TESTIMONY
For
"Mobility, Congestion and Intermodalism"

by

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before the

UNITED STATES SENATE

Committee on Environment and Public Works

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Mr. Chairman, Distinguished members of the Committee, ladies and gentlemen, my name is Alan E. Pisarski, and I am honored to be invited to speak before you once again to address the outlook for American travel. I recall with pleasure that I participated in your hearings in 1997 in the advent to TEA-21, and also in the first hearing for ISTEA. It is a responsibility that I take very seriously.

I recall in that first hearing that Senator Moynihan spoke of seeing the New York World's Fair in 1937 as a youngster and how it affected his sense of the future of transportation. I related then that I had been there also, my parents had wheeled me thru that fair as a newborn, and I must have acquired some of the same flavor he did.

We need to look at the next reauthorization period through the lens of the changes likely to occur between now and the end of the cycle. As the next reauthorized period concludes, delivering us to the doorstep of the year 2010, we will have seen dramatic changes in the first decade of the new century:

- We will have crossed 300 million in population at some point midway in the period
- Our rural population alone will be over 60 million, more than many nations
- We will have added more than 25 million people
- And perhaps as many cars as people
- Another 10 million households
- More than 10 million more immigrants
- The first of the baby boomers will be at retirement age.
- 13% of the population will be over 65 years of age
- We will have added four trillion dollars or so to our economy

In many respects our world and the transportation system that serves it will be a different place.

In reviewing travel trends and their social and economic determinants I like to use the following list of eight elements of transportation. Now more than ever it is critical to keep them in mind.

1. **•COMMUTING**
2. **•OTHER LOCAL TRAVEL**
3. **•TOURISM**
4. **•SERVICE VEHICLES**
5. **•PUBLIC VEHICLES**
6. **•URBAN GOODS MOVEMENT**
7. **•THRU PASSENGER TRAVEL**
8. **•THRU FREIGHT TRAVEL**

Too often we say we are going to talk about transportation and then we forget freight and talk only about passenger travel; then we say we will talk about passenger travel and end

up talking about metropolitan commuting. Then we get into an argument about highways versus transit and get lost in the thickets of advocacy.

We must consider both freight and passenger travel, in both their metropolitan and non-metropolitan forms as the list indicates. Many of our issues of the future will be centered in freight-passenger conflicts; and intercity-local interactions.

The Metaphor of the Wilson Bridge

One of the difficult problems addressed by the Congress in the recent past has been the Wilson Bridge. It is the perfect symbol of our challenges:

– It is a critical commuter corridor in the morning and evening
– A major all day regional connector for passengers and freight
– A major route for buses and private vehicles from Maine to Florida
– A critical freight link in the I-95 corridor – main street of the Northeast

It is an aging, heavily-used facility suffering from both functional and physical deficiencies operating in a complex inter-governmental environment. There are many Wilson bridges in our future.

My focus today will be on taking the long view on the nation's travel activity trends and demographic future and its implications for future travel.

A REPORT ON RECENT TRENDS

First a report on where we are with respect to commuting and other travel trends. I made the mistake of going back and reviewing my testimony five years ago and some of the thoughts I expressed then have been borne out, others need some modifying in the light of the new census data.

The changes between 1990 and preliminary 2000 data from the statistics of the Census Bureau are shown in the accompanying table.

Journey to Work Mode Choice Trends

	1990	2000
DRIVE ALONE	73%	76%
CARPOOL	13%	11%
TRANSIT	5%	5%
TAXI	0%	0%
MOTORCYCLE	0%	0%
BICYCLE	0%	0%
OTHER	1%	1%
WALKED ONLY	4%	3%
WORKED AT HOME	3%	3%

In my testimony five years ago I felt that the decline in transit and carpooling had about reached their limits – right on transit – it has just about held share; but carpooling has continued to decline – it is fundamentally now an intra-household activity today – a fampool. Detailed data from the decennial census coming later this year will help establish the why and how of the decline.

I also stated then I expected the single occupant vehicle to have reached a share of commuting about as high as it was going to go – Wrong! - as you can see, by 3 percentage points, rising from 73% to 76% - most of it coming out of walking and carpooling.

And surprisingly working at home did not grow enough to increase its share. These rates of growth are shown below compared to total workers. Effectively, those modes of travel that grew faster than total workers gained share and those that grew less lost share. In the 1980 to 1990 period the only modes that showed growth greater than worker growth were driving alone and working at home. In these data it appears that in addition bicycling actually grew the fastest, although from a very small base.

The growth in activity for all modes in the nineties appear in the table below:

1990-2000	NET CHG (000's)	% chg
TOTAL WORKERS	12367	10.7%
DRIVE ALONE	13032	15.5%
CARPOOL	-1071	-7.0%
TRANSIT	492	8.4%
TAXI	15	8.3%
MOTORCYCLE	-79	-33.3%
BICYCLE	96	20.7%
OTHER	290	35.9%
WALKED ONLY	-1076	-24.0%
WORK AT HOME	669	19.6%

The extraordinary fact continues to be that in the nineties, as in the eighties, the increase in the number of single occupant vehicle users was greater than the increase in total workers. In effect all new commuters went to the SOV and additional commuters switched from carpooling, walking etc. The significant difference is that transit did actually gain in numbers of commuters in the nineties, though at a rate less than the growth rate for workers overall thus reducing its overall share, but a positive trend nonetheless.

Some may see cause for disappointment in that transit shares have not increased. There are reasons to be somewhat more sanguine. Transit served about 4% of the new commuters, less than its traditional overall share of 5%, but its gain of about a half million users certainly is a far superior performance than its actual decline of several hundred thousand in the 1980-1990 period. If we can say that the decline of transit has been arrested we will have accomplished a great deal. When the final census data are available it could show gains for transit sufficient to hold share at 5%. Transit reports show gains since the census was conducted. The more important share questions for transit are in metropolitan areas rather than national figures.

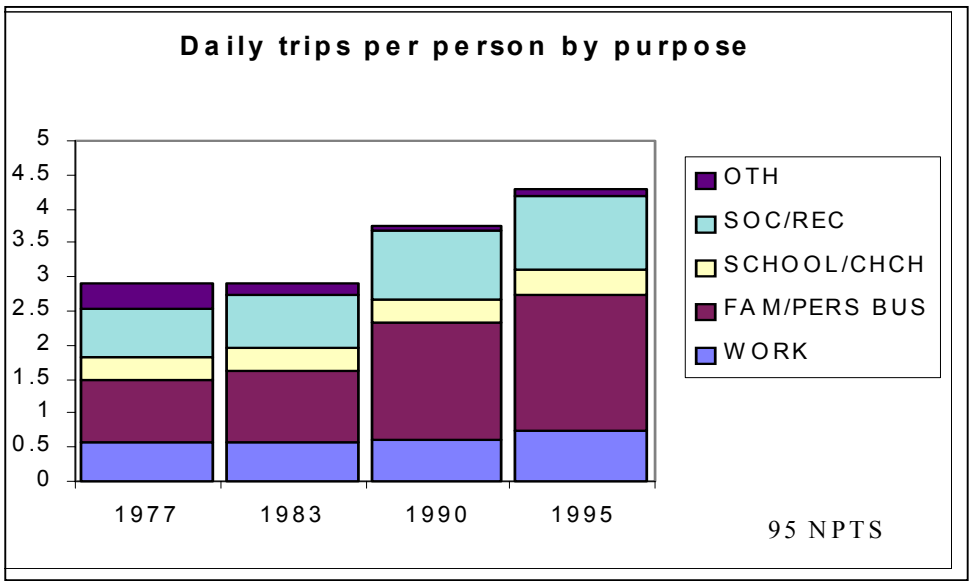
Congestion and travel times

The new census data are preliminary and indicate that average travel times to work increased to about 24.3 minutes, up from 22.4 minutes in 1990 and 21.7 minutes in 1980. When adjusted to correct for definitional changes and given the extraordinary increases in travel activity adding approximately 30 million new commuters and 35 million new vehicles out there a travel time increase of around 2 minutes in 20 years is a really positive point, however the increase of about 1 and a half minutes from 90 to 2000 was more than double the increase in the previous decade. Often in these hearings you only hear problems – in this case there can be some real pride in a system that has absorbed tremendous travel loads and by and large functioned very well.

Travel time is not about averages however. Some states have seen dramatic increases in travel times – especially those with already high densities or absorbing great growth such as Georgia 4 minutes, New York, New Jersey and Massachusetts all around 3+ minutes. But a new phenomenon arose with more rural states showing very high increases as workers commute to large metro areas beyond the state borders. West Virginia led all states with a 4.5 minute increase, Vermont grew 3.1 minutes and New Hampshire also saw large gains at 2.5 minutes. About 9 million commuters nation-wide are now commuting more than 60 minutes.

More detailed data will be arriving from the census and the US DOT later this year that will expand our knowledge appreciably. One of the trends that is clear from other data sources is that commuting is now a relatively small and declining share of total passenger travel – roughly 20-25% of local travel. We must remember not to focus on commuting to the exclusion of other important trips.

- While commuting has grown rapidly in the last 20 years, trips for personal business, shopping, etc. have grown even faster.
- Total trip-making per household has grown 66% since 1970 despite a 17% decline in household size.
- Today the average person makes more than 4 one-way trips per day as the figure below indicates.
- Moreover the average person makes about 4 trips greater than 100 miles from home each year with a round trip distance per trip of over 800 miles.



CHALLENGES AND GREAT OPPORTUNITIES LIE AHEAD

In the past I have called transportation "the collision of demography and geography." The following examines each in turn.

THE CHALLENGE OF GEOGRAPHY

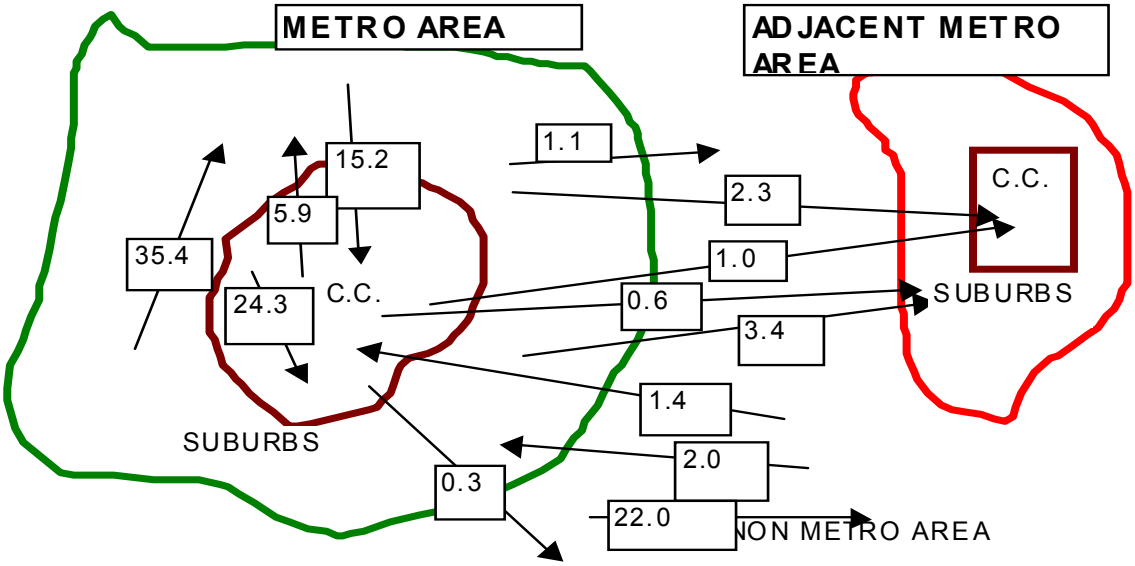
Few nations have been challenged by what Australians have labeled "the tyranny of distance" as greatly as America, and fewer still have reduced its influence on their economic future as we have. We have succeeded through a combination of timely investments in infrastructure and benign public policies that served to permit market forces to work in very positive ways. We have been blessed with great potential endowments and have responded well to those endowments. In the eighteenth century transportation knitted together a nation; in the nineteenth century it welded together great internal mass markets; and the twentieth has seen us integrate our nation into the world economy helping to define and support that world economy.

Transportation is all about reducing the time and cost penalties of distance on economic and social interactions. To the extent that nations succeed in that function they enable tremendous forces of economic opportunity, social cohesion and national unity.

What do geographic trends have in store for us in the coming period.

- We now have 50 metropolitan areas over a million in population accounting for about 60% of the US population. This is where most of the congestion and air quality issues will occur.
- The remainder of the population is roughly 20% in metropolitan areas below a million and 20% in non-metropolitan areas.
- The net flow today is from metro areas to rural areas. We will have close to 60 million people in rural areas interacting more and more with metropolitan areas every day.
- Suburbanization continues to extend the scale and extent of suburbs
- Metropolitan areas are growing together – the fastest growing travel pattern geographically will be inter-metropolitan flows – from the suburbs of one area to the suburbs of another.
- A key question will be the balance within suburbs of jobs and workers so that average trip lengths to job opportunities do not grow inordinately.

COMMUTING TRIPS IN MILLIONS



THE CHALLENGES OF THE NEW DEMOGRAPHY

All of our professional life times have been dominated by the baby boom. That and the dramatic increases in involvement of women in the labor force have defined our age. As we approach 2010 many of the strong forces of the past will be less potent as the list below delineates:

- LOWER POPULATION GROWTH
- LOWER HOUSEHOLD GROWTH
- LOWER LABOR FORCE GROWTH
- SATURATION OF DRIVER'S LICENSES
- SATURATION OF CAR OWNERSHIP
- LOWER DOMESTIC MIGRATION RATES

Again, we have absorbed the massive impacts of prodigious growth in these areas over the last forty years and done it rather well. These elements, which have been the drivers of travel demand since World War II, will not be pursued here other than to say that they will not be as dominant an influence on travel growth and character as they have in the past, although their influence will still be substantial in specific areas of the nation, especially those still receiving dramatic levels of domestic and foreign migration growth.

We will have new forces of change to address. One sign of the more balanced growth is that the 2000 census recorded growth in every state in the Union.

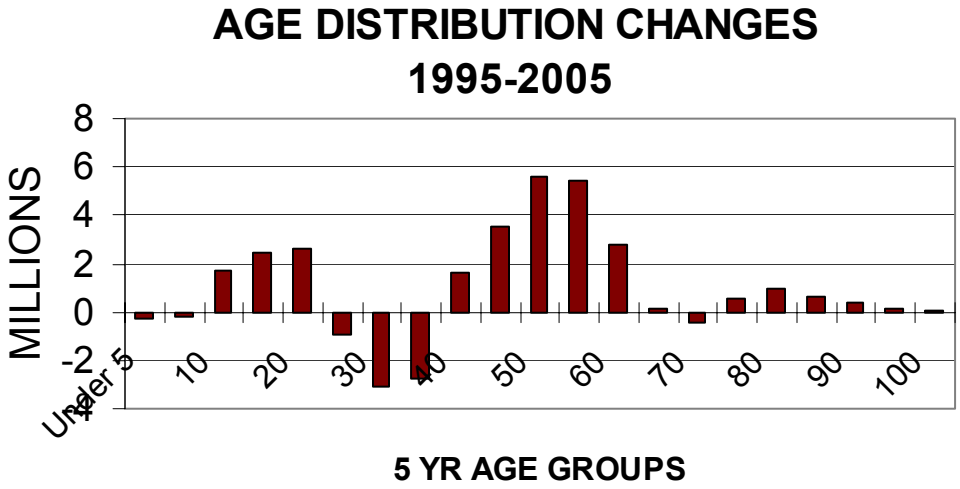
There are just a few demographic factors that will be the key forces of change in the coming period of reauthorization and beyond. These are:

- An aging population
- A stagnating labor force
- Changing household composition
- A continuing immigrant wave
- Mainstreaming minorities – the Democratization of Mobility
- An increasingly affluent society

Of these one might say that the first three are inexorable – they will happen; and the last three are strong likelihoods but more open to question.

An Aging Population

There are many facets to the challenges raised by our aging society. A sharp image is portrayed in the graphic below showing the crucial role played by the aging of the baby boom. The combinations of that boom with greater health among the older population and declining birth rates will sharply shift the relationships between our population groups.



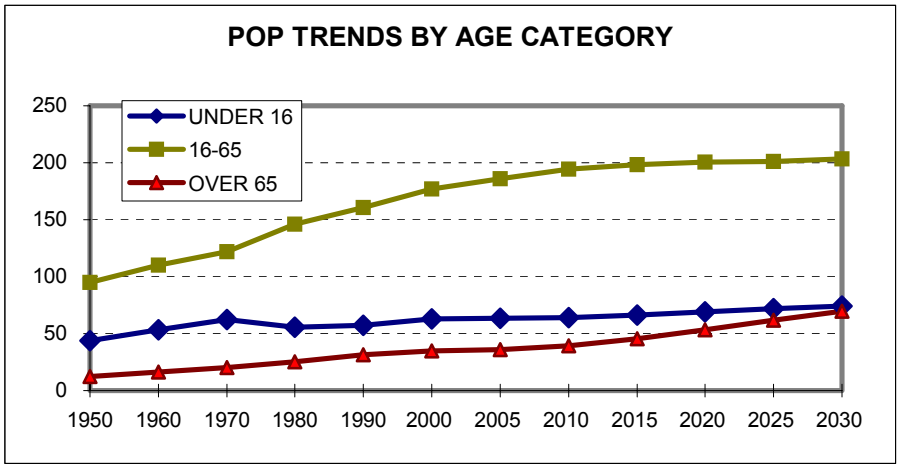
Present estimates place the population over 65 at about 35 million, only slightly increased from 1990. The small increase was a product of limited increase among the depression babies generation, those now between 65 and 75, but we also saw extraordinary growth in

those between 75 and 85, rising 23%. There are roughly 70 men for each 100 women in the group. Persons over 65 composed 12.4% of the population with 29 states with equal or higher percentages.

By the end of the coming cycle of reauthorization those over 65 will rise to 13.2% by 2010 and reach 20% by 2030 as the last of the baby boomer surge reaches 65. At that point we will have reached a stage where there will be more than 31 older citizens per 100 working age adults contrasted to about 20 today. During this period the working age population is actually projected to decline by 5%. At the same time the dependent young will remain about the same level. As a result the number and kinds of trips made by and for the elder population will increase sharply. By 2025 there will be 27 states with 20 percent of their population over 65 or more, higher than Florida today.

A number of factors will have bearing on how that population will meet its travel needs:

1. The coming older population grew to maturity in an auto oriented world - 95% of those, men and women, who will be reaching 65 after 2010 now have licenses.
2. Disability rates among older persons have been declining in the US, and the developed world, suggesting an active older population in the future.
3. At present older citizens are retiring sooner and are more likely to have the means for an active retirement.
4. Retired citizens make almost as many trips of non-work purposes as the general population.
5. Given that the trips most oriented to transit (work and school) are the trips not taken by elder populations it should not be a surprise that their travel is heavily auto oriented.



Stagnating Labor Force

The chart above that showed the growth in the older population also showed the diminishing growth in worker-age groups. The graphic provides both the history and the future of American age and labor force relationships. From the 70's on we see the sharp rise of the working age population as baby boomers joined the labor force age group, compounded further by women joining the labor force in extraordinary numbers, doubling the labor force by 2010. But as 2010 approaches, the size of the labor force age group stops growing and remains effectively constant out into the future. Some projections have indicated that the group actually slightly declines in numbers. The implications of this for retirement programs have been discussed extensively in the public press around the world. In fact the US is less extreme than many western nations in this regard.

The working age population responding to those job developments will be sharply changed from the past. While the entire working age population is projected to grow by about 12% the number of members of the labor force over 55 years of age will grow by almost 47%. Workers over 55 will be responsible for half of the growth in labor force from 2000 to 2010. Although these changes need to be of concern we should note that the average age of the labor force in 2010 will be about the same as in the sixties just as the baby-boomers began to join the labor force.

From a transportation view, however, an additional and perhaps more significant factor will be shortages of workers, particularly in skilled jobs, which may lead to important potential changes in travel behavior, such as:

- attempts to keep older workers in the work force longer;
- attempts to recruit even more women into the work force;
- greater use of part-time-like work arrangements;
- greater competition among employers for workers;
- the increased role of immigrant workers.

If the last decade was one of too many commuters the next may be the decade of too few. There will be a severe lack of skilled workers in the future – apparent already. We will have to employ everyone who is employable. Transportation will be central to making that happen. Connecting rural populations and inner city residents to suburban job centers will be one need. The great demand for workers means that workers will be more free to choose where they wish to live and employers will follow. This may mean greater dispersion of jobs and home sites, but it need not; workers may opt for center city living as well as rural life styles. It will mean an amenity-driven development process where areas that can attract and retain workers will be highly advantaged.

Much of this suggests greater freedom for workers to define the when and where of their work. It will mean more flexible work hours for older workers and parents. Jobs in the future will be flexible in a more humanized work place – women in the work force have

seen to that. The jobs of the future will look to us from this vantage point like part-time jobs. The implications for travel are a more dispersed and balanced travel pattern throughout the day.

Changing Household Composition

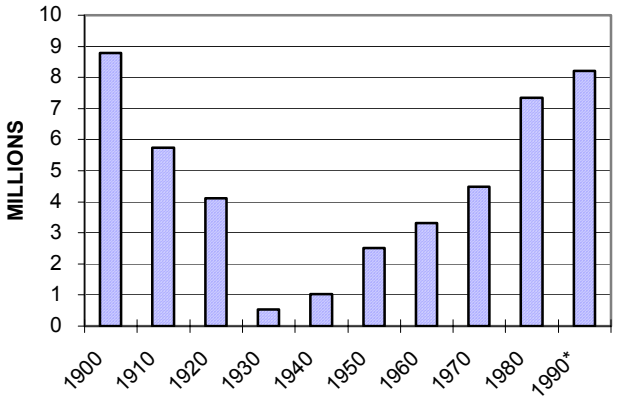
The number of households increased by almost 14 millions between 1990 and 2000, growing faster than population, yielding smaller average household sizes. Households are key generators of travel – more so often than individuals. Had households remained at their 1960 levels we would have 20 million fewer households today. Households have declined to less than 2.6 persons in size, and family-based households are down to 3.14.

Households without children have grown more rapidly than those with children. In 1970 40% of all households were those of married couples with children, today they account for less than 25% of households. They are now outnumbered by married couples without children.

A notable facet of our future is that we have more than 33 million non-family households, about a third of all households, more than 27 million of which consist of persons living alone. We now have 10 million persons over 65 living alone, most of them women. Their transportation needs are likely to be significantly different than the general population.

The Continuing Immigrant Wave

America is once again a nation of immigrants as it was at the start of the last century, as shown graphically below – however the extent to which that is true is unclear. Census estimates have ranged from 8 to 11 million immigrants arriving in the 1990's with some estimates reaching as high as 14 millions. This would place immigration somewhere around 40% of the sources of population growth in the nineties and an even greater share of the labor force age group. Of the roughly 28 million foreign born in the US today 40% arrived between 1990 and 2000.



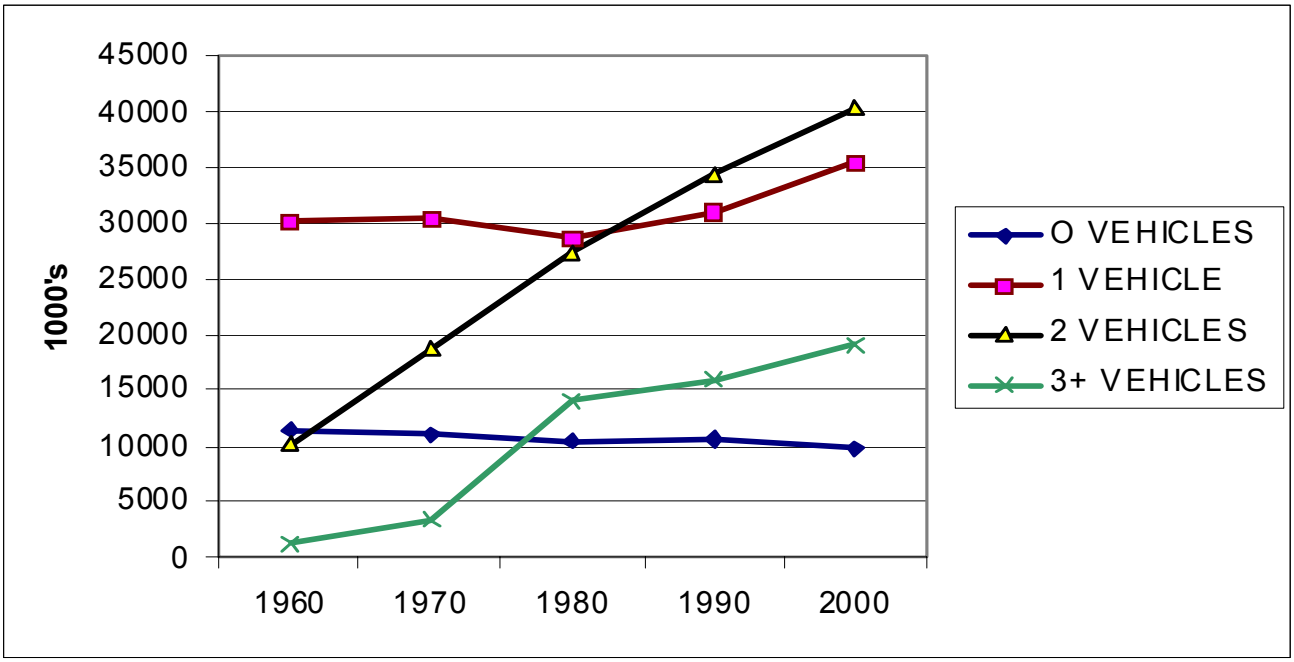
From a transportation view it must be noted that additions to the population by natural increase generate a new worker in 18 or so years; whereas immigrants, heavily distributed in the working age years, are often instantaneous additions to the work force and the traveling population. Of those immigrants arriving between 1990 and 2000 the census estimates that two-thirds are in the age group from 16 to 45, and more than 80% of men and 50% of women are presently in the labor force.

The flow of immigrants nationally is toward the South and West; tending to locate where other Americans are, in the largest metro areas, where the jobs are. Although they have been a significant factor in replacing residents who have been leaving center cities, the current immigrant wave is far more likely to arrive directly at suburban locations contrasted to center cities as in past migrations.

Mainstreaming Minorities – the Democratization of Mobility

Many of the aspects of the questions regarding immigrant travel behavior are interrelated with a discussion of the travel behavior of racial and ethnic minorities. For example, their arrivals in the many large metro areas of the south and west actually had the effect of reversing declining trends in the number of households without vehicles. Not surprisingly there are indications that new immigrants use transit more than current residents, but that over time their travel choices echo the general population. Immigrants constitute a significant element of transit ridership today in many metropolitan areas. A distinct role for the transit systems of the nation may well be in the socialization process of immigrant populations.

It is often the case that immigrants and resident minorities constitute that group in our society with limited mobility. Their growing access to vehicles will be one of the major factors in travel growth in the future. The figure below shows the long term trend in vehicle ownership among households. The key observations here are that one vehicle households having been stable for almost 40 years at about 30 million households have jumped by 5 million in the last decade, and a related move of households without vehicles to below 10 million for the first time. Both of these moves are strongly related to immigrant and minority trends. We have moved from more than 25% of households without vehicles in 1960 to less than 10% today even with the surge in immigrants in the last decade.



The relative saturation in drivers' licenses and vehicles has been noted earlier. These apparent national patterns mask the reality that such saturation has a long way to go before it is a fact among minorities and immigrants. While the White Non-Hispanic population tends to be saturated in ownership of drivers licenses, with both men and women having above 92% with licenses, these values are more like 80% among Hispanic and African American men and in the range of 70% among women of those groups.

Auto ownership has similar patterns with households without vehicles at about 7% among White Non-Hispanics and closer to 30% for African-American households and half that for Hispanic households. Even rural African-American households have 17% of households without vehicles.

An important facet of national mobility regarding minorities is the longevity of the vehicle fleet and the resultant affordability of serviceable vehicles for lower income households. The average age of the vehicle fleet today exceeds 8 years.

In many respects our minority populations are somewhere back in the sixties or seventies in terms of transportation and mobility

- They are at 25% of households without vehicles, as the general population was in 1960
- Minority women are at 70% with drivers licenses; white women probably were at that level in the 60's.
- Long distance travel rates by minorities are less than the general population rates of the seventies.

Rising Affluence and Aspirations

Many of the aspirations we have for our society are closed connected with rising affluence, either in establishing the means for families to act on their own economic and social goals or to create the resources to assist those that do not have those resources.

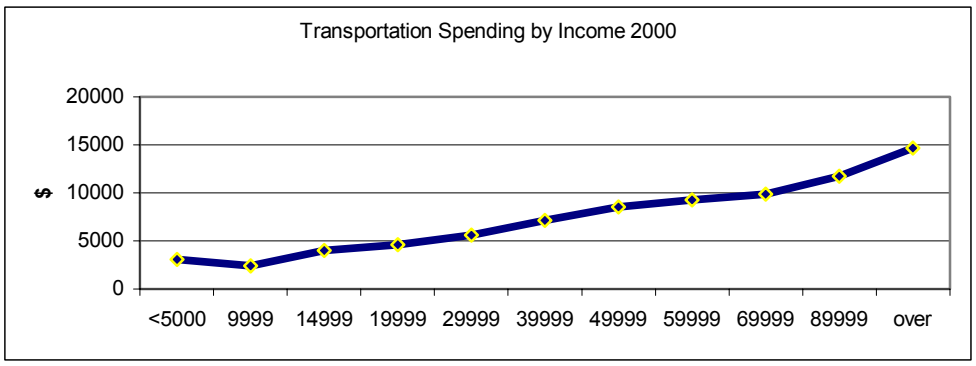
Among these goals are:

- Home ownership and adequate housing – 2/3 of households today own homes
- Greater access to opportunity and social services
- Greater participation in the mainstream of society by minorities
- Increased freedom for all to act on their social and economic goals

All of these very desirable goals are tied to mobility and the interaction between mobility and rising incomes is strong. Some key attributes:

- Minority households are reaching the income levels where vehicle ownership is an increasing probability and near certainty.
- There will continue to be a close linkage between workers and vehicle ownership. Most households without vehicles will also be without workers
- Trip making and trip lengths will increase with increasing incomes
- Long distance travel for business and recreation is strongly correlated with income.

Households spending going to transportation is about $7,400 per year, about 19% of all household spending, second only to housing – not surprisingly most of it oriented to the acquisition and use of personal vehicles. Transportation, like other household expenditures, clothing, housing and food for example, is both a necessity and a discretionary good. The amount of spending rises substantially, even in percentage of income terms, with rising household incomes as documented in the figure below.



note: Those with low incomes may have other assets

Increased spending is closely associated with greater auto ownership, more trip making and with trips of greater length. In part this is attributable to the fact that higher income households often have more household members and more workers, but it is also attributable to the fact that higher income households have more discretionary income for travel including recreation, visiting friends and relatives, eating out, etc. Auto trips over one hundred miles increase 4 fold between low income and high income households and air trips more than 7 fold. In local travel trip-making by high-income households roughly doubles that of low income households. Much of the growth in travel we have seen in recent years is a product of this affluence.

Long distance travel also means important international interactions, as not just we, but also our neighbors, rise in affluence. Despite 9/11 it is expected that foreign visitors to the US will rise to 60 million per year by sometime after 2005, a delayed growth but with no long term effects – a tremendous force for economic health and social understanding – but a challenge for our transportation systems. Foreign visitors, especially our North American neighbors, are heavy users of all aspects of our transportation systems.

Perhaps the most illuminating variation in transportation spending is that between rural populations and their urban counterparts. Rural households have the highest share of income going to transportation expenditures (23.5%) contrasted to only 19% for urban residents. In fact they spend more in total dollars, about $7460 than their urban counterparts despite earnings about 80% of urban households. It is tremendously significant, however, that rural residents have the lowest housing costs share and have the lowest total costs share for the housing-transportation combination. Housing and transportation are tightly linked in cost and character with transportation representing the trade-off in terms of home cost and size. The fact that two-thirds of American households own their own homes is a crucial factor in our understanding of transportation budgets.

At 2000 with about 1.72 vehicles per household, on average, the majority of American households have two or more private vehicles; vehicles available equal or exceed workers in the majority of households regardless of the number of workers in the household. Perhaps the most significant event in auto ownership, as noted earlier has been that households without vehicles have dropped below 10% of all households for the first time.

One of the things that this says is that congestion is one of the prices we pay for a high degree of affluence and vehicle affordability.

> In my view congestion is: People with the economic means to act on their social and economic interests - getting in the way of other people with the means to act on theirs!

Another thing the reality of rising national affluence produces is that the value of time will be increasing for most people. As incomes rise the value of time rises accordingly.

Particularly, the pressures of time will be acute for working women, seeking to balance multiple goals and tasks.

We must also recognize that rising in parallel with that value of personal time is the rising value of the goods and products we move. These too are a product of our increasingly affluent society. It suggests that many products will be intensely time sensitive with a tolerance for high cost transportation if it provides high speed, reliable transport; this will often mean the air freight- truck combination.

Implications

In summary, America will be:

- A STABLE "OLDER" POPULATION
- OPERATING IN A GLOBAL ECONOMY
- WHERE "HIGH COST" TRANSPORT IS OK
- WHERE SKILLED WORKERS ARE AT A PREMIUM
- WHERE MANY WORKERS CAN LIVE AND WORK ANYWHERE
- WHO, WHERE ARE THE IMMIGRANTS WILL BE A KEY QUESTION
- WHERE MAINSTREAMING MINORITIES WILL BE A KEY FACTOR OF GROWTH

We will be a challenge affluent society where transportation will have immense importance in helping us remain competitive and to realize our economic and social aspirations.

To me transportation is about society building – not just economy building – society building ! It ties people together across distances – especially today when families are dispersed over the entire nation.

The greatest strength of our economy is the nationwide mobility of workers in a highly specialized division of labor. Transportation knits families back together.
Many planners still think in terms of "community" as the people physically next door – our communities today are a product of multiple voluntary links across vast distances supported by two pillars –communications and transportation – virtual communities.

Transportation's goals are all about speed, cost and reliability and those are the three things we are just terrible at measuring in transportation! We must do better.

SUMMARY

In summary the factors that will matter most in the future are these:

For commuting – the lack of workers, skilled workers especially, creating a sellers market in jobs – greater freedom of location through technology and greater flexibility about work schedules (more part-time-like jobs) in the work place. Who and where the immigrants are will be central. Expect appeals to older workers and even more women to join the work force.

For Local travel – an aging population with more freedom and discretionary resources for recreation and other travel. A more mobile minority and immigrant population. A generally more affluent society able to act on its social and economic interests. Expect very active day-time, evening and week-end travel patterns.

For Long Distance Travel – many people in the peak long distance travel age groups; more people able to participate in long distance travel; more foreign visitors. Expect a peak period in American tourism.

For Geography – the flows between local elements of the nation will expand faster than the internal travel within those elements. Expect interaction conflicts between long distance and local travel.

A higher value of time for people and goods means greater emphasis on time-saving technologies and modes of transportation for both. Expect interaction conflicts between freight and passenger travel.

Transportation will always be about distance and time. I have said in the past that transportation's goal must be to reduce the impact of distance on the ability of society to act on its social and economic interests. Today in many respects America through its transportation system has largely overcome the challenges of distance and reduced its costs to our society. This is a large part of our success as a nation. We are now at the stage where it is the pressures of time that should be the great driver of transportation goals and issues for the future.

May 10, 2002

FOLLOW-UP QUESTIONS FOR THE RECORD

QUESTIONS FROM SENATOR SMITH

1. Would you please discuss, in greater detail, your thoughts on hot lanes? What I am most interested in are your thoughts as to how such a concept can be employed on a nation-wide scale in our bill next year re-authorizing the Highway Trust Fund and surface transportation program?

I prefer to think of hot lanes as "premium service lanes" – that captures the essence of the service they provide. My thoughts regarding their development nationally follow:

a. They must be additional lanes not conversions of existing lanes – the public has demonstrated again and again their antagonism for taking existing lanes for any purpose.
b. The public, at all levels of income, will accept the idea of paying for better service, as long as the non-tolled option continues to exist.
c. They should be tied in with bus rapid transit and carpooling preferably in a network of routes. We desperately need to find ways to resuscitate car-pooling and to provide lower cost transit services.
d. The private sector can be a major source of development and funding thru revenue bonding of these facilities.

2. As you know, ISTEA created various programs and policies to increase transportation options, and reduce people's dependance on single occupancy vehicle trips, yet as your testimony showed, driving alone has increased over the last ten years, and vehicle miles traveled also experienced substantial growth. What are the mobility benefits and constraints associated with such policies, and what segments of the population bear the burden of such policies?

We have seen a tremendous focus on the value of time in our society, particularly among women who are maintaining careers, households, etc., etc. As our population becomes more affluent their value of time increases and the standards by which they judge the transportation system become higher than before. It is my belief that as long as fuel costs remain anywhere near reasonable and vehicles are relatively affordable that the public will react to their time pressures through the use of the single occupant vehicle. The only suitable way to make headway against that trend is to improve the competitiveness in speed and quality of transit and carpooling services. Efforts to push workers out of their cars by making things worse for them – consciously abetting congestion or increasing the costs of travel are antagonistic to society's best interests and to our faith in our citizens' ability to make sound judgments about how to lead their lives. Perhaps more significantly, I would argue that there are critical needs for transportation services regarding getting low income populations to jobs and services, assisting our rural populations and serving the aging population everywhere that should be the focus of our resources, taking precedence over spending money trying to attract high income commuters out of their cars.

3. *You define congestion in terms of economic and social interests. How would you define mobility? Is there a way to measure or assign value to increased mobility (due to greater transportation choices and capacity) or decreased mobility (due to increased congestion)?*

This is a wonderful question that unfortunately goes to the heart of our ignorance about transportation and its benefits. At least part of it is that we have always taken our mobility for granted and have not needed to rigorously defend or justify its value to ourselves personally or to society in general. Mobility of course is closely linked to my sense of economic and social interests. I think of mobility in terms of choice – expanded opportunity for choices which means selection, service and perhaps most important – price. Recent data show that the ranges of choices of products and services available to the public has exploded. Among the most important of these opportunities are job opportunities whether seen from the workers point of view – jobs within a half hour of home – or from the employer's – potential employees within a half hour of my office.

Perhaps the most telling way to appreciate its value is to consider its absence. Center city populations lacking mobility are often subjected to low quality services and monopoly prices because they do not have the mobility to take advantage of alternatives. Rural isolation has similar attributes.

It is interesting that we measure fuel efficiencies in miles per gallon to two decimal places and air quality in parts per million in legislation but have no metric for the benefits of travel activity – mobility. This has clearly distorted our tradeoffs and the policy decisions that support them. Perhaps we should think of it in terms of "*opportunities provided per minute"*. A major research effort to quantify, understand and relate the value of mobility to us as a society would be very valuable to public policy. The question is important and needs to be pursued. The more we know about mobility and its interactions in a healthy society the better will be our public policies.

QUESTIONS FROM SENATOR GRAHAM

1. **You mention the growing tension between movement of people and movement of goods. Both are becoming gridlocked. Will this tension escalate in the face of new security measures screening cargo, perhaps several times, along its route? Can you offer advice on ways to ensure movement of goods with minimal impact to passenger travel, and timely screening for national security?**

We have used "time-separation" as a way to reduce conflicts between cars and trucks in the past. The Interstate belonged to cars by day and trucks by night – that is now failing us. Trucks used to get off the road in our metro areas during peak hours until traffic subsided – that is now failing us. All of these failures are due to increasing congestion and the need of truckers to get through in something like a timely manner.

Ultimately I believe it will lead us to some form of separation of the vehicle streams – separate truck lanes for large, through vehicles – as both a safety and a driving ease matter. Sections of the New Jersey Turnpike are the example I am thinking of. Such separation would facilitate truck screening and monitoring as well, as in weigh stations. The need for security inspections will only add to our conflicts. The air-truck combination will grow in significance in the future with the increases in value of goods. Inspections at the airport inbound and out may become a critical factor in travel conflicts.

Perhaps we need to consider a wholly separate set of national parkways designed for personal vehicles, accepting the fact that trucks will dominate permanently on certain Interstate routes.

QUESTIONS FROM SENATOR JEFFORDS

1. **Mr. Pisarski, you mention in your testimony that transit ridership increased slightly in the last ten years (500,000 net increase) while remaining at five percent of the work commute trips. However, I understand from FTA data that transit ridership declined in the first five years of that period (1991-1996), and then rose dramatically, by 21%, in the last five years (1997-2001). If you focus on the most recent five years, you get a different picture of where transit is going, don't you?**

Yes, I would like to think so. There were some indications from other census surveys that transit may have dropped below its current 5% share during the 90's and got back to that figure by decades end at least in part due to new services, new fare policies, and new worker populations, etc. It is important to recognize that these data sets portray very different snapshots of the activity. The census data I base my work on counts workers and the way they travel to work. The FTA data on the other hand are effectively turnstile counts. If a worker passes through a turnstile (or equivalent) four times in a day that would be a big jump in FTA data but still just one worker as counted by census. This would not really change the 5% figure share I mentioned in my testimony. There are just a few metro areas at 10% shares for transit across the country today New York, Chicago, and Washington for sure; maybe Boston, Philadelphia, and San Francisco – a very worthy goal to examine would be to see how many more areas we could bring up to that level. Shifts in transit use for non-work activities could add to the differences but I do not expect that they have grown enough to change transit's 2% share in overall travel. It is important to keep a sense of scale in interpreting these measures.

2. *Mr. Pisarski, your testimony touches on the aging population and their transportation needs in terms of the need to continue driving. However, many Americans lose their ability to drive as they age. For example, in 2000, only 68% of women over the age of 65 had licenses. How will we meet the needs of older Americans unable or unwilling to drive?*

I wish there were easy answers here. In the early stages of the aging scenario we face, roughly the next 15 years, the numbers of elderly drives will increase strongly – for instance with women's licensing rising to over 90% for those over 65 – as the first real age group that grew up with the car ages. Most of their travel demand will be met by their own driving and then secondarily by family and friends, which is a major factor in the mobility of aging populations typically. For those unable or unwilling to drive and for most of those who reach the higher age groups where infirmity begins to be a critical factor something new in the forms of present community transportation services needs to be developed. While, there are many willing people and organizations trying to serve the aging community well, from what I have seen in my work the present systems of services need careful review and rationalization. They are often times confusing and expensive. In many cases these older citizens cannot use traditional transit or even curb side delivery but need door to door assistance. We will need a national summit-like discussion of how to respond to these dramatic social challenges. Costs and pricing are critical. A role for the private sector and for community institutions is crucial. It must be an important focus for reauthorization planning.

3. *Mr Pisarski, you discuss the mobility needs of immigrants and resident minorities. Do the data sources mentioned have a good rate of return from these communities. What is your confidence level in these data?*

In the census I am convinced that they have done a successful job of accessing minorities and obtaining the necessary information. There are certainly response problems with undercount that we all are concerned about but by and large they have been very effective. I am much more concerned about travel surveys by

local governments, MPO's etc., and even our national sources, the NPTS now NHTS. While those survey's managers are doing a great job trying to address these challenges, the weaknesses in phone interviewing techniques are critical in causing concern about the representativeness of the returns. I had similar problems 30 years ago in surveying in face to face interviewing, so this is nothing new but the changes in people's life styles and means of communications have not been balanced by new approaches in surveying methods. We might consider matching census data with survey data to evaluate gaps and weaknesses. We need a national commitment to better data to support transportation decisions – this means more money, of course, but also research on innovative methods, employing new technologies to respond to these growing challenges.

4. *Mr. Pisarski, you emphasize demographic factors behind travel patterns. However, the data shows that the growth in driving itself is far outstripping the growth in population. In fact, an FHWA analysis found that population growth is responsible for only 13 percent of the increase in driving, and TTI data show that the distance driven rises every year. Can you speak more about how travel demand management can be an effective congestion-fighting strategy.*

Senator Moynihan was fond of saying that "demography is destiny" – and so it is – certainly in transportation. But these demographic factors go far beyond population growth. I was responsible for the FHWA study mentioned in your question and concur that population growth itself is typically a relatively minor factor in growth – except in metro areas and states seeing dramatic shifts in population – Nevada, Georgia to name just two. More to the point areas losing population are still seeing growth in travel. Clearly it is the per-capita growth rates that are significant. Growing affluence, changes in family composition and life styles, the availability of relatively low cost transportation automobile services are the really significant drivers of change. A central factor in the changes we have seen has been the same aging factor referred to in an earlier question. We have many more people of working age; many more at the peak travel age group.

Given these factors it is not clear what the role of demand management should be. I would certainly argue that suppressing trips is both undesirable and unwarranted. Trips have economic and social transactions at their end of value to each citizen. This suggests that reducing the time and cost penalties of trip-making is a highly desirable public goal – I see such "induced" travel as a major social benefit – to be applauded not condemned. We may think of others' trips as unnecessary, but which of us examining his or her own travel would judge them to have been meaningless. Almost 30 years a congressional committee asked me what percent of trips were frivolous – a question I could not answer.

There may be opportunities in getting people to combine trips in what we call "trip chains," linking purposes together in a time and energy efficient pattern. People tend to do that under the pressures of time. Land use solutions, where people might find opportunities at shorter distances travel might have limited potential, but I would not overstate it. Many of the changes we are seeing are the product of shifts in trip purposes and their lengths. Going out to eat for instance instead of preparing meals at home; taking laundry out rather than doing it at home. This is often accompanied by increases in trip length as distant opportunities become accessible. One of the not-so obvious factors is just the growing size of our metro areas. About 60% of our population lives in the 50 areas of more than a million – substantially up from the past (there were 39 such areas in 1990). Such areas make possible the prospect of work trips of 20 miles or even trips to a restaurant or to visit friends and relatives of that distance that do not exist in a smaller metro area. The most significant factor there will be travel times and the effects of congestion.