

Commuting in America III

The Third National Report on Commuting Patterns and Trends

Transportation Research Board – U.S. Academy of Sciences

A Summary for Hawaii's People and Decision Makers



Commuting in America is the definitive report produced roughly in the middle of each decade to help transportation professionals and policy makers understand the demographic, social and lifestyle forces that shape the demand and choices for transportation in the United States.

All exhibits and text in *italics* are taken directly from the report. My commentary appears in plain font as in this sentence. This 2006 report provides useful guidance for Oahu's major decision to develop transportation infrastructure costing billions of dollars.

The purpose of my commentary is to provide an insight into the trends in commuters' needs, wants, and likely choices for transportation, anticipated for the next decade, caused in large part by the baby boomers' reaching the final stages of their work life. I hope that you will find this 7-page summary useful. The 172 page report is available at TRB.org.

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Commuting in America III provides a snapshot view of commuting patterns and trends derived principally from an analysis of the 2000 decennial U.S. Census and will be a valuable resource for those interested in public policy, planning, research, and education. This is the third report in this series authored by Alan E. Pisarski, transportation consultant, over the last 20 years. His first two reports were published in 1987 and 1996.

So many of the major forces of change in the past have diminished: the explosive growth of drivers' licenses and vehicle ownership, the rise of female participation in the workforce, the suburban boom, and the boom in baby boomer workers themselves are all behind us. Watching the final stages of the baby boomers' work life and the rise of the new populations that will replace them should be equally fascinating.

The summary is grouped in four sections. Throughout the text, SOV is single occupant vehicle.

- Demographics
- Travel choices or modes of travel
- Congestion
- Infrastructure decision making.

DEMOGRAPHICS

The modal usage of the worker population over age 55 shows that as the older worker ages, there is a significant shift away from the SOV (from about 80% to 68%), slight gains in carpooling, and major shifts to walking and working at home. Bus travel gains somewhat as workers age and other transit modes tend toward minor losses in shares.

In general, as people transition to advanced age, they increasingly depend on buses to take them to their activities. Rail transit goes to dozens of places whereas buses go to several hundred places. Rail transit requires transfers and long cumulative wait times, whereas an express bus can travel for 10 miles or more without making any stops. In the recent Honolulu city administration's rail transit poll, only 33% of current *TheBus* riders support rail transit.

One of the main themes of this report has been the aging of the baby boomer workforce. We are now seeing the leading edge of the baby boomer generation approaching age 60, and some early indicators of more extensive changes to come are becoming visible. What we are seeing could be summarized quickly as: more workers working after 65; more older workers working limited hours; more older workers shifting away from the private vehicle; and more older workers shifting to working at home and walking, with mixed effects on transit (gains in buses but losses in rail).

The question remains whether significant numbers of baby boomers will tire of crabgrass and home care and opt for a more clustered-living lifestyle with less vehicle dependence and fewer household care concerns. There are immense governmental pressures trying to create these patterns. [The "Smart Growth" doctrine.] The net effects [of Smart Growth] over time would be likely to be minor with increases in density in the suburbs in some areas and declines in central city densities acting to balance out.

*Very few things are as central to how people live, or how they choose to live, as the residential density at which they live. In America, affluence has always been associated with declining density of living and increased ownership of land, including multiple homes. At the same time, the desire for walking and "walkability" is very real and I would expect it to grow (but as noted in *Commuting in America II*, don't be shocked if people drive to where they want to walk!)*

TRAVEL CHOICES

The distribution of the fleet by trip purpose clearly indicates that the automobile is used less for work than it is for other travel purposes. The van is also less used, but pickups are used in greater proportion.

The average age of vehicles has been climbing for years and now is reaching close to 9 years. One of the dramatic changes in American technology in the latter part of the past century was the engineering of vehicles that last longer. This has made serviceable vehicles available to lower income populations.

Over its 40-year span, the baby boom generation's coming of age and entry into the workforce, accompanied by the surge of women into the workforce, has been fundamentally served by the private vehicle.

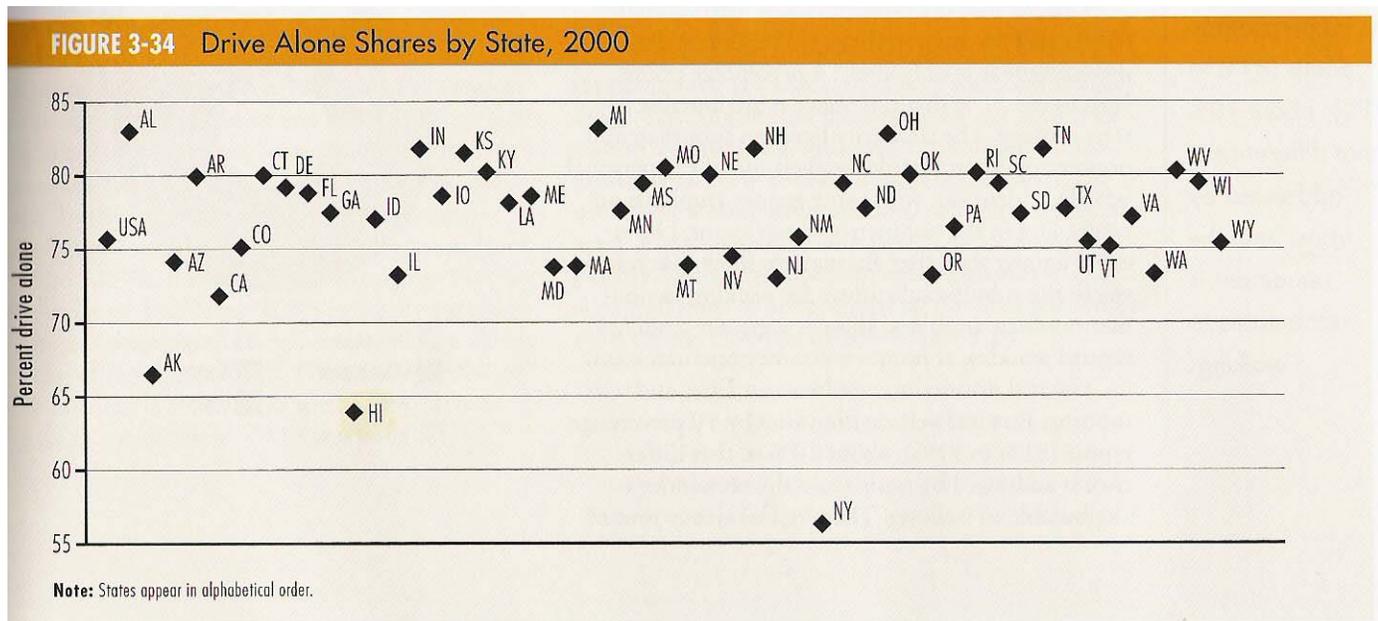
Transit: Of the 13 states that posted gains [in ridership], only Nevada gained more than 1 percentage point. Driving alone remains the lowest in travel time of the major modes. Commuter rail is the longest. Average transit travel times remain roughly double that of driving alone.

Only under very special circumstances is transit travel time competitive with travel time by auto. Honolulu’s Alternatives Analysis report shows that trips by rail between Aiea and Manoa will be of longer duration than the same trips by auto, in 2030 (“Rail” travel times vs. “No Build” auto travel times in the AA report, Table 3-11.) In an increasingly multi-tasking society, this time savings and the inherent flexibility of private vehicles make them both invaluable as well as essential for daily living. Those who do not understand this either live in the past or are eager to recreate a socialist utopia: fixed, “canned sardines,” government-controlled travel versus flexible, independent, autonomous travel. All developed countries went through a phase of poverty that necessitated mass transit (from horse-drawn trams to double-decker commuter trains.) Those times are in the past for Hawaii and the U.S.

Transit is more prevalent in densely populated areas, such as in downtowns and along the well-served transit corridors of the 12 mega-metropolitan areas with population over 5 million. ... Overall, almost 73% of national transit usage occurred in areas over 5 million in 2000. With the recent additions of Miami, Atlanta, and Houston, transit’s share would decline.

Transit includes all forms of public transportation. The point is clear that transit is less able to serve populations in smaller and horizontally developed urban areas. West of Salt Lake, Honolulu is largely suburbia with large rural patches. Even bus service is marginally efficient in these conditions. Here’s how Hawaii did in terms of means used for trips:

*Driving alone: States below 70% are New York, Hawaii and Alaska
 Carpooling: All states Except Hawaii (19%) are between 9% and 15% share.*



It is clear that we have the second lowest drive-alone rate in the country and the highest carpooling rate (Figure 3-34). To succeed, Oahu's future infrastructure choices must understand why these travel choices occur and how to foster them.

CONGESTION

Many of the congestion problems we face are a product of vehicle breakdowns, construction and repair activities on the roadway, weather, and poor signal timing, all of which have ameliorative solutions that do not involve building new facilities.

I have repeatedly cited poor traffic signal timing, incompetent crash clearance, and a lack of responsive traffic rerouting during special events, evacuations, disasters, etc., in interviews, letters to the editor, and other venues for over a decade. Honolulu has accomplished very little in this regard. (See ITS below.)

Congestion, while growing, is still a relatively small part of work travel. Many workers suggest that they enjoy their work travel.

Indeed, many people make the best out of their commute because it presents an opportunity to be alone, to enjoy music, to catch up to the news or listen to a book tape. Others enjoy some quality family time and passengers enjoy some more sleep. Stop-and-go traffic is certainly a major annoyance, but compared to rail transit, traffic congestion is usually more tolerable compared with multiple transfers, standing and waiting, lack of seats in peak commute times, smelly surroundings, and exposure to pick-pocketing, groping, and other crimes.

Will ITS [Intelligent Transportation Systems] technologies begin to assert an influence on travel times or other factors of commuting?

Recent studies have shown that many of the tools developed have a very positive influence at relatively low cost. Focusing on just four of the myriad technologies available (freeway entrance ramp metering, freeway incident management, traffic signal coordination, and arterial street access management), their research indicates that the present level of utilization of these technologies provided 336 million hours of delay reduction and \$5.6 billion in congestion savings in 2003 for the 85 areas that they monitor. In the future, demonstrating effective use of existing capacity will be seen as a critical predicate to justifying investment in any form of new capacity.

The public should look forward to the Federal Highway and Transit agencies requiring proof that traffic and transit operations are reasonably optimized before approving any capital intensive traffic or transit projects. Traffic operations in Honolulu are far from being at an optimum level.

INFRASTRUCTURE DECISION MAKING

Will the value of time in an affluent society be the major force guiding decisions?

Seeking to juggle multiple tasks and household roles has created tremendous pressures to get things done on the way to something else. During the energy crisis of the 1970s this was driven by the need to conserve fuel; today it is driven by the need to conserve time. This has probably been the central factor in the growth of the SOV versus carpooling and other alternatives – the speed and flexibility of operating alone in a vehicle has strong appeal in an environment that values the ability to multitask.

There is another part of this: as incomes rise, the value of time increases. That means that many people, if not most, will have increasing values of time that they apply to their transportation decisions. Hence, the same system next year will be less acceptable to users than it is today because their value of time increases even if the system does not change.

We are hoping for ever increasing affluence in Hawaii since, in terms of purchasing parity, average incomes are relatively low. Any and all increases in affluence will move commuters from mass to individual means of transportation, regardless of what social planners wish. The preceding text from *Communing in America III* also explains the skyrocketing acceptance for toll or variable pricing highways in the U.S. and worldwide.

Time is money. For most people, some of their trips are worth a lot, so a few dollars in tolls for free flow travel are well spent. Variable pricing HOT highways in California enjoy an unprecedented 70% approval rate. In contrast, all three recent Honolulu polls indicated that at most 45% support rail, and in some Council districts, the majority of citizens are unaware of the heavy new taxation that will pay for it. Also most people are not aware of the 24 mph average speed of rapid rail.

Will the role of the work trip decline, grow, or evolve?

The work trip is no longer the dominant factor in local metropolitan and rural travel that it was in past years. Yes, the work trip is now festooned with associated and integrated trips in what has become a well-known phenomenon called the "work trip chain" – dropping off things in the morning and picking them up on the way home – all of this tightly tied to the continuing pressures of time on the average worker. Trips to the gym and market, drop-offs/pickups, etc. – are as likely to start from work as home in many households. Thus, for the majority of adults who work, the workplace location is a major force in the stimulus for travel, the direction, location, and time of travel and – often – the mode of travel as well.

Currently people make a chain of trips and not the old fashioned commute to work. (Rail systems were designed to serve the home-work-home commute, which is now nearly extinct.) Therefore, in a chain of daily trips, if even one trip has to be made by car, then it is likely that the car will be chosen to do all of the day's trips. People are rational decision makers when it comes to running their daily routine. They may like to use rail transit, but their daily chores preclude them from doing so.

The proof for this is in the report's data. The table below shows that regular transit users use transit only 69.4% of the time; they use other modes the rest of the time. In contrast, drive-alone commuters drive alone 90% of the time and drive with another person 9.3% of the time. Carpoolers carpool 74.8% of the time and drive alone 22.2% of the time. Even

walkers and bikers are more consistent in their choice of transportation mode than are transit users.

Is the Usual Mode the Actual Mode?						
Usual Mode	On Travel Day (%)					
	Drove SOV	Drove with Others	Took Transit	Walked	Biked	Gave No Report/Other
Drive alone	90.0	9.3	0.2	0.3	0.1	0.2
Carpool	22.2	74.8	1.0	1.4	0.4	0.3
Take transit	7.8	9.7	69.4	10.1	0.5	2.5
Walk	8.1	9.2	2.6	79.5	0.2	0.4
Bike	6.7	8.4	1.7	6.1	77.1	0.0

Table 3-14 shows that on average, out of 1,000 commuters, fewer than 200 of them use subway or similar metro rail systems (2%). These percentages include New York City which skews statistics in favor of transit. Note that Honolulu already has very high carpooling and bus usage percentages, roughly twice those of mainland U.S. There is little room for a rail system to attract commuters. At best, it will siphon passengers from Oahu's successful *TheBus*.

Honolulu is a small metro area compared to the 50 largest metro areas in the nation, as shown in **Table 2-16** on page 7. About half of these metro areas do not have rail systems. It would seem logical that several much larger metro areas will have priority over Honolulu for developing expensive rail infrastructure.

Indeed some are developing light rail urban systems. Honolulu is planning a heavy rail suburban system.

For example, Phoenix, Arizona with a population that is four times larger than Honolulu's is developing a light rail system with a cost that is less than one quarter the cost of Honolulu's proposed 28 mile heavy rail system. Compared to fast growing metro area like Atlanta, Las Vegas and Phoenix, Honolulu's population growth was tiny – under 5% between 1990 and 2000

Proving to Oahu's residents and to the nation that Honolulu's proposed heavy rail system is necessary, cost-effective, and with a total cost that is in line with Honolulu's size will be a very tall order for Council Members and for Hawaii's Congressional Delegation.

In addition to high cost, Honolulu's proposed rail transit system does not fit its people's commuting patterns,¹ transportation needs,² chosen lifestyle³ and the state's plans for alternative energy sources.⁴ At the same time a reversible high occupancy/toll (HOT) expressway fits well. It is a proven solution for congestion relief, a reward for carpoolers, a great stimulator for bus usage, a tool for multi-work and activity multitasking residents and visitors, and it supports a market for locally produced alternative fuels.

¹ Hawaii has the highest proportion of carpoolers, and second lowest proportion of SOV commuters in the nation.

² Oahu residents have multiple jobs, or both school and job duties, and an active lifestyle.

³ Relative to population, there is a large variety of activities, most of them year-round scattered throughout Oahu.

⁴ Ethanol production from agricultural crops and expanded bio-diesel production to provide fuel for vehicles.

TABLE 3-14 Modal Usage by Age and Gender

Mode	Total	Percent	
		Male	Female
Drive alone	75.73	76.17	75.22
Carpool	12.18	12.21	12.15
2-person	9.43	9.31	9.57
3-person	1.68	1.68	1.69
4-person+	1.07	1.22	0.89
Transit	4.55	4.11	5.07
Bus	2.51	2.10	2.98
Streetcar	0.05	0.05	0.05
Subway	1.45	1.36	1.56
Railroad	0.51	0.57	0.45
Ferry	0.04	0.04	0.03
Taxi	0.16	0.14	0.18
Motorcycle	0.12	0.20	0.02
Bike	0.38	0.57	0.16
Walk	2.93	2.90	2.96
Work at home	3.27	2.88	3.72
Other	0.69	0.83	0.53
	100%		

TABLE 2-16 Metropolitan Areas with Population Over 1 Million

Population Rank	Metro Area	April 1, 1990 (Millions)	April 1, 2000 (Millions)	Change (Millions)	Change (%)	Population Rank	Metro Area	April 1, 1990 (Millions)	April 1, 2000 (Millions)	Change (Millions)	Change (%)
1	New York	19.55	21.20	1.65	8.44	26	Milwaukee	1.61	1.69	0.08	5.13
2	Los Angeles	14.53	16.37	1.84	12.68	27	Orlando	1.22	1.64	0.42	34.27
3	Chicago	8.24	9.16	0.92	11.14	28	Indianapolis	1.38	1.61	0.23	16.44
4	Washington, D.C.-Baltimore	6.73	7.61	0.88	13.10	29	San Antonio	1.32	1.59	0.27	20.20
5	San Francisco	6.25	7.04	0.79	12.57	30	Norfolk	1.44	1.57	0.13	8.75
6	Philadelphia	5.89	6.19	0.30	5.01	31	Las Vegas	0.85	1.56	0.71	83.33
7	Detroit	5.46	5.82	0.36	6.67	32	Columbus	1.35	1.54	0.19	14.47
8	Boston	5.19	5.46	0.27	5.19	33	Charlotte	1.16	1.50	0.34	29.02
9	Dallas-Fort Worth	4.04	5.22	1.18	29.34	34	New Orleans	1.29	1.34	0.05	4.08
10	Houston	3.73	4.67	0.94	25.15	35	Salt Lake City	1.07	1.33	0.26	24.41
11	Atlanta	2.96	4.11	1.15	38.93	36	Greensboro	1.05	1.25	0.20	19.16
12	Miami	3.19	3.88	0.68	21.42	37	Austin	0.85	1.25	0.40	47.69
13	Seattle	2.97	3.55	0.58	19.68	38	Nashville	0.99	1.23	0.25	25.00
14	Phoenix	2.24	3.25	1.01	45.27	39	Providence	1.13	1.19	0.05	4.78
15	Minneapolis-St. Paul	2.54	2.97	0.43	16.94	40	Raleigh	0.86	1.19	0.33	38.85
16	Cleveland	2.86	2.95	0.09	3.01	41	Hartford	1.16	1.18	0.03	2.21
17	San Diego	2.50	2.81	0.32	12.64	42	Buffalo	1.19	1.17	-0.02	-1.61
18	St. Louis	2.49	2.60	0.11	4.46	43	Memphis	1.01	1.14	0.13	12.74
19	Denver	1.98	2.58	0.60	30.37	44	West Palm Beach	0.86	1.13	0.27	31.00
20	Tampa	2.07	2.40	0.33	15.86	45	Jacksonville	0.91	1.10	0.19	21.37
21	Pittsburgh	2.39	2.36	-0.04	-1.51	46	Rochester	1.06	1.10	0.04	3.36
22	Portland	1.79	2.27	0.47	26.30	47	Grand Rapids	0.94	1.09	0.15	16.06
23	Cincinnati	1.82	1.98	0.16	8.89	48	Oklahoma City	0.96	1.08	0.12	12.99
24	Sacramento	1.48	1.80	0.32	21.32	49	Louisville	0.95	1.03	0.08	8.09
25	Kansas City	1.58	1.78	0.19	12.20	50	Richmond	0.87	1.00	0.13	15.12

* Full-length names for the above metropolitan areas can be found in Appendix 4.

The entire island will barely reach one million population by 2030. The central City of Honolulu (Red Hill to Hawaii Kai) is small in population and population growth.

Municipality	State	2000 Population	2000 Land Area in Square Miles	Population per Square Mile	1990 Population	1990 Land Area in Square Miles	Population per Square Mile	Change in Population
City & County of Honolulu	Hawaii	876,156	600.0	1,460	836,231	600.0	1,394	4.8%
Honolulu CDP	Hawaii	371,657	102.2	3,637	365,272	102.2	3,574	1.7%

Source: Calculated from US Census Bureau data. (demographia.com)