

TESTIMONY OF

Alan E. Pisarski
independent consultant

before the

THE SUBCOMMITTEE ON GROUND TRANSPORTATION

of the

HOUSE OF REPRESENTATIVES

COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE

Wednesday, February 3, 1999

Alan E. Pisarski

6501 Waterway Drive, Falls Church, Va.

(703) 941-4257

INTRODUCTION

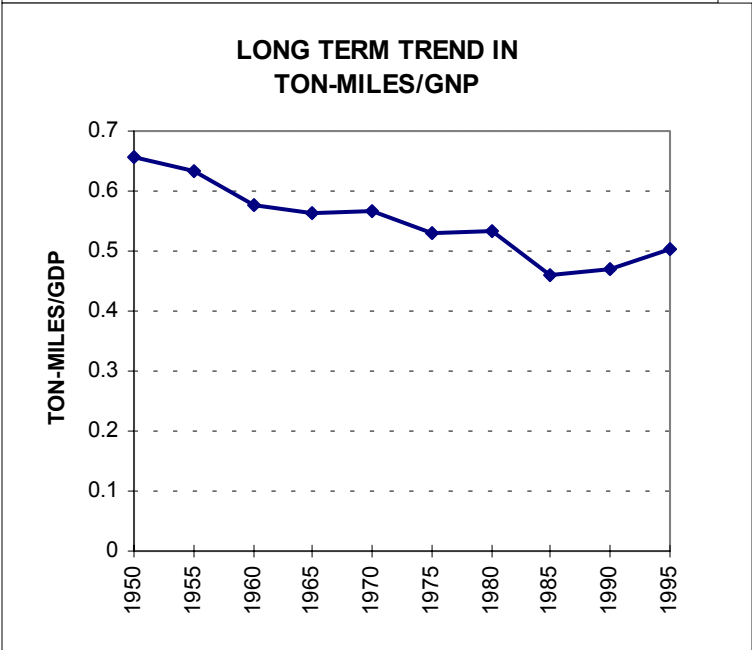
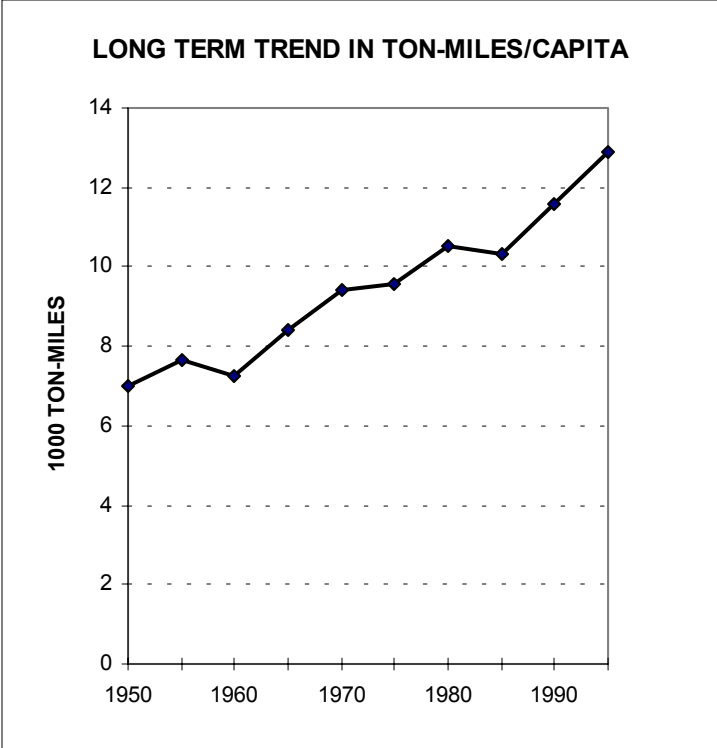
My name is Alan E. Pisarski and I am an independent consultant in transport matters. I am delighted to participate in this first hearing of the new Subcommittee on Ground Transportation of the House of Representatives Committee on Transportation and Infrastructure. I hope that my contribution will be helpful in the challenges ahead faced by the Subcommittee.

It is easy to miss broad sweeping trends when you are in the middle of them. So it is that we have often failed to recognize the broad trends affecting national transportation patterns and growth. We need to heighten our awareness of the social and economic trends around us that will form the scale and scope of future transport demand. My presentation examines some of the extant trends and their effects; and looks at emerging trends that will be forces of change in the future.

THE BROAD TRENDS

AN AFFLUENT SOCIETY AND FREIGHT MOVEMENT

Important changes are occurring, mostly positive. As we grow richer as a nation, we consume more tons of "stuff" and therefore ton-miles of stuff per capita than ever before. Think of the ton-miles in the average American breakfast. Water from France, Coffee from Columbia, Cereal from Nebraska, fruit from Asia. The attached figure, *Ton-miles of Freight/capita*, shows that since the end of World War 2, ton-miles of freight movement per capita in the U.S. has grown by about 85 percent. All of this growth cannot be totally attributed to an increasingly affluent population, of course, some part of it is attributable to increased foreign trade.



Source: Transportation in America, Eno Transportation Foundation, 1998

One measure of the value to the economy of freight flows is that freight revenue has grown faster than ton-miles indicating a shift to higher value modes of transport such as air freight, trucking and intermodal movements. At the same time freight revenues have declined as a share of the GNP, down from about 7.8 percent in 1980 to just over 6.2 percent as of 1997, suggesting we are moving much more very productively. As a result the American public is getting more goods delivered per capita, for a smaller share of their income. That is true productivity.

The trend is changing in fascinating ways. We are downsizing everything; weights of things being moved are diminishing; improved fuel efficiencies reduce the tonnage of fuels to be moved about, etc.

GNP AND FREIGHT MOVEMENTS

The amount of "stuff" needed to produce a dollar of GDP has been declining, partly due to the factors above but also due to the fact that services are now and will continue to be dominant in our economy. (A dollars worth of steel output demands more tons of inputs than a dollars worth of radio station output.) Recent work of the BTS has shown that services industries are highly dependent on reliable freight delivery just as other sectorsⁱ.

The attached figure, *Long Term Trends in Ton-miles/GDP*, illustrates these points, showing that ton-miles of freight movement per unit of GNP declined about 30 percent from 1950 to 1985. Since 1985 it has begun a slight rebound, again probably attributable to rising international trade.

Another important factor in all this is that the average value of goods moved is increasing dramatically. (Think of a ton of computer chips.) This means greater need in shipping for speed, reliability and security. That equals a greater tolerance to higher transport cost modes - air freight and trucking.

AN AFFLUENT POPULATION AND PASSENGER TRAVEL

The two main sources of passenger travel information that we have in the United States are the NPTSⁱⁱ and the ATSⁱⁱⁱ of the US DOT. The NPTS indicates that passenger miles of travel have increased about 80 percent between 1977 and 1995. The ATS which focuses exclusively on long distance travel indicates that travel over 100 miles grew by more than 115 percent in that period. Almost

all of the growth has been in personal-use vehicles and in air travel for the longer trips.

We must also consider the prodigious growth in foreign visitors to our shores and their impact on our transportation system. The World Tourism Organization, an international body that monitors world travel, indicates that world travel between nations will grow from about 600 million visitors per year in the year 2000 to over 1.6 billion by the year 2020. While these forecasts indicate a decline over the next few years in Asian travel growth due to the economic pressures there, compensating demand from Europe is expected to keep annual national visitor travel growing above 3.3 percent in the Americas and in the range of 4 percent in the new century. Foreign tourism will continue to be a dramatic source of positive balance of payments earnings for the USA and a significant factor in internal travel demand as visitors traverse America. The USA, with more than 100 million visitors per year in the year 2020, as forecasted by the World Tourism Organization, is expected to be the world's second biggest destination for visitor travel, after China.

THE FUTURE

I would like to dwell a moment on some of the important trends of the past that we missed and then focus on the future trends that we must not miss.

TWO REALLY IMPORTANT TRENDS WE MISSED

1. "Demography is destiny" The history of our professional lifetimes is the history of the baby boom. We missed the trends on job growth in the seventies and the eighties. There was an explosion in workers and jobs as baby boomers reached working age, and women jumped into the labor markets in vast numbers. This changed completely the amount and the character of American commuting behavior, and travel behavior in general. We so rarely see trends when we are immersed in them. So it has been with the baby boom. We may have reached a stage of uncertainty about our ability to respond to transportation demand, just as the determinants of that demand are behind us.

2. We missed the trends on truck travel growth in absolute terms and in terms of share of total vmt on our roads; and in share of freight activity. Why did we miss it? It seems to me we missed the dramatic changes in the value of goods that occurred and therefore the pressures for rapid and reliable movement. It seems that we understand very little about freight movement in the public sector.

Our lack of recognition of economic trends and basic economic skills in transportation policy and planning has hurt us time and time again. Understanding that public investment is an enabling investment in and for our economic and social values is key. We are involved in an incredibly rapidly changing world in trade matters - which means freight flows - The logistics revolution some call it, that few understand and fewer plan for.

SOME SUCCESSES

By and large, since World War II with colossal changes as the baby boom has moved through its life cycle, with the surge of women into the work place, and the national migrations first from the south to the north and then to the Sun-belt, we have managed to construct a transportation system that serves people and the larger society, well. Not perhaps the envy of the world that we like to think, but very good. In the last census the percentage

of the population commuting over 60 minutes to work was only about 6 percent of commuters and clearly some share of those consciously chose that arrangement of travel.

We have talked about being the safest transportation system in the world. We have made tremendous progress in fatality rates and accident rates, but we are no longer the safest in the world. A number of European countries have caught and passed us. There is clearly more we can be doing.

By and large, we have been tremendously successful at responding to transportation air pollution emissions, virtually eliminating some pollutants and sharply reducing others.

We have seen the number of carless households decline from 21 percent in 1960 to around 10 percent today - and that occurred in the presence of a dramatic surge of immigrants throughout this period. This has meant a great increase in people with free choice and a greater range of job and other opportunities. A large share of the remaining households without vehicles are minorities and when they reach the same levels of vehicle ownership as the non-Hispanic white population then we will have completed the democratization of mobility.

TRENDS WE CANNOT AFFORD TO MISS

There are forces of stability and, forces of change now acting in our society and the world. The forces of stability are straightforward.

- ◆ The lowest population growth rate in this century
- ◆ the leveling off of drivers licensing
- ◆ the leveling off of auto growth
- ◆ the leveling off of travel growth
- ◆ the leveling off of regional migration rates

but there are still significant sources of growth and change for the future:

- ◆ Ever more specialization in the economy
- ◆ The last source of new licenses; new car owners - *the democratization of mobility*
- ◆ Immigration
- ◆ Shifting age groups
- ◆ Improving incomes and dispersion of people, jobs, and goals

SPECIALIZATION IN THE ECONOMY

Recent research^{iv} has shown that America's economic future lies largely with improved competitive access between suppliers and manufacturers and consumers. The two dominant factors in competitive success cited are communications and transportation. The State of Wisconsin in related work has shown that in the smallest hinterland towns in the State there are many small companies that have exports as their major market. This division of labor in society, permitting specialization of labor and investment, yields our tremendous productivity; division of labor also begets transportation, requiring both workers and products to move between dispersed sites.

It must be recognized that the nation is very weak in terms of its ability to understand major trade flows; domestic and international; passenger and freight. In the last few years DOT's BTS has helped resurrect the surveys of the seventies that measured the intercity movement of both freight and passengers, after a 20 year gap. Much more needs to be done.

The dominant factor among states and smart metro areas is a major focus on the economy. In the economic sphere it is a period of globalization of almost everything - production, markets, both supply and demand. New economic arrangements - NAFTA, the Common Market - define new competitive and cooperative arrangements. Both freight and passenger markets are affected. It is becoming increasingly clear that domestic markets are sharply affected by international services and competition.

States are struggling to expand their ability to respond to these challenges and to use the new statistical and analytical resources at their disposal.

Among the areas where tremendous information gaps exist are:

- Just-in-Time patterns and trends
- Current and Prospective NAFTA flows
- Intermodal freight movements
- urban goods movement distribution
- inland movements of goods moving in foreign trade
- Travel and tourism requirements, both intercity and international
- Major new trade corridor flows

THE LAST SOURCE OF NEW LICENSES; NEW CAR OWNERS - *THE DEMOCRATIZATION OF MOBILITY*

Just above we introduced the thought that we could be proud of the fact that our carless households had declined from 21 percent to about 10 percent. That number when disaggregated by race and ethnicity indicates that while about 8 percent of White non-Hispanic households are carless that number for Hispanic households is closer to 19 percent and for Black households, 30 percent. Clearly those numbers are not permanent and we can expect that these minority populations will have vehicle-owning characteristics like the larger population in not too many years, meaning that we will have about 1.7 or 1.8 vehicles per household in America. The American Travel Survey makes the point succinctly; minority member travel growth from 1977 to 1995 exceeded that of the White majority; but minority long distance travel is still less than the White travel levels in 1977. Obviously tremendous growth can be expected in the future from the minority populations.

It is noteworthy that national data show that vehicle ownership and use mirrors the general population starting at a

household income level of \$25,000; and that is roughly the median household income level for the Black population as of today. The arrival of the minority populations at levels of auto ownership more like the general population will tell us that the democratization of mobility in this country will have been largely completed. For those who might argue that the Black population is largely center-city based and therefore not needing/wanting cars, consider that the Black rural carless rate is 20 percent contrasted to White non-Hispanic rates of 5 percent and Hispanic rates of about 8 percent.

We have done a very bad job of measuring the travel requirements of low income populations. We must develop real descriptive power in increasing our understanding and guiding our policies. The DOT must develop such a program.

IMMIGRATION

U.S. population growth in the nineties has been the lowest in the century, short of the great depression. We are growing at well below 1 percent a year; and would be growing at even lower rates than that absent strong foreign immigration. That immigration accounts for about 35 percent of our population increase. Why does this matter for future transportation policy and planning? A few thoughts:

- When you add one to the population from a birth you get a commuter in about 18 years; when you add one to the population by immigration you have an instant commuter. Most immigrants are in their early working-age years and a safe guess is that a job and a car were high on their list of motivations in coming here in the first place.
- Where the immigrant populations go will matter greatly in our plans. At this point they tend to locate where other Americans are: in the largest metro areas, where the jobs are; but are more likely to go directly to suburbs than past immigrant waves; yet their significant tendency to locate in center cities is one of the few population highlights of our center cities.

SHIFTING AGE GROUPS

The history of our era since World War II has been the baby boom working its way down the age-cohort system like a pig swallowed by a boa constrictor. Have you noticed the number of 50th birthday parties lately? In this decade - 1995-2005 - the number

of persons in their fifties will increase by 50 percent. This phenomenon has important implications for travel:

- This is the high travel propensity period, especially for long distance business and vacation travel.
- The challenges to safety in all modes of the transport system will be substantial.
- This groups travel growth levels seem to be stabilizing. There are signs of a ceiling on total vehicle miles of travel here.
- Maybe, just maybe baby boomers will tire of crabgrass and opt for higher density living.
- Just around the corner, about 2010 these boomers start crossing the 65 year old barrier and then the world changes dramatically.

IMPROVING INCOMES AND THE DISPERSION OF PEOPLE, JOBS, AND GOALS

If we accept the fact that rising incomes are good then we must recognize that they permit people to act on their needs and desires in ways they prefer. Rising incomes also bring: increased auto availability and use; increased trips per household; and increased average trip lengths. There is obviously something in travel that people value because as the means to do so increases people consume more transportation. Consumers spend just below 19 percent of their incomes on transportation, only exceeded by spending on housing^v.

Along with increasing incomes comes an increasing value of time. The pressures of time will dominate commuting and other travel purposes, pushing trip-chaining and faster modes, i.e. the single occupant vehicle. Long distance travel will emphasize shorter time, longer distance, more frequent trips.

The dominant economic reality of the new century will be a shortage of skilled professionals; employers will go where access to skilled workers is high to gain advantage over their competitors. Dispersal will be abetted by employers in search of skilled employees; locating where those employees are, or where they want to be. Jobs will follow the skilled.

Many of the logistical needs of businesses are now ubiquitously available. Back-office functions are dispersing to low-cost areas. Employer location choices will be guided by the facts that they can locate almost anywhere near a mailbox, phone and airport; access to skilled employees who just might as well be in

a nice place to be, and the search for capacity - road and air. Efforts to squeeze people to get them to behave in "socially acceptable" ways will generate more dispersal.

There has been considerable over-hyping of the long-awaited high tech boom in working at home. The present reality is more modest, although still a significant story. There were about 4.3 million people working at home full-time in 1990, up 56% from 1980, but still not back to the 4.7 million who worked at home in 1960.

(Many of whom were farmers.)

But there is a story to tell about the future. Downsizing and out-sourcing are creating mini home-based businesses in many areas. The availability of telecommunications technologies have broken down many of the distance and personnel barriers of the past. Many such firms can be almost anywhere.

But the big future change I foresee is that of working women, particularly working mothers, creating a strong force for more flexible working arrangements. In many instances increased pay will be secondary to better control of personal time. This will result in more flexible hours and days of work with some work being done at home.

The key effects here are that these patterns will abet further dispersal of the population and further support orientation to the single-occupant vehicle.

CONCLUDING THOUGHTS

The good news in all of this is that we have largely passed through an extraordinary one-time event, a bubble, as the baby boomers marched through the life-cycle, frequently overwhelming our attempts to keep up with schools, roads and other public services. The decades of explosive growth in our metropolitan areas, particularly those of the Southwest, are largely behind us. The major factor often will be where do immigrants come from and where do they choose to locate.

Our problems in the future will be much more operable. We will add 25 million to our population each decade for the foreseeable future, as we have since 1950. Our ability to respond to that growth will grow faster than that. Our public infrastructure investments won't be overwhelmed by dramatic growth and our resources should be greater, as well, to deal with the smaller scale of problems we will face. It would be tragic if our failures to keep pace with the astonishing levels of growth of the last few decades would weaken our resolve to deal with the problems of the future.

This will create the opportunity for States to make a shift from continuously playing catch-up in our transportation investments to acting more strategically and focusing investments where potential economic and social benefits are greatest.

Most trips have economic transactions at their ends, and if not they have social interactions of great value to those making the trips.

CHALLENGES TO UNDERSTANDING IN THE FUTURE

For more than 20 years surface transportation funding has been premised on needs estimates to maintain and to improve the surface transportation system. Much of this has given rise to arguments about the condition of national infrastructure and the use of the word crisis became common to explain and justify spending needs. With TEA21 we have transcended those perspectives.

Future spending programs will need to depend on more rigorous and sound economic arguments showing users and decision-makers the benefits to be obtained for each additional increment in funding. Public agencies at all levels will need to be better equipped to understand, to quantify, and to describe transportation's social and economic benefits.

Too often when we talk about transportation we focus narrowly on passenger travel and then further focus on commuting issues. Americans must recognize that there are at least eight forms of transportation activity that need our concern and response in public policy, as shown in the chart below.

FORMS OF TRANSPORT

- ⇒ COMMUTING
- ⇒ OTHER LOCAL PASSENGER TRAVEL
- ⇒ TOURISM
- ⇒ SERVICES VEHICLE MOVEMENT
- ⇒ PUBLIC VEHICLES MOVEMENT
- ⇒ URBAN GOODS MOVEMENT
- ⇒ THRU PASSENGER TRAVEL
- ⇒ THRU FREIGHT TRAVEL

A MODEST INVESTMENT LIST - AN ADDENDUM

While there is a current tendency to believe that most of our high-payoff investments in infrastructure have already been made, The future holds great opportunities for investments in surface transportation with high economic and social yields. Overall our investment thinking will have to be "nimble," i.e. responsive to a rapidly changing world, and "smart" using well-trained people properly prepared with the necessary statistical data and analytical tools. Everyone of these is information-intensive in that we will need to educate ourselves, decision-makers, and the public about the nature of these problems and the nature of the solutions. Among my high pay-off list:

1. Safety-related Investments - The deaths on our nation's highways are unconscionable, particularly because investments can be made that can sharply reduce the toll. Of course, a large part of the causes of fatalities are linked to driver behavior and vehicle condition and characteristics, but all contributory factors linked to the highway itself must be addressed including highway condition and design. Much of this needed investment will be on the National Highway System.

The aging of the population will be another factor that contributes to increased traffic risk. We need to re-think and perhaps retrofit our highways, particularly the high speed facilities, to respond to the changing visual acuity, reaction times, etc. of our aging population.

It is frightening to think that in the past we consciously accumulated highway trust fund revenues to artificially balance the budget only to forego making safety investments that could save lives. We must commit to a date certain in the future (2010?) when these problems will have been addressed, with timely monitoring of progress. The public wants a menu for action in highway safety which ISTEA and TEA 21 lacked.

2. International Competitiveness - Expansion of interstate trade corridors between and into our metropolitan areas that serve our international trading needs can sustain and extend our international competitiveness. Major choke-points at our borders and in and around metropolitan areas need to be addressed. Most of our cities exist because of these trading realities and then grow up and try to destroy them. A large part of America's comparative advantage lies in the speed, reliability and low cost of its transportation system.

3. Operations Improvements - Investment in and greater application of traffic engineering and ITS technologies to expedite traffic flows and increase capacity of our highway systems, reducing waiting times and delays, can pay big air quality and time savings dividends. We will need to invest in the research, the technologies, the data but most of all the skilled operators to make these systems work.
4. Job Access - We need to invest in better ways to get inner city residents to jobs that are now more likely to be at highly dispersed locations in the suburbs. Rather than "big" transit projects we should invest in jitney-like systems or van-pools, where, frequently, it will be inner-city entrepreneurs who become "small" bus company owners to meet these needs. This will take both some investment and some regulatory treatment.
5. These are likely to be among the few successful transit strategies in responding to overall metropolitan and suburban travel demands as well. Other high payoff transit investments are likely to be related to rehabilitating and upgrading many of our aging transit systems, particularly those in the Northeast.
6. Metropolitan Capacity - We actually are going to have to build roads in the suburbs and the outer fringes of our metropolitan areas. There will be a search for capacity across America in the coming years - both highway and air capacity - for both passengers and freight. Unless we provide some of that capacity in our metropolitan areas, businesses and high skilled employees will disperse even farther afield. Such investment will help keep our metropolitan areas competitive and make the life-styles of a majority of our population more livable.
7. Whether this is part of the solution or the problem is not clear but at some stage, and sooner than later, we will be faced with the need to separate cars and trucks - as cars get smaller and trucks get bigger.
8. The simple commandment is "Make things better" - Improve transit - yes, improve pedestrian and biking facilities - yes; improve highways - yes. Trying to congest people into preferred modes - the theory that says that if we just can make people miserable enough we can solve the problem, is a bankrupt public policy.

9. Make the auto a good neighbor. We have made believe the auto was going to go away. Our homes, job sites, shopping centers have not recognized how to make the pedestrian and auto interact safely, comfortably and attractively. It can be done. Those who work it out will be richly rewarded. The future belongs to the personal vehicle and walking.

10. My goal for transportation is to reduce the effects of distance as an inhibiting force in our society's ability to realize its economic and social aspirations - to "destroy" distance as a factor in meeting society's needs. I would hope this would be everyone's goal.

ⁱ The Transportation Satellite Account, TSA, BTS jointly with BEA

ⁱⁱ the Nationwide Personal Transportation Survey, FHWA, USDOT

ⁱⁱⁱ The American Travel Survey, BTS, US DOT

^{iv} University of Illinois and Federal Reserve Bank of Chicago REAL Discussion paper on the structure of spatial interaction in the Midwest, including Wisconsin, Michigan, Illinois, Indiana and Ohio

^v 1997 Consumer Expenditure Survey, BLS