



Session 3:
Data Driven Decision Making:
Next Level Fleet Analysis & Planning Tools

Franklin Ballroom Wed, September 18<sup>th</sup>, 2019; 3:30 – 4:30 PM



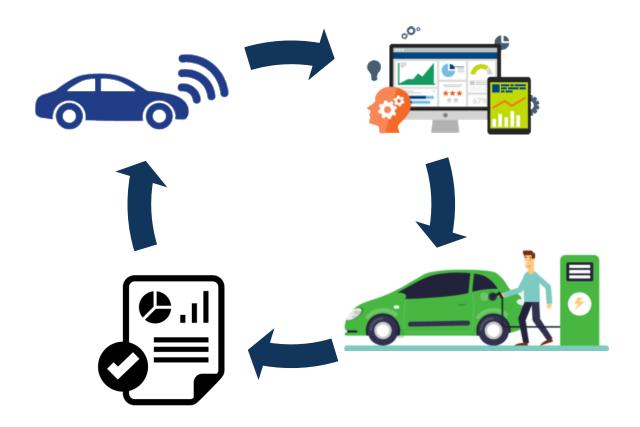
# Data-Driven Fleet Optimization & Electrification





#### The Sawatch Approach

#### Measure



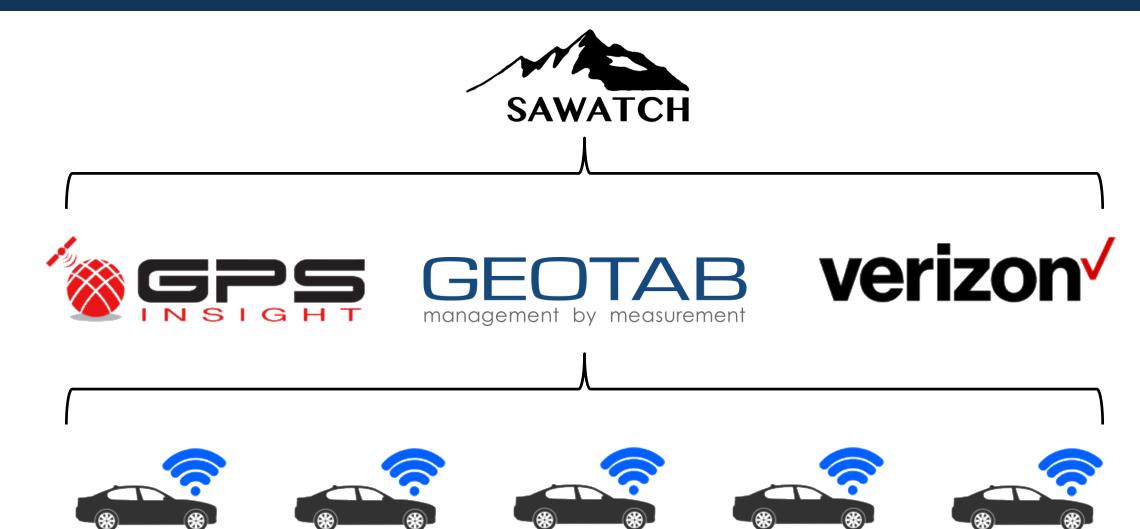
**Optimize** 

Manage

**Electrify** 

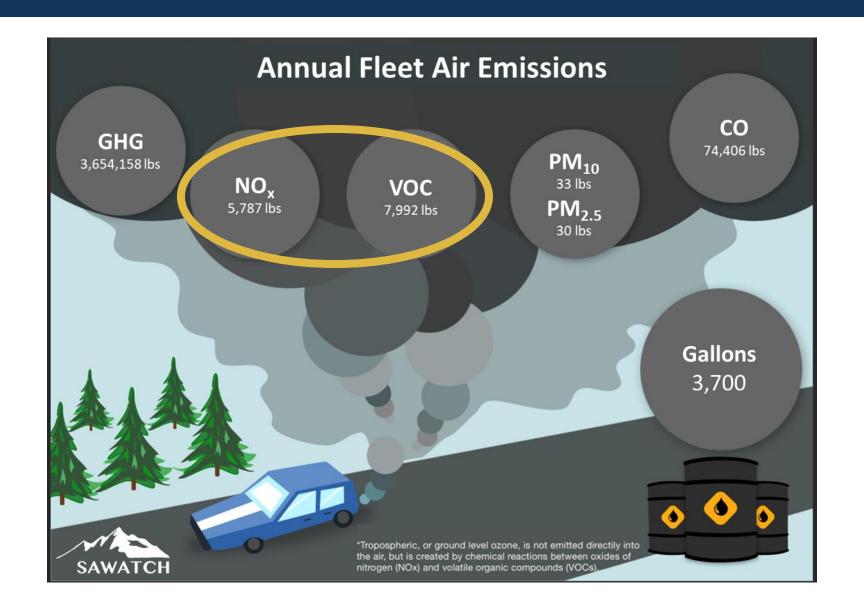


#### **Any Telematics Data**





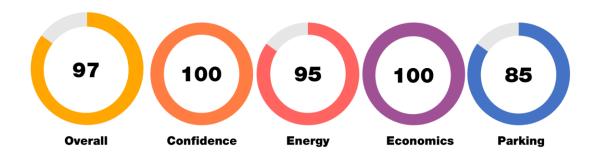
#### Measure: EMIT





#### Electrify: EV Suitability Assessment

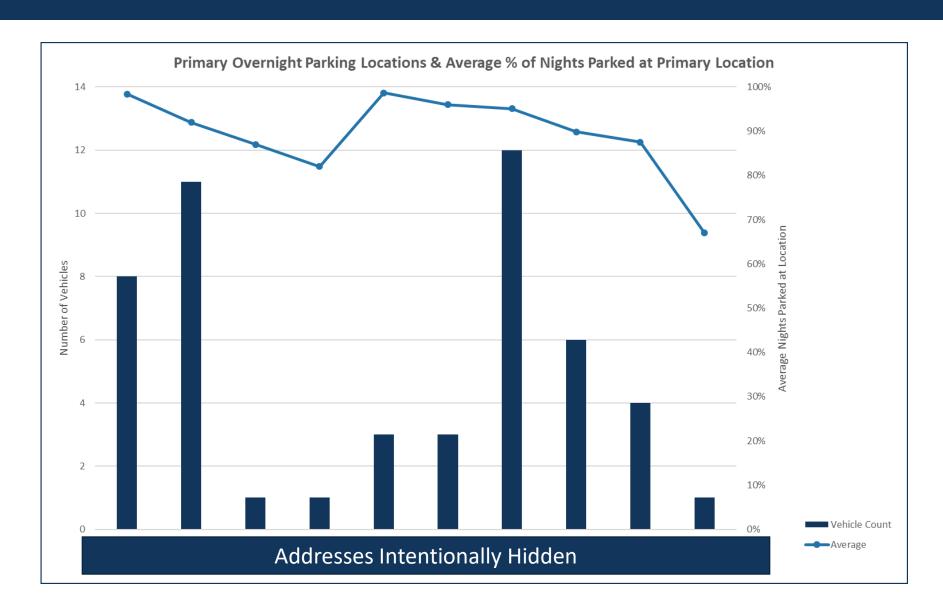




GHG Reduction	Operational Savings	TCO Change (Lifetime)	TCO Change (%)
80%	\$12,000-15,000	\$6,000-9,000	15%

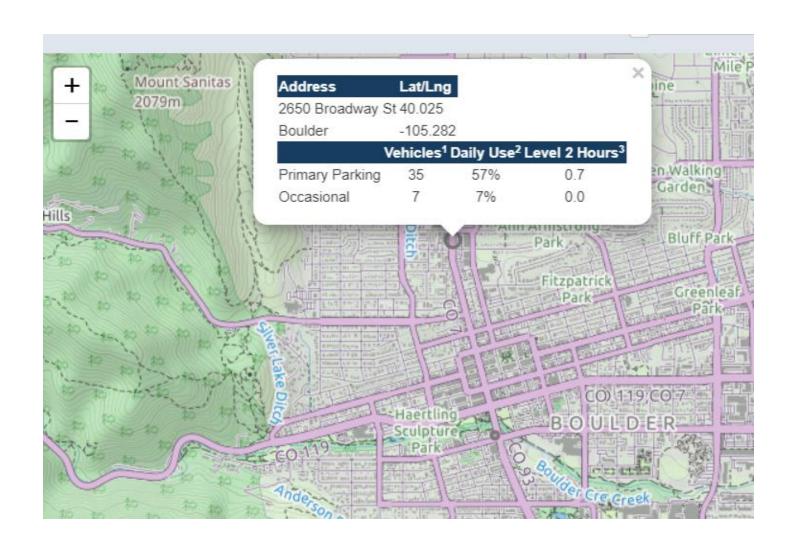


#### Electrify: Infrastructure Planning



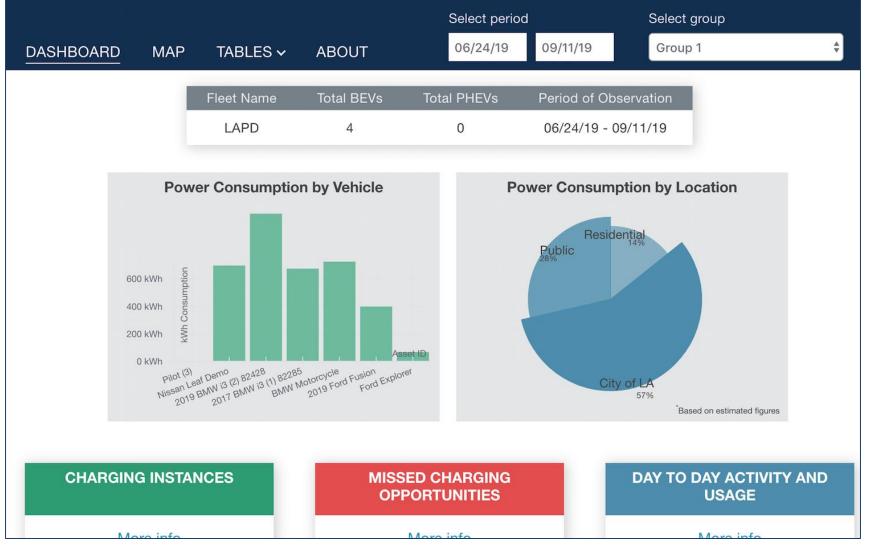


#### Electrify: Infrastructure Planning





#### Manage: ionEV EV Management



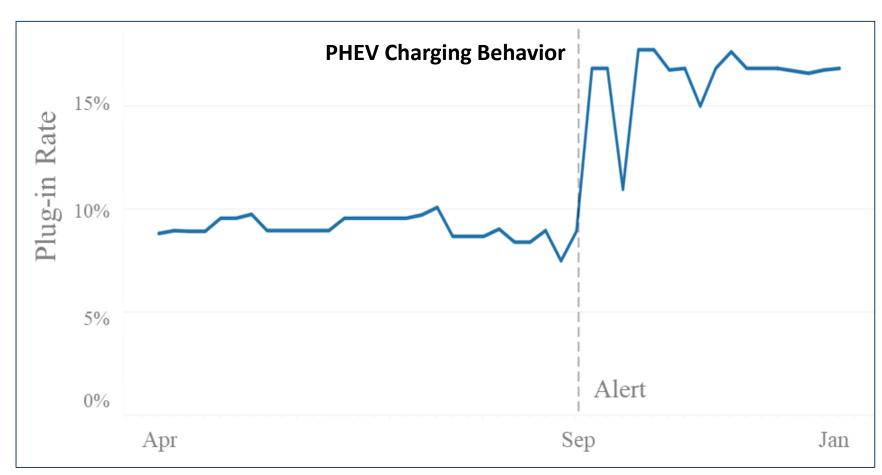
- EV utilization
- Energy Use
- E vs. G VMT
- Missed opportunities
- Charging management

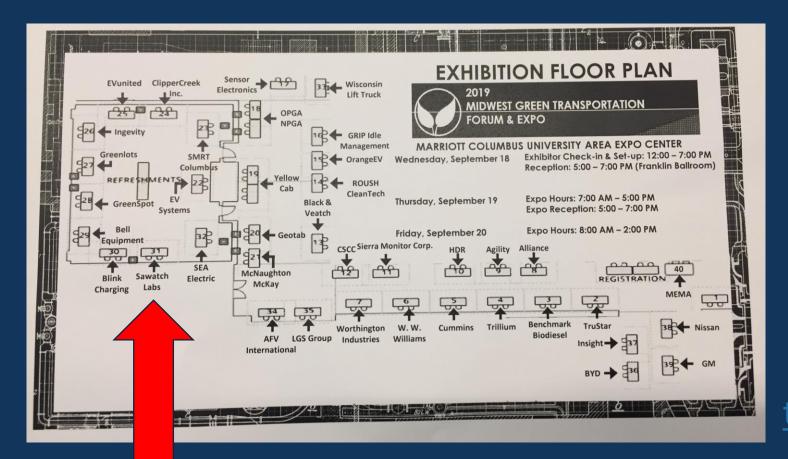


#### Manage: PHEV Missed Opportunities

- PHEVs are not charged often enough →
- Development of automated feedback mechanisms can improve performance
- BEVs charged too often: average SOC = 80%









### Thank You

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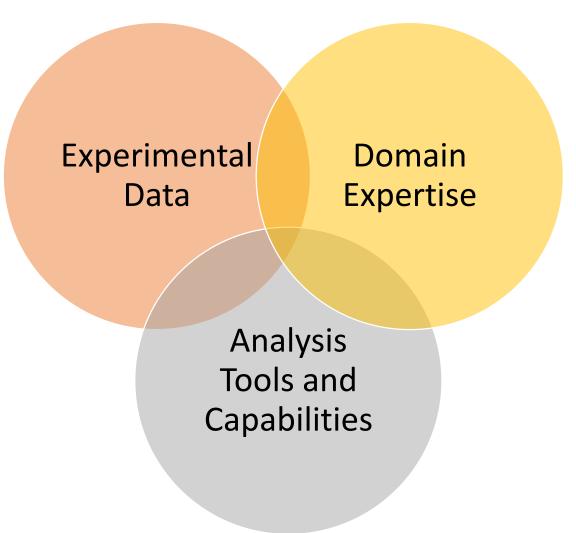
## Data-Driven Decision Making: Next Level Fleet Analysis & Planning Tools

Lauren Lynch, Mechanical Engineer Vehicle Technology Integration National Renewable Energy Laboratory

Midwest Green Transportation September 18<sup>th</sup>, 2019

#### Effective Data-Driven Decision Making

- VISUALIZE DATA
- CHARACTERIZE VEHICLE USE
- COST PER MILE
- DRIVE CYCLE INVESTIGATION
- REAL WORLD ACTIVITY
- SIMULATE VEHICLE DESIGN
- PREDICT PERFORMANCE
- ESTIMATE ROI
- COMPARE TO INDUSTRY



**DRIVE** — Produce drive cycles from real-world vehicle data to cut evaluation and analysis time.

FASTSim — Simulate vehicle design and use scenarios with fuel economy, performance, battery life, and cost calculations.

FLEET DNA — Provides data summaries and visualizations to helps users understand the broad operational range of commercial vehicles across vocations and weight classes