

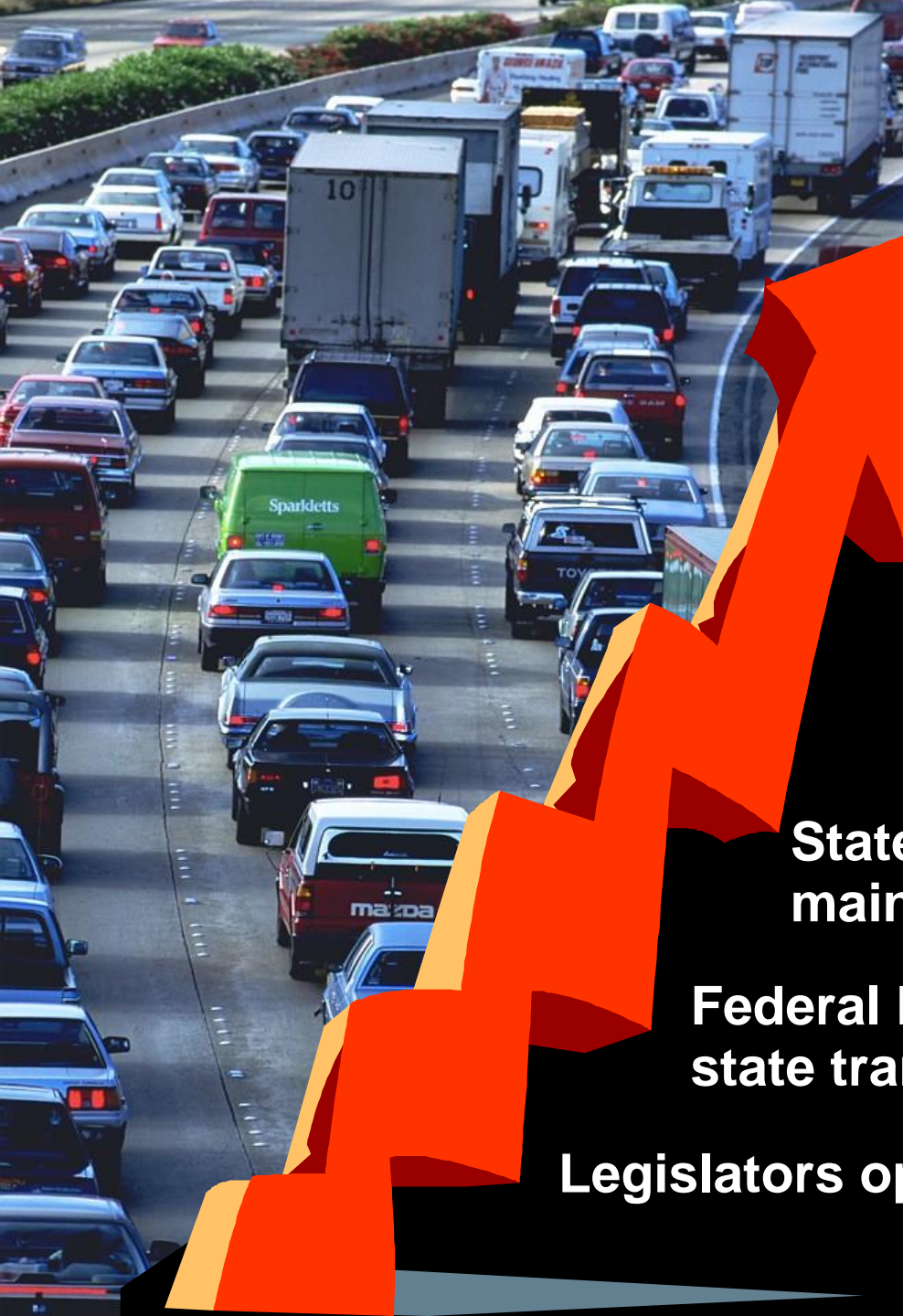


INFRASTRUCTURE, SAFETY,
AND ENVIRONMENT

***Crisis & Response:
Lessons from a Century of Struggle
to Find A Stable System of Transportation Finance***

***2009 Lake Arrowhead Conference
The Transportation – Land Use – Environment Connection***

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Transportation, Space, & Technology
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The National Transportation Program is in Fiscal Crisis

**Unable to fund standard
maintenance much less
system expansion or
environmental improvements**

**For first time since 1930 less
than half of state funding is
from user fees**

**States are borrowing to pay for
maintenance and operations**

**Federal Highway Trust Fund and many
state transportation funds are in deficit**

Legislators oppose increases in user fees

There are Lessons to be Learned From History

- **Financing transportation in the US differs from financing most other infrastructure systems and from financing transportation in most other countries**
- **How and why we chose user-based financing is important for understanding the present and for shaping the future**

Local Streets & County Roads

- **Financed largely by property taxes on residential and commercial land . . . and ought to be . . .**
- **Most benefits come from “access” to property: postal delivery, ambulance, fire, police, water, sewer, telephone service**
- **Access gives value to property & value should be “recouped”**
- **Local streets & county roads carry tiny % of all traffic**



Local Public Transit

- Was mostly privately provided
- Gradually failed over decades
- Public acquisition and operation
- Financed largely by local general funds with some help much later from states and feds

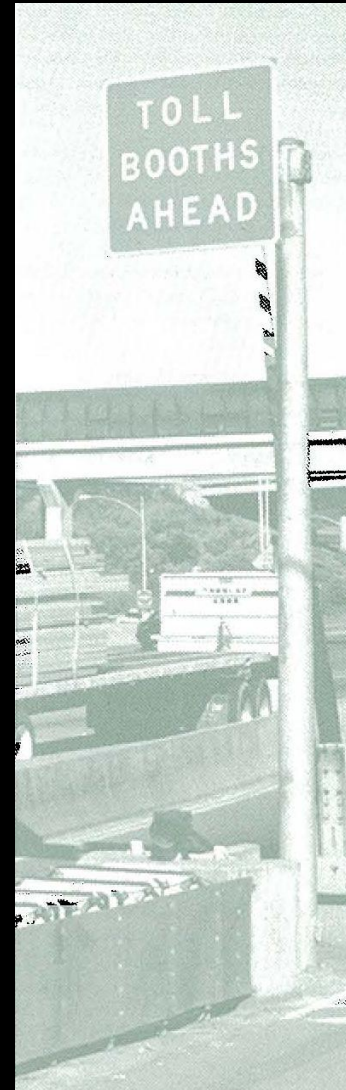


History of Highway Finance

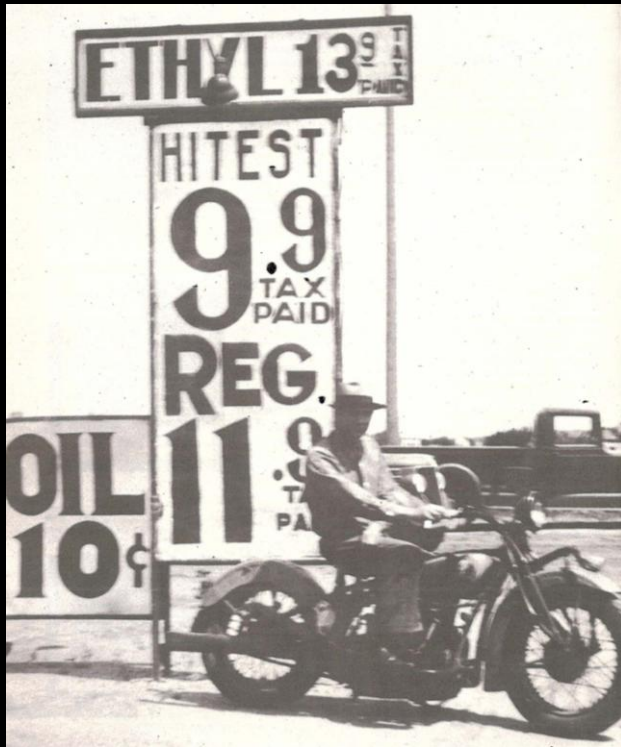
- **Local streets and county roads: transportation finance: 90%++ of system**
- **State highways bankrupting states in 1915-25 period; fastest growth of autos and roads ever . . . led to innovation of “user fees”**
- **Tolls most desirable user fee, in principle**
- **Motor fuel taxes and various “car taxes” were adopted as “second best” but practical**

Gasoline Taxes were Invented Before 1920 But Have Always been “Second Best”

- **State highways were bankrupting states in 1915-25 period; fastest growth of autos and roads ever . . . led to innovation of “user fees”**
- **Tolls - direct user fees – were most desirable in principle**
- **Motor fuel taxes and various “car taxes” adopted as “second best” but practical**



Motor Fuel Taxes Have Worked Well for a Century



- Motor fuel taxes were enormously popular in early years
- Supported by wide variety of constituencies
- Adopted in every state by 1940
- Federal motor fuel tax in 1930s
- Fundamental finance mechanism for interstate system in 1950s

Benefits & Shortcomings of Gasoline Taxes

Benefits

- **Low collection costs**
- **Little fraud and evasion**
- **Grew for decades as car ownership & driving expanded**
- **Placed burden on system users**

Shortcomings

- **Tax per gallon makes them vulnerable to fuel economy increases**
- **Don't automatically rise with inflation; require legislation for each increase**
- **Creates a basic contradiction for government between environmental and revenue goals**

User Fee Finance is Unique to Transportation & America

- **User fees in USA became associated with “trust funds” and non-diversion constitutional provisions in many states**
- **Elastic definition of user fees allowed expansion to transit and to environmental mitigation in many states**
- **“Hypothecation” not common worldwide**



Motor Fuel Taxes

- Usually expressed as “cents per gallon”
- Must be raised by act of legislature
- Revenue does not rise automatically with inflation as does income tax or sales tax
- Improving fuel economy lowers revenue per mile of driving
- Revenue declining precipitously in relation to VMT



There is a Crisis in Commitment to Upholding This System

- **Congress and state legislatures reluctant to raise user fees [US and CA gas taxes steady since early nineties]**
- **Increasingly reluctant to directly raise fees or taxes at all**
- **Putting measures on ballot for voters to enact instead of taking action in legislatures**
- **Shift to borrowing rather than pay as you go**
- **Devolving responsibility to local governments**

While Tax Revenues Fall Behind

- Vehicle fuel economy is improving
- Inflation is reducing the value of revenue
- Construction & maintenance costs have risen
- Vehicle ownership has grown faster than population growth
- VMT is growing faster than population and economic growth
- Alternative fuels are being developed for climate control reasons



Lessons From History

- **Crises can be an opportunity – adoption of motor fuel taxes in twenties . . . BUT**
- **Adoption on a large scale took decades, even when there was a high level of public support**
- **There has not ever been a major “transformation at one moment,” but rather a set of marginal changes over many years**
- **Adoption of a major change – even over decades – was based on a broad consensus among many interests**
 - **All accepted some pain because of commitment to getting the gains**

Interpretations for the Present

- **There is NOT a broad consensus on what to do next**
 - **Rural vs Urban**
 - **Donor vs “Donee”**
 - **Highways vs transit and environmentalists**
- **There is a high level of public and media distrust (NOT indifference) of those who must make the choices**
- **All recent changes have been incremental – Congress and states have avoided basic transformation**
- **Policy community has much higher priorities in other areas: health care, stimulus, cap and trade**

What is Possible?

- **We are not ready for deep, lasting, major changes**
- **We must steer a careful course, adopting incremental steps that move in the right direction and gradually build consensus**
 - **Public and media support**
 - **Stakeholder support (truckers, states, AAA, environmentalists)**
- **Options open for choice are VERY few and all are reasonably controversial**

History Suggests One Path is Most Logical

What to Do?

- Raise the fuel taxes while fuel prices are high?
Not politically feasible
- General fund financing? Sales tax measures in many states?
Not equitable
- Increase borrowing in the short term?
Not really new revenue & raises total cost
- Lessen Federal role in finance and devolve to states and localities?
Federal interest and role are greater than ever
- Rejuvenate user financing using new technology and more direct charges?
Electronic tolls and VMT fees?



Many Transportation Experts Agree that Direct VMT Charges Are the Most Promising Direction

- **Will continue to produce revenue when vehicles are no longer powered by petroleum fuels**
- **Come closer to the goals for road user fees that existed even in 1920 – more direct than fuel taxes**
- **Technology is coming on line and is in use in several countries overseas; five major tests already done in US – e.g. “pay at pump” in Oregon**
- **Provide policy flexibility – can vary fees by type of vehicle, type of road, hour of day**

Several VMT Metering Options Are Possible but Risky for Short-Term Deployment

- Odometer in vehicle linked through On-Board Diagnostics (OBD) system with cell phone technology to fuel pump or perhaps to a central billing system
- GPS System with central billing or billing at time of fueling
- DSRC-based tolling (gantries) – but on only part of system



Political/Public Acceptance: The Privacy Issue

- **Fear about privacy**
 - With all this on-board technology, is Big Brother watching?
- **Fueled by press misrepresentations:**
 - LA Times quote: “tracking devices send a signal to a GPS satellite following the car”



Transition Is a Critical Question

- **Direct charging may need to be phased into new vehicles over time**
- **We may need time for political & public acceptance to grow**
- **Privacy concerns versus ability to audit**
- **Gas tax ok in short run if Congress agrees to raise it – even if a transition to new system is planned**

The Transition is Well Underway

- **Fuel tax still valid for decades in USA**
- **GPSS truck use charges in Europe**
- **Oregon experiment demonstrates transition mechanism**
- **University of Iowa Project at many sites**

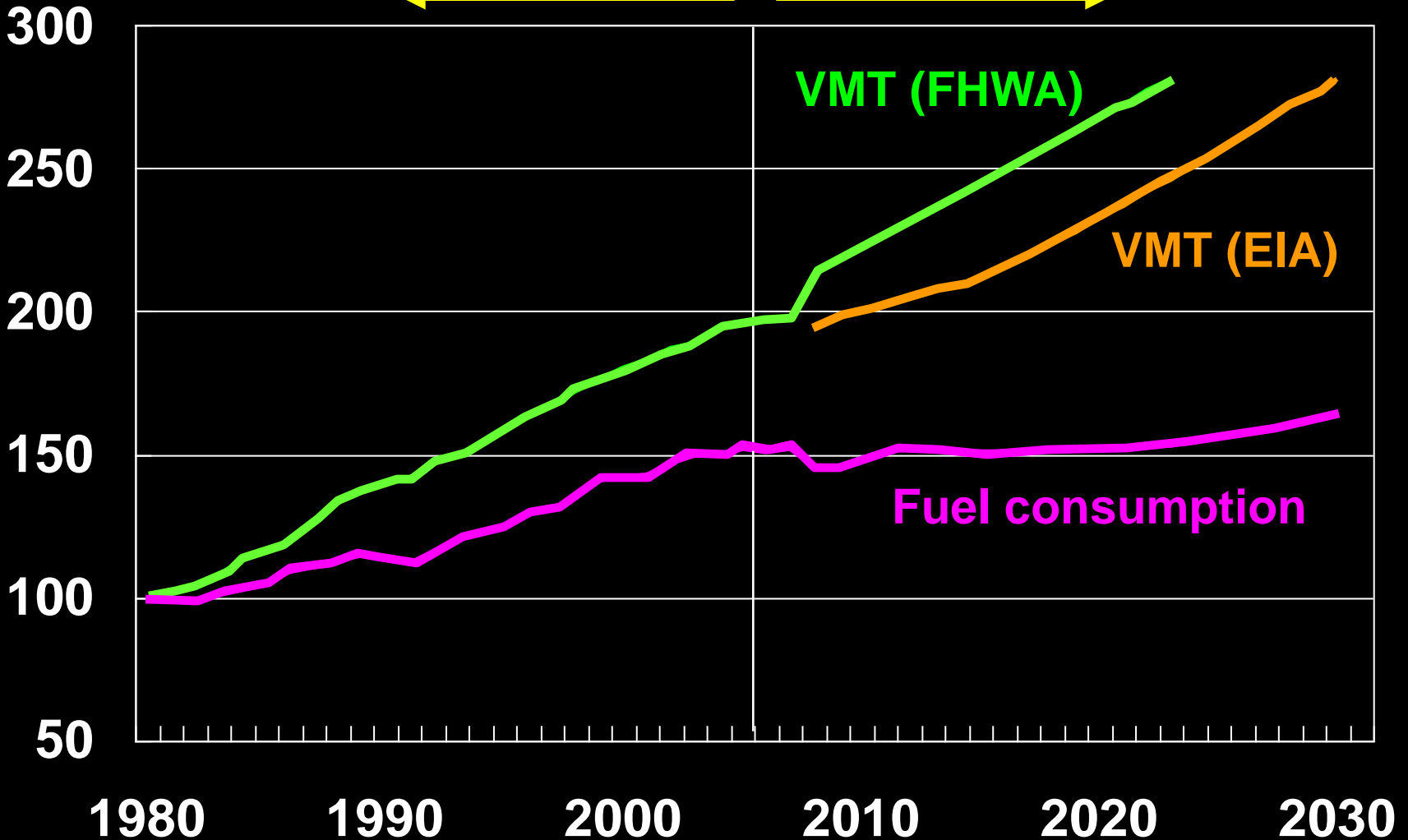
Forecasts Suggest That VMT Growth Will Continue to Outpace Fuel Consumption in Coming Decades

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1980 = 100

Actual

Forecast



Based Upon History: Best Approach is Incremental

- **Adopt large-scale testing and further research in current reauthorization, aiming at full implementation in next cycle around 2015**
- **Do not adopt a national system hastily**
 - **Failure could end the entire program**
 - **Risky to adopt unperfected technology**
 - **Not yet public trust or confidence**

During Next Six-Year Bill

- **Test pay-at-the-pump collection system on a much larger scale than in Oregon – hundreds of thousands of vehicles**
- **Develop central billing agency for alternative-fuel vehicles (market share will increase over time)**
- **Pursue targeted research to resolve uncertainties regarding the cost and capabilities of alternate in-vehicle equipment options**
- **Develop in detail a transition plan (assign responsibility) in current six-year bill in expectation of full implementation in next bill**



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Truck toll collection in Germany

Automatic log-on

