

U.S. DEPARTMENT OF  
**ENERGY**

Office of  
**ENERGY EFFICIENCY &  
RENEWABLE ENERGY**

VEHICLE TECHNOLOGIES OFFICE

# DOE EV Infrastructure R&D

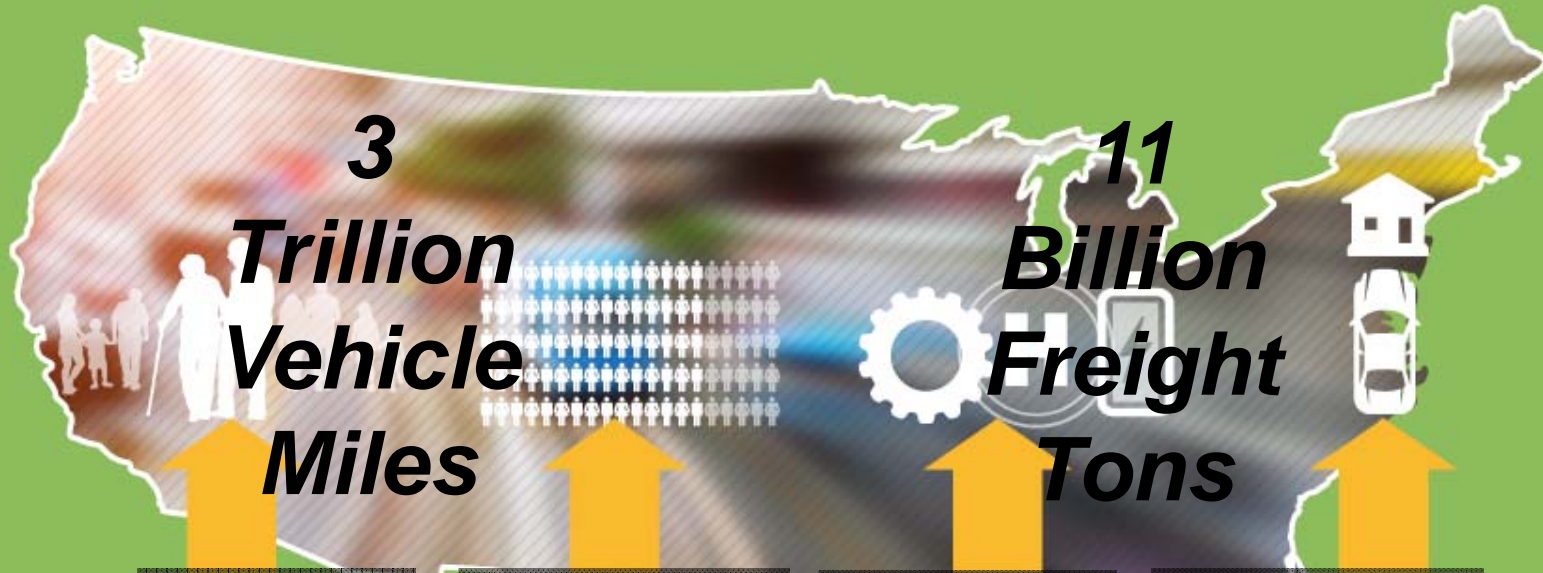
EPRI 21<sup>st</sup> Climate and Energy Research Seminar

Rachael Nealer, PhD

Program Manager, Vehicle  
Technologies Office Analysis



TRANSPORTATION IS  
FUNDAMENTAL TO **OUR WAY OF LIFE**



**3  
Trillion  
Vehicle  
Miles**

**11  
Billion  
Freight  
Tons**

The U.S. population is growing and aging

Population density is increasing—**75% of the population** lives in urban mega-regions

Technologies and fuel choices are expanding

Transportation costs are high—second only to housing expenses

VEHICLE TECHNOLOGIES OFFICE FOCUS

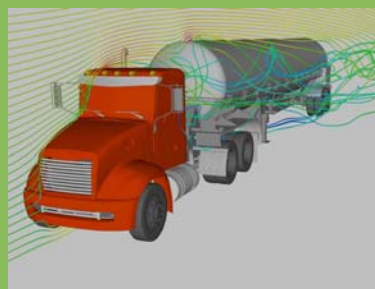
# ALL LEVELS



**U.S.  
Dept. of  
Energy**



**National  
Labs**



# Enabling Fast Charging:

A Technology Gap Assessment

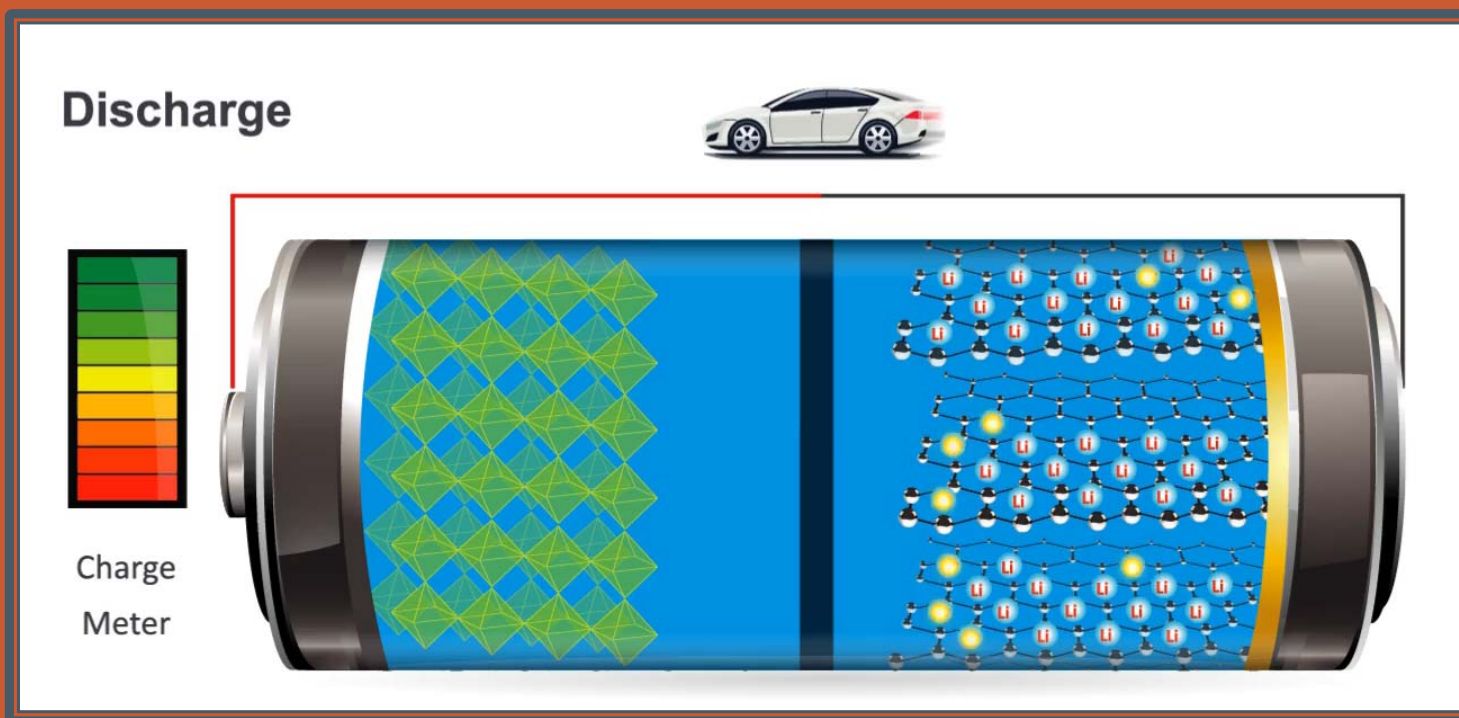
October

# National Plug-In Electric Vehicle Infrastructure Analysis

September 2017

The screenshot shows the Alternative Fuels Data Center website. At the top, there is a navigation bar with the U.S. Department of Energy logo and the text "Energy Efficiency & Renewable Energy". Below this is a search bar and a menu with options: "FUELS & VEHICLES", "CONSERVE FUEL", "LOCATE STATIONS", "LAWS & INCENTIVES", "Maps & Data", "Case Studies", "Publications", "Tools", "About", and "Home". The main content area features the "EV Infrastructure Projection Tool (EVI-Pro)" with a sub-header "How Much Electric Vehicle Charging Do I Need in My Area?". Below this are two large buttons: "Estimate for a State" (with a map of the United States) and "Estimate for a City/Urban Area" (with a city skyline icon). At the bottom, there is a paragraph of text describing the tool's purpose and its use in various studies.

# ELECTRIFICATION



Advanced  
Fueling  
Infrastructure



Connected &  
Automated  
Vehicles



SMART MOBILITY LAB



Urban Science

# CONSORTIUM

7 labs, 30+ projects, 65 researchers,  
\$34M\* over 3 years.

Mobility  
Decision  
Science

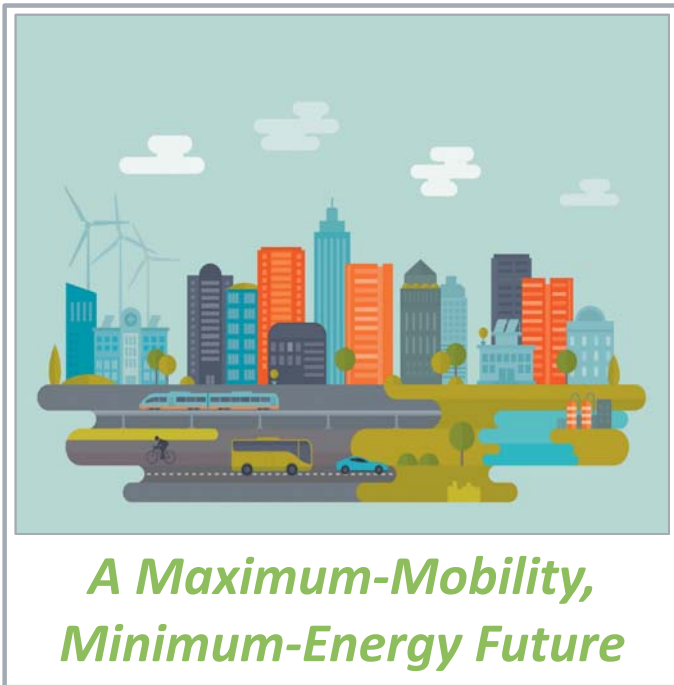


Multi-Modal  
Transport

# ANALYSIS AND CAPABILITIES

- Possible future transportation infrastructure
- MD/HD needs for infrastructure
- V-G interactions through Grid Modernization Initiative and analysis
- Exploring MUD issues for infrastructure
- AFDC as resource for public and stakeholders





*A Maximum-Mobility,  
Minimum-Energy Future*

# Thank You

**Rachael Nealer, PhD**

Vehicle Technologies Office

Rachael.nealer@ee.doe.gov

***Energy.gov/vehicles***