

# Commission Briefing Paper 4A-03

## Implication of Alternative Assumptions Concerning Future Immigration on Travel Demand for Different Modes

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### Introduction

This paper is part of a series of briefing papers to be prepared for the National Surface Transportation Policy and Revenue Study Commission authorized in Section 1909 of SAFETEA-LU. The papers are intended to synthesize the state-of-the-practice consensus on the issues that are relevant to the Commission's charge outlined in Section 1909, and will serve as background material in developing the analyses to be presented in the final report of the Commission.

The past 50 years have seen an unprecedented growth in travel due to several factors, one of which is demographic change. There are myriad unforeseeable influences that will shape the future of transportation planning and there are strong indications that the key factors (such as vehicle ownership) that have had a direct relationship on travel demand in the past may be less influential in the future. This paper uses current travel behavior to examine future potential travel demand based on demographic change alone and assumes all other factors are held constant.

This paper presents information on the historic and projected growth of the immigrant population in the United States and the potential impact of that growth on travel demand. As birth rates decline and the native-born population ages, new immigrants account for much of the population growth in the U.S., especially those of working age (16-65). New immigrants exhibit very different travel behavior, such as increased transit use, walk trips, and carpooling, as compared to U.S.-born populations.

### Background and Key Findings

Immigration has a significant impact on national, regional, and local transportation needs. Immigrants, especially new immigrants, travel in significantly different ways than U.S.-born residents. Because of this, immigration places a different set of demands on the transportation system. The key findings presented here include:

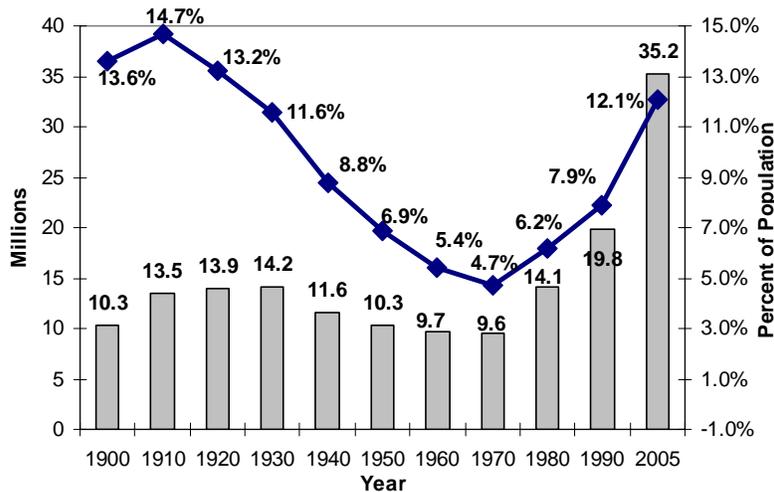
- Immigration is at the highest level it has ever been in the U.S. 15.4 million new immigrants have entered the U.S. since 1990. The immigrant population in the U.S. reached a new record of 35.2 million in 2005, over 12 percent of the population.
- Actual growth of the immigrant population is highly dependent upon immigration policies in years to come. However, projections show that by 2050, between 16 and 27 percent of the U.S. population will be foreign born.

- If the Big Six continue to be immigrant magnet states, California, New York, Texas, Florida, Illinois, and New Jersey can expect between 22 million and 52 million<sup>1</sup> new immigrants by 2050.
- New immigrants (less than five years in the U.S.)<sup>2</sup> exhibit the greatest differences in the types of modes used and purposes of travel, especially in the use of transit and walking.
- If current trends in immigration continue, by 2050 the current 658 billion person miles of travel generated by the immigrant population will increase to 2.1 trillion, and VMT would triple to just over 1 billion immigrant miles per year by 2050.
- The constant addition of new immigrants over the coming decades may have a significant impact on transit providers, especially in the local areas and States that become magnets for immigrant populations.

### Record Growth in Immigration

For the first time since 1920, immigrants comprise more than 12 percent of the U.S. population. An analysis of Census Bureau data shows that the nation’s foreign-born or immigrant (legal and illegal) population reached a new record of 35.2 million in March of 2005 (11). The data also show that 2000 – 2005 has been the highest five-year period of immigration in American history (11).

**Figure 1 – Immigrants in the U.S., Number and Percent of Population**



Source: Decennial Census for 1990 to 2000, Center for Immigration Studies and Analysis of March 2005 Current Population Survey Data

As shown in Figure 1, the immigrant population in the U.S. has grown at a rapid rate since 1970. Between 1970 and 1990 (a 20 year period), the number of immigrants in the U.S. grew by 10.2 million, just over half a million a year. During the past 15 years (1990 – 2005), 15.4 million

*One immigrant enters the U.S. every 31 seconds*  
-U.S. Census Bureau

<sup>1</sup> Estimate uses current trend and high series projections assuming that the Big Six States continue to draw 66 percent of the immigrant population.

<sup>2</sup> Based on the structure of supporting data sources, new immigrants are shown in this paper both as those in the U.S. less than five years (Census data) and those in the U.S. less than 3 years (NHTS data).

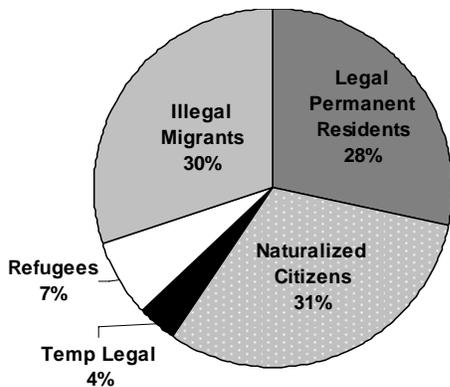
people have migrated to the United States, or just over a million a year.

Historically, the impact of high levels of immigration, such as in the decades between 1910 and 1930, was an important factor in residential development outside of urban centers. New suburbs were built on the trolley lines that allowed the middle class to move out from the urban centers where immigrants were concentrated. The continued dispersion of the population through the rings of suburban growth, coupled with other factors such as vehicle ownership, has a significant impact on travel demand. A separate briefing paper (4A-05 Urban Rural) details the effect of dispersion of the population on travel demand.

### Counting Immigrants

The *actual* total number of immigrants in the U.S. is unknown. This is because a significant portion of immigrants in the U.S. are here illegally. Estimates of total immigration are developed from U.S. Citizenship and Immigration Services entry data, Decennial Census counts, and Current Population Survey data. Of the 35.2 million immigrants living in the U.S., it is estimated that 11.5 to 12 million are unauthorized, in the U.S. illegally (8).

**Figure 2: Legal Status of Immigrants**



Source: Pew Hispanic Research Center. Estimates based on the March 2005 Current Population Survey

In 2005, illegal immigrants accounted for 30 percent of the total foreign born population. The legal status of immigrants is important to travel demand because such a high percentage of illegal immigrants have been in the U.S. for five years or less and exhibit significantly different travel behavior during this time. Among illegal immigrants, 66 percent have been in the U.S. for 10 years or less, 40 percent have been in the country for five years or less (9). Since 2000, growth in the illegal immigrant population has averaged more than 500,000 per year (9).

### Geographic Impacts

Although much of the data shown here are for the nation, immigration is concentrated both regionally and in major metropolitan areas. Understanding the distribution of new immigrants across our nation’s cities and states helps to understand different trends in growth, and the transportation needs of the people in the geographic locations where immigration levels are very high.

*The number of immigrants in the state of Georgia has increased by 38 percent since 2000.*

New immigrants are still more likely to take up residence in the “Big Six” immigrant magnet states: California, New York, Texas, Florida, Illinois, and New Jersey. These states accounted

for 69 percent of the foreign-born population in 2000 and 66 percent of that population in 2005 (12).

**Table 1: Change in Foreign-Born Population – 2000 - 2005**

State	2000 population	2005 population	Change 2000-2005	% change 2000-2005
California	8,809,641	9,647,768	838,127	9.5
New York	3,819,028	3,962,767	143,739	3.8
Texas	2,878,503	3,550,140	671,637	23.3
Florida	2,634,349	3,220,141	585,792	22.2
Illinois	1,518,500	1,703,548	185,048	12.2
New Jersey	1,459,007	1,655,837	196,830	13.5
Georgia	573,161	791,706	218,545	38.1
North Carolina	425,246	559,343	134,097	31.5
Arizona	654,746	854,356	199,610	30.5
Virginia	561,332	721,843	160,511	28.6
Maryland	512,040	644,978	132,938	26.0
Pennsylvania	495,017	621,896	126,879	25.6
Washington	608,622	757,235	148,613	24.4
Massachusetts	752,899	907,054	154,155	20.5

Source: Population Studies Center, University of Michigan, PSC Research Report No. 02-520

An important trend however, is the dispersion of new immigrant populations to other states in the U.S. and to more suburban areas. These more “domestic” migration centers include Georgia, North Carolina, Arizona, and Virginia. Over the past five years, Georgia experienced a 38 percent increase in the foreign-born population. The state of Washington experienced a 24 percent increase in the number of foreign-born residents since 2000.

### **Travel Behavior of Immigrants**

Immigrant households, especially during the first 3-5 years in the U.S., exhibit different travel behavior and place different demands on the transportation system as compared to U.S.-born residents (2). The differences in travel are usually associated with the socio-demographics of immigrants.

In 2001, the National Household Travel Survey (NHTS) collected information on place of birth and year of entry to the U.S. in the context of travel behavior. As shown in Table 2, new immigrants differ significantly in key demographic indicators of travel. Compared to the Nation, immigrants have fewer drivers, work closer to home, live in larger households and make a greater number of household trips per day, and are less likely to own vehicles.

**Table 2 – Key Demographic and Travel Characteristics of New Immigrants**

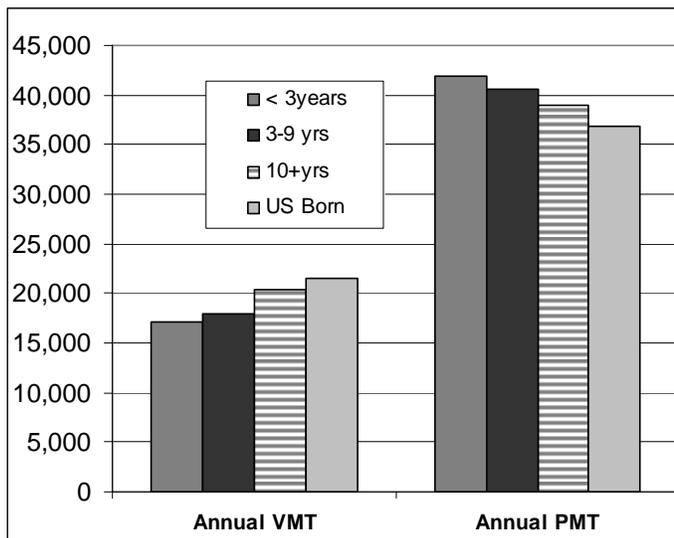
	<b>New Immigrants</b>	<b>National Average</b>
<b>Demographic Characteristics</b>		
Average Household Size	3.6	2.6
Average Workers per Household	2.0	1.4
Average Vehicles per Household	1.3	1.7
Home Ownership	16.1%	72.3%
<b>Travel Characteristics</b>		
Percent Drivers (16+)	60.6%	91.5%
Usual Distance to Work (miles)	9.5	13.2
Usual Time to Work (minutes)	24.6	25.5
Average Daily Trips per Household	10.2	9.6

Source: National Household Travel Survey, 2001

New immigrants are defined as foreign born persons living in the U.S. for three years or less.

Differences in the characteristics of immigrant households translate into significant travel demand variation. Figure 3 shows the average annual household vehicle miles of travel (VMT) and person miles of travel (PMT) for the immigrant and U.S.-born populations.

**Figure 3 – Average Annual VMT and PMT Per Household by Years in the U.S.**



Source: National Household Travel Survey, 2001

*Transit and walking are used in 25 percent of trips made by new immigrants.*

-National Household Travel Survey

In looking at VMT, it is clear that all immigrants have lower VMT and higher PMT than U.S.-born residents. For new immigrants (< 3 years in the U.S.), only 41.0 percent of their annual household PMT is in vehicle travel. Conversely, 58.3 percent of U.S.-born PMT is in vehicle travel. Note that the longer immigrants spend in the U.S., the more similar their travel demand becomes to U.S.-born residents, which is discussed later in this section.

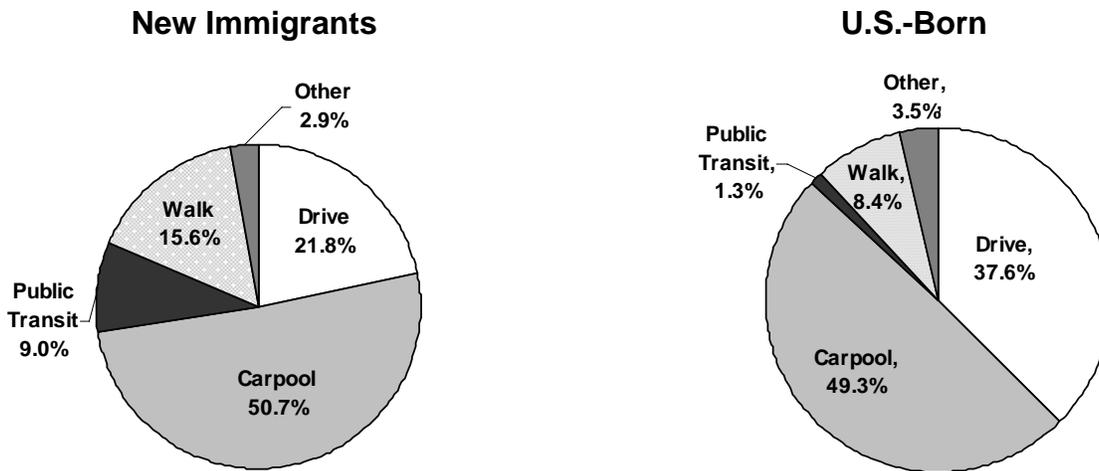
In looking at all trips, new immigrants are seven times more likely to use transit and twice as likely to walk. New immigrants only drive alone for 21.8 percent of all trips as compared to U.S.-born residents at 37.6 percent. Note that the carpool numbers are for both work and non-work travel, where many of the trips include people from the same family.

Nineteen percent of new immigrants do not have a household vehicle as compared to 13 percent of immigrants in the U.S. for 11 or more years. The average percentage of U.S.-born households without a vehicle is just under 8 percent.

The mode distribution for trips and alternative mode usage are shown in Figures 4 and 5.

Differences in travel behavior have been confirmed in a study by Tal and Handy (10). Using data from the NHTS, new foreign-born residents were significantly more likely to use public transit when compared with longer-term foreign-born residents and U.S.-born residents. Their study also found, not surprisingly, that new immigrants drive significantly fewer miles per year than longer-term immigrants and native-born residents.

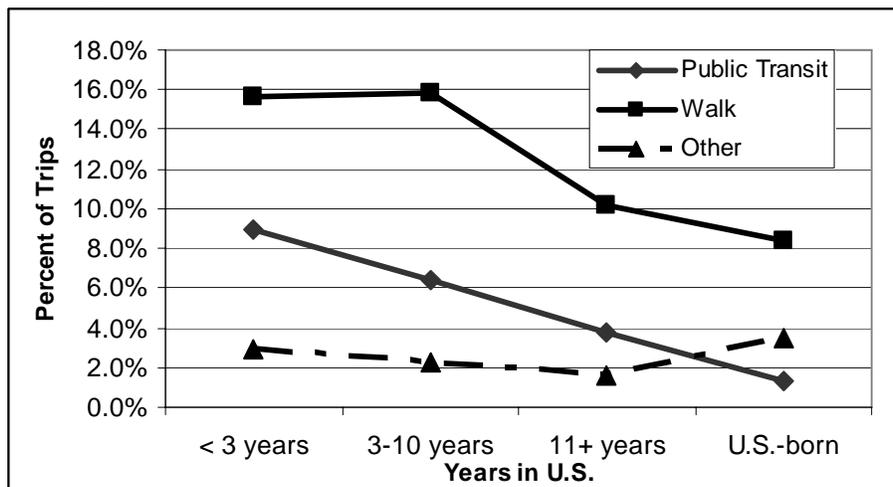
**Figure 4 – Mode Distribution (Percent of Trips)**



Source: National Household Travel Survey, 2001

Immigrant travel behavior follows a continuum from new entry to full assimilation. The more years immigrants spend in the U.S., the more they travel like U.S.-born residents. Figure 5 shows the dramatic trend in alternative mode use by time in the U.S. for immigrants compared to U.S.-born.

**Figure 5 – Percent of Transit, Walk, and Other Modes**

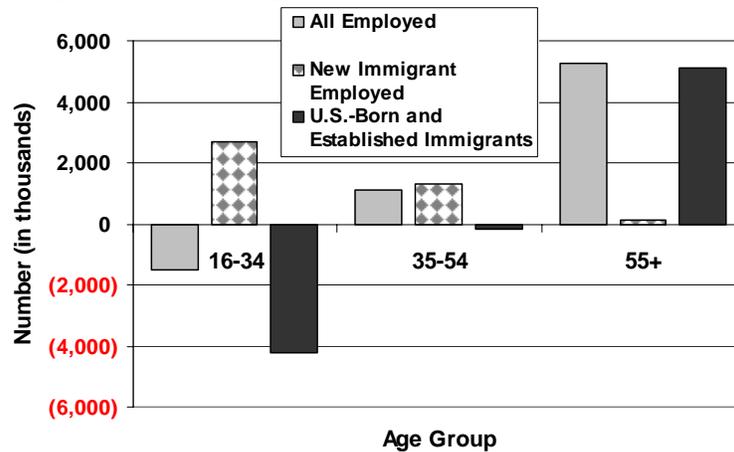


Source: National Household Travel Survey, 2001

## Work Travel

Over 80 percent of immigrants arriving in the five years prior to the 2000 Census were in the 16-64 age group which accounts for the bulk of “workers” in the U.S. (3). Figure 6 shows the shifting of the worker pool--new immigrants constitute all the growth in the number of workers between the ages of 16-54. This has significant implications for commute trips as new immigrants are much more likely to use carpooling or to walk, bike, or use public transit for their commute to work.

**Figure 6 – Change in Worker Pool (2000-2005)**



The travel differences of new immigrants go beyond higher average workers per household, increased numbers of part time workers, and lower rates of vehicle ownership. While total household trip rates are higher for new immigrants due to larger household size, individually, new immigrants make fewer trips—about 5 trips a week less than U.S.-born.

In addition, the purpose of trips shifts as new immigrants assimilate into U.S. society. For example, a higher proportion of immigrant travel is work and work-related. While immigrants who have been in the U.S. more than ten years show similar trip distributions to U.S.-born, new immigrants take about 50 percent fewer trips for social and recreational purposes.

## Projections

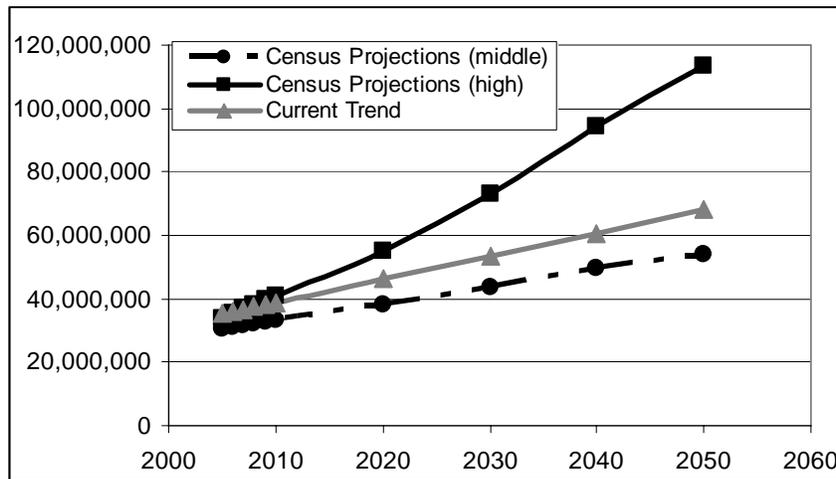
The big unknown in the population projections is the future level of immigration to the U.S. As with total population, the U.S. Census Bureau creates three levels of projections for immigration: Low Series, Middle Series, and High Series. The most recent immigration projections by the Census Bureau date back to the mid 1990’s. The data shown in Figure 7 presents the Census high and middle series along with a projection based on current trends (731,000 per year average since 1970). The Census Bureau will release updated immigration projections in the spring of 2007.

*The U.S. Census Bureau projects 114 million total immigrants in the U.S. by 2050.*

Current trends will take the immigrant population to 68 million, 16.2 percent of the U.S. population by 2050. Census high series projections estimate total immigrants at 114 million in 2050. If the Big Six continue to be immigrant magnet states, California, New York, Texas,

Florida, Illinois, and New Jersey can expect between 22 million and 52 million<sup>3</sup> new immigrants by 2050.

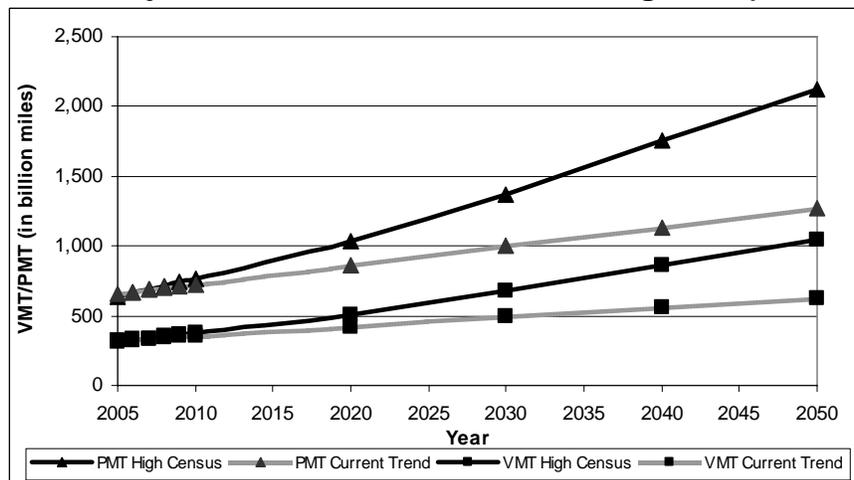
**Figure 7 – Projected Annual Immigration (2000 – 2050)**



Source: U.S. Census Bureau Projections, Middle and High Series. Current trends assume current average of 731,000 new immigrants per year continues out to 2050.

As immigrants (especially new immigrants) are more reliant on transit, walking, and carpooling (see Figure 4), the most pronounced effect of these projections of immigration is on the level of person miles of travel (PMT). As shown in Figure 8, the Census High Series Immigration Projection would mean an increase from the current 658 billion person miles of travel generated by the immigrant population to 2.1 trillion by 2050, a three-fold increase. Under the same Census High Series Projection, VMT would triple to just over 1 billion immigrant miles per year by 2050.

**Figure 8 – Projected Travel Demand from Immigrants (2005 – 2050)**



Source: High Census is based on Census Bureau immigrant population projections using 1990 Decennial Census. Current trends assume current average of 731,000 new immigrants per year continues out to 2050. VMT and PMT estimates are based on the current travel of immigrants from the 2001 NHTS.

<sup>3</sup> Estimate uses current trend and high series projections assuming that the Big Six States continue to draw 66 percent of the immigrant population.

While these Census projections do not divide the foreign-born population into new immigrants and longer-term foreign-born, projected impacts on travel demand for alternative transportation is worth noting. Even the more conservative estimate (current trends) projects adding 730,000 new immigrants each year, which would add more than a 100,000 new transit riders in each year for the period between 2010 and 2050. Over time, immigrants assimilate, purchase cars, and travel more like U.S. born. This will add to future VMT. But, importantly, the constant addition of new immigrants will have an appreciable impact, especially in the magnet areas, for transit service, especially the location, time of service, and customer service factors such as providing schedules in other languages.

In addition, new immigrants take twice as many of their trips by walking, and many areas are experiencing more pedestrian accidents and fatalities, especially in suburban areas with wide arterials and few provisions for pedestrians. The safety impact of added immigrant walk trips is an area that requires further study.

*15 percent of new immigrants and  
5 percent of all immigrants use  
transit.*

-National Household Travel Survey

## Conclusions

Immigration has a significant impact on national, regional, and local transportation needs. Immigrants, especially new immigrants, travel in significantly different ways than U.S.-born residents. Because of this, immigration places a different set of demands on the transportation system. Currently immigrants are geographically concentrated, with 66 percent residing in the states of California, New York, Texas, Florida, Illinois, and California. However, as the immigration population continues to grow, other states in the U.S. will experience high growth rates in their foreign born population. One example is Georgia which experienced a 38 percent increase in the immigrant population between 2000 and 2005.

If current immigration levels continue (731,000 per year), the immigrant magnet areas in the U.S. will experience more dramatic shifts in travel demand. As VMT is typically at a lower rate for immigrants as compared to U.S.-born residents, the travel demand created by immigration is concentrated primarily in transit and walk trips. In addition, the demographic characteristics of new immigrants (such as household size, income, and vehicle ownership) differ significantly from U.S.-born residents. As these are key indicators of travel demand used for local planning and forecasting, demographic shifts represent a substantial area of risk in terms of capacity and service planning for affected states and local areas.

While the immigrant population (even at the projected 2050 levels) is not great enough to have a significant influence on national VMT and PMT projections, regions in the U.S. with high levels of immigration will see a significant shift in travel demand and forecasting assumptions. Future immigration levels are highly dependent upon future policy in this area. However, if the U.S. experiences the projected level of immigration, future transportation demands will be concentrated in the following key areas:

- Continued expansion of metropolitan areas as settled immigrants move away from city centers
- Growth in vehicle travel as immigrants assimilate to U.S. travel behavior
- Continued demand for public transit in metropolitan areas and suburban areas

- Continued focus on pedestrian safety,
- Potential for increased congestion in southern and western states that are seeing sharp increases in both domestic and foreign-born migration to areas previously “off the radar screen” for foreign-born residents.

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