



# Measuring E-bike Impact in U.S. Cities Tutorial of RMI's New, Free Tool

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# RMI Speakers



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# Reason for Gathering

- **Demonstrate RMI's E-bike Environment and Economics Impact Assessment Calculator functionality of each planning scenario**
- **Discuss opportunities for using the data produced by the calculator**
- **Answer audience questions about calculator scenarios, calculations, etc.**
- **Collect ideas and insight from experts (cities, advocates, practitioners) to enhance usefulness and expand functionality through future calculator updates**

# Agenda

- **Calculator Background and E-Bikes as Climate Solution**
- **RMI's E-bike Environment and Economics Impact Assessment Calculator Demonstration**
- **Facilitated Q&A**
- **Close out and survey**

Our Mission: Transforming the global energy system to secure a clean, prosperous, zero-carbon future for all.

RMI's Strategy:  
**A Bold Goal:**

**1.5°C**  
**↓50% CO<sub>2</sub>**  
**BY 2030**

Requires a  
Carbon-free  
Grid...

to Power Key Sectors...



Carbon-Free  
Industry



Carbon-Free  
Transportation



Carbon-Free  
Buildings



Carbon-Free  
Electricity

Accelerated by Market Catalysts...



Policy



Finance



Business  
Models



Data &  
Transparency



Technology



Education  
& Capacity

Across Critical Global Geographies



Cities



China



India



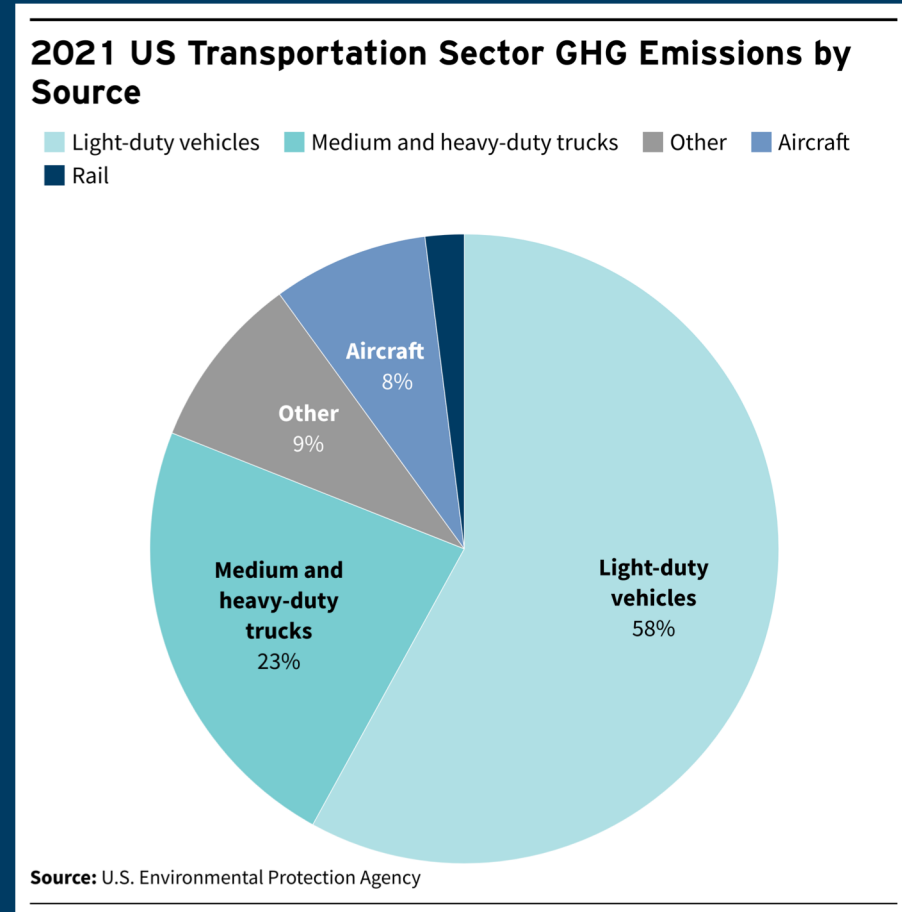
U.S.



Developing  
Economies

# RMI created the e-bike calculator to demonstrate the potential of e-bikes to meet transportation emission reduction goals, today and cost-effectively

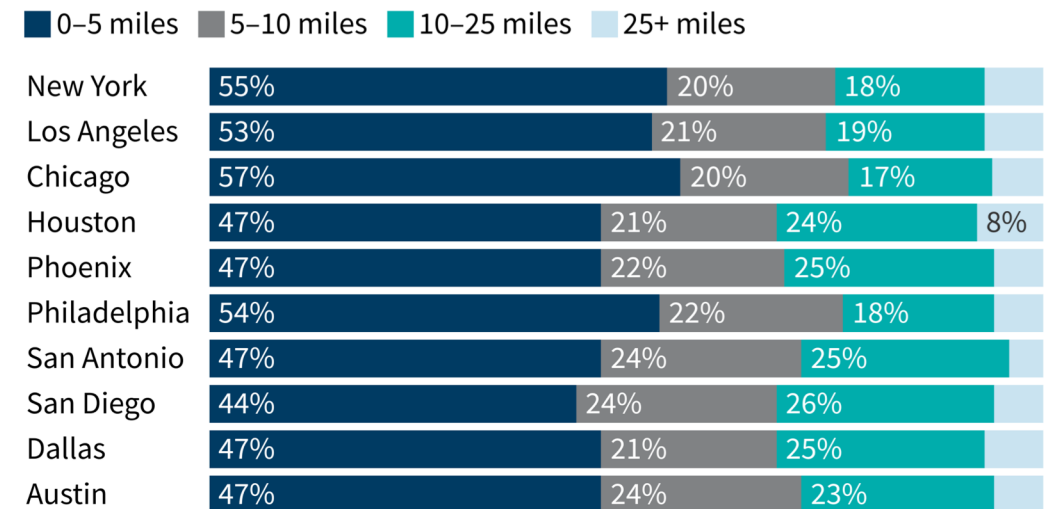
- **To stay aligned with a 1.5 °C scenario under the Paris Climate Agreement, RMI's U.S. gap analysis indicates that we must:**
  - Electrify passenger vehicles, with a goal of 100% EV sales by 2035 and 100% EVs on the road by 2050
  - Cut Vehicle Miles Traveled (VMT) 20% by 2030
- **Complementary VMT reduction strategies including mode shift and land use reform are essential to meet the 1.5 °C Scenario**
- **E-bikes are a proven climate solution; however, decision makers often lack the necessary data to make a compelling argument for shifting investments to active transportation infrastructure**



# E-bikes paired with incentives and safe infrastructure offer significant potential for enabling mode-shift in cities

- 50% of passenger vehicle trips within the US are shorter than five miles
- Reducing 25% of vehicle trips under five miles in the 10 most populous cities would:
  - Be the equivalent of removing 388,000 vehicles from the road
  - Avoid the emissions equivalent of what 4 natural gas plants produce in a year
  - Avoid usage of 208.5 million gallons of gas
  - Save e-bikers \$91 million in fuel and maintenance costs through reduced driving

## Weekly Vehicle Trips in the 10 Largest US Cities by Population



[RMI analysis](#)

# Impact Spotlight: Denver's e-bike incentive program demonstrates early impact

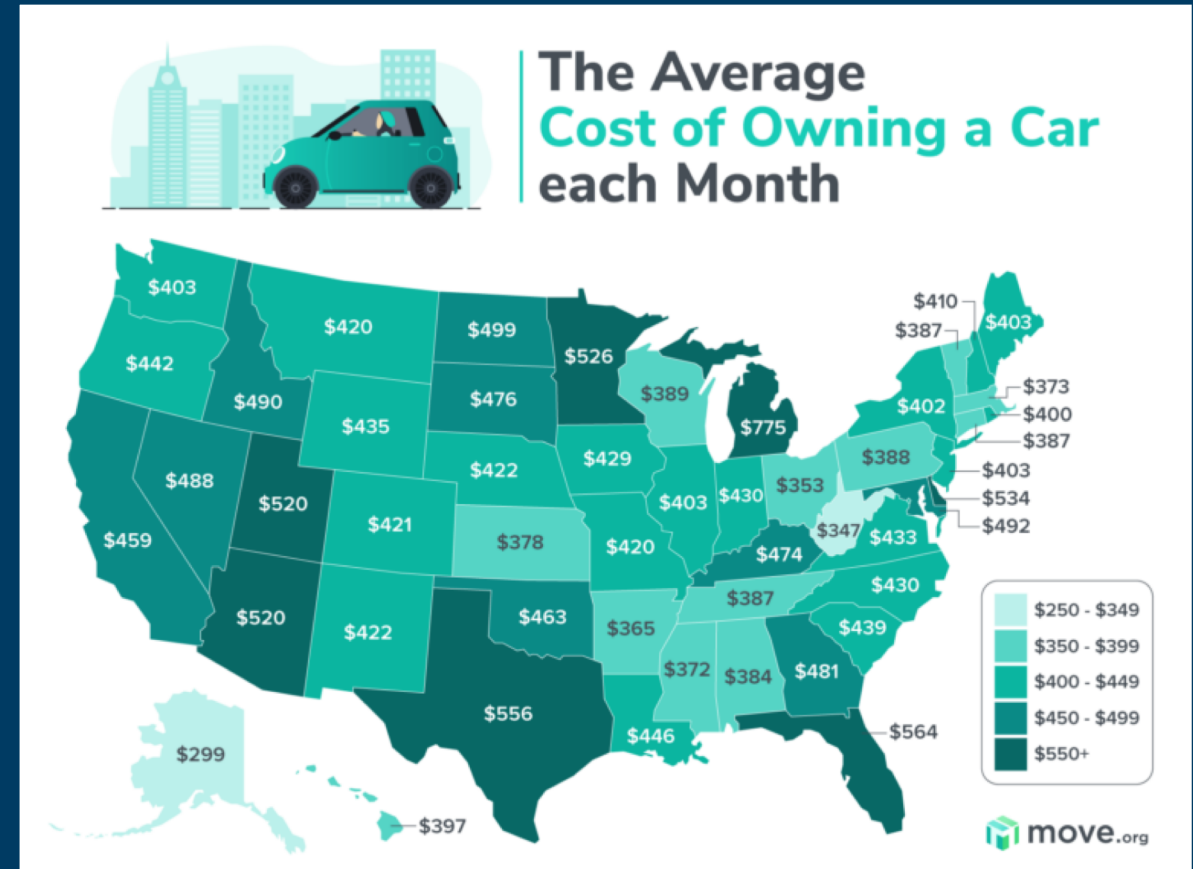
- Launched in 2022, the program became immensely popular, providing over 4,700 rebates in year one
- 71% of participants reported using their vehicle less, replacing 3.4 car trips a week and biking on average 26 miles/week
- Over 10 years, we can reasonably expect:

Category	Value
Individual VMT Reduction	10%
CO2e Reduced	61,266 MT
Fuel and Maintenance Savings Per Person	\$1,675



# E-bikes reduce transportation costs and pollution, promoting equitable mobility for all

- Cost of vehicle ownership continues to rise – 13% increase from 2022 to 2023
- People of color are exposed to 20% more transportation-related PM2.5 pollution than white households
- E-bikes improve mobility for residents of multi-family housing as well as car-less and transit dependent households



# E-Bike Calculator for Advocates

- **Make the case for**
  - **using federal funding on bike infrastructure, particularly the Carbon Reduction Program (CRP) and Congestion Mitigation and Air Quality Program (CMAQ)**
  - **At the local level, the calculator may also help make the case for bikes in any climate action plan a locality adopts**
- **Help story tell through data**
- **Provides an excuse to have a meeting with city/local leaders**
- **Others as advocates use this!**

# Overview of the tool's assessment scenarios

## City Mode-Shift Goal

- Estimate the impact of shifting a percentage of passenger vehicle trips to e-bikes
- Scenario planning options include a gradual replacement over 10 years and immediate adoption

## E-Bike Incentive Program

- Estimate the environmental and economic impact of an e-bike incentive program
- Can test out varying levels of incentive amounts by market-rate or income-qualified, or bike type (commuting or cargo bikes)

**Both scenarios are measuring potential only. They are meant to provide stakeholders, like advocates and cities the data they need to justify investments in e-bike rebate programs or bicycle infrastructure.**