



The Implications of Demographic Change: How will our cities grow- Out to the “burbs” or back to the city?

William A.V. Clark

University of California, Los Angeles

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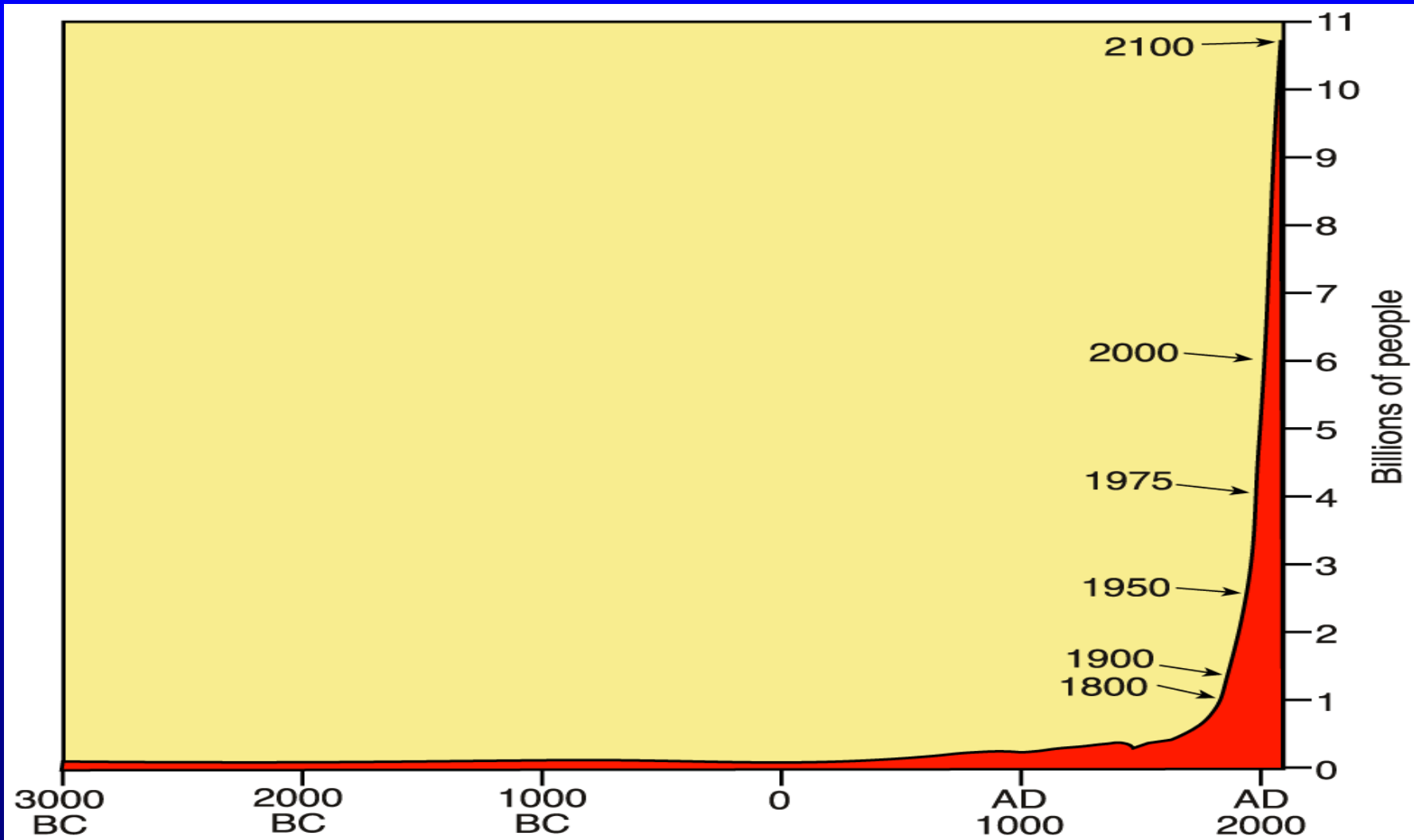
Outline

- Demography - past and future
 - our demographic past
 - our demographic future
- Demographic implications
 - aging
 - continuing fertility decline
- Implications for transportation and sustainable communities
- Observations

A Changing World

- Population growth will likely end this century – even in California
 - already declining in developed nations
 - growth will continue for half a century in developing nations
- Transition from a surfeit of babies to a surfeit of elders

World Population Growth



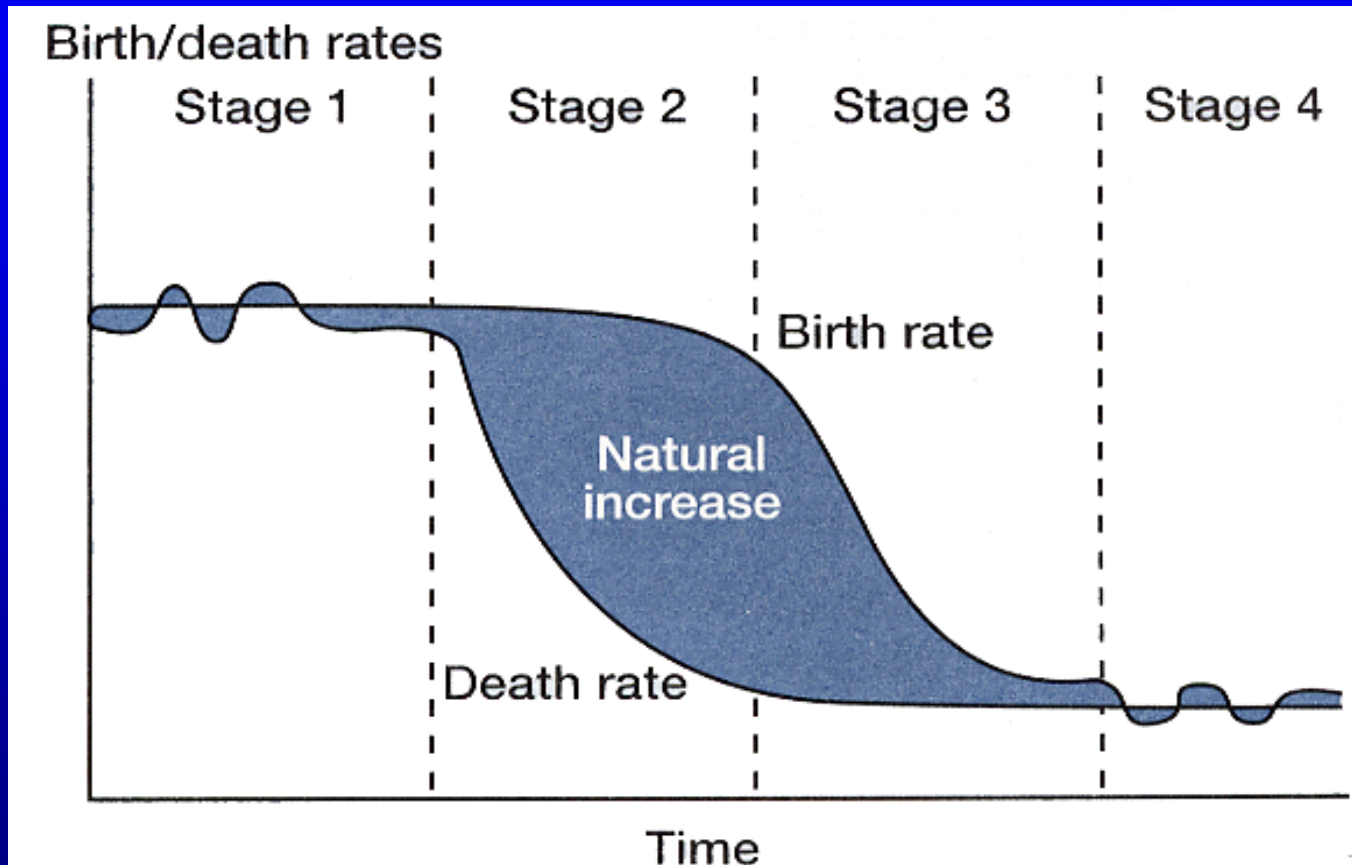
World Population Change

- 1900 ---- 1.6 billion
- 2000 ---- 6.1 billion

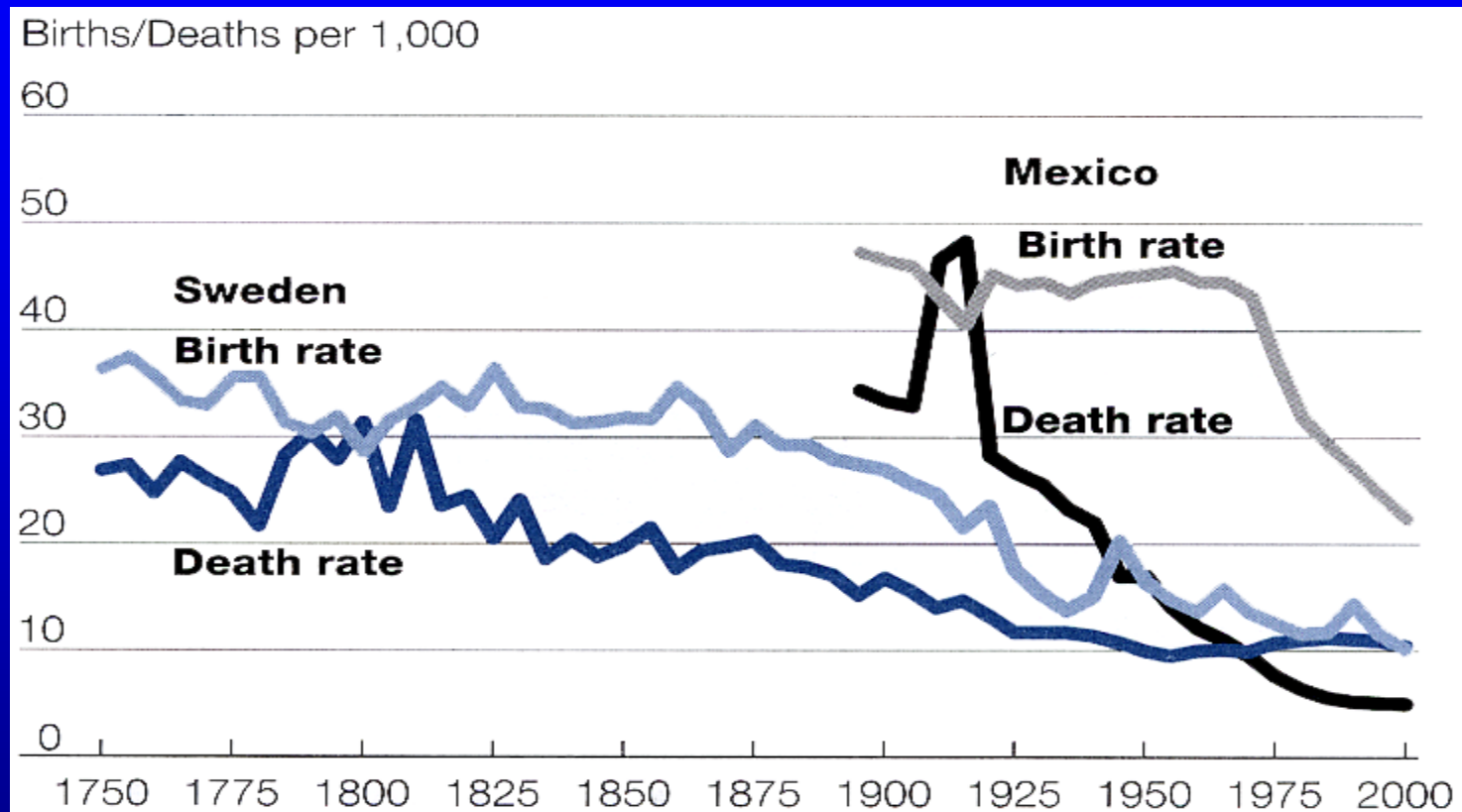
A reminder of the role of the demographic transition

- A rise in living standards and better health led to declines in mortality followed with a time lag by declines in fertility.
- The lag between the two rates led to a rapid increase in world population

The Demographic Transition

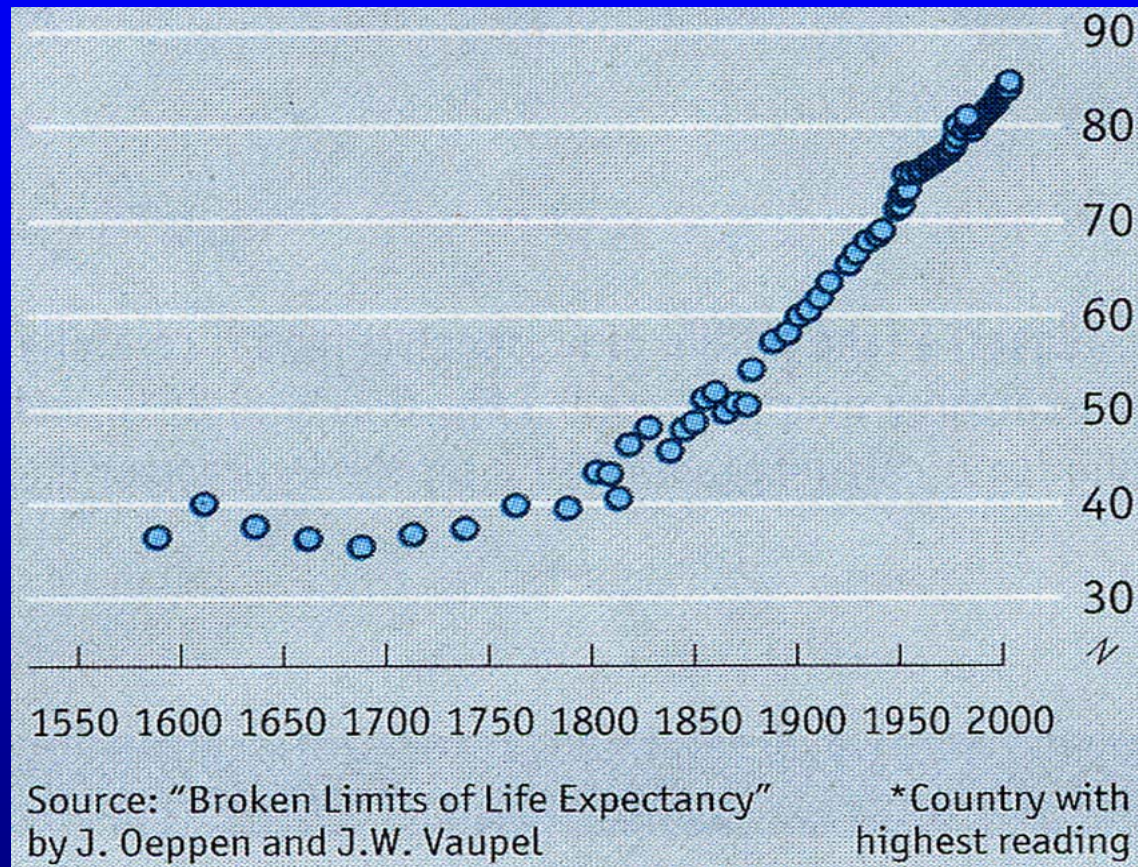


Demographic transition-case studies

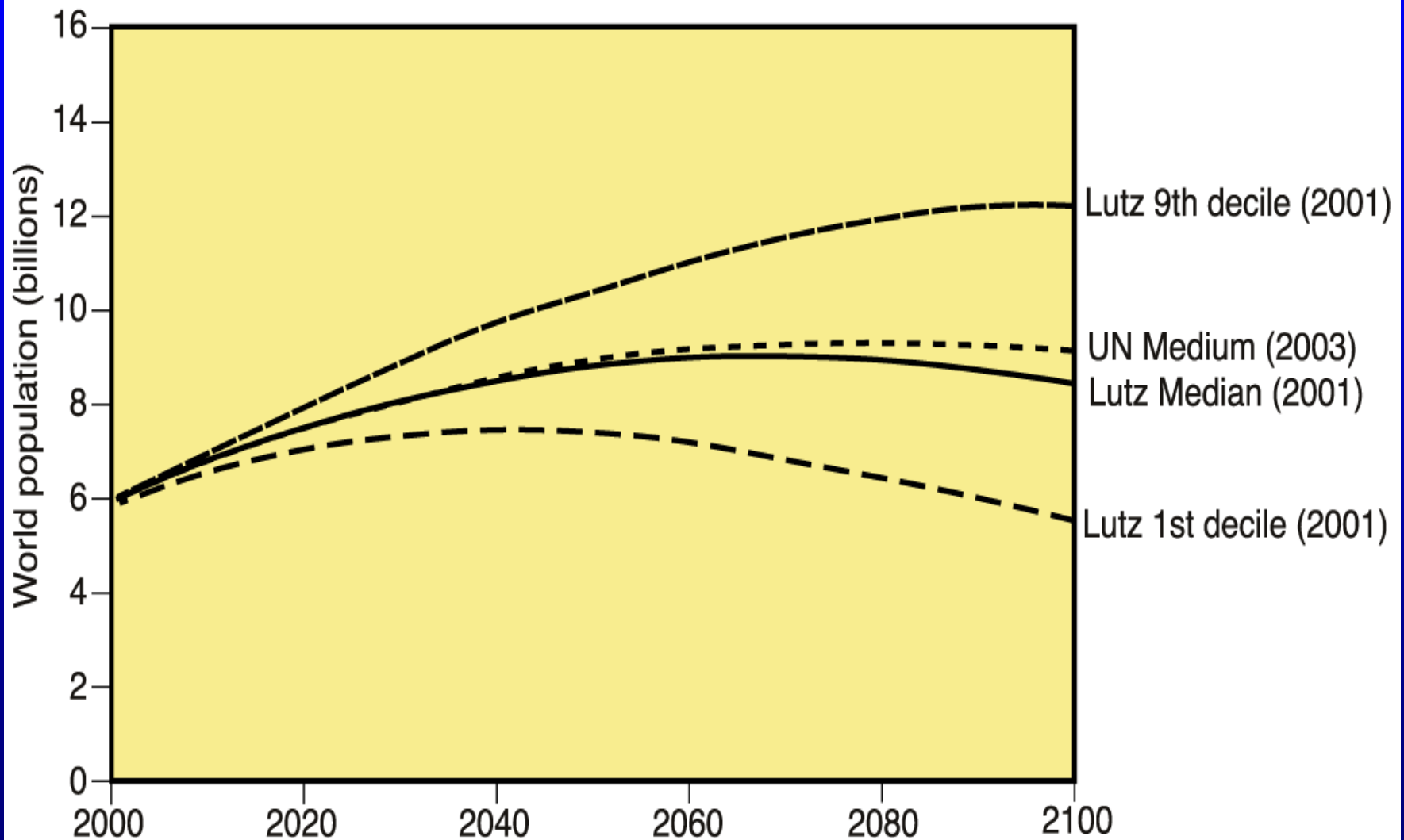


Sources: B.R. Mitchell, *European Historical Statistics 1750-1970* (1976): table B6; Council of Europe, *Recent Demographic Developments in Europe 2001* (2001): tables T3.1 and T4.1; CELADE, *Boletín demográfico* 69 (2002): tables 4 and 7; Francisco Alba-Hernandez, *La población de México* (1976): 14; and UN Population Division, *World Population Prospects: The 2002 Revision* (2003): 326.

Women's life expectancy



Projection Comparisons



The World will be Gray



Gray Dawn-More gray heads than toddlers

- Large scale growth of the old, elderly and very old - the silver century
- Increasing dependency ratios especially in Europe but in the US too
- Alternatives to increasing dependency
 - pro-natalist policies
 - immigration

The Chance of Meeting a 65 year old

Data for Western Affluent Societies

- Before the Industrial Revolution

1 in 40

- At the turn of the last Century

1 in 25

- In 1990

1 in 10

- In 2040

1 in 4

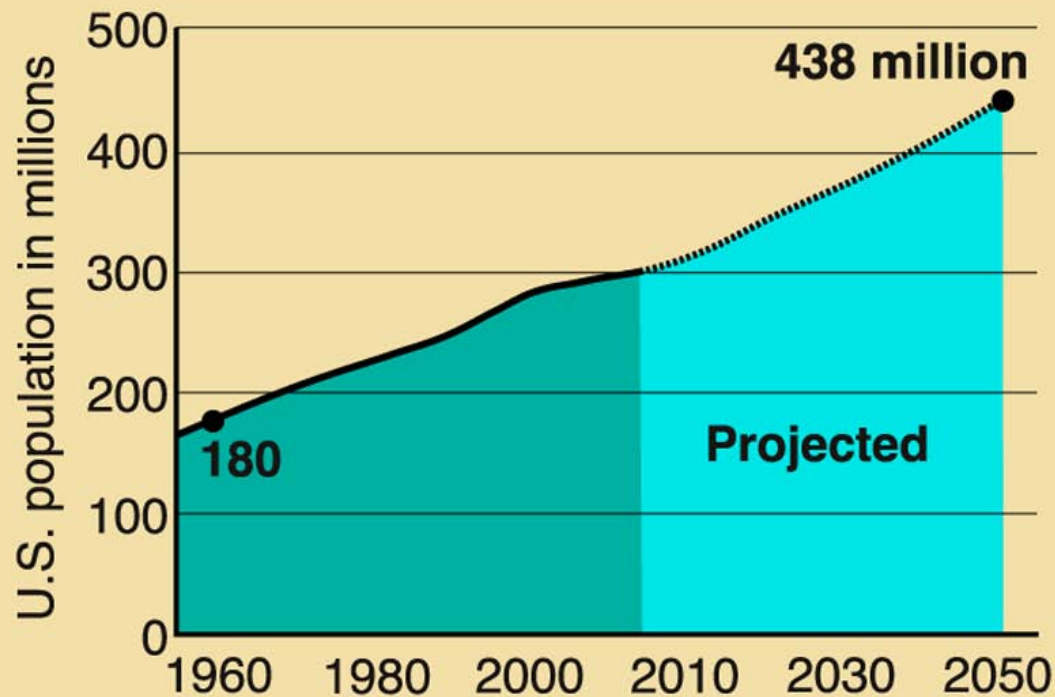
Implications of Aging for the Workforce

- Those retiring from the workforce will outnumber those entering
- The workforce is rising in age and will soon start shrinking in size
- The skills shortage will be compounded by a (skilled) people shortage

Bringing it home – the US and California

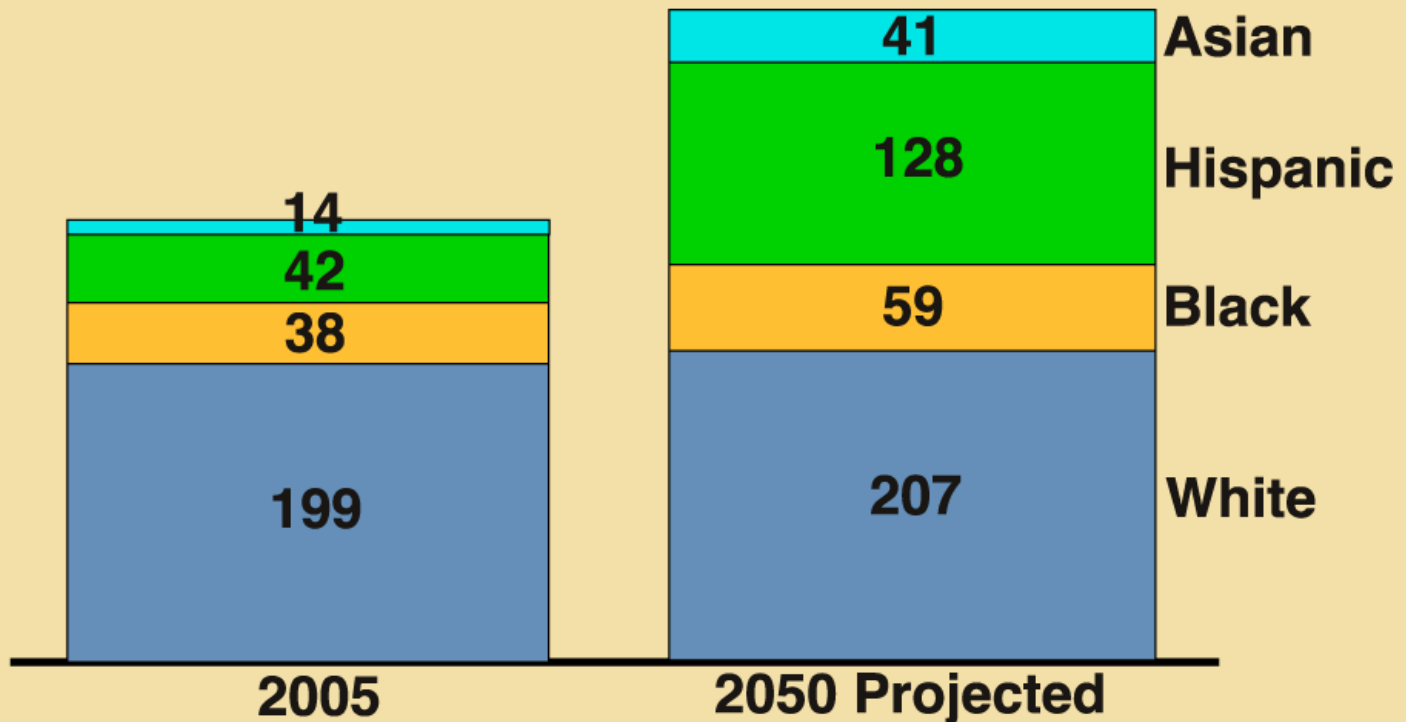
- US projections to 438 million soon
- California projections to 50 million soon

US Population Growth



Source: Jeffery S. Passel and D'Vera Cohn, U.S. Population Projections: 2005-2050 (Washington, DC: Pew Research Center, 2008), accessed online at www.pewhispanic.org/files/reports/85.pdf, on Feb. 14, 2008.

U.S. Population in Millions by Ethnic Group



Source: Jeffery S. Passel and D'Vera Cohn, U.S. Population Projections: 2005-2050 (Washington, DC: Pew Research Center, 2008), accessed online at www.pewhispanic.org/files/reports/85.pdf, on Feb. 14, 2008.

California Now

Population (2007)

- 37.7 million Californians
- 41.4 % white, 35.9 % Hispanic, 12.3 % Asian, 6.3 % Black, 3.3 % Mixed race

Immigrants and growth 2000-07

- Net foreign born migration 1.54 million
- 2.3 natural increase

California Immigrant growth and proportions

(000s)

Number of Immigrants(2007) 9,980

Share of California Population (%) 27.6

Immigrants who arrived 00-07 2,022

Pop. Share of immigrants and their 37.9

US born children

California to come (millions)

	2010	2020	2030
• Total Pop.	39.0	44.1	49.2
• White	16.4	16.5	16.4
• Hispanic	14.5	18.3	22.4
• Asian	4.7	5.5	6.3
• Black	2.3	2.4	2.5

Regional Growth (millions)

•	2010	2020	2030
• Alameda	1.6	1.7	1.8
• Fresno	.9	1.2	1.4
• Central Valley	1.6	2.0	2.5
• Los Angeles	10.5	11.2	11.9
• SB/Riverside	4.4	5.5	6.5
• San Diego	3.2	3.6	4.0

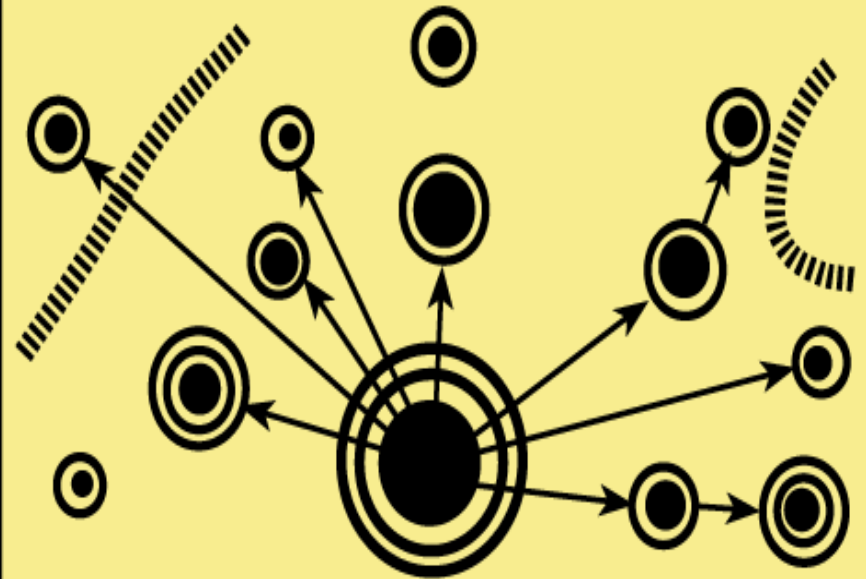
The Demographic Implications for Communities and Transportation

- Flourishing communities are central to a healthy society
- But, what is the nature of these communities?
- What does demography tell us about how they might look?
- And, with what type of transportation?

Alternative Urban Forms



Compact



Policentric-distributed city

Opposing paradigms

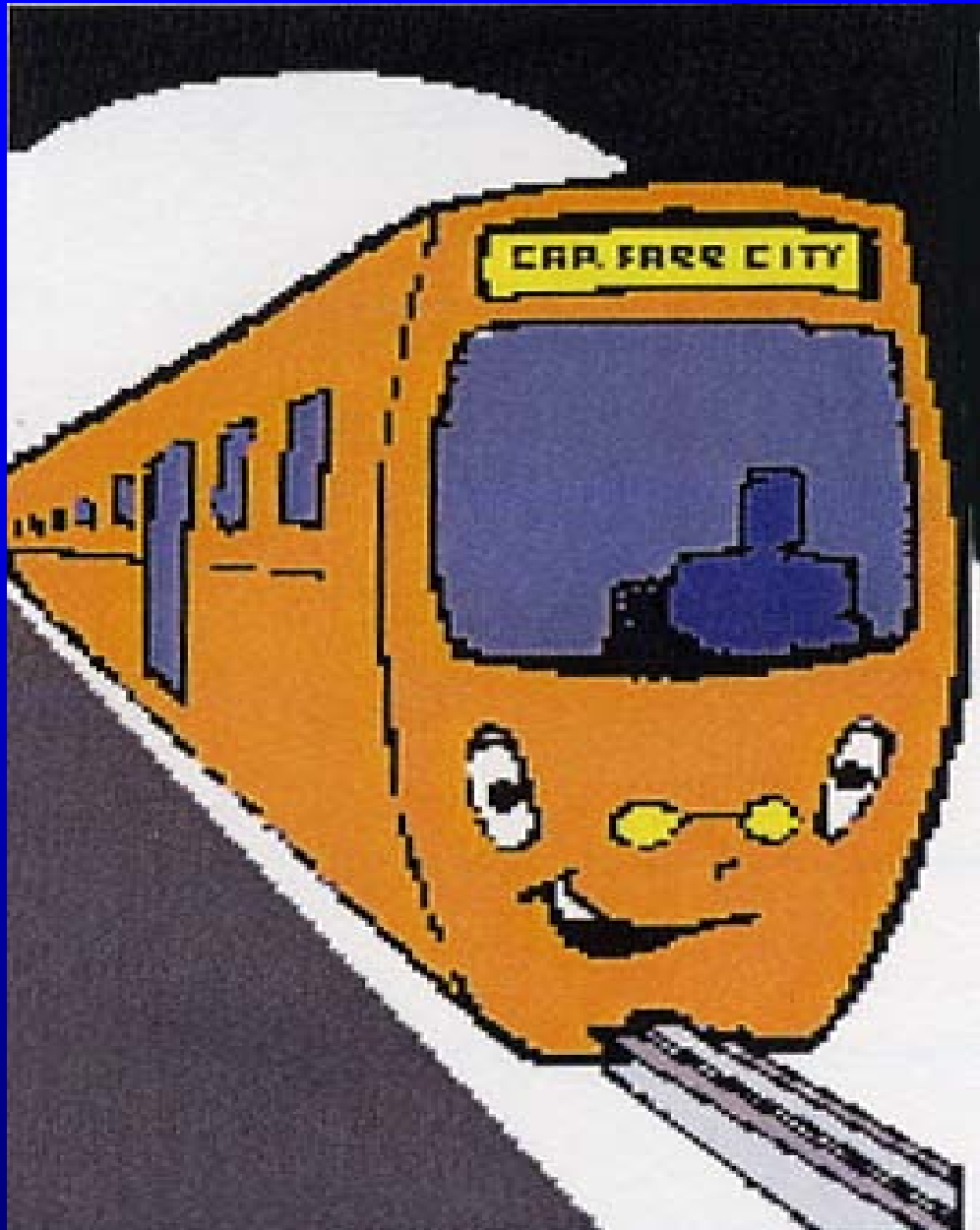
- Compact city and public transportation

“The current automobile age is coming a rapid halt within the lifetime of most people under 50 today” (Cities without cars)

- Distributed city and the car

*“access to the family car meant freedom, but now driving is traffic jams, nonproductive time and expense”
(Transportation and Urban Design)*

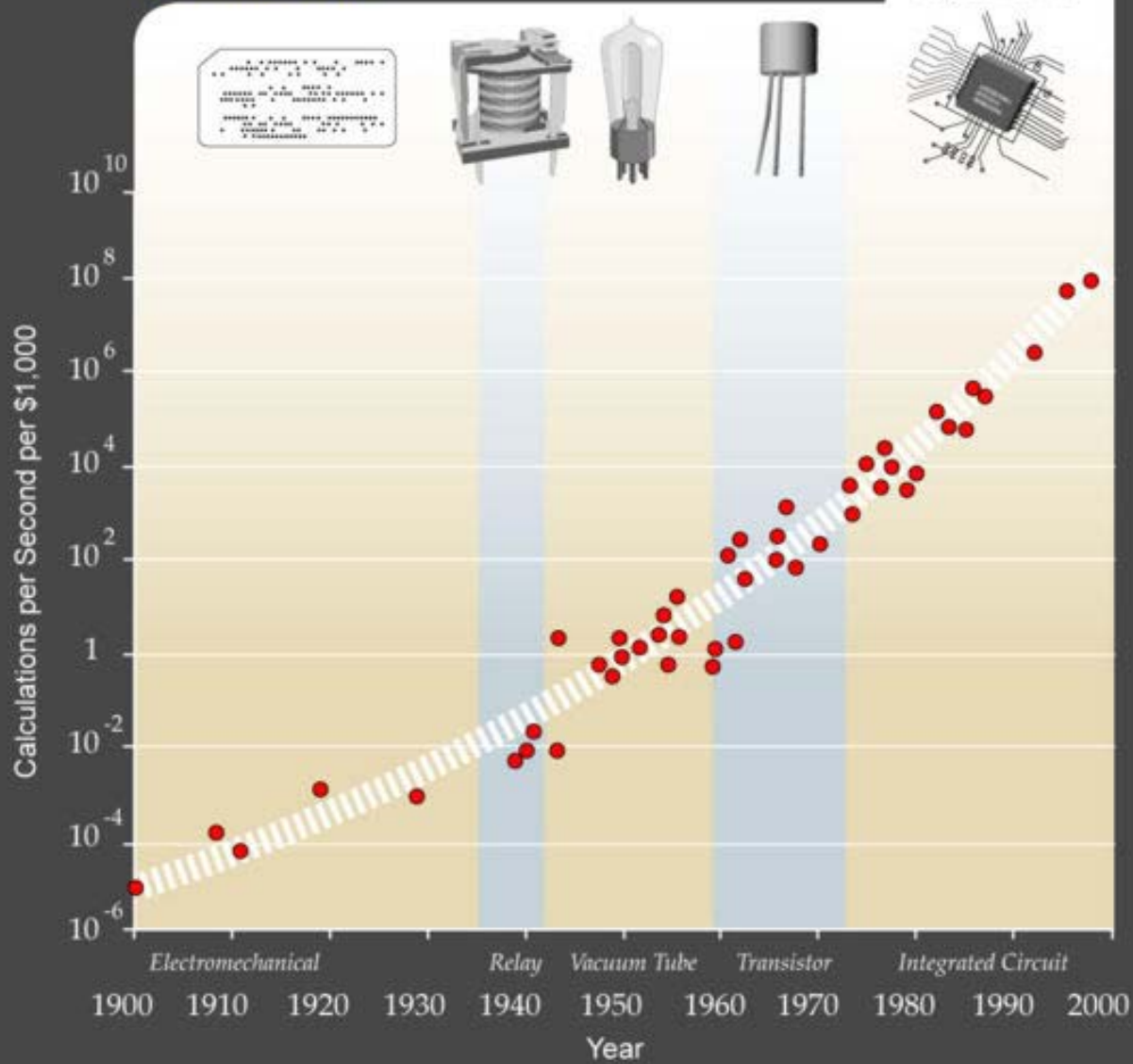




Moore's Law

The Fifth Paradigm

Logarithmic Plot



What does research tell us about spatial patterns

- Is decentralization reversing – back from the burbs?
- Where is the growth occurring?
- What is the impact of exit and voice?
- Where do non-work trips fit in?

No on centralization, yes on continuing decentralization (probably?)

- Frostbelt- sunbelt migration continues – climate counts. Limited evidence of re-centralization and firms are more footloose than ever. They do not have to locate in high density centers to achieve agglomeration economies.
- 1990-2000 84 percent of growth in the “suburbs “ (Gordon, Richardson and Kim, 2008)

Where is growth occurring?

- The old hierarchy of center and periphery, of downtown and suburbs, ... is being replaced by a system of roads and highways... and telephone lines, cables and computer links (Bogart, 2006)
- Scenic communities are soaking up new riches ... the wealthy are colonizing rural areas, bringing cash, culture and controversy (WSJ Jan 19,2008)

Exit and voice

- Relative costs of exit and voice have been shifting in favor of exit
 - Footloose industries
 - Greater affluence
 - Secession of the successful (Reich, 1991)

(adapted from Peter Gordon and Harry Richardson,
Hayek and Cities: Guidelines for Regional
Scientists)

Non- work travel and the implications

Percent of all trips in the US (NHTS 2001)

- Work 16.6
- Non-work 83.4
 - » Family personal 46.0
 - » School church 10.8
 - » Social recreation 27.2

(Lee, Gordon, Moore, Richardson, 2006)

Speculating on Alternatives?

- Jitneys not fixed rail
- Flexibility not permanence
- Allow for the changing workforce
- Factor in non-work trips

Observations

- **California's population will continue to grow but within four decades will stabilize**
- **Increasing dependency ratio with many more elderly with different transport needs**
- **Fewer work trips and more trips to the clinic**
- **A truism but worth re-stating -planning requires flexibility**