

ACCELERATE YOUR CITY

DRIVING CONSUMER EV  
ADOPTION THROUGH  
PUBLIC/PRIVATE  
PARTNERSHIPS





SM  
RT  
COLUMBUS

# AccelerateYourCity.com

Best Practices and Lessons Learned on:

- EV Adoption & Charging
- Community Engagement 'The Columbus Way'
- Mobility Shift & More

From the \$10 million  
Smart Columbus Electrification Program



PAUL G. ALLEN  
FAMILY FOUNDATION





# **PANEL**

**Matt Stephens-Rich, Program Manager, Electrification Coalition**  
**Jordan Davis, Director, Smart Columbus, Columbus Partnership**  
**Allegra Wiesler, Sustainability Manager, OhioHealth**

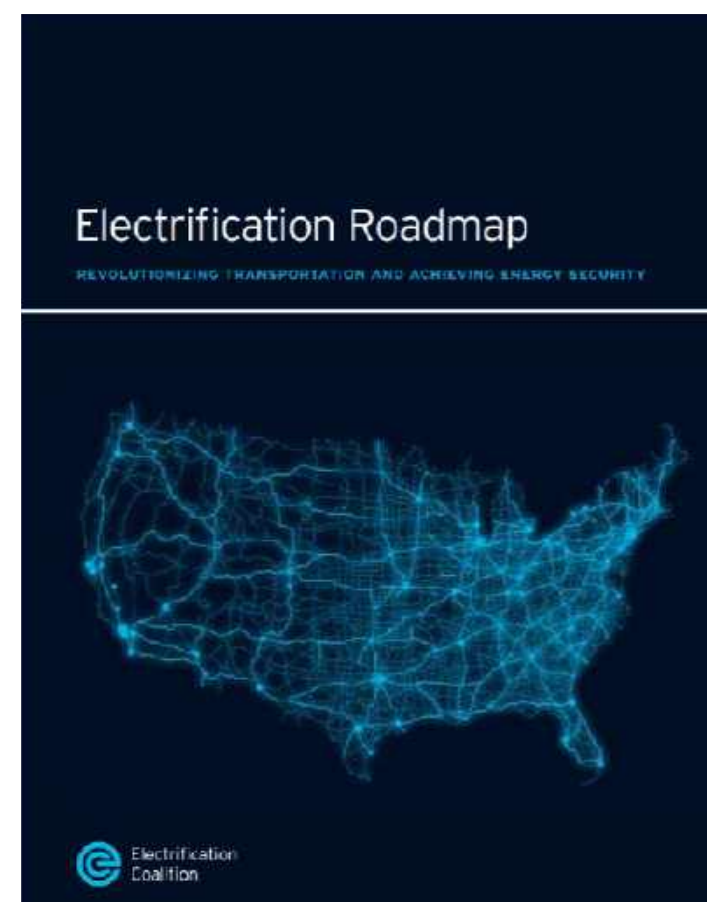


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## ELECTRIFICATION COALITION

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*The Electrification Coalition (EC) works to accelerate the adoption of electric vehicles to reduce the national security, economic and environmental threats caused by our nation's oil dependency.*



## American Cities Climate Challenge



## Freight Electrification Pilot

## State EV Policy Accelerator



# Electrification Coalition

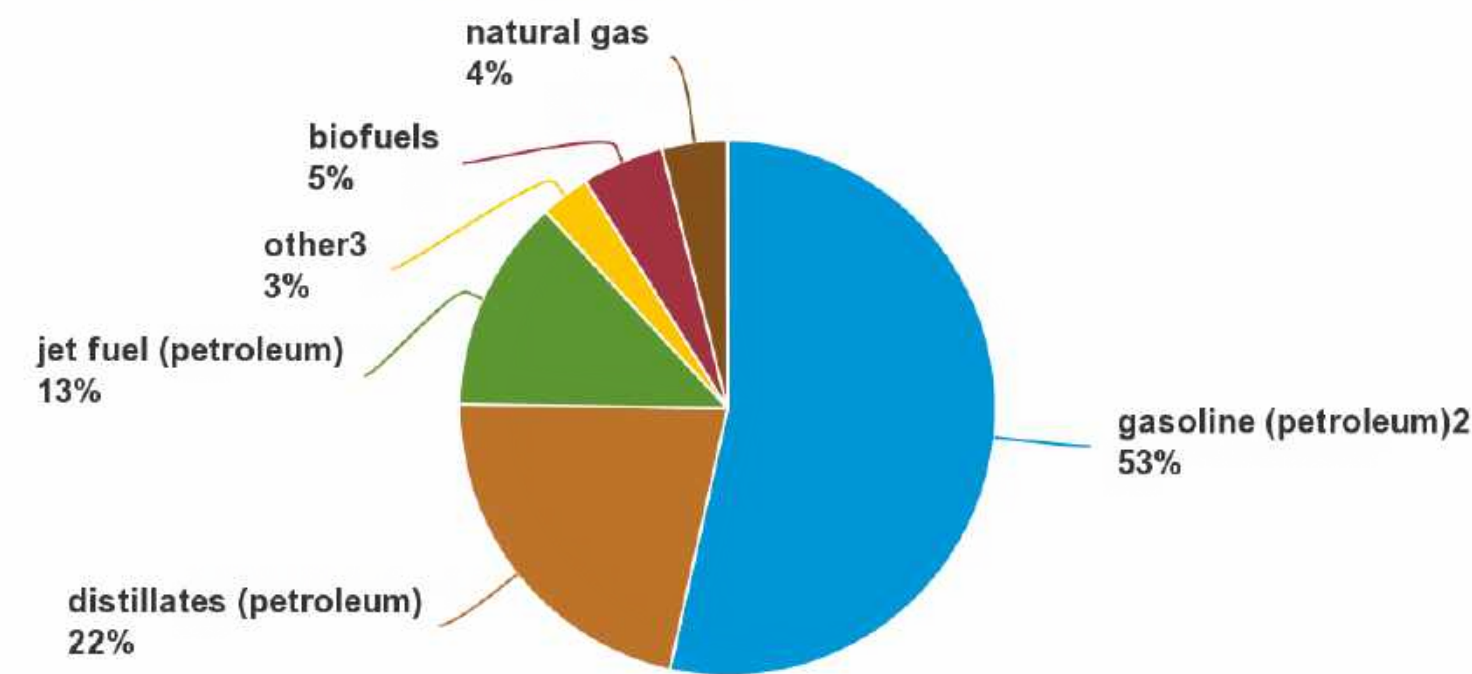
## Our Motivation: National & Energy Security

*92% of U.S. transportation powered by oil...*

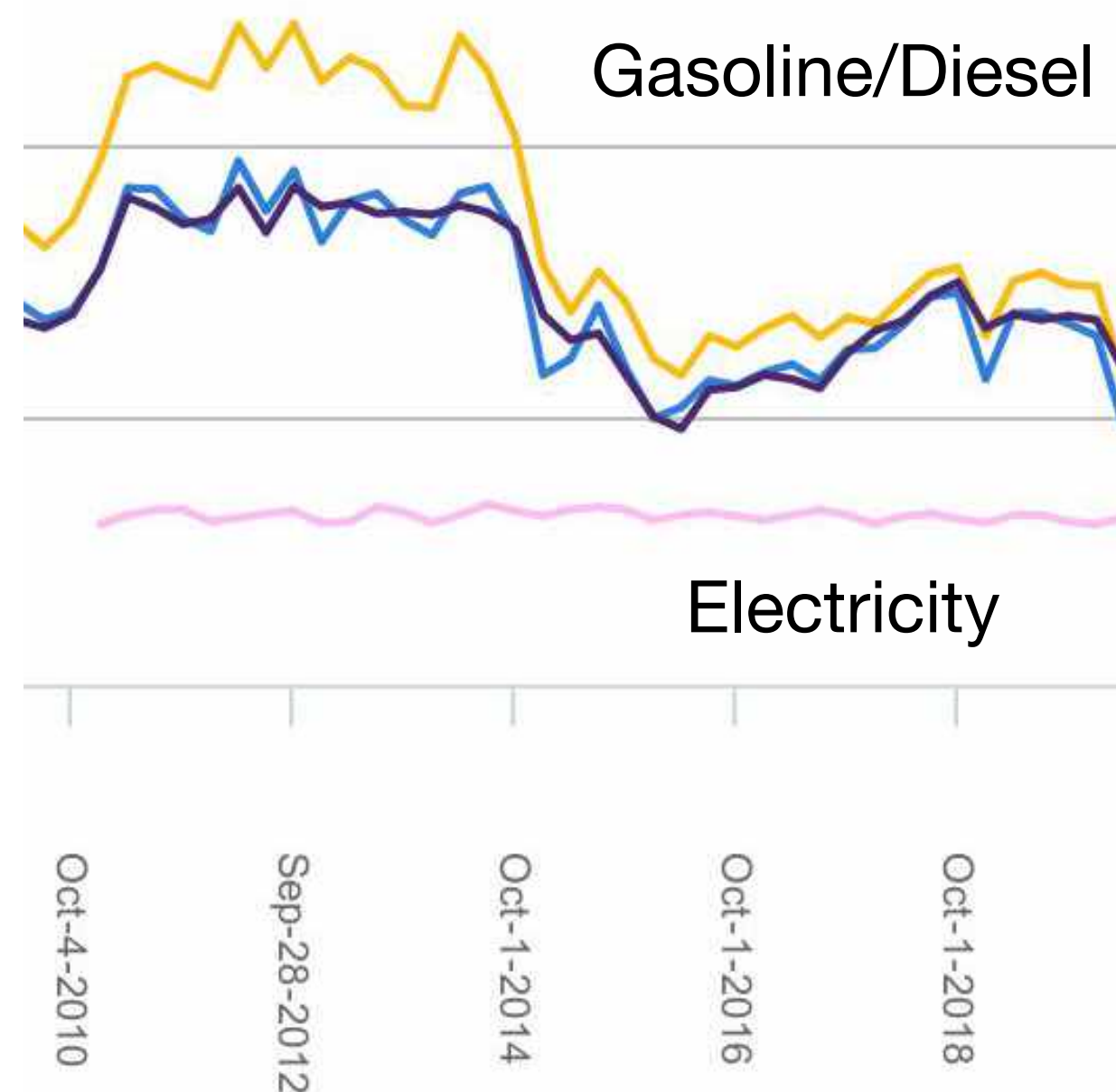
*...a resource with volatile prices that the US spends \$80 billion per year to protect...*

*...that is a leading emissions source*

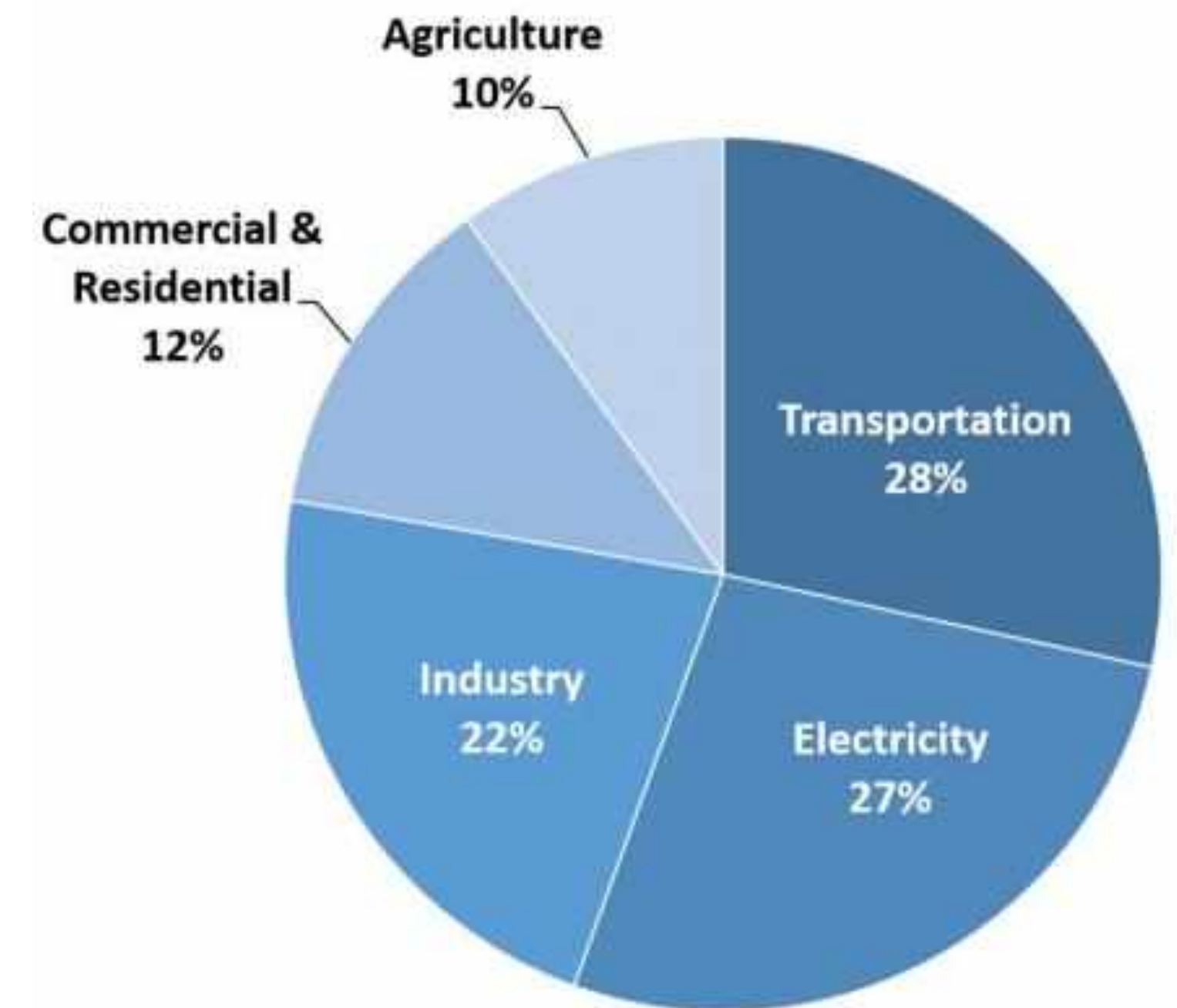
U.S. transportation energy sources/fuels, 2019 1



1. Based on energy content



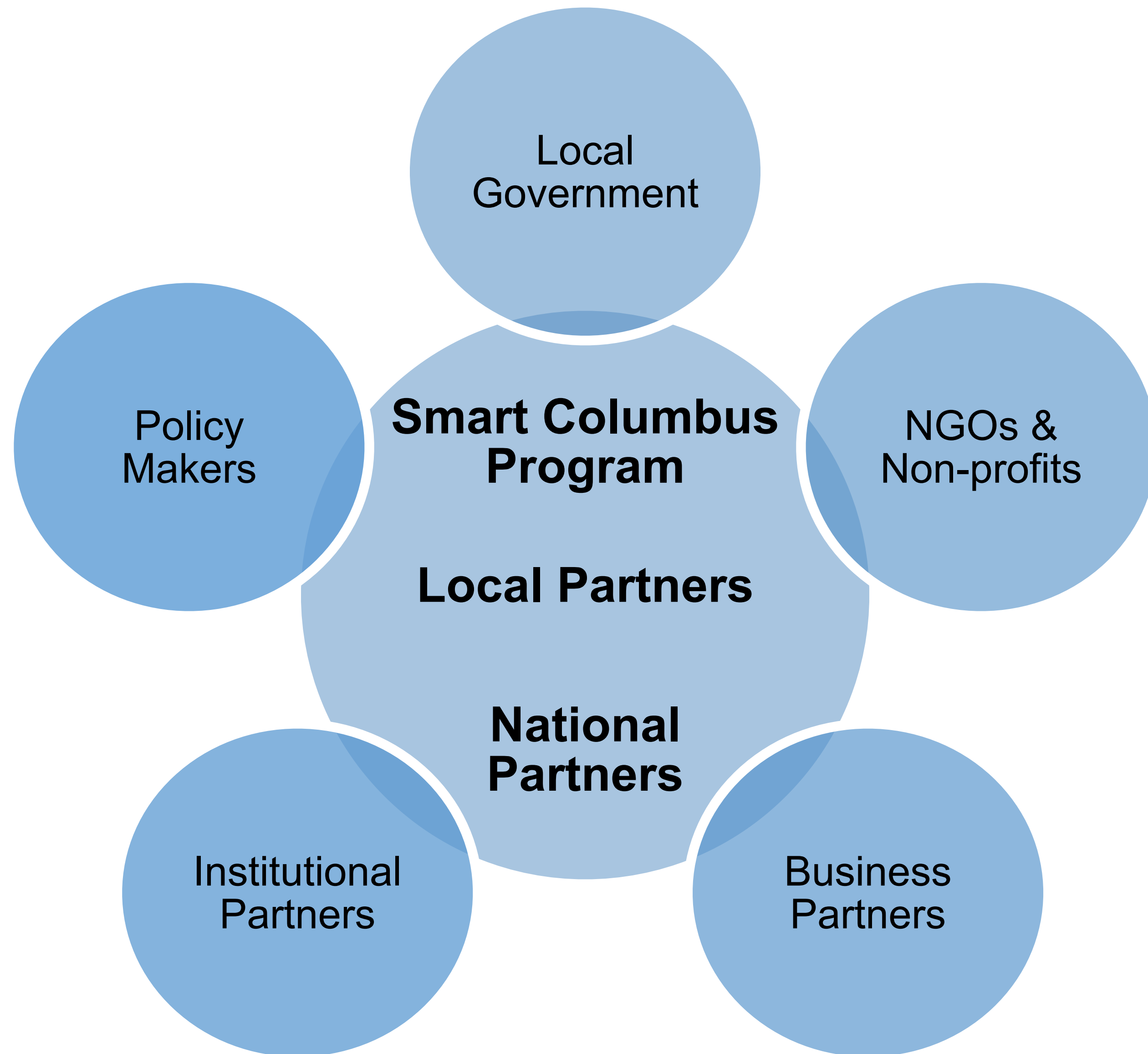
Total U.S. Greenhouse Gas Emissions by Economic Sector in 2018



Source: EIA



# Accelerator Community Model



A productive collaboration:

- Proves concept
- Drives to scale
- Creates a national model
- Supports regional/local vision
- Reinforces national leadership



# SMART COLUMBUS ELECTRIFICATION PROGRAM





# ELECTRIFICATION PROGRAM

1

## DECARBONIZATION & GRID MODERNIZATION

### GOAL

- 905 MW of utility scale renewable energy generation through solar and wind
- 1.2 TeraWh of renewable energy & save 480 GWh consumed through energy efficiency

2

## FLEET ELECTRIFICATION

### GOAL

- 755 Electric Fleet Vehicles in Operation by 2020

3

## TRANSIT, AUTONOMOUS, MULTIMODAL MOBILITY OPTIONS

### GOAL

- 6 Electric Autonomous Vehicles in Operation by 2020
- 50 Electric Bikes

4

## CONSUMER ADOPTION OF ELECTRIC VEHICLES

### GOAL

- 1.8% of all new vehicle sales in 2020 are electric
- 50 Executives are driving electric by 2020

5

## CHARGING INFRASTRUCTURE

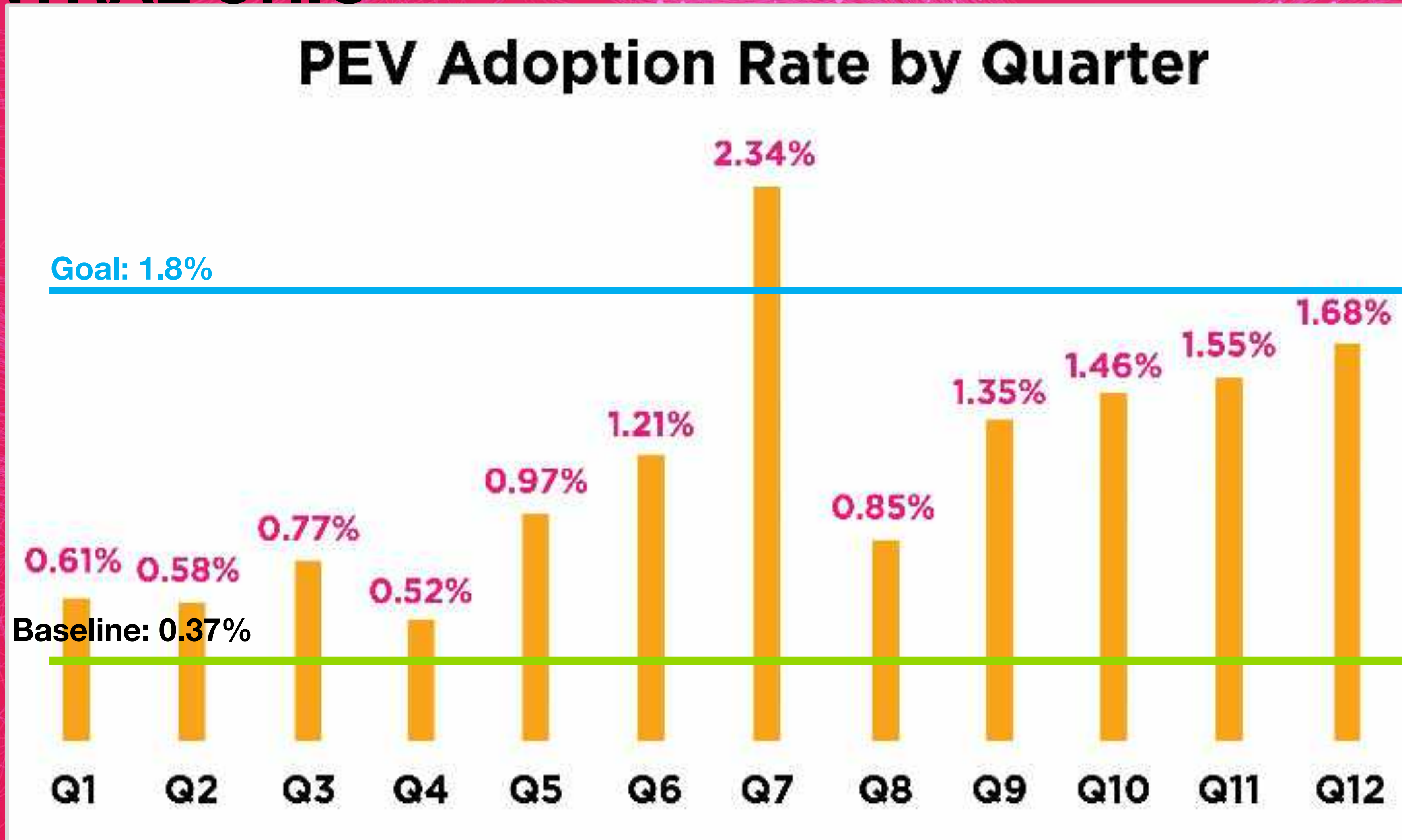
### GOAL

- 925 new electric vehicle chargers are installed by 2020



# OUR GOAL:

## SHIFT THE TRAJECTORY OF ELECTRIC VEHICLE ADOPTION IN CENTRAL OHIO





# PROGRESS THROUGH PARTNERSHIPS



**Installed  
552,000+ Smart  
Meters**



**Installed 900+ EV  
charging stations**



**Installed 419  
workplace  
chargers**



**Purchased 313  
electric fleet  
vehicles**



**Engaged 40% of  
regional car  
dealerships**



**Opened world-  
class EV  
showcase  
facility**



**Forged  
unprecedented  
partnerships to  
increase e-mobility  
options**



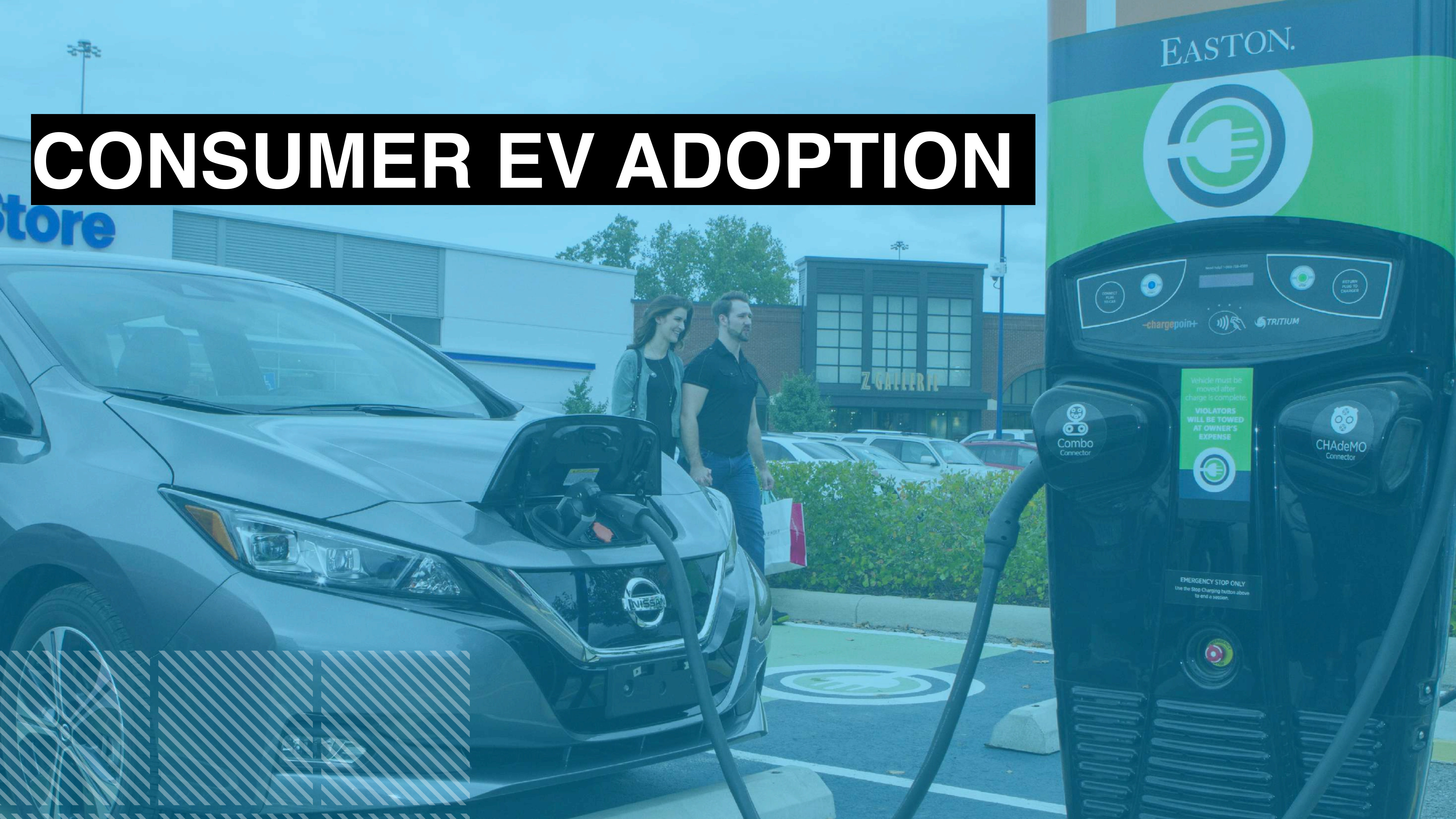
**Conducted  
12,400+ EV test  
drives**



**Influenced  
3,458 people  
to buy an  
EV in 3  
years**



# CONSUMER EV ADOPTION





# SMART COLUMBUS ELECTRIFICATION PROGRAM

1

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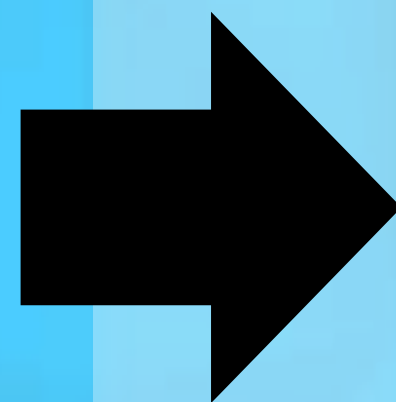
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# EARLY ADOPTER STRATEGY

EV EARLY ADOPTERS =  
HIGHER EDUCATION  
AND/OR MAKE \$100K+



**REACH EARLY ADOPTERS  
AT MED-LG EMPLOYERS**

STRONG EMPLOYER  
RELATIONSHIPS

HIGH CONCENTRATION OF  
FORTUNE 1000 COMPANIES



# ACCELERATION PARTNERS PROGRAM

## 70 LARGE EMPLOYERS

1

EMPOWERED  
LEADER

2

BUY  
ELECTRIC

3

INSTALL CHARGING  
INFRASTRUCTURE

4

SMART  
MOBILITY  
EDUCATION

5

INCENTIVIZE  
BEHAVIOR  
CHANGE



# CHARGE AN EMPOWERED LEADER

Designate a talented, energized senior leader to lead an internal cross-functional team that fulfills your Acceleration commitments.

## Our Goal

100 active companies by 2020

## Partner Ask

Assign a Senior Sponsor and a Mobility Ambassador





**60 MOBILITY AMBASSADORS**





# BUY ELECTRIC

Encourage your senior leaders to lead by example and adopt EVs for personal use. Invest in low total cost of ownership assets by adopting Electric Vehicles within your corporate fleet.



## Our Goal

- 50 executives drive electric by 2020
- 500 Electric Vehicles in operation in corporate fleets by 2020

## Partner Ask

- Report the name of at least one executive committed to driving electric
- Conduct a free Smart Columbus fleet assessment within three months to determine EV opportunities





50

EXECUTIVES  
DRIVING  
ELECTRIC



# PRIVATE FLEET ELECTRIFICATION

## Overview

- 350 Committed EVs
- 45 Fleet Analyses Completed
- 200+ businesses and organizations engaged





# INSTALL CHARGING INFRASTRUCTURE

Break down barriers to Electric Vehicle adoption by installing chargers at your employment locations for employees.



## Our Goal

- All corporate campuses have Electric Vehicle charging stations by 2020

## Partner Ask

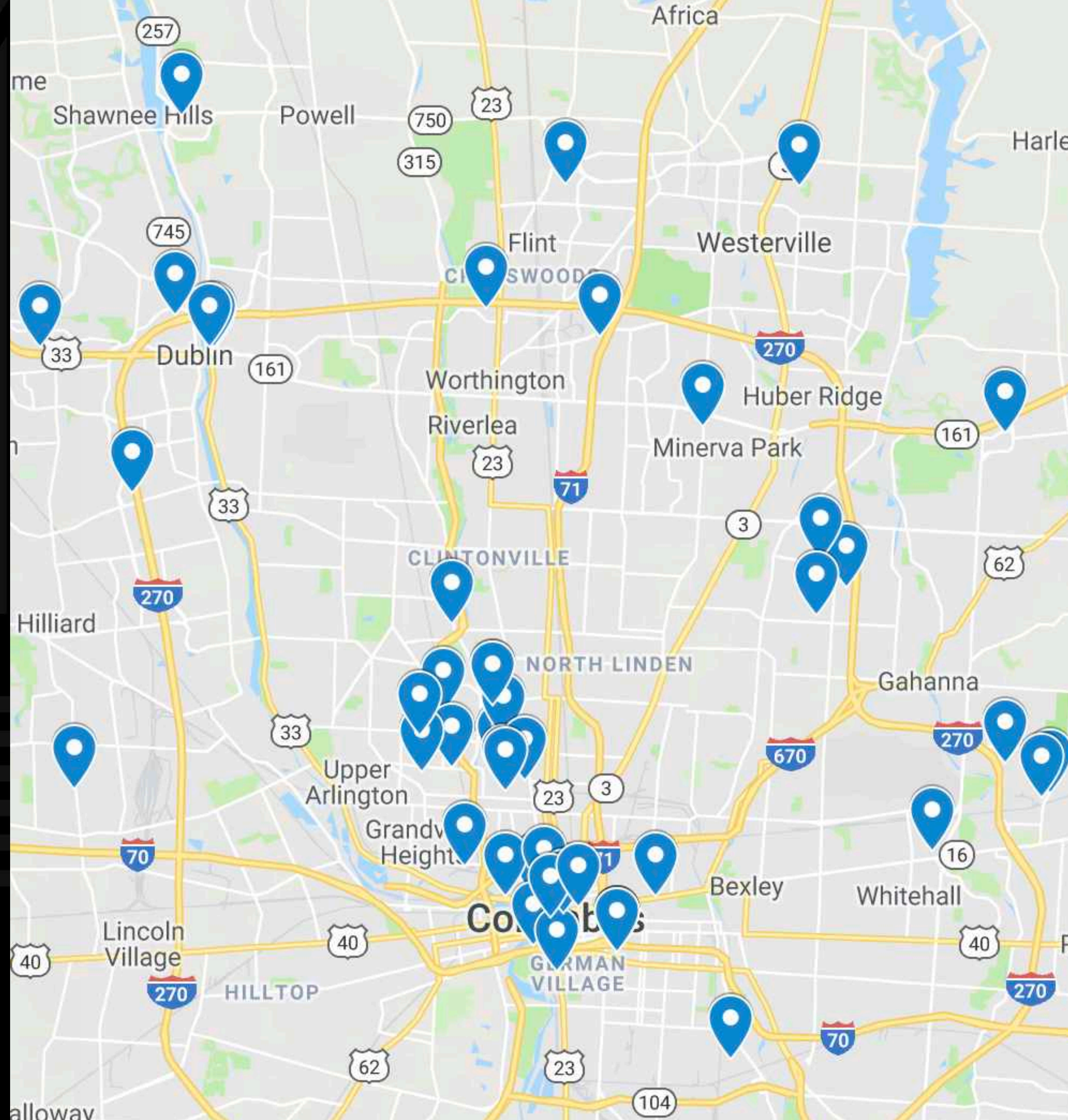
- Install charging stations at 2% of parking spaces on each of your properties
- Lay conduit in all new parking structures to prepare for the future



# WORKPLACE CHARGING

**394 PORTS**

**DEPLOYED  
OR COMMITTED  
AT 63 SITES**





## AEP CHARGING FUNDING

### **\$9.5 million program**

#### **141 applications for Level 2 charging**

- 255 stations, 494 ports
- \$3.1 million incentives reserved

#### **45 applications for DC Fast charging**

- 73 stations, 88 ports
- \$4.6 million incentives reserved





# EDUCATE ON SMART MOBILITY

Get smart on our shared vision. Join us for a Smart Columbus Live interactive gallery walk to learn more about our goals and how we'll get there. Offer your employees the opportunity to get behind the wheel of the latest Electric Vehicles by hosting a Smart Mobility Ride and Drive at your location.

## Our Goal

- 1,500 community leaders attend a Smart Columbus Live gallery walk session in 2017
- Host 50 Ride and Drive events per year through 2020

## Partner Ask

- Send at least 20 people to attend a Smart Columbus Live session
- Conduct at least 3 Ride and Drives at each major campus/location by 2020



# SMART COLUMBUS LIVE

96 sessions engaging 1,526 residents, community leaders and corporate partners

## Topics:

- Future of Mobility/CASE
- Columbus Story
- USDOT Smart City Challenge
- Smart Columbus Initiative & Grant Projects
- Future of our City and their place in it.

Post-event surveys showed an increased likelihood to consider owning an EV after participating





# RIDE & DRIVE ROADSHOW

**FLAGSHIP EV AWARENESS  
& CONSIDERATION  
BUILDING PROGRAM**

**Conducted  
nearly 12,000  
educational EV  
test drives**







SIGN-UP ONLINE

# PARTICIPANT EXPERIENCE



LEAD NURTURING



STEP 1:  
CHECK IN



STEP 2:  
PRE-DRIVE EDU



STEP 3:  
THE DRIVE



STEP 4:  
SURVEY & SWAG





# DRIVE LESS

OPPORTUNITY TO  
EDUCATE ABOUT  
ALL MODES





# IMPACT AT SCALE

**EVENTS: 120 in 24 months**

**HOSTS: 57**

**LOCATIONS: 71**

**DRIVES: 11,956**

Average drives per event: 99

**DEALER LEADS: 1,528**

% opt-ins: 13%

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COLUMBUS







# INCENTIVIZE BEHAVIOR CHANGE

Treat mobility as an employee benefit like healthcare or retirement to improve access to mobility, boost morale and enable mode shift.



## Our Goal

- Decrease single occupant vehicle commuter traffic by 10%
- Increase employee Electric Vehicle ownership by 4x
- 50 companies offer Mobility Benefit Packages by 2020

## Partner Ask

- Establish employee mobility benefits — may leverage the Ignite Action Fund



## MOBILITY AS A BENEFIT

31 PARTNERS  
DEPLOYED

1,000 EMPLOYEES  
DIRECTLY USING  
NEW BENEFITS  
(EXCLUDING C-PASS)

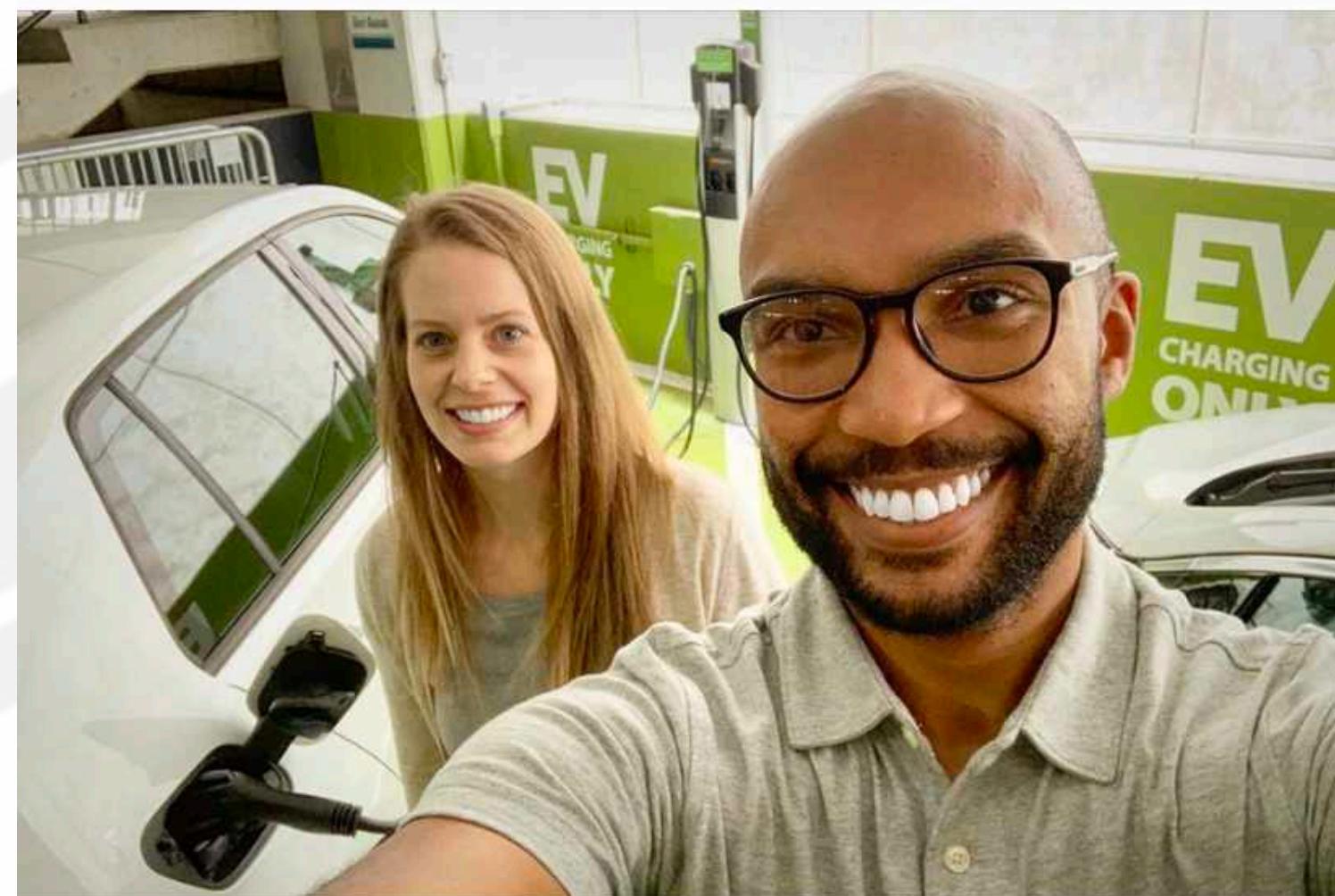


Fahlgren Mortine is in Columbus, Ohio.

7 hrs · 🌐

Our carpool crews had a successful week of ridesharing! Nearly 25% of our #cbus associates participated and they reduced their single occupancy vehicle (SOV) commutes by almost 50% which lessened SOV miles by nearly 1,400. Even better news is that 70% of participants say they're planning to continue carpooling on a continuous basis.

#accelerationpartner 🚗 @ Columbus, Ohio



👍 You, Marty McDonald and 16 others

👍 Like

💬 Comment

➦ Share

## DEPLOYED

A&R Creative Group

Advanced Drainage  
Systems

AEP

Alliance Data

AT&T

Battelle

Cardinal Health

CAS

Columbus Zoo

CoverMyMeds

Deloitte

Denison University

Dispatch Media Group

Encova

Fahlgren Mortine

Fifth Third

Hexion

Huntington

IBMix

JadeTrack

JPMorgan Chase

Lifestyle Communities

Nationwide

OhioHealth

PNC

Squire Patton Boggs

State Auto

Steiner + Associates

U.S. Bank

Vorys

White Castle



# ACCELERATION PARTNER PROGRAM

1

**EMPOWERED  
LEADER**

**70 EMPLOYERS COMMITTED**  
60 MOBILITY AMBASSADORS - 51 COMPANIES

2

**BUY  
ELECTRIC**

**50 EXECUTIVES DRIVING ELECTRIC**  
**26% OF PARTNERS DEPLOYING EVS**

3

**INSTALL CHARGING  
INFRASTRUCTURE**

**88% OF PARTNERS INSTALLED CHARGING**  
219 CHARGING PORTS

4

**SMART  
MOBILITY  
EDUCATION**

**120 RIDE & DRIVE EVENTS**  
11,900+ TEST DRIVES

5

**INCENTIVIZE  
BEHAVIOR  
CHANGE**

**43% OF PARTNERS CREATED BENEFIT PROGRAMS**  
1,000+ PARTICIPATING RESIDENTS



# ACCELERATION PARTNER PROGRAM

1	EMPOWERED LEADER
2	BUY ELECTRIC
3	INSTALL CHARGING INFRASTRUCTURE
4	SMART MOBILITY EDUCATION
5	INCENTIVIZE BEHAVIOR CHANGE

100%

AMERICAN ELECTRIC POWER

DENISON

CAS  
A DIVISION OF THE AMERICAN CHEMICAL SOCIETY

LC

Huntington

COLUMBUS ZOO AND AQUARIUM

OhioHealth

CardinalHealth

90%  
(One goal left)

THE OHIO STATE UNIVERSITY

Nationwide

covermymeds

STEINER

Deloitte.

DONATOS

White Castle

jade track

PELOTONIA

75%  
(Two goals left)

AllianceData

fahlgren

mortine

ScottsMiracleGro

CHASE

STATE AUTO Insurance Companies

SQUIRE PATTON BOGGS

wagenbrenner DEVELOPMENT

BATTELLE

Grange Insurance

AAA

COLUMBUS REGIONAL AIRPORT AUTHORITY

accenture

OHIO DOMINICAN UNIVERSITY

#1RICART

IGS

Abbott

DMG DISPATCH MEDIA GROUP a GateHouse Media group

NiSource

A&R CREATIVE GROUP

Lbrands

PNC

at&t





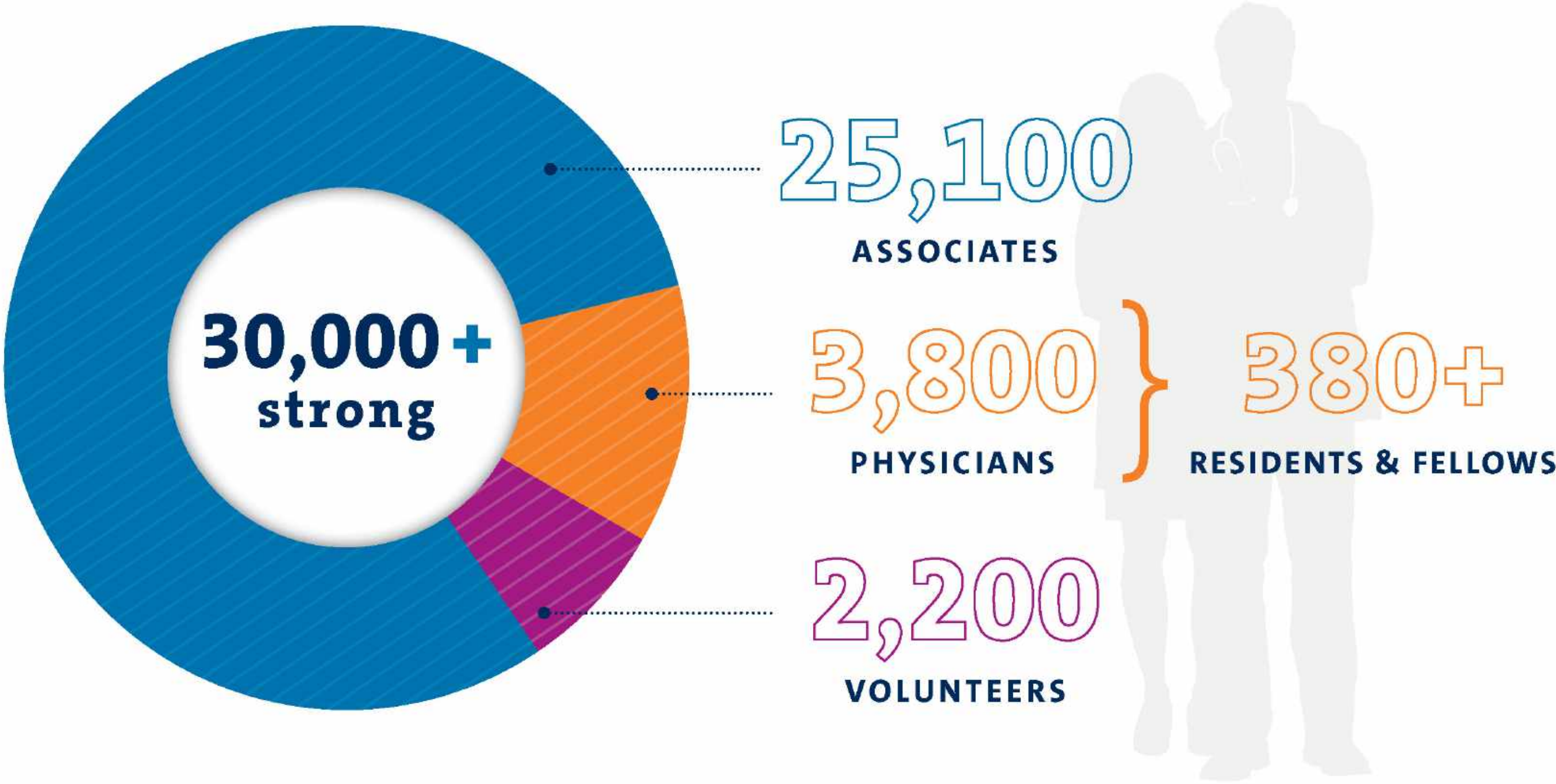
# OhioHealth + Smart Columbus

Allegra Wiesler, Senior Sustainability Consultant



# WHO WE ARE & WHAT WE DO

**WE** are a faith-based, not-for-profit healthcare system.



Represents Fiscal Year 2018 Data





# WHERE WE ARE

## care site locations

### hospital

- 1 OHIOHEALTH RIVERSIDE METHODIST
- 2 OHIOHEALTH GRANT MEDICAL CENTER
- 3 OHIOHEALTH DOCTORS HOSPITAL
- 4 OHIOHEALTH GRADY MEMORIAL
- 5 OHIOHEALTH DUBLIN METHODIST
- 6 OHIOHEALTH HARDIN MEMORIAL
- 7 OHIOHEALTH MARION GENERAL
- 8 OHIOHEALTH O'BLENESSE HOSPITAL
- 9 OHIOHEALTH MANSFIELD HOSPITAL
- 10 OHIOHEALTH SHELBY HOSPITAL
- 11 OHIOHEALTH GROVE CITY METHODIST
- 12 OHIOHEALTH BERGER HOSPITAL

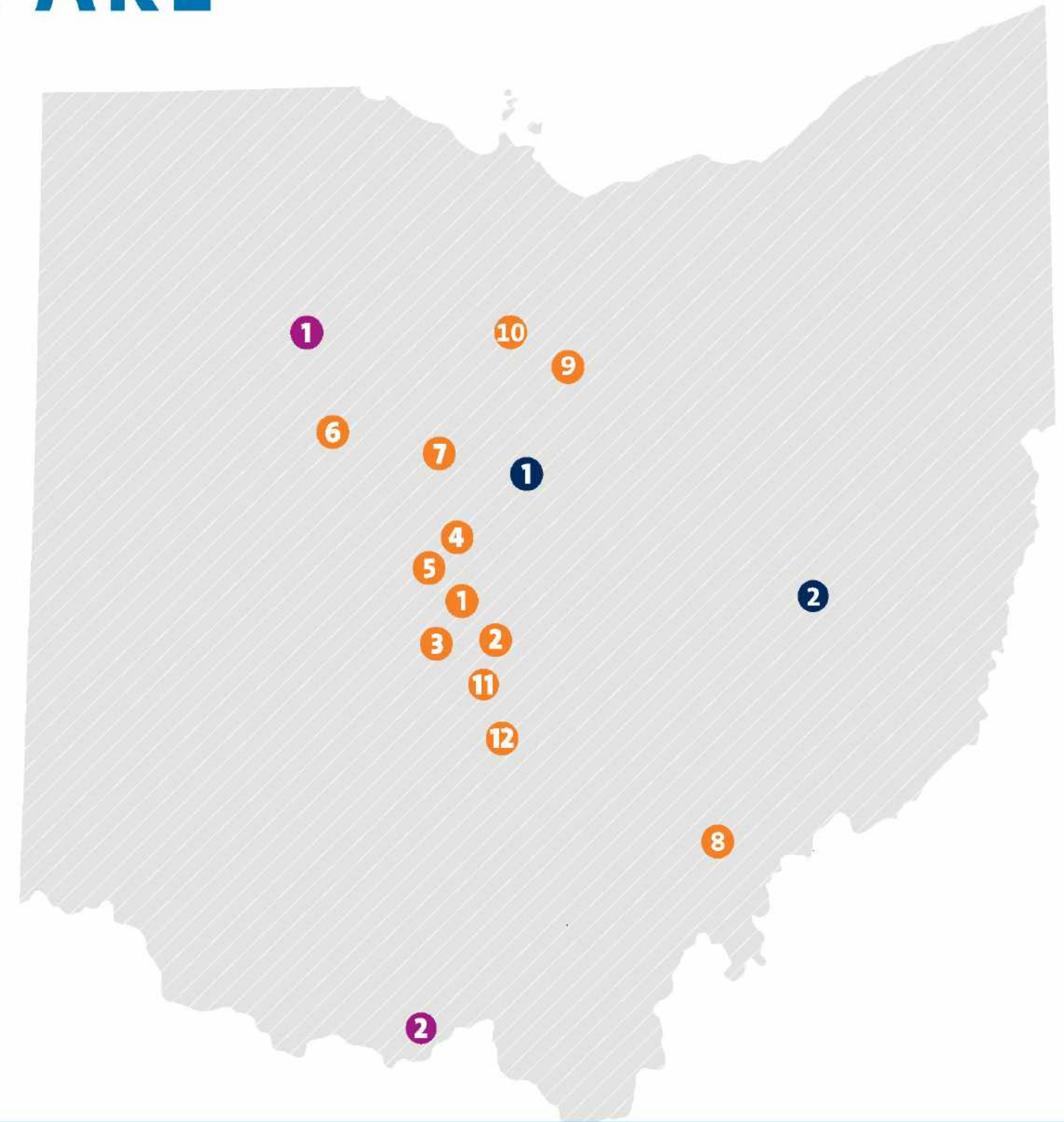
### managed

- 1 MORROW COUNTY HOSPITAL
- 2 SOUTHEASTERN OHIO REGIONAL MEDICAL CENTER

### affiliate

- 1 BLANCHARD VALLEY MEDICAL CENTER
- 2 SOUTHERN OHIO MEDICAL CENTER

60+  
OUTPATIENT  
LOCATIONS



Represents Fiscal Year 2018



# Why We Care

- Increasing number of electric vehicles on the road will:
  - Reduce GHG emissions and improve air quality
  - Decrease vehicle owner's fuel costs and vehicle maintenance
- Associate and Community Benefits
  - Free charging
  - Visible locations





# OhioHealth Steering Team

- Senior Leader designated to lead efforts
- Formed internal Steering Team
  - Sustainability
  - Marketing and Communications
  - Human Resources
  - Legal
  - Community Relations
  - Logistics



# OhioHealth Initiatives

- Associate Engagement
  - How do we reduce our SOV usage (carpooling, vanpooling, biking, public transportation)
- Fleet Assessment
  - What does our fleet look like? How do we decarbonize our fleet? How do we integrate this with our procurement policies?





# OhioHealth Initiatives

- Workplace Charging
  - Develop EV deployment plan
  - Install charging stations across system



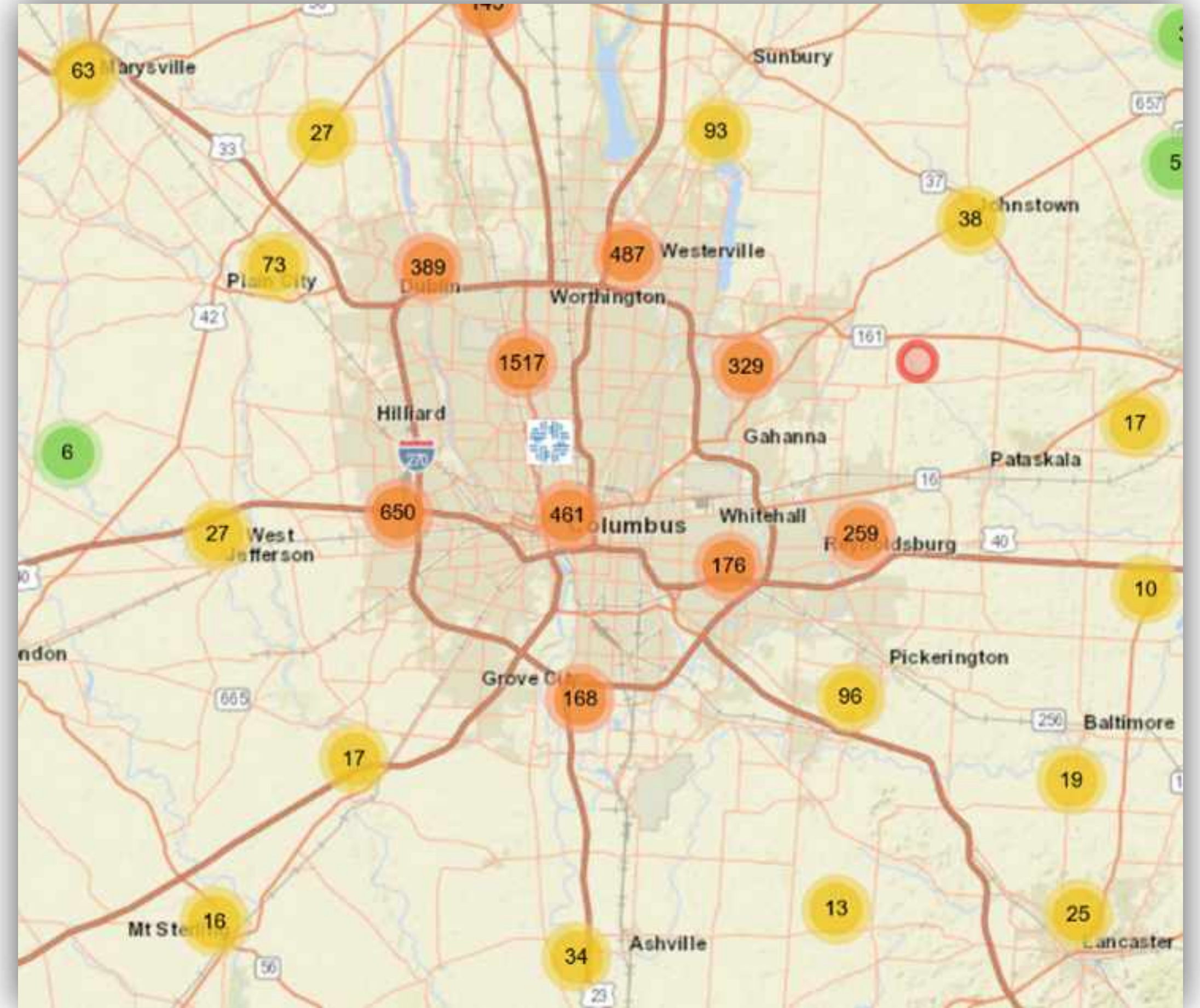


# Associate Engagement



# SOV Reduction

- Mobility survey to Riverside Methodist Hospital associates
- Commuter Heat Map
- SOV Reduction Pilot
  - Multi-modal transportation platform
  - Incentives to promote commuting behavior change
  - In 3 month period, over 200 associates signed up and 15% stayed actively engaged





# Ride and Drives

- 3 Ride and Drives
  - Hospitals & Office
- 212 EV test drives
- 32 Associates (15%)  
Asked to be  
Contacted by a  
Dealer



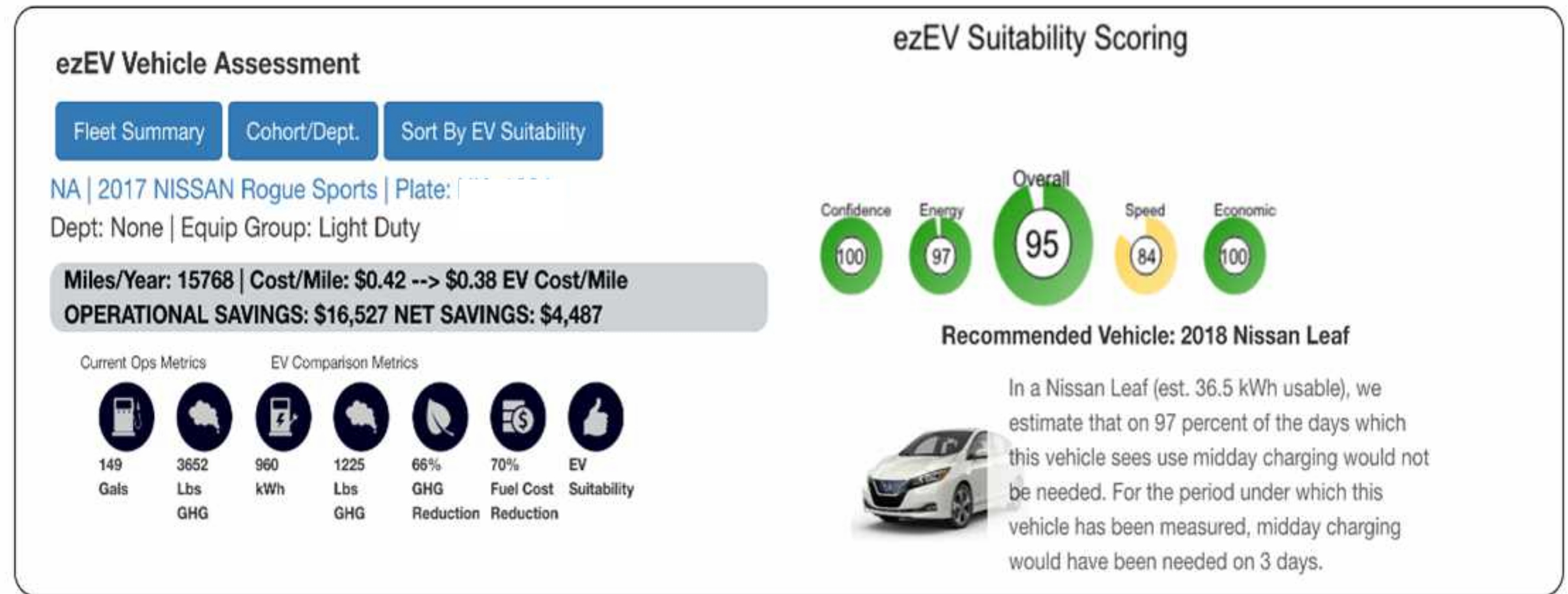


# Fleet



# Fleet Assessment

- Telematics installed in lab vehicles for 90 days
  - Targeted our vehicles with high mileage & city routes
  - Ability to charge overnight





# Fleet Procurement

- Used electrification feasibility data to purchase EV
- Procurement policy that requires all new vehicle requests to be assessed for electrification opportunities



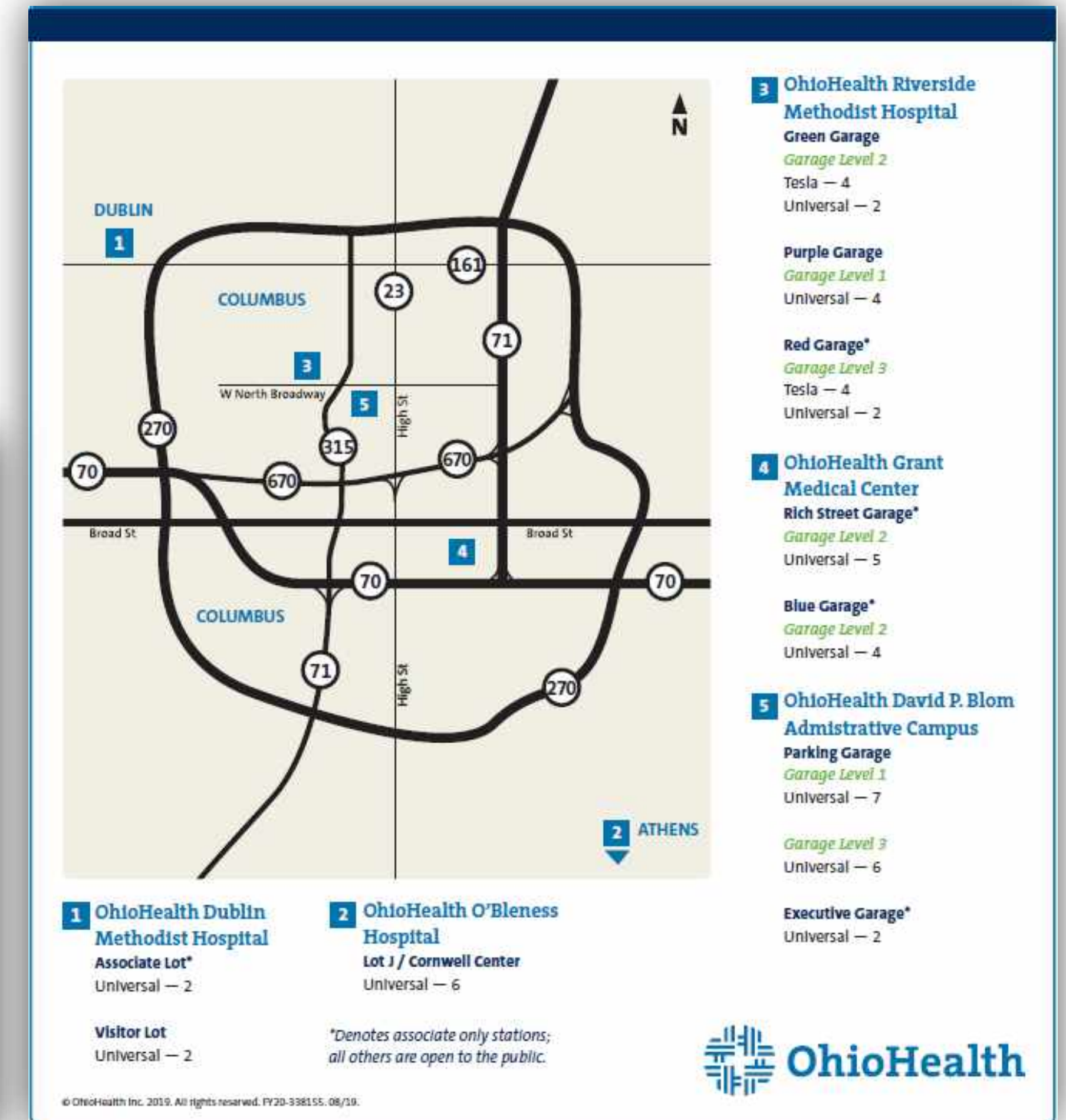


# Workplace Charging



# EV Charging Stations

- Utility Rebates
- Standards
  - Charging station vendor
  - Public + Workplace
  - Signage + stenciling
  - New construction + renovations
- Parking lot stencil share program





# Looking Ahead



# Future Priorities

- Continue fleet efficiency efforts
- Expanding fleet charging infrastructure
- Mobility/Commuting education to associates









# SMART COLUMBUS PROGRAM IMPACT SURVEY

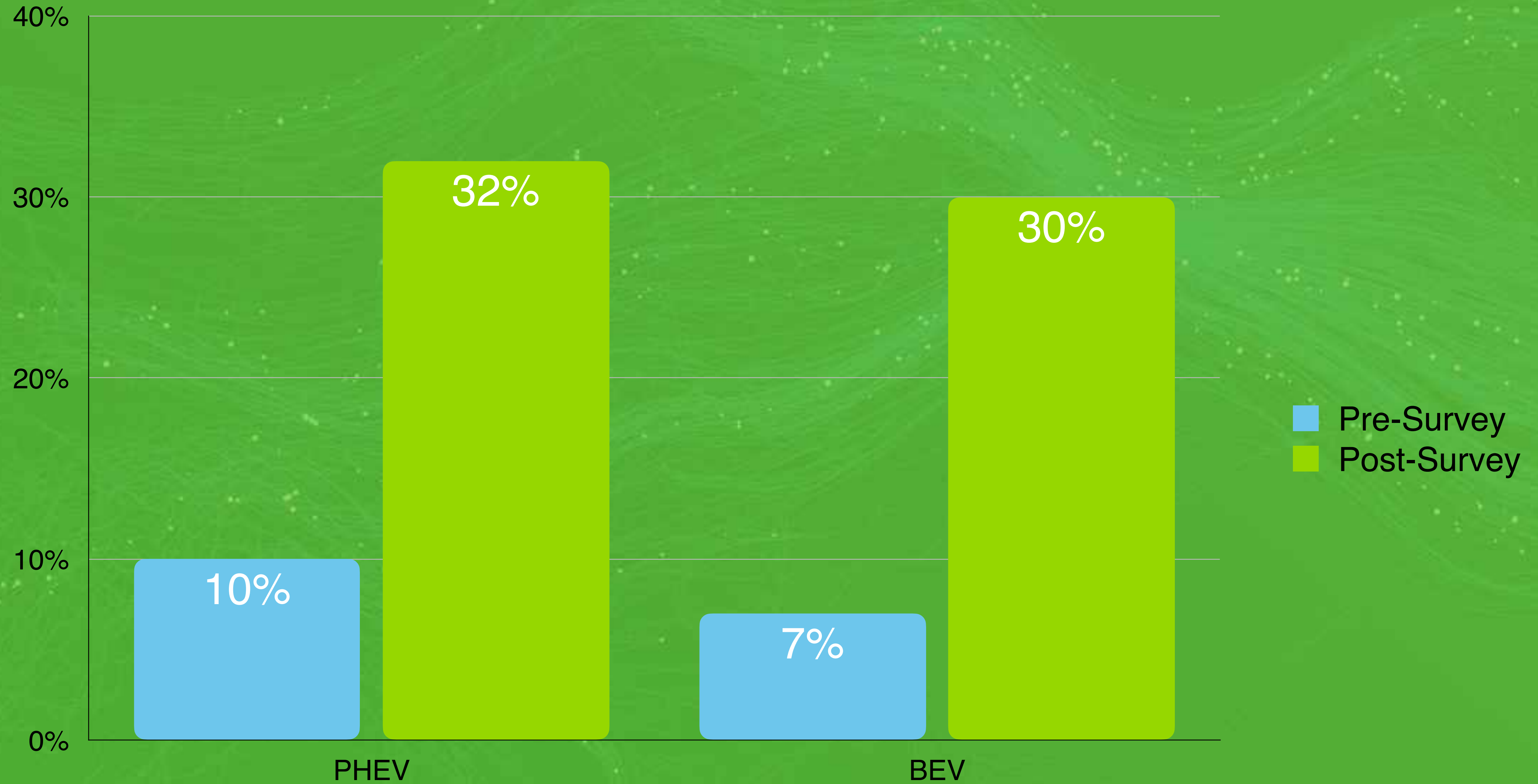
In March 2018, Smart Columbus and research firm Navigant, published the findings of a survey of 900 people in the Columbus region who were identified as early adopters or early majority users for EVs, and who were looking to buy a new car in the next four years. The survey measures respondents' vehicle preferences, EV awareness, considerations when buying a car, barriers to purchase and other consumer characteristics.

The same survey was repeated in March 2020 to illustrate the impact of the Smart Columbus program.



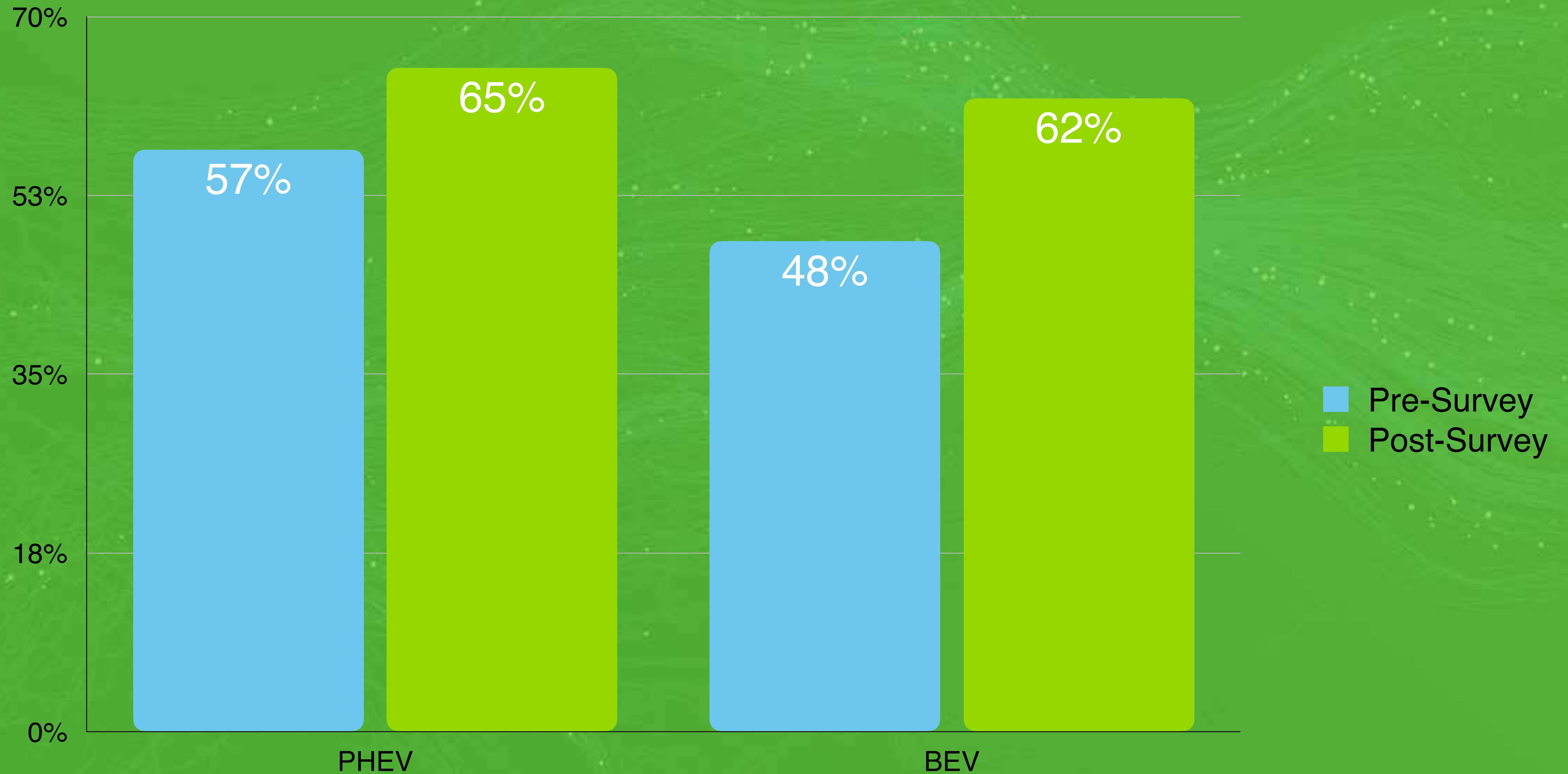
# IMPACT SURVEY

## Have Driven a PHEV or BEV





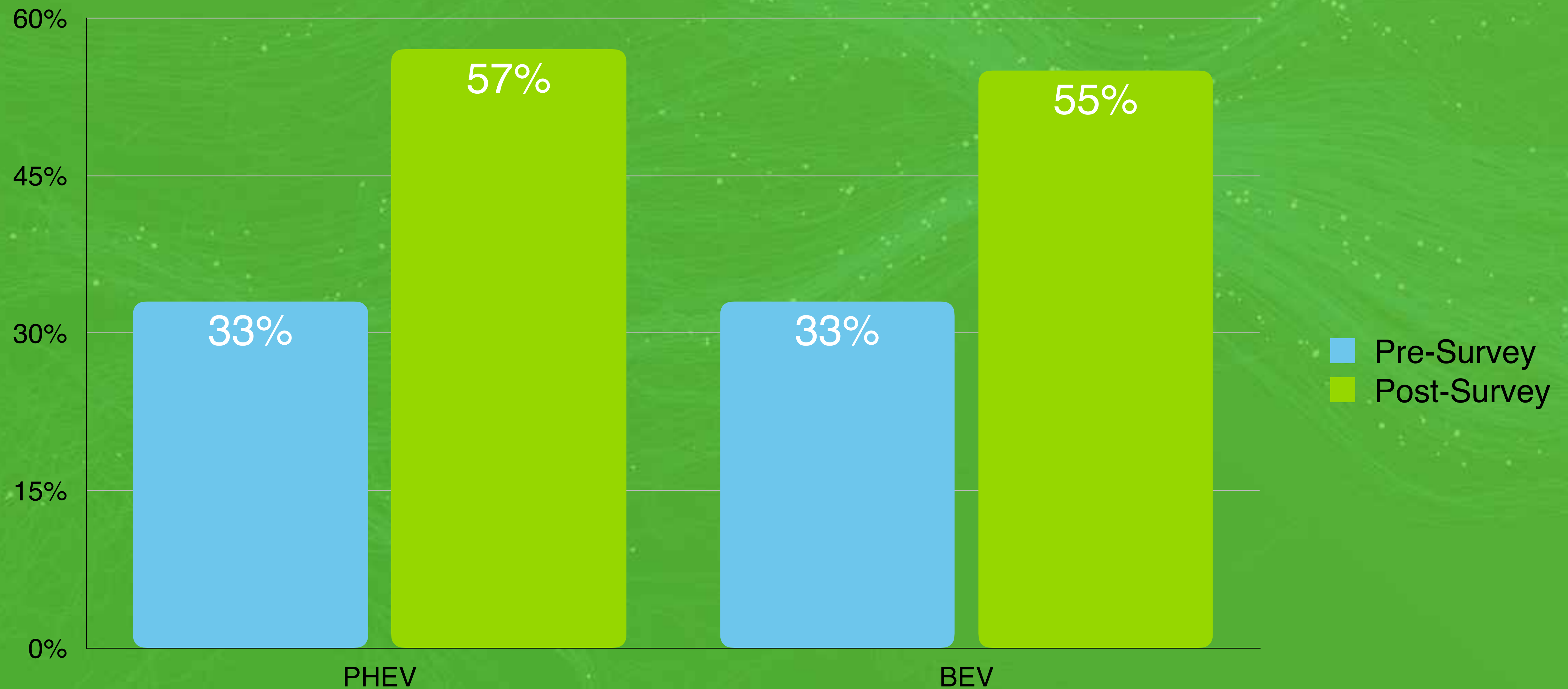
## Favorable Impressions of PHEVs and BEVs





# IMPACT SURVEY

Intent to Purchase a PHEV or BEV: Somewhat Likely -  
Extremely Likely







**WHAT'S NEXT IN  
FOR CONSUMER EV ADOPTION**



# SHORT TERM, NEW MODELS STILL EXPENSIVE

## 2020

- Astin Martin Rapid-e
- BMW iX3 EV
- Mercedes-Benz EQC
- Ford SUV EV
- Rivian R1T
- Rivian R1S
- Tesla Model Y
- VW ID
- VW Cross
- Volvo Polestar 2

## 2021

- BMW i4
- BMW i-next
- VW ID Buzz
- VW ID Vizzion
- MORE



Jaguar i-pace



Tesla Model Y

Kia Soul EV

Rivian RT1

BMW X5

Kia Niro EV

VW ID

2019

Audi e-tron

2020

2021

Mercedes-Benz EQC

Ford EV SUV

Hyundai Kona



Polestar 2



# NEED FOR INTERVENTIONS TO DRIVE EQUITY

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## ELECTRIFYING SHARED MOBILITY

- A single car shared can impact 10 people per vehicle in a neighborhood or more, rather than just 1 person with a personal vehicle. Requires public charging infrastructure in low income areas.
- Federal, state and local financial incentives are making it feasible for COTA to introduce electric buses and Columbus Yellow Cab to transition their fleet to electric.

**SM  
RT**  
COLUMBUS

## UNTAPPED OPPORTUNITY IN USED MARKET

- 70% of US Car Purchases are Used
- Many used EVs can be purchased under \$12,000
- Longer range options from 2018 and 2019, come off lease in 2021 and 2022 respectively





# **BATTERIES & CHARGING SPEED IMPROVING**

**Batteries in new EVs will hold longer and longer charge, making it more desirable by customers and also changing charging use and need**

**Time to charge at a fast charger will substantially decrease as technology enables higher voltage transfer**

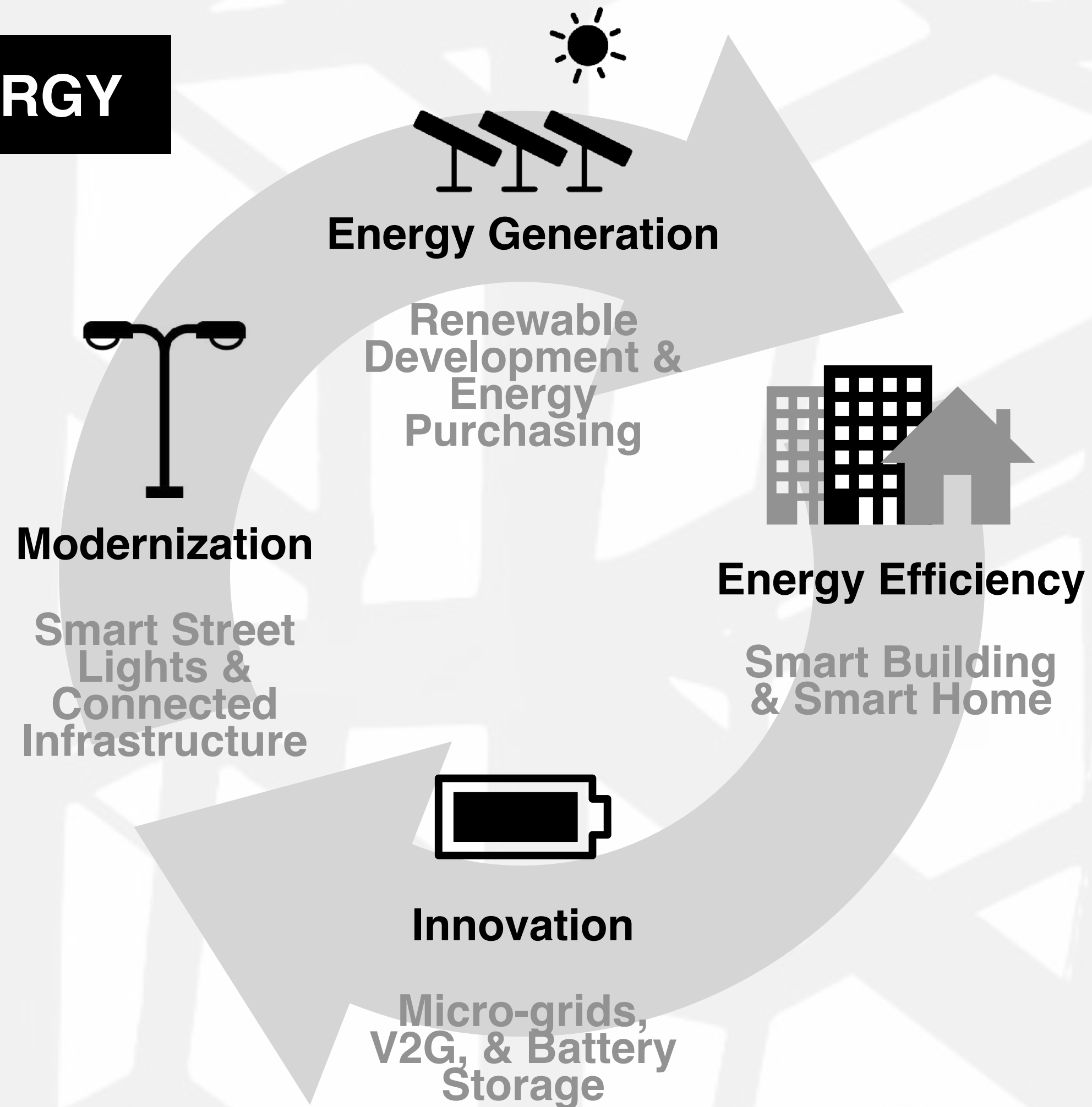




# More than just EVs, it's about Climate Leadership

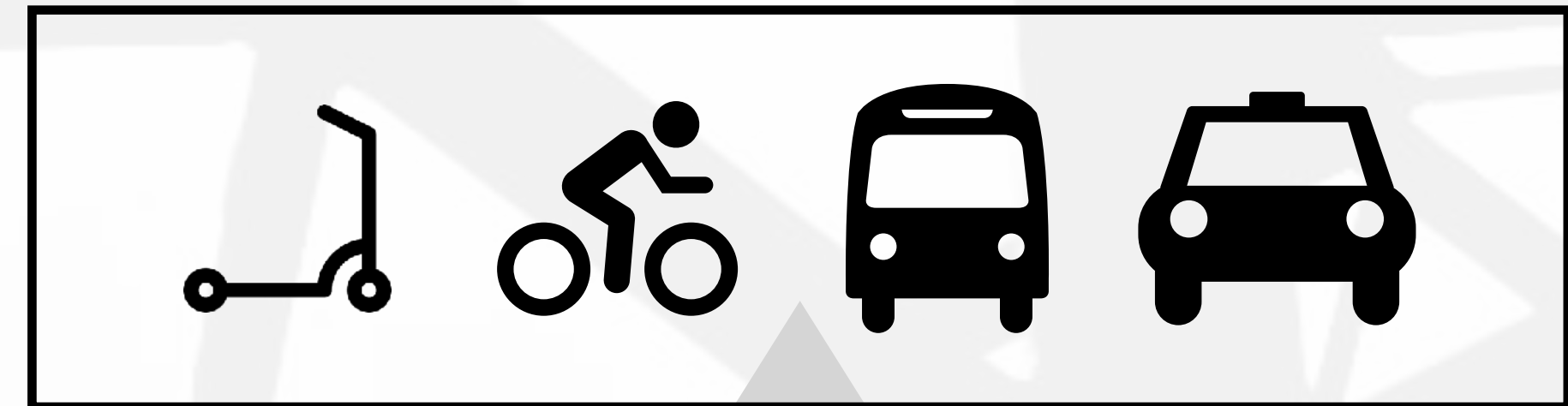
>>We have the collective capacity to go beyond 'cars' to achieve greater prosperity

## ENERGY



## TRANSPORTATION

Electrify Options  **SHARED MOBILITY**  Increase Adoption



Dedicated  
Infrastructure

Benefits &  
Incentives

New & Expanded  
Options

Education &  
Marketing





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FAMILY FOUNDATION



The background image shows a white electric vehicle, likely a Chevrolet Bolt, parked at a charging station. The car is positioned diagonally, with its front end towards the top right. A charging cable is visible on the left. The entire image has a green color overlay. A large black rectangle with white text is in the upper left, and a smaller black rectangle with white text is in the middle left.

# THANK YOU

Please join us on September 8th at 3pm for the next webinar, **Fortifying Regional EV Charging Infrastructure**

**AEP  
OHIO** SM

An **AEP** Company