

Addressing Barriers to EVI Deployment in Disadvantaged Communities

Statewide Energy Efficiency Collaborative - 2019

June 27, 2019



Session Plan

Introductions

- Panel Introductions and Attendee Profile (Group Participation)

Define the Problem

- What are “Underserved Communities” and the principal Barriers (Group Participation)

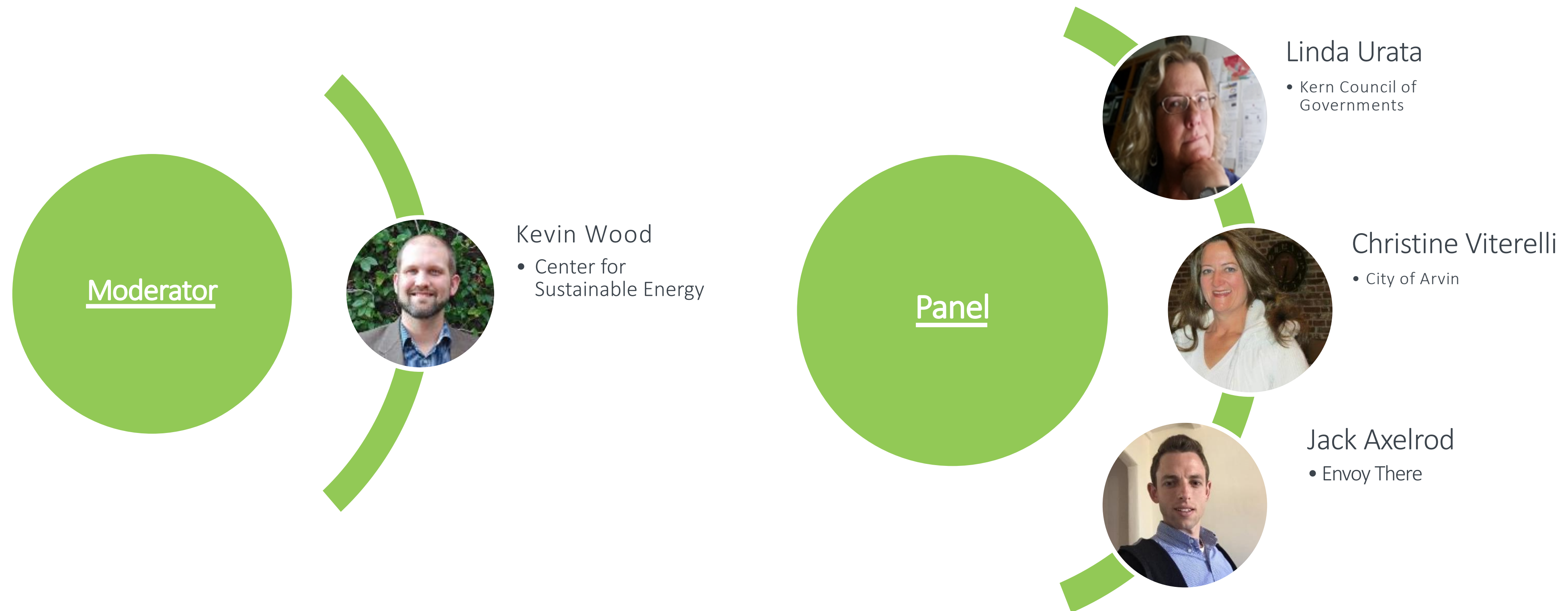
Explore Solutions

- Common strategies for EE and EVI
- Engagement and technology solutions

Build a Tool

- Develop a toolkit (Group Participation)

Panel



Defining the Problem: Hard to Reach Communities



**Disadvantaged
Communities**



**Rural
Residents**



**Underserved
Communities**

California will not meet its goals for energy efficiency, electric vehicles, electric vehicle infrastructure, climate, or air quality without activating low-to-moderate income, diverse, and rural communities.

Poll - Who's in the Room?

Audience Profile

- Public Works/Operations
- Planning Department
- Sustainability Department
- Utility
- Consultant
- Other

Poll - Level of EV / EVI Experience in the Room?

Audience Profile

- I have driven a hybrid vehicle
- I have driven an electric vehicle or plug-in hybrid
- I own an electric vehicle or plug-in hybrid
- I charge a car at home
- I charge a car at work
- I charge a car at other locations
- My agency has EV charging stations on site

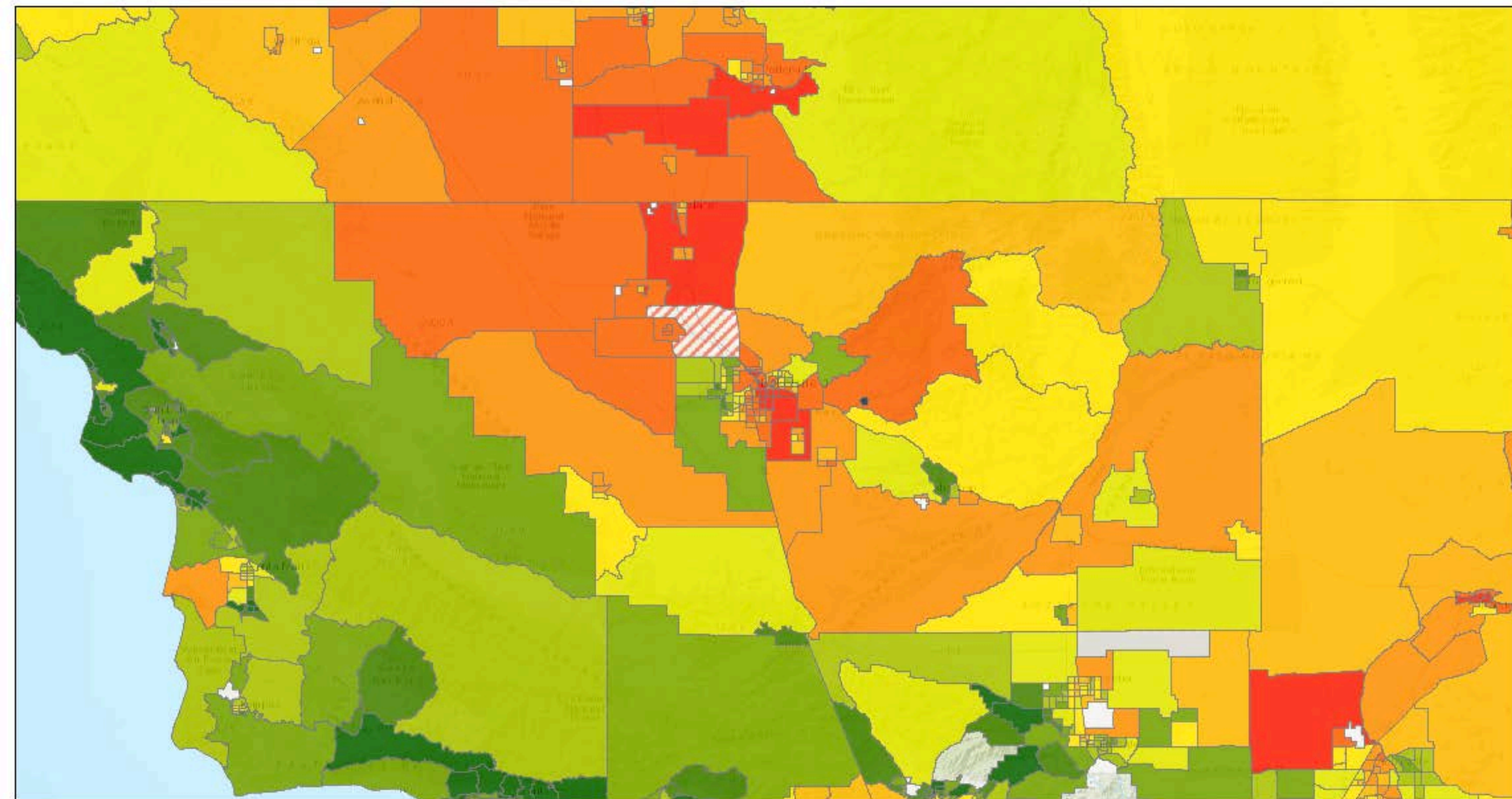
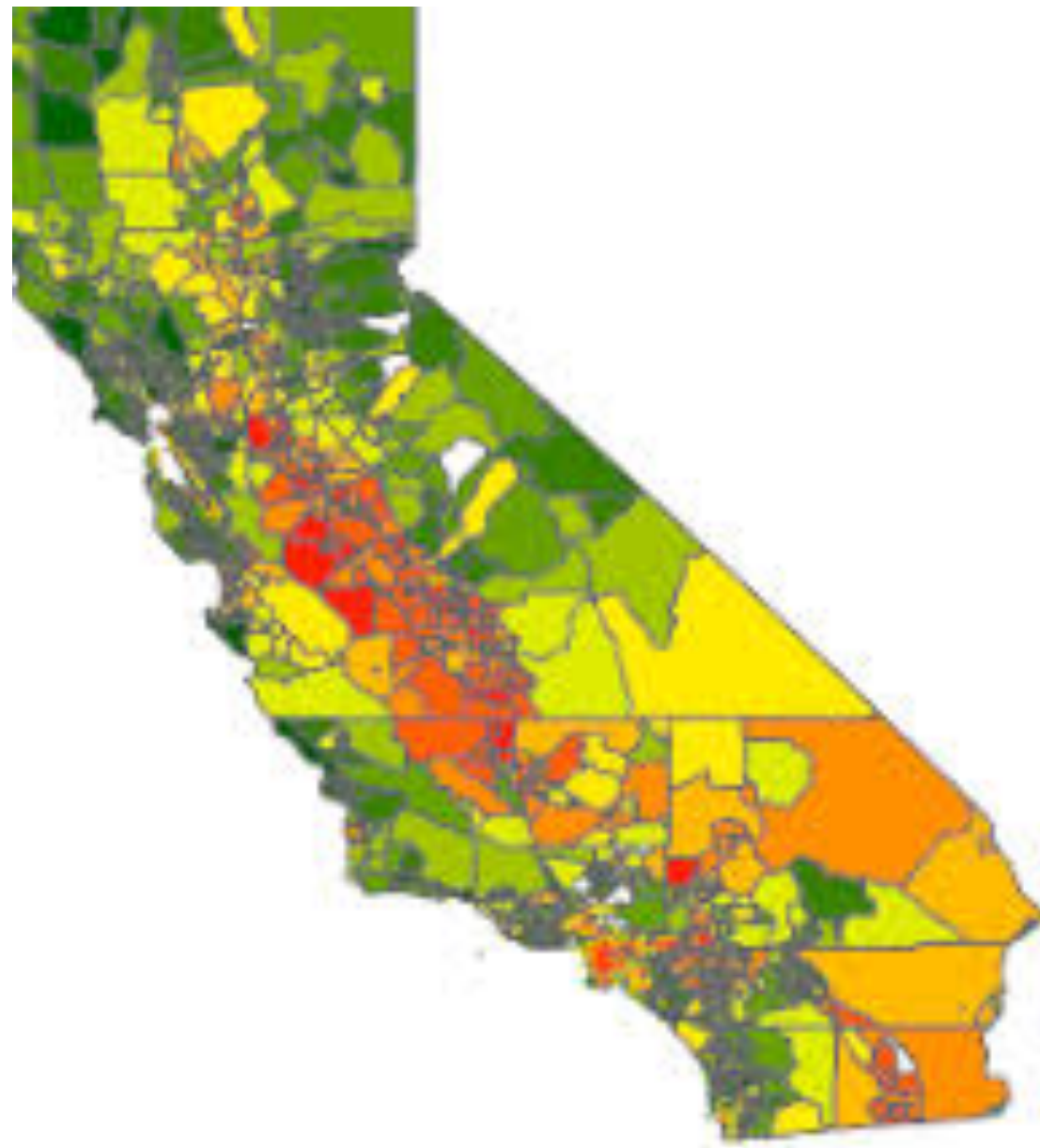
Poll - Disadvantaged Communities (DACs) or Underserved

Audience Profile

- I know about CalEnviroScreen 3.0
- My agency office is in a DAC
- My agency serves individuals working and living in a DAC
- My agency serves a rural community or underserved community

Kern County Disadvantaged Communities

CalEnviroScreen 3.0 Results Kern County (June 2018 Update)



6/19/2019, 12:45:54 PM

CalEnviroScreen 3.0 Results (June 2018 Update)

1 - 10% (Lowest Scores)

11 - 20%

21 - 30%

31 - 40%

41 - 50%

51 - 60%

61 - 70%

71 - 80%

81 - 90%

91 - 100% (Highest Scores)

1:1,155,581

0 10 20 40 mi
0 15 30 60 km

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community, OEHHA.

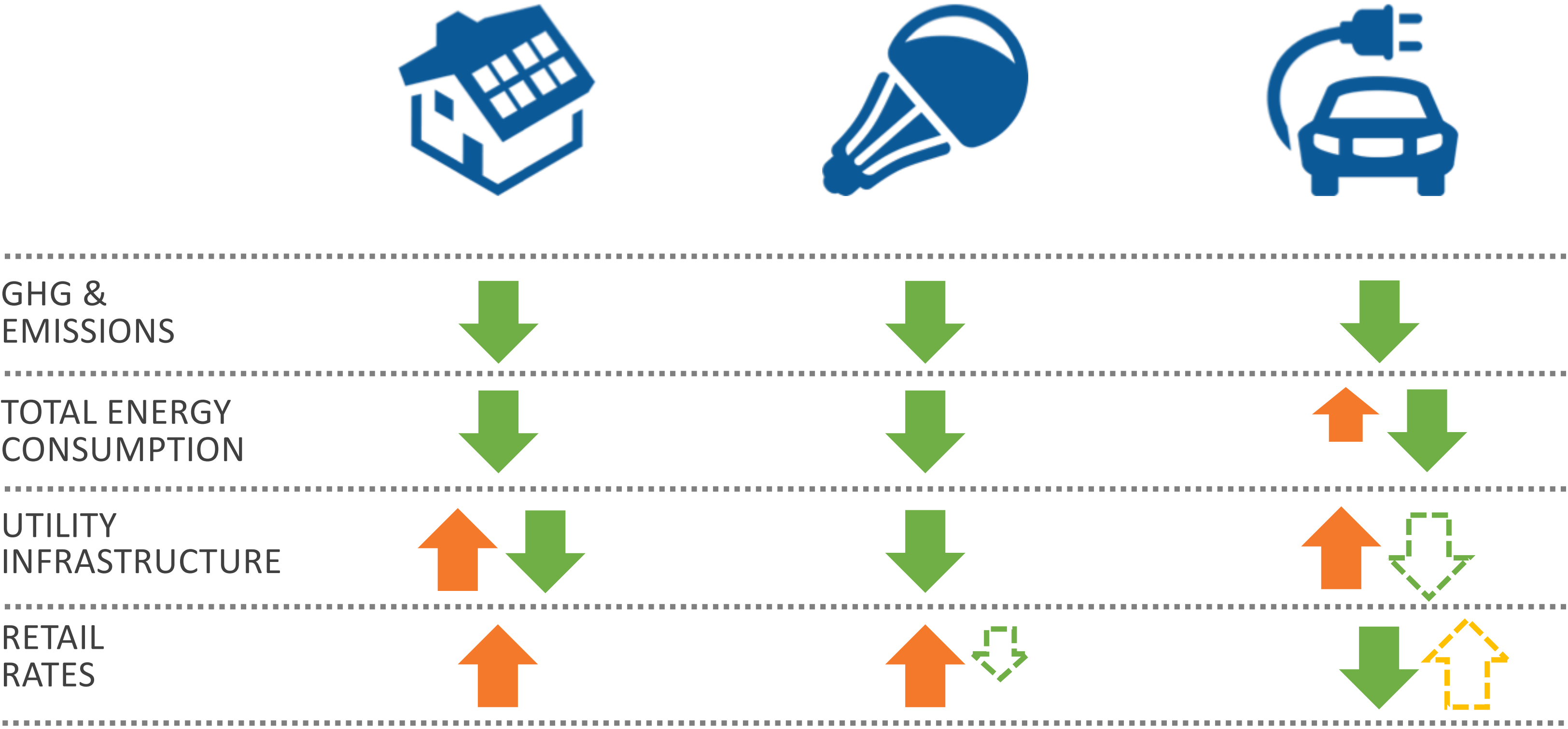
Web AppBuilder for ArcGIS
Esri, HERE, Garmin, FAO, USGS, NGA, EPA, NPS | OEHHA |

Why Electric Vehicle Infrastructure

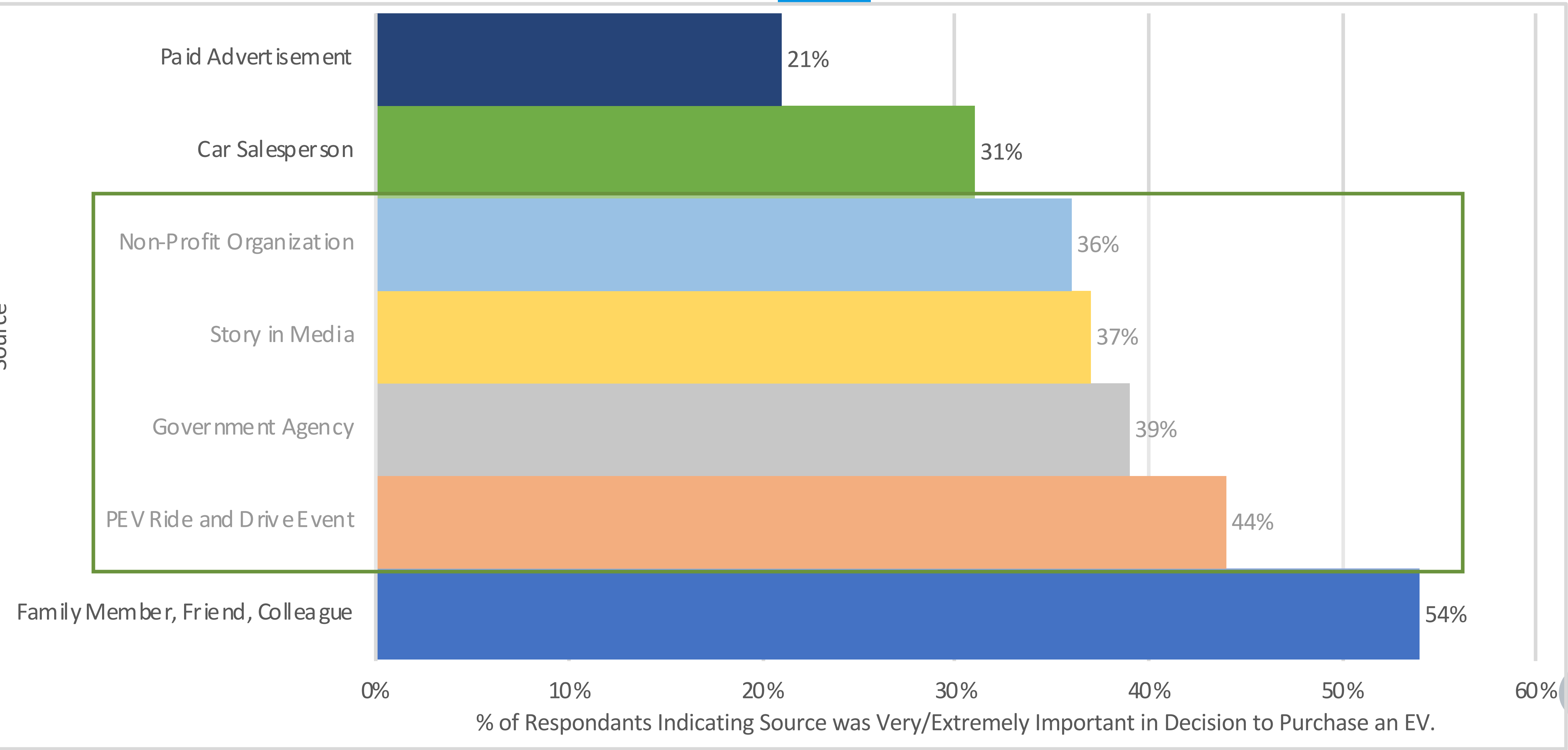
WHY EVI?

- **State Goal & EV Adoption** – Transition is happening
- **Improved Local Air Quality**
- **Access to Funding** – Availability or Increased value of rebates in Disadvantaged Communities
- **Cost Savings** – cheaper fueling, reduced maintenance, incentives,
- **Improves Commutes** – workplace charging, first/last mile with public transit
- **Innovation** – car sharing, income potential with TNCs

Impacts: PV and EE Vs Electric Vehicles



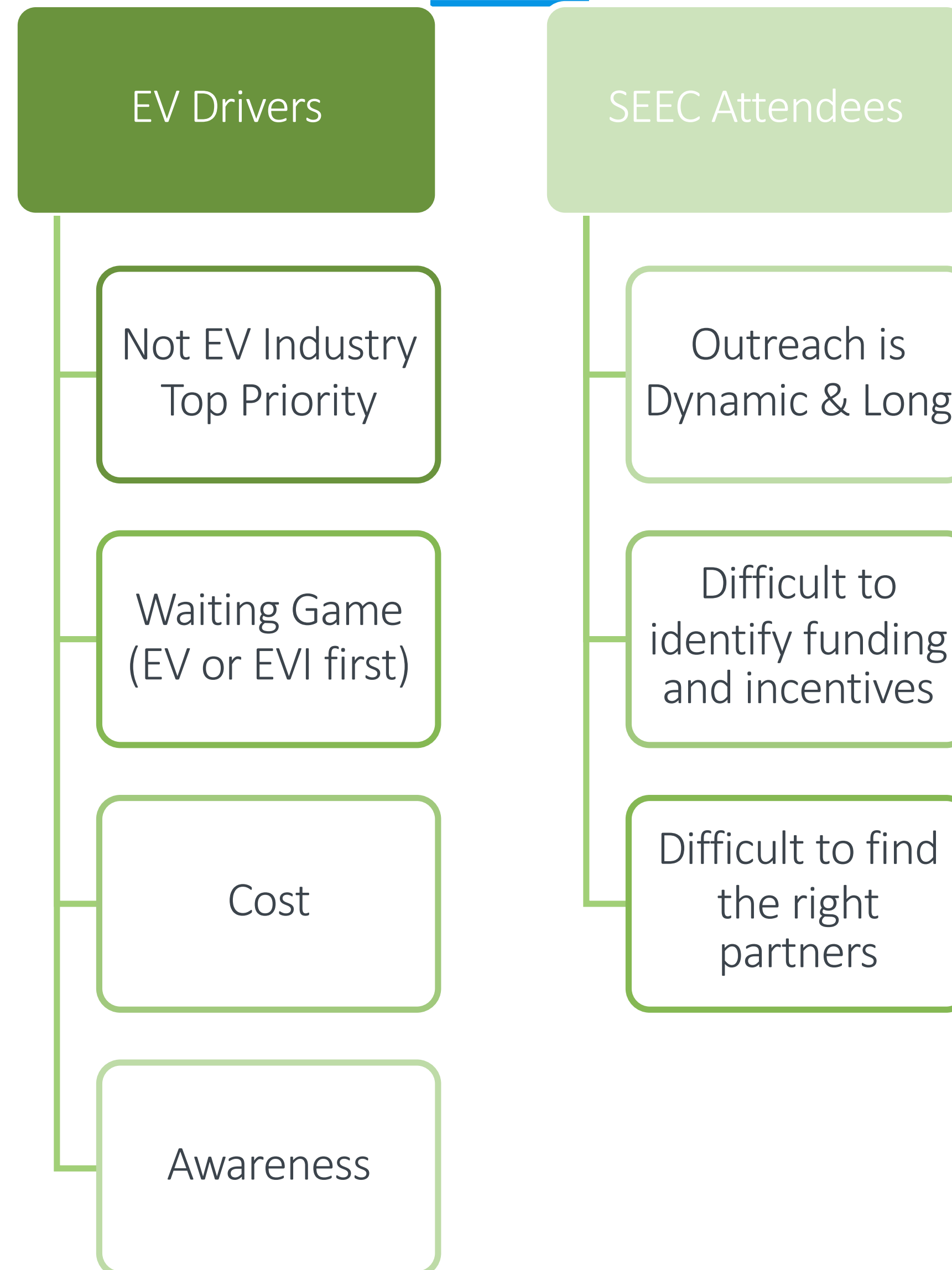
What Role Do “We” Play



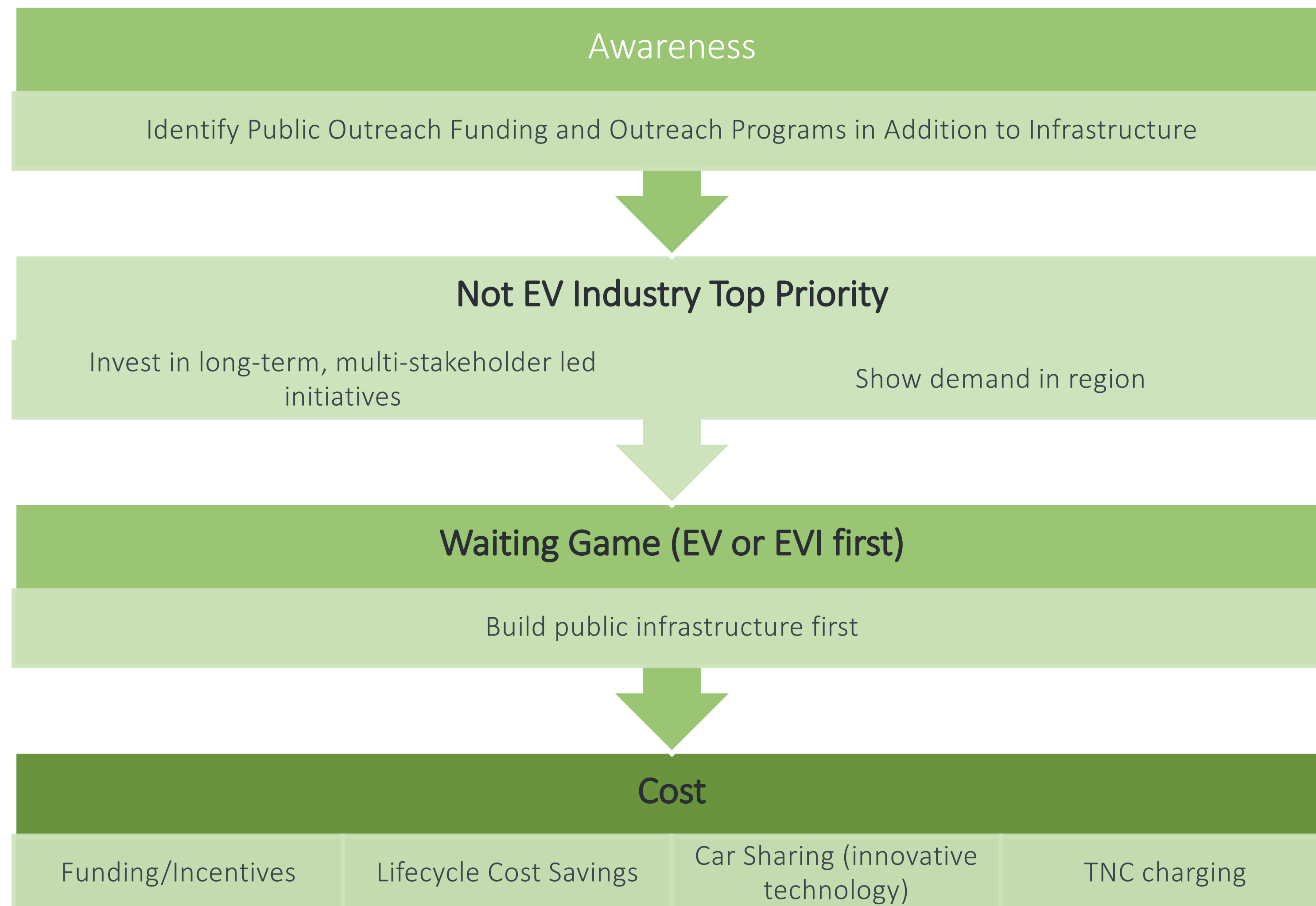
Barriers Exploration Exercise (Group to Rank Barriers)

- Cost
 - Limited used EV inventory
 - New technology costs more
- EV or EVI first
 - Insufficient EVI to support daily travel (long distances)
 - Renters don't always have access to home-based charging
- Not an Industry Priority
 - Car Dealerships aren't marketing or engaging DACs
 - Available EVs on the market are expensive
- Outreach is Dynamic and Long
 - Requires large amounts of staff
 - Requires consistent engagement to see results
 - Multi-language engagement
 - Need to meet audience where they are (high number of events)

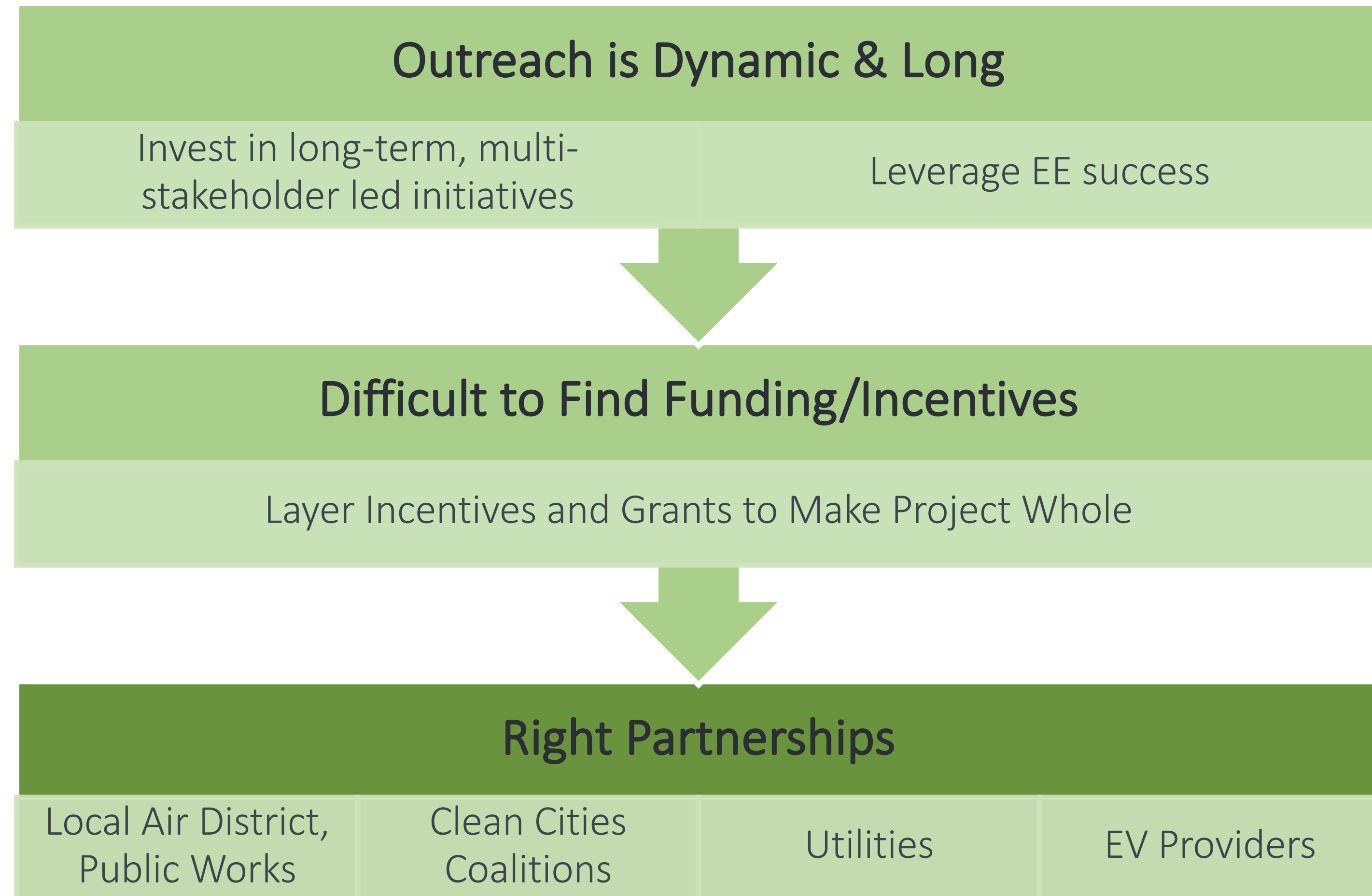
Barriers for EV/EVI Deployment



Solutions for Reaching Drivers in DACs & Rural Areas



Solutions for Public Agencies to Deploy EVI



Solution Focus: Planning Strategy

California Energy Commission EV Blueprint Planning Grant

- Kern Electric Vehicle Charging Station Blueprint

Project Team

- Center for Sustainable Energy
- Kern Council of Governments (Kern COG)

Input

- Kern COG Technical Advisory Committees, Policy Committee and Board
- EV Blueprint Working Group

Kern EV Charging Station Blueprint Scenarios

Scenario A (by Population)

- 4,310 spaces/plugs (2,329 dual plug EVCS)
- 311,205,158 lbs CO2e

Scenario B (EVI Pro)

- 1,248 spaces/plugs
- (624 dual plug EVCS)
122,213,484 lbs CO2e

Plan identified enough sites to meet either scenario and offers a pathway with implementation guidance to get there

Kern Electric Vehicle Charging Station Blueprint

Kern EV CS Blueprint

- Primer
- Current Status, Gap Analysis
- Potential EV sites by community

Outreach Toolkits by Category

- Public Agency
- Workplace
- Destination
- Multi-Unit Dwelling

Signage

High Impact Sites



City of Arvin

2016 Barriers to Ev Charging:

- No Budget
- No Ability to Match Funds
- Lack of EV Drivers
- Emerging Technology- limited information and support
- Lack of Power- required transformer upgrade with utility providers

2016 Solutions:

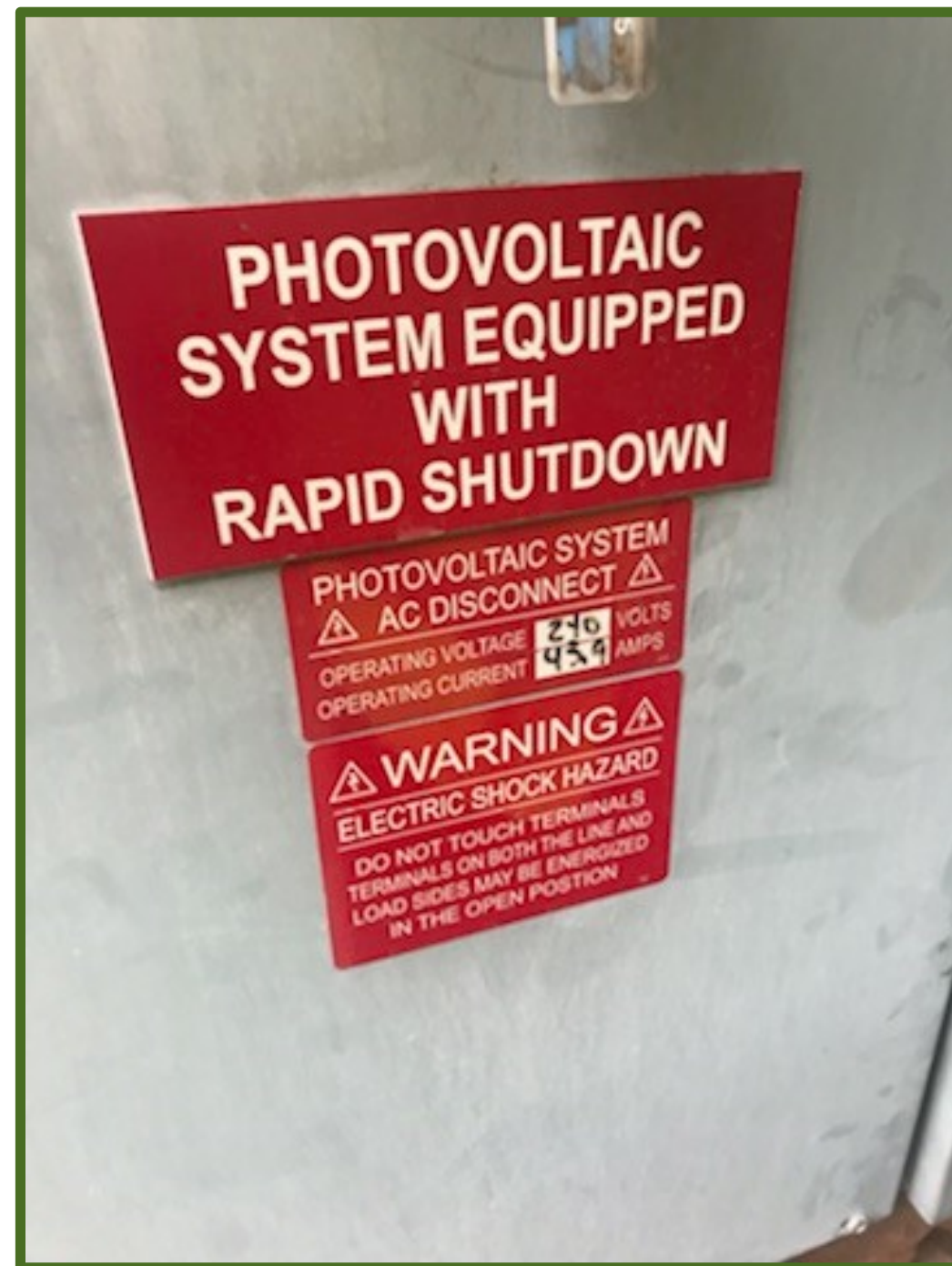
- **Layered Grants and Incentives**
- **EvGo** (infrastructure funding)
- **San Joaquin Valley Air District** (Charging Stations, EV Fleet Vehicles-partial)
- **Rose Foundation** (Fleet Charging Station, and EV Fleet Vehicles-remainder)
- **Built Infrastructure with Expansion Capacity**- extra stub ups for future stations without capital outlay all at once
- **Pursued funding** for Charging Stations as it became available



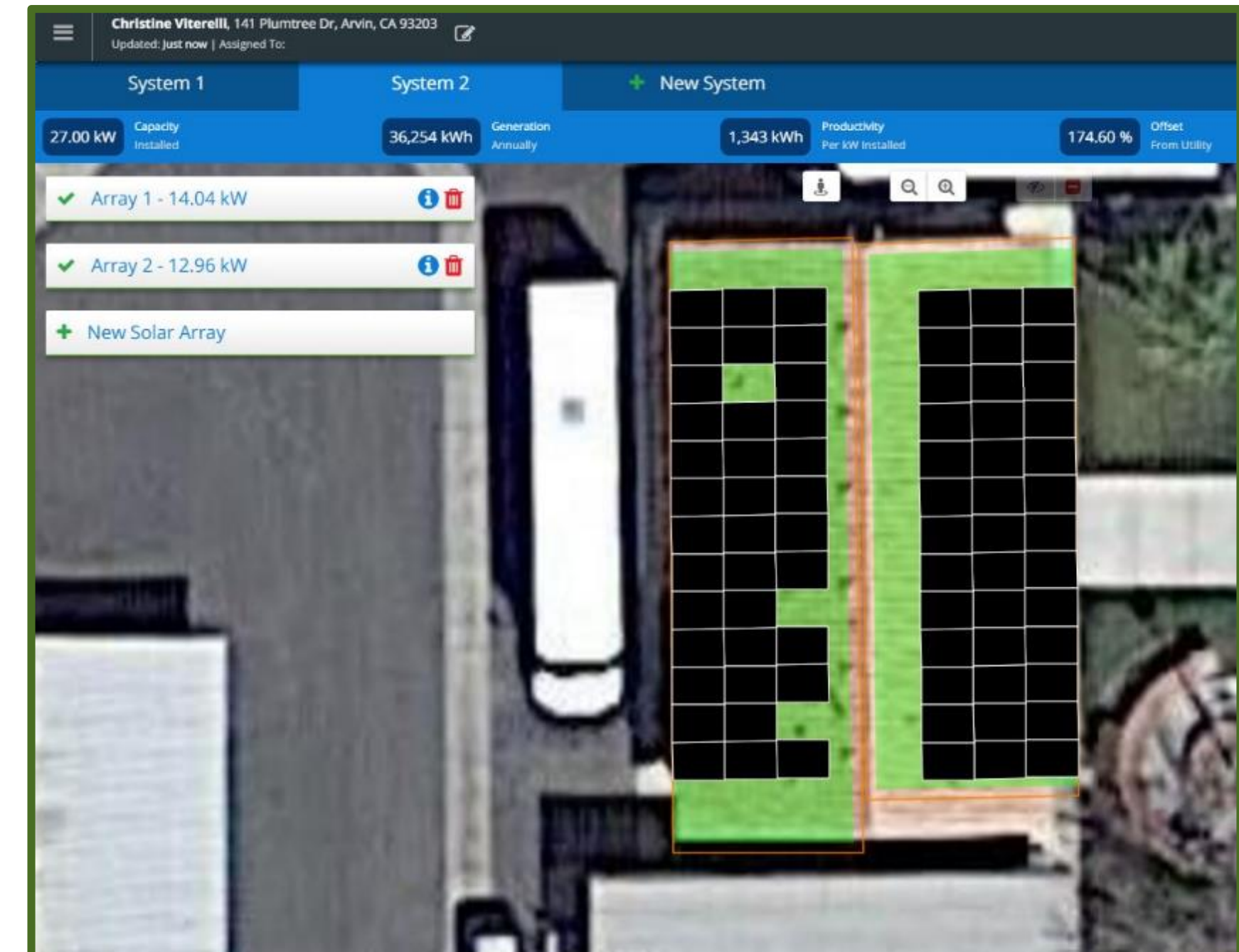
Arvin's Projects- The Lego Approach

Barrier= Cost- Project Cannot Cost anything; includes electricity

Challenge- Electrify Arvin with no match funds



Short-term Solution: Renewable Energy and Aggregate Power to power two buildings and charging stations

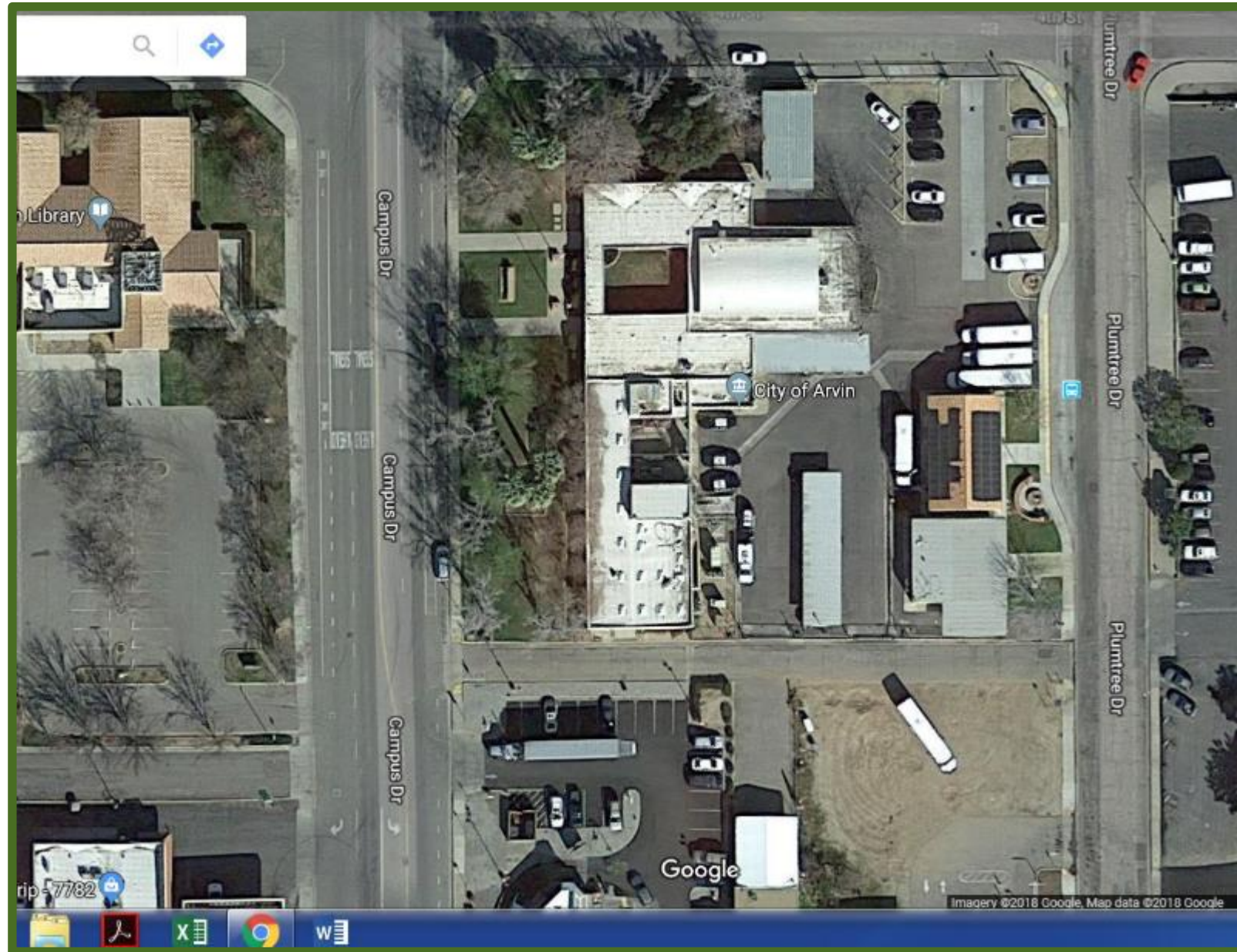


Long -term Solution: Solar Carports carports

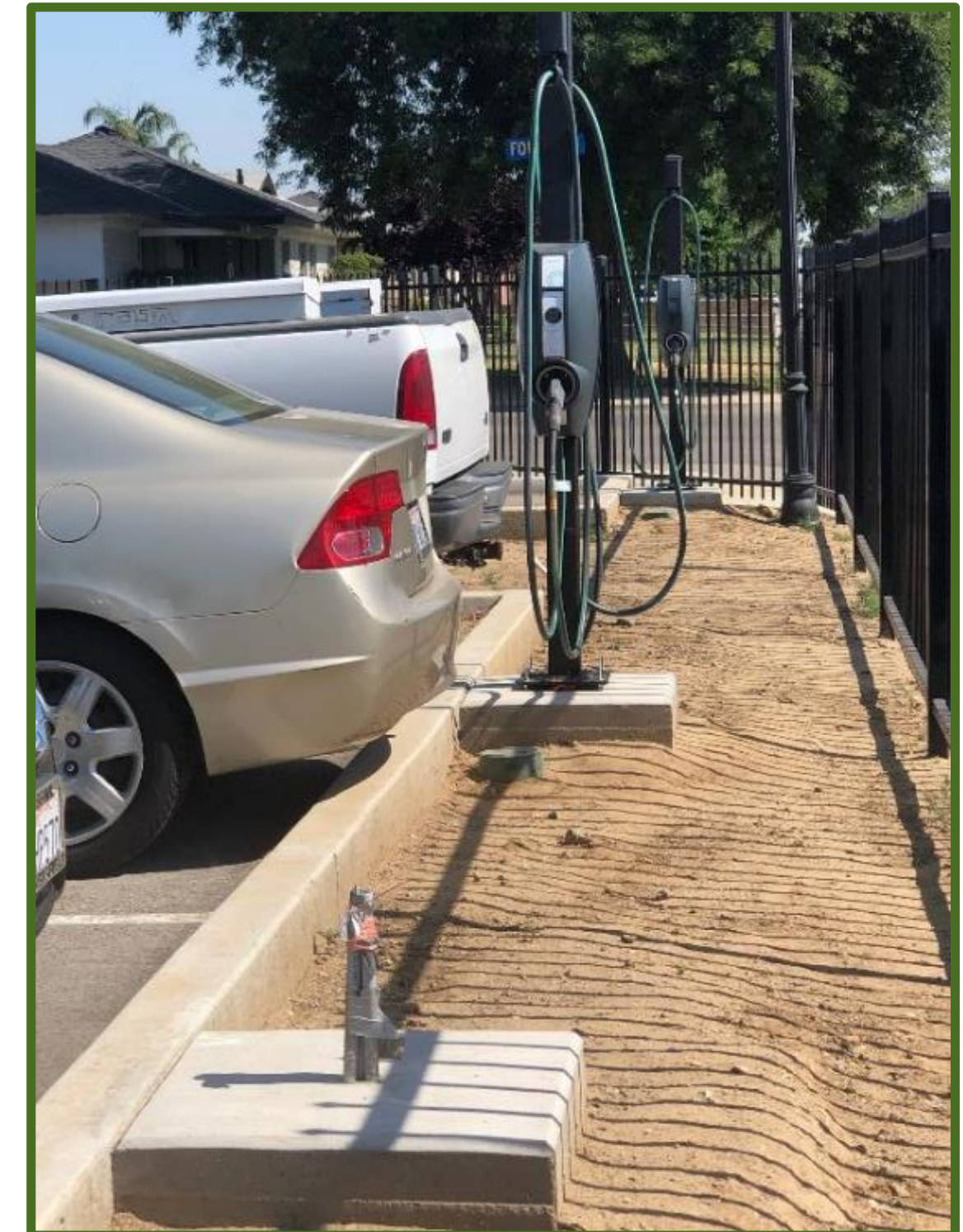
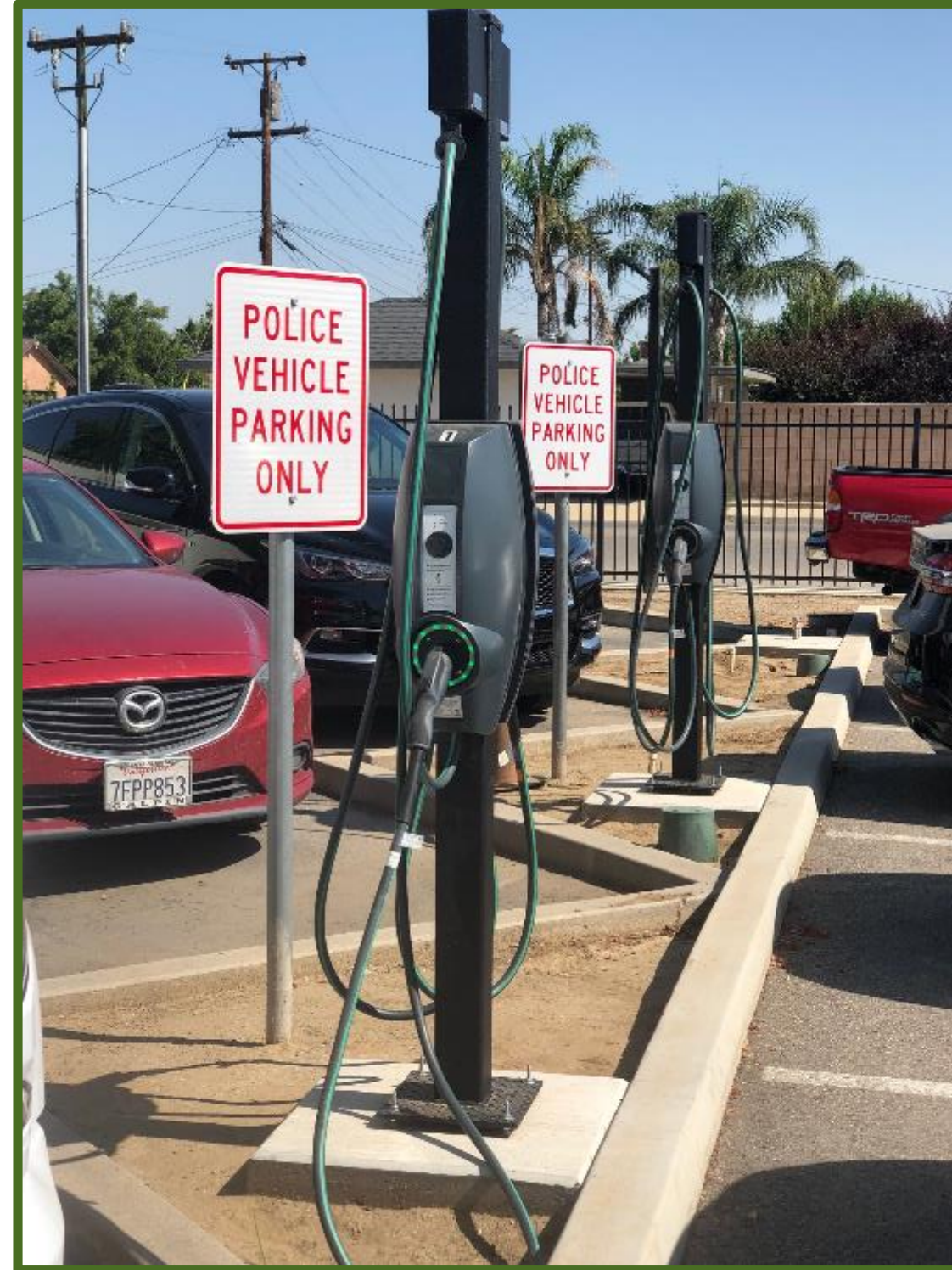


Arvin's Projects

- City Hall- Fleet Charging
- Started with 1 Dual Port Charging Station and Grew to 5 Stations (with capacity for 10)



Before



After



Arvin's Projects

- Public Charging Station- serves Adobe Complex and Veteran's Hall visitors and general public

10 Single Port Level II



Before



After



Arvin's Projects- The Lego Approach

- When considering barriers Arvin took the Lego approach and implemented in phases or “Chunks” at a time.
 - Solution: Apply for Funds to transform fleet to Zero Emissions in Phases



Barrier- Aging Diesel Buses that breakdown and cost a lot to maintain and operate



Before



Arvin's Projects- The Lego Approach

- Final Phase includes installation of renewable energy to keep operation costs down

City of Arvin
Arvin TAM 2025



CITY OF ARVIN IS PROUD TO INVITE YOU TO OUR:

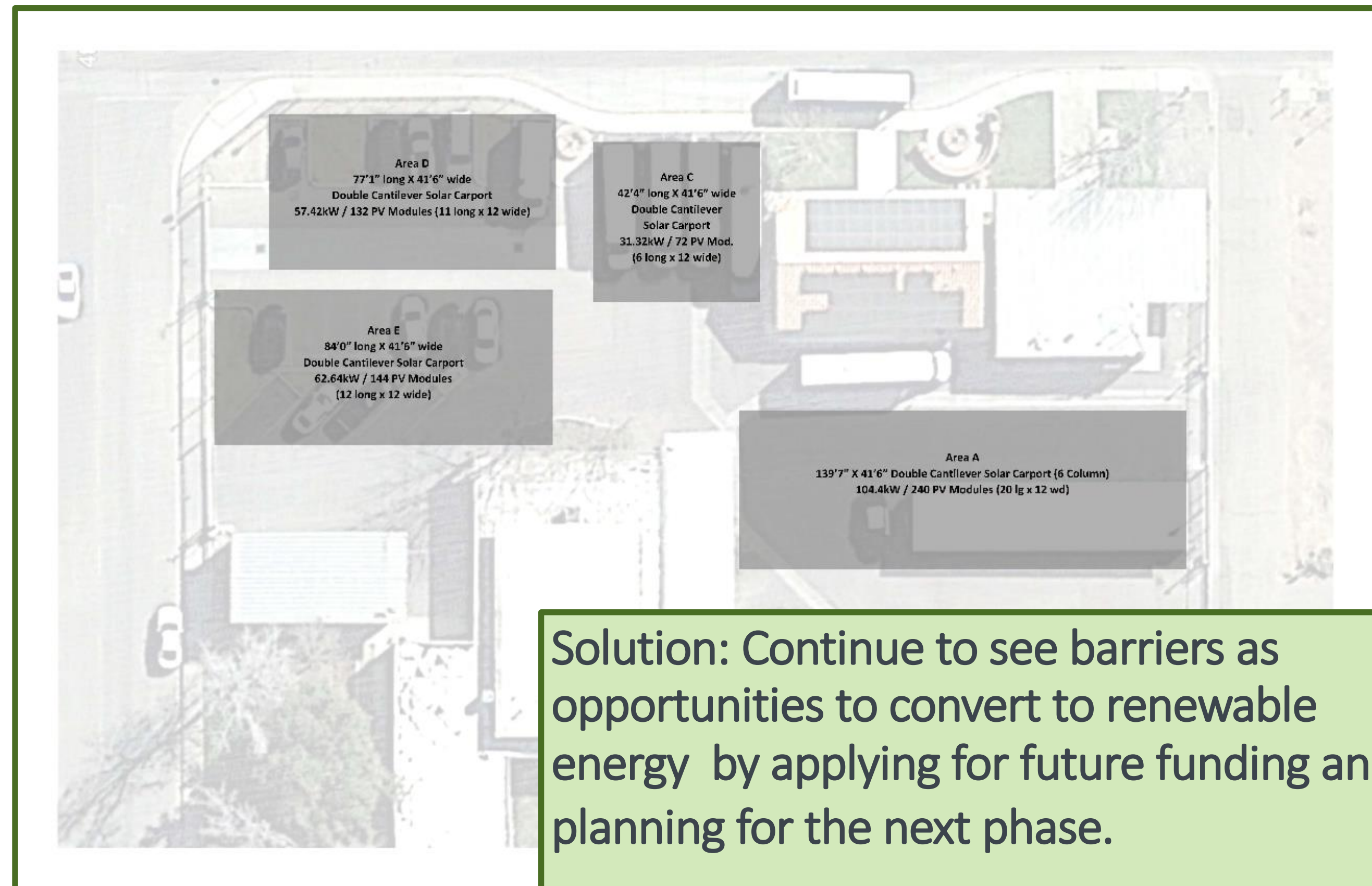
Electric Bus Tour

Take a seat and ride into the future of Arvin Transit! Proterra, a leading innovator in heavy-duty electric transportation, will be showcasing their zero-emission, battery-electric bus currently being built for the City of Arvin



Location: 200 Campus Dr. Arvin, CA 93203
Date/Time: Friday, November 16 at 10:30 a.m.

Solution: Transform to Electric early on during States CCI and Energy Initiatives



Solution Focus:

Energy Efficiency & EV Infrastructure for DACs Commonalities

Residential

- Both target the same demographic
- Goal to lower bills (electricity vs. fuel)
- Similar outreach strategies (engage CBOs, established events, multi-lingual assets)

Business

- Entry point through Utility Programs
- Energy Efficiency retrofits provide capacity for EV charging
- Engage same stakeholders (e.g., same property manager engaging for EE & EVI)
- Same Regulatory Drivers

EE and EVI: Additional Connections

Charging Technologies

- L2 EVCS simply supply power, charger onboard vehicle does the conversion
- State Programs requiring Energy Star certification of level 2 stations
- Upcoming Energy star standards of DCFC.
- Integration with building energy management systems
- Demand response and other grid-interactive charging.

Solution Focus: Technology Solutions

Envoy Technologies

- Market based amenities & solutions for lower income communities

In The News

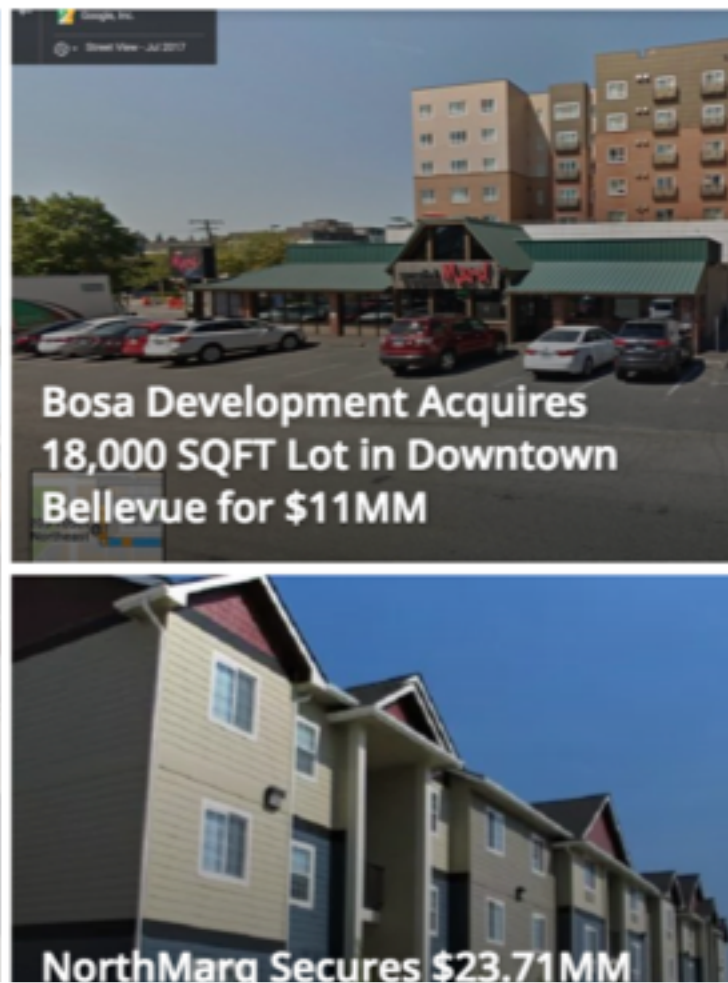
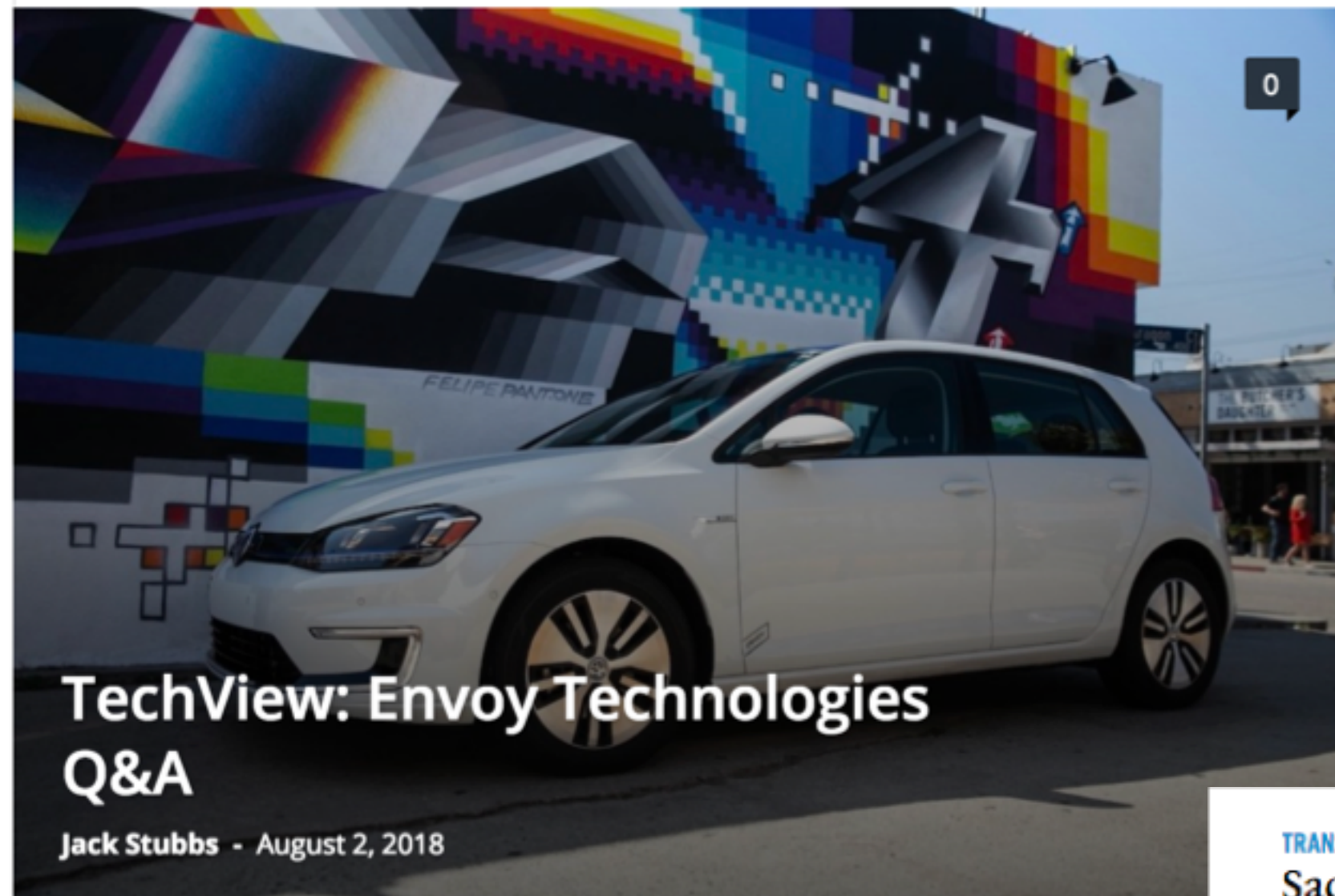
THURSDAY, AUGUST 2, 2018 ADVERTISING CONTACT US JOBS

THE REGISTRY

PUGET SOUND REAL ESTATE

HOME COMMERCIAL RESIDENTIAL ▾ FINANCE AEC CONTRIBUTORS CALENDAR NEWS

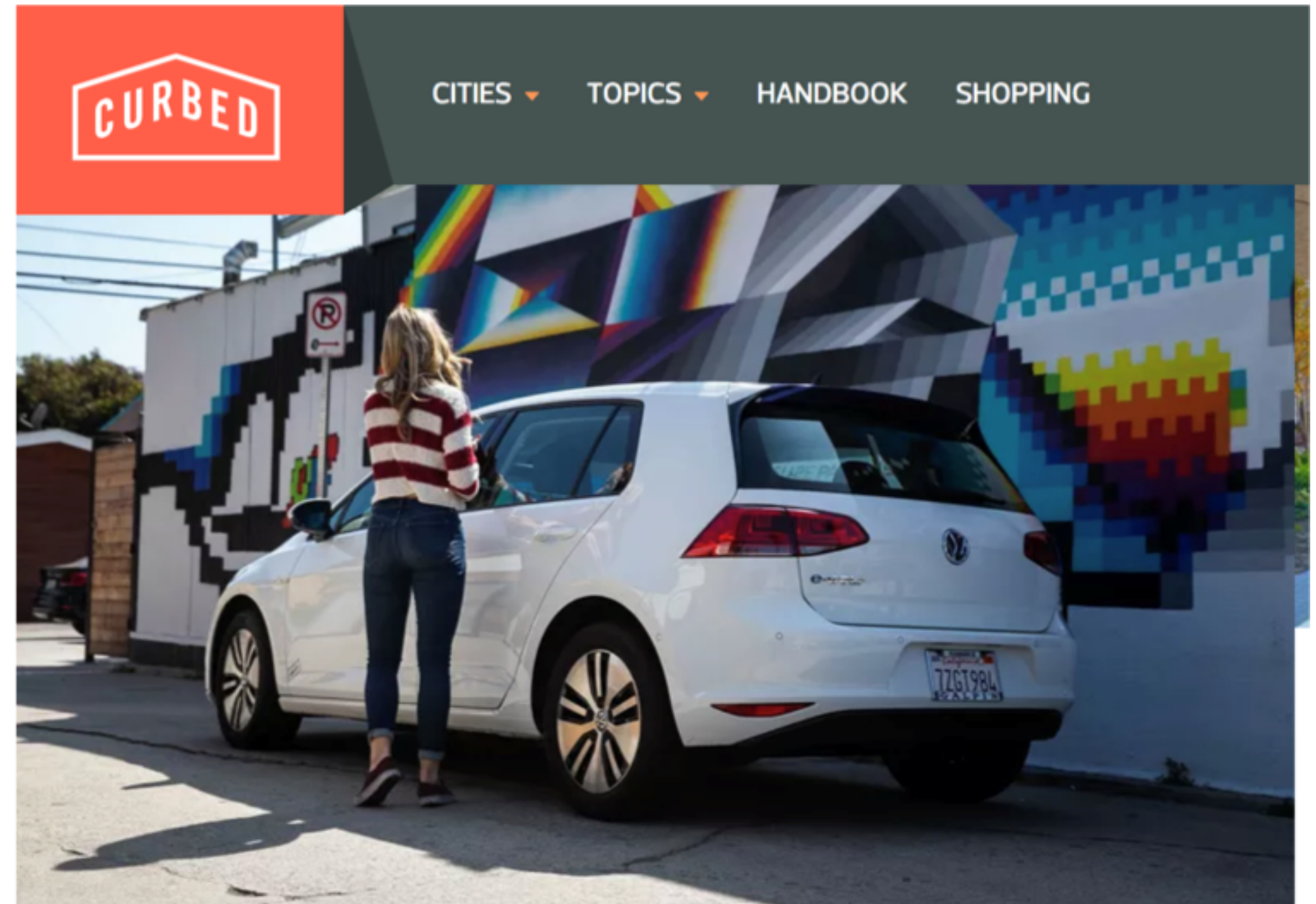
TRENDING NOW TechView: Envoy Technologies Q&A Bosa Development Acquires 18,000 SQFT Lot in Downtown Bellevue for \$11MM



TRANSPORTATION

Sacramento wants you to dump your car and rent one of these 400 electric share vehicles

Sacramento will soon offer the country's largest electric-car sharing program, with GIG Car Share and Envoy Technologies, using funds from an Electrify America grant provided by Volkswagen as part of its settlement for installing software in its diesel cars that allowed them to cheat on smog tests.



Sacramento's \$44 million plan to become the U.S. electric car capital

By **Patrick Sisson**

LIVE
WORK
STAY

ENVOY

Solution Focus: Technology Solutions



- Helping to replace the highest polluting vehicles
- Late adopters **now** first adopters
- Educate communities on sustainable transportation
- Creating personal income in the **Gig Economy**

Poll - Installation and Operation Costs

- My agency administrator will want to know the cost to install
- My agency will be concerned about long-term operation costs
- My agency is willing to consider solar

Solutions & Toolkit Building Exercise

- Group Participation

Thank You!



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