WA-RD 615.2

Travel Indicators and Trends in Washington State—Summary

by

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for

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16. ABSTRACT

This review of travel indicators in Washington State aims to understand similarities and differences between the state and the nation and to detect changes or special conditions that need to be considered in the future. The work is intended to support general transportation policies and future state-level transportation plans.

None of the travel indicators reviewed strongly suggests that travel conditions in the state stand out in the national context. Two factors are prime in their association with travel demand: household income and development density. Stagnant income explains why the demand for car travel has slowed over the recent past, yet future demand for car travel may increase if the economy improves. On the other hand, demand could remain stable if development density continues to increase.

Residential and population densities are positively associated with demand for modes other than single-occupancy vehicle (SOV) travel. Living in more compact residential areas and in alternative housing types, and renting versus owning a home, also relate to lower demand for SOV travel.

Even at the aggregate level of national data, the Puget Sound region's transportation context differs from that of rural or other urbanized regions in the state. State policies need to recognize at least three different markets for transportation, which are found in rural, small town, and metropolitan areas.

Overall, Washington State needs to stay tuned to national projections about the likely impacts on travel demand and transportation of general economic trends, the slow down in household formation, growth in car ownership among new immigrants, an aging population with changing driving patterns, and population growth in densely populated areas --where transportation systems investments and land-use policies can affect future travel behavior.

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Washington State
Travel Trends 1980-2001

Contents

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- PART I: Washington State 2001 Travel Indicators Related to
  - Demographic Factors
  - Land-Use Factors
- PART II: Trends 1980-2000 and Beyond

How Different Are We?

Travel Indicators

Washington State Versus the Nation

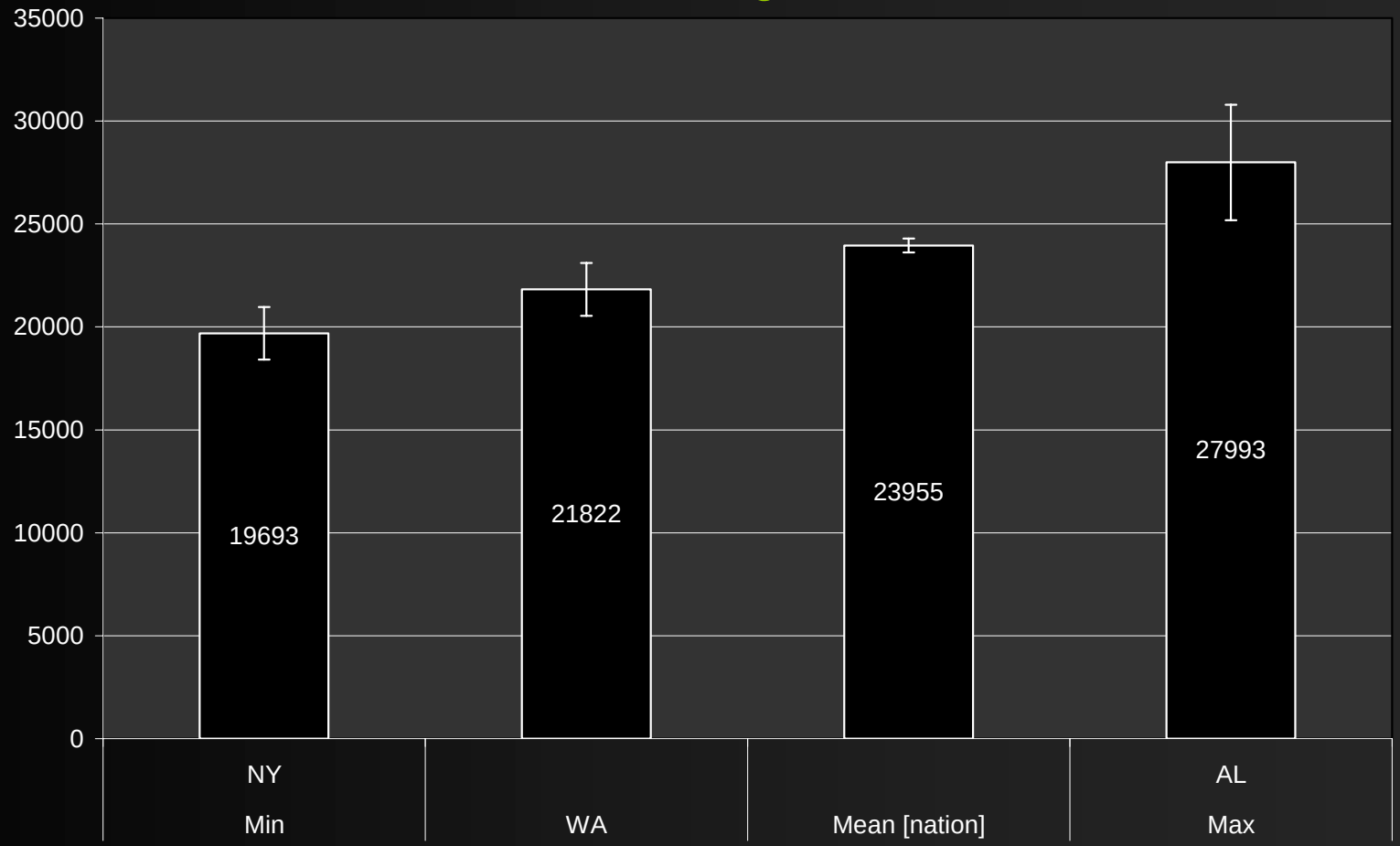
NHTS 2001

Household VMT	Below average
Household Vehicle Count	Above average
Person Distance to Work	Slightly below average
Person Public Transit Use	Average
Person Number of Walking trips	Slightly above average
Person Number of Biking trips	Below average

How Different Are We?

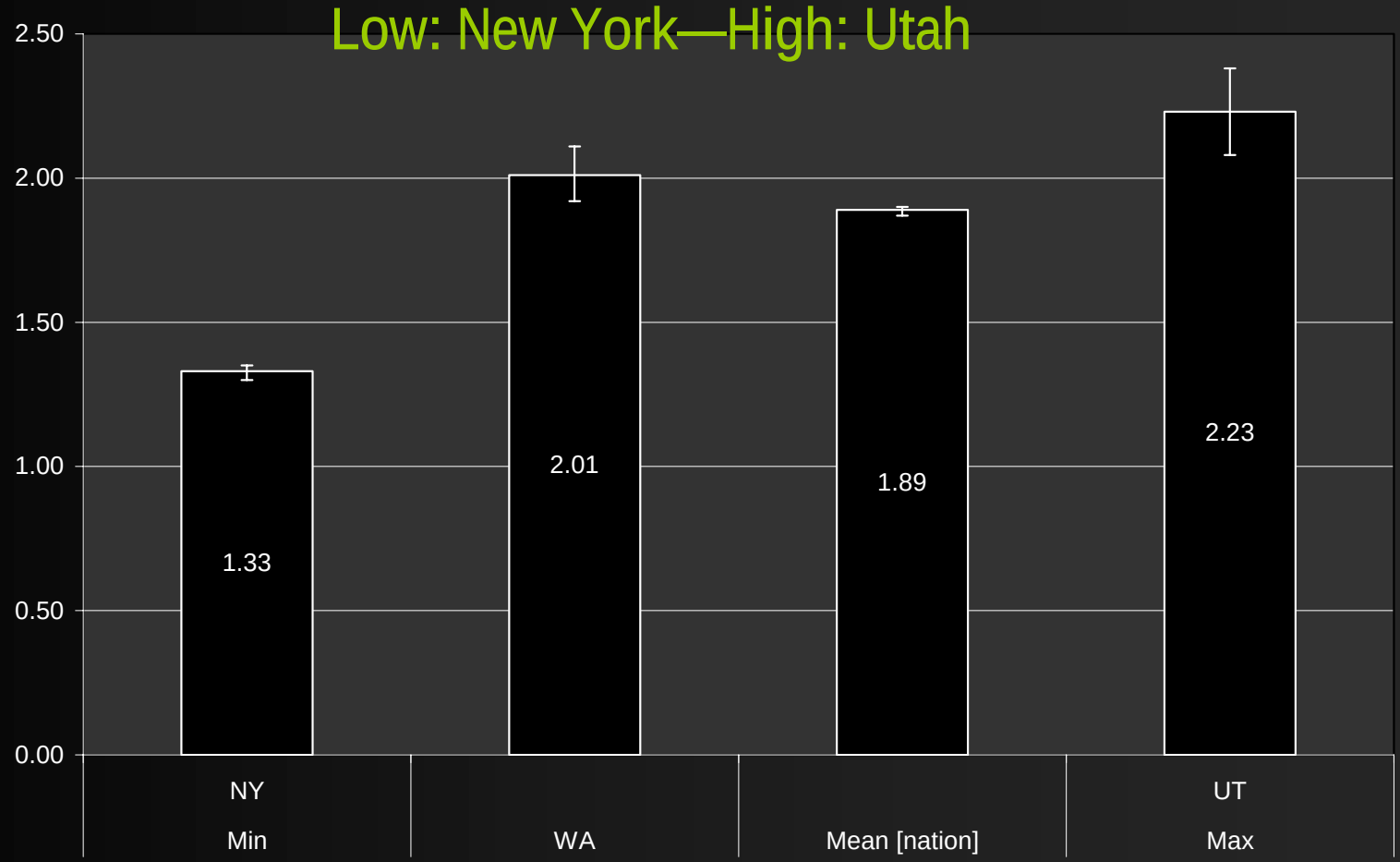
Average VMT per Household

Low: New York—High: Alabama



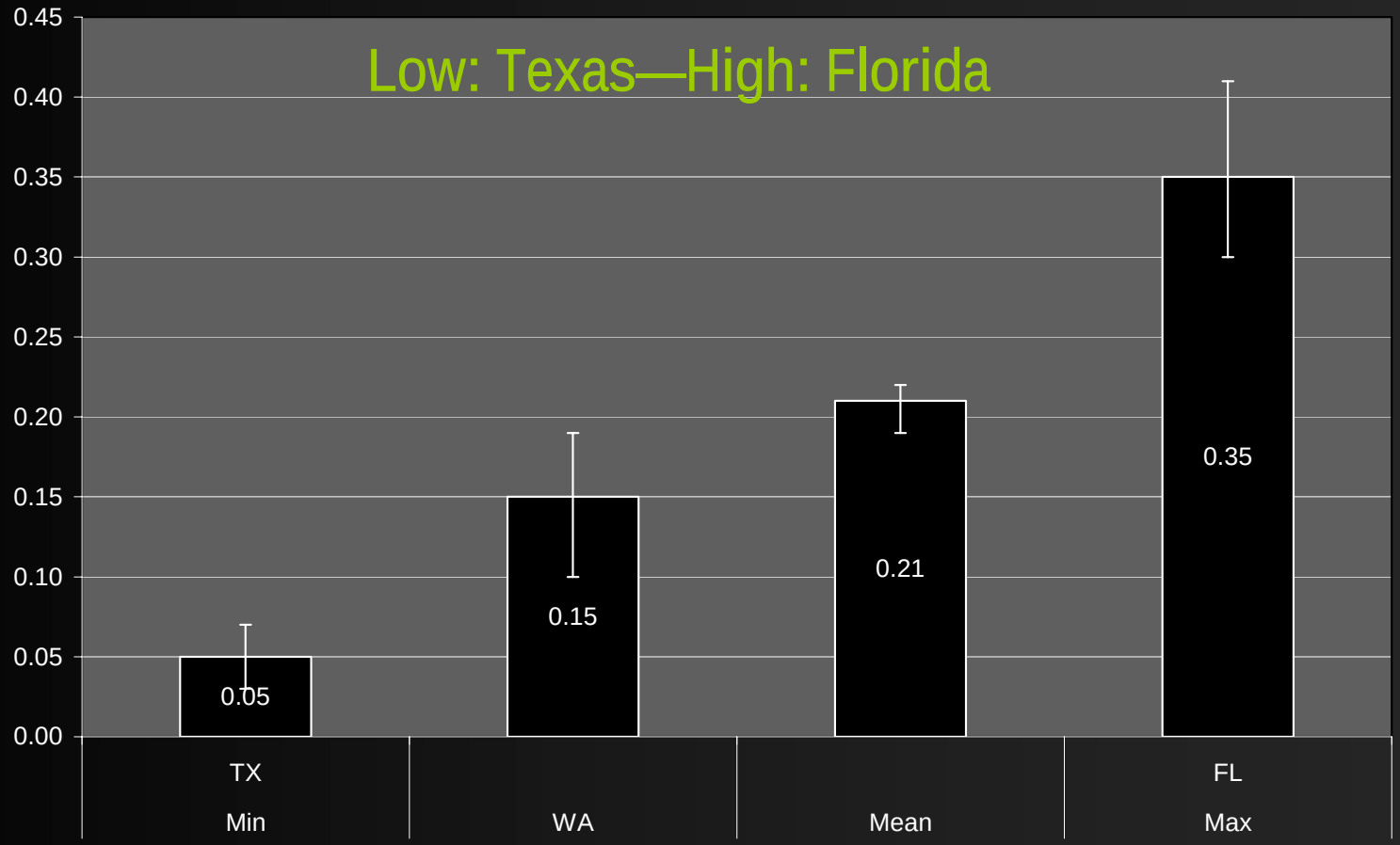
How Different Are We?

Average Vehicle Count per Household



How Different Are We?

Average Number of Bicycle Trips per Person per Week



PART I

Washington State 2001 Travel Indicators

From the National Household Transportation Survey (NHTS 2001)

- Demographic Factors
- Land-Use Factors

Washington State 2001 Travel Indicators

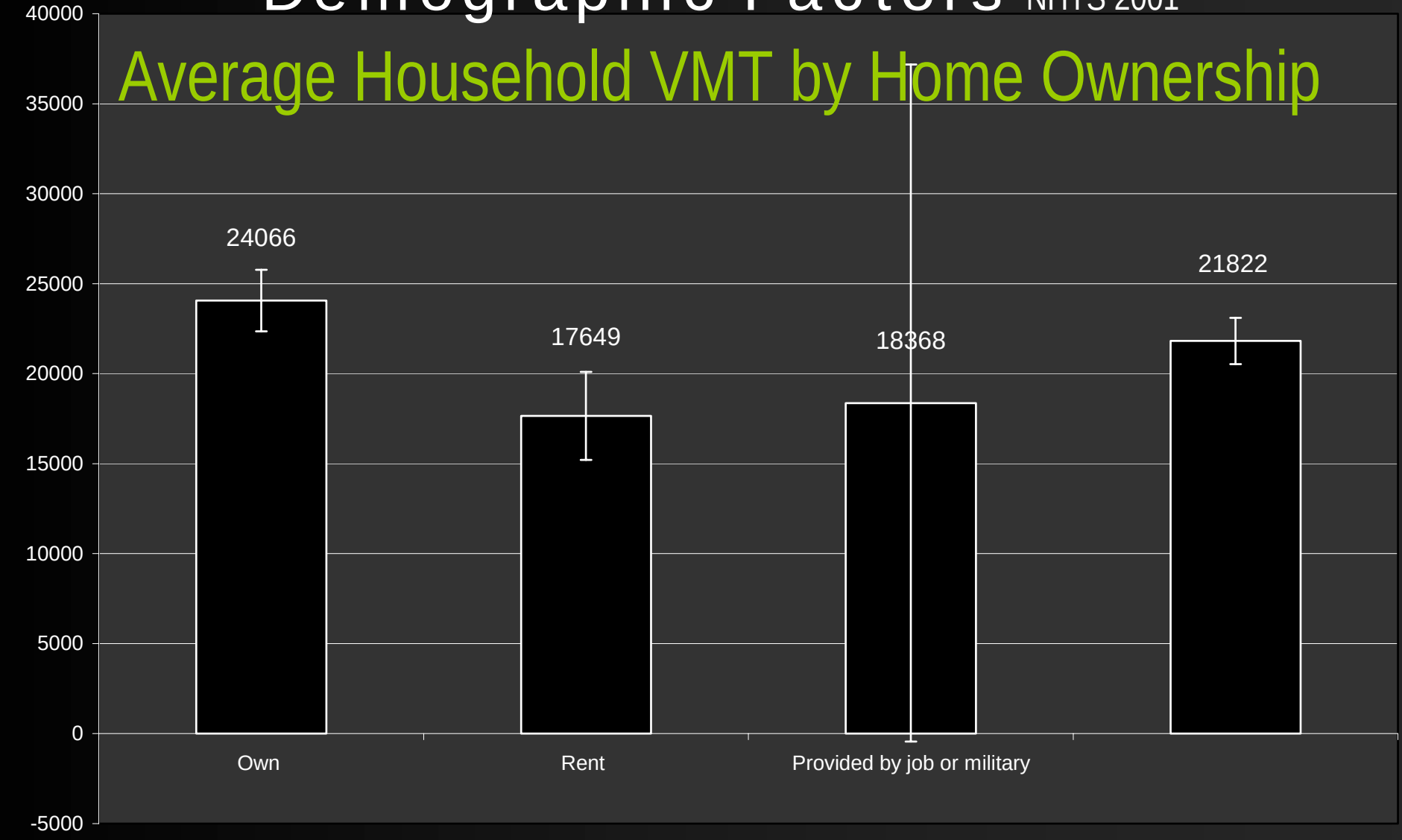
Demographic Factors NHTS 2001

Average Household VMT

HH Income	Home Ownership	Life Cycle	Race	Place of Birth
VMT steadily increases with higher household incomes and peaks at $75,000	VMT is higher for households that own their own home than for household that rent.	VMT generally increases with the number of adults and with the presence of older children. Only couples with small children have lower VMT than couples without children.	Standard errors are high, yet non-white households may have lower VMT than white	na

Washington State 2001 Travel Indicators

Demographic Factors NHTS 2001



Washington State 2001 Travel Indicators

Demographic Factors NHTS 2001

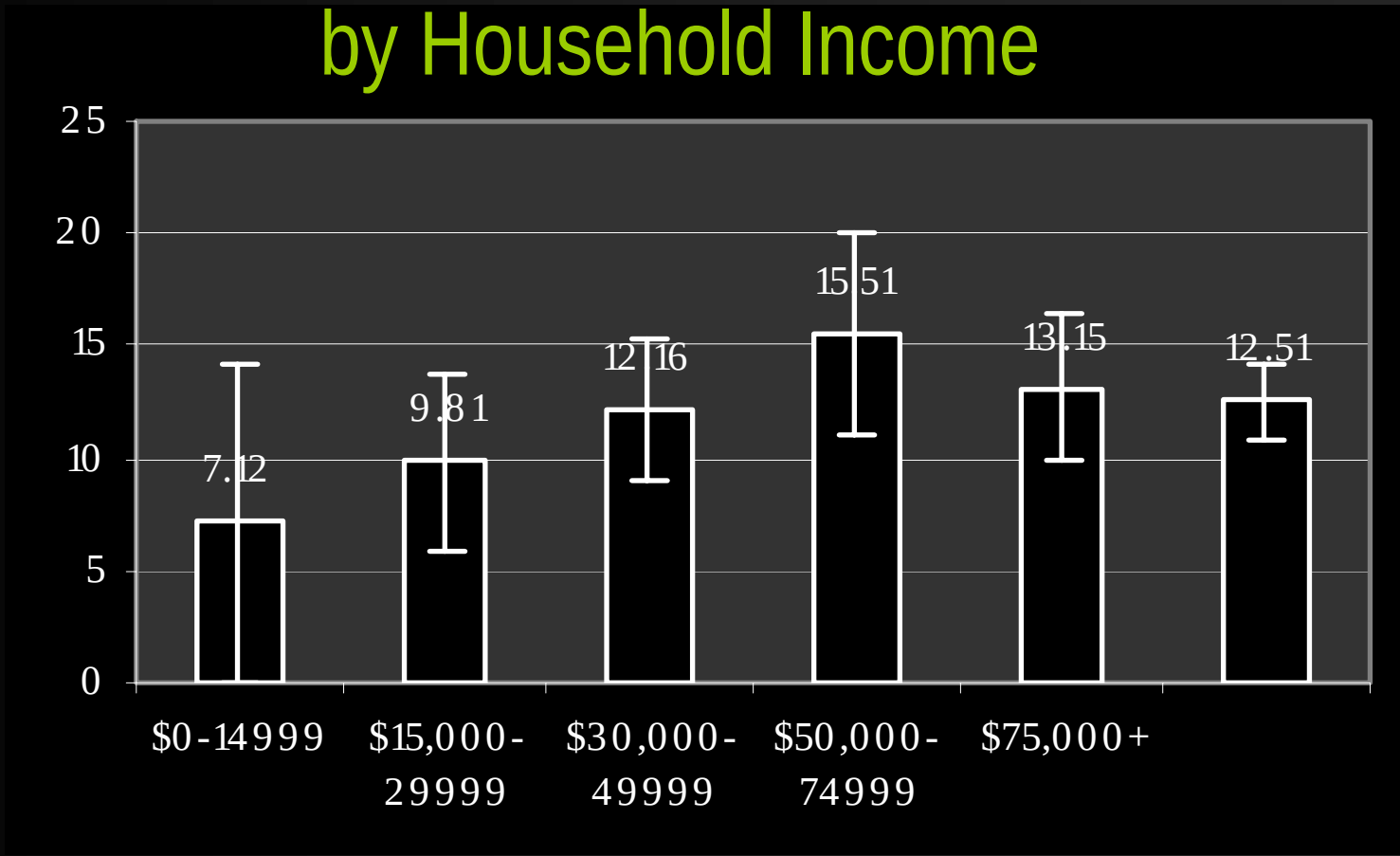
Average Household Vehicle Count

HH Income	Home Ownership	Life Cycle	Race	Place of Birth
The number of vehicles owned per household steadily increases with higher household income and peaks at $75,000	Households that own their own home own a greater number of vehicles than those that rent.	The number of vehicles owned per household increases with the number of adults and the number of children over the age of 5.	Non-white households own fewer vehicles er household than white households.	Foreign born household respondents may travel shorter distances to work. However, large standard errors make these differences statistically insignificant.

Washington State 2001 Travel Indicators

Demographic Factors NHTS 2001

Average Person Distance to Work by Household Income



Washington State 2001 Travel Indicators

Demographic Factors NHTS 2001

Average Number of Walk Trips per Person per Week

Income	Home Ownership	Life Cycle	Race	Place of Birth
No recognizable pattern	Those who own their homes appear to walk slightly less than those who rent	Standard errors are high, yet singles may walk more than couples except when their children are very young or between the ages of 16-21.	Standard errors are high, yet white households may make more walking trips than non-white households	Standard errors are high, yet US born households may make more walking trips than foreign born households

Washington State 2001 Travel Indicators

Demographic Factors NHTS 2001

Average Person Distance to Work

HH Income	Home Ownership	Life Cycle	Race	Place of Birth
Distance to work increases with income and peaks at $50,000 to $75,000 range	Persons in households that own their home own work at distances 30% higher than those who rent	Distance to work increases with the number of adults in the household	Standard errors are high	Distance to work is 30% shorter for those who are foreign born than those born in the US

Washington State 2001 Travel Indicators

Demographic Factors NHTS 2001

Average Number of Bicycle Trips per Person per Week

HH Income	Home Ownership	Life Cycle	Race	Place of Birth
Standard errors are high	Standard errors are high, but those who own their home may bike more	Standard errors are high yet it appears singles may walk more than couples.	No recognizable pattern	na

Washington State 2001 Travel Indicators

Land-Use Factors NHTS 2001

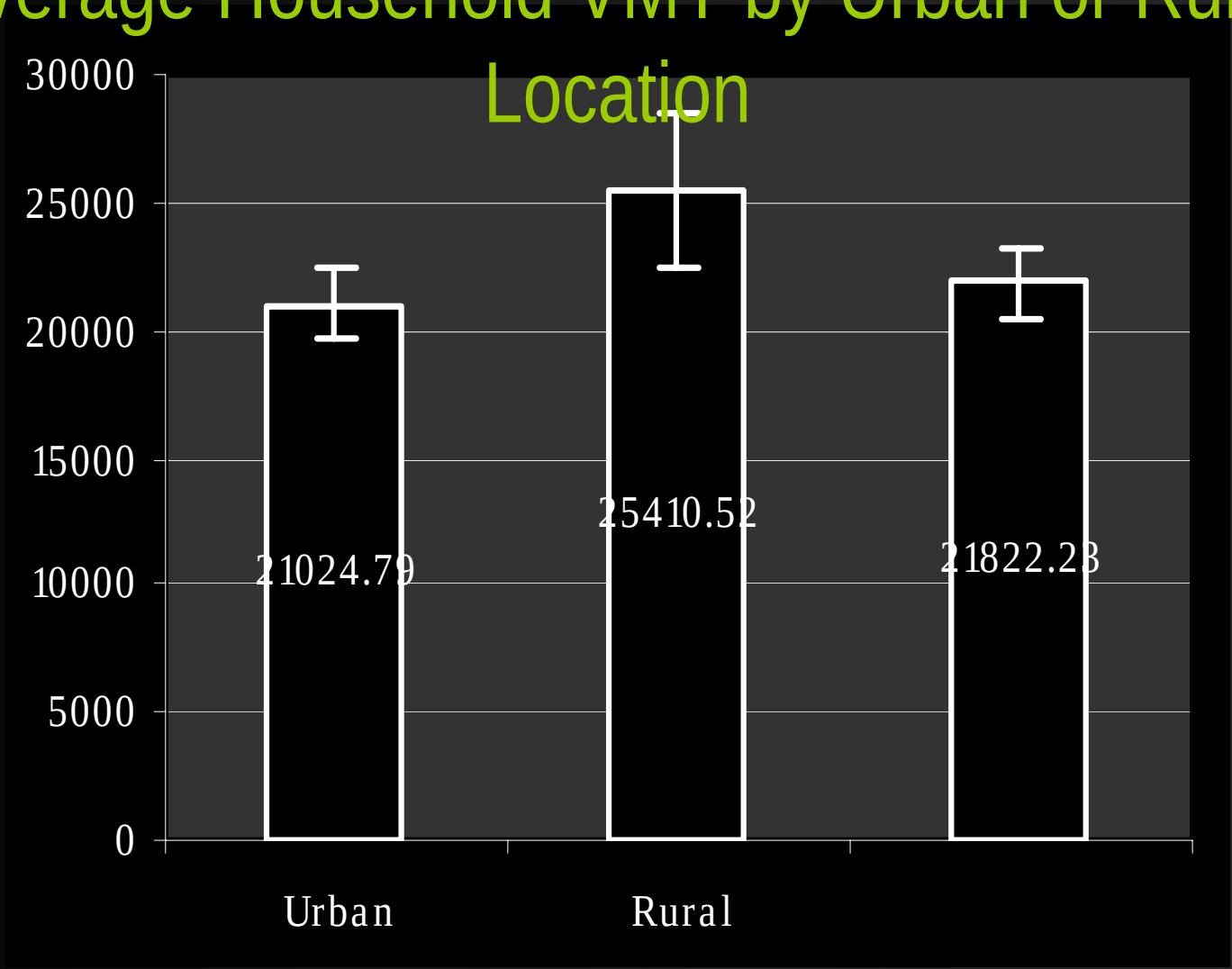
Average Household VMT

Housing Unit Density	Population Density	Home Type	Urban/ Rural	Size of MSA
VMT generally decreases with higher densities up to 5000 housing units per square mile	VMT generally decreases with higher densities up to 25,000 person per square mile	Households living in mobile and SF homes have highest VMT; those in town-homes or row houses have lower VMT, and those in apts and condos have the lowest VMT.	Households in rural areas have higher VMT than those in urban areas.	Not much difference between different sized MSAs, however VMT is greater for households living outside of MSAs

Washington State 2001 Travel Indicators

Land-Use Factors NHTS 2001

Average Household VMT by Urban or Rural Location



Washington State 2001 Travel Indicators

Land-Use Factors NHTS 2001

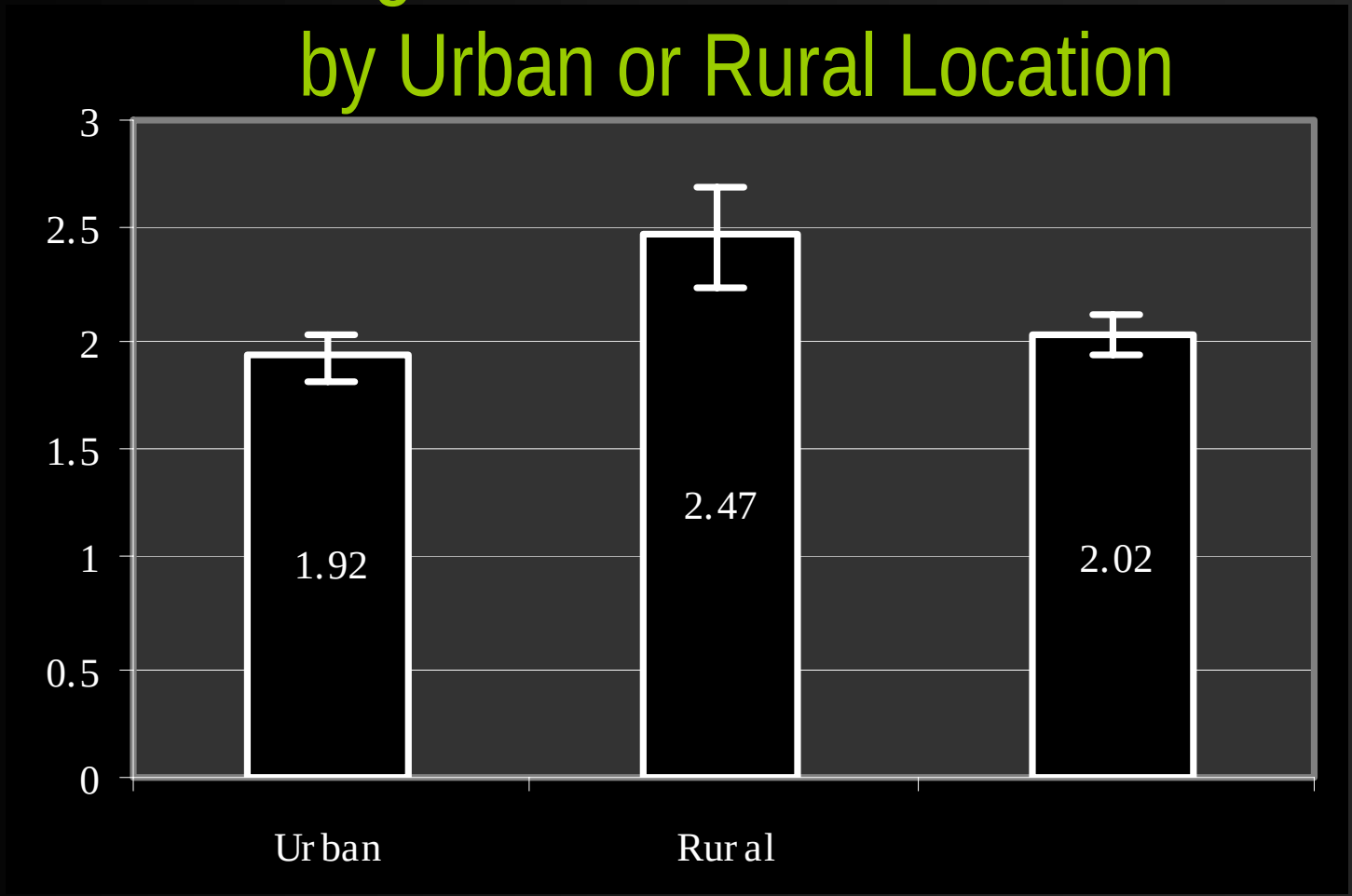
Average Household Vehicle Count

Housing Unit Density	Population Density	Home Type	Urban/ Rural	Size of MSA
The number of vehicles owned decreases with higher densities.	The number of vehicles owned gradually decreases with higher densities.	Households living in SF and mobile homes own a greater number of vehicles than those living in apts and condos. Standard errors are high, but households living in row houses and townhomes may own fewer vehicles	Households living in rural areas own a greater number of vehicles than those in urban areas.	Not much difference in vehicle ownership between households living in different sized MSAs, nor between households living inside or outside of an MSA.

Washington State 2001 Travel Indicators

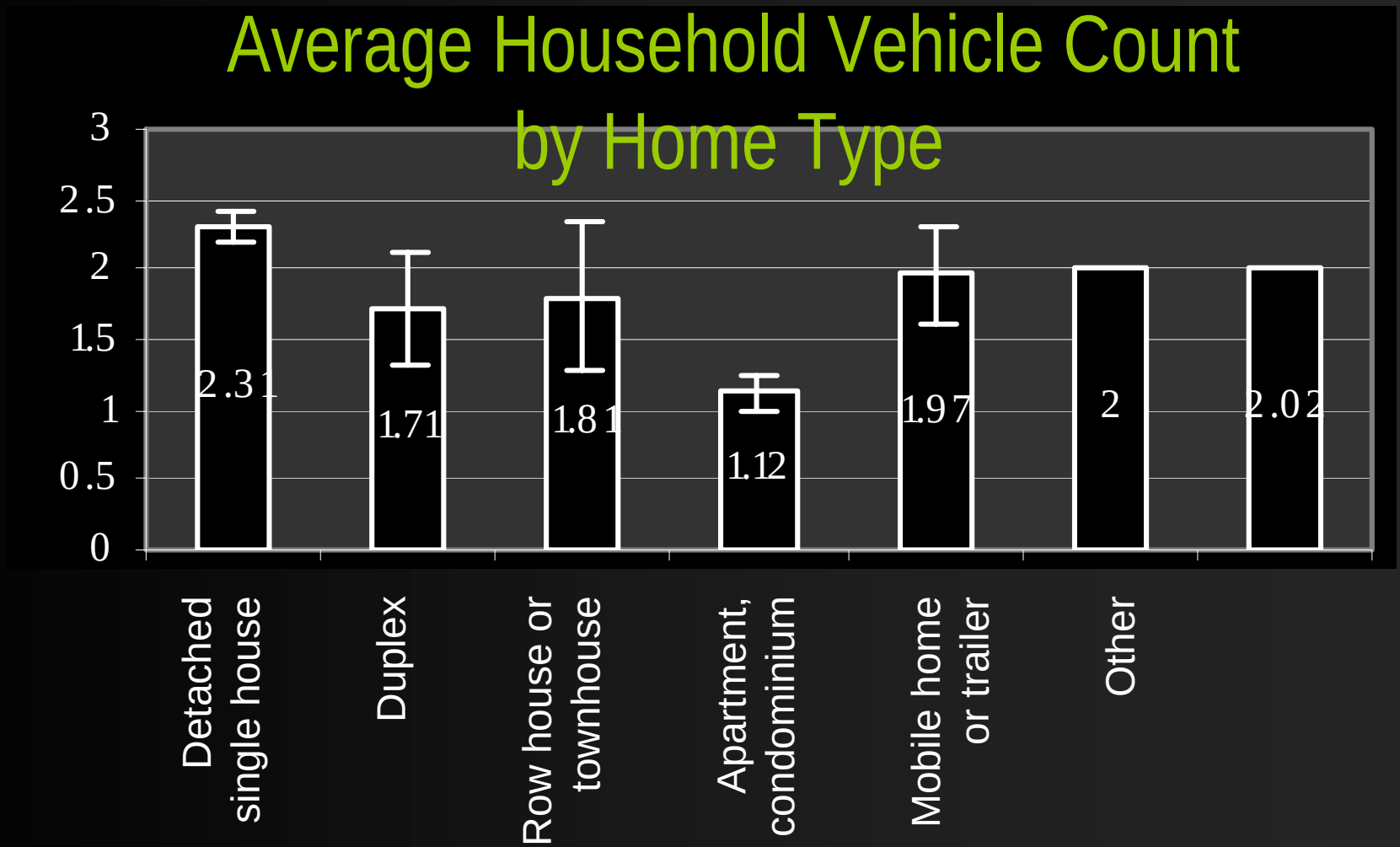
Land-Use Factors NHTS 2001

Average Household Vehicle Count by Urban or Rural Location



Washington State 2001 Travel Indicators

Land-Use Factors NHTS 2001



Washington State 2001 Travel Indicators

Land-Use Factors NHTS 2001

Average Person Distance to Work

Housing Unit Density	Population Density	Home Type	Urban/ Rural	Size of MSA
Standard errors are high, but on average, households living at higher densities may travel shorter distances to work	Standard errors are high, but distance to work indicates interesting patterns. For instance, it remains almost constant at the lowest densities, increases at densities with 500 to 1000 people per sq. mile, and drops at densities greater than 1000 people per sq. mile. This same pattern occurs with distances increasing slightly at 10,000-25,000 people per sq. mile and then dropping considerably again at 25,000 people per sq. mile.	Standard errors are large, but households living in rowhouses and townhomes may have the shortest distances to work and households living in mobile homes the longest distance to work.	na	Standards errors for the different sized MSAs are too large to draw any conclusion

Washington State 2001 Travel Indicators

Land-Use Factors NHTS 2001

Average Number of Walk Trips per Person per Week

Housing Unit Density	Population Density	Home Type	Urban/ Rural	Size of MSA
Standard errors are high, but the number of walking trips taken by people living in low density areas appears to be higher than those living in higher density areas until densities become very high, greater than 5000 housing units per sq. mile.	Standard errors are high, but, but the number of walking trips taken by people living in low density areas appears to be higher than those living in high density areas until densities become very high, greater than 10,000 people per sq. mile.	Large standard errors prevent conclusions to be drawn, however, a greater number of walking trips may be made by households living in rowhouses, townhouses and apartments than by households living in single-family and mobile homes.	na	No recognizable pattern

Washington State 2001 Travel Indicators

Land-Use Factors NHTS 2001

Average Number of Bicycle Trips per Person per Week

Standard errors are too large to draw conclusions

PART II

Washington State

Trends 1980-2000 and Beyond

From the Neighborhood Change Database (NCDB) 1970-2000

Washington State Trends 1980-2000
Travel Time to Work

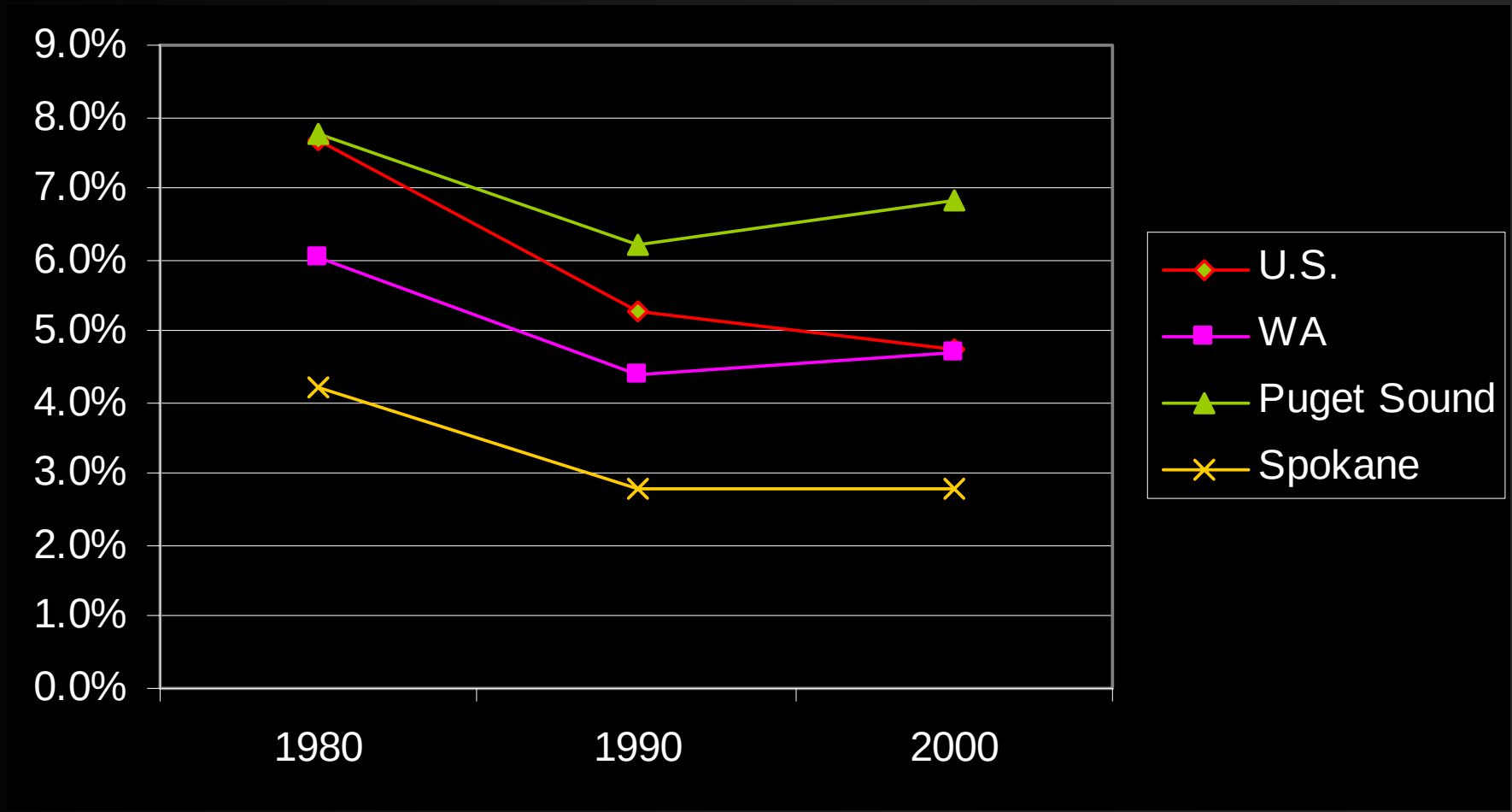
- Commute trip is getting longer
- Average commute trip in the Puget Sound has increased by 3.6 minutes from 1990 to 2000 (higher than 3.1-minute national average)
- The proportion of workers commuting “more than 45 minutes” has increased over time in all study areas.
- The proportion of workers working at home has increased over time in all study areas.

Washington State Trends 1980-2000
Public Transportation in Travel to Work

- Nationwide, proportion of commute to work by public transportation has decreased over the two decades
- In Puget Sound, proportion of workers using public transportation is higher than the national average, while Spokane and statewide averages are lower.
- In Washington State, proportion of commute trips by public transportation reached their lowest point in 1990 but slightly increased by 2000.
- Increases in transit use 1990 –2000 in Puget Sound bring Washington State's average to the same level as the national average, marking an increase in the use of transit in the state while the nation experienced a decrease.

Washington State Trends 1980-2000

Percentage of Commuters Using Public Transportation



Conclusions

Washington State

The Future

Washington State — The Future
Car Ownership Versus VMT

- Washington State has car ownership rates that are higher than the nation's average (2.01 vs. 1.89 per household), but this does NOT translate into VMTs that are higher than the national average (21,800 vs. 24,000 miles per household per year)

Washington State — The Future
The State Versus the Nation

- Washington travel indicators are not very different from those of the nation as a whole
- There are no “red” flags in travel and demographic trends that are specific to the state

Washington State —The Future

The State Versus the Nation

A State Agenda

- Stay tuned to national socio-economic projections
- Monitor factors affecting travel demand:
  - Income and wealth
  - New influx of immigrants
  - Changing distribution of young and old in population
- Monitor and influence land-use patterns as they affect travel demand
  - Growth will take place in metropolitan areas
  - Recognize that rural, small towns, and large metropolitan areas have different transportation needs

Washington State — The Future
Income and Density

- The consistently strong relationship of income and development density with travel (VMT and car ownership) may explain the leveling of demand for car travel in the early part of the 21st century, as reported by Todd Litman
- Future demand for travel will likely increase if the economy improves, but it could stay level if development density continues to increase.

Washington State — The Future

Income and Development Density

Keeping Ahead of Demand for Travel

- Monitor increases in income and wealth to identify future growth in travel demand
- Work with growth management laws and programs to keep track of metropolitan growth and land development patterns.

Washington State — The Future

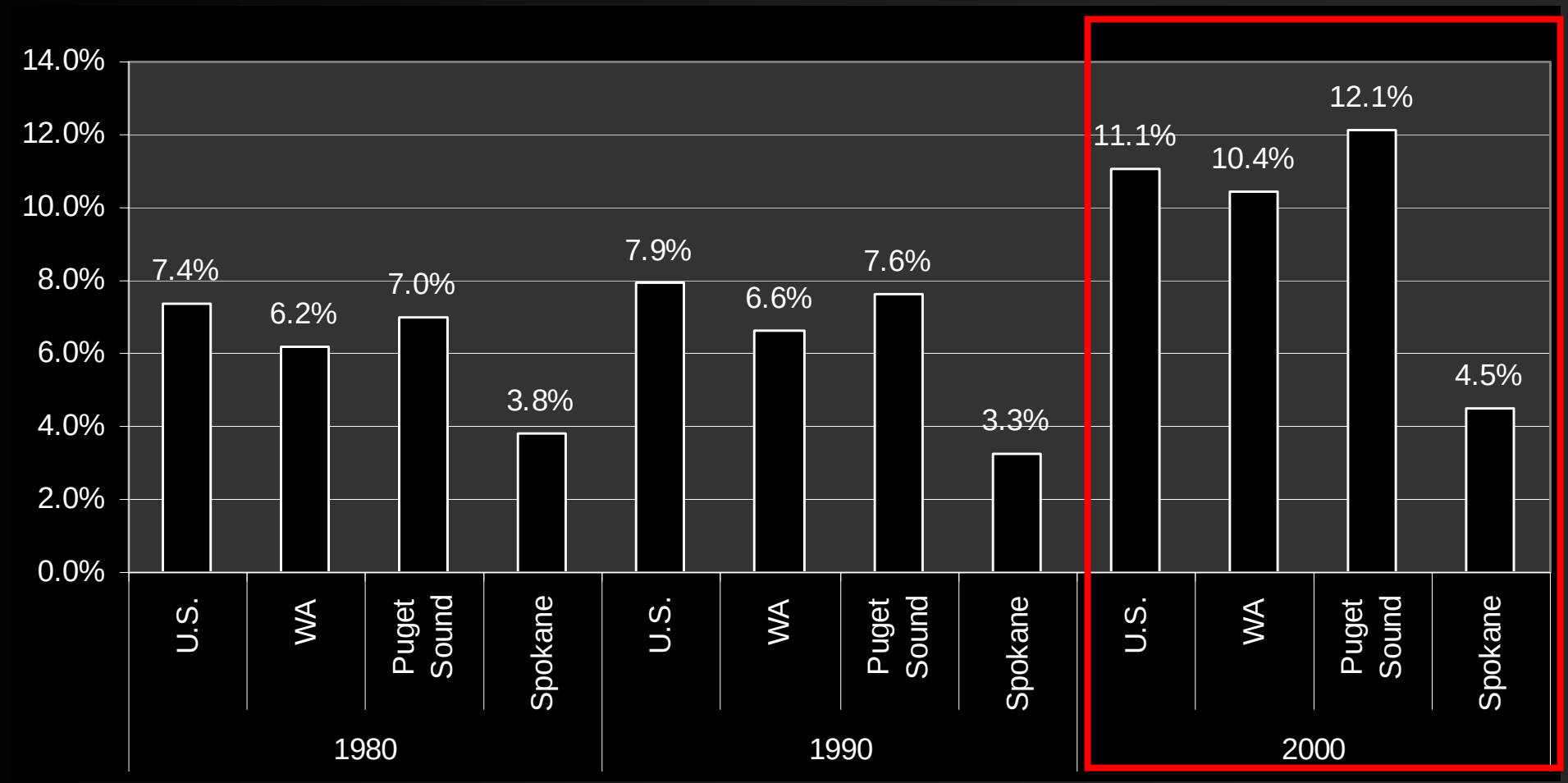
New Influx of Immigrants

From Pisarski 2002

- Nationwide, immigrants gain access to automobile ownership more rapidly than in the past
- Increases in the number of immigrants may increase demand for automobile travel faster than anticipated

Washington State — The Future

Foreign-Born Population



Washington State — The Future

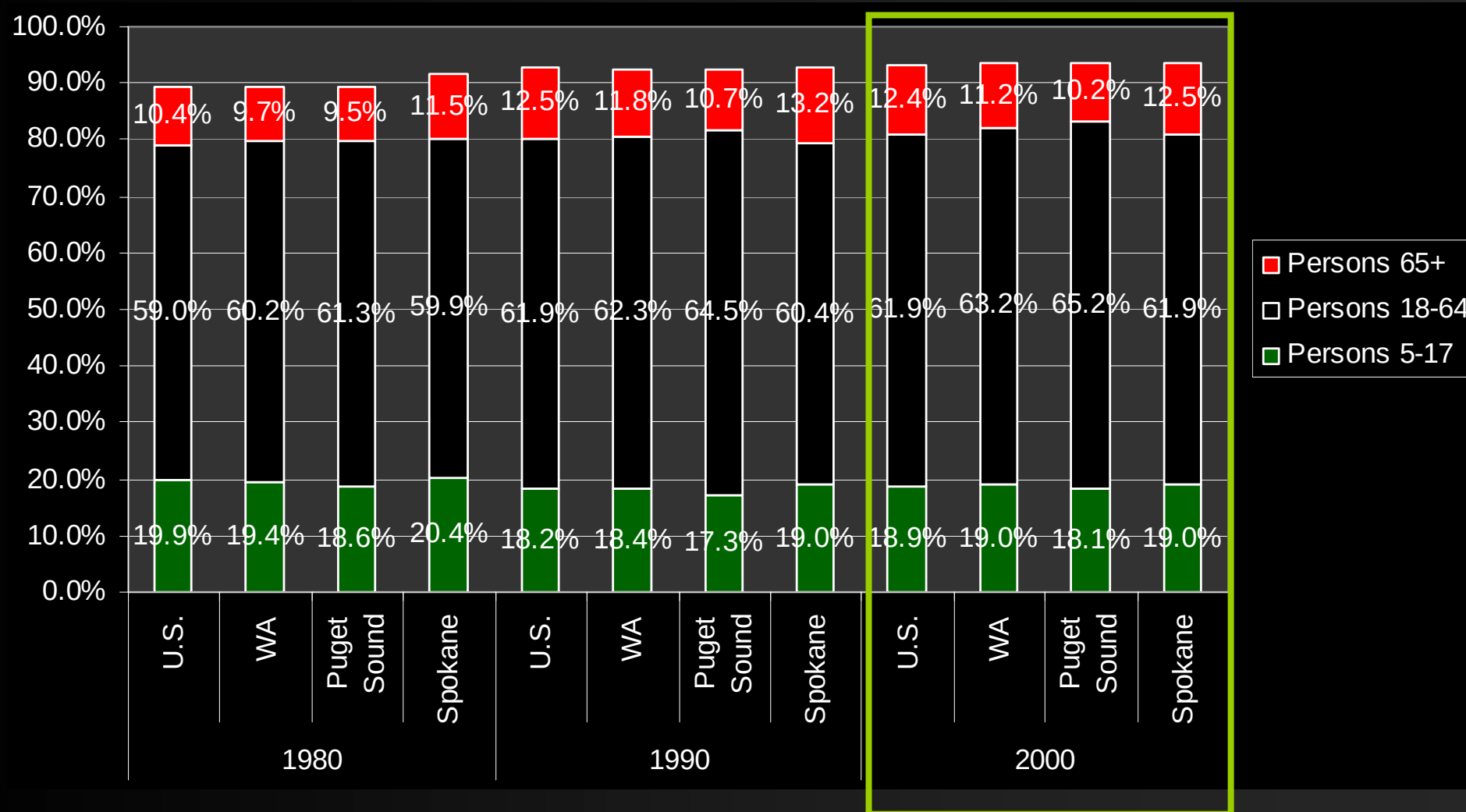
An Aging Population

From Litman, VTPI 2005

- Older adults (>64 years) tend to drive less than their younger counterparts
- Demand for automobile travel may decrease or stop increasing as the population ages

Washington State — The Future

Population Distribution by Age



Washington State — The Future
Location-Specific Demand for Travel
One Size Does NOT Fit All

- Travel indicators differ by location
- Future policies need to separately address rural/urban and Spokane/Puget Sound demand for travel

End