



Clean Miles Standard (SB 1014) – Advancing Equity in Electric Vehicle and Charging Access for Low to Moderate Income Ridehail Drivers

Mengying Ju (PhD Candidate)

with Prof. Susan Shaheen (Advisor) and Dr. Elliot Martin
University of California, Berkeley

Background

- **Transportation network companies (TNCs)** contribute 1.25% light-duty vehicle miles traveled (VMT) in California (CARB, 2022).
- **Under CPUC ruling, CARB** has set aggressive targets to incentivize zero emission vehicles (ZEVs) and charging infrastructure.
- **SB 1014 (Clean Miles Standard)** requires 90% eVMT and zero GHG per person miles traveled with TNCs by 2030.

Study Motivation

We want to understand the equity impacts of creating an owner-based EV TNC fleet and charging network in California.

* This project is funded by the UC Institute of Transportation Studies (ITS) through California's Road Repair and Accountability Act of 2017 (Senate Bill 1).

Research Plans (Ongoing)

Barrier Identification

Understand driver concerns, perceived charging accessibility, policy awareness, etc.

Charging Accessibility

Understand driver access to charging infrastructure via spatial analysis

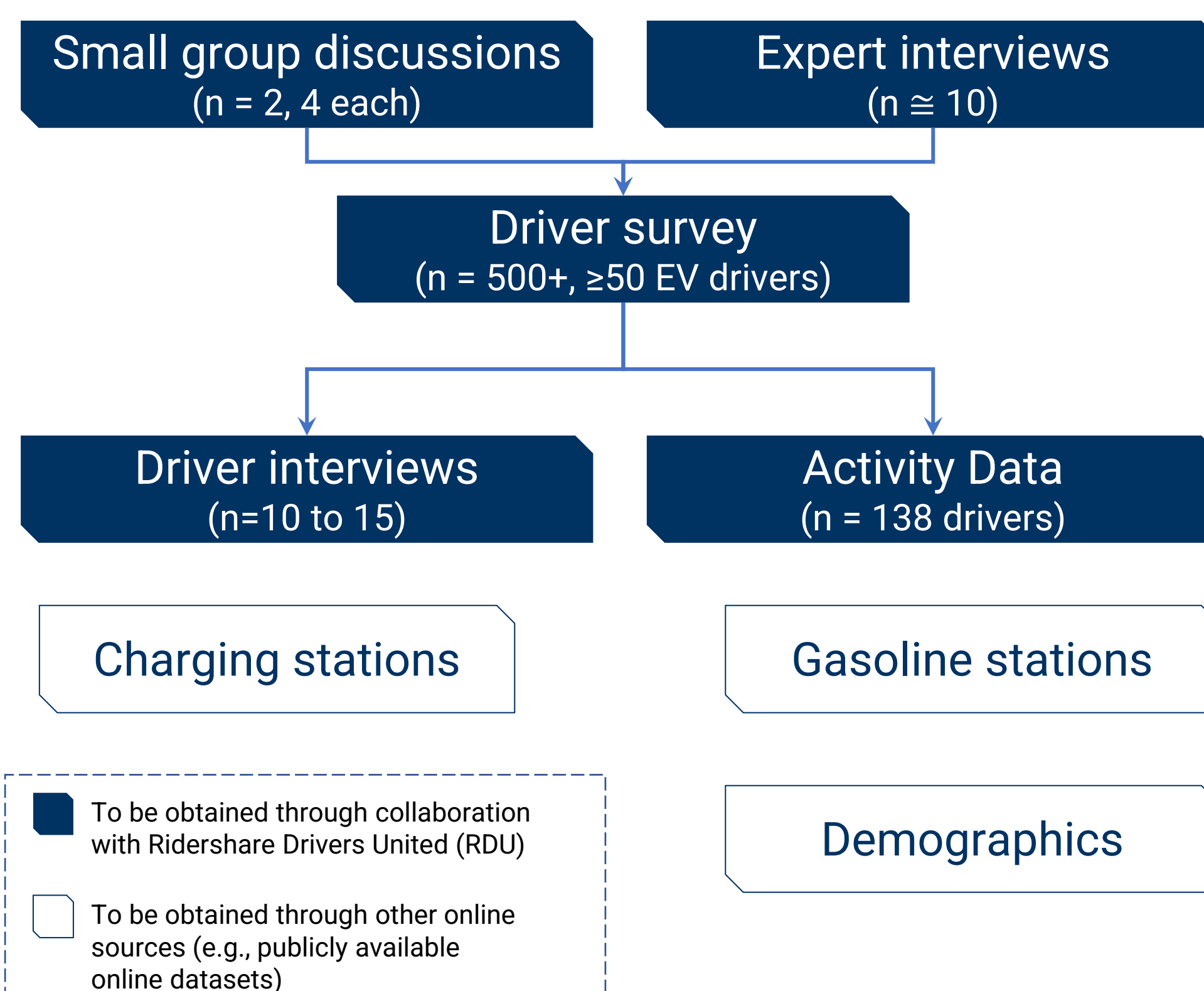
Cost-Benefit Evaluation

Estimate monetary cost and/or benefit if TNC drivers switch to EVs

Policy Evaluation

Evaluate existing and potential future policies to address problems

Research Instruments & Data Source



Expert Interviews

Expert interviews (n=10) were conducted in May and June 2023.

| | Public Agencies | Non-Profit | Private Companies | Public Companies |
|-----------------------------------------------|-----------------|------------|-------------------|------------------|
| California Public Utilities Commission (CPUC) | X | | | |
| California Air Resources Board (CARB) | X | | | |
| IATR | | X | | |
| RDU | | X | | |
| The Rideshare Guy (RSG) | | | X | |
| Forth | | X | | |
| Uber | | | X | |
| EVgo | | | | X |
| Hertz | | | | X |
| Itselectric | | | | X |
| Totals | 2 | 3 | 2 | 3 |

Driver Small Group Discussions & Driver Interview

One EV group (n=4 drivers) and one non-EV group (n=4 drivers) were conducted in June 2023.

Driver Profile

Tenure: All drivers have been driving 4-7 years

Geographic: 75% in Los Angeles area, 25% in San Francisco Bay Area

Reasons for becoming TNC drivers: enjoyed driving as an income and were satisfied with the pay; lost their jobs; tired or working from home; preference for better control over their own time and income, etc.

Implementation of SB 1014

Awareness: Drivers were generally aware of SB 1014

Opinions: Generally mixed.

- One EV driver expressed strong positivity: "EVs are the future."
- One non-EV driver expressed strong negativity: "Don't understand what they are doing."

Responsibility: Most believed that the responsibility is on the State or TNCs

Vehicle Ownership

Rent, lease or buy: More EV drivers rent/lease than non-EV drivers

New or used: More non-EV drivers operate with a used vehicle than EV drivers

Driver Habits

Area/time of operation: Urbanized areas, airports, etc.; high demand time (e.g., after big events)

Duration of operation: Some take as many trips as possible until reaching their daily goal; others switch between TNC apps to take advantage of bonuses

Charging/fueling habits: EV drivers care more about areas with better charging availability; non-EV drivers care more about areas with cheaper gas prices

EV Charging

Concerns: Fast charging speed; charging availability and overstays; double payments (i.e., both parking and charging); broader charging network; etc.

Suggestions: Multimodal charging hub equipped with other facilities

Income and Expenses

EV drivers: Concerns of missing orders due to charging

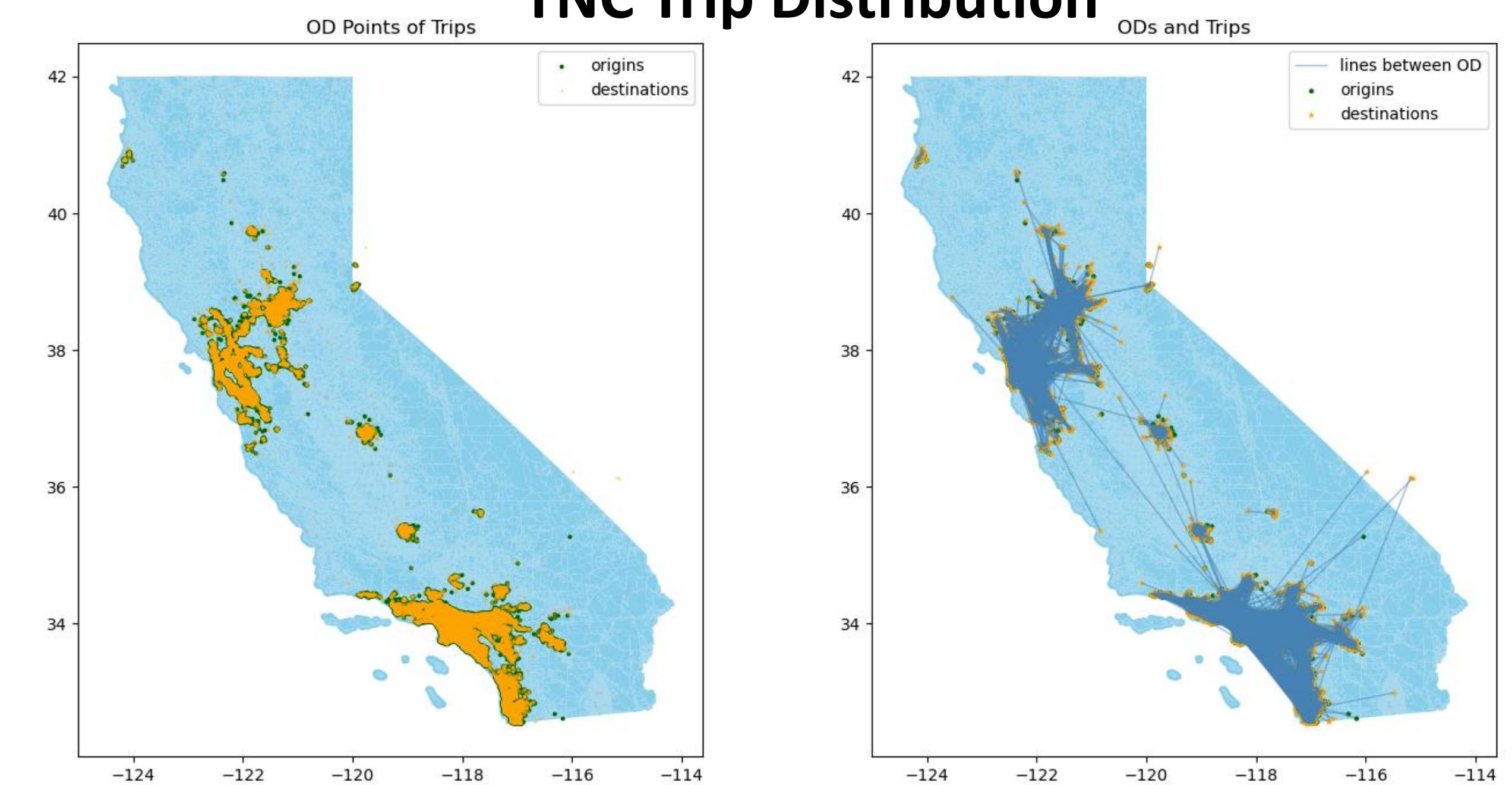
Non-EV drivers: Concerns of acquiring EVs and complaints over Prop 22

Driver Small Group Discussions & Driver Interview Findings (Continued)

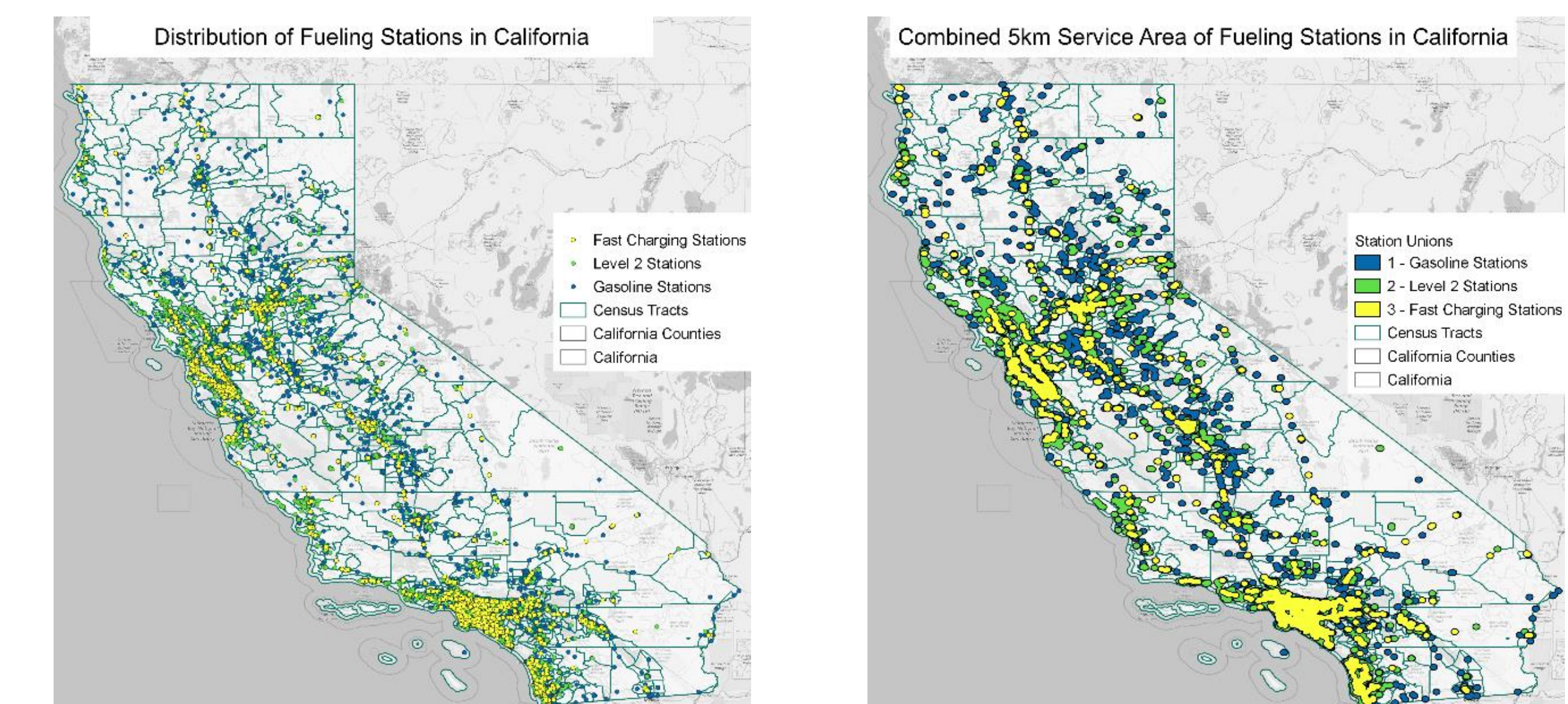
EV Incentives and Other Barriers

Suggestions and recommendations: EV rental incentives; driver-targeted incentives; used vehicles; education, loan, and vehicle price; State-controlled funds; more responsive and better regulated mandates; labor concerns; charging and vehicle range improvements; data sharing and transparency, etc.

TNC Trip Distribution



Fuel Stations



| Types of Fuel Station | Number in California | Proportion of Land Served |
|---------------------------|----------------------|---------------------------|
| Gasoline | 9,613 | 21.2% |
| Level 2 | 12,575 | 13.2% |
| Fast charging | 1,660 | 8.3% |
| Level 2 and fast charging | 14,235 | 14.2% |

Home Chargers (San Francisco)

