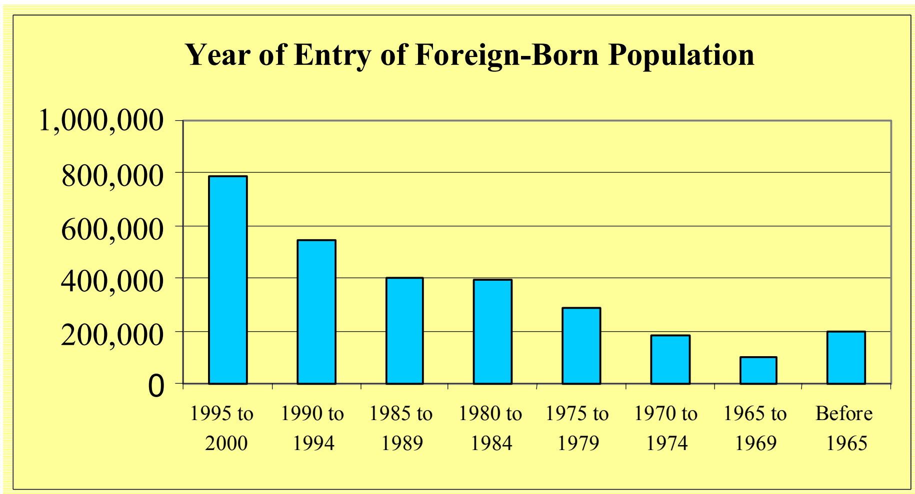
APPENDIX I

Immigration

Texas now has almost 3 million foreign-born residents out of a population of roughly 21 million, a little less than half of who have arrived in the nineties, accounting for about a third of all of the population change in the period.

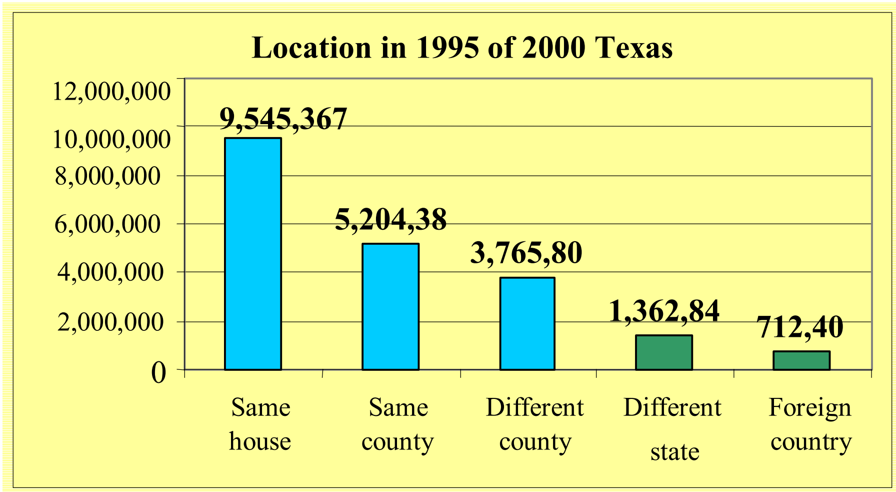


It is this immigrant population that is likely to be responsible, in major part, for defining many of the other of Texas' demographic attributes, including those below:

Characteristics in 2000	Texas	U.S.A.	ratio
% under 18	28.2%	25.7%	1.10
% over 65	9.9%	12.4%	.80
Median Income	$39, 100	$41,350	.95
Average Household size	2.74	2.59	1.06
% Home Ownership	63.8%	66.2%	.96
% households with no vehicle	6.3%	9.3%	.68

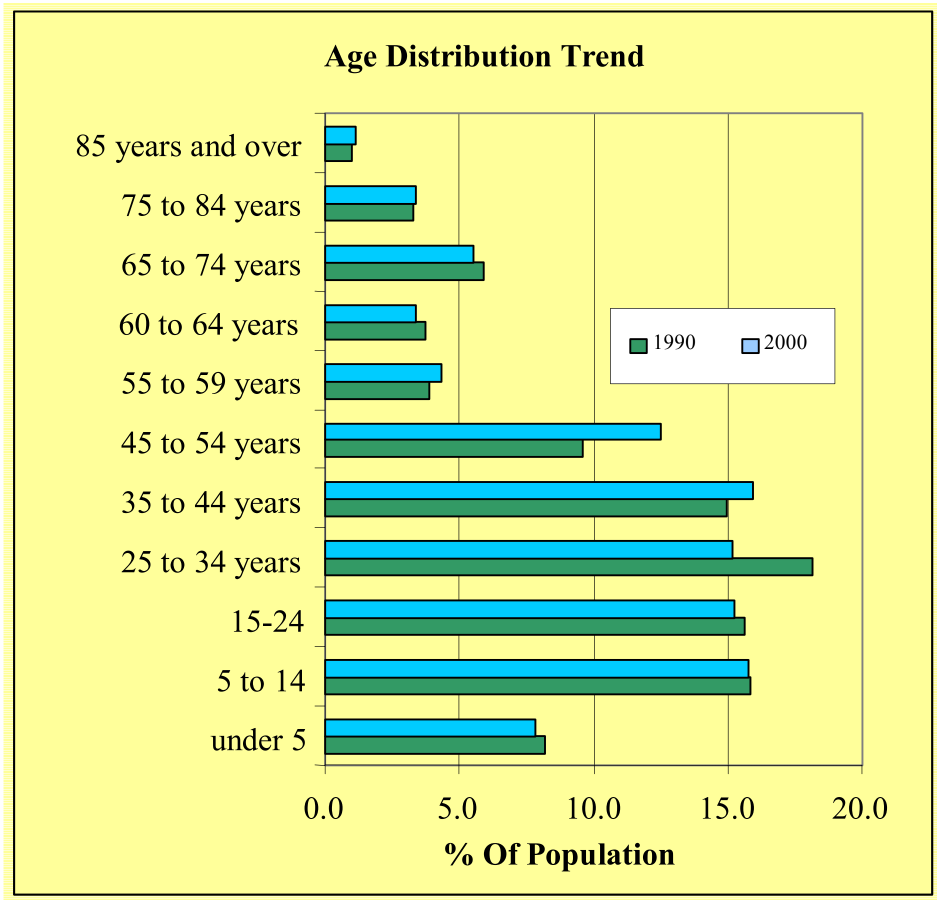
These attributes are all of a set of characteristics associated with a somewhat less affluent group of households that are larger with more young members. One transportation attribute that stands out in contrast to this pattern is that there is a far lower share of households in Texas without a vehicle than in the nation on average. In fact the share of Texas' households without vehicles in 1990 was about two-thirds of the nation's 2000 average. The income effect seems to assert itself in that Texans have fewer households with three or more vehicles than the national average despite its larger family sizes, as shown in the trend chart from the census later in this text.

The arrival of outsiders needs to be seen in context; the following chart describing the location of persons five and older in 1995 helps considerably in confirming that a high level of stability is the typical situation. In 2000 about half of Texans were living in the same house as in 1995, another quarter had moved but were still living in the same county and about a 15 percent share were from other counties within the state. Only about 10 percent of residents in 2000 were from other states or from outside the country.



An Aging Population

Changes in the age distribution of the population of Texas are exhibited in the figure below for the period between 1990 and 2000: It has the classical characteristic of our age; the younger age workers shifting into the older worker age groups. Note the sharp drop in younger workers and the rise in the share of population in the 45 to 54 year age groups. These will be the people hitting retirement after 2010. Also observable is the decline in the younger over-65 population as the depression generation moves into older age.



<u>Texas' aging problem is significant but not as acute as most others</u>, largely due to the balancing of the younger immigrant age groups. Fourth among states in aged population, Texas had the greatest increase in percentage terms, 20.7 percent, between 1990 and 2000, adding about 350,000 over-65 residents. The percentage of the Texas population over 65 is almost exactly 10 percent, which is relatively minor given that the US is over 12 percent on average and Florida, for example, is over 18 percent. There will be many states over 20 percent within a decade or so. These characteristics of the population will have strong bearing on the scale and character of transportation demand in Texas in the coming years.

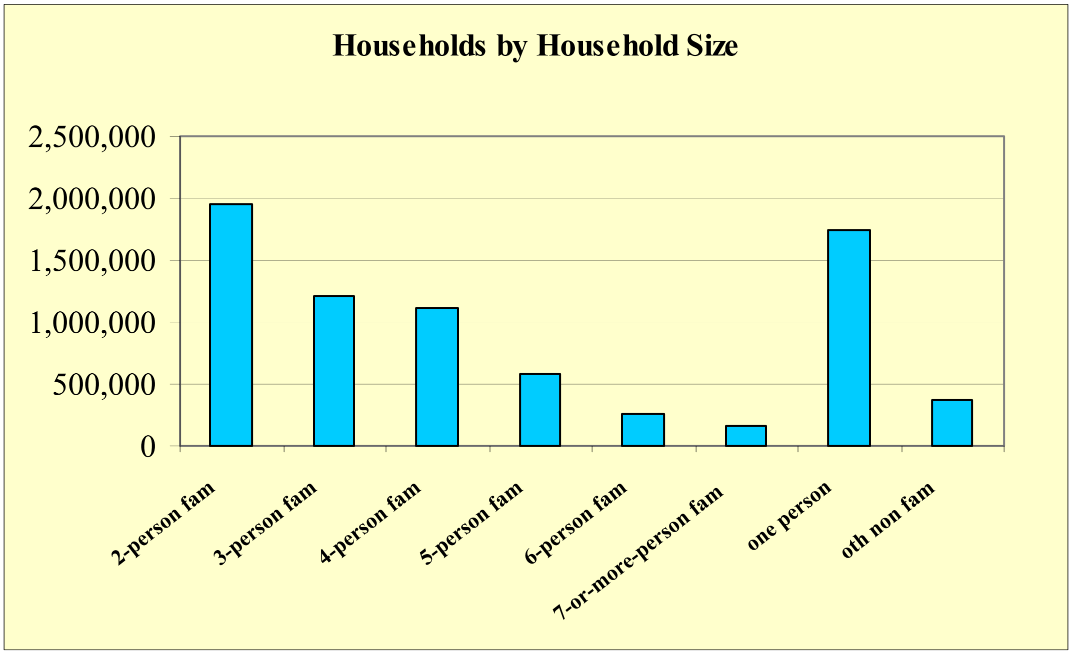
Rank	Area	2000		1990		Change, 1990 to 2000	
		Population 65 years and over		Population 65 years and over			
		Number	Percent	Number	Percent	Number	Percent
(X)	United States	34,991,753	12.4	31,241,831	12.6	3,749,922	12.0
1	California	3,595,658	10.6	3,135,552	10.5	460,106	14.7
2	Florida	2,807,597	17.6	2,369,431	18.3	438,166	18.5
3	New York	2,448,352	12.9	2,363,722	13.1	84,630	3.6
4	Texas	2,072,532	9.9	1,716,576	10.1	355,956	20.7
5	Pennsylvania	1,919,165	15.6	1,829,106	15.4	90,059	4.9
6	Ohio	1,507,757	13.3	1,406,961	13.0	100,796	7.2
7	Illinois	1,500,025	12.1	1,436,545	12.6	63,480	4.4
8	Michigan	1,219,018	12.3	1,108,461	11.9	110,557	10.0
9	New Jersey	1,113,136	13.2	1,032,025	13.4	81,111	7.9
10	North Carolina	969,048	12.0	804,341	12.1	164,707	20.5

A key attribute of the present and future population will be its workers, particularly in terms of transportation needs. The 2000 census surveys showed about 10 million Texans to be in the labor force, roughly 7.2 percent of the nation's labor force, about the same share as its population. Over the 30-year period 2000-2030 an estimate of the state's labor force-age population rises at a substantial, but somewhat slower pace than the general population's increase, rising from 13 million people between the ages of 18 and 64 to almost 19 million. A key attribute of this change is that the prospective commuting population declines as a share of the population from 61.9 percent in 2000 to 60.4 percent in 2030.

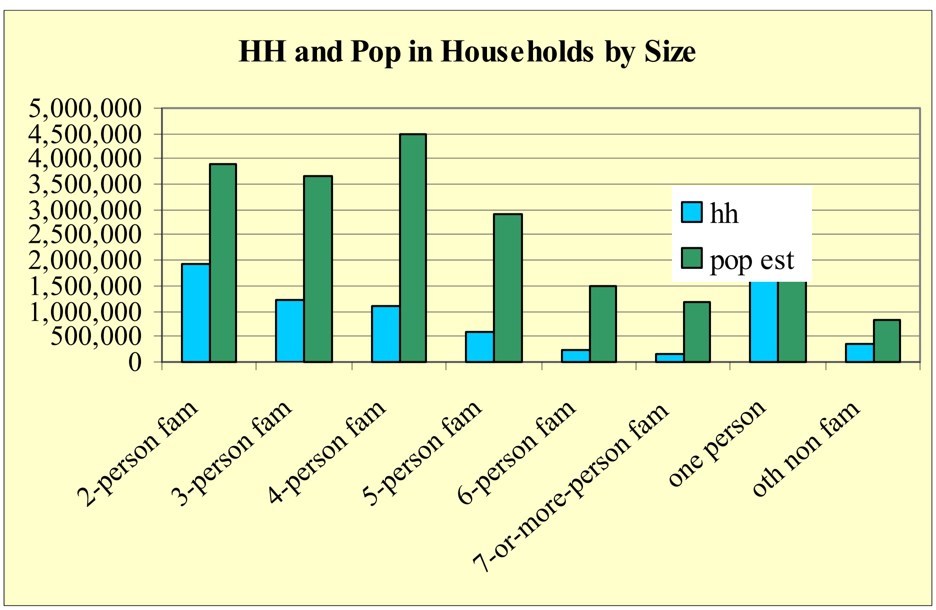
This means that the dependent population, those not yet at or those already beyond the working years, will rise as a share of population, going from 38.1 percent to 39.6 percent of the population. Contrasted to the nation in general these are relatively small changes. Overall the median age of the population rises from 32.3 in 2000 to 38.5 in 2030. The growth of the Hispanic immigrant population significantly slows the aging of the population. Hispanics average 13 years younger than the Anglo population – by 2030 they are at a median of 31.9 years whereas Anglos are at 44.3.

Household Characteristics

Of the approximately 20 million persons in Texas not living in institutions in 2000, about 17.7 million (85 percent) lived in more than 5 million family households. The remainder consisted of almost one million women and 800,000 men living alone with the balance unrelated persons living together. In addition to the typical situation of parents and children within the family household, more than 10 percent of household members consisted of grandparents, grandchildren, brothers and sisters of the householder or unrelated individuals. While all households averaged 2.74 in size; family-based households were far larger, as expected, at 3.35 persons. The distribution of households by size of household is shown below.



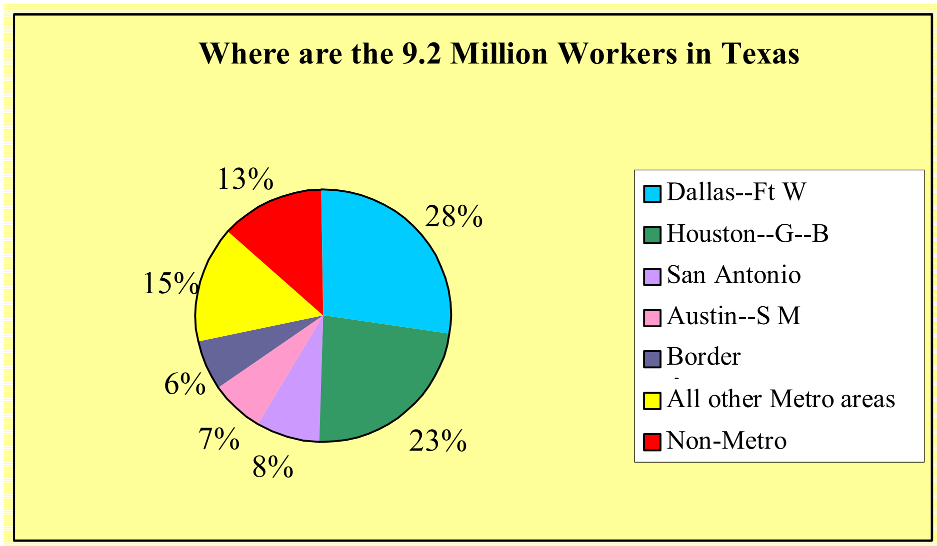
These households represent very different shares of the population as shown in the chart below. Note, for instance that the largest group of persons live in 4-person households and there are more people in 6-or-more-person households than living alone.



The formation of populations into households and the stage in the life cycle of those households has immense bearing on the amount and scope of travel that persons engage in. It is households that give rise to many of the trips people make: shopping and other services; and it is the stage in life that defines many trips to school, recreation and personal business activities. The larger family sizes in Texas would tend to have the effect of reducing overall travel demand contrasted to that same population in more households.

The Work Trip Market

The pie chart below identifies in more detail the location of the workers in Texas. Half of the workers in the state are in Dallas-Ft. Worth and Houston.



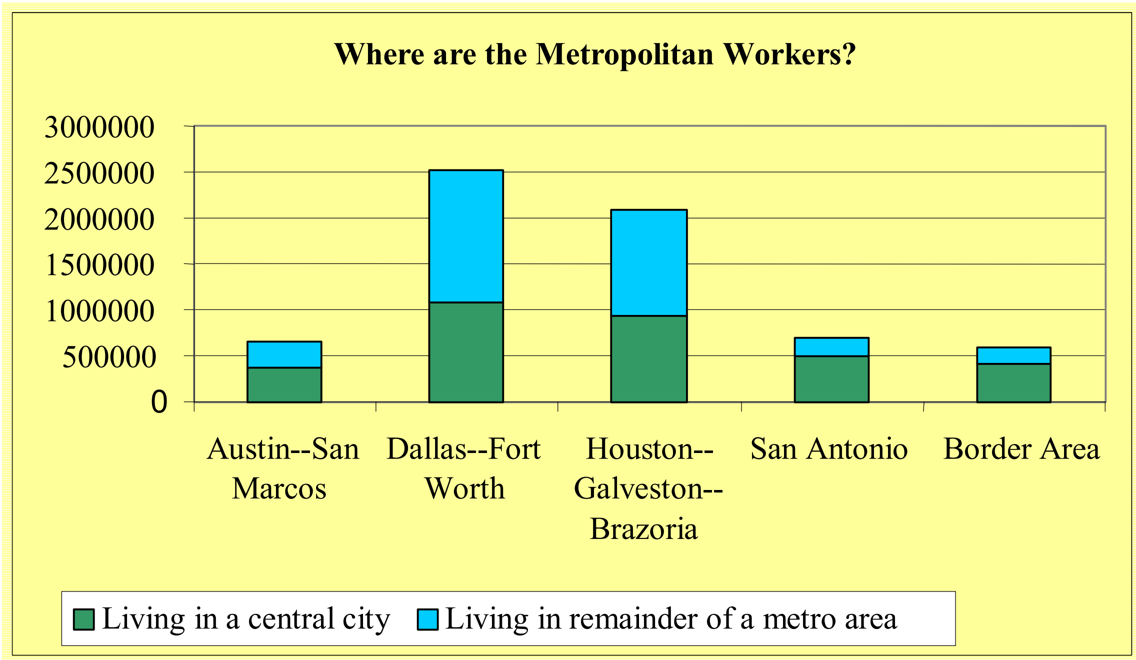
SUMMARY: TEXAS COMMUTING MARKETS BY SIZE

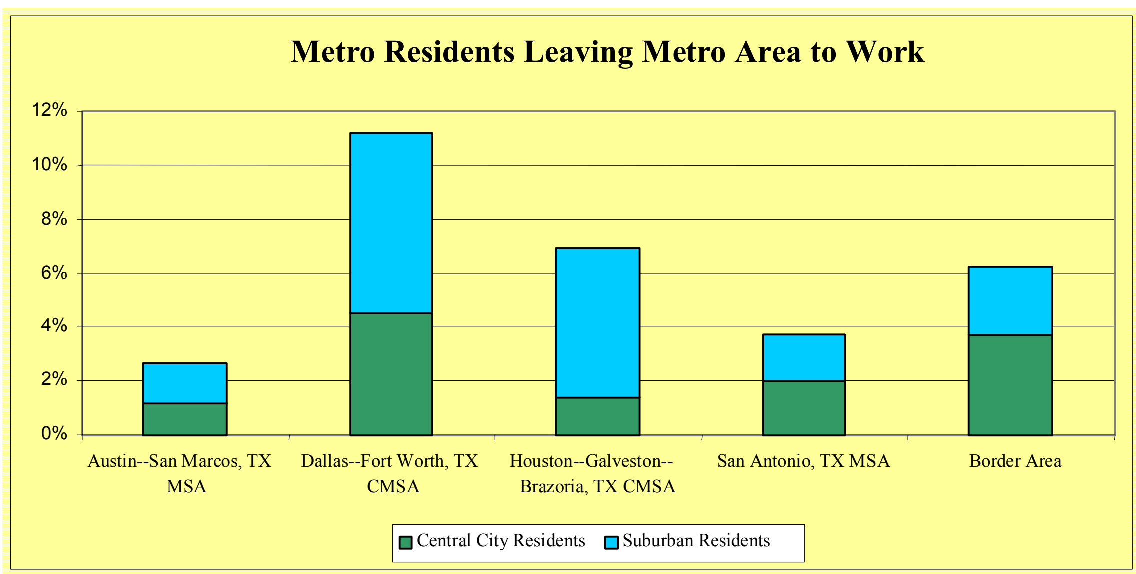
1. Central City to Central City – 3.3 million
2. Suburbs to Suburbs – 1.8 million
3. Suburbs to Central City – 1.6 million
4. Rural to Rural – 1 million
5. Suburbs to other Metropolitan– 300,000
6. Central City to other Metropolitan – 200,000
7. All others; 4 at about 100,000

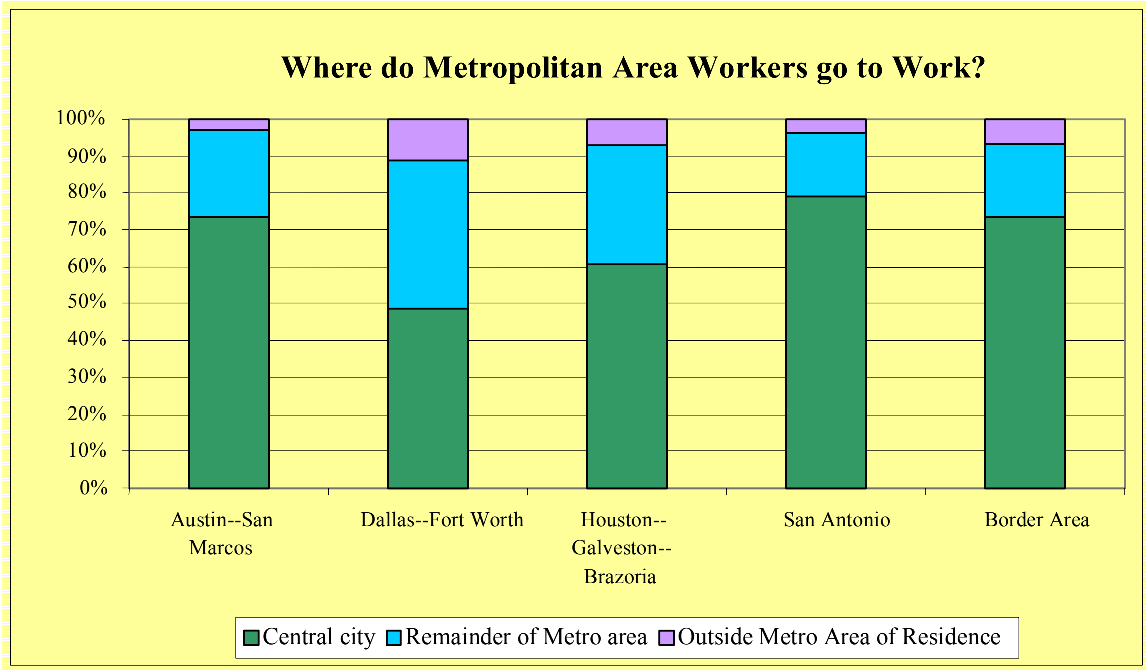
The following three charts describe the work flows of the almost 6.5 million workers in the five major metropolitan areas studied:

- The first shows that, unlike the rest of the country, most workers reside in central cities rather than suburbs in Texas, largely attributable to annexation policies in Texas. (note: A metropolitan area can have more than one central city)
- The second identifies the flow of workers to areas beyond their home metropolitan area. (This could include for example, flows from Dallas to Fort Worth.)
- The third provides a more detailed depiction of the flows within and between the five areas.

These data suggest a greater self-sufficiency among areas than in most states. There seems to be a greater tendency for workers to live and work in their own areas than observed elsewhere.

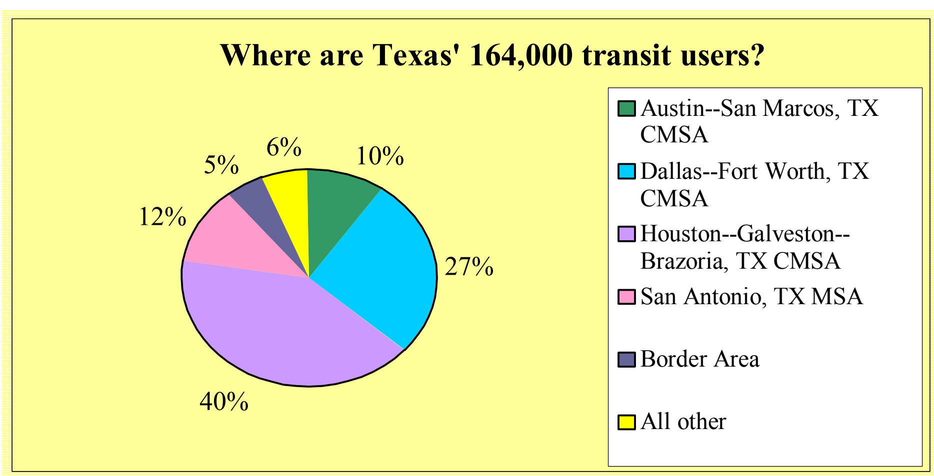




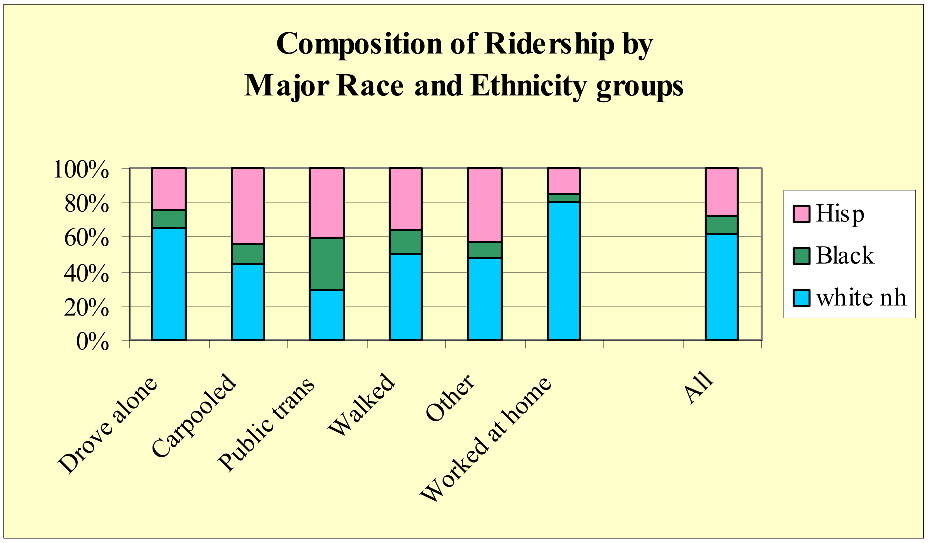


Roughly a quarter of a million residents worked at home in 2000, up from approximately 185,000 in 1990, about a 36 percent increase. Working at home accounted for 2.75 percent of all workers, a greater share than those who walk to work or those who use transit to work.

The state makes limited use of transit services for work travel. Overall transit use in the state's metropolitan areas stands at 2 percent and only Houston exceeds 3 percent. While transit use is fifth ranked among modes for the overall state, among metropolitan areas it surpasses walking but still is below working at home.



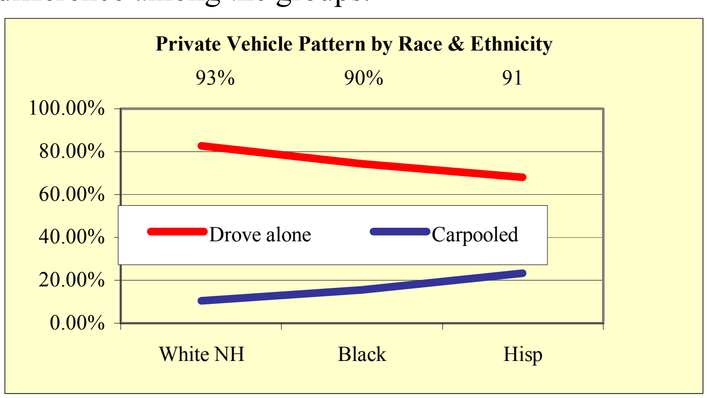
When mode choice results are stratified by the major racial and ethnic groups in Texas significant patterns emerge. The mode of transportation with a distribution most similar to the distribution of workers themselves is driving alone. Among the significant variations are: working at home with 80 percent Anglo composition; car-pooling with a strong Hispanic composition; and transit use with a strong Black composition.



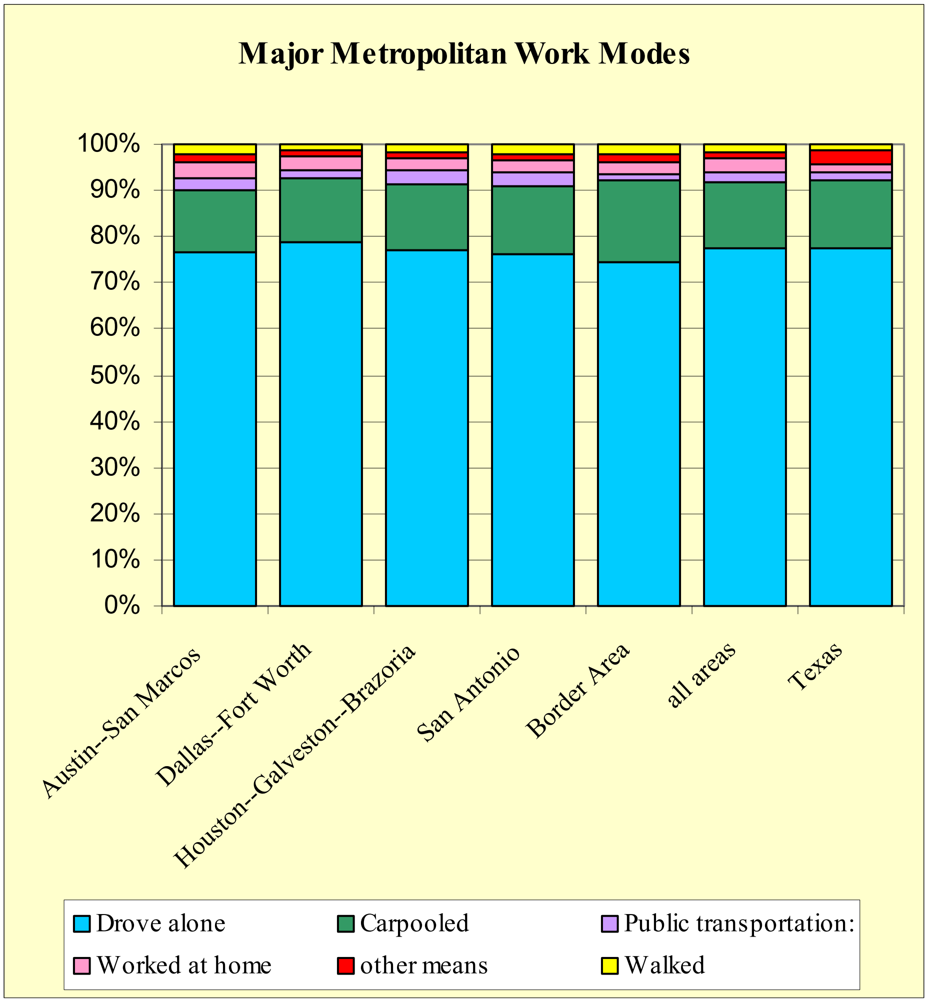
When the mode shares by race and ethnicity are examined, as below, the Black group is most similar to the overall national pattern. An extraordinary difference is notable in the strong orientation to carpooling on the part of Hispanics.

	Anglo	Black	Hisp	US
Drove alone	82.69%	74.46%	67.96%	75.7%
Carpooled	10.31%	15.55%	23.31%	12.2%
Public trans	0.84%	5.10%	2.64%	4.6%
Walked	1.52%	2.34%	2.44%	2.9%
Other	1.06%	1.31%	2.12%	1.3%
Worked at home	3.57%	1.24%	1.53%	3.3%
	100%	100%	100%	100%

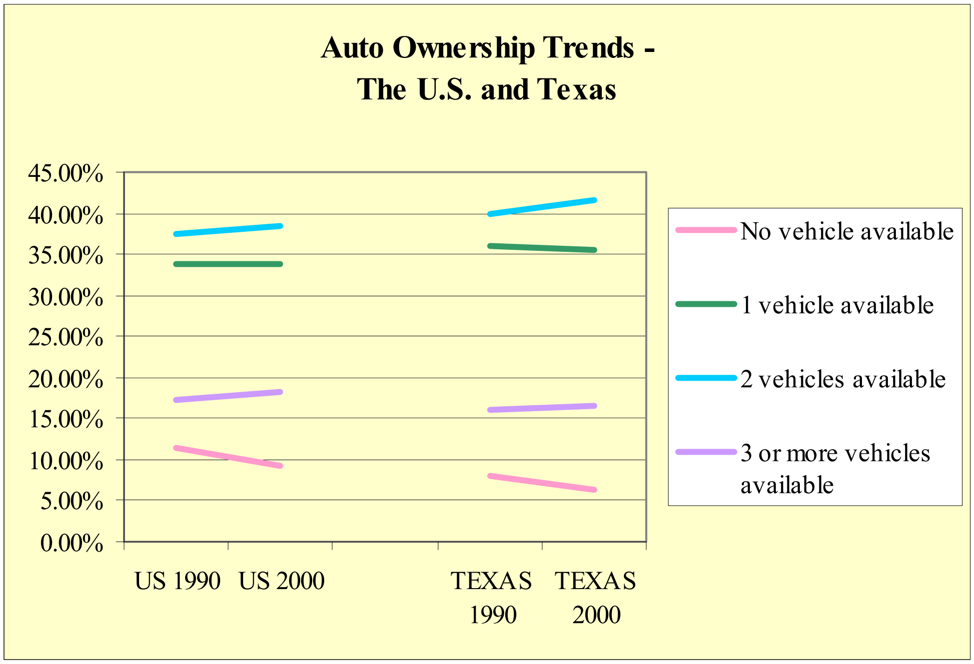
The chart below shows how the combination of driving alone and carpooling comes out to a very similar value for all groups in Texas. Similarly, if working at home and walking are combined their total share is very similar among all groups. Transit use is the truly distinct difference among the groups.



The modal usage for work travel in the detailed study areas selected is depicted in the bar chart below; its key characteristic is the similarity in mode choice despite large variations in the scale of commuting. The detailed work mode percentages for each area are displayed in the table following; perhaps the key point in the table is to confirm how similar all areas are.



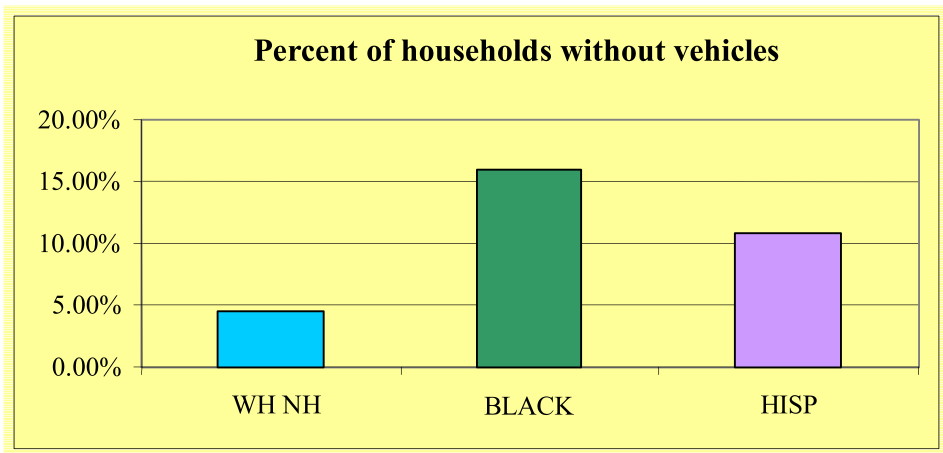
Household Auto Ownership

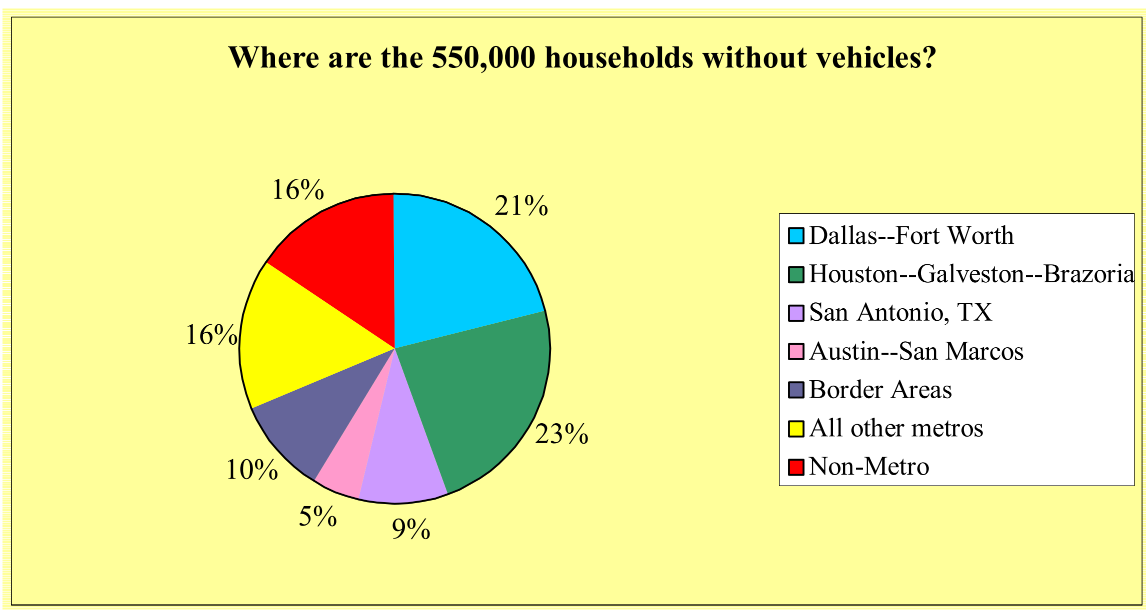


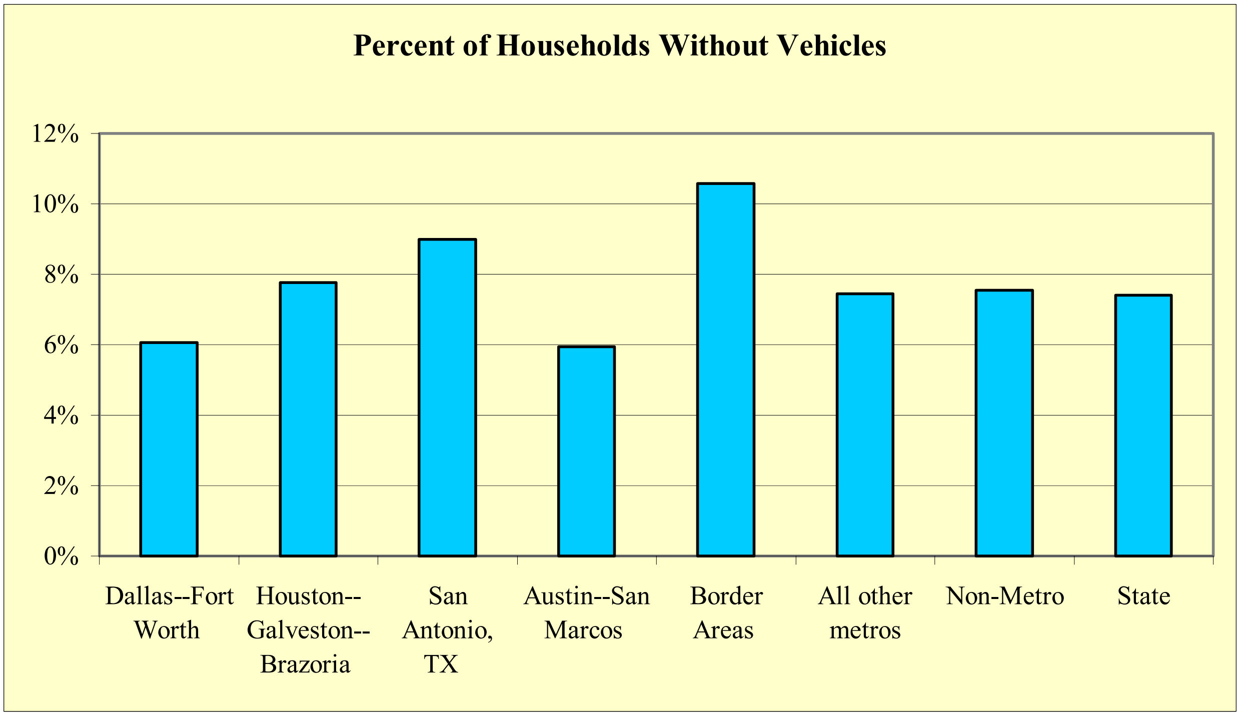
The ways in which Texas auto ownership varies from the national pattern was to be expected—more one and two car households and fewer three-car households. What is unexpected is that the share of households without vehicles is significantly lower in Texas than in the nation. In fact Texas was below the nation's 2000 average in 1990. The nation today hovers at 10 percent of all households without access to vehicles, while Texas, at about 8 percent in 1990 is now down to 7.4 percent. These households without vehicles numbering about 550,000 represent an important component of the community whose transportation service needs must be recognized. Who and where they are is very important to transportation needs and plans. What do we know about these households?

- <u>They are predominantly renters</u>: two-thirds of the vehicle-less households are renters. Only about 4 percent of home owning households are without a vehicle whereas 14 percent of renting households are vehicle-less.
- <u>Lack of vehicles is predominantly among minorities</u>: the figure below shows the pattern; 5 percent of Anglo (White non-Hispanic) households are without vehicles contrasted to 15 percent of Black households, with Hispanic households roughly in between.
- <u>The Anglo population predominates among no-vehicle households</u>: almost 40 percent of households without a vehicle are Anglo with about 36 percent in the Hispanic population, and 25 percent in the Black population.
- <u>About a third of vehicle-less households are headed by a person over 65</u>: Noted earlier was the fact that those over 65 constituted only 10 percent of the population. More than half of the home-owning households without vehicles were over 65. Lack of vehicles is more evenly spread among renters where about 20 percent are over 65.

- Most households without vehicles are in the major cities: The figure below shows that distribution with Houston and Dallas-Ft. W. the major locations. But it is to be noted that 16 percent of vehicle-less households reside in rural (non-metropolitan) areas. Only Houston, Dallas-Ft. W, San Antonio, Austin and El Paso have more than 20,000 households without vehicles.
- Households without vehicles represent a small share of the population. Most households without vehicles are small households; almost half are one-person households, another 20 percent are two-person households.







Non-Work Travel Trends

There are no data for local travel purposes explicitly for Texas; however national patterns make a case that is wholly appropriate for Texas. First, the following list shows the eight major elements of travel of concern in this review. It is notable that work travel, so often the focus of transportation planning and policy concern only constitutes about a 20 percent share of local travel trip-making activity; but a slightly greater share of travel volume. Beyond local travel, long distance travel has been estimated at upwards of 20-25 percent of all passenger travel. None of this includes all of the freight flows treated elsewhere in this review.

•	**COMMUTING**
•	**OTHER RESIDENT TRAVEL**
	• **School**
	• **Work Connected Business**
	• **Personal Business**
	• **Shopping**
	• **Visit Friends And Relatives**
	• **Social/Recreational**
	• **Medical Dental**
	• **Other**
•	**TOURISM**
	• **Overnight Visitors**
	• **Same Day Visitors**
	• **Business Travel**
•	**SERVICES**
	• **Telephone**
	• **Gas**
	• **Electric**
	• **Cable TV**
•	**PUBLIC VEHICLES**
	• **Government/Military**
	• **Police**
	• **Fire**
	• **Ambulance**
	• **Refuse**
	• **Road Construction/Maint.**
•	**URBAN GOODS MOVEMENT**
	• **Couriers**
	• **Store Delivery**
	• **Home Delivery**
	• **Office Delivery**
	• **Services/Repair**
•	**THRU PASSENGER TRAVEL**
	• **Business**
	• **Social Recreational**
	• **Visit Friends/Relatives**
•	**THRU FREIGHT TRAVEL**
	• **Agriculture**
	• **Construction/Manufacturing**
	• **Wholesale/Retail**
	• **Import/Export**

Despite the dramatic growth of work travel in recent years, trips for other purposes have grown even faster, largely trips for family and personal business or for social and recreational purposes. While work travel per capita grew by 33 percent in the period, personal business travel doubled and social-recreational travel increased by more than 50 percent. Income per capita is the great factor in total trip making. This suggests that simply focusing on serving commuting trips will be increasingly inappropriate.

Intercity Passenger Travel

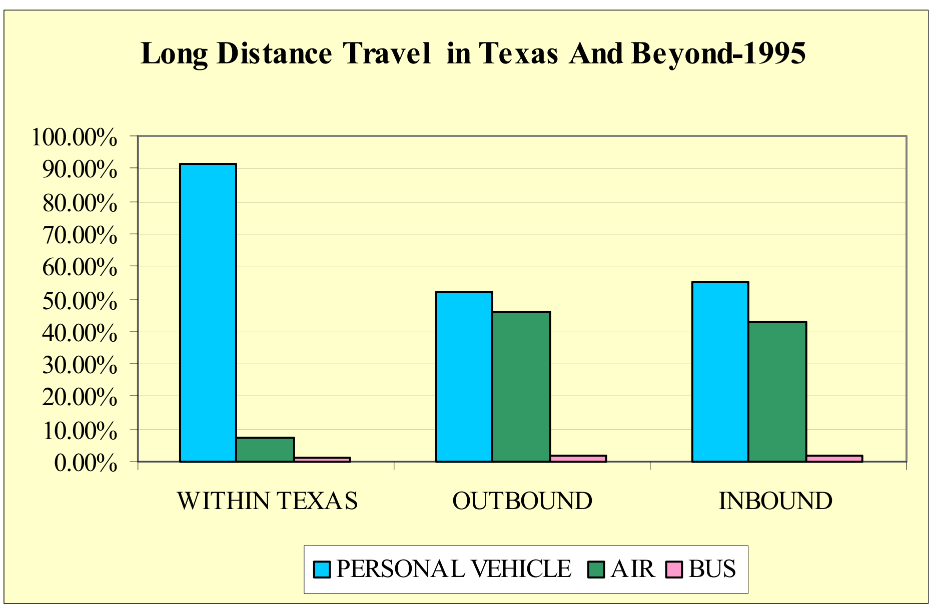
The 1995 American Travel Survey while relatively old still provides meaningful insight into long distance travel in Texas. The survey addresses all trips by households of more than 100 miles in length. A quick overview of the survey findings to gain a sense of scale of the activity is shown in the table below:

In thousands	TO		
FROM	Texas	Outside	All
Texas	56,800	23,500	80,300
Outside	19,200		
Total	76,000		

It shows that Texans made over 56 million trips of over 100 miles within Texas in 1995. Those trips averaged over 450 miles in length, roundtrip, but two million of them averaged between one thousand and two thousand miles round-trip wholly within the state. Another 23 million trips went beyond Texas, principally to adjacent states, Florida and California. Visitors to the state numbered just above 19 million. They also came principally from adjacent states, but also from Illinois and New York.

This travel by Texans amounts to a rate of travel of roughly 4.3 trips per year per capita total, 3 of which are within state. This is higher than the national average of 4 trips per person. Just the intra-state trips by Texans alone constitute 25 billion person miles of travel and the trips outside the state average 1500 miles round-trip, significant parts of which were in the state.

The highway mode was the dominant mode for all long distance travel within the state and a substantial majority for trips into and out of the state as shown below.

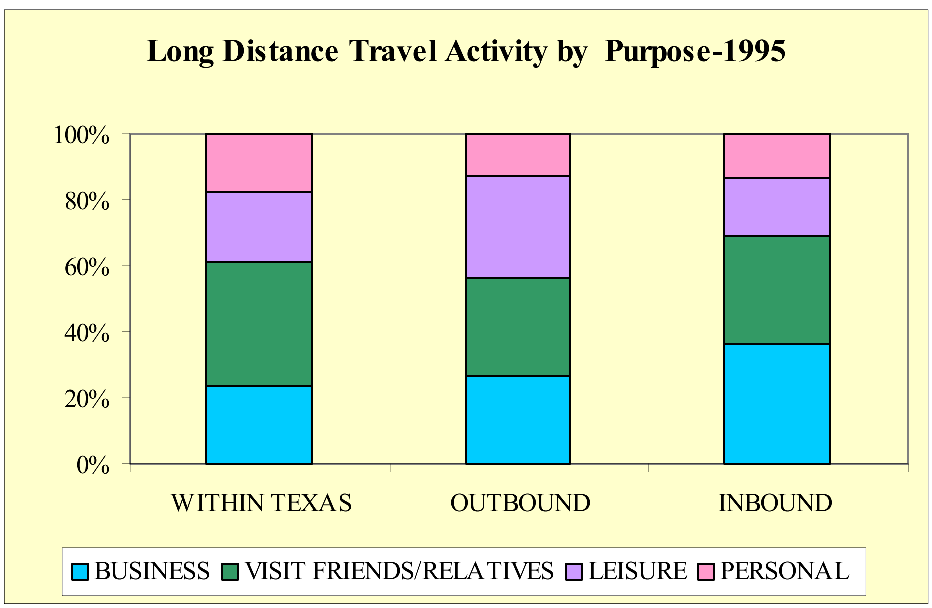


As expected, pleasure travel dominates the within-state travel activity including leisure and visiting activities and a significant portion of inbound and outbound travel is business oriented. Business travel will often be more oriented to air travel. Travel within Texas for business purposes is roughly 80 percent by personal vehicle and 20 percent by air. Over 200,000 of the air trips within state were made in personal aircraft. Non-business within-state travel was almost exclusively in private vehicles; for example, trips for visiting friends and relatives was more than 95 percent by personal vehicle.

At the national level long-distance trips by racial and ethnic minorities averaged only about half the trips per year of the general population, although their trip-making growth rates have been equivalent to or greater than the general population. It can be expected that overtime their annual trip-making rates will coincide with general population rates as their incomes rise. This will be a major source of long-distance travel growth for Texas.

One of the key concerns of Texas now and in the future is cross-border passenger flows with Mexico. The levels of traffic are prodigious; overnight visits to the US from Mexico grew by 50 percent from 1990 to 2000 and exceed 10 million visits per year; while US visitors to Mexico were closer to 20 million visits per year with growth of 20 percent for the period.

Same day travel at the border has grown dramatically, US Customs records for 2000 show almost 300 million border crossings from Mexico to the US for the year and over 90 million vehicle crossings. Of these, El Paso and San Ysidro California, both had levels above 40,000 vehicles per day, together accounting for more than 25 percent of all the crossings. In Texas, in addition to El Paso, Hidalgo, Brownsville and Laredo exceeded 20,000 vehicles per day. These four Texas ports accounted for 43 percent of all border crossings with Mexico.



This all makes the point that most trips, particularly longer ones, have economic or social transactions at their destination of value to the traveler and to the society.