



# Equitable Electric Vehicle Ready Parking in Columbus

Roundtable #1

January 26, 2022

# A few Zoom reminders for today

## Roundtable attendees:

- **Please mute** when not speaking
- Please *also* use the chat function to react, ask questions, and comment!
- Please **rename yourself with name, org, and pronouns** by right clicking on the 3 dots on your image

# Your hosts and facilitators for today

- **Bryan Clark**, Sustainable Columbus
- **Jenna Tipaldi**, Sustainable Columbus
- **Jordan Davis**, Smart Columbus
- **Matt Stephens-Rich**, Electrification Coalition
- **Alek Suni**, Delivery Associates (American Cities Climate Challenge)

# How we would like to work together

## The role we hope you will play

1. Share how you are approaching the transition to electric vehicles
2. Work together to co-create an Equitable EV Ready Parking Ordinance

## Suggested group norms

1. Use video whenever possible
2. Minimize distractions
3. Practice the democracy of time
4. Be respectful of opinions
5. *Anything else?*

# Together, we hope to accomplish the following

- Ground ourselves in shared language, process, and understanding of why we're focused on equitable EV charging
- Learn about the opportunities and barriers you may face during the transition to electric vehicles
- Collaboratively answer these questions on access to EV charging:
  - How would a policy help Columbus increase the number of and access to EV chargers?
  - What supportive programming would help Columbus get there?

**This collaboration will advance a policy approach**

# Proposed Meeting Schedule

Date / Time	Desired outcome
January 26, 2022	<ul style="list-style-type: none"><li>● <b>Achieve a common base of knowledge</b> and shared understanding of the task</li><li>● <b>Reach agreement</b> to work cooperatively toward a common goal</li></ul>
February 9, 2022	<ul style="list-style-type: none"><li>● <b>Understand stakeholder opportunities</b> and barriers around EV transition</li></ul>
February 23, 2022	<ul style="list-style-type: none"><li>● Work in partnership to <b>shape policy</b> and program design</li></ul>

*We will hold additional meetings as the co-creation process continues at the frequency needed. For continuity, feel free to invite another member of your team if you cannot join a future meeting.*

# Icebreaker Time



- Name
- Organization
- Why you wanted to participate today

# Zoom poll: How familiar with EVs are you?

- **Very familiar - I'm an EV enthusiast**
- **Somewhat familiar - I know people who have them**
- **Somewhat unfamiliar - I've seen them around**
- **Very unfamiliar - What does EV stand for?**
- **Other (*share in the chat!*)**



# Agenda

- *Welcome and Introduction*
- **National and Local Trends**
- What is EV Ready Parking
- Equitable Community, Stakeholder, and Resident Engagement
- Looking Ahead: Enabling Equitable Access to EV Charging
- Where We Go From Here and How We Get There Together



**SUSTAINABLE  
COLUMBUS**  
ANDREW J. GINTHER, MAYOR

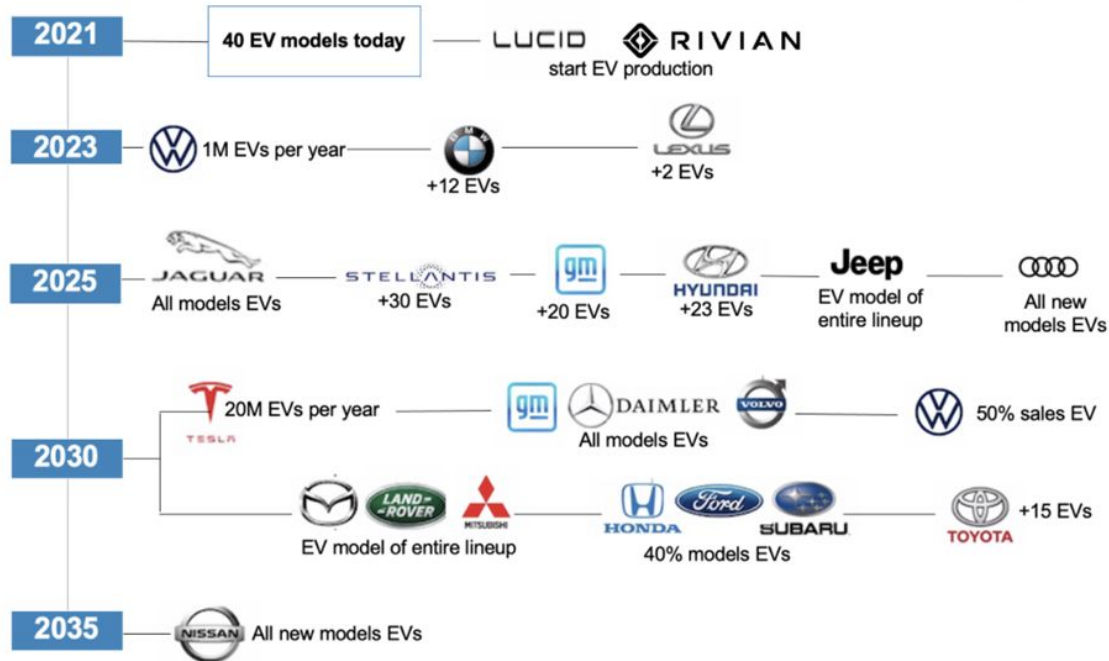
# National and Local Trends

What has been working well and what could be improved as we move forward?

# National Tailwinds Fueling Local Momentum

# National momentum is sparked as the federal government and car companies prepare for electrification

BY: APRIL BOLDDUC, PRESIDENT, ELECTRIC AUTO ASSOCIATION



# While companies invest, over 50 municipalities have passed or are pursuing EV Ready Parking Ordinances



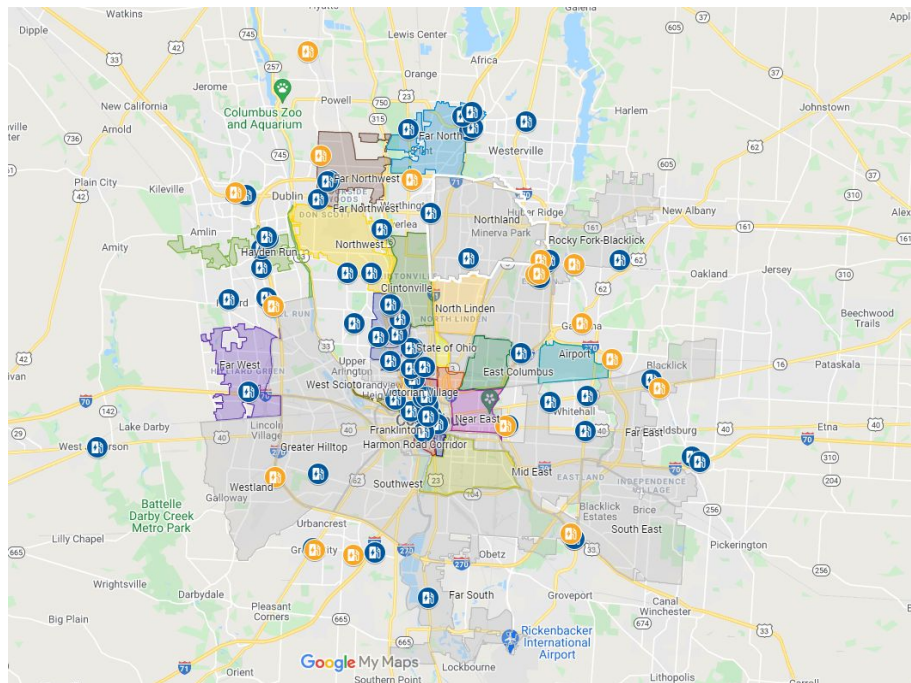
# National momentum spurs local commitments

	<i>Last 5 years</i>	<i>Last 2 years</i>	<i>Next 2 years</i>	<b>2030</b>	<b>2050</b>
<b>City of Columbus</b>	City's fleet emissions reduced by 23%	Added 200 electric vehicles to the City's fleet	An electric garbage truck will be added to the City's fleet  Partnering with vendors to add fast chargers in public right-of-way	100% of municipal passenger vehicles will be electric  2% of municipal heavy-duty vehicles will be electric	100% of municipal heavy-duty vehicles will be electric
<b>External Partners</b>	Smart Columbus Partners deploy over 900 chargers	COTA launched first electric bus  OSU installs on campus charging stations	COTA will purchase 10 electric busses  Launch of Smart Columbus Accelerated Partner Program 2.0	What commitments can your organization make to support the transition to electric vehicles?	Carbon neutral community

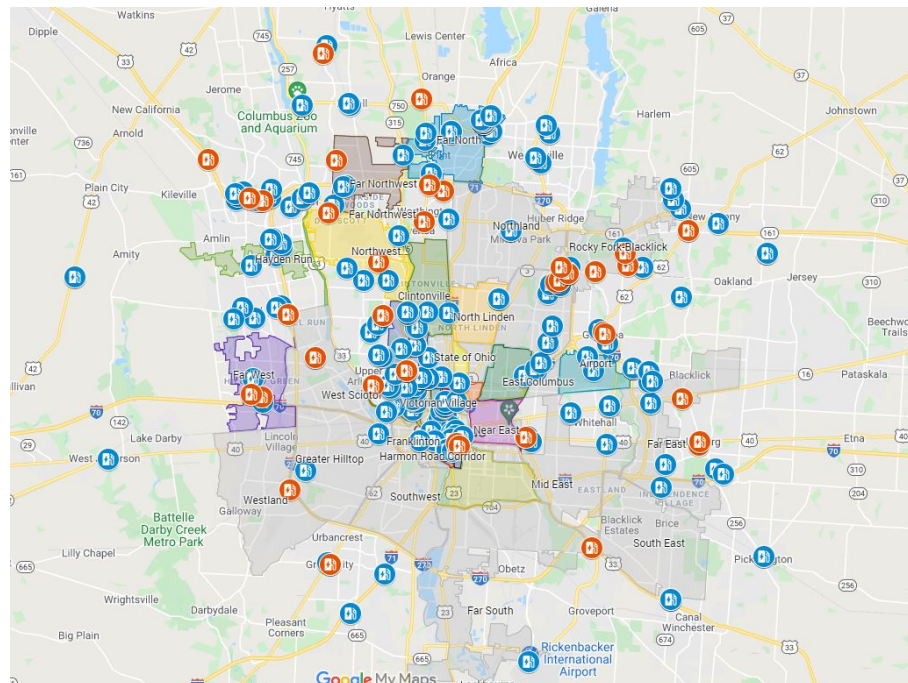
# Local Success to Date

# 3 Year Increase: Charger Deployment Success

## Pre-Smart Columbus (2018)

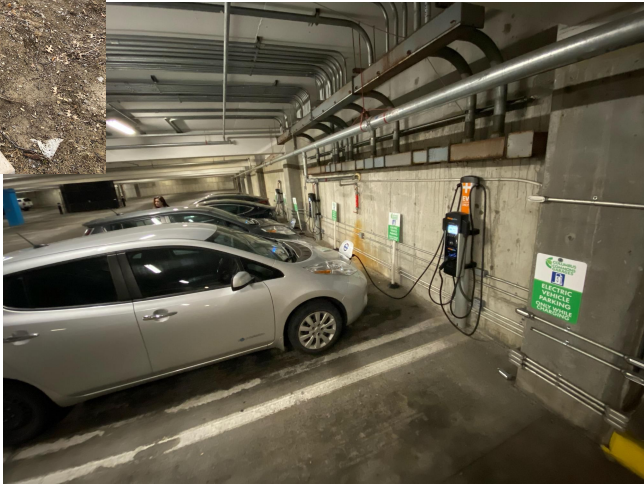


## Post-Smart Columbus (2021)





# Local Charging Stations

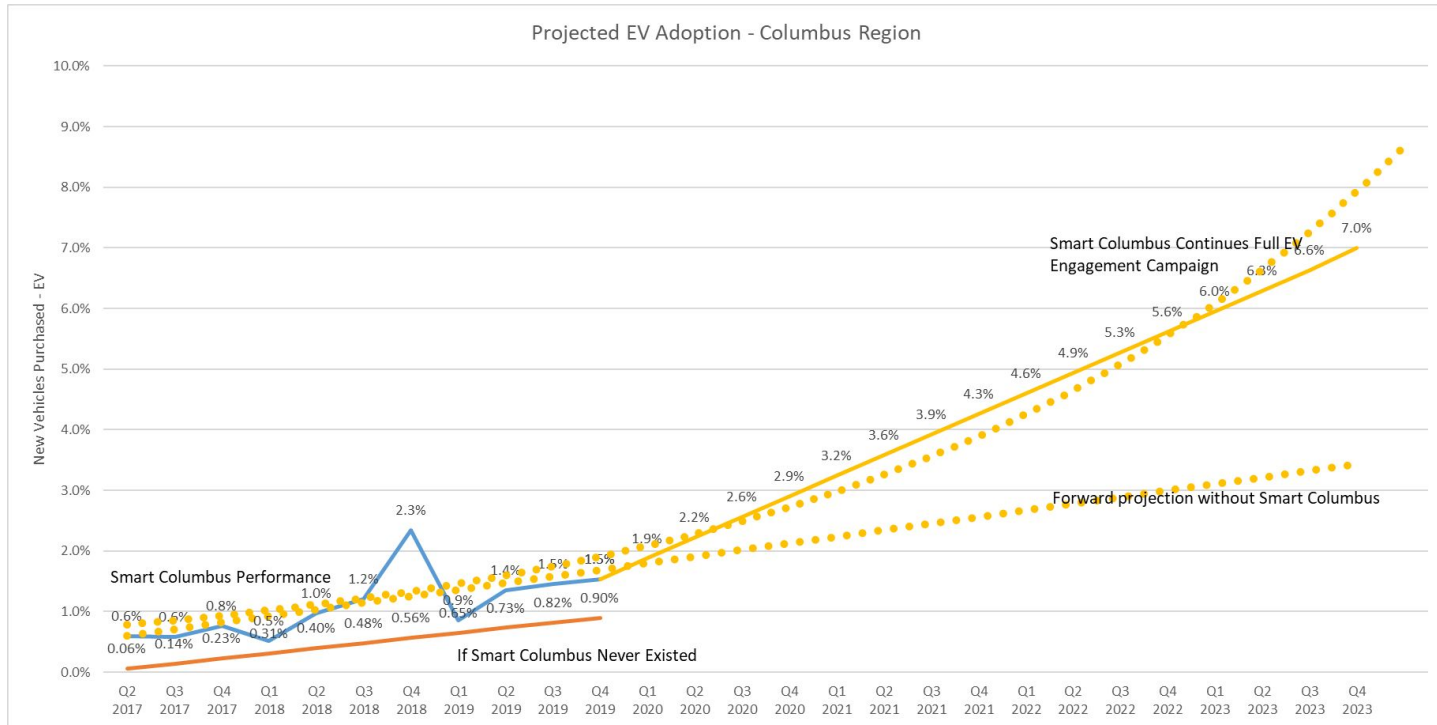


## Partner Organizations Leading By Example

- |                                                                                                                                                                                               |                                                                                                                                                                     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>● Abbott</li><li>● Alliance Data</li><li>● Huntington Bank</li><li>● OhioHealth</li><li>● Safelite Autoglass</li><li>● Worthington Industries</li></ul> | <ul style="list-style-type: none"><li>● Casto</li><li>● Champion</li><li>● Kaufman Development</li><li>● Nationwide Energy Partners</li><li>● SP+ Parking</li></ul> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|

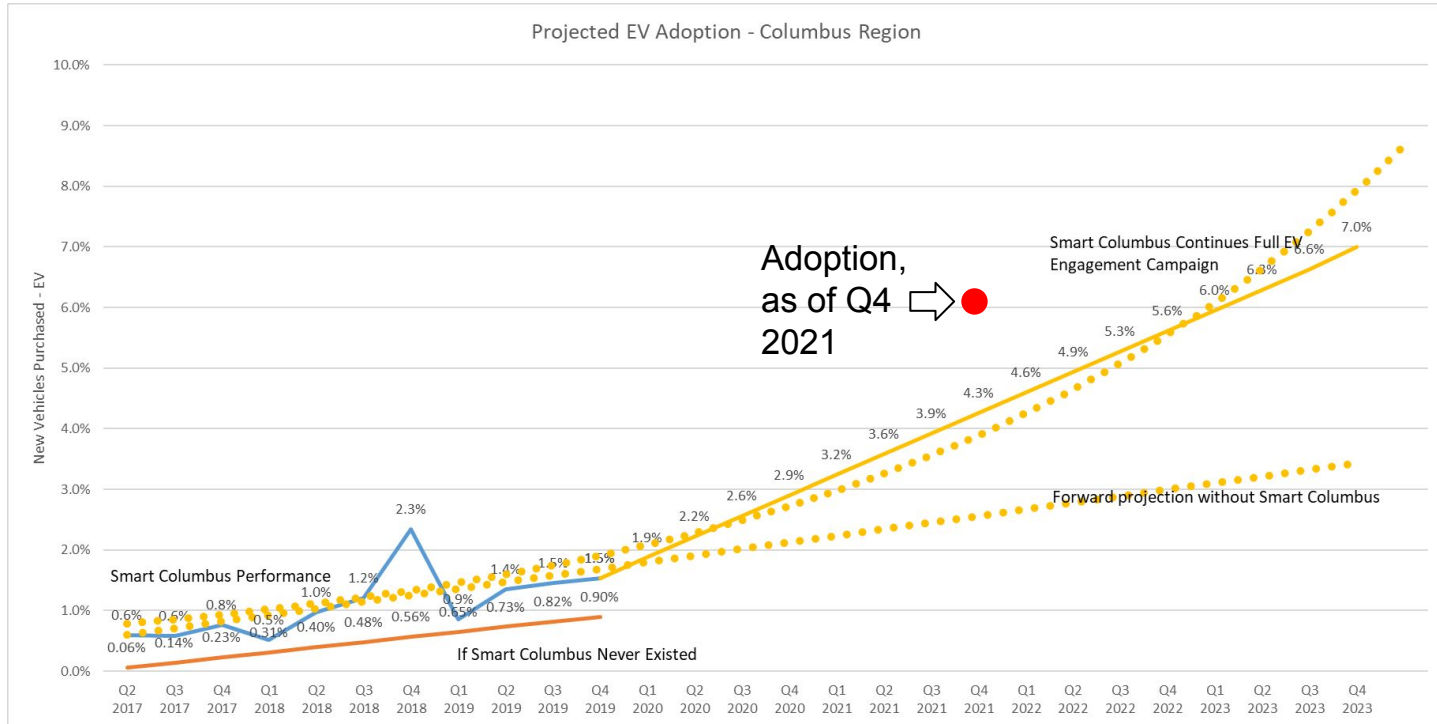
# Local Consumer Adoption Projections

- In early 2020, consumer adoption projections anticipated 7.0% adoption rate by 2023...




# Local Consumer Adoption Projections

- ... yet have already hit/exceeded 6% new vehicle purchases, **2 years** ahead of schedule!



# EV Charging Needs to Meet Current & Future Demand

EV Adoption is growing fast! While we met needs for charging in 2019, EV adoption is quickly outpacing number of needed chargers.

<b>Time</b>	<b>% of EVs On-Road</b>	<b>Number of Needed L2 Charging Ports</b>	<b>Number of Needed DC Fast Charging Ports</b>
2021	~0.75%	391 (currently exceeding)	51 (currently exceeding)
	1.0%	1,706	218
	5.0%	7,508	548
2030 Climate Action Plan Goal	15.0%	20,522	1,462

\*EVI Pro Lite. Used 50% at-home charging access. <https://afdc.energy.gov/evi-pro-lite>

# Temperature Check

**How familiar is the group with these efforts?**

# Agenda

- *Welcome and Introduction*
- *National and Local Trends*
- **What is EV Ready Parking**
- Equitable Community, Stakeholder, and Resident Engagement
- Looking Ahead: Enabling Equitable Access to EV Charging
- Where We Go From Here and How We Get There Together



**SUSTAINABLE  
COLUMBUS**  
ANDREW J. GINTHER, MAYOR

# What is EV Ready Parking?

What are we hoping to achieve?

# EV Ready Parking 101: The “What” and the “Why”



# What is EV Ready Parking?

Building to **EV Ready parking standards** enables newly constructed and significantly renovated parking spaces to include, or be easily and affordably converted to, EV charging stations in the future

## Levels of EV Readiness:

### EV Capable



Install electrical panel capacity and run conduit to parking spaces

### EV Ready



Run wiring through conduit ending with an outlet or terminal box

### EVSE Installed



Install a minimum number of Level 2 EV charging stations

*Level of impact and cost*

# Electric vehicle charging infrastructure provides widespread, equitable benefits

## Who Benefits?

- **Multifamily tenants**, who gain access to convenient and affordable charging at home
- **Residents**, who feel reduced range anxiety by having access to charging at work and retail hubs
- **Community**, who breathe cleaner air in our neighborhoods from reduced pollution released from gas-powered vehicles
- **Developers**, who realize a 75% financial savings<sup>1</sup> in charging infrastructure installation during construction compared to retrofitting
- **Building owners**, who demonstrate their commitment to more affordable and environmentally-friendly transportation for residents



1. [Plug-In Electric Vehicle Infrastructure Cost-Effectiveness Report](#)

# EV Ready Parking + Columbus' Climate Action Plan

# Electric vehicle adoption is critical to achieve Columbus' climate and equity goals



Transportation, mostly from vehicles, accounts for **38% of our community-wide GHG emissions**

## Alignment with Climate Action Plan Electric Vehicle Adoption Goals



Reliable home and workplace charging infrastructure significantly increases the likelihood of widespread EV adoption


## EV Charging Infrastructure Provides **Equitable Access** to Charging

Standardized requirements for EV charging infrastructure will **increase access to lower cost transportation** for those with disproportionately less access: residents in multifamily housing, low-income neighborhoods, and BIPOC communities

# EVs and the Columbus Climate Action Plan

- Expansion of EV charging infrastructure is a key component of action **10.1** - **Increase private zero emissions vehicle adoption:**

TARGETS
Equitable EV charging plan developed by 2025
EV Ready Ordinance implemented by 2025
15% ZEV registrations by 2030
100% ZEV registrations by 2050

ACTION		GHG IMPACT	COST		EXPECTED BENEFITS				LEAD
			City	Non-City	Climate Justice	Environmental Quality	Human Health	Economic Prosperity	
 <b>TRANSPORTATION</b>									
<b>10   Enable Carbon Free Vehicles</b>									
10.1	Increase private ZEV adoption	●●●	\$	\$\$					SMRT
10.2	Implement ZEV fleets	●●●	\$\$	\$\$					SMRT
10.3	Promote medium/heavy duty ZEV adoption	●●●	\$\$	\$\$\$					SMRT
<b>11   Support Equitable Mode Shift</b>									
11.1	Implement comprehensive multi-modal network	—	\$\$\$	\$					SUST
11.2	Reduce single occupant vehicle miles traveled	●●●	\$	\$					SERV
11.3	Increase transit use	●●●	\$\$	\$					COTA
11.4	Support active transportation infrastructure	—	\$	\$\$					SERV

# Agenda

- *Welcome and Introduction*
- *National and Local Trends*
- *What is EV Ready Parking*
- **Equitable Community, Stakeholder, and Resident Engagement**
- Looking Ahead: Enabling Equitable Access to EV Charging
- Where We Go From Here and How We Get There Together



**SUSTAINABLE  
COLUMBUS**  
ANDREW J. GINTHER, MAYOR

# Equitable Community, Stakeholder, and Resident Engagement

How do we equitably and inclusively meet our goals?

# Why Now? What Brings Us Together



# Sustainable Columbus Values

- Transparency and authenticity
- Acknowledge and repair past harm
- Moving at the speed of trust and building long-standing relationships
- Power sharing
- Mindset of abundance and capacity building
- Value, respect, and compensate for community expertise

# A New Model for Engagement: Community Co-Creation

- **Community co-creation** is a process of iterative collaboration between City staff and leaders rooted in and accountable to historically marginalized communities. The purpose of community co-creation is to design city policies and programs to advance equity.

## Process Requires

- Shared decision-making
- Capacity for community members to contribute their expertise
- Effort and new ways of doing things (shift from traditional/historical City-stakeholder engagement)
- Building trust, in part through transparency, accountability and commitment



## Process Should Result In

- Policies that meet communities needs
- Effective or improved working relationships
- Increase capacity for community to contribute to equitable policies and programs in the future
- Increased capacity for government to engage effectively with frontline communities

# The Spectrum of Community Engagement

## THE SPECTRUM OF COMMUNITY ENGAGEMENT TO OWNERSHIP



2



35

# Equitable EV Ready Co-Creation Process

**Objective:** Develop an Equitable EV Ready Parking Ordinance and supportive programming that advances equitable outcomes and increases the number of EV charging stations citywide.

**Process:** Collaborate with a diverse set of stakeholders to split time between large group discussion and topic-specific breakout groups to co-create policy.

Technical  
Requirements

Affordable  
Housing  
Impacts

Community  
Impacts  
*(resident  
focused)*

Funding and  
Financing  
Options

# Equity and Climate Justice

- **Equity means** increasing quality of life, improving the lived environment, providing additional resources, and eliminating barriers to opportunities for BIPOC, low-income, and other marginalized communities.
- We **achieve equitable outcomes** through procedural, distributive, and interactional environmental justice that removes disparities and biases that systematically harm BIPOC, low-income, and other marginalized communities.

# Temperature Check

**What does EV equity mean to you and your organization?**

# A Quick Look Back

# Retrospective: Residents and Community

2018

- Smart Columbus program launch, **70 public EV chargers** available
- Focus on increasing EV adoption

2019

- **900 EV chargers locally**, largest per capita increase in U.S.
- 12,000 'Ride and Drive' events administered over two years

2020

- Local study with fifty **low-to-moderate income residents** to understand transportation patterns and interest in EVs

2021

- Focus groups with **residents in BIPOC neighborhoods** to understand resident needs for the transition to EVs



# Retrospective: Partners and Planning

## Research and Analysis

- Analyzed anticipated costs to developers
- Researched current charger distribution
- Looked at policies in other cities

## Local Ground-truthing

- Met with local developers to discuss EV charging priorities
- Identified interest in standardized approach to charging

## Partner Identification

- Partnered with CommEN Strategies and IMPACT Community Action for equitable engagement

## Equitable Engagement

- Launched equitable engagement with residents, CBOs, affordable housing, non-traditional partners, and developers

January through December 2021

# Low-to-Moderate Income Resident Conversations

- Partnering with Illuminology in 2020, we **met with 50 residents** with low-to-moderate income status.
- Objectives:
  - Understand transportation patterns, knowledge of car-sharing, and **interest in electric vehicles**
- Key Findings:
  - Residents say local transportation options can be time-consuming, costly, or unreliable
  - Residents main concern with purchasing an EV is the up-front cost
  - Those interested in owning EVs are concerned about how and where to charge their car

# BIPOC Resident Focus Groups

- Partnering with CommEN Strategies in 2021, we held **focus groups with residents** in Columbus' BIPOC neighborhoods
- Objectives:
  - Understand residents overall transportation needs and needs for the transition to electric vehicles
- Key Findings:
  - Residents say transportation needs to be affordable, reliable, and convenient
  - Benefits of EVs are not well-known; common misconceptions
  - Recommendations for Columbus: conduct education and engagement campaigns and provide financial incentives

# Smart Columbus Community Work

- Through Smart Columbus, our community deployed **hundreds of EV chargers**, expanded multi-modal options, and drove new EV consumer adoption.
- Highlights Include:
  - Linden LEAP autonomous pilot delivered 130,000 meals after pivoting to COVID-19 relief and support efforts
  - Pivot wayfinder app created new ways for residents to navigate multi-modal transportation options
  - Electrified Dealer Program expanded to 37 participant dealers

# Temperature Check

**How has this engagement gone from the group's perspective? Have you engaged through these venues?**

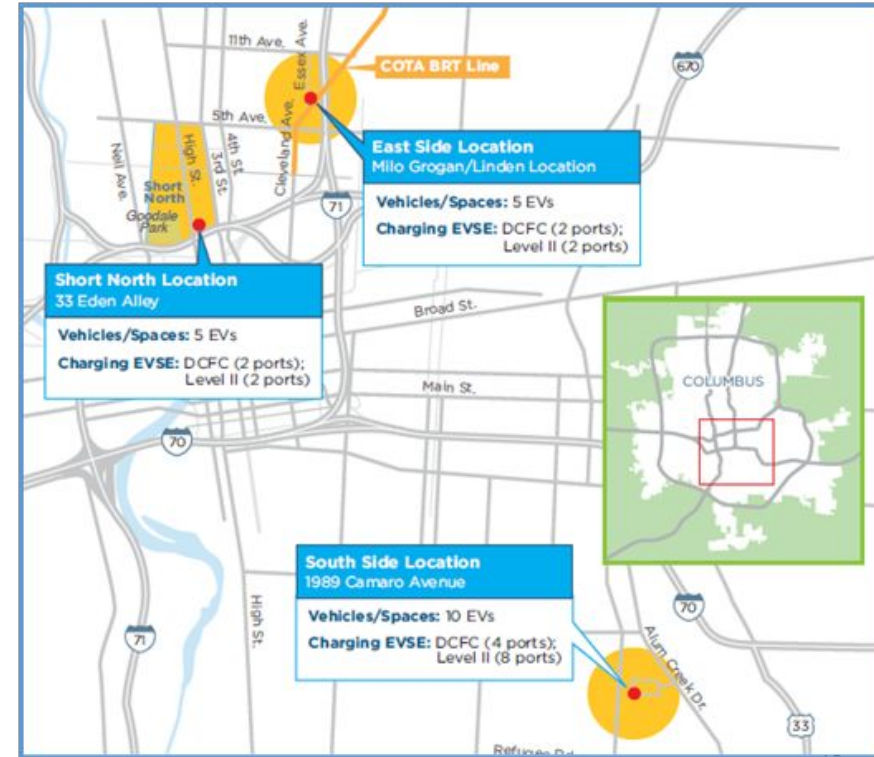
# Looking Ahead

# Community Advocates

- Partnering with **IMPACT Community Action**, we will hire three Community Advocates who will:
  - Be residents of Columbus' BIPOC neighborhoods
  - Serve as community subject-matter experts
  - Ensure community priorities are reflected in current Sustainable Columbus programming
  - Develop a structure to ensure BIPOC voices are included in future program and policy development for Sustainable Columbus

# Mobility Hubs Equitable Engagement

- Partnering with **Clean Fuels Ohio, Columbus Yellow Cab, and IMPACT Community Action Plan**, we will:
  - Support taxi and ride-share drivers and gig-economy workers
  - Increase access to electric car-sharing services
  - Establish community engagement plan with local partners
  - Establish neighborhood-based ambassadors
  - Engage and educate residents



Source: Clean Fuels Ohio



# Agenda

- *Welcome and Introduction*
- *National and Local Trends*
- *What is EV Ready Parking*
- *Equitable Community, Stakeholder, and Resident Engagement*
- **Looking Ahead: Enabling Equitable Access to EV Charging**
- *Where We Go From Here and How We Get There Together*



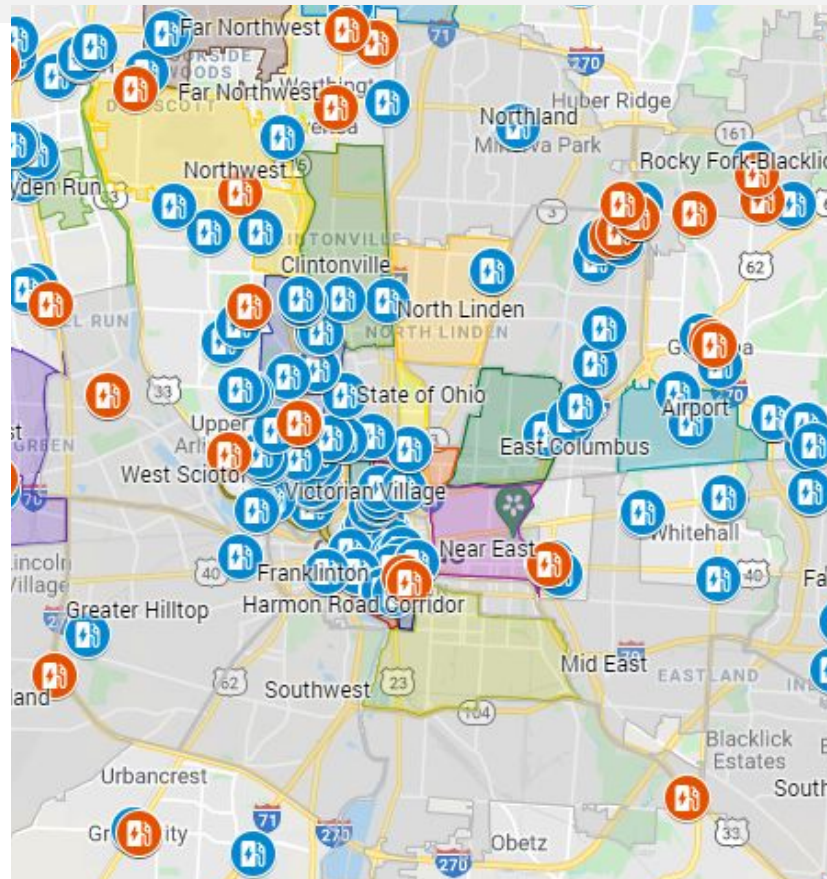
**SUSTAINABLE  
COLUMBUS**  
ANDREW J. GINTHER, MAYOR

# Looking Ahead: Establishing the Need for Standardized, Equitable EV Charging Infrastructure

How can we build on and equitably accelerate the adoption of electric vehicles?

# Climate Justice and Equitable Access

# Current EV Charger Locations

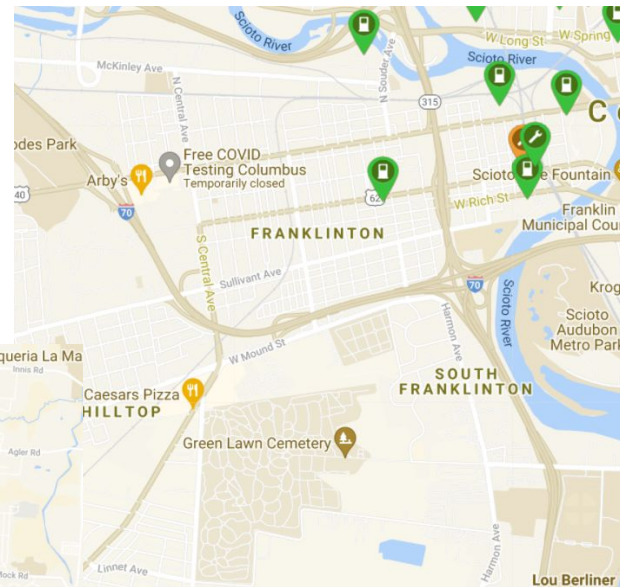


# Our Opportunity Neighborhood are those with the least access to EV chargers

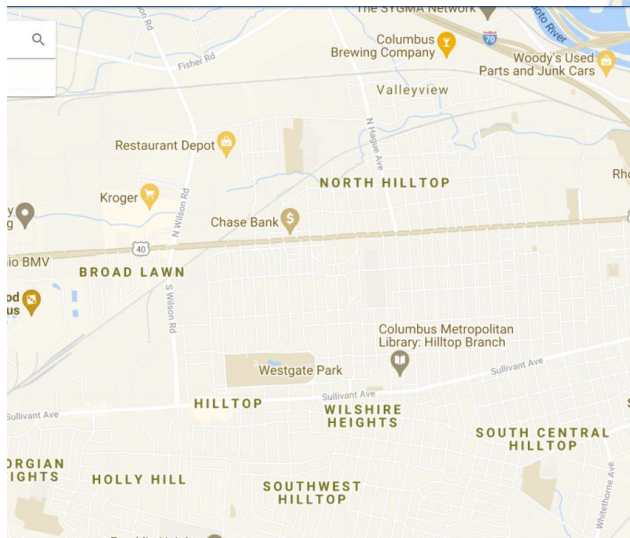
## Southside



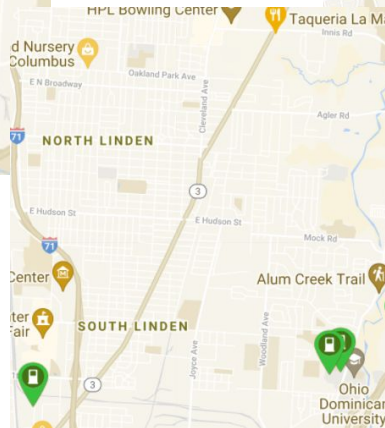
## Franklinton



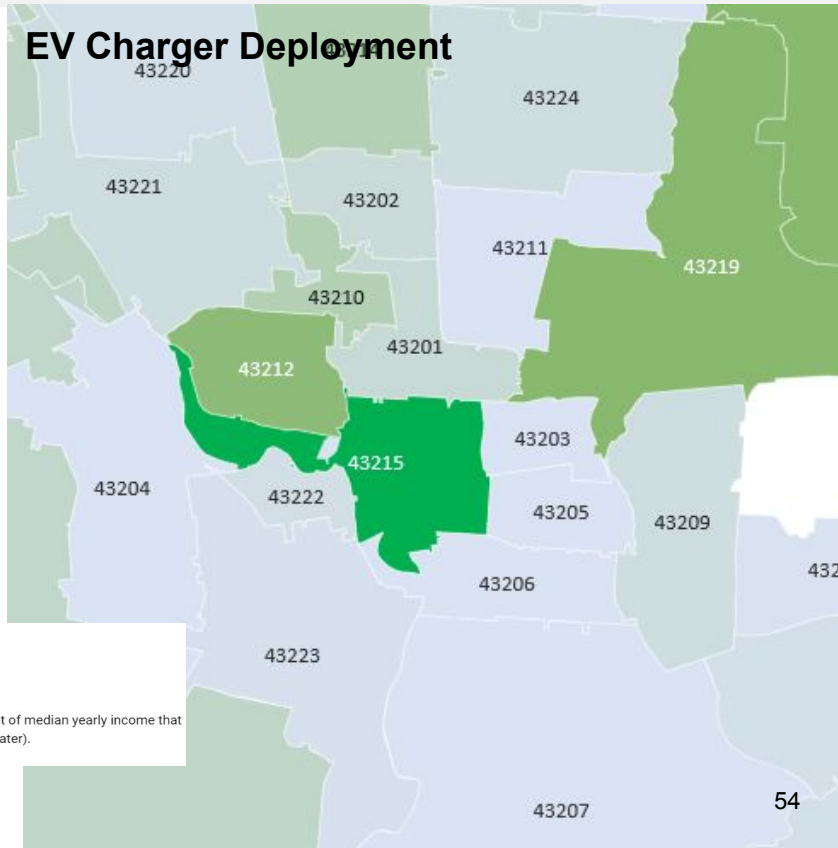
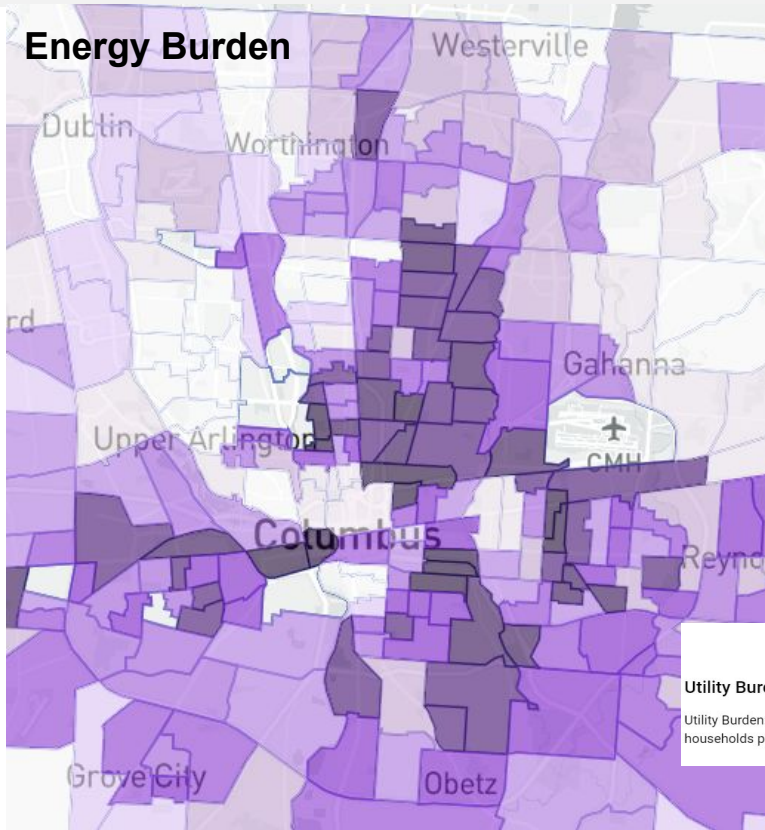
## Hilltop



## Linden



# Columbus + Energy Burden



### Legend

Utility Burden: Neighborhood Average

Utility Burden: Neighborhood Average shows the percent of median yearly income that households pay for utility bills (electricity, gas, and/or water).

L

M

H

# Columbus + Air Quality

## Electric Vehicle Charging Dashboard

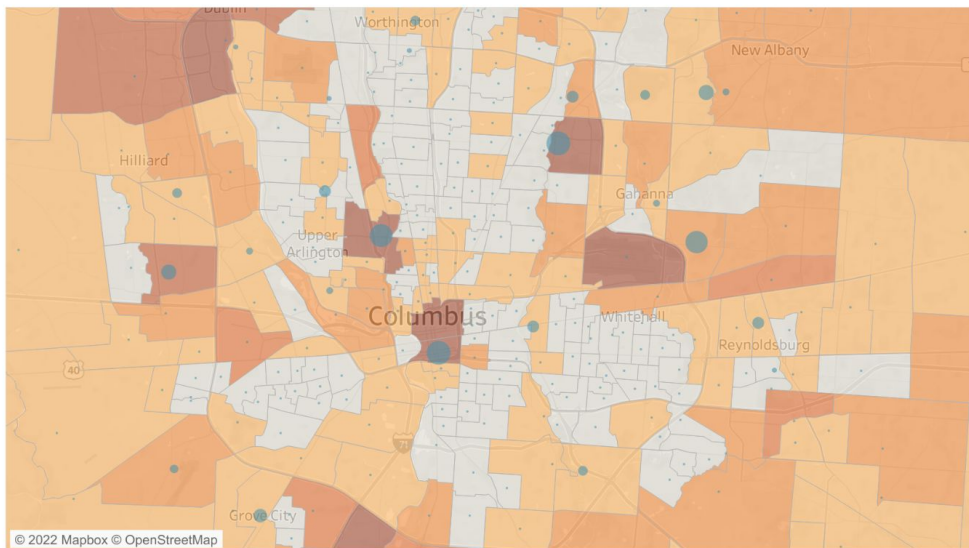
This dashboard shows gaps in the existing electric vehicle charging network. Select a scenario below to learn more.

Optimize for:  
Level 2 - Equity

Select state(s):  
Ohio

For equity scenarios, prioritize:  
Exposure to air pollution (PM2.5)

First, select a charging optimization goal. Then, select one or more states to see where charging stations should be prioritized to fulfill that goal. Red means the gap is significant. Blue areas may already have en.



© 2022 Mapbox © OpenStreetMap

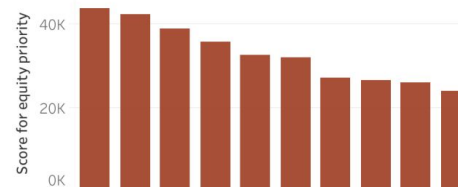


Gaps in existing EV charging networks

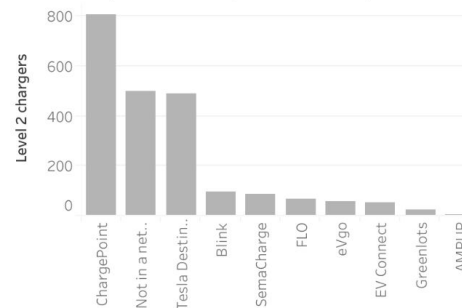


Show chargers:  
Yes - Exclude Tesla

Top 10 Tracts..



Existing Chargers by Network  
(for Selected Charge Level & US States)



Source: <https://www.streetlightdata.com/refine-ev-charging-infrastructure-plan/>

# Columbus + Area Median Income

## Electric Vehicle Charging Dashboard

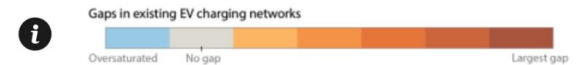
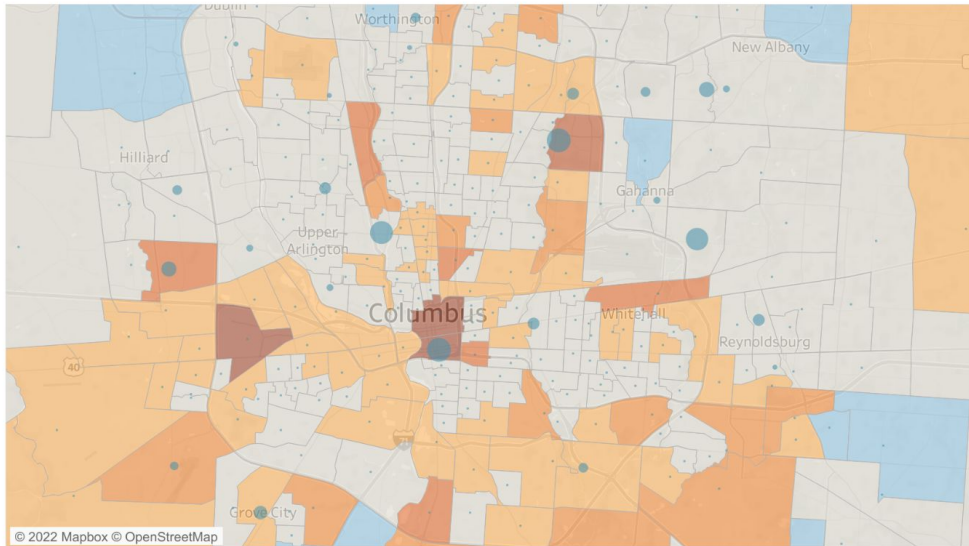
This dashboard shows gaps in the existing electric vehicle charging network. Select a scenario below to learn more.

Optimize for:  
Level 2 - Equity

Select state(s):  
Ohio

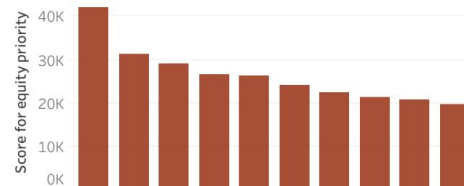
For equity scenarios, prioritize:  
Low income (relative to federal p..

First, select a charging optimization goal. Then, select one or more states to see where charging stations should be prioritized to fulfill that goal. Red means the gap is significant. Blue areas may already have en..

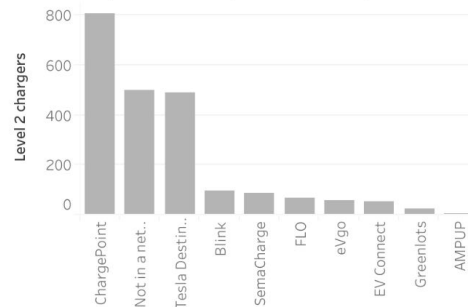


Show chargers:  
Yes - Exclude Tesla

Top 10 Tracts..



Existing Chargers by Network  
(for Selected Charge Level & US States)



Source: <https://www.streetlightdata.com/refine-ev-charging-infrastructure-plan/>



# Agenda

- *Welcome and Introduction*
- *National and Local Trends*
- *What is EV Ready Parking*
- *Equitable Community, Stakeholder, and Resident Engagement*
- *Looking Ahead: Enabling Equitable Access to EV Charging*
- **Where We Go From Here and How We Get There Together**



**SUSTAINABLE  
COLUMBUS**  
ANDREW J. GINTHER, MAYOR

# Where We Go From Here and How We Get There Together

How do we collectively and collaboratively move forward?

# The Opportunity Ahead

# Why Implement an EV Ready Parking Ordinance

- Limited access to EV charging is a significant barrier to EV adoption
- Increased access to charging accelerates climate and equity goals
- Garages can last over 50 years and parking lots over 20 years – investing at the time of construction is cost-effective and makes buildings future-ready
- To provide certainty, consistency, and standardization across the market



# Agenda for February 9 meeting

## Proposed Agenda:

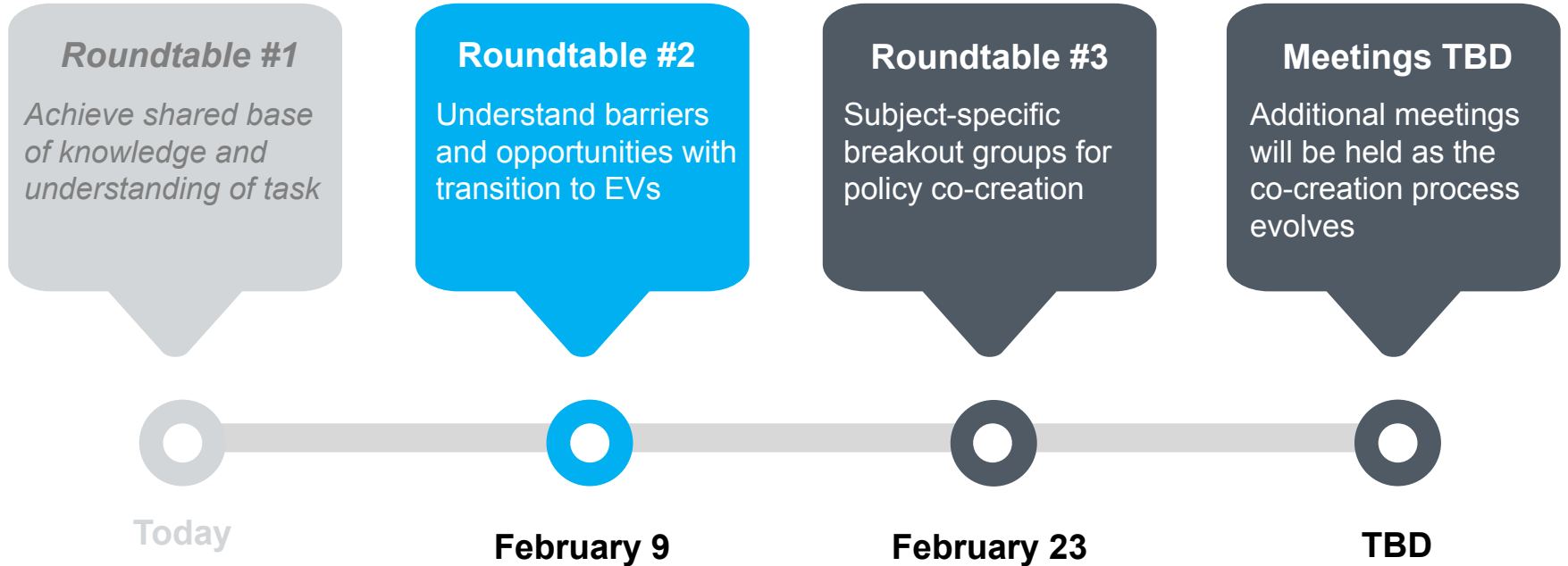
1. Welcome, icebreaker, white board activity (*5 mins*)
2. Breakout groups: Understand stakeholder opportunities and barriers around EV transition (*50 mins*)
3. Large group recap, Q&A, and looking ahead (*35 mins*)



**What do you hope to accomplish in the next meeting?**

# Questions / Open Dialogue

# Upcoming Meetings



# Additional Resources

- **Equitable EV Ready Parking [Website](#):**
  - Process overview
  - One-pager to download
  - Frequently Asked Questions document
- Examples of how other cities have approached EV Ready:

<https://www.swenergy.org/transportation/electric-vehicles/building-codes#who>





# THANK YOU!

## **Our contact information**

- Bryan Clark (BMClark@columbus.gov)
- Jenna Tipaldi (JETipaldi@columbus.gov)
- Jordan Davis (JLD@smartcolumbus.com)
- Matt Stephens-Rich (mstephensrich@electrificationcoalition.org)