

Congestion, VMT, and Public Policy

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Overview of the Presentation

1. Framework for thinking about Transportation goals
2. Congestion and VMT in U.S. and Maryland
3. Policies to address congestion and VMT

The Logic

Broad Goals...

- Need “good” transportation services
 - Transportation performance and attributes E.g.:
Safety Speed Reliability Convenience
 - Cost E.g.:
Total (fiscal constraints) Cost effectiveness
 - Other objectives E.g.:
Economic development
Environmental quality
Urban amenity
Fairness (Equity)

...More Specific Objectives

- Congestion
 - Especially in metropolitan areas
 - Affects all aspects of transportation service
 - Affects other desired objectives
- Climate Change
 - CC < GHG < energy use < 25–35% transport < 80% highway vehicles < 90% cars / light trucks
 - Thus, if less highway travel, less GHG
 - Thus, reduce vehicle-miles traveled

The Policy Toolbox

- New road capacity But...
 - “Can’t build our way out of congestion” So...
- Transportation System Management
 - More efficient use of existing capacity
- Travel Demand Management
 - Change incentives for travel type, time, location
- New facilities for alternative travel modes
 - Transit, bicycle, pedestrian

Congestion and VMT in the U.S. and Maryland

Congestion: The Contributors

- Things that would increase congestion are growing faster than population
 - Per capita real income, licensed drivers, vehicles, people in labor force, fuel consumption, VMT
- Things that would decrease congestion are growing slower than population
 - Highway miles, the real price of gasoline, operating cost per mile

Period roughly 1980 to 2000

Congestion: The Results

- Almost every measure of congestion (e.g., V/C ratio, amount and cost of delay) grew 5 - 10 times faster than population over about the last 30 years
- Decreasing effectiveness and increasing cost of supply-side (capacity) solutions causes slow shift toward demand-side solutions:
 - Direct regulation
 - Pricing

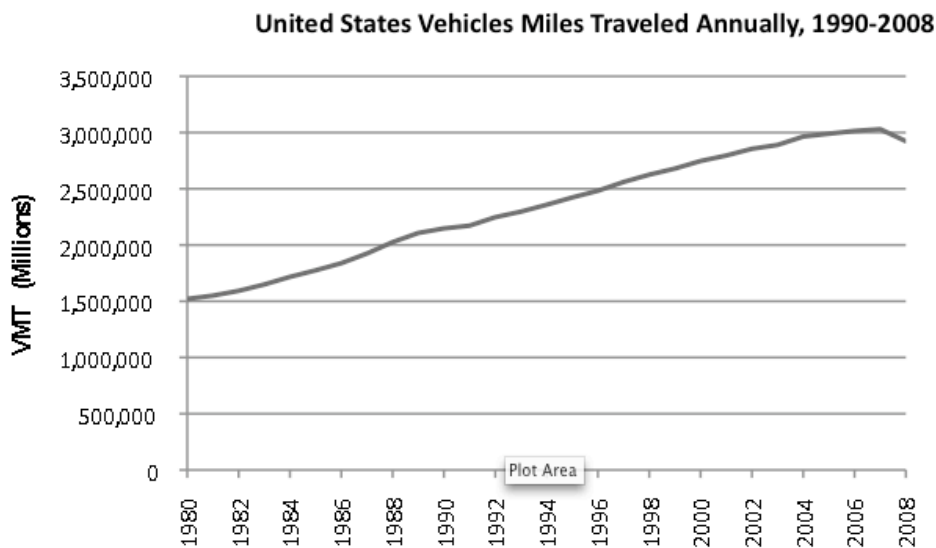
VMT: Contributors

- Increases in:
 - Labor force participation Number of cars and drivers
 - Real incomes Suburbanization
 - Shopping and recreation opportunities
- Decreases in:
 - Real cost of vehicle operation School transportation budgets
- Curbed (in theory) by increases in congestion

VMT: the Results

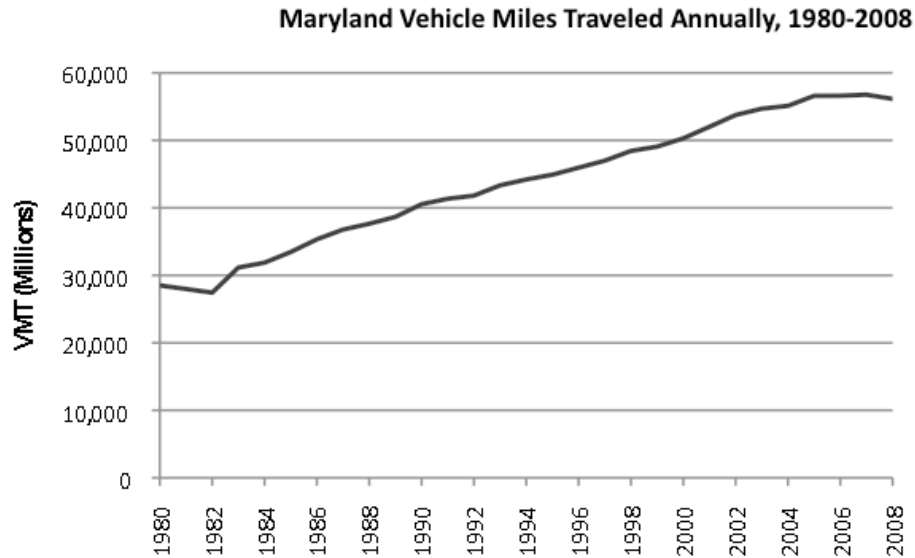
- 1980 -2005, % increase:
 - U.S.: pop 30% VMT 97%
 - Maryland: pop 32% VMT 99%
- 2008: first year of absolute decline; per capita decline in 2005
- Baseline forecasts are for increases in VMT in U.S. and Maryland:
 - Maryland: 50% by 2030; growing twice as fast as population

Historical VMT: U.S.



Source: United States Department of Transportation, Federal Highway Administration

Historical VMT: Maryland



Source: Maryland Department of Transportation, State Highway Administration

Conclusion

- For congestion and VMT in both Maryland and U.S.:
 - Have grown unremittingly for decades
 - Only recently some evidence of slowing their rate of growth
 - Baseline forecasts for continued growth, and generally at rates that exceed population growth
- Thus, problems for federal, state, and local government not likely to go away

Evaluating Policies to Address Congestion and VMT

Limitations of Evaluation

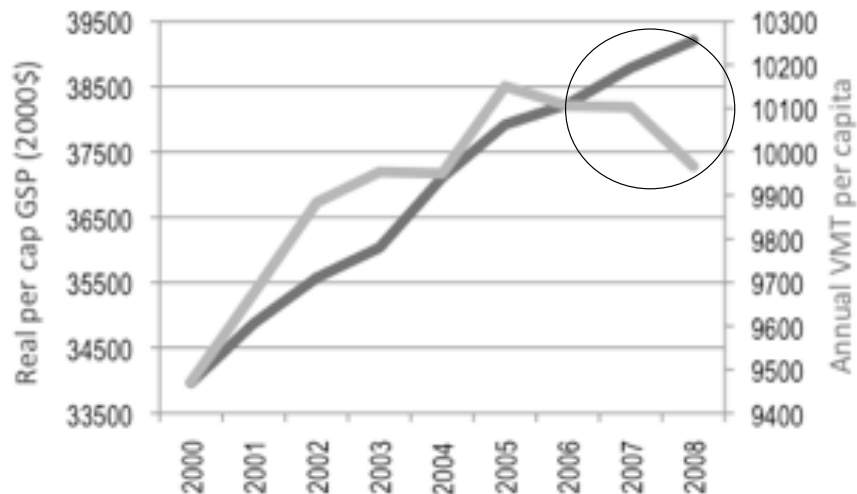
- Complicated, interconnected system
 - All types of impacts, over large geography, over long period, disaggregated by groups of interest
- Inherent uncertainty of the future
- Relative value of different impacts (weighting)
- No model is going to give the answer
 - Simulations, not forecasts
 - Decision aiding, not decision making

Debate About Objectives

- Might congestion / VMT be good, or at least correlated with growth of some good things?
 - Where is the efficient level?
 - A clearer definition of the congestion problem
- Congestion: general agreement that in areas of heavy congestion, less is better
- VMT: Debate about tradeoffs (page 20 of paper):
 - Economic impacts: plus or minus; long run or short run
 - Other (more efficient) ways to reduce GHG
- Agreement not likely

GSP and VMT per capita

- Comparison of growth in real per capita Gross State Product to per capita VMT, Maryland, 2000-2008



Dialing Back Congestion and VMT

- They are linked. Effects of congestion reduction on VMT depends on how congestion is reduced
- Change in fuel prices alone unlikely to have big effect: fuel small % of total cost
- Land use (diversity, density, design): can reduce both, but (1) at what cost? (2) how much? (3) over what time period?
- Pricing, especially by time and location of travel (i.e., congestion pricing)

A Technician's Perspective

Congestion Policy

- Supply (capacity) not enough and in some cases not right
- Travel demand management, especially pricing, especially congestion pricing
- Advantages: (1) efficiency, (2) revenue, (3) clearer signals about what to build, where
- Problems more political than technical: the technology and results are proven

VMT Policy

- VMT targets, or not? Total or per capita?
Amount or rate of growth?
- If targets, direct restrictions are less likely to work than policies that use incentives and restrictions on things that presumed to reduce or to contribute to VMT.
 - Travel-demand management (pricing)
 - Land use
 - Investment in alternative modes