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

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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

![Diagram showing stages of birth/death rates over time](image)
Demographic transition-case studies

Women’s life expectancy

Source: “Broken Limits of Life Expectancy” by J. Oeppen and J.W. Vaupel

*Country with highest reading
Projection Comparisons

- Lutz 9th decile (2001)
- UN Medium (2003)
- Lutz Median (2001)
- Lutz 1st decile (2001)
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

U.S. Population in Millions by Ethnic Group

<table>
<thead>
<tr>
<th>Ethnic Group</th>
<th>2005</th>
<th>2050 Projected</th>
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</thead>
<tbody>
<tr>
<td>Asian</td>
<td>14</td>
<td>41</td>
</tr>
<tr>
<td>Hispanic</td>
<td>42</td>
<td>128</td>
</tr>
<tr>
<td>Black</td>
<td>38</td>
<td>59</td>
</tr>
<tr>
<td>White</td>
<td>199</td>
<td>207</td>
</tr>
</tbody>
</table>

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 US born children 37.9
California to come (millions)

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2020</th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Pop.</td>
<td>39.0</td>
<td>44.1</td>
<td>49.2</td>
</tr>
<tr>
<td>White</td>
<td>16.4</td>
<td>16.5</td>
<td>16.4</td>
</tr>
<tr>
<td>Hispanic</td>
<td>14.5</td>
<td>18.3</td>
<td>22.4</td>
</tr>
<tr>
<td>Asian</td>
<td>4.7</td>
<td>5.5</td>
<td>6.3</td>
</tr>
<tr>
<td>Black</td>
<td>2.3</td>
<td>2.4</td>
<td>2.5</td>
</tr>
</tbody>
</table>
### Regional Growth (millions)

<table>
<thead>
<tr>
<th>Region</th>
<th>2010</th>
<th>2020</th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alameda</td>
<td>1.6</td>
<td>1.7</td>
<td>1.8</td>
</tr>
<tr>
<td>Fresno</td>
<td>.9</td>
<td>1.2</td>
<td>1.4</td>
</tr>
<tr>
<td>Central Valley</td>
<td>1.6</td>
<td>2.0</td>
<td>2.5</td>
</tr>
<tr>
<td>Los Angeles</td>
<td>10.5</td>
<td>11.2</td>
<td>11.9</td>
</tr>
<tr>
<td>SB/Riverside</td>
<td>4.4</td>
<td>5.5</td>
<td>6.5</td>
</tr>
<tr>
<td>San Diego</td>
<td>3.2</td>
<td>3.6</td>
<td>4.0</td>
</tr>
</tbody>
</table>
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)
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