



California
Road Charge

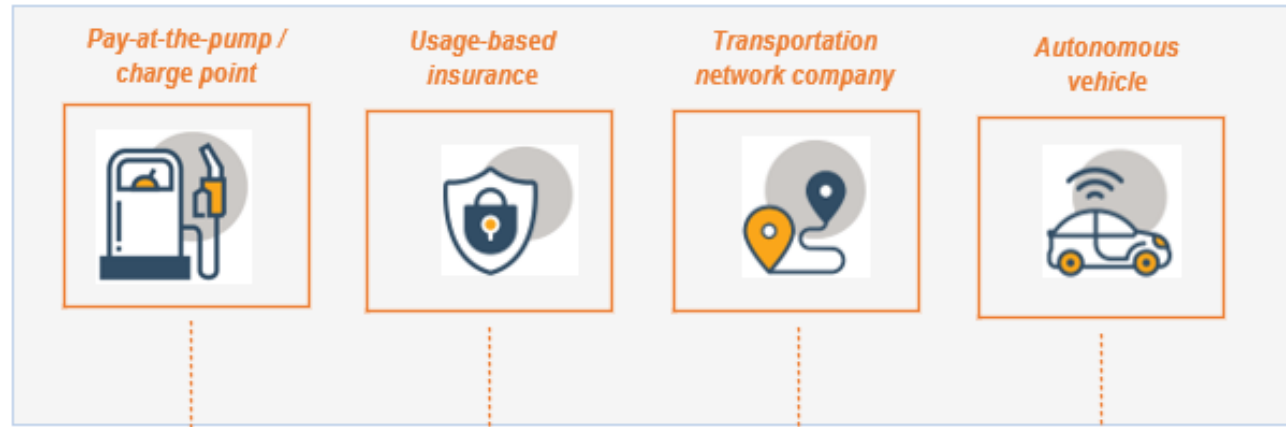
Tab 7

April 22, 2022

PRIME Overview



Platform for Road charge Innovation and Mobility Evolution (PRIME)



ANALYTICS EXAMPLES

Traffic Modeling

EV Charging Stats

Emissions

Road Weather Info

GIS Map Updates

Travel Patterns

Vehicle Fleet Sampling

VMT Modeling

Road Charge Assessment and Account Management

Platform for Road charge Innovation and Mobility Evolution (PRIME)

Dashboards and Analytics Engine



External Sources of Data



PRIME Achievements

Platform for **R**oad charge **I**nnovation and **M**obility **E**volution

- ▶ PRIME serves as the data clearinghouse and reporting engine for the California Road Charge Demonstration
- ▶ Demonstration data from each business partner was pushed to PRIME and then used to analyze demonstration performance, evaluate trends, and generate revenue reports
- ▶ PRIME served as the data focal point for customer service coordination, participant activity, and business partner service level monitoring
- ▶ PRIME allowed each business partner to connect with no modifications to their systems (a first of its kind). Supports ease of entry for future programs
- ▶ PRIME also integrated with other public data sources to create a series of informative mobility dashboards



PRIME Capabilities

California Road Charge

Available Menus:

- *VMT Summary*
- *Monthly Reports*
- *Micromobility Potential*
- *Transit Potential*

Participants
Business Partners
Mileage Reporting Options

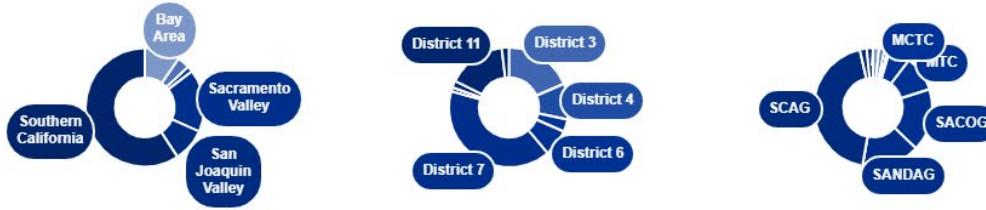


PRIME Capabilities

California Road Charge

- Dashboards
- VMT Summary
- Monthly Report
- Micromobility Potential
- Transit Potential
- Participants
- Business Partners
- MROs

VMT by Region

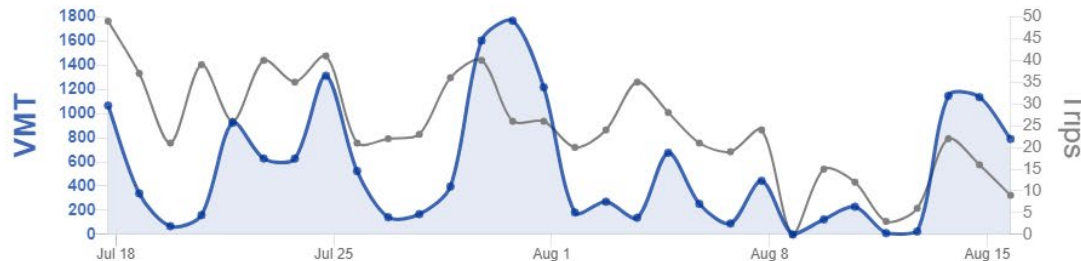


VMT by County



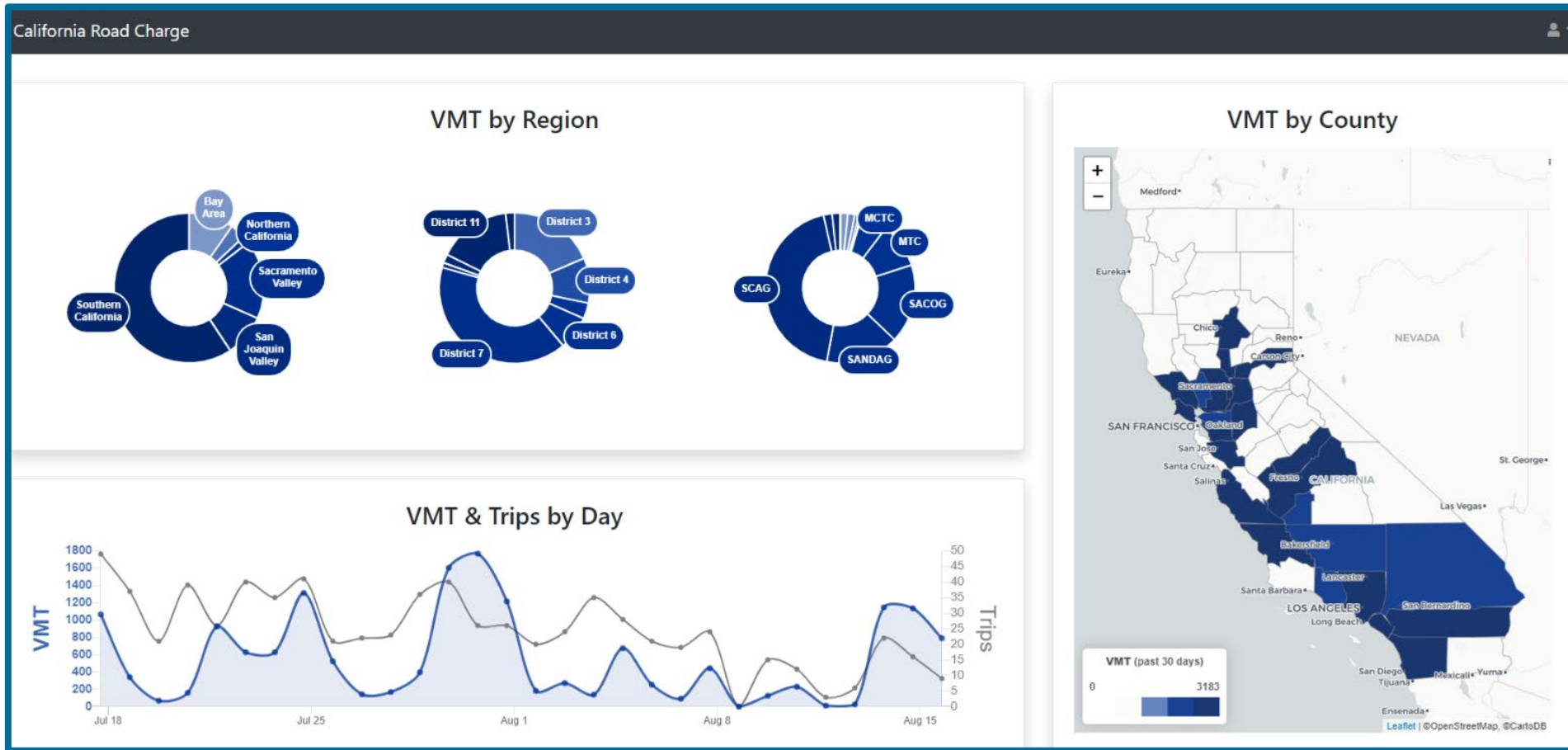
Dashboard Display

VMT & Trips by Day



PRIME Use Cases

VMT Summary



- Shows demonstration participant mileage per region, county, Caltrans district, and MPO
- Allows drill down into specific areas to determine VMT impacts
- Could support future VMT impact studies or impacts by vehicle class



Operational & Financial Summary

Monthly Report

Select a reporting period:

Month Quarter Year

Filter by month or date range:

January February March April May June

01/01/2021 → 06/30/2021

Operational & Financial Summary

Phase 1: Pay-at-the-Pump (GasBuddy) Simulated Revenues

Month	Vehicles Reporting	Total Miles	California Miles	Out-of-State Miles	Other Miles	Fuel Purchased (gal)	Gross Road Charge (\$0.022/mi)	Fuel Tax Credit (\$0.505/gal)	Net Road Charge
January 2021	3	522.3	522.3	0.0	0.0	0.0	\$11.49	\$0.00	\$11.49
February 2021	13	6,016.2	6,016.2	0.0	0.0	234.8	\$132.36	-\$118.59	\$13.77
March 2021	21	14,609.2	14,441.0	168.2	0.0	154.6	\$317.70	-\$78.07	\$239.63
April 2021	25	16,678.7	16,678.7	0.0	0.0	796.2	\$366.93	-\$402.06	-\$35.13

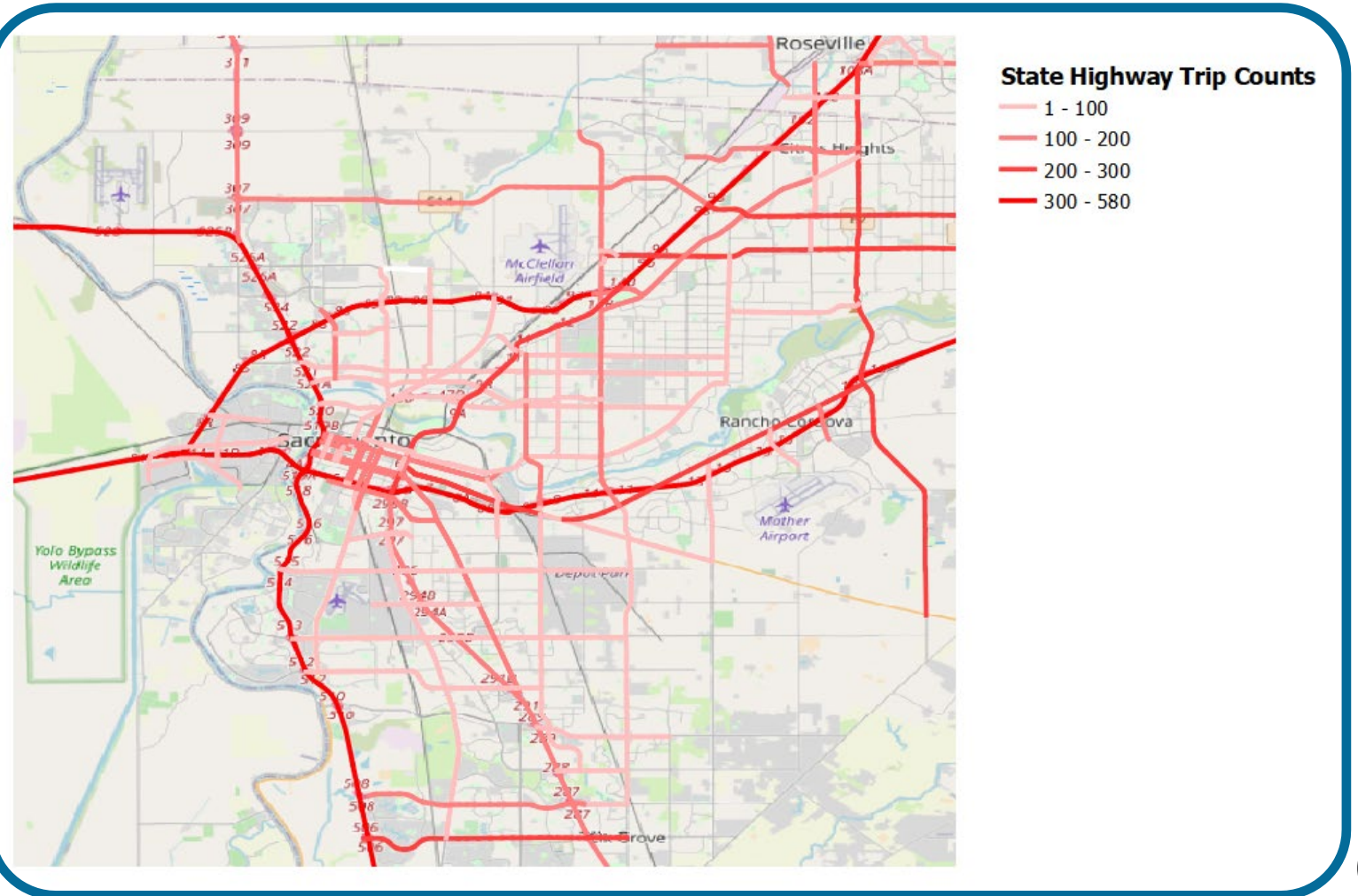
- Breaks down miles, fuel (if applicable), road charge, fuels tax credits, and net revenues
- Toggles for date ranges / reporting periods
- Provides snapshots of simulated revenues for each phase of the Demonstration



PRIME Use Cases

Highway Trip Concentrations

- ▶ Technology also allowed for showing the number of trips across major highways
- ▶ Identified real-time congestion and showed which corridors are operating most efficiently
- ▶ Could lead to identifying how to better fund roadway maintenance funding
- ▶ Specific driver/vehicle location was never provided

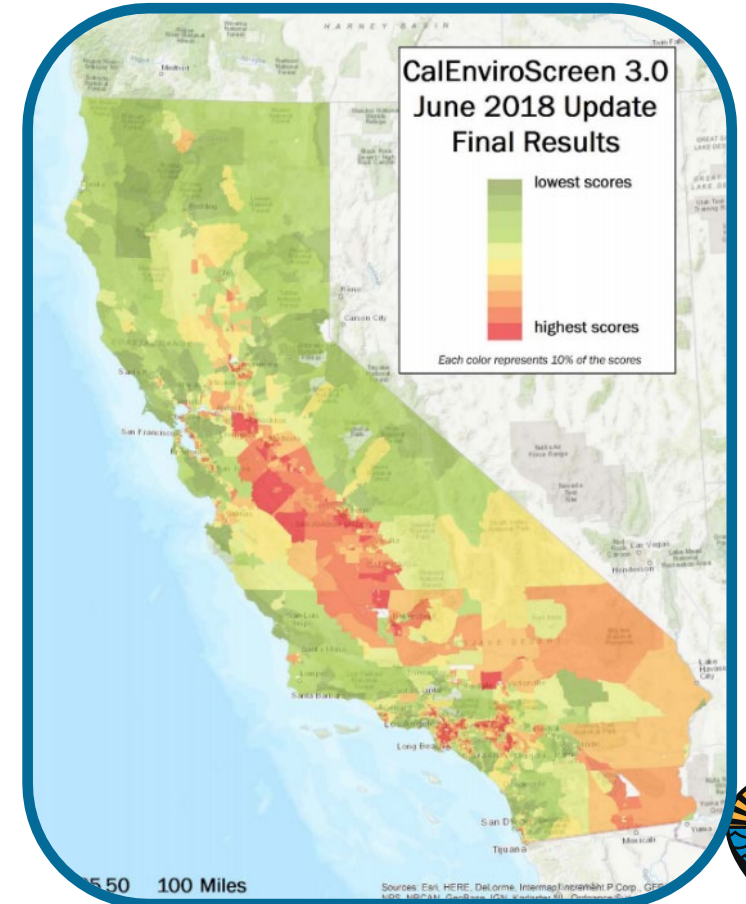
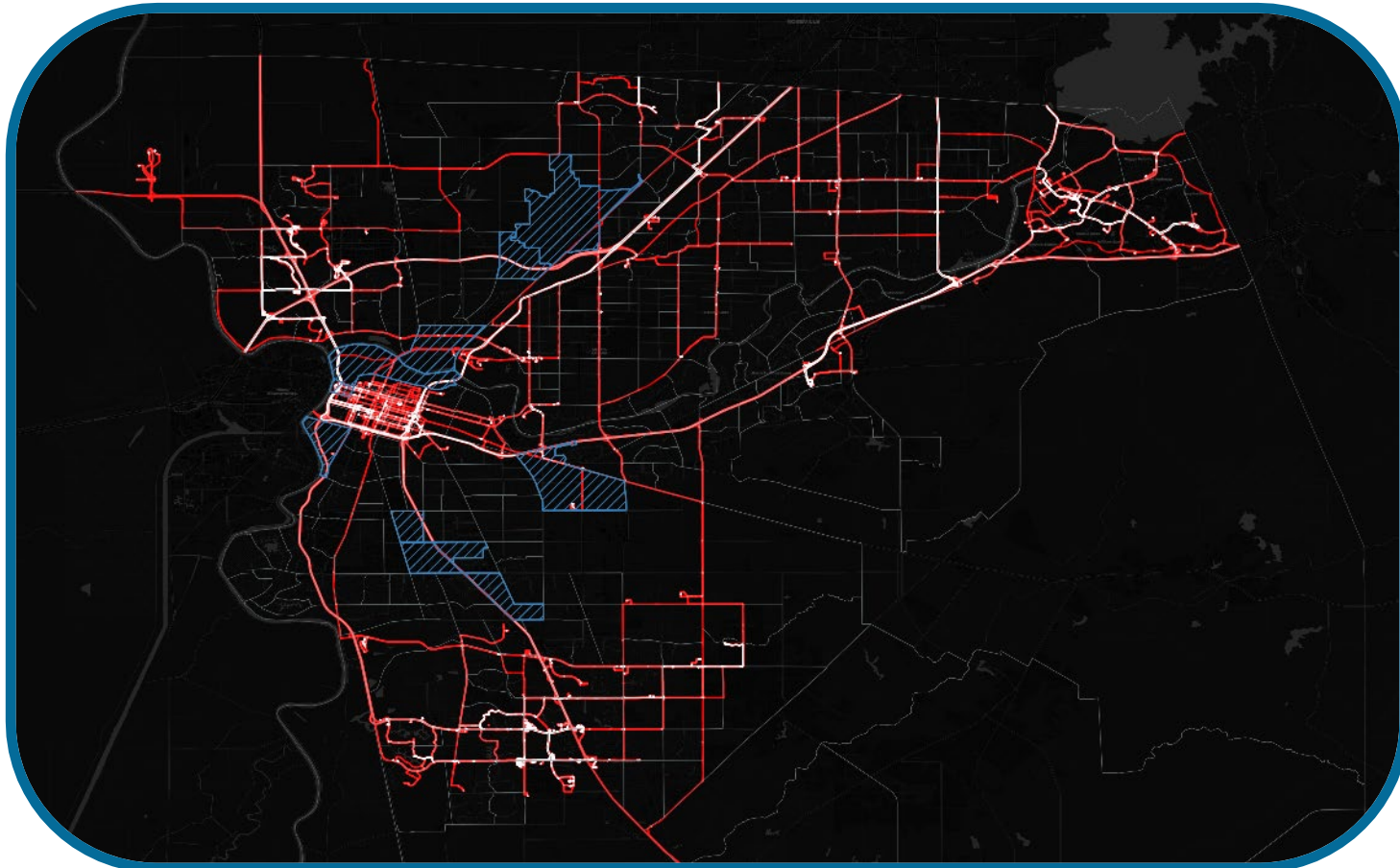


PRIME Use Cases

Travel Concentrations

Is travel concentrated in disadvantaged communities?

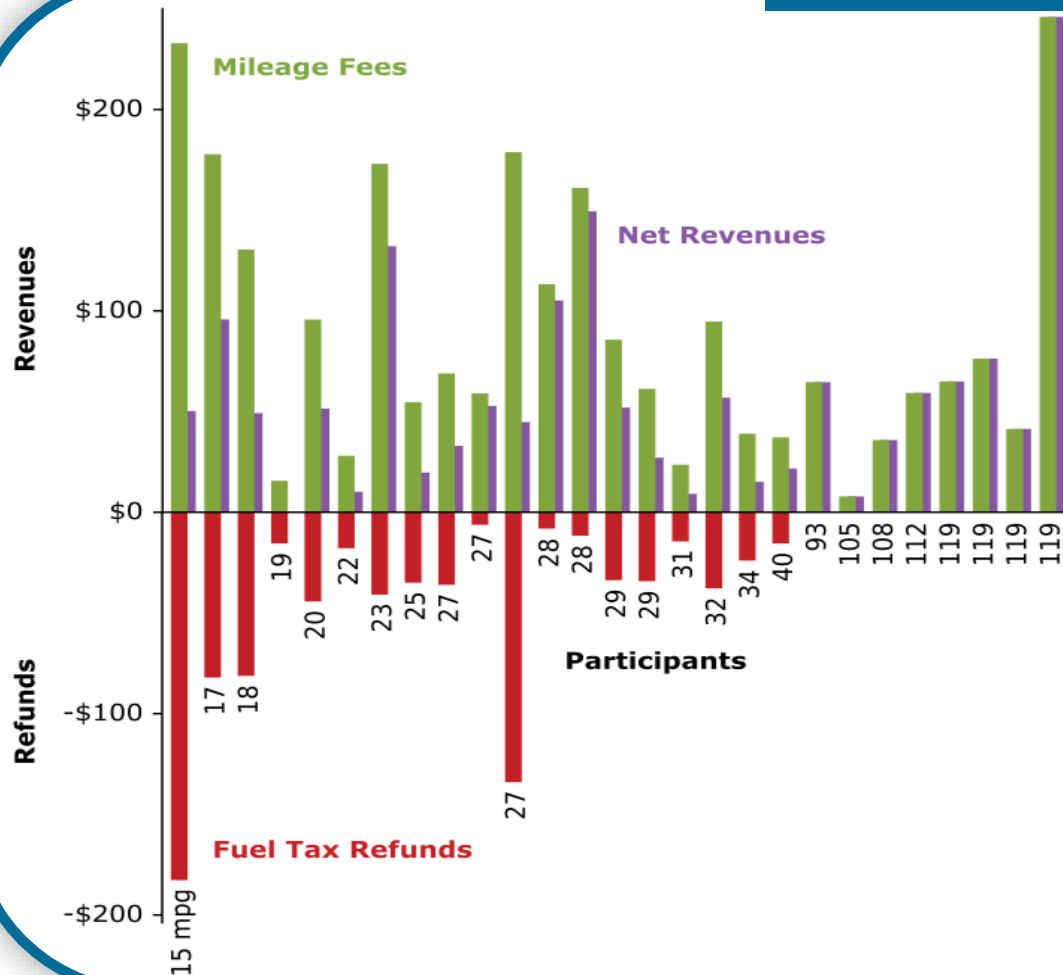
Are emissions greater in disadvantaged communities than in others?



Blue hatched areas represent Sacramento County Census Tracts identified in the 90-100 percent decile of CalEnviroScreen 3.0

PRIME Use Cases

Revenue Impacts by Vehicle Fuel Efficiency



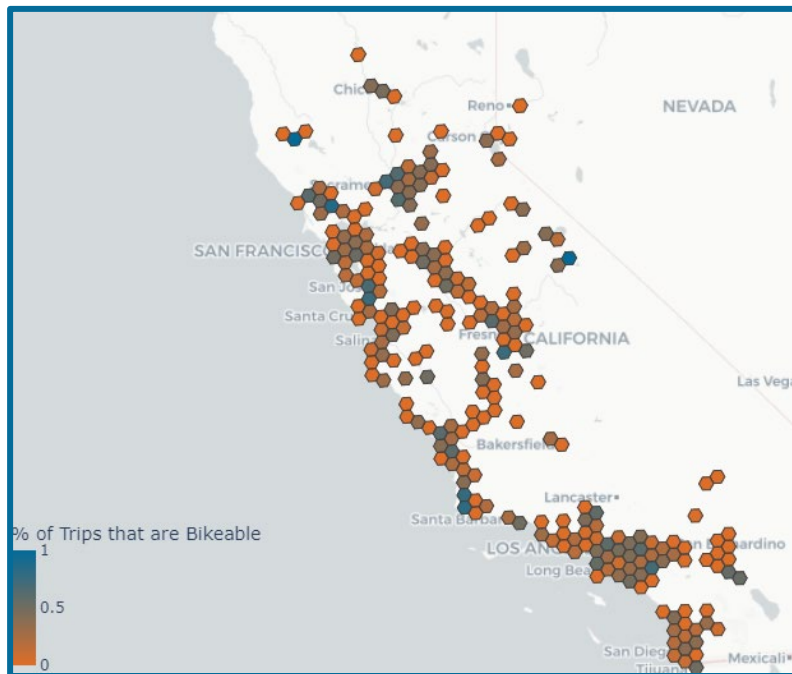
- ▶ Low net revenues from low-efficiency vehicles
- ▶ High net revenues from electric vehicles
- ▶ Can be adjusted based on specific policy decisions



PRIME Use Cases

Micromobility Potential

PRIME allows us to analyze whether driving trips of a certain distance could be supported through walking, biking, or e-scooter



California Road Charge

Could They Have Biked?

Short trips could be traveled by active modes or micromobility instead of driving.

So far in 2021, 43% of trips were between 0.5 and 5 miles long, a bikeable distance.

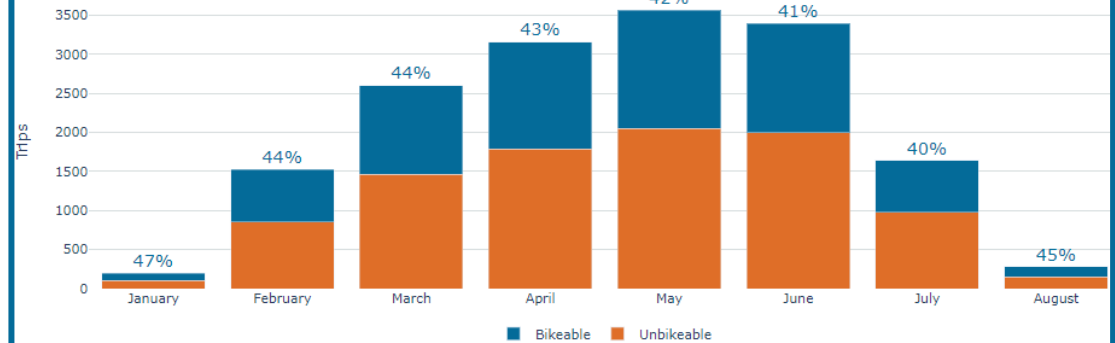
Select a different mode to see what portion of trips could be displaced:

Walk Bike Scooter

Or customize the distance range for a bikeable trip:



Does the proportion of trips that are bikeable change by month?
Click on a bar to select only that month.



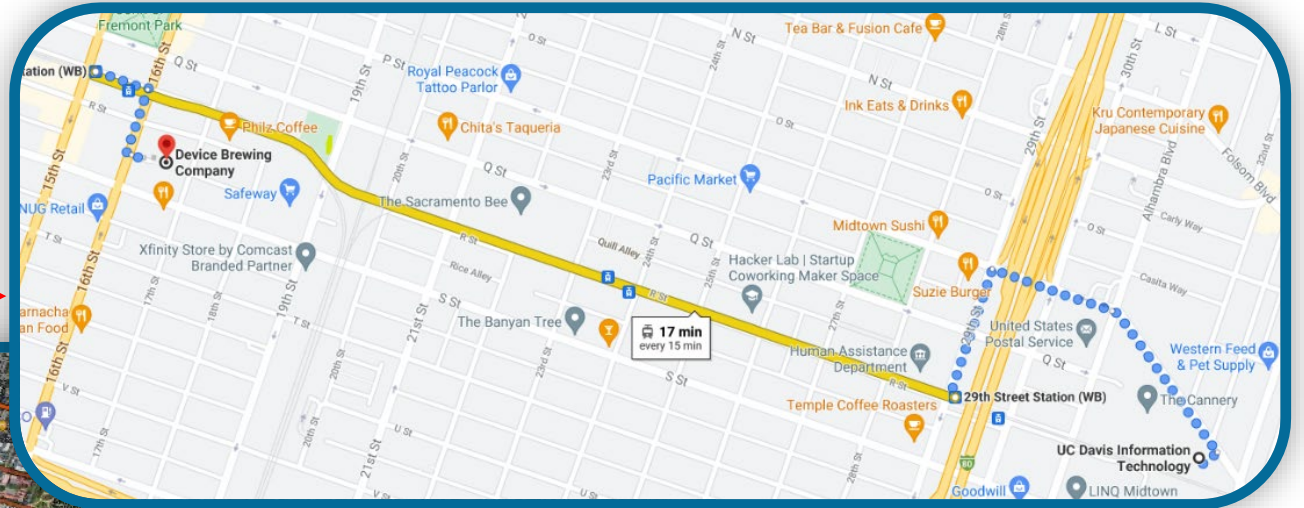
PRIME Use Cases

Transit Potential

Trips in Sacramento County Starting and Ending Near Transit

- ▶ PRIME also compares travel data against existing transit routes and times
- ▶ Shows potential implications of taking transit instead of driving

17 Minutes on Transit →

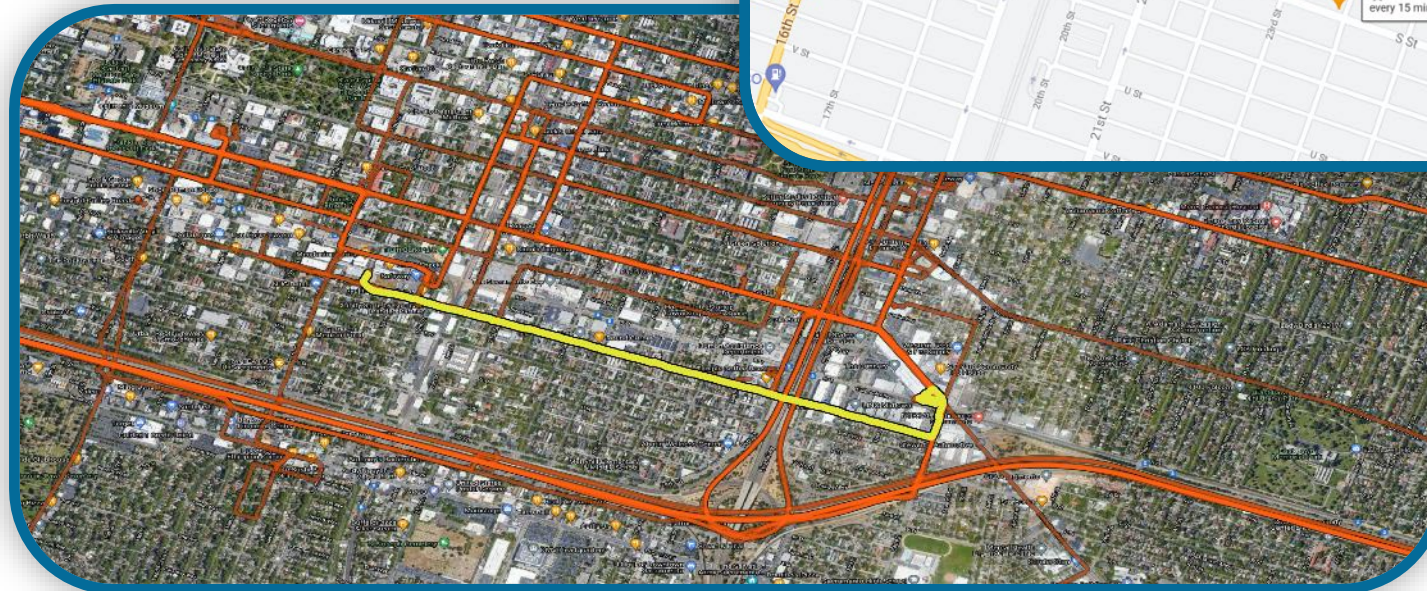


Orange lines represent all trips in Sacramento County that start and end within 1,000 feet of a SacRT stop.

Yellow line represents comparison route with Google Transit directions.



8 Minutes Driving →
(Observed)

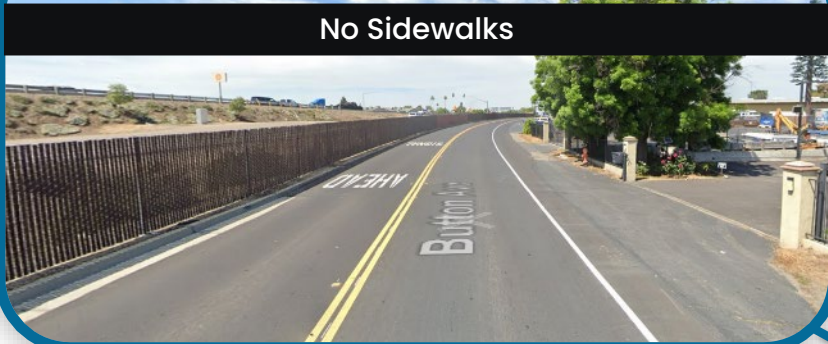


PRIME Use Cases

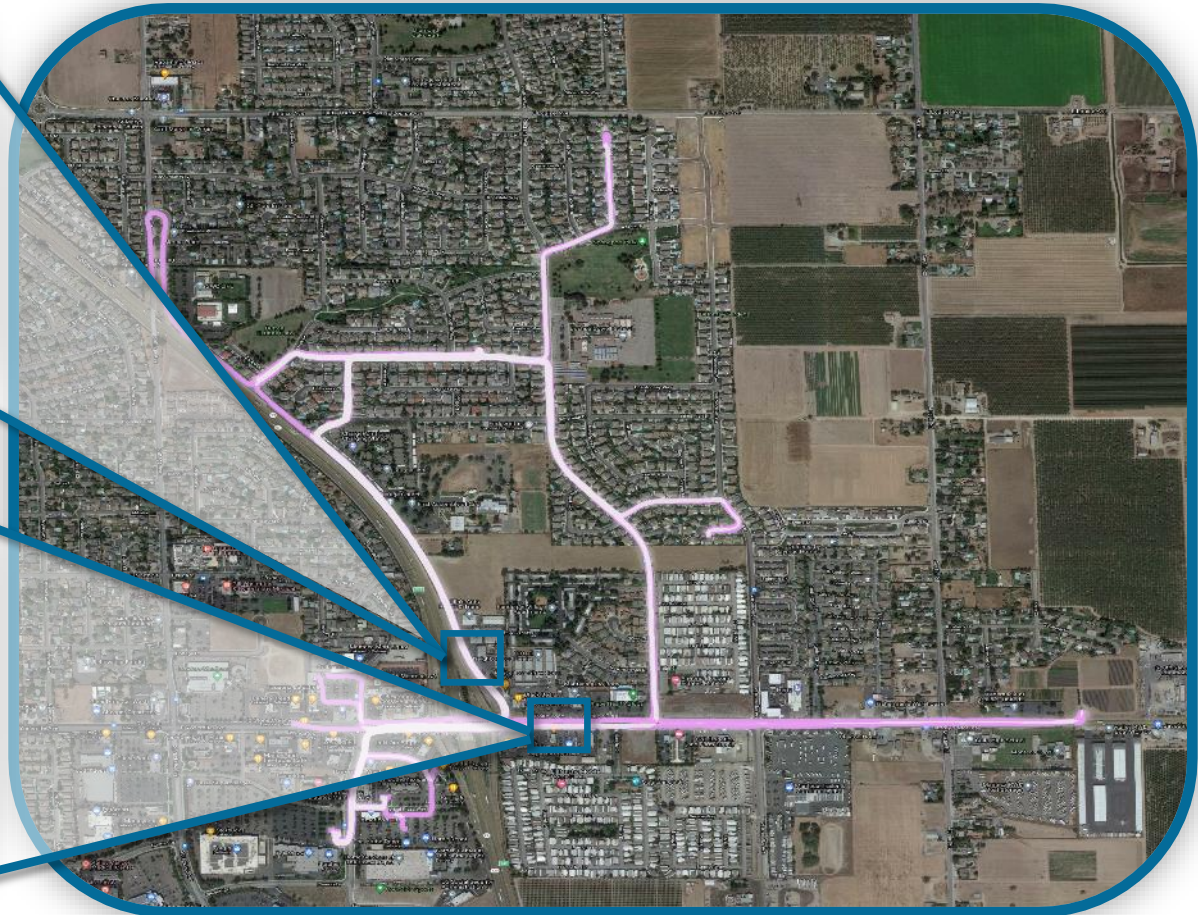
Complete Streets Considerations

Auto Trips in Manteca Traveling Less Than 2 Miles

No Sidewalks



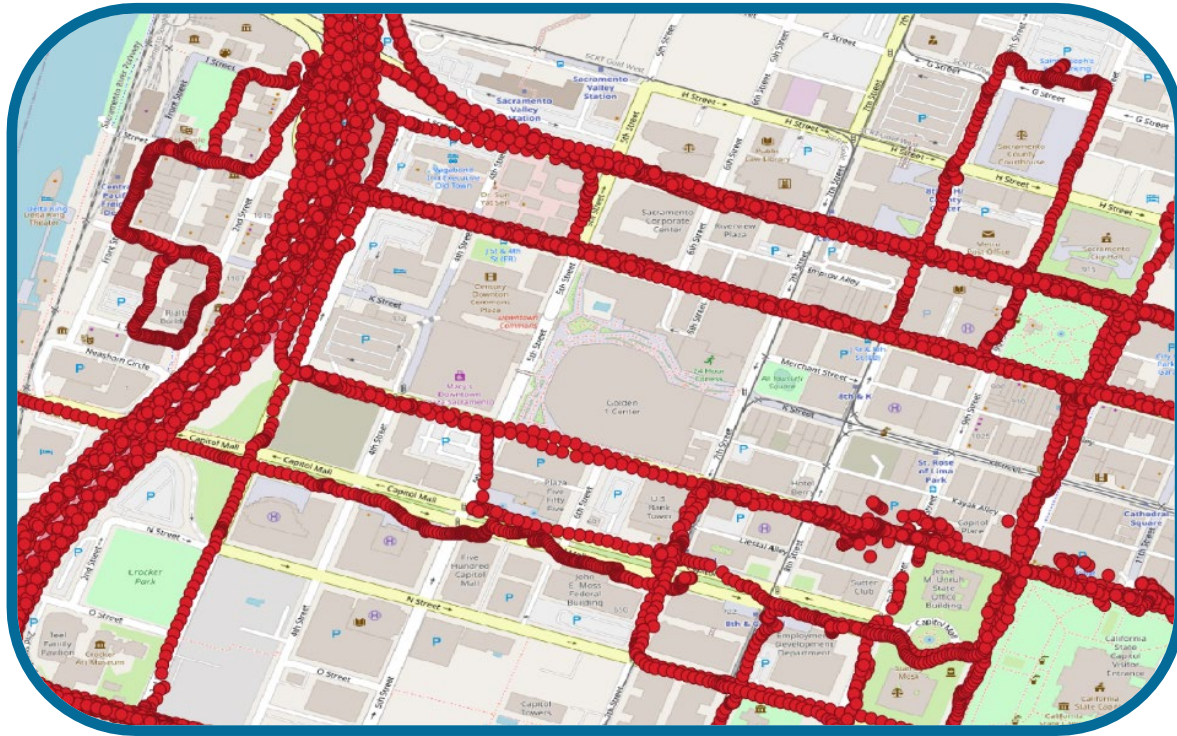
Auto Oriented / Unsafe for People



PRIME Use Cases

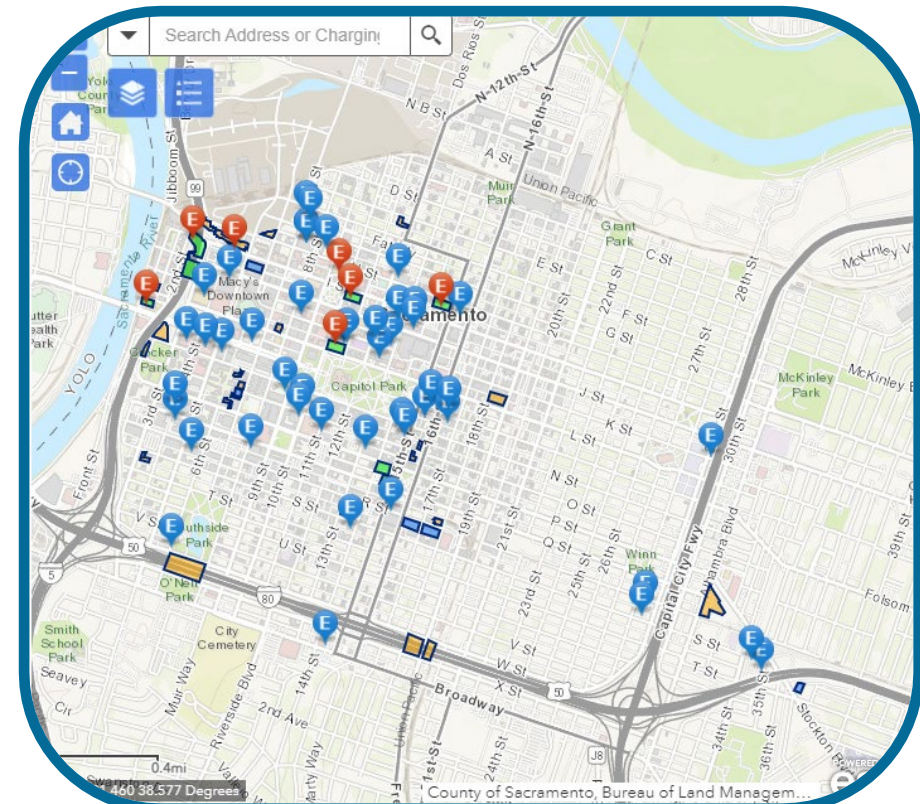
Electrical Grid Impacts

Where are optimal charge station locations?



As well as identify potential electrical grid surges due to EV charging

PRIME can also determine the optimal locations for installing charging stations



PRIME Use Cases

Multi-State Interoperability

How can road charge differentiate between state borders?



Sanitized data from over 5,000 pilot vehicles from the 2017 Demonstration exchanged with OReGO:

- ▶ Data was ingested into OReGO RUCAS Accounting System
- ▶ Mileage data was differentiated between state borders
- ▶ Demonstrated multi-jurisdiction interoperability
- ▶ Expanded PRIME to further its capability into a scalable and interoperable clearinghouse





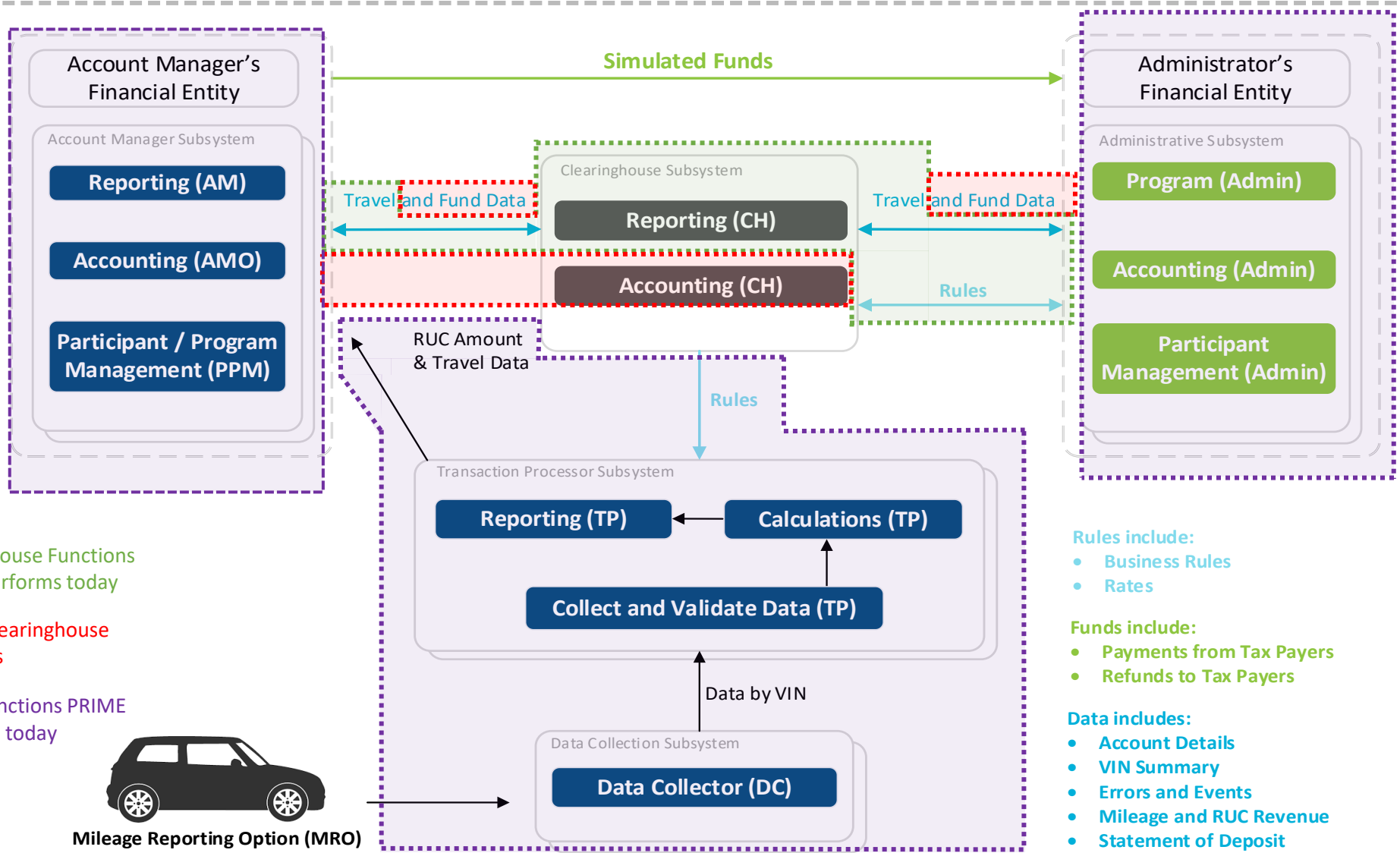
PRIME

Next Technical Steps

- ▶ Continue integrating data and defining dashboards and analytics capabilities
- ▶ Develop model multi-jurisdictional interoperable financial reporting
- ▶ Define potential scalability of PRIME for a larger-scale program
- ▶ Work with other state agencies to determine integration points and potential use cases for PRIME to support operations



PRIME Future Architecture



Legend

- Clearinghouse Functions PRIME performs today
- Future Clearinghouse Functions
- Other Functions PRIME performs today



Mileage Reporting Option (MRO)



Privacy vs Data Use

- ▶ **Privacy**
- ▶ **Public's Priority**

- ▶ **Increased System Safety**
- ▶ **Increased System Efficiency**
- ▶ **Attractive to Private Account Managers (lower admin costs)**





Data Privacy and Security

California Privacy Rights Act (2020)

- ▶ Amends the existing California Consumer Privacy Act of 2018...
- ▶ Establishes that any business (that buys, receives, sells, or shares the personal information of 100,000 or more consumers):
 - Inform consumers of the types of personal information collected and the purpose
 - Establishes “sensitive personal information” category which includes consumer’s SSN and precise geolocation
 - Requires businesses to fully disclose how that information is collected, the purposes of the collection, and whether the information is sold or shared
 - Requires businesses inform how long data can be retained
 - Establishes a limit on data retention
 - Require reasonable security practice and procedures
 - Allow consumers to opt-out of selling personal information
 - Establishes penalties for the violation of opt-out provisions
 - Creates a new California Privacy Protection Agency to enforce the CCPA



Privacy Protections in a Road Charge System

- ▶ Third-party account managers, not government, collect data
- ▶ Similar requirements to the CCPA
 - Right to know
 - Opt-outs and opt-ins
 - Police warrants
 - Limits on data retention
- ▶ Multiple options for mileage collection – including non-location tracking options and a no technology third party odometer read

This means that not all VMT would be tracked in a road charge system. More likely the system would capture 50–75% of VMT, which would still be highly useful for system management.





State Policy Questions to Consider

- What is the State's responsibility to protect taxpayer privacy?
- What is the appropriate balance between privacy and system efficiency?
- What is the public's perception of the privacy protections of a road charge system, and how does that affect a potential system's structure and level of data use?





California
Road Charge

Thank you

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