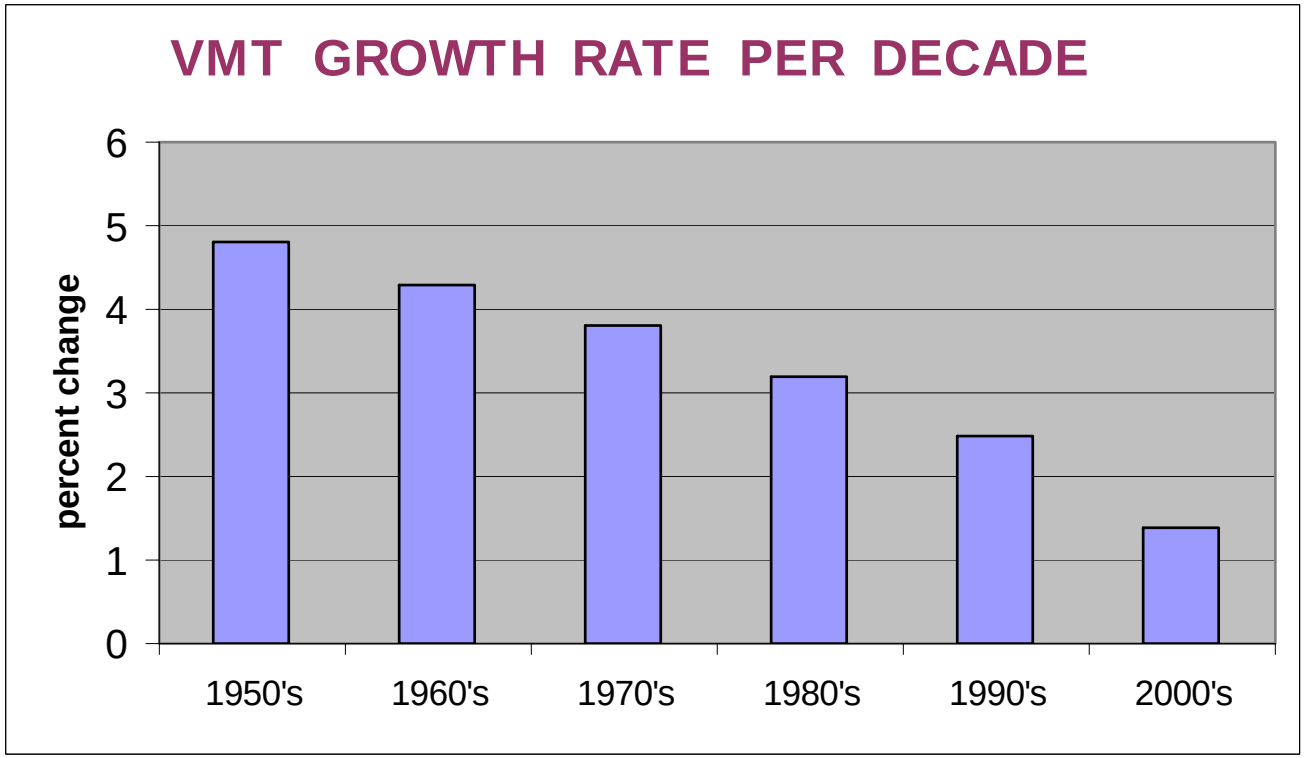
VMT Growth Trends

- VMT growth has been steadily declining since the 1950s
- VMT growth slowed to about 1.5% in early 2000s
- VMT growth was actually negative in 2008
- VMT is affected by population, economy, transportation prices, demographics, land use
- AASHTO supports reducing VMT growth rate to 1% per year



Source: Alan Pisarski and Cambridge Systematics

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VMT Reduction: What I heard at Asilomar*

- Little on how to reduce VMT
- That carbon pricing (HR 2454) won't achieve significant VMT/GHG reduction
- That land use change and transit are considered necessary and important ways to reduce VMT/GHG
- That significant fuel price increases have made a swift, noticeable impact on VMT nationwide
- Suspicion of VMT fees

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* In hallway talk as well as in sessions

What I didn't hear at Asilomar
(even though evidence is ample elsewhere)

- Clean Air Act efforts made no apparent dent in VMT or VMT trends
- Transit has small potential to reduce VMT (only 1% of PMT is on transit, none of freight VMT)*
- Even heroic land use assumptions over 40 years achieve small GHG reductions (via VMT)

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* Or did Dan Sperling make this point on Thursday afternoon?

What I didn't hear at Asilomar (continued)

- Supporting data and evidence for land use and transit as VMT/GHG reducers
- Recognition of carpooling/vanpooling
- Recognition of the power of pricing
- Exploration of VMT fees (with factors for GHG vehicle intensity and congestion) as a win-win-win solution
- Discussion of how environmental advocates and transportation professionals can find common ground

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Consider:

- **1,445** mmt of GHG reduced over 40 years of "Maximum Deployment"* of land use change
- **1,815** mmt of GHG reduced over 40 years from "Maximum Deployment"** of eco-driving
- **16,182** mmt of GHG reduced over 40 years from "Maximum Deployment"*** of carbon pricing

-- Moving Cooler, July 2009

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* 90% of new development in metro areas is compact development with high quality transit

** 20% of drivers adopt ecodriving practices

*** Carbon price equivalent to 12 cents/mile ($2.71/gallon indexed to FE)

Consider: Pricing

- Without price signals, trying to reduce VMT/GHG/congestion is futile
- Multiple pricing tools available: carbon/fuel prices, VMT fees, PAYD insurance, congestion pricing, etc.
- Pricing rewards prudent VMT choices and produces revenue to invest in transportation
- **Key pricing opportunity: Federal and state VMT fees, with factors for vehicle GHG intensity and congestion**

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Consider:
Carpooling and Vanpooling

- There are 7 times as many work carpool/vanpool PMT as transit PMT
- Carpooling/vanpooling costs government little; saves transport costs for users
- Effective in all kinds of areas – rural, small urban areas, suburban, urban
- High potential to reduce GHG
- Nearer-term payoff than most transport strategies

What more do we need to know?

- Why there is such divergence in studies on land use/transit potential to reduce VMT/GHG?
- How can we take advantage of the potential in carpooling/vanpooling?
- Do we really understand what the public wants and values?
- How can we deal with “predictably irrational” behavior?
- Can we overcome public resistance to pricing strategies?

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How to Reduce VMT Depends on your Perspective….

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And it depends on…

Your profession:

"If the only tool you have is a hammer, every problem looks like a nail."

And how you use data:

"If you torture data long enough, they will admit to anything."

SUPPLEMENTARY SLIDES

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Many Strategies to Reduce LDV VMT*

- Economy-wide carbon cap and trade (raises fuel prices)
- Transportation pricing (PAYD insurance, parking pricing, tolls, higher user fees, cordon pricing, congestion pricing, etc.)
- Carpooling and vanpooling (currently carry **7 times as much work trip PMT as transit)**
- Bike/ped and transit (but some transit is higher GHG than LDV)
- Trip chaining
- Tele-working, tele-shopping, tele-education, tele-medicine
- Compact land use

When VMT dropped in 2008, where did it go? We know <2% of the lost VMT went to transit, but don't know where the rest of the drop went.

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Strategies: Transit

- Transit serves many different goals and there is broad support for increasing transit.

- But transit's potential GHG reduction is small
  - Transit serves 1% of PMT and 0% freight in the U.S.
  - DOE: Bus transit has higher GHG/passenger mile traveled than average auto use in the U.S. *(Increasing bus service will worsen GHG.)*
  - APTA studies: (a) Transit reduced GHG by 6.9 MMT in 2005; or (b) by 35 MMT in 2005. <u>This is 0.3% to 1.7% of U.S. transportation GHG</u>

- European Ministers of Transport caution: *"Modal shift policies are usually weak in terms of CO2 abated. <u>They can not … form the corner-stone of effective CO2 abatement policy…..</u>."*

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Strategies: Land Use

- "Growing Cooler" finds compact mixed-use development can achieve 3.5-5% reduction in transportation GHG, 2007-2050
- GC's assumptions of land use change may be considered aggressive:
  - 67% of all development in place in 2050 will be constructed or rehabbed after 2005
  - 60-90% of that development is compact (comparable to 13.3 housing-units per acre)
  - Compact development has 30% less VMT than very sprawling development

European View (ECMT, 2006)

- "The most effective measures available include *fuel taxes, vehicle and component standards, differentiated vehicle taxation, support for eco-driving and incentives for more efficient logistic organization, including point of use pricing for roads*. "
- "More integrated transport and spatial planning policies might contain demand for motorized transport."
- Mode shifts … cannot … form the corner-stone of effective CO2 abatement policy and the prominence given to modal shift policies is at odds with indications that most modal shift policies achieve much lower abatement levels than measures focusing on fuel efficiency."
- "Ultimately higher cost energy sources …. will be required if there are to be further cuts in transport sector CO2 emissions."

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CO_2e Emissions Per Passenger Mile for Various Modes

NATIONAL AVERAGE	Energy Intensities		Load Factor	CO_2e
	(Btu or kWhr per vehicle mile)	(Btu or kWhr per passenger mile)	Persons Per Vehicle	(Estimated Pounds CO_2e Per Passenger Mile)
Single Occupancy Vehicle (SOV) LDVs	5,987	5,987	1.00	0.99
Personal Trucks at Average Occupancy	6,785	4,329	1.72	0.71
Transit Bus	37,310	4,318	8.80	0.71
Cars at Average Occupancy	5,514	3,496	1.57	0.58
Electric Trolley Bus	5.2	0.39	13.36	0.52
High Occupancy Vehicle (HOV) LDVs at 2+ Occupancy	5,987	2,851	2.10	0.47
Intercity Rail (Amtrak)	54,167	2,760	20.50	0.39
Light and Heavy Rail Transit	62,797	2,750	22.50	0.39
Motorcycles	2,226	2,272	1.20	0.37
Commuter Rail	92,739	2,569	31.30	0.36
Vanpool	8,048	1,294	6.10	0.21
Walking or Biking	-	-	1.00	0.00

REGIONAL EXAMPLE (SEATTLE/PUGET SOUND REGION)	Energy Intensities		Load Factor	CO_2e
	(Btu or kWhr per vehicle mile)	(Btu or kWhr per passenger mile)	Persons Per Vehicle	(Estimated Pounds CO_2e Per Passenger Mile)
Cars (64%) and Personal Trucks (36%) at Average Occupancy	5,987	4,468	1.34	0.74
King County Metro Diesel and Hybrid Buses	33,024	2,854	11.57	0.47
Sound Transit Buses	33,024	2,517	13.12	0.42
King County Electrically-Powered Trolley Buses	5.33	0.44	12.12	0.11

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