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

External Sources of Data
**PRIME Achievements**

**Platform for Road charge Innovation and Mobility Evolution**

- 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

Available Menus:
- Dashboards
  - VMT Summary
  - Monthly Reports
  - Micromobility Potential
  - Transit Potential

Participants
- Business Partners
- Mileage Reporting Options
PRIME Capabilities

Dashboard Display

VMT by Region

VMT by County

VMT & Trips by Day

California Road Charge

[Image of dashboard display with data on road charge, VMT by region, and VMT by county]
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
### PRIME Dashboards

**Operational & Financial Summary**

- 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

#### 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**

<table>
<thead>
<tr>
<th>Month</th>
<th>Vehicles Reporting</th>
<th>Total Miles</th>
<th>California Miles</th>
<th>Out-of-State Miles</th>
<th>Other Miles</th>
<th>Fuel Purchased (gal)</th>
<th>Gross Road Charge ($0.022/ml)</th>
<th>Fuel Tax Credit ($0.506/gal)</th>
<th>Net Road Charge</th>
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<tbody>
<tr>
<td>January</td>
<td>3</td>
<td>522.3</td>
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<td>0.0</td>
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<td>234.8</td>
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<td>0.0</td>
<td>796.2</td>
<td>360.93</td>
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</table>
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
Which vehicles are contributing the most to revenue?

**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.
PRIME Use Cases

Transit Potential

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

Trips in Sacramento County Starting and Ending Near Transit

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

8 Minutes Driving (Observed)

17 Minutes on Transit

Yellow line represents comparison route with Google Transit directions.
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
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

Rules include:
- Business Rules
- Rates

Funds include:
- Payments from Tax Payers
- Refunds to Tax Payers

Data includes:
- Account Details
- VIN Summary
- Errors and Events
- Mileage and RUC Revenue
- Statement of Deposit

Data includes:
- RUC Amount
- Travel Data

Mileage Reporting Option (MRO)

Clearinghouse Functions
- PRIME performs today
- Future Clearinghouse Functions
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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?
Thank you

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