DOCKETED	
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DC Fast Charger Siting
Merging Expert Perspectives

Cal Silcox
Pacific Gas & Electric

PG&E & Electric Vehicles

Company Facts

- Regulated gas & electric utility serving Northern and Central California
- $17B in operating revenues in 2014
- 23,000 employees

Energy Supply

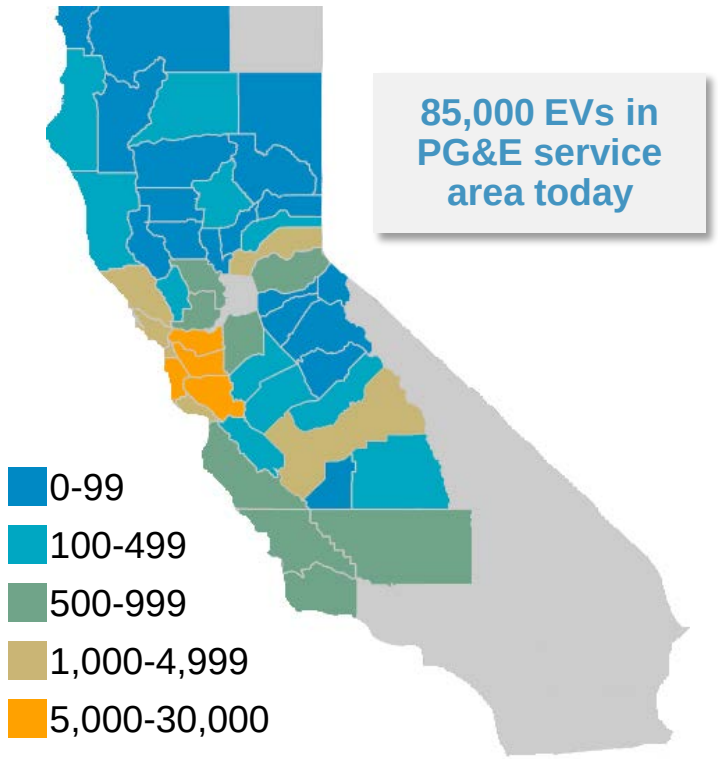
- Services to 16M people:
  - 5.2M Electric accounts
  - 4.3M Natural Gas accounts
- Peak electricity demand: Approx. 22,000 MW
- Approx. 55% of PG&E's electric supply comes from non-greenhouse gas emitting sources

Service Territory

- 70,000 sq. miles with diverse topography
- 160,000 circuit miles of electric transmission and distribution lines
- 49,000 miles of natural gas transmission and distribution pipelines

Cumulative EV Registrations by County

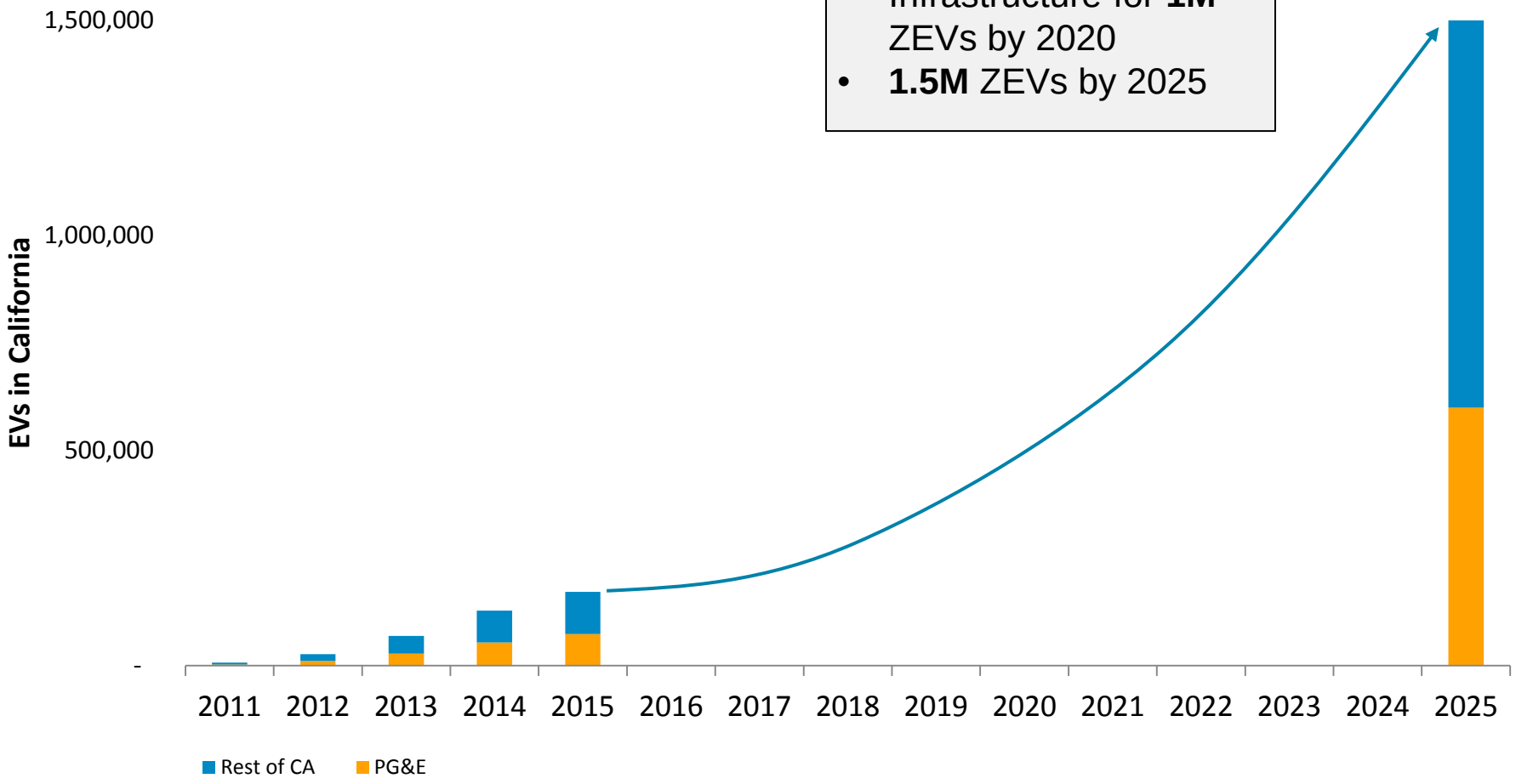
PG&E Service Area



Source: EPRI, R.L. Polk Data, Dec. 2015

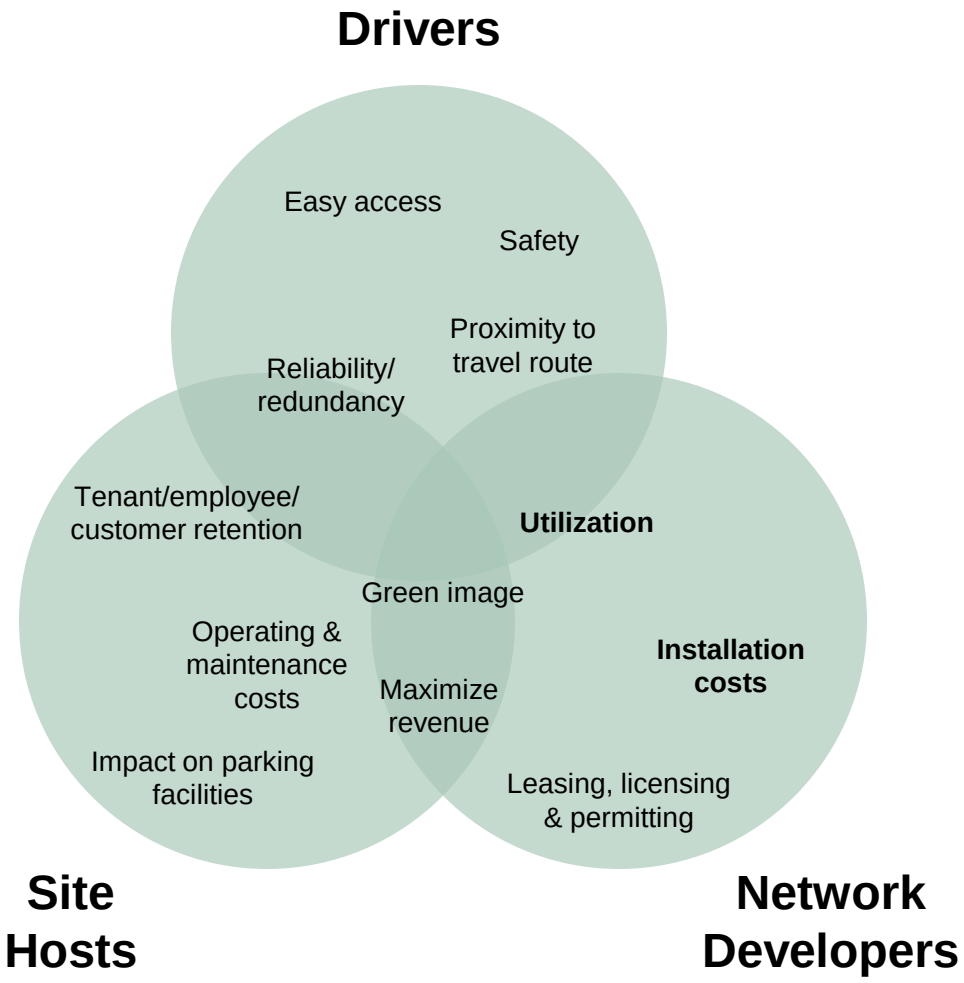
The need for public DC Fast Charging

Gov. Brown's ZEV goals:
- Infrastructure for **1M** ZEVs by 2020
- **1.5M** ZEVs by 2025



Source: EPRI, R.L. Polk Data, Dec. 2015

Perspectives for Developing DCFC in California



Research Overview and Goals

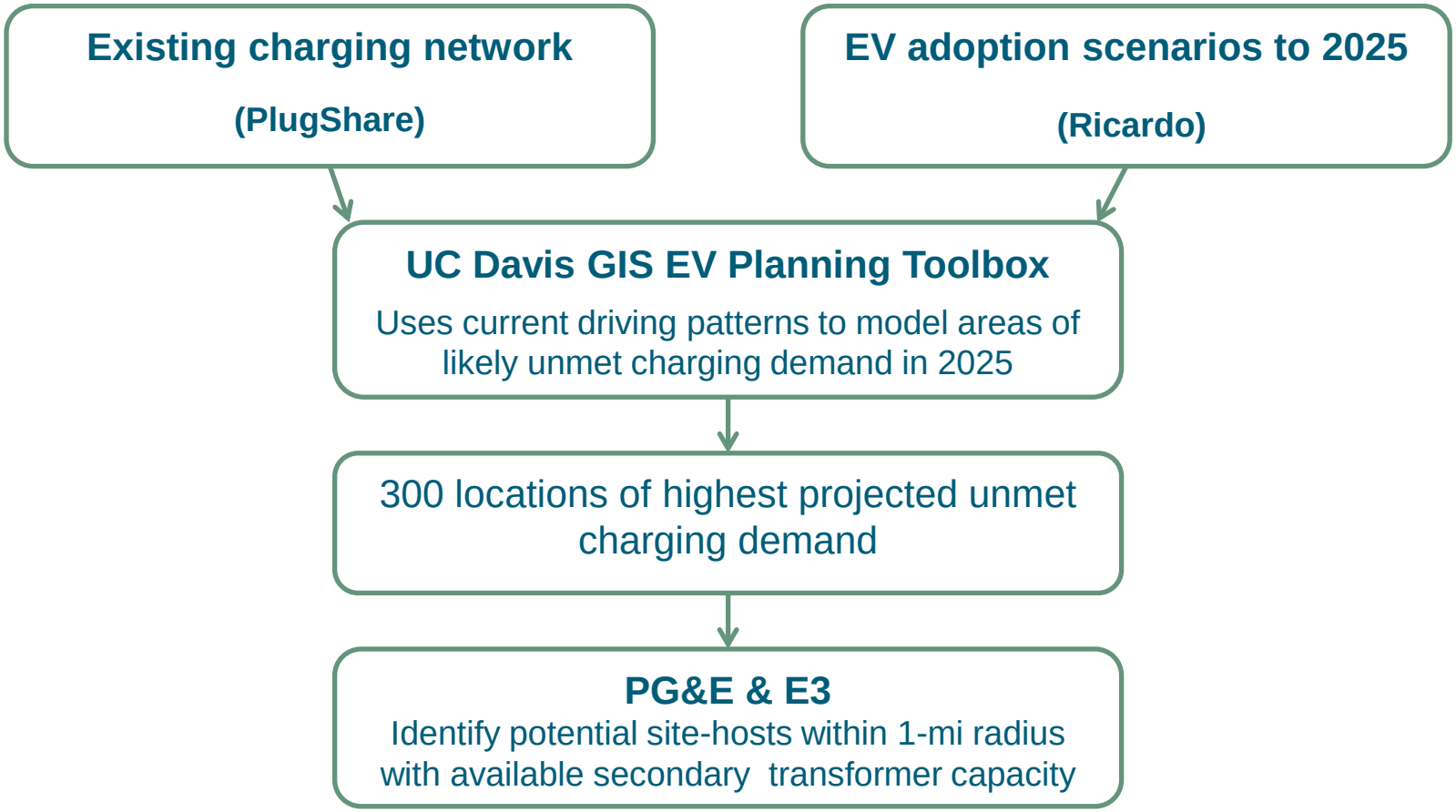
1. Collect & publish **best practices** in DC fast charger (DCFC) siting
2. Using these best practices, find the **most needed DCFC sites** in PG&E's service territory:
   - A. Find the 300 most needed broad *locations* within PG&E's territory for DC fast charger installations in 2025
   - B. Estimate how many chargers are needed at each location to support projected EV adoption in 2025
   - C. Identify individual potential *sites* with existing capacity for planners to target
   - D. Provide a map & scoring tool to help on-the-ground planners prioritize these sites

Macro - siting

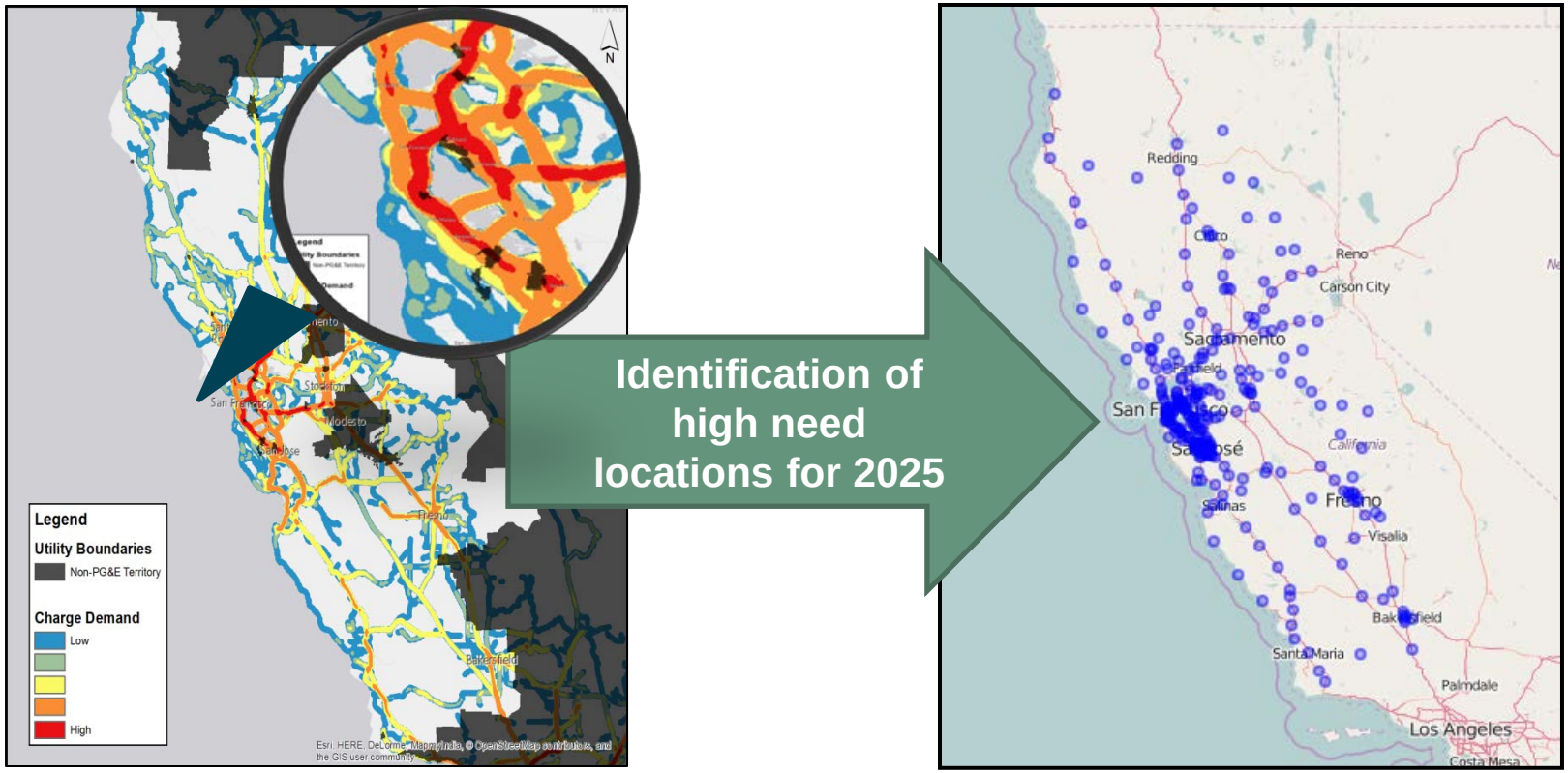
Micro - siting

This study was funded by PG&E, through California's Electric Program Investment Charge (EPIC), D. 13-11-025

Method

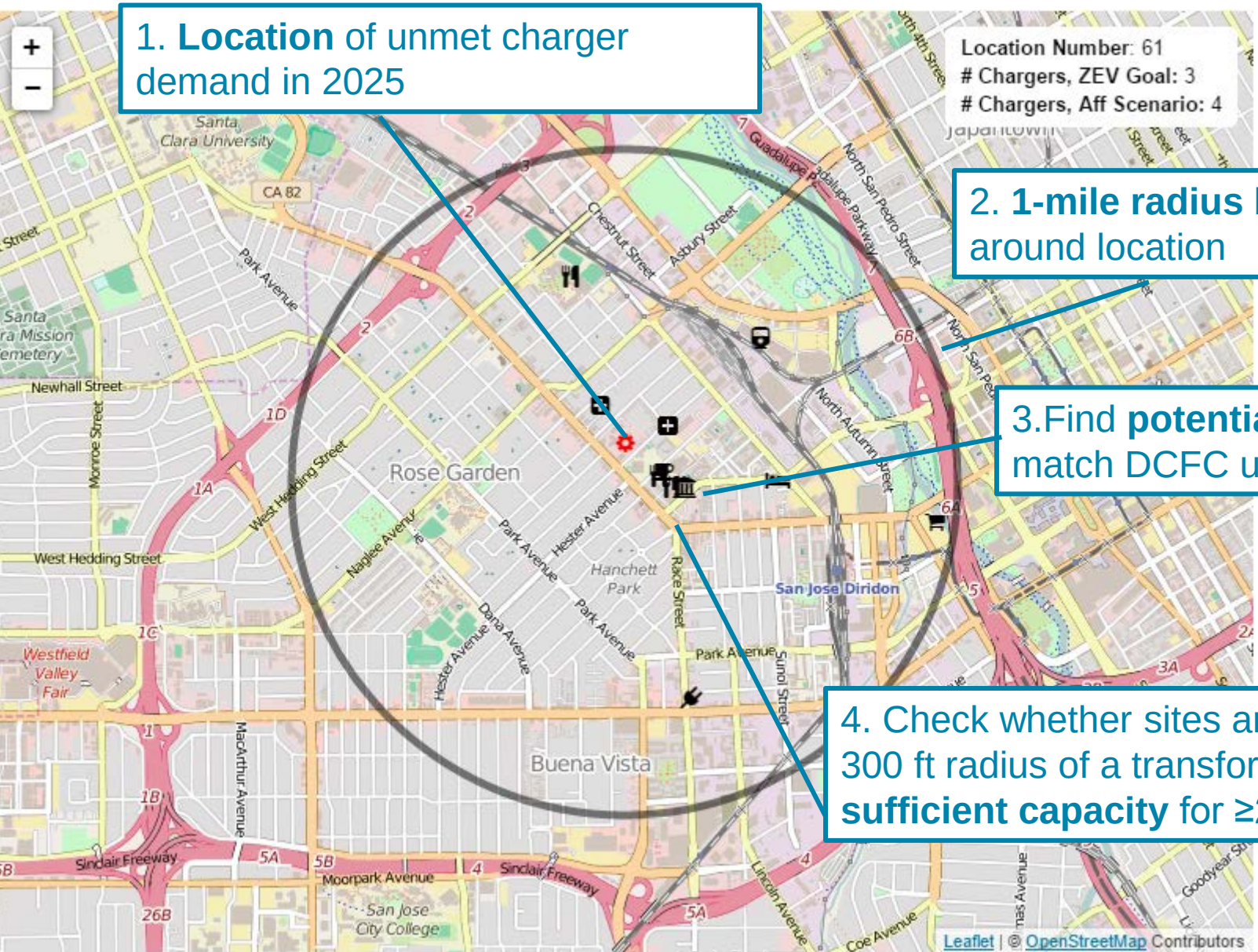

Existing charging network
(PlugShare)
EV adoption scenarios to 2025
(Ricardo)
UC Davis GIS EV Planning Toolbox
Uses current driving patterns to model areas of likely unmet charging demand in 2025
300 locations of highest projected unmet charging demand
PG&E & E3
Identify potential site-hosts within 1-mi radius with available secondary transformer capacity

Identification of 300 locations



UC Davis and PlugShare identified 300 locations where DCFCs are needed through a travel-demand model and modified to account for existing infrastructure.

Identification of Sites at a Potential Location



Online Interactive Siting Map will be Released in August

- **14,416 sites in 300 ranked bubbles**
- **Interactive map & siting tool for DCFC developers to identify sites based on priorities**