



Northern Virginia Transportation Commission

NVTC

Thinking Outside the Car Since 1964



Commonwealth of Virginia Energy and Sustainability Conference

Session: Attaining Competitive Advantage by Reducing Fuel Consumption

Presentation: Reducing Individual Fuel Consumption and Costs

October 17, 2007

3:30 – 5:00 P.M.

RICK TAUBE
EXECUTIVE DIRECTOR

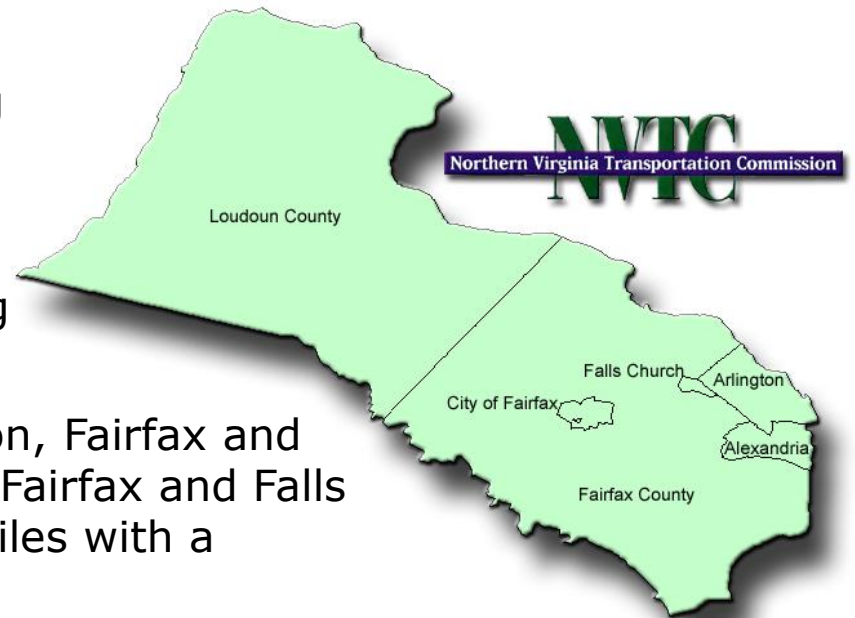
NORTHERN VIRGINIA TRANSPORTATION COMMISSION



NVTC is...



- A regional agency with the mission of managing traffic congestion, restoring clean air, boosting the economy and improving the quality of life for all of Northern Virginia's citizens through effective public transit and ridesharing networks.
- NVTC includes the counties of Arlington, Fairfax and Loudoun and the cities of Alexandria, Fairfax and Falls Church covering over 1,000 square miles with a population of 1.6 million.
- The agency manages up to \$200 million of state and federal grant funds each year for public transit and serves as a forum for its board of 20 state and local elected officials to resolve issues involving public transit and ridesharing.
- For information about NVTC, please visit www.thinkoutsidethecar.org.



TRANSPORTATION IS THE LARGEST CONSUMER OF PETROLEUM IN THE U.S.

- The U.S. consumes almost 8,000 kilograms of oil equivalent per person per year, far in excess of Germany (4,200), Japan (4,000), China (1,100) and India (500).¹
- The U.S. has about 780 cars per 1,000 people, compared to 650 for Japan, 580 for Germany, and less than 10 for China and India.²
- Transportation in the U.S. uses 28% of total energy and almost 70% of U.S. petroleum consumption (up from about 50% in 1973).³



ENERGY/TRANSPORTATION ISSUES AFFECTING INDIVIDUALS



- Energy costs
- Energy dependency and security
- Traffic congestion
- Environmental impacts of energy production and use
- Pollution (NO_x, VOC, PM, GHG)
- Land use (sprawl)
- Social impacts (livability)

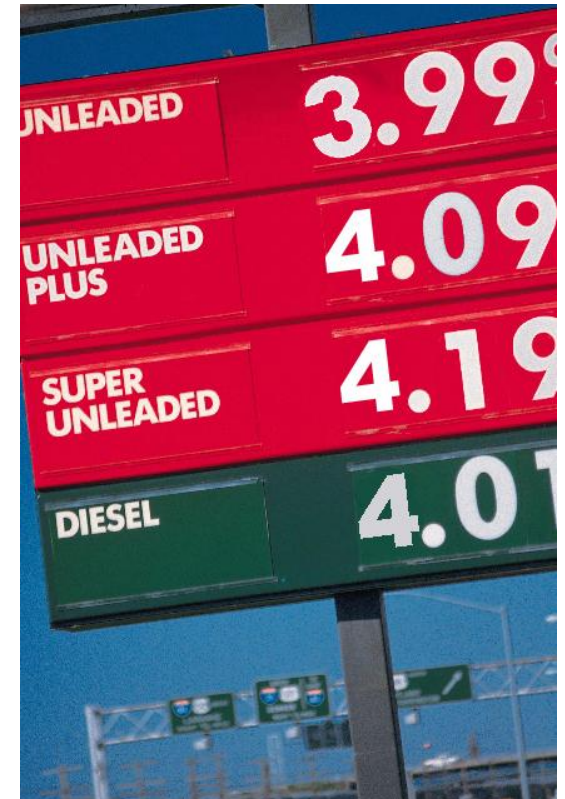


IMPACT OF HIGH GAS PRICES ON CONSUMERS



Gas at \$3 per gallon:

- An employee earning \$65,000 per year and commuting 40 miles roundtrip per day (10,000 miles annually) requires more than two months to pay (\$7,276 total).⁴
- 84% report they are “financially squeezed” and at higher prices 94% are. At incomes of \$75,000, 20% are forced to “cut back.”⁵
- Shares of income devoted to gas purchases rise sharply as income falls. At \$25,000, 8.16% is spent on gas; at \$50,000, 7.38%; at \$75,000, 5.67%.⁶
- Accordingly, policies to boost gas prices may be regressive.
- In Northern Virginia, \$400 million extra (or \$250 per capita) compared to \$2.26 average (in 2005). Each 1-cent increase costs \$5.4 million annually.⁷





IMPACT OF HIGH GAS PRICES ON CONSUMERS



- Historically, real gasoline costs have trended down sharply for decades:
 - Above \$2.50 per gallon in 1930's (in 2005 dollars)
 - Dropped to below \$1.50 in 1990's with spike in late 70's early 80's
 - Jumped to \$1.75 in 2000's through 2005.⁸
- Cost per 1,000 gallons as share of disposable income:
 - Above 30% in 1930's
 - Dropped to almost 5% in 1990's
 - Rose to above 6% through 2005⁹
- Average automobile fuel efficiency trending up from about 14 mpg in 1970 to almost 25 mpg today.¹⁰
- Price elasticity of gas estimated to be -0.2 in short run and -0.7 in the long run. Price elasticity of vehicle miles traveled with respect to fuel price is -0.1 and -0.3 , respectively.¹¹
- Thus, prices alone may not generate much conservation or shifts to alternate fuels.

IMPACT OF CONGESTION



- In the Washington Metropolitan Area, drivers experienced in 2005 127 million hours of delay valued at \$1,094 per rush-hour commuter and wasted 91 million gallons of fuel.¹²
- In Northern Virginia, traffic congestion wastes 34 gallons per resident per year or over \$100 at \$3 per gallon. That is one reason why surveys show most Northern Virginia residents would pay at least \$1 per day more for better transit and roads. Congestion is a hidden tax.¹³
- Nationwide, FHWA reports that from 1994 to 2004, licensed drivers grew 13%, vehicles owned grew 20%, VMT grew 26% and average minutes per day in cars grew 27% (to 62 minutes). Gas use grew 24%.



PUBLIC TRANSIT SAVES FUEL



- In the U.S., 1.4 billion gallons of gasoline per year, equal to 34 fewer super tankers a year, or 140,000 fewer tank truck deliveries.¹⁴
- At 4 million gallons per day, equals 90 percent of U.S. imports from Kuwait.¹⁵
- If one in 10 U.S. commuters shifted to transit to match European levels, we would need no oil from Saudi Arabia (a reduction of imported oil of 40%).¹⁶



- If we used transit at the same rate as Canada, we could cut oil imports by 20%.¹⁷
- Using factors from the American Public Transportation Association, fuel savings in Northern Virginia from public transit use are about \$819 per transit user per year or \$190 million for the region (assume 273 gallons per person per year times 232,000 persons with gas at \$3 per gallon).

PUBLIC TRANSIT SAVES FUEL



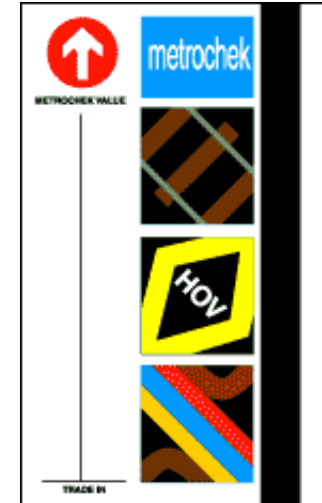
- These savings are equivalent to \$1.39 per transit trip.
- In Northern Virginia for FY 2006 transit ridership up 17% since FY 2002 to 137 million annual trips and passenger miles up 20% to 868 million.¹⁸
- Transit and ridesharing mode shares are about two-thirds of persons traveling during peak periods in major corridors.¹⁹
- Transit use is growing, but due to other factors as well as gas prices.
- Historically there is not a direct relationship between transit ridership and the price of fuel. Transit customers need reliable service, which requires substantial public investment.



PUBLIC POLICY STRATEGIES



- Increase cap on transit commuter benefits (now \$110 per month and used by an estimated four million people nationally) to match tax-free parking incentives (\$215 per month). Currently about 400,000 commuters nationwide receive the pre-tax parking benefit from employers, which can save them up to \$1000 annually. More would use this benefit but much parking is free.²⁰



- Implement land use policies to limit distances between home and work, including transit-oriented development and affordable housing. Better pedestrian access.

Arlington collects 30% of its property tax revenue from 8% of its land area closest to the Rosslyn-Ballston Metrorail corridor and enjoys a very high transit mode share.

PUBLIC POLICY STRATEGIES



- Encourage transit systems to use fuel wisely.

WMATA pays \$26 million annually for electricity for facilities plus \$45.6 million for propulsion. PEPCO is doing an audit and promises to save the equivalent of removing 2,173 vehicles from the road.

- Charge variable prices (tolls) for roadways. USDOT has provided \$848 million in grants to help several cities implement such programs. HOT lanes are proposed on the Northern Virginia Beltway and the I-95/395 corridor.





PUBLIC POLICY STRATEGIES



- Apply proper pricing of parking. Each curb space can generate up to 1,825 VMT (greater than half the distance across the U.S.) from drivers cruising for cheap empty spaces. Less than 500 such spaces can generate almost 950,000 VMT—equivalent to 38 trips around the earth or four trips to the moon. Ideally, price curb spaces to yield 85% average occupancy.²¹
- Encourage car sharing (Flexcar, Zipcar, etc.), ridesharing, electronic hitchhiking (NuRide), and slugging. At Newington on I-95 in spring of 2006, VDOT counted almost 22,000 northbound HOV persons plus 5,000 slugs on a typical weekday. Since its inception, NuRide has attracted 22,205 members and generated over one million shared rides. Reported fuel savings total \$7.6 million.²²
- Aggressively implement telework. Of 1.3 million eligible federal employees, OPM found 119,000 (almost 10%) telework, but 47,000 of those are less than once per week.²³ MWCOG found 19% of surveyed workers now telework an average of 1.5 days per week. Another 24% (570,000 workers) would if their employers allowed.

PUBLIC POLICY STRATEGIES



- Continue incentives to own hybrid and fuel efficient vehicles. In Northern Virginia, access to HOV lanes for hybrid vehicles led to accelerating sales of vehicles but overcrowding of the HOV facilities (21% of peak hour vehicles had clean fuel exemptions). Arlington provides its own financial incentives in addition to state and federal tax benefits.²⁴



- Find alternatives to the gas tax which is not keeping pace with funding needs for all levels of government primarily due to fuel efficient cars. VMT tax experiments are proceeding in Oregon and several other states. More private sector funding is needed.
- Properly integrate transit routes and fares (Northern Virginia has eight distinct transit providers). Link websites and coordinate marketing. Share technologies (e.g. SmarTrip fareboxes). Develop joint emergency response plans. Purchase fuel cooperatively and jointly procure equipment.

What would you do without METRO?



These people found out the hard way.