



# **American Cities and Sustainable Development**

## **Why Thinking Globally But Excluding Locally May Be A Recipe For Doom**

**By  
Edward H Ziegler  
Professor of Law  
University of Denver**

**America's Built Environment Today  
Reflects the Market Trends and  
Innovations of the Twentieth Century....**

**Along with our Public Laws, Policies, and  
Subsidies Promoting Low Density  
Automobile-dependant Sprawl**

**The  
Automobile  
Industry**

**&**

**The  
Interstate  
Highway**





**The  
Shopping  
Mall**

**&**

**Big Box  
Retail**



# The Suburban Office Park

&

# Edge City



**A World  
Completely  
Dependant  
on the  
Automobile**

**&**

**Fossil Fuels**



# **Is Low Density Automobile Dependant Sprawl Sustainable?**

- Quality of life – auto use/traffic congestion
- Economic cost to households
- Global competition - job losses/transit costs
- Auto impact public health & safety
- Infrastructure costs/maintenance
- Peak oil - rising gasoline prices
- Global warming – Co<sub>2</sub> fossil fuels



# High Density is Green

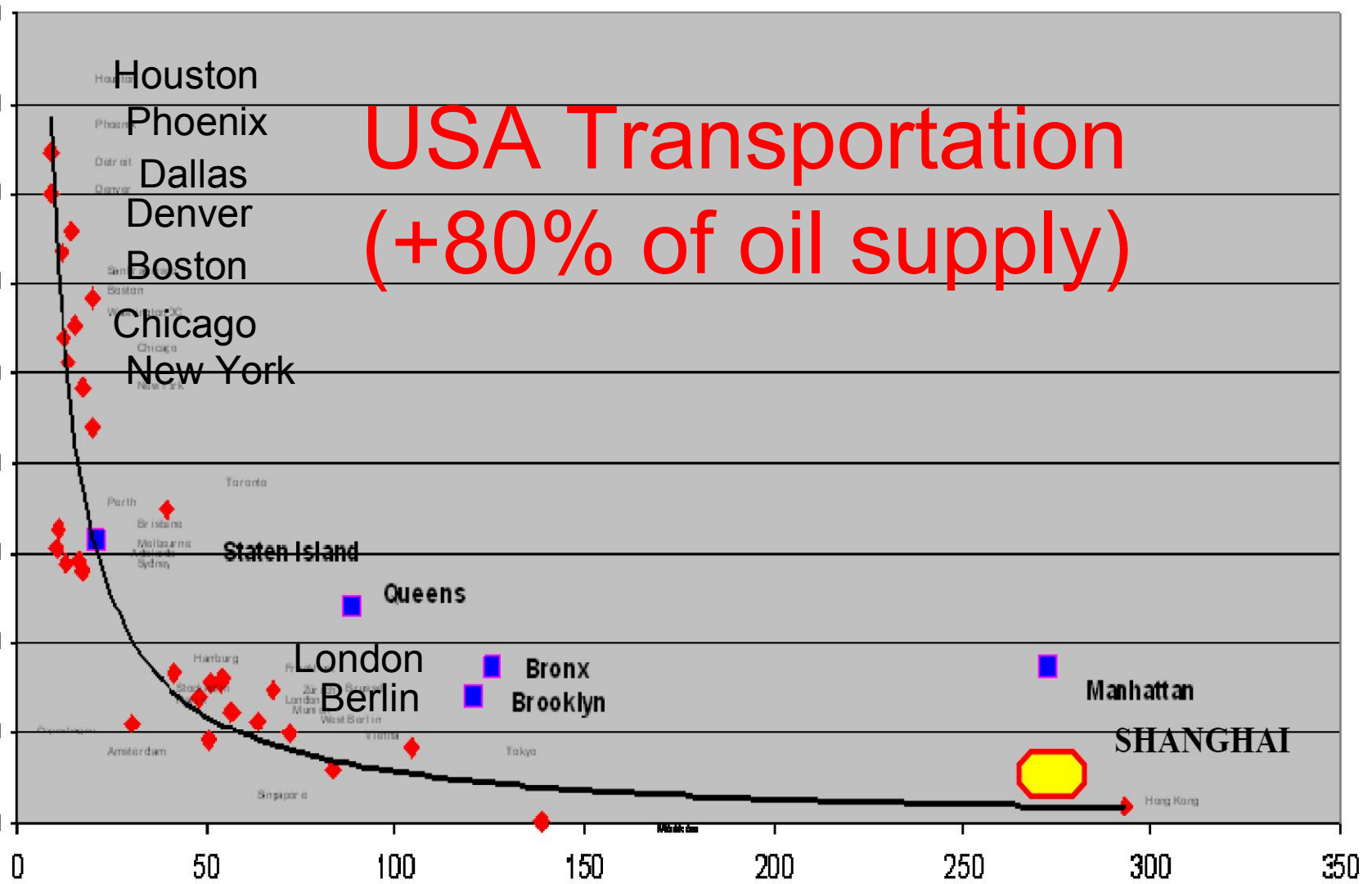
David Owen  
“Green Manhattan”  
New Yorker  
Oct, 2004





Energy for mobility MJ/p/a

USA Transportation  
(+80% of oil supply)



Density people per ha

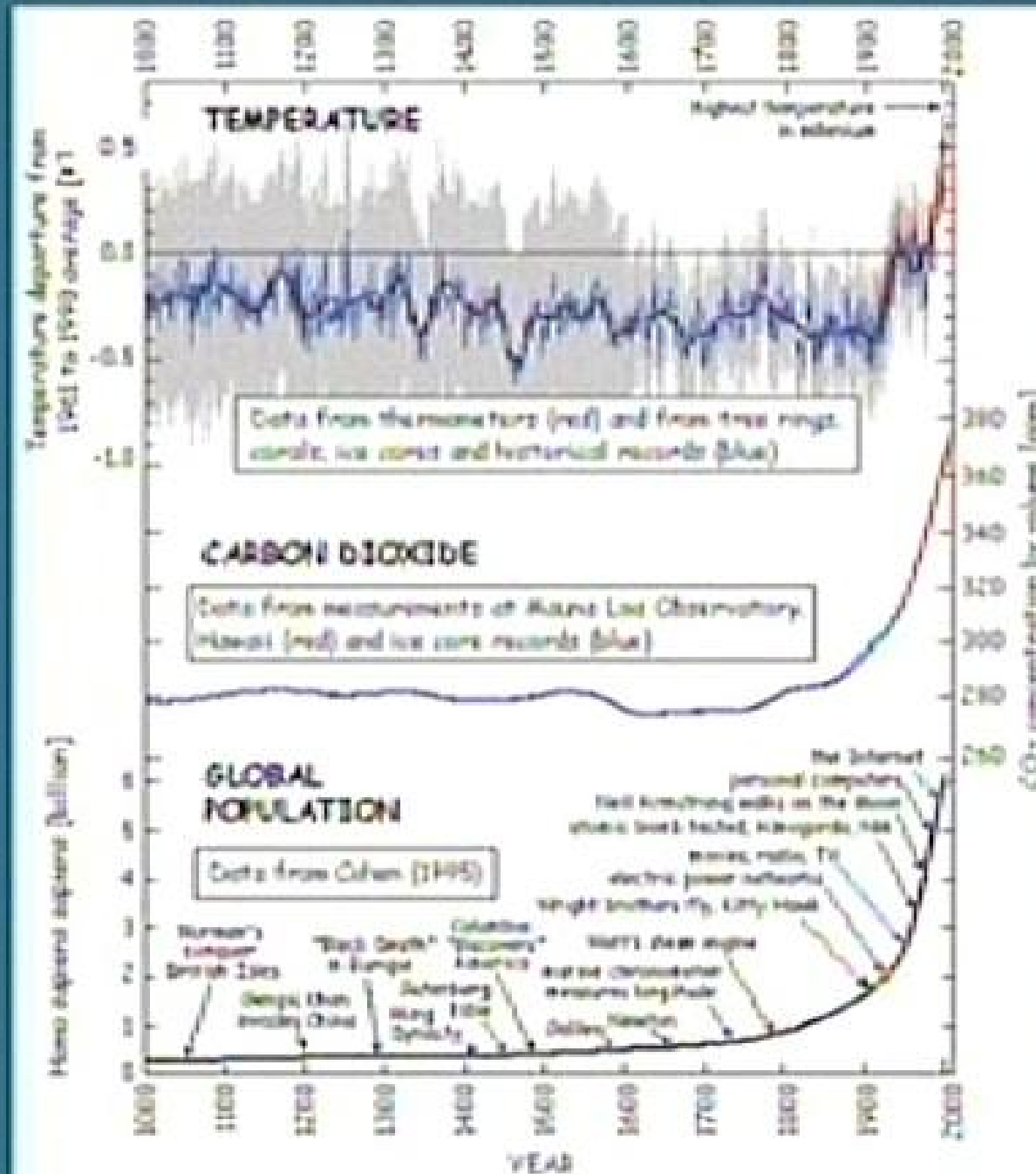
# GLOBAL WARMING CLIMATE CHANGE

## CO2 Increase

- 1700-280ppm
- 2000-370ppm
- 2999-700ppm

## IPPC Estimate

Temperature  
Increase by End  
of Century  
+1.4 \_ +5.8°C



# United States Energy Consumption

• Coal	23%	Fossil fuels 90%
• Oil	44%	
• Natural Gas	23%	
• Nuclear	8%	
• Hydro		3%
• Solar		<1%
• Wind		
• Geothermal		



# Wind and solar energy

.2 %

# Peak Oil



Urban  
Collapse?

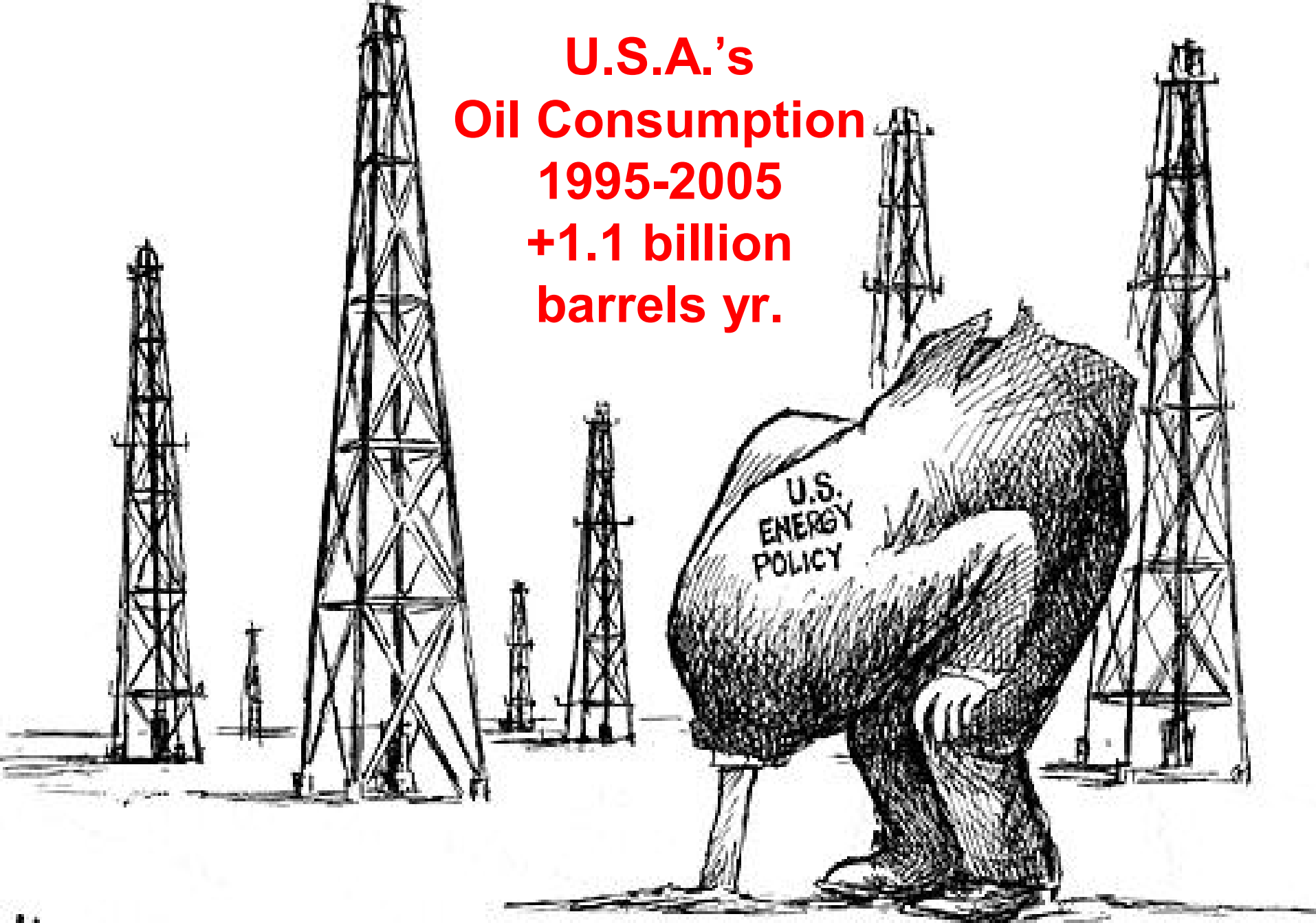


**China's Oil  
Consumption  
1995-2005  
+1.2 billion  
barrels yr.**





**U.S.A.'s  
Oil Consumption  
1995-2005  
+1.1 billion  
barrels yr.**



Conservation and energy efficiency  
are unlikely alone to be sufficient....

# USA Population 300 million

## two future growth stages

1. By 2035 year +100 million people than now
2. By 2099 year +250 million people than now

For stage 1 (next 30 yrs.) we will need to build/add

- 70 million new residential units!\*
- More new non-residential development than all that now exists!\*
- 2/3 this new development in newer suburbs/beyond\*
- + 90 million additional automobiles\*\*

\*A. Nelson & R. Lang, *The Next 100 Million*, Planning 4, Jan. 2007

\*\* Estimate based on present USA +3 million vehicle yr



21 century?



**Broomfield Subdivision  
Colorado USA**

21 century?



**Luodian New Town  
Shanghai China**

The Technological Fix?

-business as usual-

## The “American Freedom Car”



An ethanol-electric-hybrid car  
that gets 600 miles to the gallon

# Clean cheap electricity!

To produce hydrogen to run our entire transportation system with cars and trucks getting 80 miles a gallon we will probably need to build 600 (500 megawatt) nuclear power plants by mid-century.





# How About Our Urban Renaissance, and Smart Growth and New Urbanism ?

Most large cities and downtowns  
in USA grew in the 1990s



Decentralization still dominates



# Density dropped across all regions in the U.S. between 1982 and 1997

	Density		Percent Change
	1982	1997	
Northeast	5.87	4.51	-23.1%
South	3.68	2.82	-23.4%
Midwest	4.19	3.39	-19.0%
West	5.46	4.85	-11.2%
United States	4.46	3.55	-20.5%



Densities continue to decline....

# 2003 USA Census Data

- Many cities (San Francisco, Chicago, Boston, that had been gaining population) now losing population
- Many cities now losing population at a faster rate
- Some major metropolitan regions now losing population to exurban areas



# Mega Regional Growth\*

2007 - 2040 metro decentralization  
continues....but growth focused in 10 Mega regions

- US population + concentration these Mega regions
- Substantial density + in most Mega regions
- May be little density change in other Mega regions
- 2/3 of new development in newer suburbs/beyond

\*R. Lang & A. Nelson, *America 2040*, Planning 7 Jan. 2007

An aerial photograph of Los Angeles, California, showing a vast urban area with a grid-like street pattern. The city extends to the horizon, with mountains visible in the background under a blue sky with some clouds. The text "It's not just about Density!" is overlaid in red at the top.

**It's not just about Density!**

**Los Angeles**

Highest density

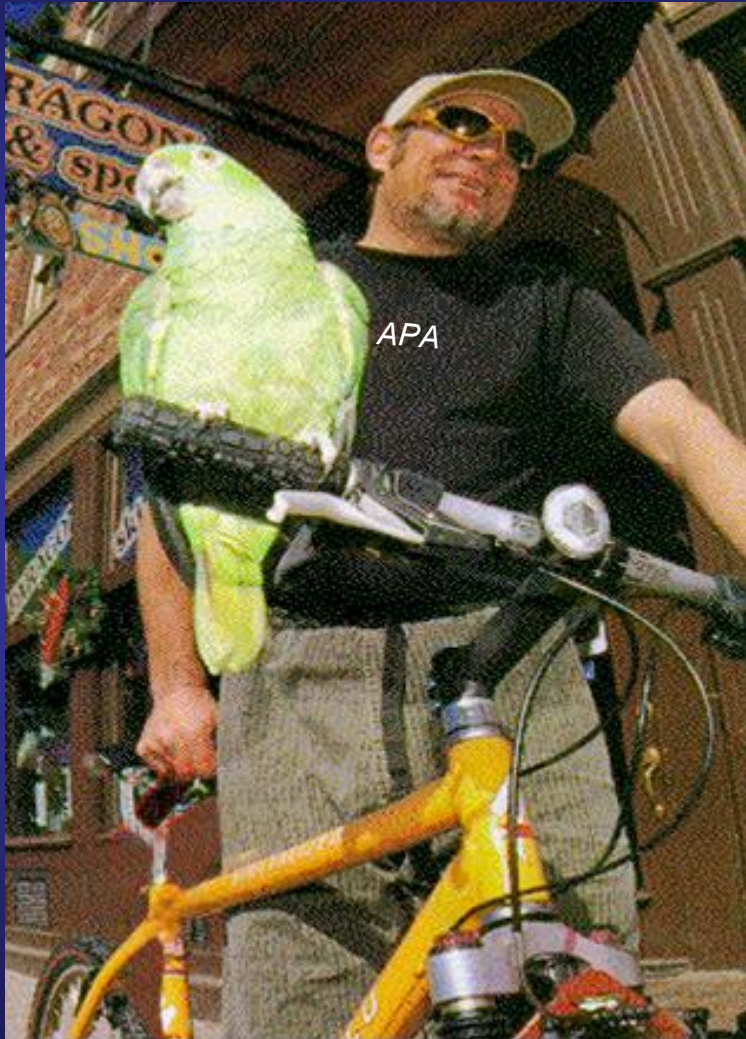
urban metro area in USA

# Causes Unsustainable Low Density Sprawl

- **Private market demand for low density**
- **Public laws, policies and subsidies**  
(for low density development)
- **Local low density fiscal zoning**  
(taxes/spending concerns)
- **Local low density zoning & NIMBY growth management programs**

# SMART GROWTH ?

## Built Environment NIMBYS



### “Sentimental NIMBYS”

Land use activists promoting the “public interest” by “fighting sprawl” through various “smart growth” and “environmental protection” restrictions (which enhance the aesthetic character and property values of existing neighborhoods but that actually promote more harmful and unsustainable low-density regional sprawl).

“Think globally - Exclude locally”

W E L C O M E T O

U S A

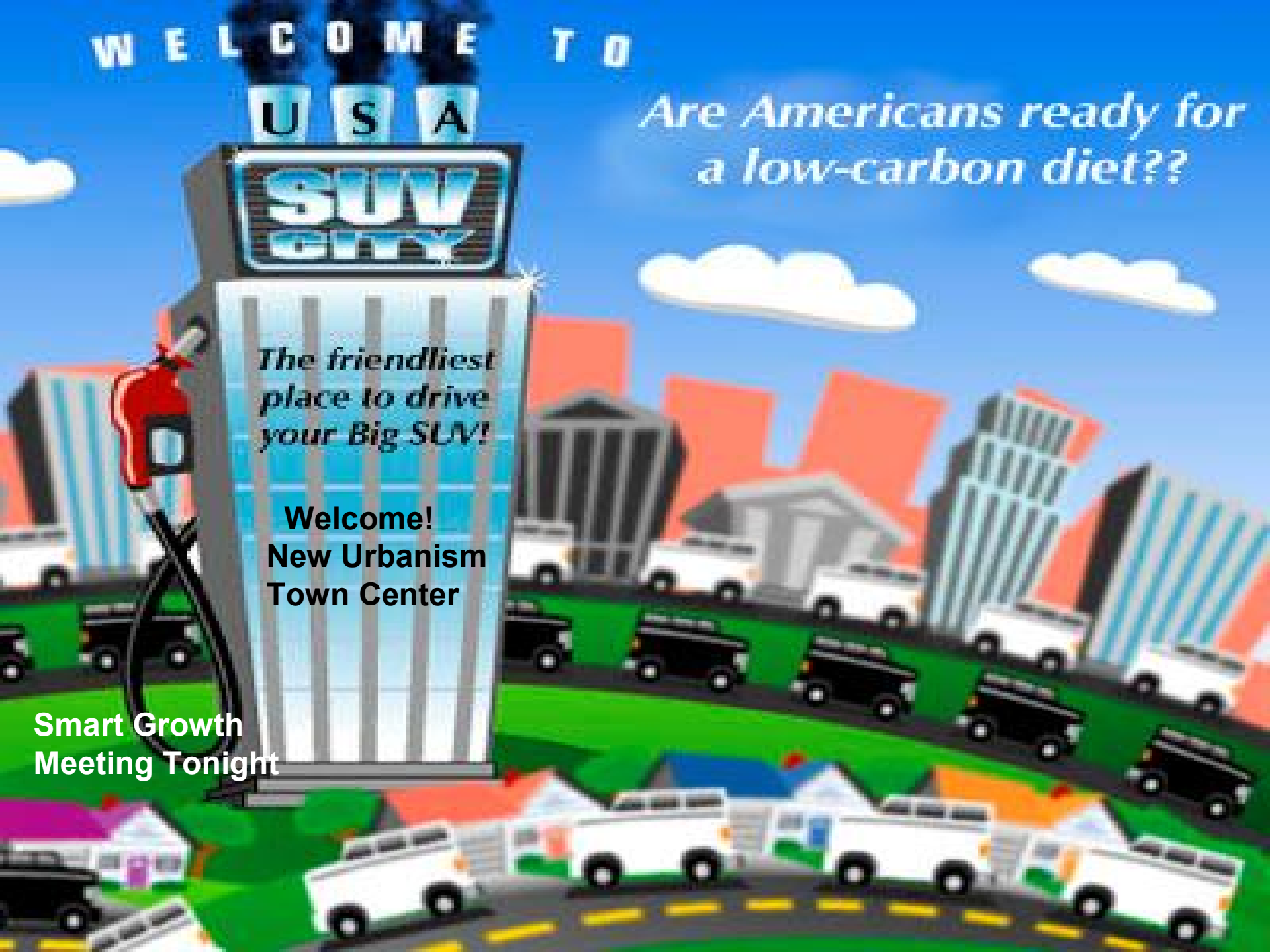
SUV  
CITY

*The friendliest  
place to drive  
your Big SUV!*

**Welcome!  
New Urbanism  
Town Center**

*Are Americans ready for  
a low-carbon diet??*

**Smart Growth  
Meeting Tonight**





# Changes for High Density Sustainable Development

-beyond merely fashionable remedies-

- **Private market demand for high density**
- **Public laws, policies and subsidies**  
(promoting/requiring high density & substantial exactions on low density)
- **State law preemption of local zoning & NIMBY growth management programs** (for all high density residential & energy projects)
- **Substantial + funding new energy technologies**
- **Prohibit solo driver commuting**

# Our twenty-first century

## 2007-2050 problematic times USA

- Much oil from unstable regions of the world
- US households/a negative savings rate
- US \$ +100 billion yr global terrorism
- US \$ 8 trillion national debt
- US \$ 2 trillion state infrastructure deficit
- US \$50 trillion federal entitlement deficit by 2050
- Problem of sustaining “long term” goals in “short term” inward-thinking democracy.

# Sustainable Development

The trouble is not just in the way we are thinking; it is also in the way we, or anyhow we in the affluent parts of the world, are living. And it is going to be hard to define anybody's living as a series of simple choices between irrationality and rationality. Moreover, this is supposedly an age of reason; we are encouraged to believe that the governments and corporations of the affluent parts of the world are run by rational people using rational processes to make rational decisions.

The dominant faith of the world in our time is in rationality. That in an age of reason, the human race, or the most wealthy and powerful parts of it, should be behaving with colossal irrationality ought to make us wonder if reason alone can lead us to do what is right.

Wendell Berry, *Two Minds*, **Citizenship Papers** 87 (2004)



# **American Cities and Sustainable Development**

**“Tomorrow is promised to no one”**

**Jared Diamond, Collapse (2004)**

# Sustainable Development?

Global ecosystems and resources are simply not sufficient to sustain the current economies of the industrial West and at the same time bring more than 2 billion people into the global middle class through the same resource intensive development model pioneered by North America and Europe.

Limits on the ability to increase oil production, shortages of water, and the economic impacts of damaged ecosystems and rapid climate change are among the factors that make it impossible to continue current patterns on such a vastly larger scale.

Humanity is now on a collision course with the world's ecosystems and resources. In the coming decades, we will either find ways of meeting needs based on new technologies, policies, and cultural values, or the global economy will begin to collapse.

World Watch Institute, State of The World 3 (2006).



# GROWTH & CLIMATE CHANGE

## FUTURE GROWTH

China and the US are likely to be building thousands of coal-fired green house gas emitting power plants by mid century and both countries will be adding millions of new automobiles with greenhouse emissions from oil consumption.

## GLOBAL WARMING

To limit global warming to not more than a 2° Celsius rise in temperature, the world will need to produce by mid century from 100 to 300% of all the energy now produced, and all from non-fossil fuel sources.

# TOD Vienna, Austria





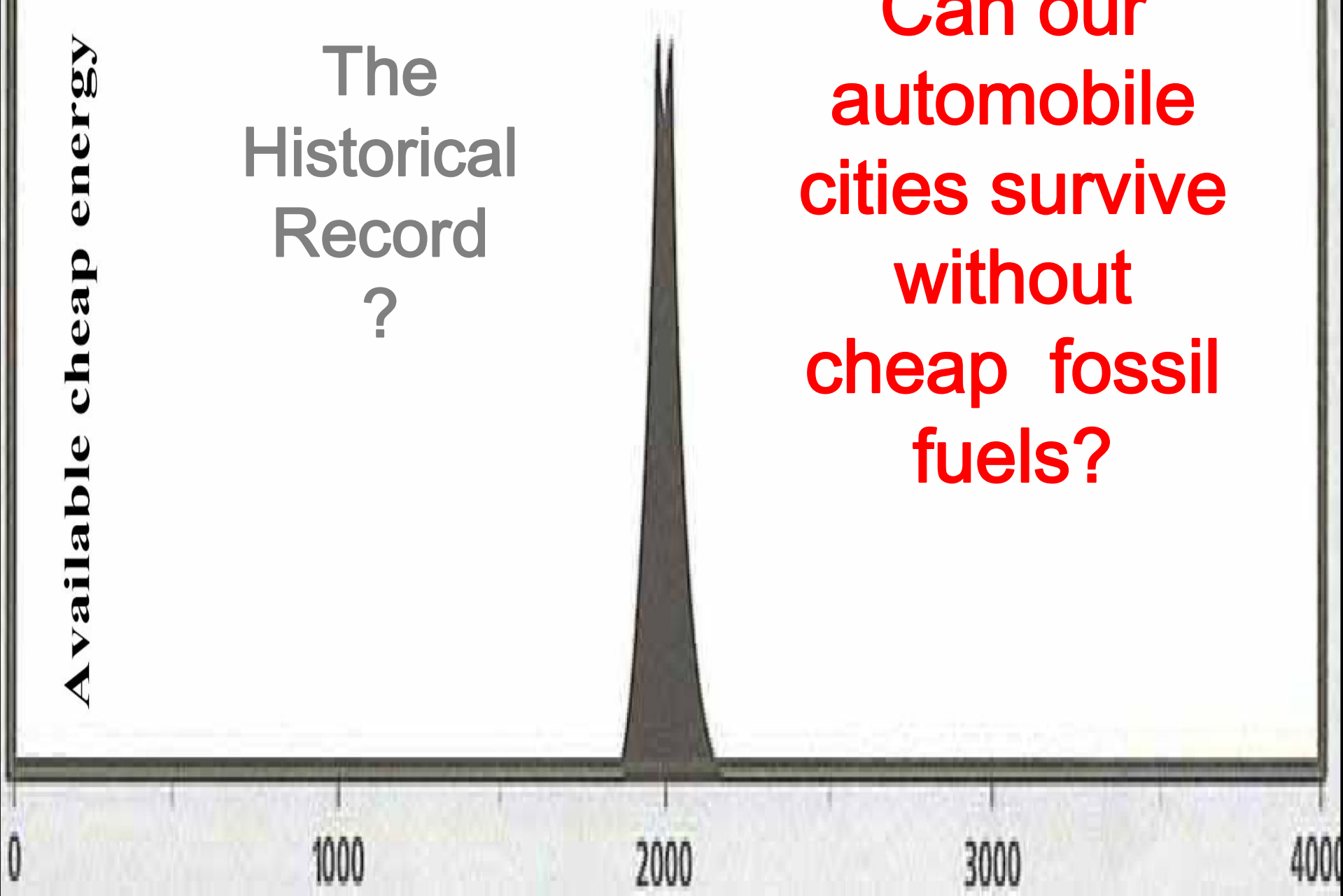
# TOD - Vienna, Austria



**Available cheap energy**

**The  
Historical  
Record  
?**

**Can our  
automobile  
cities survive  
without  
cheap fossil  
fuels?**



**Is Our Built  
Environment of  
Auto-Dependant  
Sprawl  
Sustainable?**





**The Balloon  
Frame House**

**&**

**The Housing  
Industry**





Urburbine Lowry 303-320-1989  
Contact: Carol Lease  
Grand Lowry Lofts 720-858-0800

#### Senior Communities

Aspen Village at Lowry 303-364-7149

Generations at Lowry 303-364-8500

#### Touchstone Duplexes by:

Touchstone Homes 720-941-7451

#### Tapestry Flats by:

Tapestry Flats 720-219-1186

The information depicted on this map is based on current development plans of the Lowry Redevelopment Authority as of January 13, 2004 and is subject to change. Please direct all questions about the development to the Lowry Information Center @ 303-331-1516. Visit our web site at [www.lowry.org](http://www.lowry.org) for information about Lowry's environmental program.

The Lowry Redevelopment Authority is committed to developing a vibrant and diverse community. This commitment includes the provision of a variety of housing opportunities as well as parks, schools, and services within close proximity.

**New  
Urbanism  
Denver**

**Still Automobile  
Dependant!**



**Lowry Redevelopment Map**



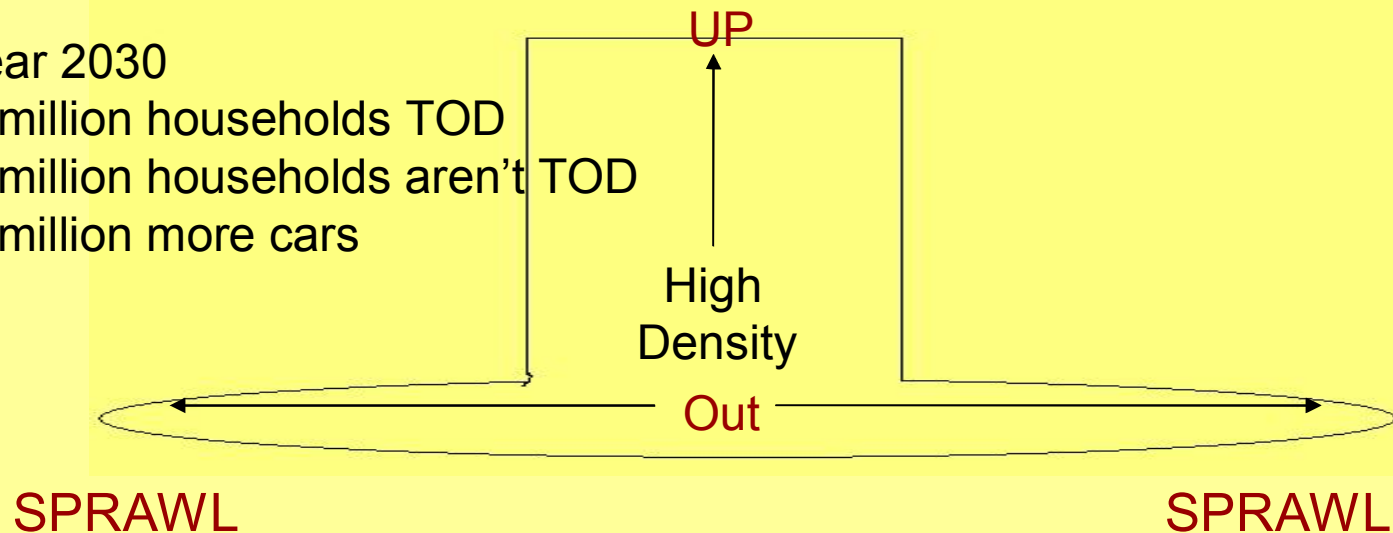
# Fixed Rail Public Transit for widely dispersed population?

## A Comparative Perspective

### Barcelona, Spain 1.6 million pop.

By year 2030

- \* 10 million households TOD
- \* 40 million households aren't TOD
- \* 70 million more cars



### City of Denver, USA ½ million pop.

\*Barcelona has 9x Denver's Residential Density

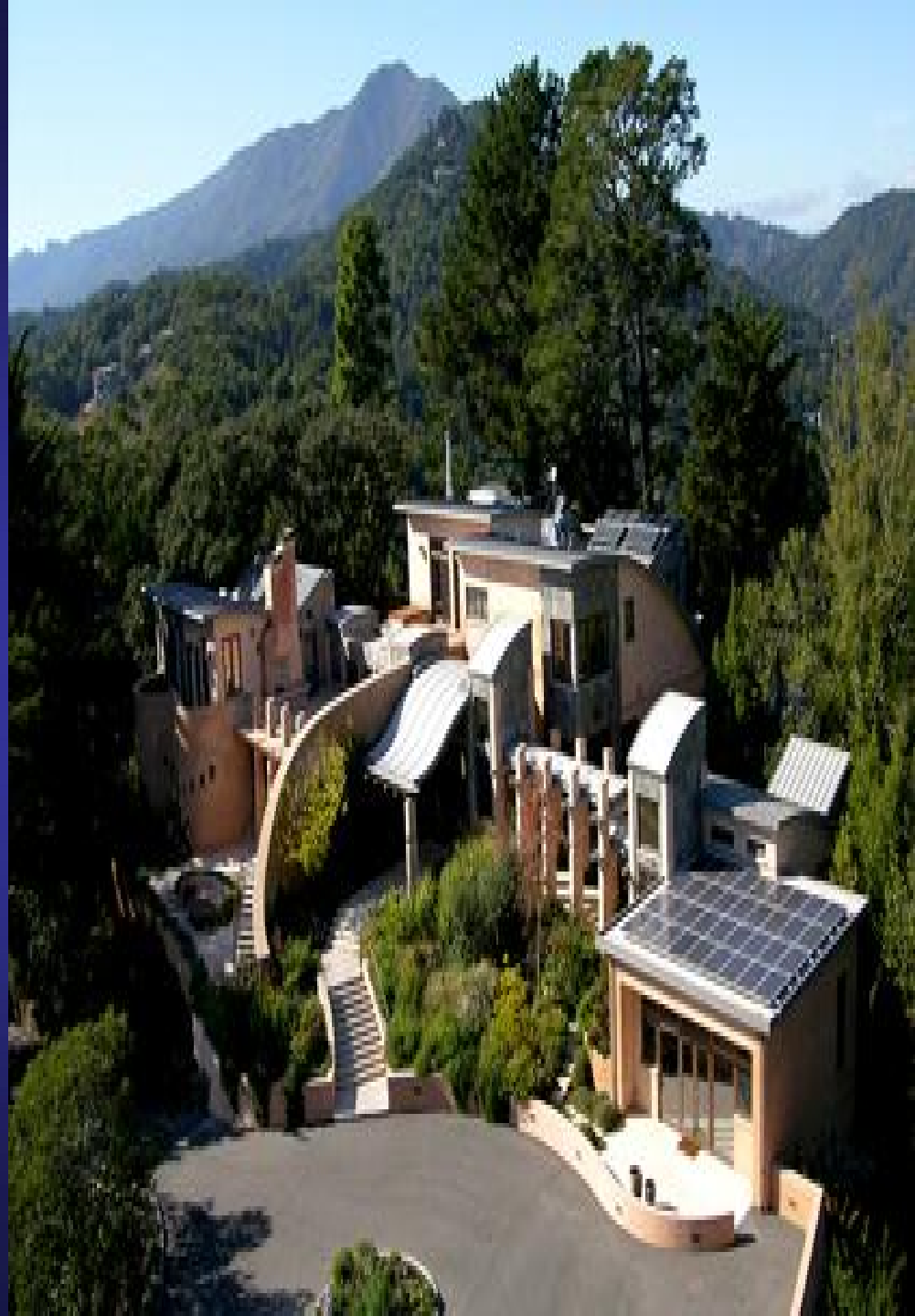
# Sustainable Development

How about Green  
Development codes ?

# Green Development ?

Homes +7,500 sq. ft  
25% Solar Energy

Building Code  
Marin County,  
California



## Green Development ?

Solar Energy Parking  
Belmar, Colorado  
New Urbanism

2 megawatts  
250-500 homes

