VMT: Now That’s a Horse of a Different Color

Katy Cole | June 20, 2017
Key Questions

1. What is VMT?
2. How do we define VMT for different purposes?
3. How can we influence VMT?
VMT

Network or Roadway VMT = Traffic Volume x Distance

Land Use VMT = Vehicle Trips x Trip Length
Types of VMT

- VMT/Capita
- Non-Home Based VMT
- Average Project Trip Length
- Total Project VMT
- Home Based VMT
- HBW Average Trip Length
- HBO Average Trip Length
Types of VMT – When are they used?

**Vehicle Miles Traveled (VMT) (Millions)**

January 2000 to March 2017

- Unadjusted VMT
- Seasonally-adjusted VMT

**Source:**

**Unadjusted VMT** - U.S. Department of Transportation, Federal Highways Administration, Traffic Volumes and Trends
http://www.fhwa.dot.gov/policyinformation/travel_monitoring/tvt.cfm

**Seasonally-adjusted VMT** - U.S. Department of Transportation, Bureau of Transportation Statistics (BTS) calculation from U.S. Department of Transportation, Federal Highways Administration, Traffic Volumes and Trends
http://www.fhwa.dot.gov/policyinformation/travel_monitoring/tvt.cfm

**California Road Charge Pilot Program**

Get Up to Speed

Ready, Set, GO!

On July 1, 2016, Caltrans launched the nine-month pilot to test a pay-by-the-mile road funding model as a possible replacement to the gas tax. Over 5,000 vehicles have currently enrolled into the pilot, helping the state gain insight into this innovative approach to road funding.

**CEQA**
Types of VMT – When are they used?

What SB 743 Does Do?
- Eliminates LOS/Delay
- Adds VMT Analysis
- Provides methods and thresholds guidance
- Changes mitigation focus

Source: Chris Ganson, OPR
Types of VMT – When are they used?

Greenhouse Gas & Air Quality Analysis

- Total Project VMT: Sum of the distance for all trips generated for all trip purposes for all uses within the project.

SB 743

- For residential projects: Home-based auto VMT/Capita: Sum of the distance of all auto trips to/from the homes divided by the population.
- For office projects: VMT/employee: Sum of the distances of all home based work auto trips to/from the office divided by the number of employees. (For “tour” based VMT would include other work based trips)
Evaluating VMT – Trip Based

1. Residence to Work
2. Work to Residence
3. Home to Coffee Shop
4. Coffee Shop to Store
5. Store to Home
6. Work to Lunch
7. Lunch to Work
Evaluating VMT – Trip Based

1. Home to Work
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“Home-based” VMT

Home-Based-Work trip

Home-Based-Shopping trip

Non-Home-Based trip

Non-Home-Based trip
### Evaluating VMT – Trip Based Example

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<td>2 (out)</td>
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### Evaluating VMT – Residential Example

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- Total Home Based VMT = 78
- Total Home Based VMT/Capita = 78/3 people = 26
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- Total Project VMT = 84 (includes dog walker)
- Average Project Trip Length  = 84/10 = 8.4
Influencing VMT

Network or Roadway VMT = Traffic Volume x Distance

Land Use VMT = Vehicle Trips x Trip Length
Influencing VMT
TRAVEL DEMAND MANAGEMENT

Land Use/Location Strategies

Category Reduction = 35.9%

Project Location: urban

Density
- 15 housing units per acre

Design
- 50 number of intersections per mi²

Diversity
- 100% Total Percentages
  - 35% single family residential
  - 10% commercial
  - 45% multifamily residential
  - 0% industrial
  - 10% park

Destination Accessibility
- 2 distance to downtown or major job center (mi)

Transit Accessibility
- .25 distance to transit station (mi)

Below Market Rate Housing
- 50 percentage of units that are deed-restricted BMR housing
Influencing VMT
TRAVEL DEMAND MANAGEMENT

Neighborhood/Site Enhancements

Category Reduction = 0.7%

- Pedestrian Network: 0.0%
- Traffic Calming: 0.0%
- NEV Network: 0.0%
- Carshare Program: 0.7%

Project Location: urban

- Pedestrian Network: within project and connecting off-site
- Traffic Calming: 75% percentage of streets within project with traffic calming improvements, 100% percentage of intersections within project with traffic calming improvements
- NEV Network: 1 NEV per 20 households
- Carshare Program: all other project setting
Influencing VMT
TRAVEL DEMAND MANAGEMENT

- Parking Policy/Pricing
- Category Reduction = 1.5%
- Parking Supply Limits: 0.0%
- Unbundled Parking Costs: 1.5%
- On-Street Market Pricing: 0.0%

Project Location: urban

- Parking Supply Limits: 100 ITES parking provision for the project site improvements
- Parking Supply Limits: 90 Actual parking provision for the project site

- Unbundle Parking Costs: 50.00 monthly parking cost for the project site

- On-Street Market Pricing: 25 percent increase in on-street parking prices (min 25%, max 50%)
Influencing VMT

TRAVEL DEMAND MANAGEMENT

Transit System Improvements

- Category Reduction = 0.6%

- Network Expansion
  - Percentage increase of transit network coverage: 10
  - Percent existing transit mode share (as a % of total daily trips): 9.4

- Service Frequency/Speed
  - Percentage reduction in headways (increase in frequency): 10
  - Percent existing transit mode share (as a % of total daily trips): 9.4
  - <50% of lines (within project) improved

- Bus Rapid Transit
  - Percentage of lines serving project converted to BRT: 30
  - Percent existing transit mode share (as a % of total daily trips): 5
Influencing VMT
TRAVEL DEMAND MANAGEMENT

Commute Trip Reduction (CTR) Programs

- CTR Program - Required (work VMT)
- CTR Program - Voluntary (work VMT)
- Transit Fare Subsidy (work VMT)
- Employee Parking Cash-Out (work VMT)
- Workplace Parking Pricing (work VMT)
- Alternative Work Schedules and Telecommute Program (work VMT)
- CTR Marketing (work VMT)
- Employer-Sponsored Vanpool/Shuttle (work VMT)
- Ride Share Program (work VMT)
- School Pool (school VMT)
- School Bus (school VMT)

Category Reduction = 0.2%

Project Location: urban

Percentage of work related VMT:

- CTR Program - Required: 100%
- CTR Program - Voluntary: 100%
- Transit Fare Subsidy: 1%
- Employee Parking Cash-Out: 50%
- Workplace Parking Pricing: 2 daily parking charge
- Alternative Work Schedules and Telecommute Program: 15 days of telecommuting
- CTR Marketing: 23%
- Employer-sponsored Vanpool/Shuttle: 50% low
- Ride-Share Program: 50%
- School Pool: med
- School Bus: 50% percent of families expected to use school bus program

Fehr & Peers
Influencing VMT
TRAVEL DEMAND MANAGEMENT
Conclusion

1. What is VMT? Measure of network use or efficiency.

2. How do we define VMT for different purposes? Total Project VMT, Home-Based VMT/Capita, VMT/Employee...

3. How can we influence VMT? TDM
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