

DATA  
29, 2011

JUNE

COMMUTING IN THE 21<sup>ST</sup>  
CENTURY

Alan E. Pisarski

*The Starting Point*

*what is the goal?*

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***TODAY IN TRANSPORTATION  
WE ARE BLESSED WITH  
LOFTY GOALS TO STIR OUR  
SOULS!***

*The Starting Point*

*what is the goal?*

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***TODAY IN TRANSPORTATION  
WE ARE BLESSED WITH  
LOFTY GOALS TO STIR OUR  
SOULS!  
MAKING THINGS GET WORSE ----  
SLOWER!***

Alan E. Pisarski

# THE STARTING POINT



## WHAT IS THE GOAL?

- **My goal for transportation is to reduce the effects of distance as an inhibiting force in our society's ability to realize its economic and social aspirations**

**Does America have the mobility it needs to meet its social and economic goals today?**

**Almost!**

**There are tasks undone and immense policy challenges!**

# ***In the coming decades***

American society will be highly dependent on mobility for all economic and social interactions.

This is:

- ▣ Negative in that it generates high degrees of interdependence in the society;
- ▣ Positive because it generates most of the tremendous economic benefits of our society.
- ▣ This is the high wire act of modern societies

**-POSITIVE WINS-**

# WHERE WE'RE AT

SOME BASICS ABOUT CURRENT NATIONAL  
COMMUTING BEHAVIOR

# COMMUTING & TRANSPORTATION

## ALL TRANSPORT

- **COMMUTING**
- **OTHER LOCAL TRAVEL**
- **TOURISM**
- **SERVICE VEHICLES**
- **PUBLIC VEHICLES**
- **URBAN GOODS MOVEMENT**
- **THRU PASSENGER TRAVEL**
- **THRU FREIGHT TRAVEL**

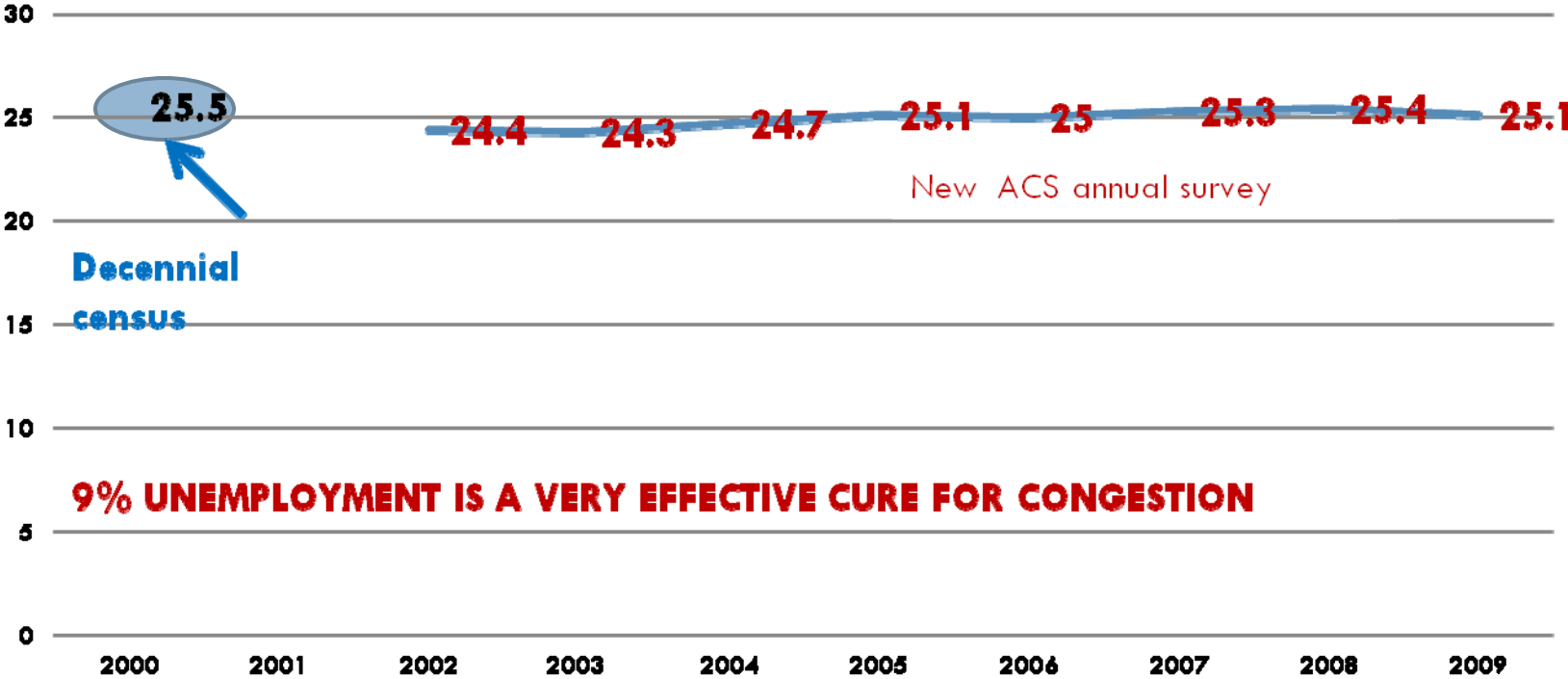
## COMMUTING'S ROLE

- **a small and declining share of travel**
- **But still an important recurring activity and key to peak hour congestion**
- **Home/work are anchors of many other activities**
- **The main source of the public's transportation frustrations**

# AVERAGE TRAVEL TIMES HAVEN'T BUDGED



**Average Travel Time - minutes  
- this decade**



**9% UNEMPLOYMENT IS A VERY EFFECTIVE CURE FOR CONGESTION**



# WHAT IS CONGESTION ?



**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!**

# MY MEASURES OF TRAVEL TIME

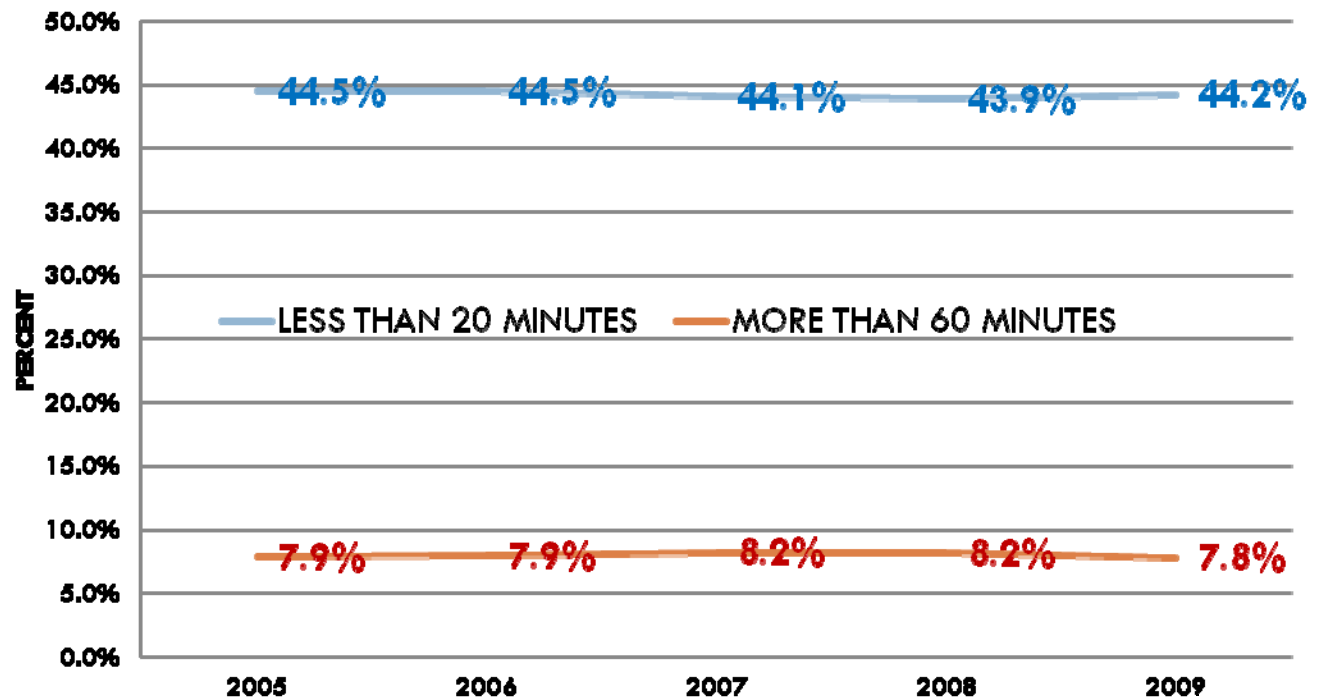
Commuters are happy when:

1/2 get to work in under 20 mins;  
(US 44%)

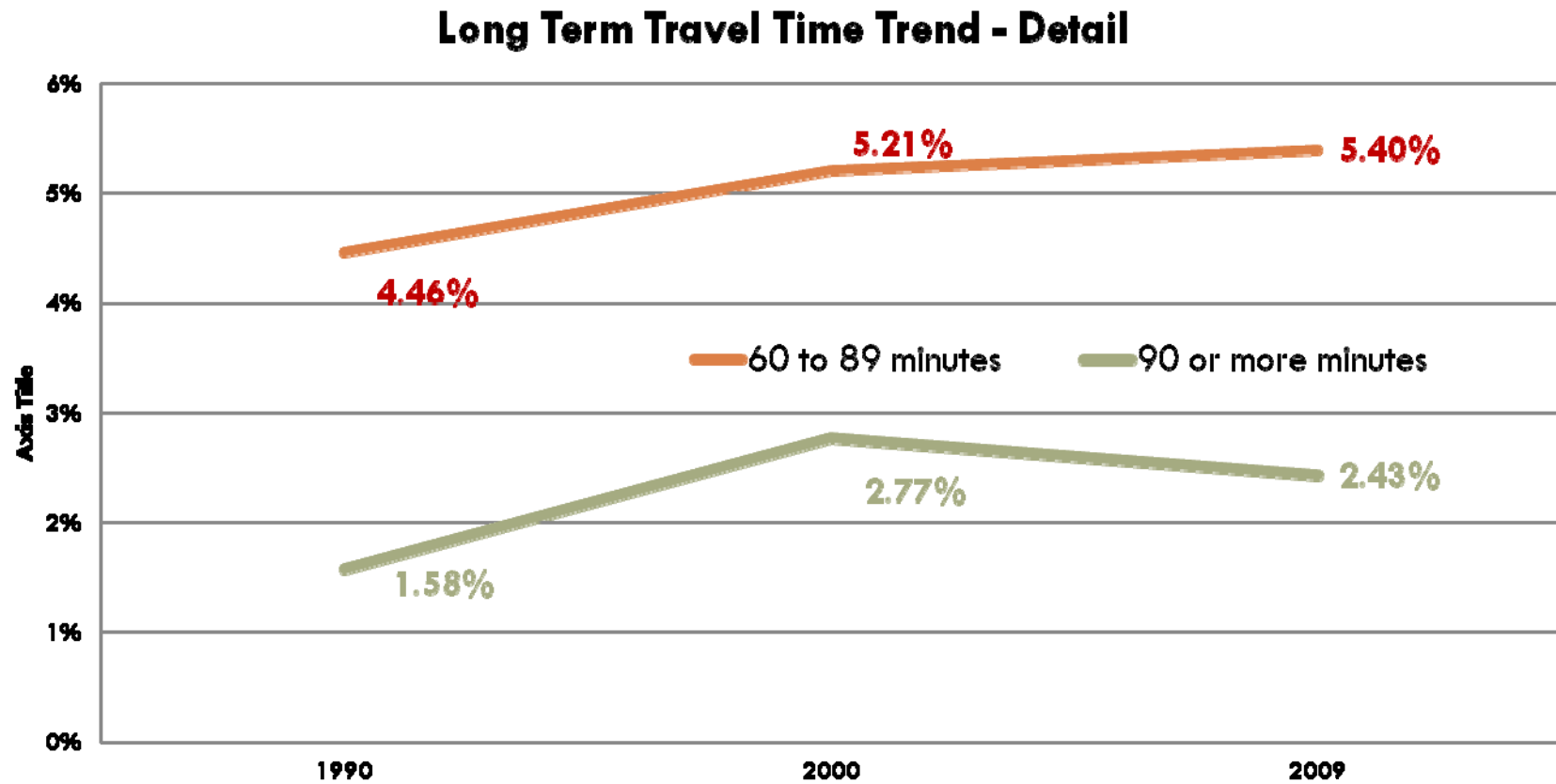
and, fewer than 10% are over 60 mins  
(US 7.8%)

Losing the battle

## UNDER 20 AND OVER 60 MINUTE TRAVEL TIME TREND



# WATCHING “EXTREME” COMMUTES RISE



# VALUE OF TIME VS VEHICLE COST

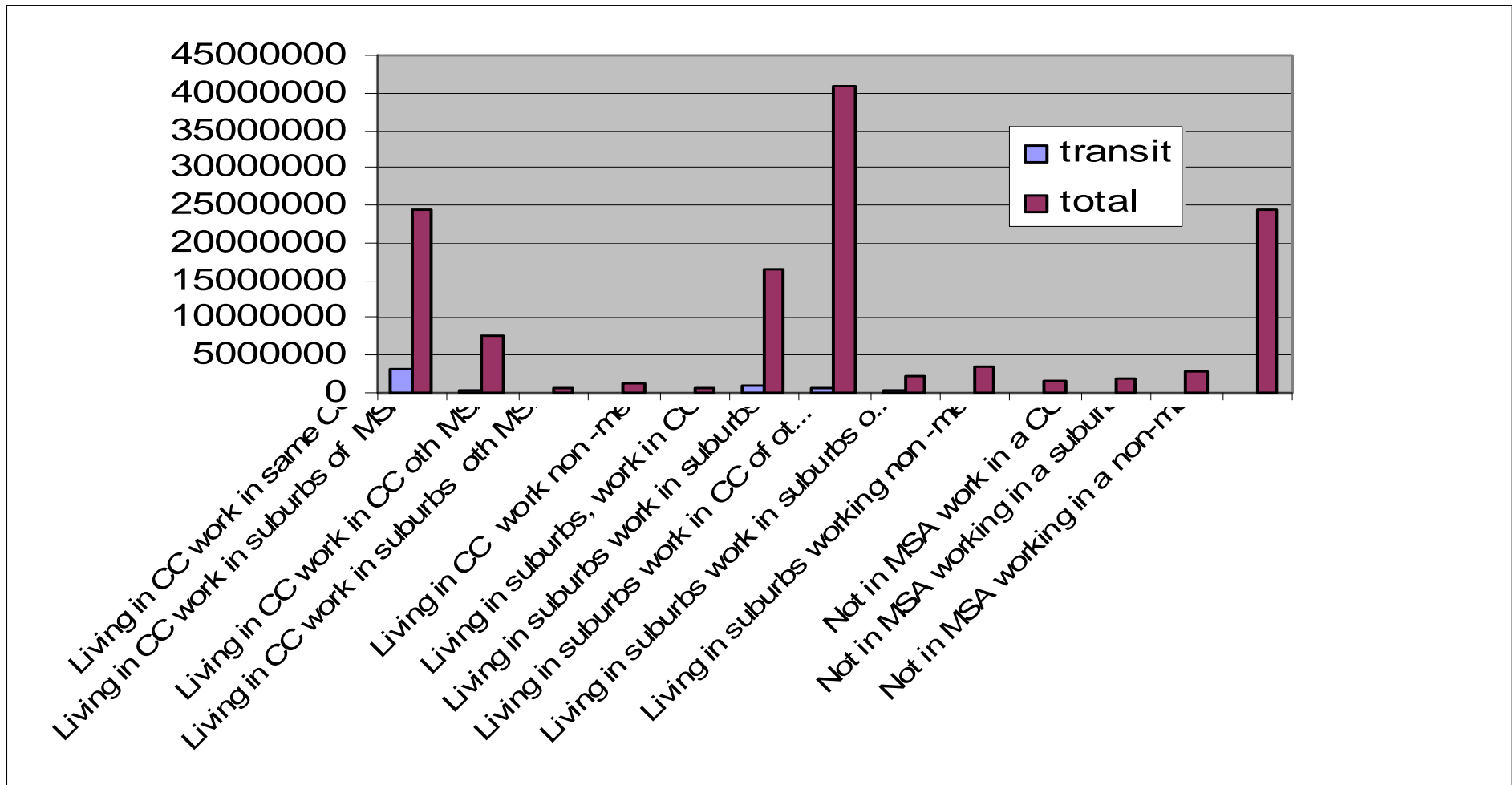


- ❑ IN EARLY INTERSTATE ERA TRAVEL OPERATING COST WAS MAIN DRIVER OF DECISIONS
- ❑ THE VALUE OF TIME WAS THE DRIVER OF BEHAVIOR IN THE 80'S AND 90'S
- ❑ THIS DECADE IT HAS BECOME MORE COST ORIENTED AGAIN
- ❑ VALUE OF TIME WILL BE ULTIMATE FACTOR AS SOCIETY PROSPERS AGAIN

# Mode Shares to Work are Stable

	<b>1990</b>	<b>2000</b>	<b>2009</b>
<b>WORKERS</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
<b>DRIVE ALONE</b>	<b>73%</b>	<b>76%</b>	<b>76%</b>
<b>CARPOOL</b>	<b>13%</b>	<b>11%</b>	<b>11%</b>
<b>TRANSIT</b>	<b>5%</b>	<b>5%</b>	<b>5%</b>
<b>TAXI</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>
<b>BICYCLE</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>
<b>WALKED</b>	<b>4%</b>	<b>3%</b>	<b>3%</b>
<b>OTHER</b>	<b>1%</b>	<b>1%</b>	<b>1%</b>
<b>WORKED AT HOME</b>	<b>3%</b>	<b>3%</b>	<b>4%</b>

# National commuting flows – 2000



# The Tools of Travel are Stable

## Licenses

- Saturation in all ages
- Women's gains
- Immigrants
- Minorities

## Vehicles

- Stability
- Aging fleet
- Workers = Drivers

**IN THIS DECADE:  
NO GROWTH IN VMT, CONGESTION, WORKERS, OR  
WORK TRAVEL TIMES**

# The Future Is More Stable Than The Past



- ◆ **LOW POPULATION GROWTH**
- ◆ **LOW HOUSEHOLD GROWTH**
- ◆ **LOW LABOR FORCE GROWTH**
- ◆ **SATURATION OF DRIVER'S LICENSES**
- ◆ **SATURATION OF CAR OWNERSHIP**
- ◆ **LOW DOMESTIC MIGRATION TRENDS**

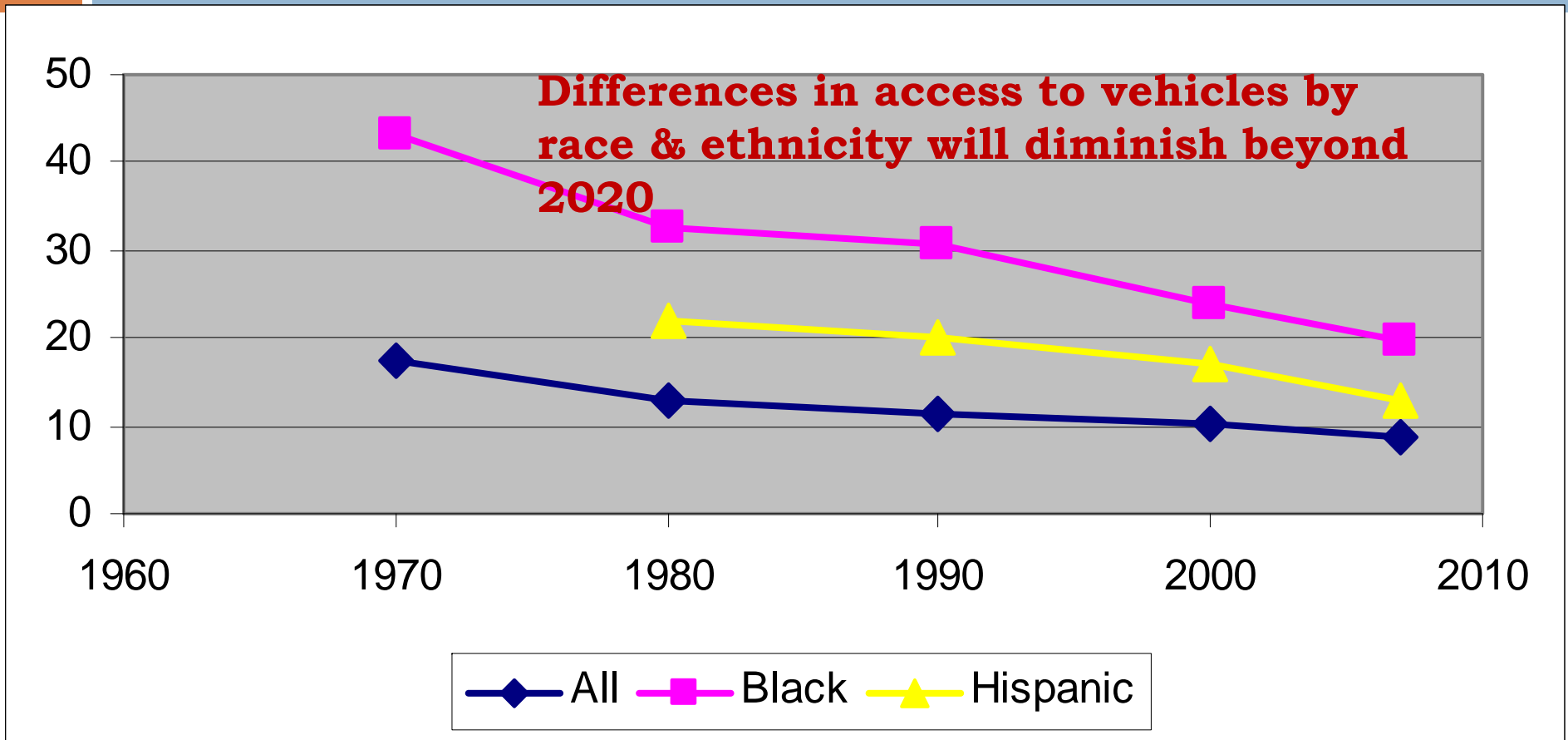


# Given all this stability

- Need a focus on current needs not impending growth
- A new context for planning: “Getting the Economy out of the mud!”
- The mobility issues we face are eminently solvable.

**Keep asking this question:  
“IS IT A NEW TREND OR JUST THE  
ECONOMY?”**

# African American Surge in Vehicle Ownership - % HH without vehicles



**CAN ANYONE SAY THIS IS A BAD THING?**

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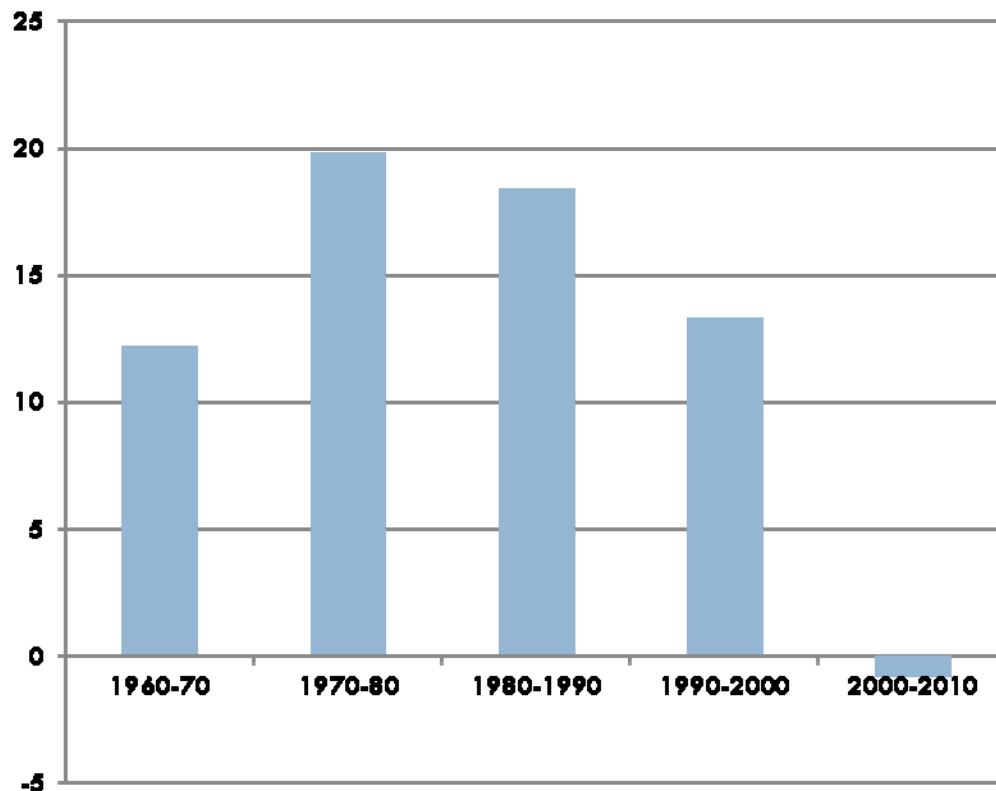


# WHERE WE'RE GOING

THE SEARCH FOR SKILLED WORKERS

# END OF THE BOOM

**WORKERS ADDED PER DECADE**



Source: Commuting in America III and BLS

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**1980-90**

- **18.5 Million**

**1990-2000**

- **13.3 Million**

**2000-2010**

- **NEGATIVE**

- **Our problem may be too few commuters not too many!**

# The Demographic Story

1. **The Commuting in America series has been the history of the working years of the baby boom generation**
2. **The Boomers are now moving off stage creating a new phase in American commuting.**
3. **The key question will be where will the workers come from?**
4. **Advent of the immigrant workforce will be just one of the challenging concerns**

# 3 Trends will define the future



1. **Replacing the Baby-boomers – where will our workforce come from?**

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2. **Expanding metro areas – the doughnut metro – with focus on the suburbs**

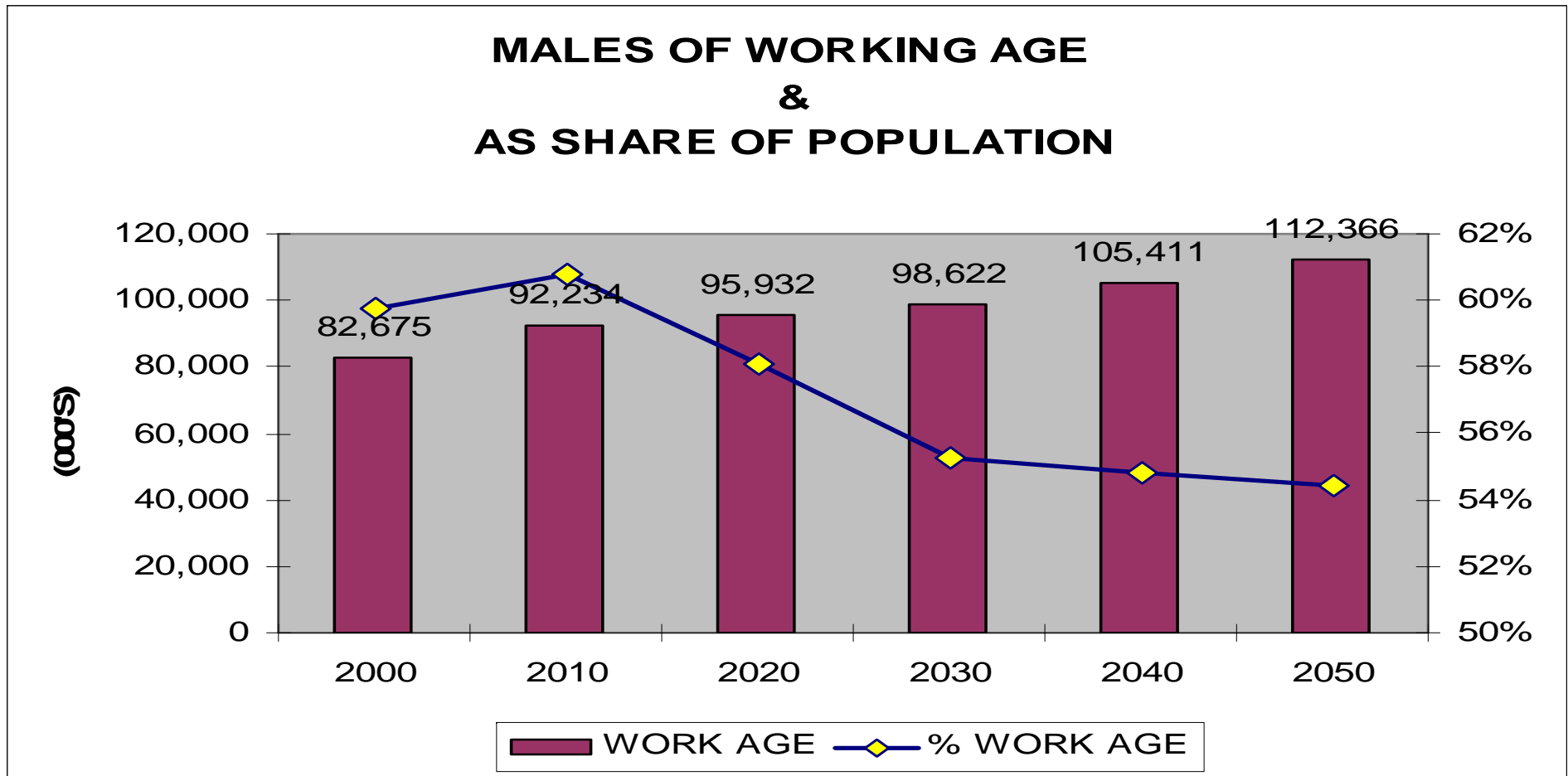
# 3 Trends will define the future



1. **Replacing the Baby-boomers – where will our workforce come from?**
2. **Expanding metro areas – the doughnut metro – with focus on the suburbs**
3. **An affluent time-focused society – \$50/hour and tripling of average value of goods moved (see my HR testimony 1/24/2007 T&I )**



# Where will the workers come from?



# Not Much Growth and in the wrong places to support work

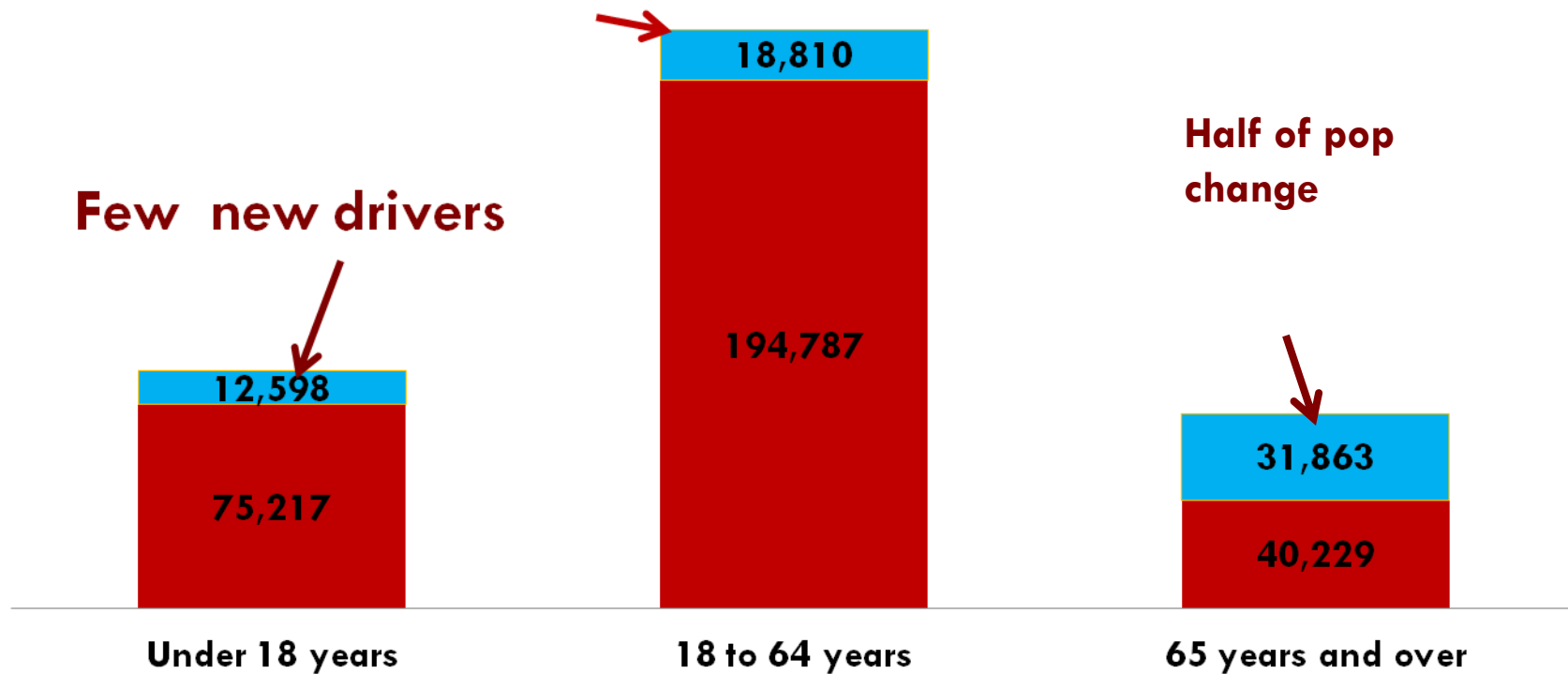
pop change ( in thousands)

■ 2010 ■ chg 2010-2030

Half annual rate

Few new drivers

Half of pop change



# Who and What Will Support The Economy?

- Keep older workers at work
- Even more women at work
- More immigrants
- More multi-tasking
- More variable work schedules
- More Productivity
- More Specialization
- More Division of Labor
- More Competitive in World Markets

**ENHANCED MOBILITY  
SUPPORTS  
ALL OF THESE**

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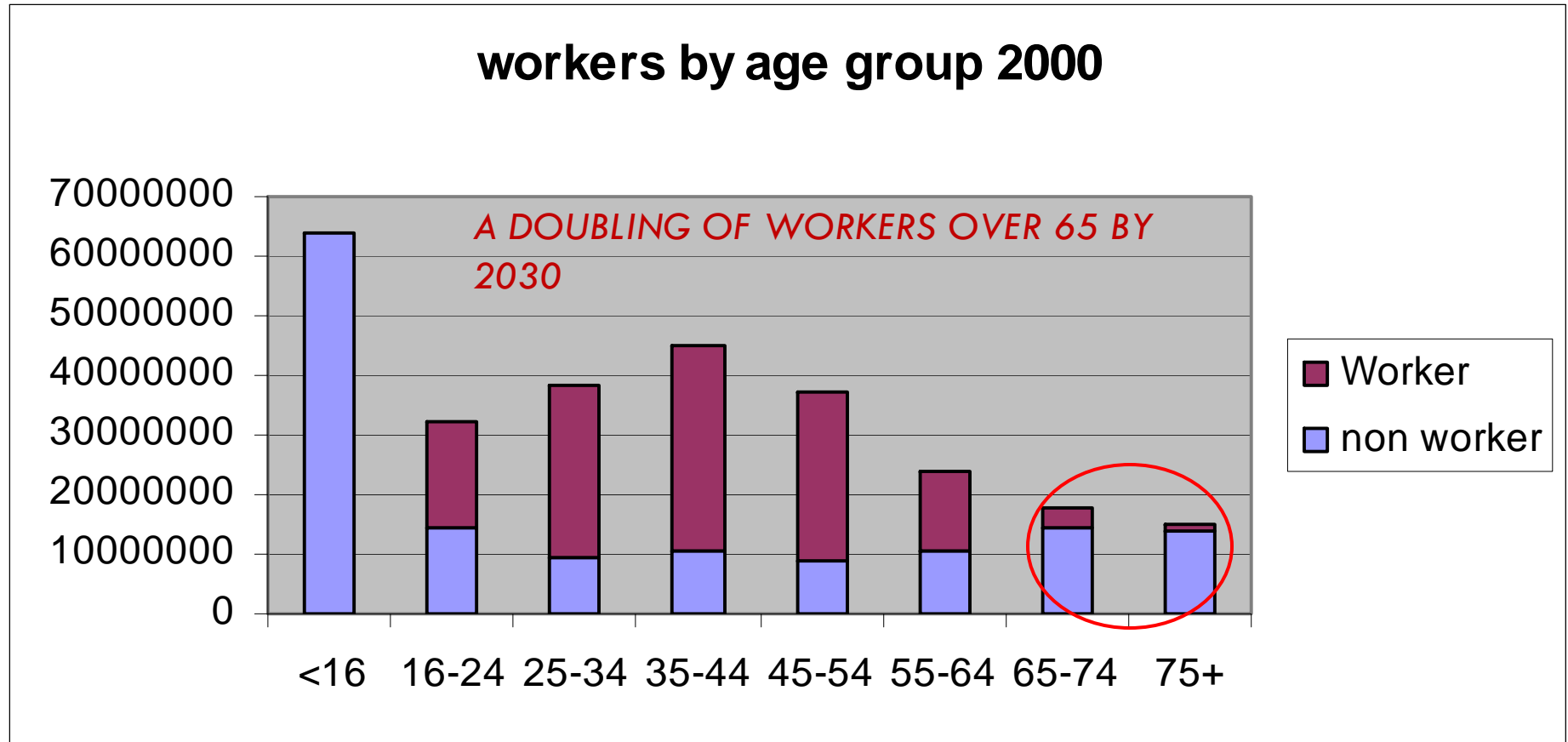
# Prosperity is ...



**“Prosperity is simply time saved,  
which is proportional to the  
division of labor.”**

Matt Ridley *The Rational Optimist*

# A New Role For Older Workers



# The shift has already begun

<u>OVER 65</u>	<u>1990</u>	<u>2000</u>	<u>2008</u>	<u>2020</u>	<u>2030</u>
<b>POPULATION</b> (millions)	31.2	35.0	38.8 (+24%)	54.8*	72.1*
<b>WORKERS</b> (millions)	3.5	4.25	5.66 (+62%)	8.2^	10.8^
<b>SHARE AT WORK</b>	11.2%	12.1%	14.5%	15%^	15%^

\*Census Projections

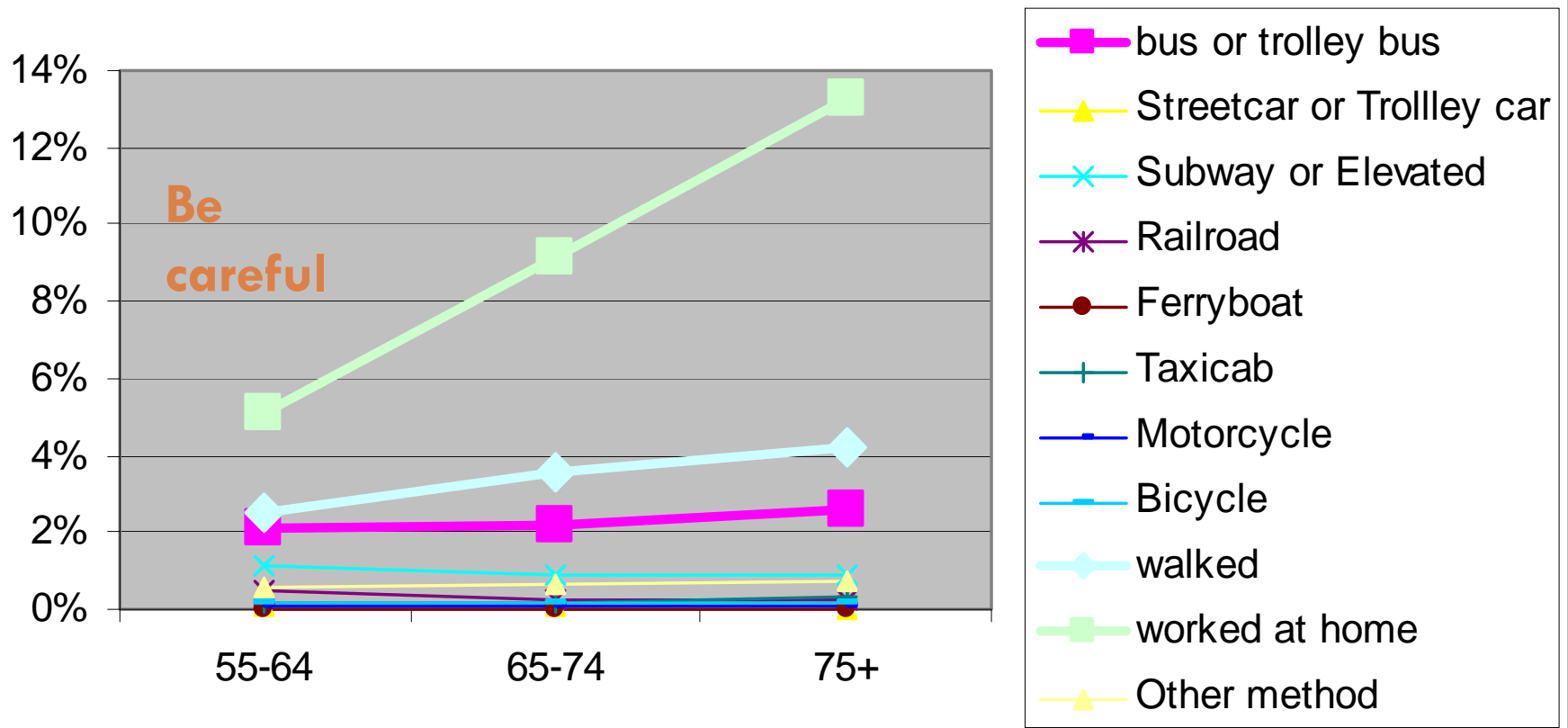
^ Authors Estimates

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# Over 55

## Aging out of the Boomers

Over 55 patterns in mode use of other modes



# MASSIVE SKILLS MISMATCHES

- **WSJ (Feb 2011):**
- **TOO MANY**
  - ▣ Farming/fishing 49 applicants per job offered
  - ▣ Construction 28 applicants per job offered
  - ▣ Building maintenance 16 per job offered
- **TOO FEW**
  - ▣ Life science has one applicant per job offered
  - ▣ Computer science .4 per job offered
  - ▣ Health care .3 per job offered



# IMMIGRANTS WILL HELP

- **BROOKINGS STUDY** (June 2011)
- Avg. education level of immigrants = US avg.
- High education (college) share > low (no HS)
- US ratio 1.06
- Wash Met Area ratio is 1.89 among highest in nation
- of 1.1 million immigrants in DC area, there are 375,000 high skill vs 200,000 low skill

# **The Future issue – Access to Workers**

## **NoVa area flunks many of these tests**

- **Broaden Market Opportunities**
  - ▣ **Access to Jobs/Workers**
  - ▣ **Access to suppliers**
  - ▣ **Access to markets/customers/clients/patients**
- **Improve**
  - ▣ **Center city access to suburban jobs**
  - ▣ **Rural access to suburban jobs**
  - ▣ **Older/Retirees access to old/new jobs**
- **Recognize more time-efficient long distance travel as central to region's health**
- **Support Employer Flexibility in time etc**
- **Stronger Private Sector roles utilizing technological strengths of the region**

# COMMUTERS LEAVING HOME COUNTY TO WORK – VIRGINIA LEADS THE NATION

## 1990

□ U.S. 23.9%

## 2000

□ U.S. 26.7%

□ Va. 52%

## 2009

□ U.S. 27.4%

□ Va. 52.1%

## WHY?

□ SPRAWL?

□ ACCESS?

□ OCCUPATIONS?

□ GOVERNMENT?

□ SKILLS MIX?

□ CHOICE?

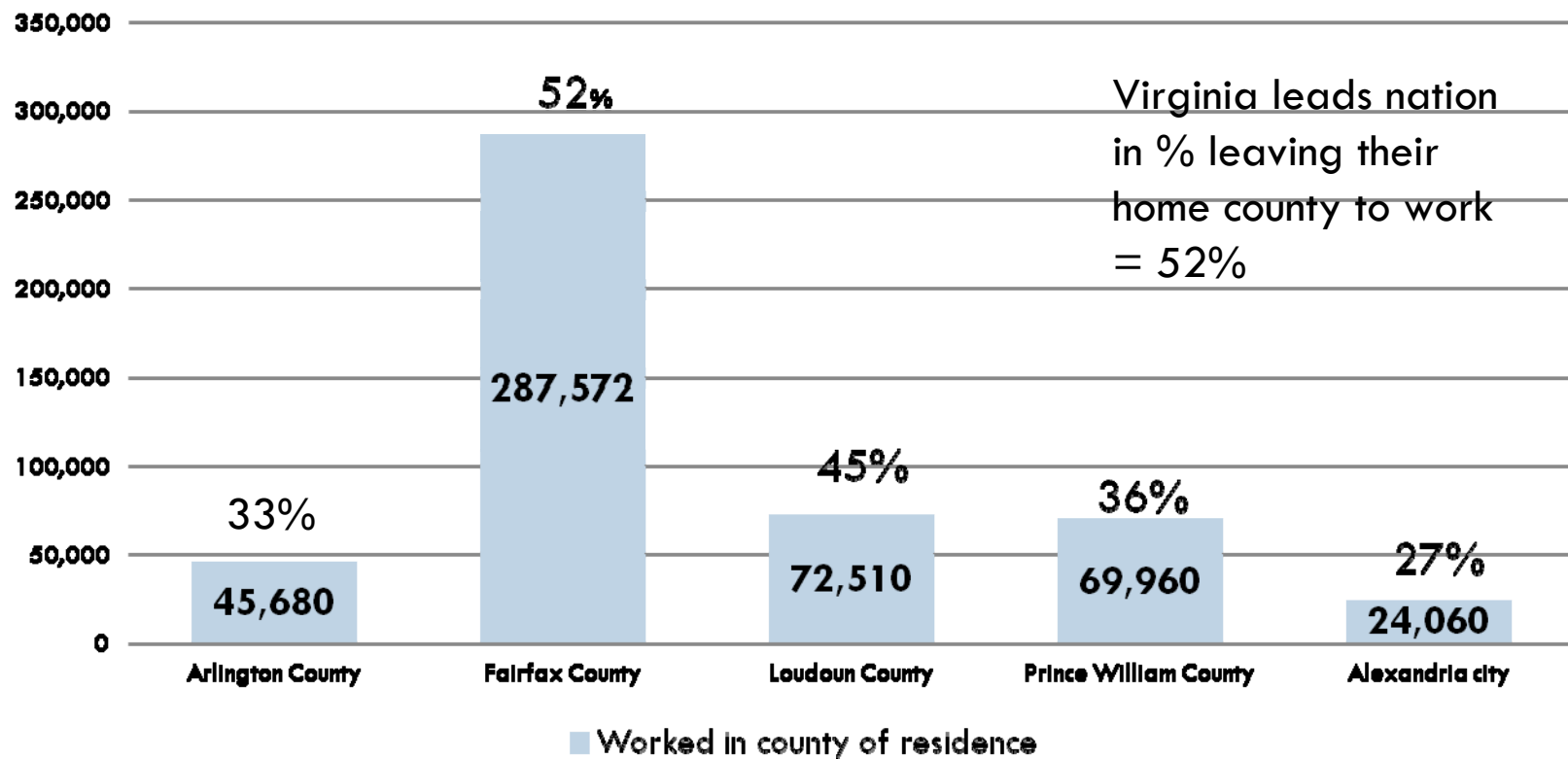
# NoVa had 1,137,000 workers in 2009

- Of these, 500,000 (44%) worked **in their county of residence (about 53,000 at home)**
- And, 376,000 (33%) worked **in another county in the State**
- The remainder 261,000 (23%) **left the state to work (DC or MD)**

▣ Includes only Alexandria city, Arlington, Fairfax, Loudoun and Pr. William Counties.

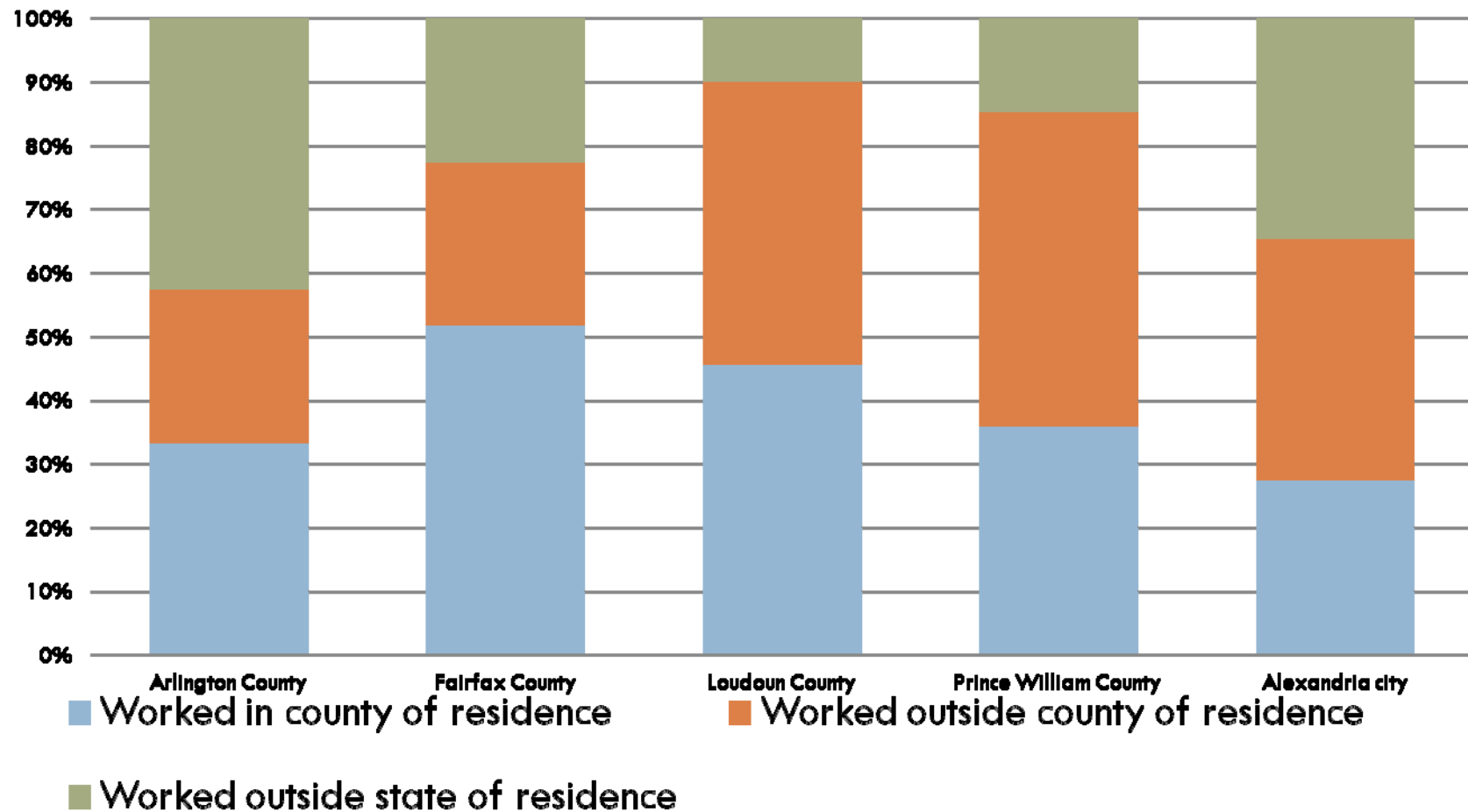
# How Many Stayed in their Home County?

## WHERE DO WORKERS WORK?



# CROSS-COUNTY FLOWS ARE KEY

## WHERE DO WORKERS WORK



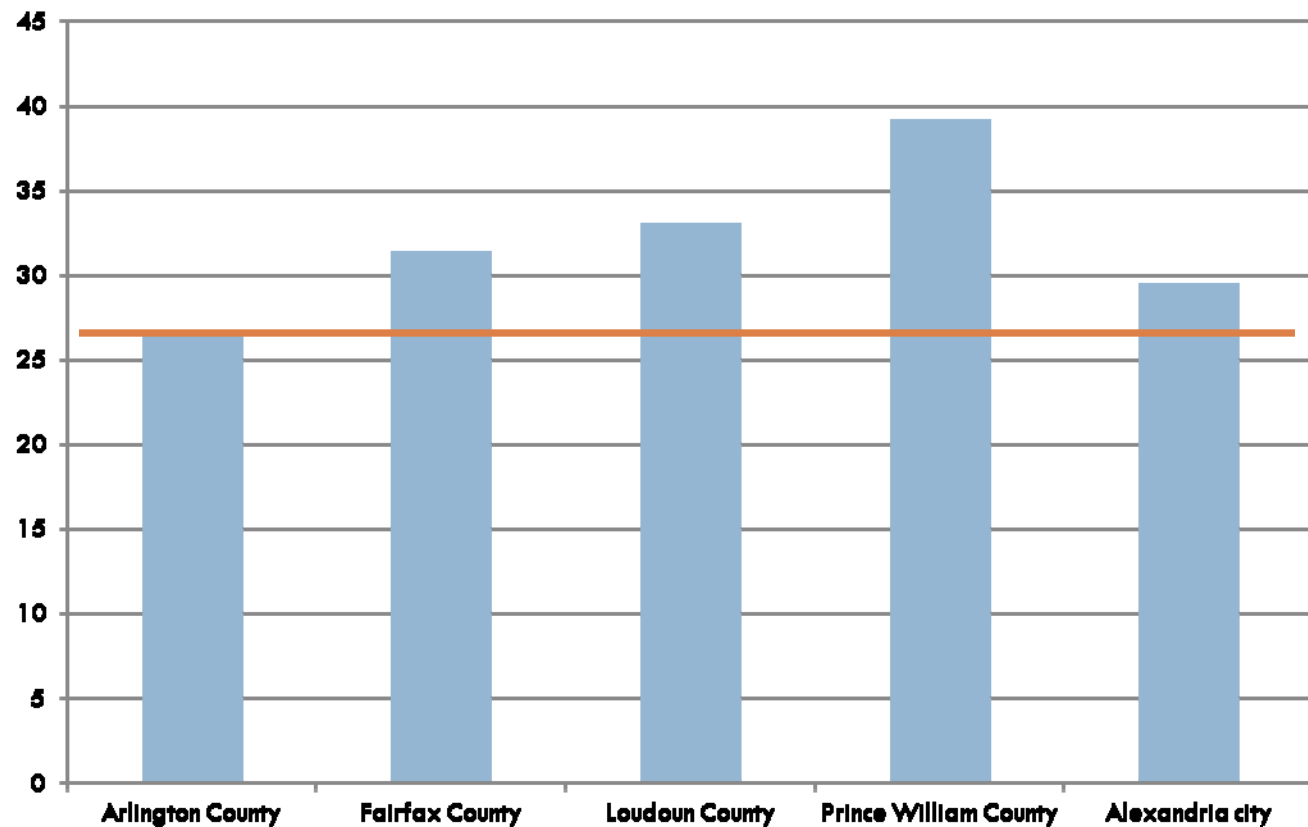
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# Its good to be way above average – No?

The national average travel time to work is about 25 minutes!

Has been for the decade!

**AVERAGE TRAVEL TIME 2009**



# My travel time measures

Commuters are happy when:

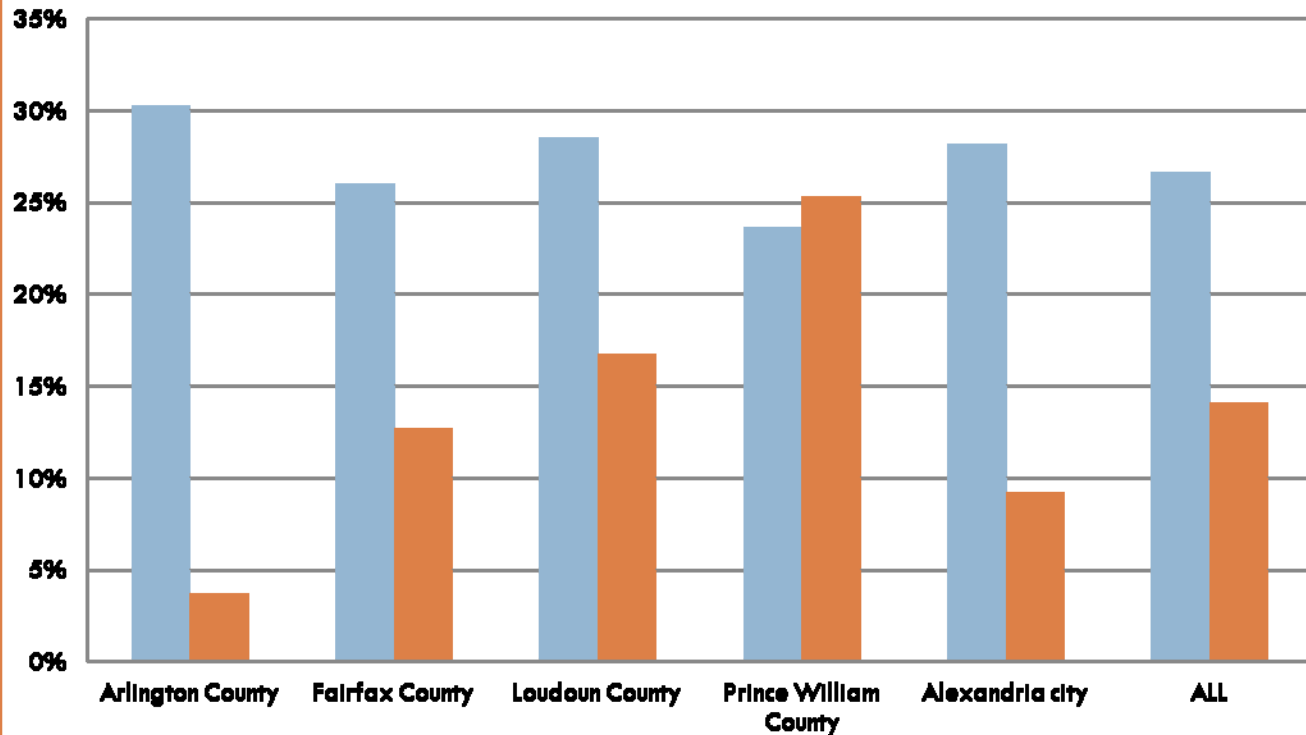
1/2 get to work in under 20 mins; (US 44%)

and, fewer than 10% are over 60 mins (US 7.8%)

Area flunks both tests

## KEY TRAVEL TIME INDICATORS

■ UNDER 20 MINS ■ OVER 60 MINS

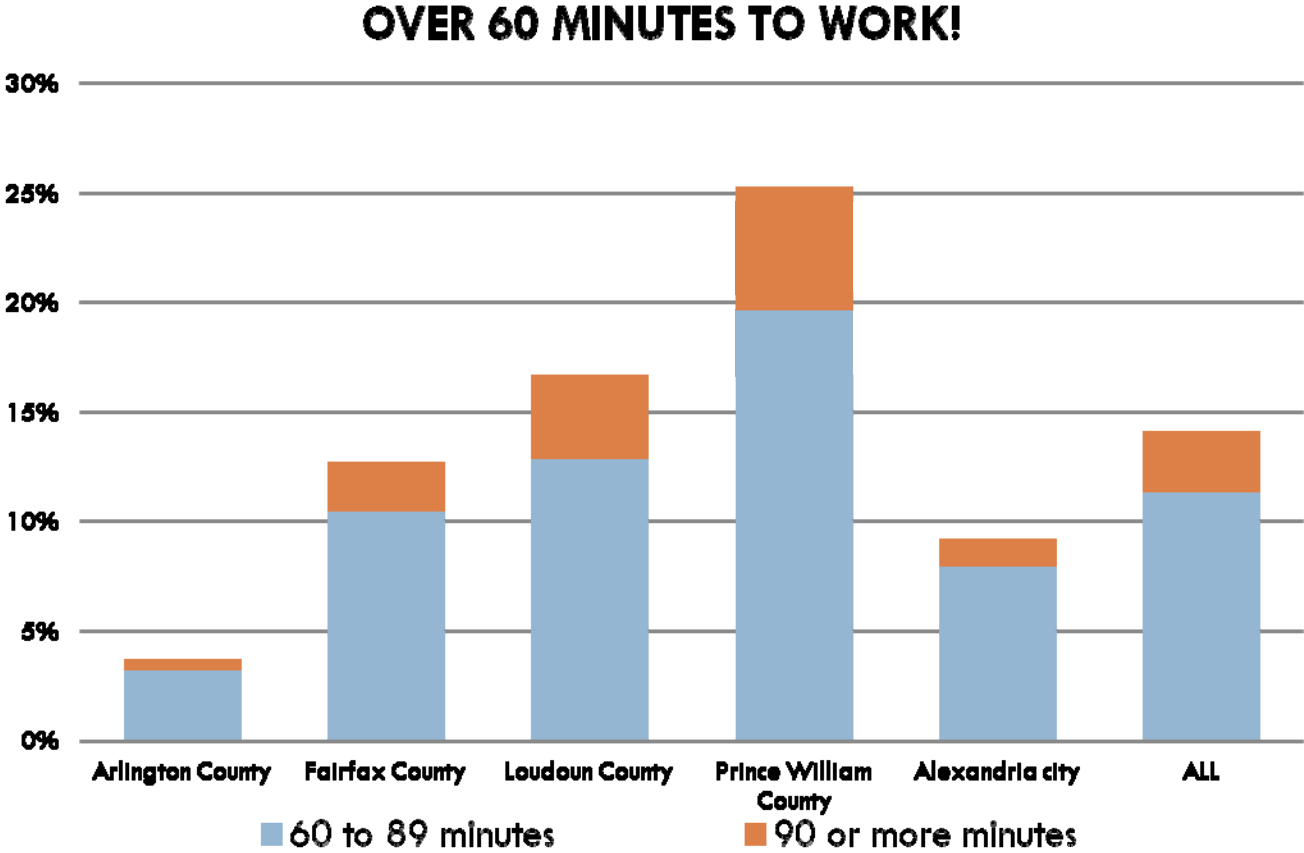




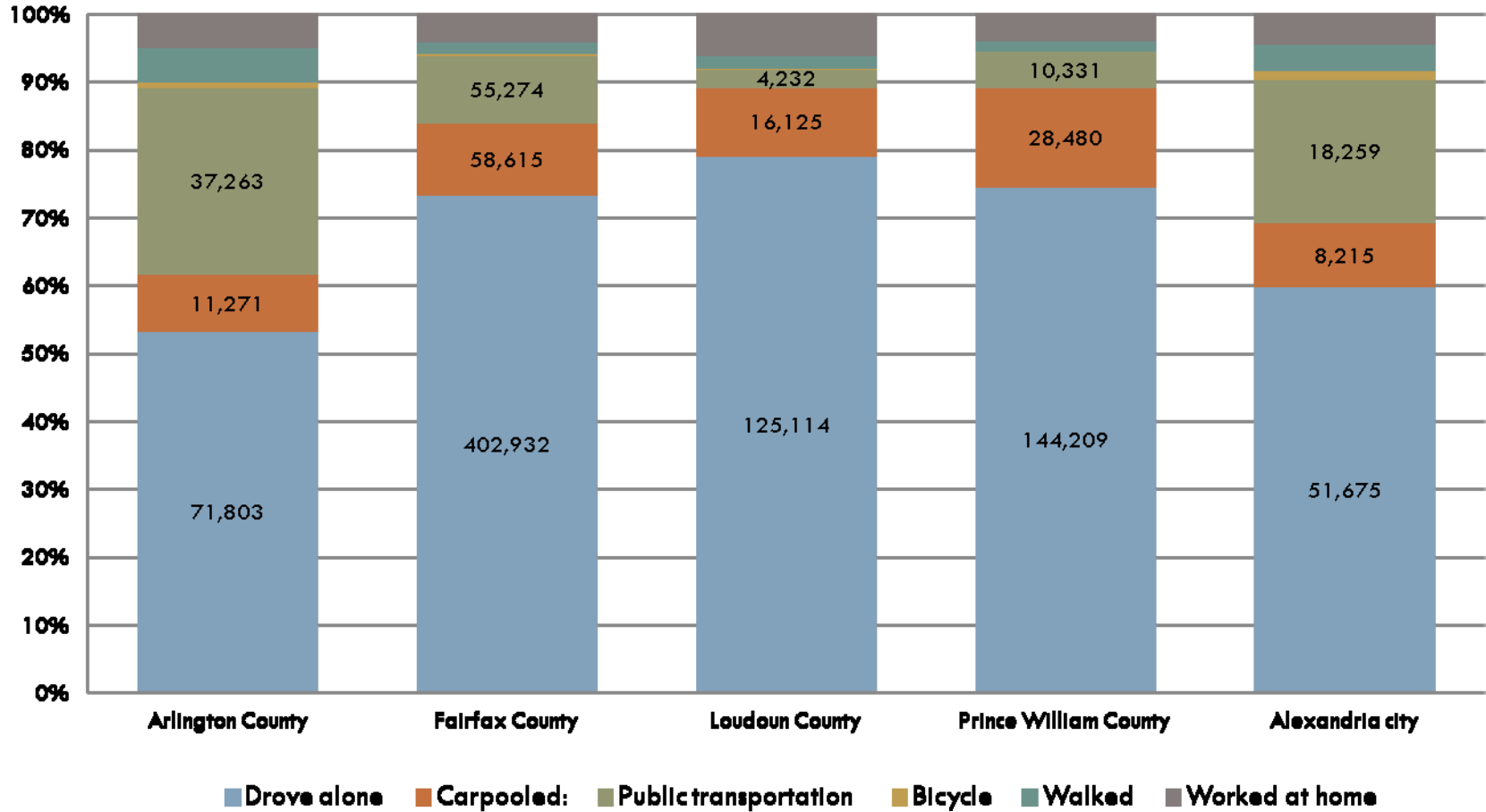
# We are good at “extreme” commutes

WELCOME TO  
EXTREME  
COMMUTE  
COUNTRY

US  
5.4% 60-90  
mins  
2.4% > 90  
mins



# Mode shares to work 2009



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# THE DECLINE OF CARPOOLING

## LONG DISTANCE – LARGE GROUP

- ▣ SHARE THE WORK
- ▣ SHARE THE COST
- ▣ SHARE THE TIME
- ▣ CONSTRUCTION
- ▣ HISPANICS

## SHORT DISTANCE – SMALL GROUP

- ▣ FAM-POOLS
- ▣ HOV-ERS

# CAUSES OF DECLINE

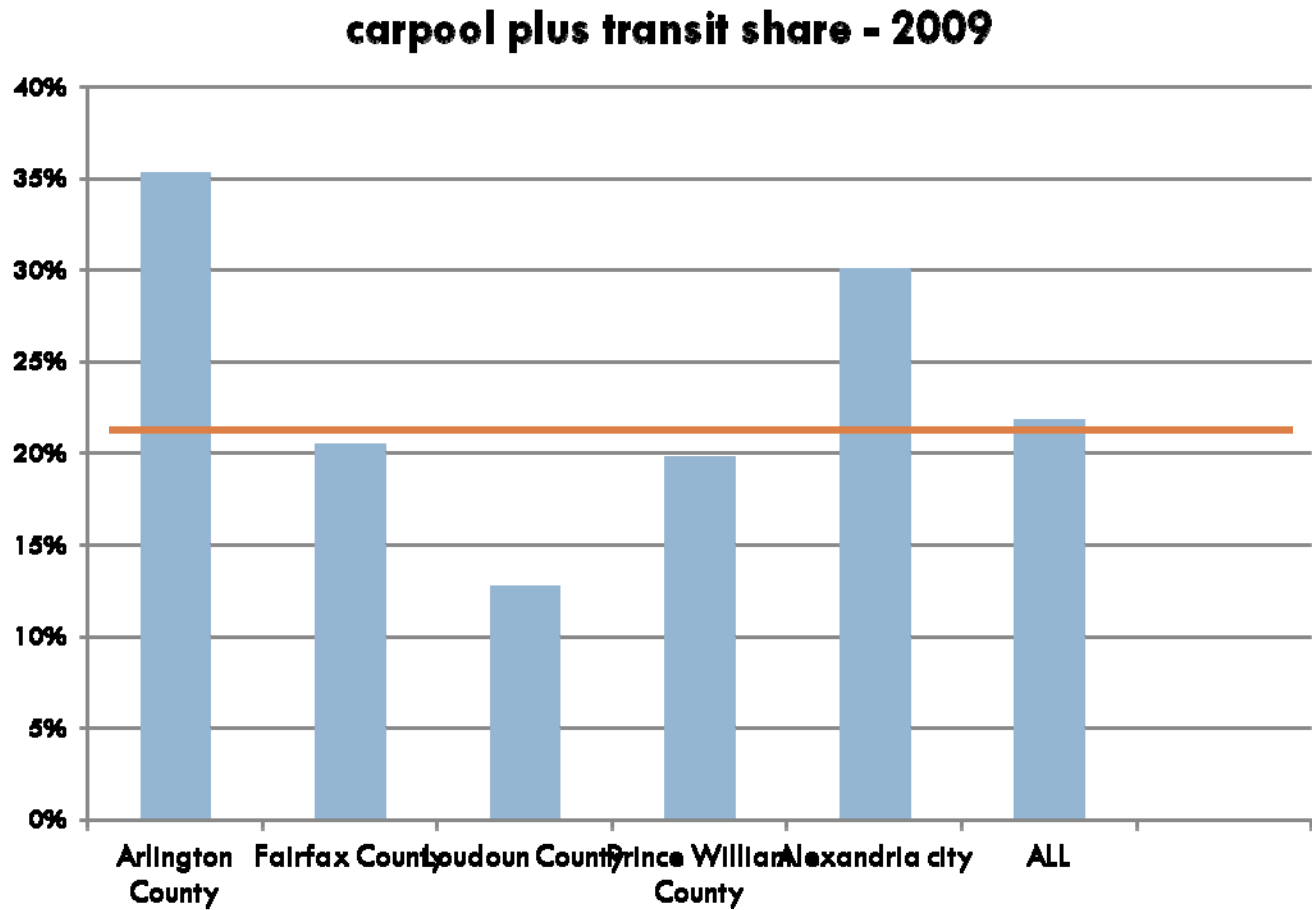


- ❑ **LOW COST AUTOS**
- ❑ **CHANGING NATURE OF WOMEN'S JOBS**
- ❑ **DISPERSAL IN TIME/ORIGIN/DESTINATIONS**
- ❑ **SMALLER WORKER POOL— NO FACTORY GATES TO LIVE NEXT TO**
- ❑ **CARPOOLERS LOOK LIKE TRANSIT RIDERS (20% TEST)**
- ❑ **NO REVENUE CONSTITUENCY**

# Transit riders and carpoolers look a lot alike!

One of my rules – if transit + carpools exceed 20% of Commute you are doing pretty good!

Most Metro areas flunk that test.



# The 20% Test for Top Metros

Top Metropolitan Statistical Areas	Total Workers	% Drove Alone	% Carpool	% Transit	% Bike or Walk	% Other	% Work at Home
New York-Northern New Jersey-Long Island, Metro Area	8,719,316	50.4%	7.4%	30.3%	6.5%	1.7%	3.7%
Los Angeles-Long Beach-Santa Ana, Metro Area	5,816,255	73.5%	11.4%	6.1%	3.4%	1.3%	4.4%
Chicago-Naperville-Joliet, Metro Area	4,422,844	70.9%	9.1%	11.5%	3.6%	1.1%	3.8%
Dallas-Fort Worth-Arlington, Metro Area	2,945,976	80.1%	11.4%	1.6%	1.5%	1.3%	4.0%
Washington-Arlington-Alexandria, Metro Area	2,795,375	66.2%	11.1%	13.9%	3.5%	0.9%	4.4%
Philadelphia-Camden-Wilmington, Metro Area	2,751,491	73.3%	8.9%	9.2%	4.3%	0.8%	3.5%
Houston-Sugar Land-Baytown, Metro Area	2,581,559	78.1%	12.6%	2.7%	1.8%	1.6%	3.2%
Atlanta-Sandy Springs-Marietta, Metro Area	2,494,475	77.5%	10.9%	3.6%	1.5%	1.5%	5.1%
Miami-Fort Lauderdale-Pompano Beach, Metro Area	2,479,021	78.4%	10.1%	3.8%	2.2%	1.5%	4.0%
Boston-Cambridge-Quincy, Metro Area	2,277,958	69.4%	8.1%	11.9%	5.7%	0.9%	4.0%
San Francisco-Oakland-Fremont, Metro Area	2,056,454	62.3%	10.4%	14.5%	5.7%	1.5%	5.5%

Wash COG

Source: American Community Survey, 2005-2009 5 year data set

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# A significant potential market

- Of the people who said they “usually” carpool; on any given day only a bit more than half (55%) actually do so!
- This means that large number of carpoolers are incidental users who for some reason diverted to pools “yesterday”.
  - ▣ 6% of “usual Drive Aloners” carpooled yesterday;
  - ▣ 9% of “usual Transit riders” carpooled yesterday;
  - ▣ 9% of “usual Walkers” carpooled yesterday. NHTS 2009

# All of our new technologies are dispersal technologies

- **THE CANNON**
- **ALL GROUND TRANSPORT**
- **AIR TRANSPORT**
- **OVERNIGHT DELIVERY**
- **TELEPHONE/CELLPHONE**
- **RADIO/TELEVISION/CABLE**
- **COMPUTER/INTERNET**

*All serve to overcome the tyranny of distance*

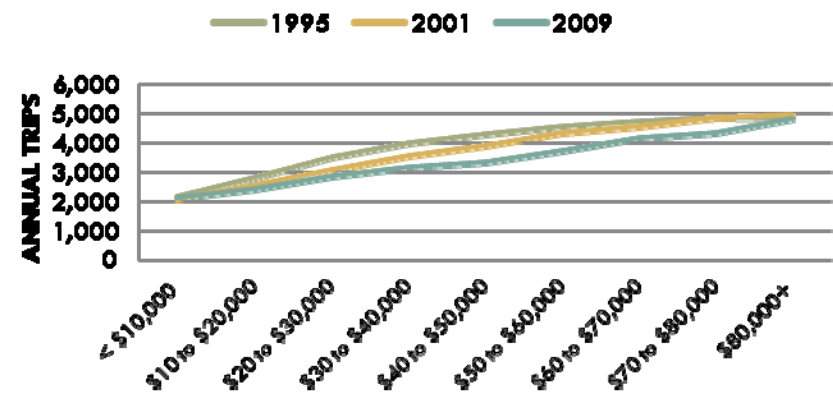
*The last aggregating technology I can think of was the elevator*



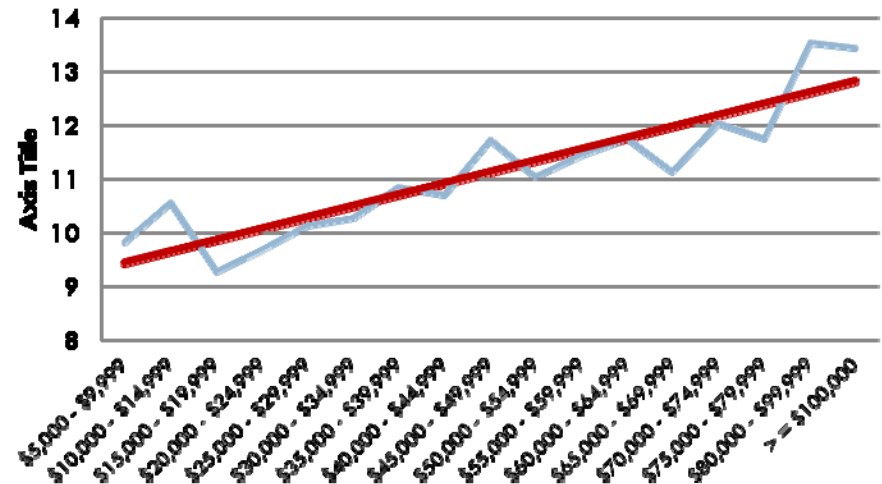
# The days of living outside the factory gate are gone

- Of course people have the option but few choose to take advantage of it. **Higher incomes yields more freedom to choose and people choose to optimize other things – schools, safety, attractiveness, access to amenities**
  
- We don't need to redesign our world to make it more "efficient". **The existing distribution of jobs housing and other destinations provides ample opportunities to be closer to destinations if we choose. There is no indication of such a preference.**
  - Work trip length increases with income!
  - **In a job-scarce environment access to jobs over greater distances is a key economic factor**
  - Work trips are increasingly minor part of people's lives.

Household travel & Income



WORK TRIP LENGTH AND INCOME 2009



# Why don't we live next to our work?

- Immense friction involved. Rapid job change; might be back! (underwater houses)
- Jobs and workers are more dispersed; Smaller work destinations; no factory gates to live next to
- 70% of workers live in a household with other workers. Whose job are we going to live next to?
- Expansion of job specialization spreads the range over which one can/must seek jobs
  - ▣ Work in fast food store – closest one is best
  - ▣ Work in environmental physics – there's no reactor down the street
  - ▣ Jobs plentiful – my marketshed = 30 minutes max
  - ▣ No jobs around here – marketshed expands 45-60 minutes

# The Challenge



- ❑ **Reaching skilled workers will be the key challenge for employers**
- ❑ **Employers will go where the skilled workers are or where they want to be**
- ❑ **Competition will be amenities-based**
- ❑ **Good transportation will be one of the amenities**
- ❑ **Metro areas that can meet this challenge will be the big winners**

# **My Vision for 2030**

## **– THE HIGH VALUE SOCIETY**



**Create the transportation systems that will serve a society where the average value of time is \$50/hr and,**

**where the average value of freight per ton is three times today's.**

**If you build a transportation system for a “high value society” you will help create that society.**

**THANK YOU!**

**Alan E. Pisarski**

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