workforce to leverage economic investments in EV related industries, expand career path opportunities, and support a prosperous region for coming generations.

## 5 Support Electric Grid Stability

Support electric utility grid stability through active and meaningful utility partner collaboration and thoughtful, cooperative planning to anticipate and support EV growth.



# Report out from groups to the full TCC

Breakout Discussions



# Next Steps

# Next Steps

## Near-Term Priority Actions:

- Capture and incorporate feedback from the Technical Coordinating Committee (TCC)
- Consider updates to the Transportation and Air Quality Committee (TAQC), and Land Use Coordinating Committee (LUCC)
- Proceed into drafting Implementation Strategies, Interactive Tool, and Final Report





Thank You