



NACAA Spring Meeting 2023

Larz Garcia : Innovative Initiatives from State and Local Air Agencies : May 9, 2023







EV Infrastructure Plan Development Process

EV Support from the top down



The FY2023 - 2026 Maricopa County Strategic Plan defines a goal to “Reduce ozone-causing emissions by implementing sustainable strategies involving renewable energy, the use of zero-emissions vehicles, and leveraging technology.”

EV Support from the top down

Chairman of County Board of Supervisors



This goal with objectives specifies by December 2023, Maricopa County will complete an electric vehicle infrastructure plan for the appointed departments and adopt recommendations and a timeline for converting a portion of the county fleet to electric vehicles.

EV Support from the top down

County Manager who ushered in project



By December 2026, Maricopa County's appointed departments will fully implement the electric vehicle and charging station targets for years 2024, 2025, and 2026 as identified in the electric vehicle infrastructure plan.

EV Project Team

Air Quality

- EV experience
- Project management experience
- Manage consultant contract
- Created GIS database of all EV chargers in the county
- It's all about the AIR

Facilities Management

- Facility Construction & Maintenance
- Install and Maintain Chargers
- Sustainability Manager on staff

Equipment Services

- Order and service all fleet vehicles
- Maintain vehicle replacement schedule
- Help find the correct replacement vehicle

Develop a scope of work that fits your specific needs.

Research

- Review other EV infrastructure plans – local if possible
- Determine what you like, and what you don't like
- Ask for the cost of the example plan if available

Scope of Work

- Be as clear and detailed as possible to address your specific needs
- Include all that you need
- Include project schedule with milestones & key deliverable dates

Consultant Selection

- Validate your consultant selection panel by their area of expertise. Example: air quality permitting engineer, fleet, construction, transportation
- Get three or more quotes to verify costs

Fast track where you can.

Procurement

- Ask your procurement office for guidance early
- They typically know about options available to you that you may not be aware of
- Be creative
- Reduce scope to prevent delays

Co-op

- May allow you to use another local agencies' consultant already under their contract
- Ask for a performance evaluation of their consultant

Vendor List

- Your procurement office can provide you with a list of pre-qualified vendors
- Look for any that have experience with electrical or transportation services



Tips and Recommendations

Involve your procurement department early.

- Include in all steps of contract development.
- Make constant communication a priority = saves time.
- There may be restrictions to discuss the project with potential bidders.



Make a Launch Video.

- Introduces Project
- Who, What, Why When, and Where
- Refers to County Strategic Plan
- Energizes employees and participation



The image shows a YouTube video player interface. At the top, there is a search bar and the YouTube logo. The video content shows a woman in a blue shirt plugging a charging cable into a white electric vehicle at a charging station. The video player includes a progress bar at 0:25 / 2:20 and various control icons like play, volume, and settings. Below the video, the title "EV Infrastructure Plan" is displayed, along with a link icon and the text "Unlisted". The channel name "Maricopa Air" and "78 subscribers" are shown, along with a "Subscribe" button. At the bottom right, there are icons for likes (2), dislikes, share, and a menu.

Develop an Outreach Plan.

- Outlines project
- Defines clear process for data gathering
- Includes deadlines and key dates
- Includes all departments

Major Goals

Maricopa County Board of Supervisors

Goal 1

By July 2023: Complete an EV infrastructure plan for the appointed departments and adopt recommendations and a timeline for converting a portion of the county fleet to electric vehicles.

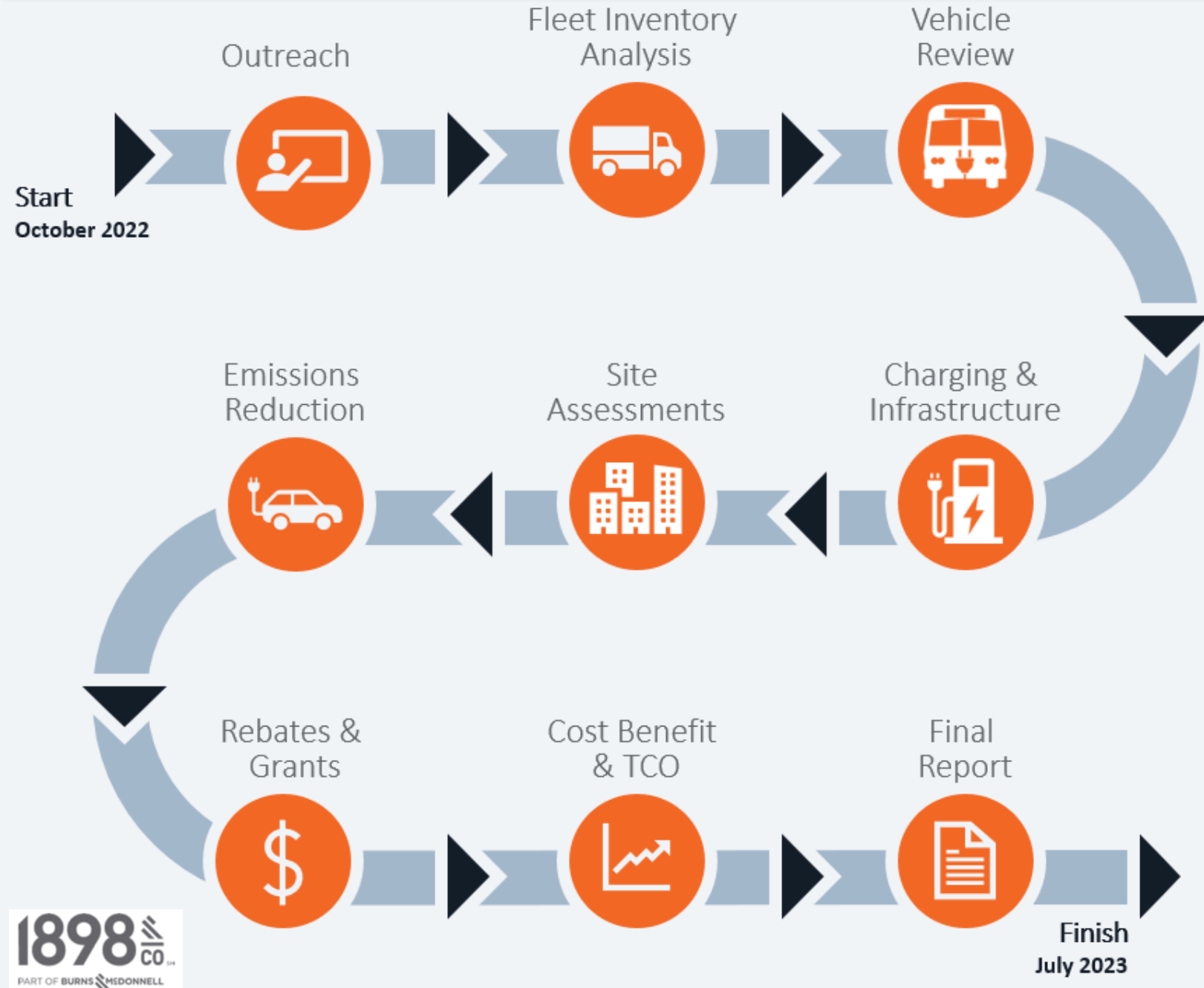
Goal 2

By December 2026: Maricopa County's appointed departments fully implement the EV Infrastructure Plan with milestone checkpoints in 2024, 2025, and 2026.



Develop an Outreach Plan.

- 41-week project
- Over 30 departments
- 15 charging sites to be evaluated
- 2,113 vehicles to be evaluated



Develop an Outreach Plan.

- Educate audience on all things EV
- This builds a standard baseline for communicating
- Answer standard questions beforehand






Economic Overview of EVs

There are five main areas of focus when evaluating the TCO and ROI of EVs: the **vehicle**, **energy**, **maintenance**, **sustainability**, and the **driver**, and within each area of focus, there are key considerations fleets should evaluate.

Hard costs are known and quantifiable like vehicle price, utility rates, tire prices etc.

Soft costs, are intangible and difficult to forecast or estimate. For example, calculating the reputational impact of transitioning to a zero-emission fleet is very difficult.

Economic Benefits of EVs

-  **Improved fuel economy**
From highly efficient electric drive components
-  **Improved energy security**
Shift from imported oil to domestic energy
-  **Lower maintenance costs**
Fewer moving parts vs. conventional vehicles
-  **Lower emissions**
Zero-tailpipe emissions
-  **Reduced driver fatigue**
Easier to drive with lower vibrations and vehicle noise

Hard Costs

- The Vehicle** 
 - Purchase / lease price
 - Incremental cost difference
 - Insurance, taxes, and fees
 - Residual or salvage fees
- Energy** 
 - Utility rates and incentives
 - Charging infrastructure
 - Battery storage
 - Parking lot design
- Maintenance** 
 - Parts and supplies
 - Service and repair
 - Facility upgrades
 - Training and certifications

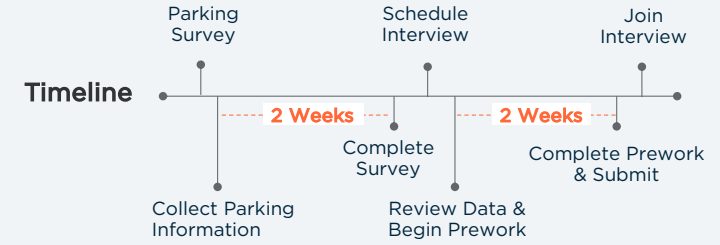
Soft Costs

- Sustainability** 
 - Corporate image
 - Recycling and second life
 - Publicly announced goals
 - Compliance
- The Driver** 
 - Health and safety
 - Hiring and retention
 - Productivity
 - Training

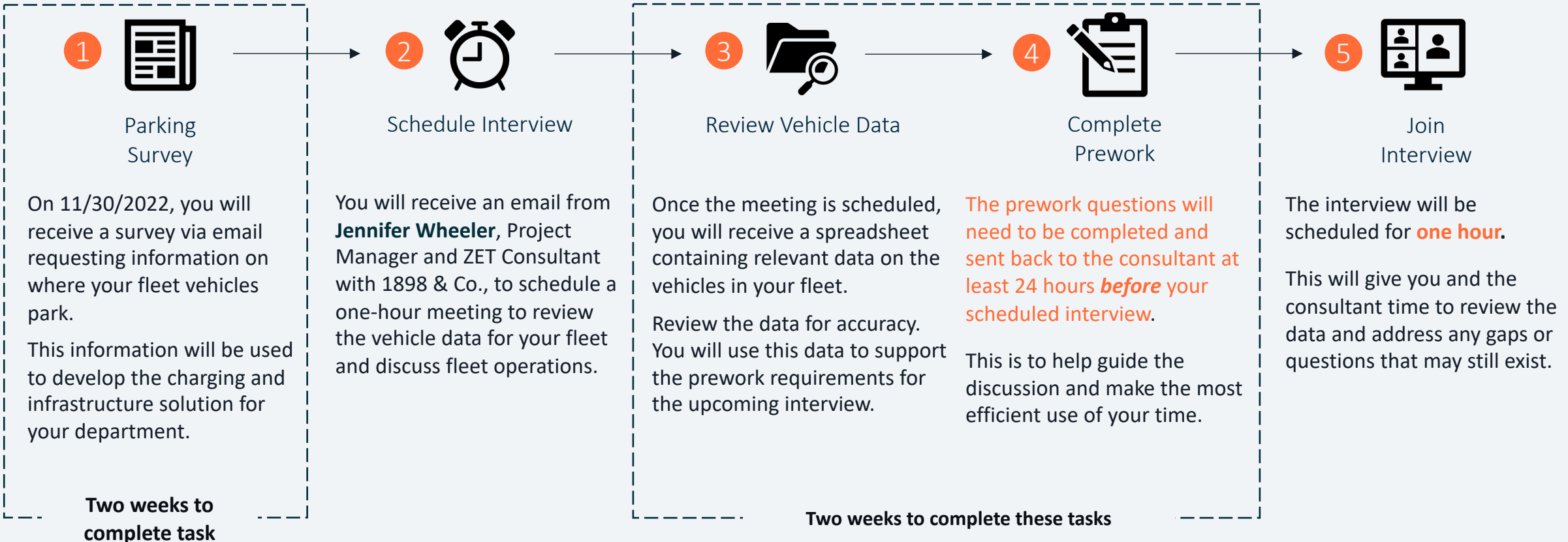
Soft costs are typically found with the sustainability and driver focus areas and can be difficult to quantify.

Process for Data Collection and Analysis

The goal of this process is to ensure data quality as the data you provide will be foundational to a large part of the MCAQD EV Infrastructure Plan. You will have approximately two-weeks to complete the parking survey in step one, and two-weeks to complete the data review and prework in steps three and four.

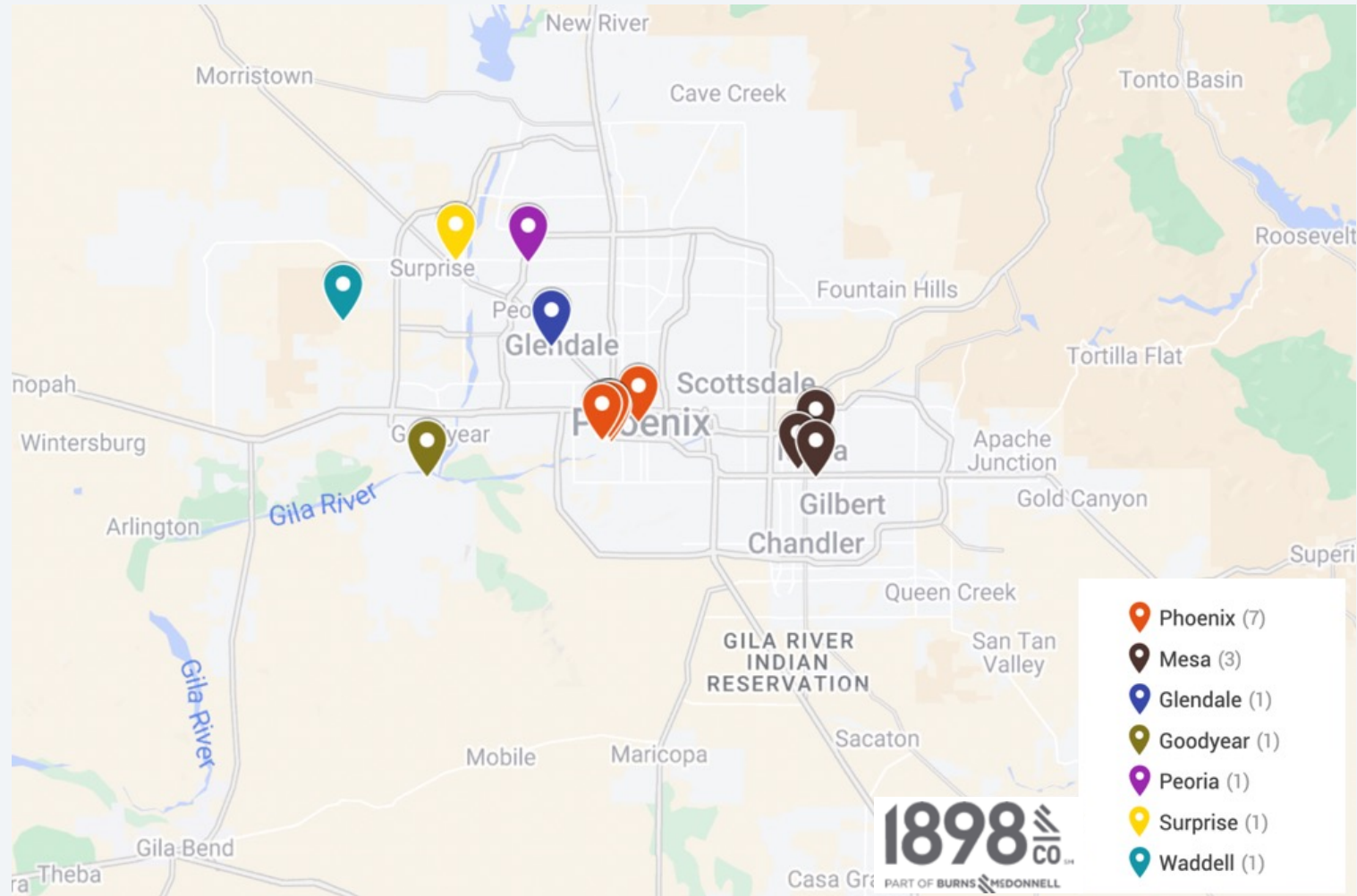


In order to ensure the project stays on schedule, it is critical that everyone complies with stated deadlines and addresses any concerns in a timely manner.



Conduct a Fleet Parking Survey.

- Shows where chargers may be needed
- Include time people are parked at a specific location
- Good indication of who drives their work vehicle home at night



Host a Ride and Drive Event.

- VIP and Hands On Experience
- Many employees had their first (exceptional) EV driving experience



Host a Ride and Drive Event.

- Create signage that fits your needs
- Showcase vehicles available for purchase today!
- Include vehicle pricing for decision makers
- Have a charging demo



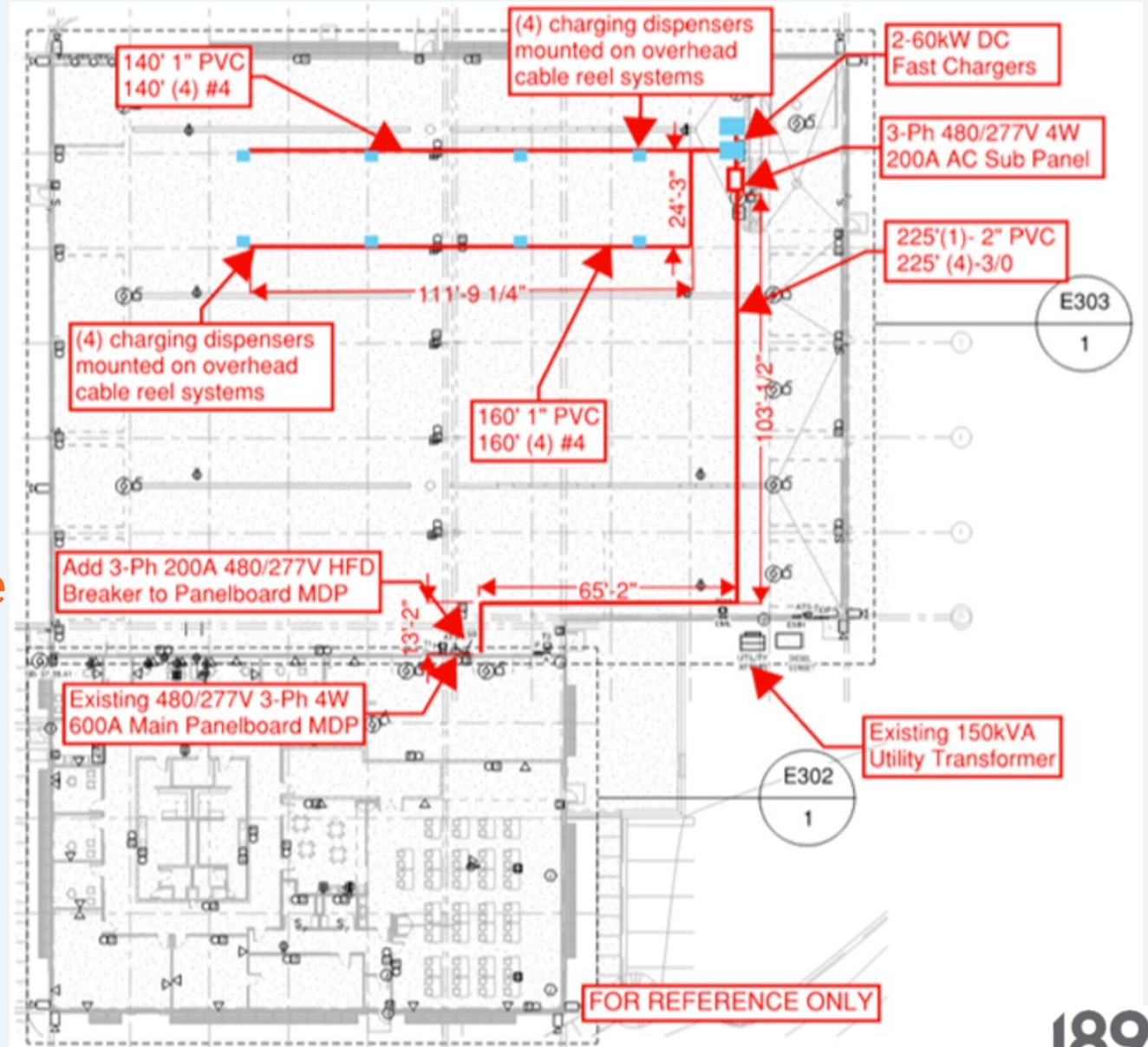
Host a Ride and Drive Event

- Generates elevated excitement for the project
- Have fun – more people are now ready for EVs



Final EV Infrastructure Plan

- 15 Charging sites
- 389 chargers - Level 2
- Final plan will include line drawings and rough cost estimates for each site
- EV vehicle replacement:
182 between 2024-26
195 by 2030



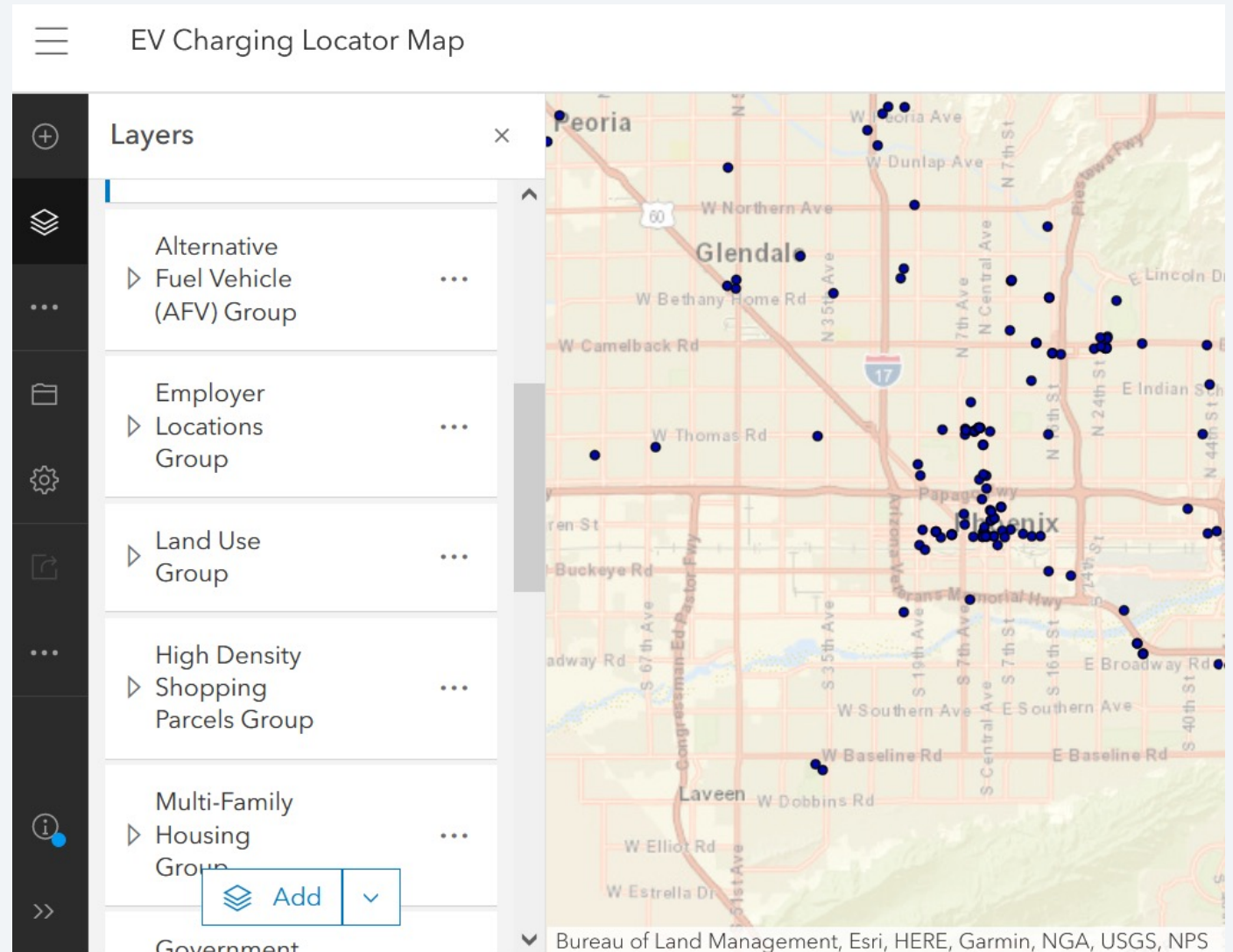
One Line Drawing Example



Additional Outreach for Electric Tech

GIS Database

- Public interface
- Includes all chargers and alternative fuel sites in the county
- To be used as a planning tool
- Can choose data layers to view



Additional Outreach for Electric Tech

EV Emissions Calculator Tool

- Public interface
- To be used as a planning tool
- Running total of county-wide emissions reduced from EV conversions
- Helps inspire county residents and planners

Additional Outreach for Electric Tech

DERA State Grant

First in state to grant fund an electric school bus



Electric Lawnmowers

Mandated by ARS 49-474.02 - \$150 vouchers



Additional Outreach

Fireplace Retrofit

Up to \$2,000 per retrofit – 879 completed



Propane Fire Pit

\$75 vouchers - 5,422 fire pits purchased





Thank You