Arthur C. Nelson, Ph.D., FAICP
Presidential Professor and Director
Metropolitan Research Center
University of Utah

Wasatch Regional Council
May 21, 2009
America Grows

200 million in 1968
300 million in 2006
400 million in 2032
500 million in 2050

America adds 100 million people faster than any other nation except India and Pakistan – But faster than China.

Source: Arthur C. Nelson, Metropolitan Research, University of Utah.
THE BOOM TO COME

AMERICA CIRCA 2030

230.3 billion square feet in 2000

337.2 billion square feet in 2030

106.8 billion new square feet

97.3 billion square feet from replacement
Housing recovery, state by state
Estimated year when excess supply of homes will be substantially depleted and new construction will be needed to meet demand:

- [ ] 2009
- [ ] 2010
- [ ] 2011
- [ ] 2012 or later

Source: Arthur C. Nelson, director of metropolitan research, University of Utah

By Julie Snider, USA TODAY
## Population Growth 2005-2040

<table>
<thead>
<tr>
<th>Area</th>
<th>2005</th>
<th>2040</th>
<th>Change</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wasatch</td>
<td>2.2M</td>
<td>4.2M</td>
<td>2.0M</td>
<td>90%</td>
</tr>
<tr>
<td>SW Utah</td>
<td>0.2M</td>
<td>0.7M</td>
<td>0.5M</td>
<td>250%</td>
</tr>
<tr>
<td>Other Utah</td>
<td>0.2M</td>
<td>0.3M</td>
<td>0.1M</td>
<td>50%</td>
</tr>
<tr>
<td>Utah</td>
<td>2.6M</td>
<td>5.2M</td>
<td>2.6M</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Arthur C. Nelson, Presidential Professor & Director of Metropolitan Research, University of Utah. Numbers may not add or calculate due to rounding. Figures adapted from *2008 Economic Report to the Governor*, Governor’s Office of Planning and Budget.
# Residential Units 2005-2040

<table>
<thead>
<tr>
<th>Area</th>
<th>2005</th>
<th>Growth</th>
<th>Replaced</th>
<th>Total</th>
<th>%’05</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wasatch</td>
<td>650k</td>
<td>720k</td>
<td>140k</td>
<td>840k</td>
<td>130%</td>
</tr>
<tr>
<td>SW Utah</td>
<td>70k</td>
<td>150k</td>
<td>15k</td>
<td>165k</td>
<td>235%</td>
</tr>
<tr>
<td>Other Utah</td>
<td>200k</td>
<td>50k</td>
<td>25k</td>
<td>70k</td>
<td>35%</td>
</tr>
<tr>
<td>Utah</td>
<td>920k</td>
<td>920k</td>
<td>180k</td>
<td>1.1M</td>
<td>120%</td>
</tr>
</tbody>
</table>

*Source: Arthur C. Nelson, Presidential Professor & Director of Metropolitan Research, University of Utah.*

Numbers may not add or calculate due to rounding. Figures based on residential units per capita 2000 adjusted for declining household size, plus loss factor based on census analysis.
### Employment Growth 2005-2040

<table>
<thead>
<tr>
<th>Area</th>
<th>2005</th>
<th>2040</th>
<th>Change</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wasatch</td>
<td>1.3M</td>
<td>2.5M</td>
<td>1.2M</td>
<td>90%</td>
</tr>
<tr>
<td>SW Utah</td>
<td>100k</td>
<td>250k</td>
<td>150k</td>
<td>215%</td>
</tr>
<tr>
<td>Other Utah</td>
<td>100k</td>
<td>150k</td>
<td>50k</td>
<td>50%</td>
</tr>
<tr>
<td>Utah</td>
<td>1.5M</td>
<td>2.9M</td>
<td>1.4M</td>
<td>90%</td>
</tr>
</tbody>
</table>

Source: Arthur C. Nelson, Presidential Professor & Director of Metropolitan Research, University of Utah. Numbers may not add or calculate due to rounding. Employment includes full- and part-time jobs as defined by BEA.
Nonresidential Space 2005-2040

<table>
<thead>
<tr>
<th>Area</th>
<th>2005</th>
<th>Growth</th>
<th>Rebuilt</th>
<th>Total</th>
<th>%’05</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wasatch</td>
<td>600M</td>
<td>600M</td>
<td>1.0B</td>
<td>1.6B</td>
<td>270%</td>
</tr>
<tr>
<td>SW Utah</td>
<td>50M</td>
<td>100M</td>
<td>60M</td>
<td>160M</td>
<td>220%</td>
</tr>
<tr>
<td>Other Utah</td>
<td>50M</td>
<td>100M</td>
<td>40M</td>
<td>140M</td>
<td>180%</td>
</tr>
<tr>
<td>Utah</td>
<td>700M</td>
<td>800M</td>
<td>1.1B</td>
<td>1.9B</td>
<td>270%</td>
</tr>
</tbody>
</table>

Source: Arthur C. Nelson, Presidential Professor & Director of Metropolitan Research, University of Utah. Numbers may not add or calculate due to rounding.
# Bottom Line Construction

## Utah 2005-2040

<table>
<thead>
<tr>
<th>Category</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>$350 Billion</td>
</tr>
<tr>
<td>Nonresidential</td>
<td>$250 Billion</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>$100 Billion</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$700 Billion</strong></td>
</tr>
</tbody>
</table>

*Source: Arthur C. Nelson, Presidential Professor & Director of Metropolitan Research, University of Utah.*
How Does It Grow?
Market Analysts Finding Changing Preferences

National Association of Realtors
National Association of Home Builders
Nationally Recognized Market Analysts
Urban Land Institute
Lend Lease/PriceWaterhouseCoopers
Joint Center for Housing Policy at Harvard

Golfing Buddies and Taxi Drivers
## Households are Changing

<table>
<thead>
<tr>
<th>Household Type</th>
<th>1960</th>
<th>2000</th>
<th>2040</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>US</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HH with Children</td>
<td>48%</td>
<td>33%</td>
<td>26%</td>
</tr>
<tr>
<td>HH without Children</td>
<td>52%</td>
<td>67%</td>
<td>74%</td>
</tr>
<tr>
<td>Single/Other HH</td>
<td>13%</td>
<td>29%</td>
<td>34%</td>
</tr>
<tr>
<td><strong>Utah</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HH with Children</td>
<td>47%</td>
<td>38%</td>
<td></td>
</tr>
<tr>
<td>HH without Children</td>
<td>53%</td>
<td>62%</td>
<td></td>
</tr>
<tr>
<td>Single/Other HH</td>
<td>18%</td>
<td>22%</td>
<td></td>
</tr>
</tbody>
</table>

*Source: Arthur C. Nelson, Presidential Professor & Director of Metropolitan Research, University of Utah.*
People Turning 65 Each Year

[Figures in 000s]

What Futurists Tell Us

Bio-medical advances extend lifetimes. Insurance actuarial tables extend to 120. Another 20 years added – minimum. Adulthood mostly after child-rearing.
Retired Location Preference

City or suburb close to a city 51%
Suburb away from a city 19%
Rural community 30%

Conventional suburbs away from cities are the least desirable for this group.

Source: Adapted from National Association of Realtors & Smart Growth America, National Community Preference Survey 2004.
Buy-Sell Rates by Age Cohort

Relocation Choices of Seniors

<table>
<thead>
<tr>
<th>Housing Type</th>
<th>Before Move</th>
<th>After Move</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attached</td>
<td>24%</td>
<td>54%</td>
</tr>
<tr>
<td>Renter</td>
<td>20%</td>
<td>59%</td>
</tr>
</tbody>
</table>

Source: American Housing Survey 2003. New movers means moved in past year. Annual senior movers are about 5% of all senior households; 75%+ of all seniors will change housing type between ages 65 and 80.
Emerging “Urbanity” Preferences

### Share of Growth 2000-2040

<table>
<thead>
<tr>
<th>US HH Type</th>
<th>Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>With children</td>
<td>14%</td>
</tr>
<tr>
<td>Without children</td>
<td>86%</td>
</tr>
<tr>
<td><strong>Single/Other</strong></td>
<td>30%</td>
</tr>
</tbody>
</table>

### Utah

| With children       | 25%   |
| Without children    | 75%   |
| **Single/Other**    | 25%   |

Source: Arthur C. Nelson, Presidential Professor & Director of Metropolitan Research, University of Utah.
“New Urbanity” Preferences

New Housing Market Realities

- Sub-prime mortgages are history
- Alt-A mortgages no more
- FHA-like conventional mortgages king
- “Jumbo” loans expensive and difficult
- Demand for $1 million+ homes in 30 largest markets has tanked → from ~15% to <5%

**Meaning**
- Smaller homes
- Smaller lots
- More renters
Home Ownership Demand Shift

Utah ownership in 2000s = 70%
Ownership may fall to 65%, or less, by 2020

Utah owner/renter split after 2015
65% owner
35% renter

65% owner  Could be 62%
35% renter  Could be 38%

Utah new construction to 2015:
67% renter-occupied
33% owner-occupied

67% renter-occupied  Could be 75%
33% owner-occupied  Could be 25%

Utah new construction to 2020:
50% renter-occupied
50% owner-occupied

50% renter-occupied  Could be 67%
50% owner-occupied  Could be 33%

Source: Arthur C. Nelson, Presidential Professor & Director of Metropolitan Research, University of Utah.
Housing Mix for Life Stages

- **40% for traditional families**
  - Mostly detached on 1/6-1/4 acre lot moderate- to large-home (>2,500 sq.ft.)

- **25% for young and low-/moderate-income families**
  - Apartment (garden), townhouse, small lot detached small-size home; some “over-the-store units” (<1,200 sq.ft.)

- **25% for transition, empty-nester, higher-density choice families**
  - Condominium, upscale townhouse, small-lot moderate-size home (1,200-2,500 sq.ft.)

- **10% of housing in Accessory Dwelling Units**
  - Allowed in larger detached and attached homes
  - *Untapped resource for humane housing options*
Core Values = Urbanity

Well-Designed Communities and Core Areas
  = Density, mixed uses, renewability

Effective Transportation Systems
  = Density, accessibility, connectivity

Employment and Economy
  = Density, accessibility, connectivity

Sense of Community
  = Walkability, life-stage options, connectivity
Urbanity Guides

- Population/employment density that is sustainable and resilient
- Housing mix that matches life-cycle stages
- Housing mix that sustains schools
- Development design promoting “urbanity”
- Preserving/protectiong vital open spaces
- Planned renewal
Importance of Community Attributes

1. Housing type (23-26%)
2. Neighborhood age/life stage mix (20-24%)
3. Public transportation options (12-14%)
4. Type of community (12-15%)
5. Size of yard (11-12%)
6. Open space (9-11%)
7. Architectural design (5-6%)

Adapted Harris Interactive for Envision Utah
Preferred Community Attributes

- **Housing type:** Mix of single family homes & town homes
- **Neighborhood age/life stage mix:** Mix of ages & stages
- **Public transportation options:** Bus, Rail, TRAX
- **Type of community:** Village
- **Lot size:** Variety of lot sizes
- **Open space:** Active & passive open spaces
- **Architecture:** Distinctive architecture and design

Preferred Combination of 75% of Utahns
Suburban Urbanity

- **Every home within ¼ mile** of primary retail (grocery) and personal service centers
  - “Walkable” sidewalks, “bikeable” bikeways, segways okay.
  - Accessible with golf-cart ways either in multi-purpose walk/bike/seg ways or dedicated ways.

- **Every home within ½ mile** of significant, active and passive open spaces

- **Complete connectivity** → no dead-ends, cul-de-sacs

- Benign *home office* home occupations allowed.

- **Transportation corridors** include BRT plus dedicated “European-style” bikeways, walkways → and have *transit ready option*. 
Sustainability & Resilience

Minimums to be taken seriously:

- 10,000+ people per square mile.
- 4,000+ occupied residential units per sq. mile.
- Average of 6,000 jobs per square mile with centers 3-times this surrounded by areas 1/3rd this – walking, biking, Segway distance
- 400,000 square feet of retail + service space per square mile but with centers of 2-times this surrounded by areas of 1/2 this.
Why?

- Facilitates reduction of vehicle trips & VMT to target levels of emissions for sustainability.
- Improves resilience to economic downturns.
- Creates wide range of housing options for each life stage.
- Creates resilient sense of community.
Day Break = 11,000 people per square mile.
Orenco Station = 15,000/Sq. Mile
Sustainable Schools

- **Student generation** rates by unit size/type are predictable.
- **Design neighborhoods** around access to schools with housing mix to support life-cycle stages. Link neighborhoods to high schools with multi-modal accessibility.
- **Design** and use schools for multiple functions
- **Integrate schools** into neighborhoods, don’t isolate them.
Sustainable-School Neighborhood Unit

Clarence Perry’s “Neighborhood Unit” of 1929

Clinton Mackenzie’s Ideal Town
The New Promised Land?
Tear Up a Parking Lot, Rebuild Paradise

Large, flat and well drained
Single, profit-motivated ownership
Major infrastructure in place
4+ lane highway frontage \(\rightarrow\) “transit-ready”
Committed to commercial/mixed use
Can turn NIMBYs into YIMBYs

Slide title phrase adapted from Joni Mitchell, *Big Yellow Taxi*, refrain: “Pave over paradise, put up a parking lot.”
Boulevard Capacity

- Roughly 60 miles of Boulevard prospects
- Roughly 20,000 acres currently @<0.25 FAR
- Nearly all land ripe for renewal by 2030
- Boulevard capacity
  - 33% to transit/auto/ped/bike/segway Boulevards @1.5 FAR
  - 30 units per acre → 200k units → 50% demand
  - 60 employees per acre → 400k jobs → 67% demand
- 0% change in developed land
- ~50%+ reduction in VMT
Transit Oriented Development Template
10-minute walk or about 1500-2000 feet
*The speed of a saunter or a walk-in-the-park.*

<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>Distance of District Boundary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seattle, WA</td>
<td>¼-mile radius from LRT station</td>
</tr>
<tr>
<td>Hillsboro, OR</td>
<td>1,300-ft radius from LRT station</td>
</tr>
<tr>
<td>Portland, OR</td>
<td>¼-mile radius from LRT station</td>
</tr>
<tr>
<td>Washington County, OR</td>
<td>½-mile radius from LRT station; ¼ mile radius from primary bus routes</td>
</tr>
<tr>
<td>San Diego, CA</td>
<td>2,000-ft radius from transit stop</td>
</tr>
</tbody>
</table>

Source: Calthorpe (1993)

District Boundary Definitions in TOD Ordinances
Source: Community Design + Architecture (2001)
Rethink TOD Planning Areas

10-minute business walk = 1km

1km radius = 6 times the planning area of ¼ mile radius → 800ac v. 125ac

FOR METRO ATLANTA, INVESTING $26-$43 BILLION IN NEW CAPACITY
COULD DRIVE UP TO $345 BILLION IN BENEFITS

Incremental investment
2008 Dollars

- $220 million* (for HOV-HOT conversion, VMT fees or congestion pricing, employer-based initiatives)
- Reliable “connecting” infrastructure and circulators: $26.0 billion
- Doubling down in congested corridors (transit and road): $17.2 billion
- $0 (if the “right” investments are made and market responds)

Incremental returns
2008 Dollars

- $40 billion over 30 years in reduced congestion costs (wasted time and fuel)
- Additional $40 billion over 30 years in reduced congestion costs
- Additional $10 billion over 30 years in reduced congestion costs
- $39 billion over 30 years in reduced congestion costs

By improving the value proposition to employers and people, these measures could also add ~$216 billion in additional GDP growth over 30 years**

- Reduction in congestion costs alone ($119-129 billion over 30 years) justifies the investment, though GDP benefits are even more substantial
- Capturing full benefit, however, requires more than just investing in infrastructure. Managing demand and coordinating the infrastructure investment with future development patterns are as important as the infrastructure itself

* Cost estimate for demand management reflect the cost of converting existing HOV lanes to HOT lanes. It does not include the cost of implementing a congestion pricing regime. The analysis assumes the cost of a congestion pricing program would be financed out of the revenues the program generates

**Assumes an incremental .25% GDP growth per year over 20 years

Source: Adapted from Kimley-Horn, ARC Travel Demand Model, McKinsey analysis for GRTA, January 7, 2009.
2040 @ 1+1+6+25 = Wasatch Urbanity Demand

1%+ Downtown SLC living (40k+ people)
1%+ Secondary centers → Ogden, Sandy, Provo (40k+ people)
6%+ Near downtown/center/Boulevard options (250k+ people)
25%+ Transit-access mixed-use options west of Jordan R.
   → Day Break-like communities (1M+ people)

Minimum 1/3 of people in 2040 want New Urbanity options.
60%+ of new housing 2005-2040 will need to be in New Urbanity options.

Source: Arthur C. Nelson, Presidential Professor, Director, Metropolitan Research Center, University of Utah
Top Planning Programs