“ATRAVEL TOOL” FOR YOU AND ME

ANDY BURNHAM, ERIC PFISTER, AND KENDRIT TAHIRAJ

Technology Integration Webinar
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ATRAVEL ANALYZES COSTS & BENEFITS OF CONSUMER TRAVEL MODES

- Examines vehicle ownership, ride-hail & transit
  - Costs
  - Travel time
  - GHGs
- Examines at 2 levels:
  - Individual consumers
    - User specified data
  - Regional household averages
    - Can analyze other factors, e.g. local demographics, air quality
- Impacts will depend on:
  - Location
  - Travel patterns and VMT
  - Mode availability, passenger loads, efficiency
1. **User enters their most common trip(s) via Google Maps interface**
   - Optional - Enter additional mileage
   - Save and load entered trips

2. **Enter vehicle make/model/year**

3. **Results compare annual cost, travel time, and GHGs of vehicle ownership vs transit vs ride-hail**
   - Optional adjust assumptions and vehicle

4. **Scroll for additional information and resources**
KEY DATA SOURCES: TRIP TOOL

- **Costs by Mode**
  - Burnham et al. 2021 “Comprehensive Total Cost of Ownership Quantification for Vehicles with Different Size Classes and Powertrains”
  - APTA Public Transportation Fare Database
  - Ridester Uber and Lyft Price Fare Estimator

- **Travel Distance and Time by Mode**
  - Google Maps API
  - Zhou et al. 2020 “Affordability of Household Transportation Fuel Costs by Region and Socioeconomic Factors”
  - US DOT Local Area Transportation Characteristics for Households Data
  - US DOT National Transit Database

- **GHG Emissions by Mode**
  - AFLEET data based on GREET
  - FuelEconomy.gov
  - US DOT National Transit Database
ATRAVEL – METRIC TOOL FOR COALITION AND LOCAL DATA

1. Select location

2. Select geographic area
   - Census tract based (default)
   - Zip code, municipality, county, CBSA, Clean Cites Coalition, state

3. Select the metric to map
   - Annual vehicle cost, GHG, travel time
   - Equity: HH vehicle burden, minority%, low income%, older population %,
   - Air quality: DPM, PM2.5, Ozone
   - Choose optional screening variable
     • Disadvantaged communities overlay available (interim guidance DAC definition)

4. View metric data analysis
   - Histogram of metric distribution in area
   - Comparison of metric at area, state, national levels

5. View household vehicle metrics
KEY DATA SOURCES: METRIC TOOL

- **Household Vehicle Costs**
  - TCO by vehicle type \(\text{(Burnham et al. 2021)}\)
  - Local vehicle registrations and age \(\text{(Experian)}\)
  - FuelEconomy.gov
  - Fuel price, household vehicles and VMT \(\text{(Zhou et al. 2020)}\)

- **Household Vehicle Travel Time**
  - Household VMT \(\text{(Zhou et al. 2020)}\)
  - Local vehicle trip speed \(\text{(2017 NHTS)}\)

- **Household Vehicle GHG Emissions**
  - AFLEET data based on GREET
  - Local vehicle registrations \(\text{(Experian)}\)
  - FuelEconomy.gov
  - Household VMT \(\text{(Zhou et al. 2020)}\)

- **Household Vehicle Burden**
  - Household vehicle costs / household income
    - HH income \(\text{(Zhou et al. 2020)}\)
FUTURE UPDATES

▪ Add electric micromobility (e-scooter and e-bike) to trip tool

▪ Add additional mapping and data
  – Vehicle registration
  – Regional TCO
  – Regional travel analysis

▪ Improve user selected visualization

▪ Gather additional coordinator and user feedback
  – Send feedback to atravel@anl.gov
ATRAVEL DEMO
DISCUSSION QUESTIONS

- What issues do coordinators/stakeholders focus us on for consumer education of personal transportation?

- What personal transportation-related metrics, data, mapping will be helpful to coordinators/stakeholders?

- Are there fleet transportation-related metrics, data, mapping will be helpful to coordinators/stakeholders?
THANK YOU!!!

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