Land Use Planning for Sustainability and Livability

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Local Government Commission

Sacramento Planning Academy

Sacramento, CA
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We are a nonprofit organization that fosters innovation in local environmental sustainability, economic prosperity and social equity.

Local Government Commission

Designing Healthy Communities • Responding to Climate Change • Promoting Energy Solutions

www.lgc.org
The Ahwahnee Principles, 1991

- Response to our members’ concerns over sprawling, poorly planned development in their communities
- Assembled with assistance from leading architects and planners working on innovative solutions
The Ahwahnee Principles, 1991

- Revitalize existing parts of our communities through infill development
- Plan complete and integrated communities with mix of uses
  - Within walking distance of one another
  - Within walking distance of transit stops
  - With a diversity of housing types
  - With a center focus
What is the Purpose of Towns and Cities?

Cities are an invention to maximize exchange (goods, culture, friendship, knowledge) and to minimize travel.

The role of transport is to maximize exchange.
Will 23 lanes be enough?

Proposal would put I-75 among country’s biggest

By ARIEL HART
ahart@ajc.com

It’s wider than an aircraft carrier. Far wider than the carving on Stone Mountain. Wider than the White House stretched end to end, twice.

It’s the planned I-75, all 23 lanes, coming soon to Cobb County. As currently conceived it’s 388 feet across, wider than a football field is long.

23 LANES: The state Department of Transportation is planning to expand I-75 (below) and I-575 in Cobb and Cherokee counties. The 23-lane stretch would be between Delk and Windy Hill roads on I-75.

<table>
<thead>
<tr>
<th>Truck lanes</th>
<th>General purpose lanes</th>
<th>HOV lanes</th>
<th>General purpose lanes</th>
<th>Truck lanes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Southbound</td>
<td>Northbound</td>
<td>Car/van pools and buses ride for free. Single-occupant vehicles must pay. Cost rises when traffic is heavier.</td>
<td></td>
</tr>
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</table>
U.S. Population Growth and Land Consumption, 1982-2027

- Land area in virtually every metropolitan region in U.S. has expanded substantially since 1950.
- Urbanized area increased 2.5 times faster than population growth between 1950 and 2010.

Data for 2012-2027 is extrapolated.
Expansion with Little Population Growth: Cuyahoga County, Ohio

U.S. Census 1950
1,389,582 pop.

U.S. Census 2002
1,393,978 pop.

Cuyahoga Co Land Use Maps – Cuyahoga County, Ohio, Planning Commission
Growth in Vehicle Miles Traveled (VMT) Far Outpaces Growth in Population

Data sources: U.S. Census Bureau; Federal Highway Administration
Why Community Design Matters…

Traditional View:
Cities produce large amounts of GHGs.

Source: www.travelmatters.org
(Center for Neighborhood Technology)
Why Community Design Matters…

Emerging View:
City dwellers produce relatively low amounts of GHGs.

Source:
www.travelmatters.org
(Center for Neighborhood Technology)
Three “E’s” or “P’s” of Sustainable Development

- Development that meets the needs of the present without compromising the ability of future generations to meet their own needs

Courtesy: sustainableschmidt.com
Equality doesn’t mean Equity
Equitable Development

- Approach to creating healthy, vibrant, communities of opportunity.
  
  Equitable outcomes come about when smart, intentional strategies are put in place to ensure that everyone can participate in and benefit from decisions that shape their neighborhoods and regions.

- PolicyLink developed an online toolkit with 27 tools
  
  - Affordable Housing
  - Economic Opportunity
  - Health Equity and Place
  - Land Use and Environment

Credit: PolicyLink
Economic Benefits of Smart Growth

“Just as companies now compete on quality, communities will too.”

— Collaborative Economics, *Linking the New Economy to the Livable Community*

“Livability isn’t some middle class luxury. It is an economic imperative.”

— Robert Solow, Nobel Prize-winning Economist
<table>
<thead>
<tr>
<th>What Smart Growth “Is” And “Is Not”</th>
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<tbody>
<tr>
<td><strong>More transportation choices and less traffic</strong></td>
</tr>
<tr>
<td><strong>Vibrant cities, suburbs and towns</strong></td>
</tr>
<tr>
<td><strong>Wider variety of housing choices</strong></td>
</tr>
<tr>
<td><strong>Well-planned growth that improves quality of life</strong></td>
</tr>
</tbody>
</table>

Courtesy: Smart Growth America
Principles of Smart Growth/
Livable Communities
Ten Principles of Smart Growth

1. Preserve Open Space, Farmland, Natural Beauty and Critical Environmental Areas
2. Strengthen and Direct Development Towards Existing Communities
3. Take Advantage of Compact Building Design
4. Mix Land Uses
5. Create Range of Housing Opportunities and Choices
6. Provide a Variety of Transportation Choices
7. Create Walkable Neighborhoods
8. Foster Distinctive, Attractive Communities with a Strong Sense of Place
9. Encourage Community and Stakeholder Collaboration
10. Make Development Decisions Predictable, Fair and Cost Effective
1. Preserve open space, farmland, and critical environmental areas

- Identify areas with highest priority for preservation
- Use a variety of preservation tools, including purchase, regulatory, and incentive programs
Sprawl in the Atlanta Region

- 1973-1992 forest land was reduced by 15 percent and grassland and cropland by about 6 percent

- The Georgia Conservancy estimated that 27 acres of tree cover were lost in the region every day

- Without transit-supportive and higher-density land use patterns, the Conservancy estimated that 200,000 acres of tree cover will be lost by 2020
Analyze where you can accommodate future growth

Mapping Method
Developed by Ian McHarg
2. Strengthen, and direct development towards, existing communities

- Use incentives to clean-up and re-use “brownfield” and “grayfield” sites
- Preserve and repair historic buildings as part of revitalization efforts
- Build on resources and amenities of existing communities
Impacts of Infill vs. Greenfield Development in the San Diego Region

- VMT/capita: Infill 52%, Greenfield 58%
- Auto travel time: Infill 51%, Greenfield 58%
- Congestion: Infill 24%, Greenfield 51%
- NOx emissions: Infill 55%, Greenfield 58%
- CO2 emissions: Infill 55%, Greenfield 58%
- Infrastructure costs: Infill 10%, Greenfield 55%
- Household travel costs: Infill 58%

Source: Study by Criterion Planners/Engineers for U.S. Environmental Protection Agency, 1998
Potential benefits of infill

- Revitalize town centers, neighborhoods
- Provide more housing options
- Support transit service
- More efficient use of land
- Reduced costs for infrastructure/services (sometimes)
- Preserve agriculture
- Conserve open space
3. Take advantage of compact building design

- Grow vertically rather than horizontally to preserve green spaces and reduce cost of providing public facilities and services
What do downtown Florence, a freeway interchange and a big box store have in common?
## Lower Cost of Infrastructure

### Low Density vs. Compact Development

<table>
<thead>
<tr>
<th>Component</th>
<th>Cost Increase</th>
</tr>
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<tbody>
<tr>
<td>Land Consumption</td>
<td>45% more*</td>
</tr>
<tr>
<td>Cost for Roads</td>
<td>25% more**</td>
</tr>
<tr>
<td>Cost for Utilities</td>
<td>15% more**</td>
</tr>
<tr>
<td>Cost for Schools</td>
<td>5% more**</td>
</tr>
<tr>
<td>Other Costs</td>
<td>2% more**</td>
</tr>
</tbody>
</table>

Suburban
City’s Annual Cost, per Household

$3,462

Parks & Recreation $129
Fire Department $406
Transportation $171
Culture / Economy $36
Sidewalks & Curbs $194

Solid Waste $185
Governance $297
Libraries $72
Roads $280
Storm & Waste Water $613
Transfers to Provinces eg, School Boards $435

Suburban (Total)

Urban
City’s Annual Cost, per Household

$1,416

Parks & Recreation $69
Fire Department $177
Transportation $91
Culture / Economy $30
School Bussing $13

Solid Waste $185
Governance $158
Libraries $30
School Bussing $13

Urban (Total)

For more data and more reports, visit thecostofsprawl.com
Data based on Halifax Regional Municipality
<table>
<thead>
<tr>
<th></th>
<th>Asheville</th>
<th>Downtown</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jobs per Acre:</td>
<td>5.9</td>
<td>73.7</td>
</tr>
<tr>
<td>Residents per Acre:</td>
<td>0.0</td>
<td>90.0</td>
</tr>
<tr>
<td>City Retail Taxes/Acre:</td>
<td>$ 47,500</td>
<td>$83,600</td>
</tr>
<tr>
<td>Total Property Taxes/Acre:</td>
<td>$ 6,500</td>
<td>$634,000</td>
</tr>
<tr>
<td>Land Consumed (Acres):</td>
<td>34.0</td>
<td>00.2</td>
</tr>
</tbody>
</table>
Land Use Pattern Affects Travel — Higher Density can reduce Vehicle Trips

Significant reduction as we go from 3-4 units/acre to over 20 units/acre

Source: John Holtzclaw, PhD, Sierra Club
Land Use Pattern Affects Travel — Density to Support Transit

Source: Jeffrey Tumlin, Sustainable Transportation Planning, 2012
Land Use Pattern Affects Travel — Density to Support Retail

For a 10,000 sq.ft. Convenience Store
■ 7 units/acre

For a 25,000 sq.ft. Small Supermarket
■ 18 units/acre
Compact Development in Appropriate Locations

Traditional Neighborhood Code

Knoxville, TN
Missing Middle Housing

Scale Between Single Family Housing and Stacked Flats

© 2015 Opticos Design, Inc.
In 1991 there were 31.8 million people over the age of 65 in the U.S.

By 2030 that number will increase to 66 million.

Demographic Trends: Increase in Elderly Population
Moving to downtowns and older neighborhoods
Driving less and looking for other transportation options.

Demographic Trends: Millenials
4. Mix land uses

- Provide retail or personal services near housing
- Incorporate parks, schools, and other public facilities
Alternative Patterns of Development

Traditional

Conventional
Housing over retail

Sacramento, CA
Housing over restaurant, shops
Sacramento, CA
Housing next to retail

Salinas, CA
5. Provide housing opportunities and choices

- Provide quality housing for people of all income levels, household sizes, and stages in the life cycle.
Live-Work Units

Little Italy, San Diego, CA
Mixed housing types

Fourplex, Doe Mill, Chico, CA
Mixed housing types

Bungalow Court, Doe Mill, Chico, CA
Mixed housing types

Townhouses, Doe Mill, Chico, CA
6. Provide a variety of transportation choices

- Coordinate land use and transportation investment
- Increase high-quality transit service
- Connect pedestrian, bike, transit, and road facilities
Transit-Oriented Development
San Diego, CA
Portland Bus Mall, 6th Avenue

Opened in 1977, 22 blocks in downtown
Portland Bus Mall, 6th Avenue

Yellow light rail line added in 2009
Bus Rapid Transit, Mexico City Metrobus, Avenida Insurgentes line
Buses run every few minutes, Passengers pay when accessing platform
Protected bicycle lanes (cycletracks) — New York City
California Examples of Protected bicycle lanes

Long Beach

Ripon

Temple City
Bicycle Share Programs

Lyon, France
Paris, France
Mexico City, Mexico
Omaha, NE
Will traffic volumes always increase? Maybe not.
Millenials are walking/cycling more and driving less

- Moving to downtowns and older neighborhoods
- Driving less and looking for other transportation options.

[Chart showing change in number of trips per capita among 16 to 34 year-olds, 2001-2009]

www.copirg.org/sites/pirg/files/reports/Millennials%20in%20Motion%20CoPIRG.pdf
Carsharing Vehicle Growth

Shaheen and Cohen, 2014
Autonomous vehicles could increase VMT by 6%-90%, depending on the percent of individually owned cars

— Joan Walker Director of Institute of Transportation Studies at UC Berkeley
7. Create walkable communities

- Mix land uses, build compactly, and provide safe and inviting pedestrian corridors
- Create “complete streets”
  - Accommodate pedestrians, bicyclists, transit users
Tremendous potential of Active Transportation

Of all trips:

50% are less than 3 miles
A 15-minute bike ride

28% are less than 1 mile
A 20-minute walk

60% are driven

Of these trips…

National Household Travel Survey (2009)
Street Design

- Influences trip choices
  - Safe, quiet, slow, shaded streets encourage people to walk, ride bicycle or take transit instead of driving a car
Conventional Pattern of Development
Trip Assignment: Conventional
Traditional Pattern of Development
Trip Assignment: Traditional
Traditional vs. Conventional

Central Business Districts at the same scale

Great Streets, Allen Jacobs
Portland, Oregon

Great Streets, Allen Jacobs
Walnut Creek, California
Principles of Safe, Walkable Streets

- Complete Streets designed for people, not just cars
- Friendly to cars, pedestrians and cyclists
Principles of Safe, Walkable Streets

- Streets designed so drivers feel comfortable at slow speeds
  - 15-25 mph on neighborhood streets
  - 25-35 mph on avenues and boulevards
Safe Streets Need Good Sidewalks
Healthy Neighborhoods Need Good Street Crossings
8. Foster Distinctive, Attractive Communities with a Strong Sense of Place
“There is little sense of having arrived anywhere, because everyplace looks like no place in particular.”

— James Howard Kunstler, *The Geography of Nowhere*
9. Encourage community and stakeholder collaboration in development decisions

- The private sector does most of the development, but residents and other stakeholders collaborate in this process to ensure it is consistent with community needs and concerns.
1. Sidewalk Finished
2. Better Lighting
3. Stop sign on Main St.
These maps may not be accurate!
Implementation – Public Participation is Key

- Get Better Plans
- Engage Residents in their Community
- Good Plans Survive Political Changes
- Way to insure that residents feel not that they have access to City Hall but that they own City Hall
10. Make development decisions predictable, fair and cost-effective

- Update comprehensive plan and implementing regulations to incorporate Livable Communities, and apply regulations consistently
LGC’s work on Smart Growth Codes

- 2003 published guide on Smart Growth Zoning Codes
- Reviewed over 250 codes and design guidelines from across the nation
- Chapters 1-3 cover comprehensive codes
  - Traditional Neighborhood Development
  - Mixed-Use/Live Work
  - Transit Area Codes
Plan proactively
Develop a Vision for Community

Pasadena
General Plan
Plan proactively
Develop a Vision for Community

Pasadena General Plan
Holly Street Village
Infill, mixed use rental housing

Model: Early 1990s
Implementing the Vision

- State-of-the-Art Development Codes — Form-Based Codes
  - Recognition that current zoning and land development regulations are flawed
  - New approaches to fixing them
  - New emphasis on form-based codes, SmartCode
  - Problems with conventional codes that emphasize use and intensity of development

Source: Duany Plater-Zyberk
Is there a market for Smart Growth?

<table>
<thead>
<tr>
<th>Important things when deciding where to live…</th>
<th>Important</th>
<th>Not Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Being within an easy walk of other places and things in the community</td>
<td>80%</td>
<td>20%</td>
</tr>
<tr>
<td>Sidewalks and places to take walks</td>
<td>86%</td>
<td>14%</td>
</tr>
<tr>
<td>Being within a short commute to work</td>
<td>74%</td>
<td>26%</td>
</tr>
<tr>
<td>Easy access to the highway</td>
<td>80%</td>
<td>20%</td>
</tr>
<tr>
<td>Having public transit nearby</td>
<td>62%</td>
<td>38%</td>
</tr>
<tr>
<td>Bike lanes and paths nearby</td>
<td>54%</td>
<td>46%</td>
</tr>
<tr>
<td>Separated bike paths or trails</td>
<td>53%</td>
<td>47%</td>
</tr>
</tbody>
</table>
Additional Resources

- Local Government Commission
  - www.lgc.org

- Smart Growth Network
  - www.smartgrowth.org

- Smart Growth America
  - www.smartgrowthamerica.org

- Congress for the New Urbanism
  - www.cnu.org

- Center for Neighborhood Technology
  - www.cnt.org
Questions/Comments

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