Housekeeping

- This DAWG meeting builds off the Energy Commission's effort to update travel models for the California Energy Demand Forecast.

- Presentation materials and agenda are posted on the DAWG website. Links are in the chat. This meeting is not recorded.

- Please post questions or comments in the chat or save them for the end of each presentation. Use the "raise hand" feature to ask questions.

- Please email questions or comments to Elena.Giyenko@energy.ca.gov

Overview of California Travel Choice: Miles and Energy

Demand Analysis Working Group Meeting

Elena Giyenko

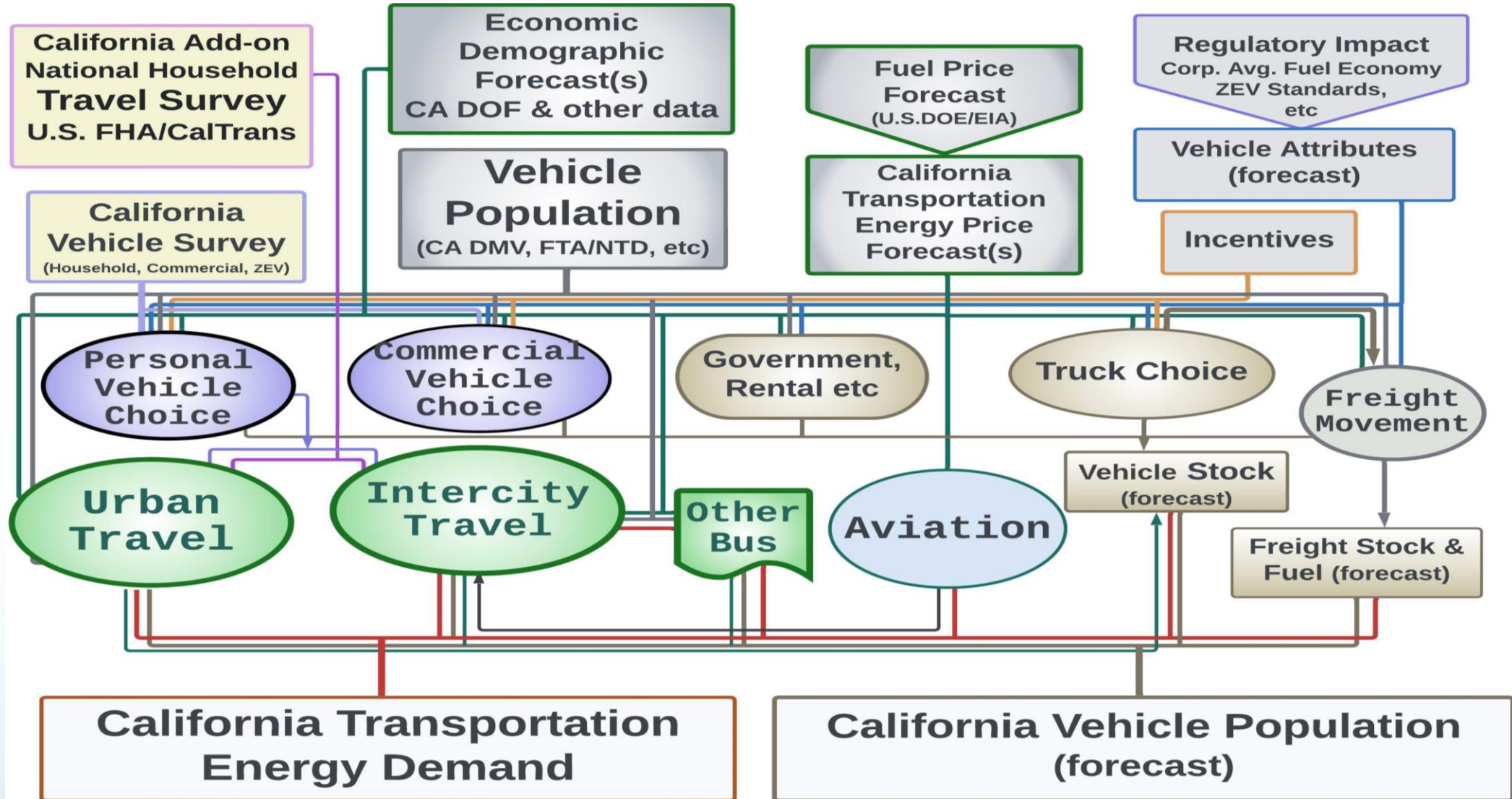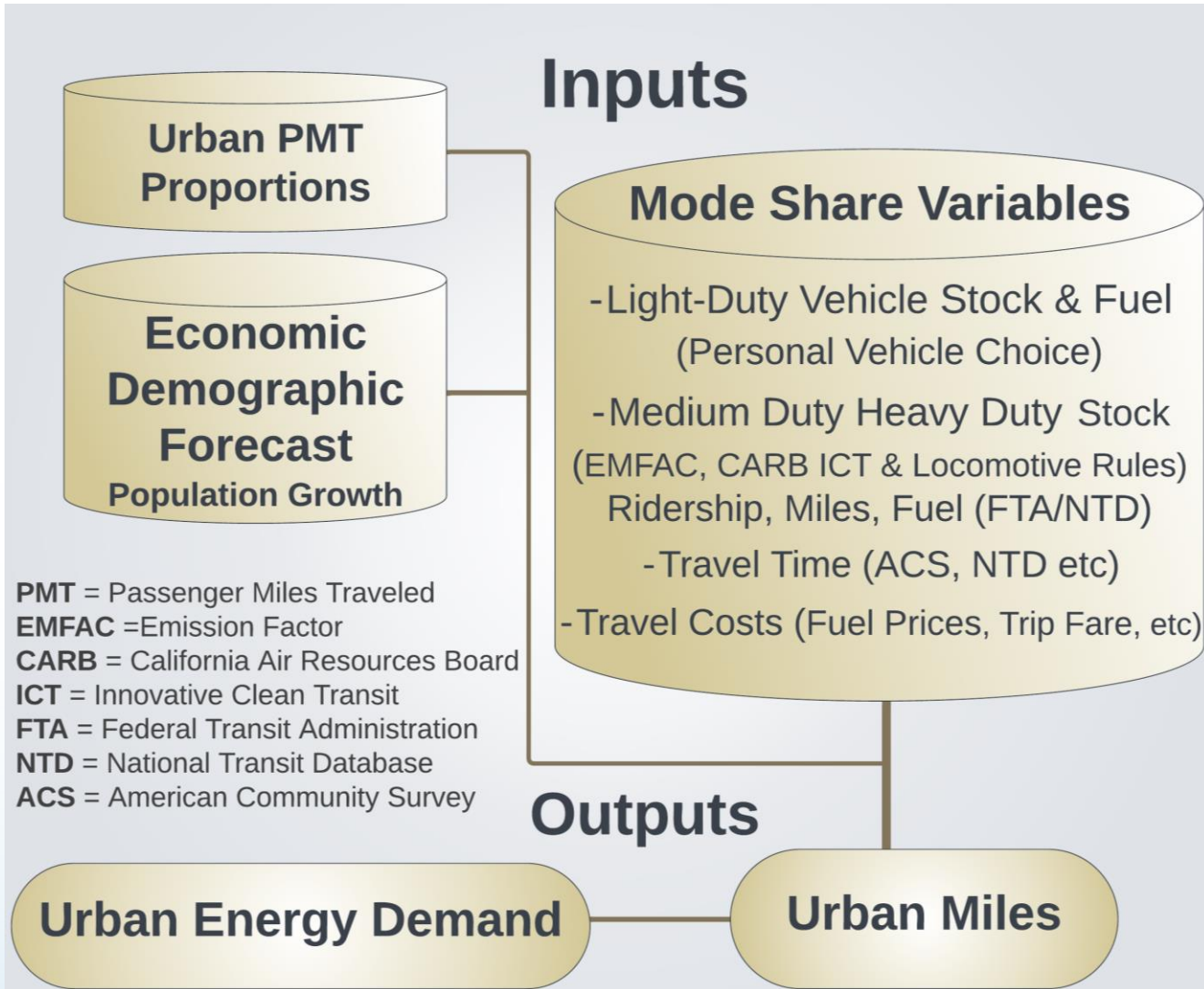July 31, 2023

Urban Travel Model

Inputs

Urban PMT Proportions

Economic Demographic Forecast Population Growth

Mode Share Variables

- Light-Duty Vehicle Stock & Fuel (Personal Vehicle Choice)
- Medium Duty Heavy Duty Stock (EMFAC, CARB ICT & Locomotive Rules) Ridership, Miles, Fuel (FTA/NTD)
- Travel Time (ACS, NTD etc)
- Travel Costs (Fuel Prices, Trip Fare, etc)

PMT = Passenger Miles Traveled
EMFAC = Emission Factor
CARB = California Air Resources Board
ICT = Innovative Clean Transit
FTA = Federal Transit Administration
NTD = National Transit Database
ACS = American Community Survey

Outputs

Urban Energy Demand

Urban Miles

California Miles & Energy Demand
Trips < 50 miles

American Community Survey 2021

- 94.2% live in urban areas
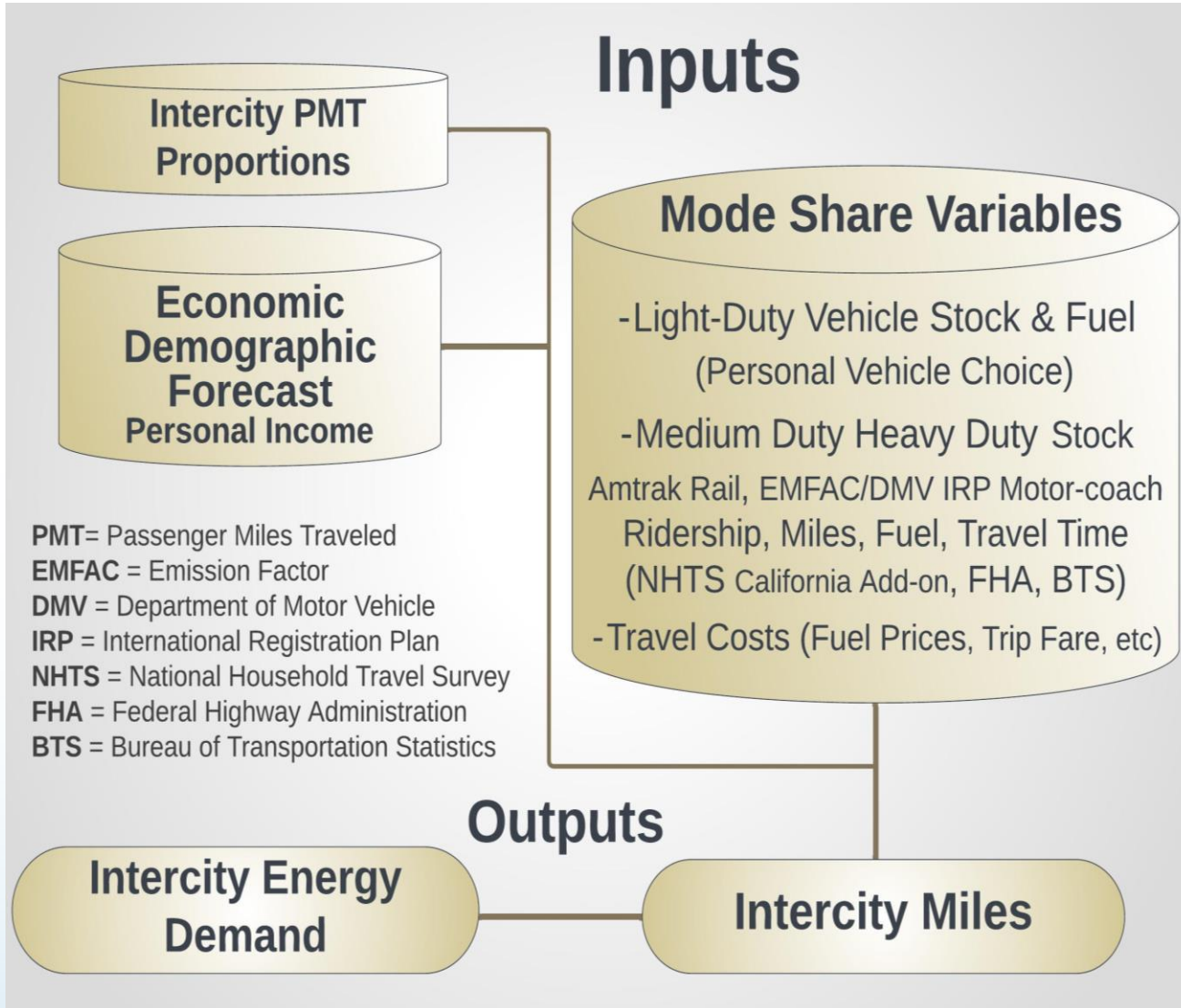- 72.1% solo drive to work
- 21.4% worked from home

Journey to Work (one way)

Drive Alone: **27.6 minutes**

Public Transit: **51.4 minutes**

Intercity Travel Model

Inputs

Intercity PMT Proportions

Economic Demographic Forecast — Personal Income

Mode Share Variables

- Light-Duty Vehicle Stock & Fuel (Personal Vehicle Choice)
- Medium Duty Heavy Duty Stock

Amtrak Rail, EMFAC/DMV IRP Motor-coach Ridership, Miles, Fuel, Travel Time (NHTS California Add-on, FHA, BTS)

- Travel Costs (Fuel Prices, Trip Fare, etc)

PMT= Passenger Miles Traveled
EMFAC = Emission Factor
DMV = Department of Motor Vehicle
IRP = International Registration Plan
NHTS = National Household Travel Survey
FHA = Federal Highway Administration
BTS = Bureau of Transportation Statistics

Outputs

Intercity Energy Demand

Intercity Miles

California Miles & Energy Demand
Trips > 50 miles

Significant differences from Urban due to distinct factors & sensitivities
- Auto
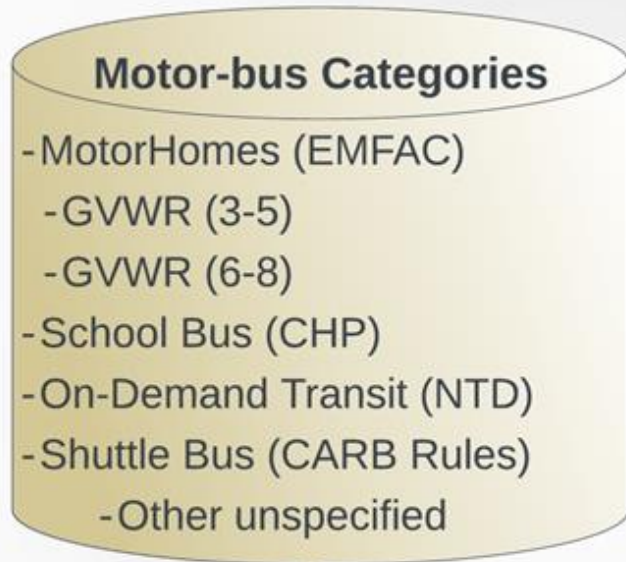- Motorcoach
- Amtrak Rail
- Air Travel

Unique Challenges
- Data Availability & Complexities
- Time-Consuming Modeling

OtherBus Model

Inputs

Motor-bus Categories

- MotorHomes (EMFAC)
  - GVWR (3-5)
  - GVWR (6-8)
- School Bus (CHP)
- On-Demand Transit (NTD)
- Shuttle Bus (CARB Rules)
  - Other unspecified

EMFAC VMT

Economic Demographic Forecast
Population Growth

Output

OtherBus Energy Demand

EMFAC = Emission Factor
CHP = California Highway Patrol
VMT = Vehicle Miles Traveled
GVWR = Gross Vehicle Weight Rating
NTD = National Transit Database
CARB = California Air Resources Board

Motorbus categories **not** covered in Urban and Intercity

- Motorhomes
- School buses
- Shuttlebuses
- On-demand transit
- Other unspecified

OtherBus does **not** generate vehicle miles, but miles can be mapped to EMFAC.

Improving and Expanding

Existing Core Categories
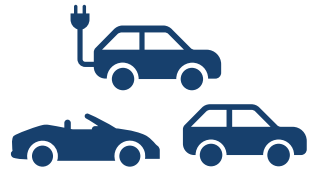
Light-Duty Vehicles: Personal, Commercial, Government, Rental, NEV

Medium- and Heavy-Duty Vehicles: Urban/Intercity Bus, OtherBus

Rail: Amtrak, Commuter, Light, Heavy, Hybrid, Trolleys, Cable Cars

Aviation

New Additions

Microtransit

CMS (TNC & CAV)

eVTOL

Marine

NEV = Neighborhood Electric Vehicles
CMS = Clean Miles Standard
TNC = Transportation Network Company
CAV = Connected Autonomous Vehicle
eVTOL = Electric Vertical Take Off and Landing

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Thank You!
Questions/Comments?

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