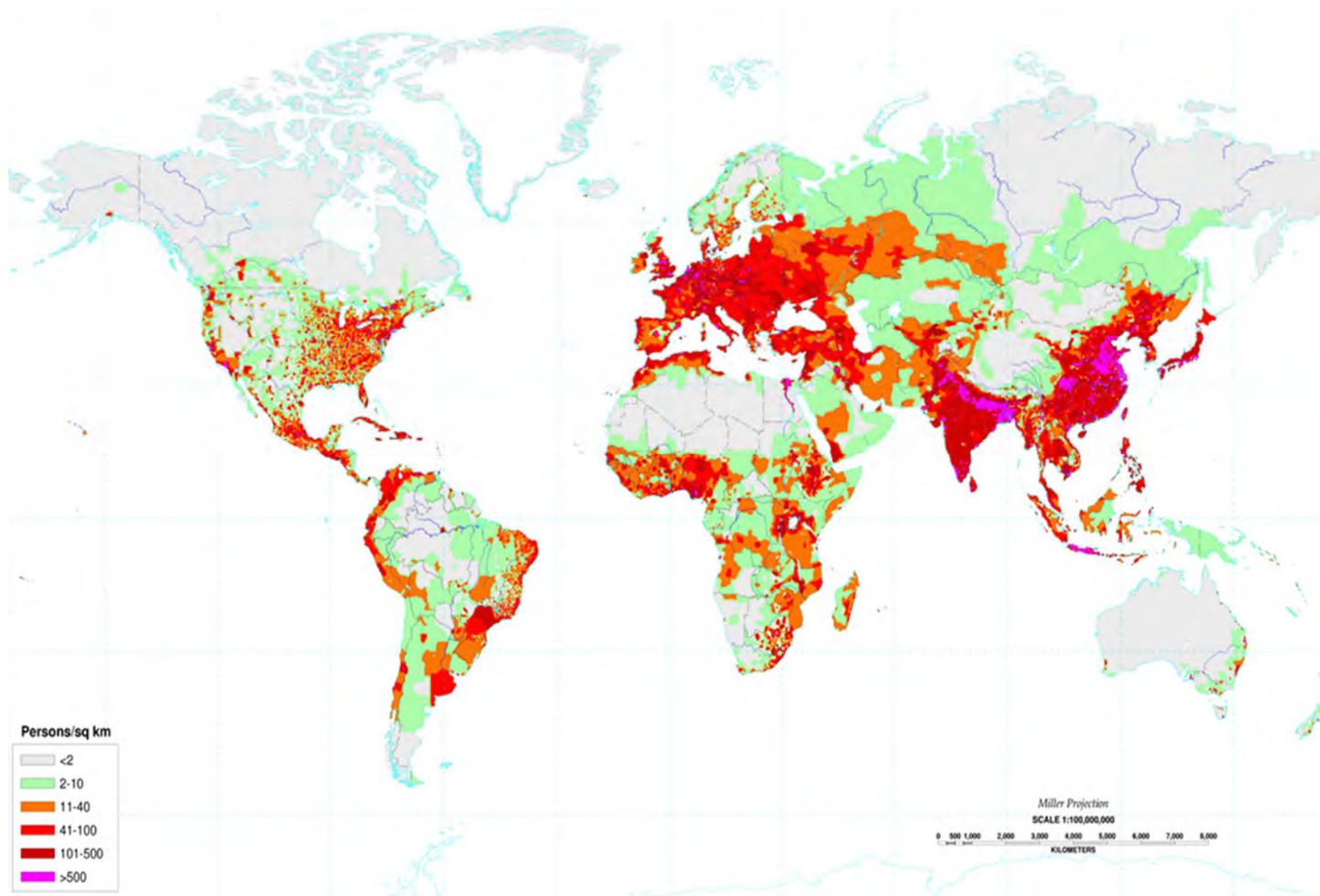




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# An Urbanizing World



# Why 2050?

- Common Coordination Milestone at Mid-point of 21<sup>st</sup> Century
- 2 Billion More People in Cities
- 2 Billion More People in Middle Class
- 75 to 100 Million More People in U.S. Metro Areas
- 66% of Buildings Needed in U.S. Not Yet Built
- 60-80% Reduction Target in CO2 Emissions
- Strategic Opportunity to Achieve Broader Public Outcomes
- Only Two Urban Development Cycles Away

# Sample Challenges

- Seattle will add the current population of Portland.
- North Texas will use 30% more water than today.
- Carolina Coast will triple population.
- Without new land use patterns, Los Angeles will require 834 square miles of developable land.

## So What?

- It's a Structural Change in the Economy!
- Business-As-Usual Unlikely to Lead to Long-term Prosperity
- The Rules Are Being Rewritten At All Levels of Government
- Communities Are Forced To Respond Affirmatively
- The Future is Now; Regardless of Today's Market Conditions

# The Speed of Change



**1966**



**2008**



**2050**

## Demographics Growing Populations

World population is projected to rise to 9 billion by 2050, with seven of every ten people living in urban areas.



## Climate Change Climbing Temperatures

Cities that currently experience heat waves are expected to be challenged by an increased number, intensity, and duration of heat waves during the course of the century.



## Demographics Regional Migrations

Economic competitiveness will "push" and "pull" migration between regions.



## Climate Change Severe Weather

Changing weather patterns place higher burdens on infrastructure, such as power lines, sewer systems, levees, and coastal evacuation routes.



## Demographics Shifting Demographics

Demographic shifts in age, ethnicity, and household composition will create new markets and drive tensions between "haves" and "have-nots."



## Climate Change Rising Seas

Many millions more people are projected to experience floods every year due to sea level rise. The numbers affected will be the largest in the densely populated, low-lying mega-deltas of Asia and Africa.



## Energy Reducing Emissions

The need to reduce greenhouse gas emissions creates dynamic market conditions in the energy sector.



## Water Vulnerable Sources

Many semi-arid and arid areas such as the Mediterranean Basin, western USA, southern Africa, and northeastern Brazil are projected to suffer a decrease of water resources due to climate change.



## Energy Peaking Oil

Rising gas prices have reduced vehicle-miles traveled in the U.S. for the first time in 30 years.



## Water Diminishing Reserves

The availability of clean sources of water complicates the economic growth of communities and regions worldwide.



## Energy Security Risks

Seventy percent of oil consumed in the United States is imported from other countries.



## Water Pollution Runoff

Persistent waterborne pollution knows no political boundaries.



## Infrastructure Deferred Maintenance



Underinvestment and deferred maintenance can result in tragic consequences.

## Capital Markets Concentration of Capital



Institutional investors and niche players grow in importance and define larger segments of the market.

## Infrastructure Communication Networks



Interconnected global systems create new economic opportunities, but introduce operational risks.

## Capital Markets Competition for Capital

Cities and regions vie for investment in a global marketplace.

U2	3918	3205	1527	710	3867	NOV	9.86	9.53	2.91
7E					3798	DEC	8.89	10.48	2.85
M					3730	JAN		10.97	2.65
M	665	3665	1357	100	3668	FEB		11.27	2.91
U6					3615		(7.45)	(8.42)	
76					3562	YH	LAST	2NDL	HIGH
M7					3477	SEP	5425	5479	5435
						OCT	5550	5500	5475

26 EFP 2371 OPT 0 VOL 33404

14:31 CORRECTED - UPDATE 3-APRAT. acknowledge mistakes. urgent change

14:31 US WEEKLY CRUDE STOCKS OFF 1.3 MLN BBL -- ETA

14:30 APT-IL S. WEEKLY CRUDE IMPORTS UP 1.4 MLN BBL TO 18.32 MLN BBL

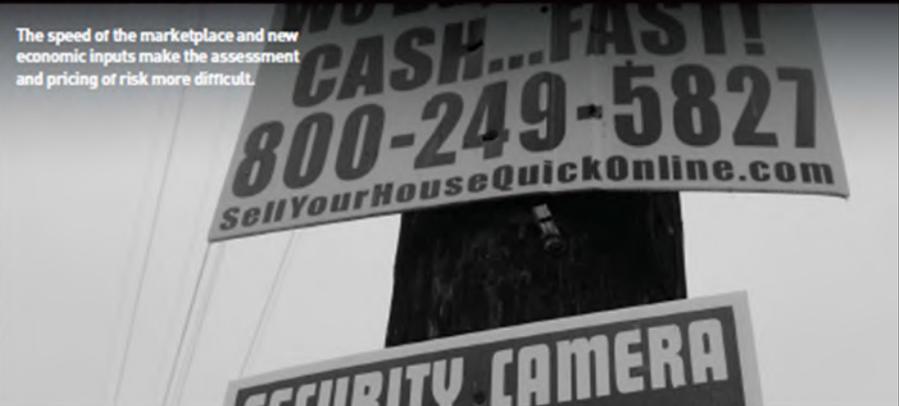


## Infrastructure Unsustainable Patterns



Both capital and operational costs are higher for infrastructure in low-density communities.

## Capital Markets Assessing Value and Risk

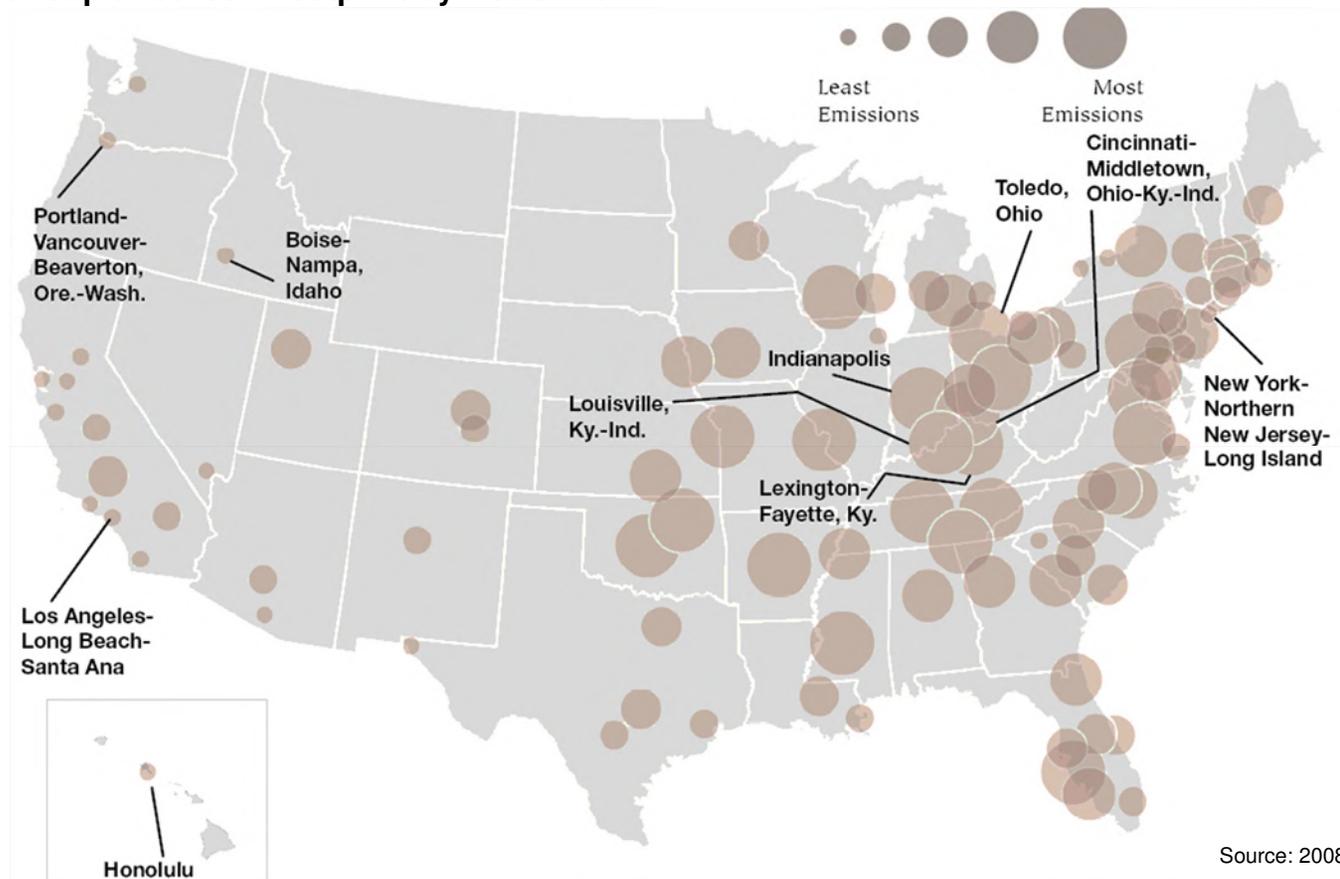


The speed of the marketplace and new economic inputs make the assessment and pricing of risk more difficult.

# Metro Areas Are the Carbon Arena

*All Communities Have Their Unique Challenges*

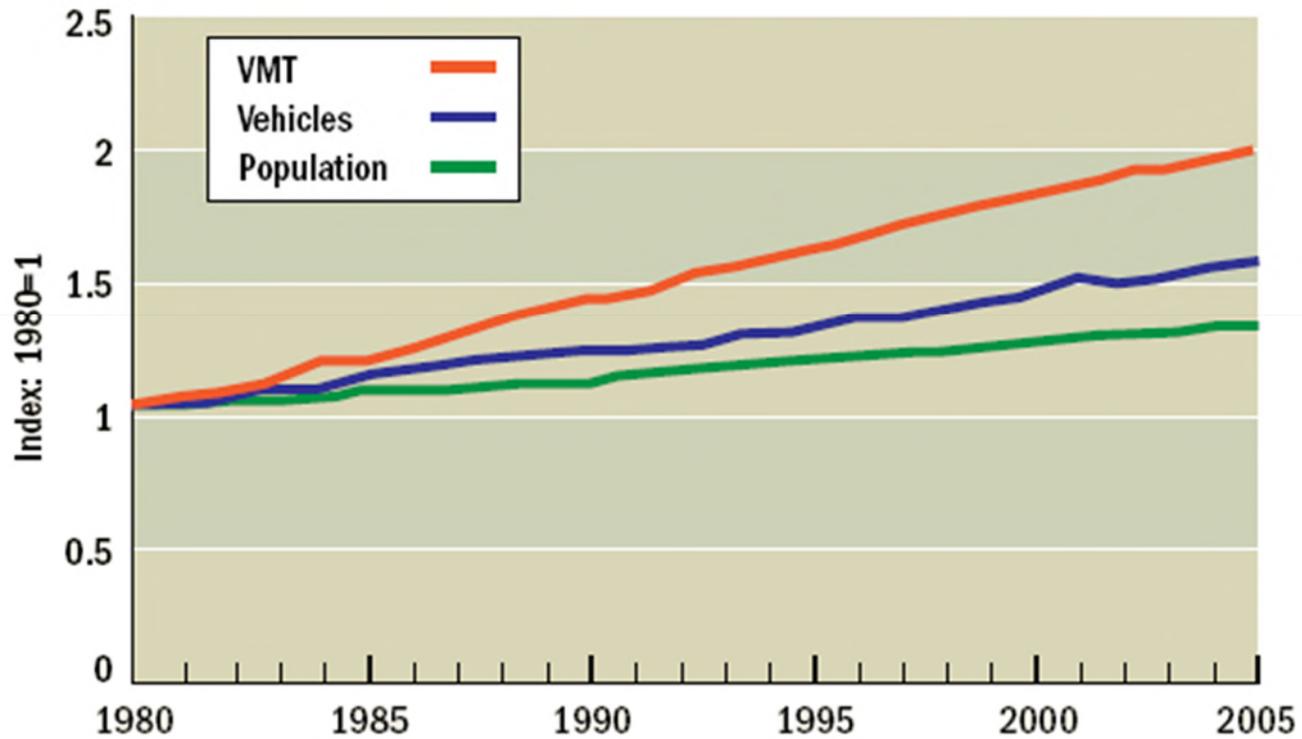
Per Capita Carbon Footprint by Metro Area



Source: 2008, Brookings Institute

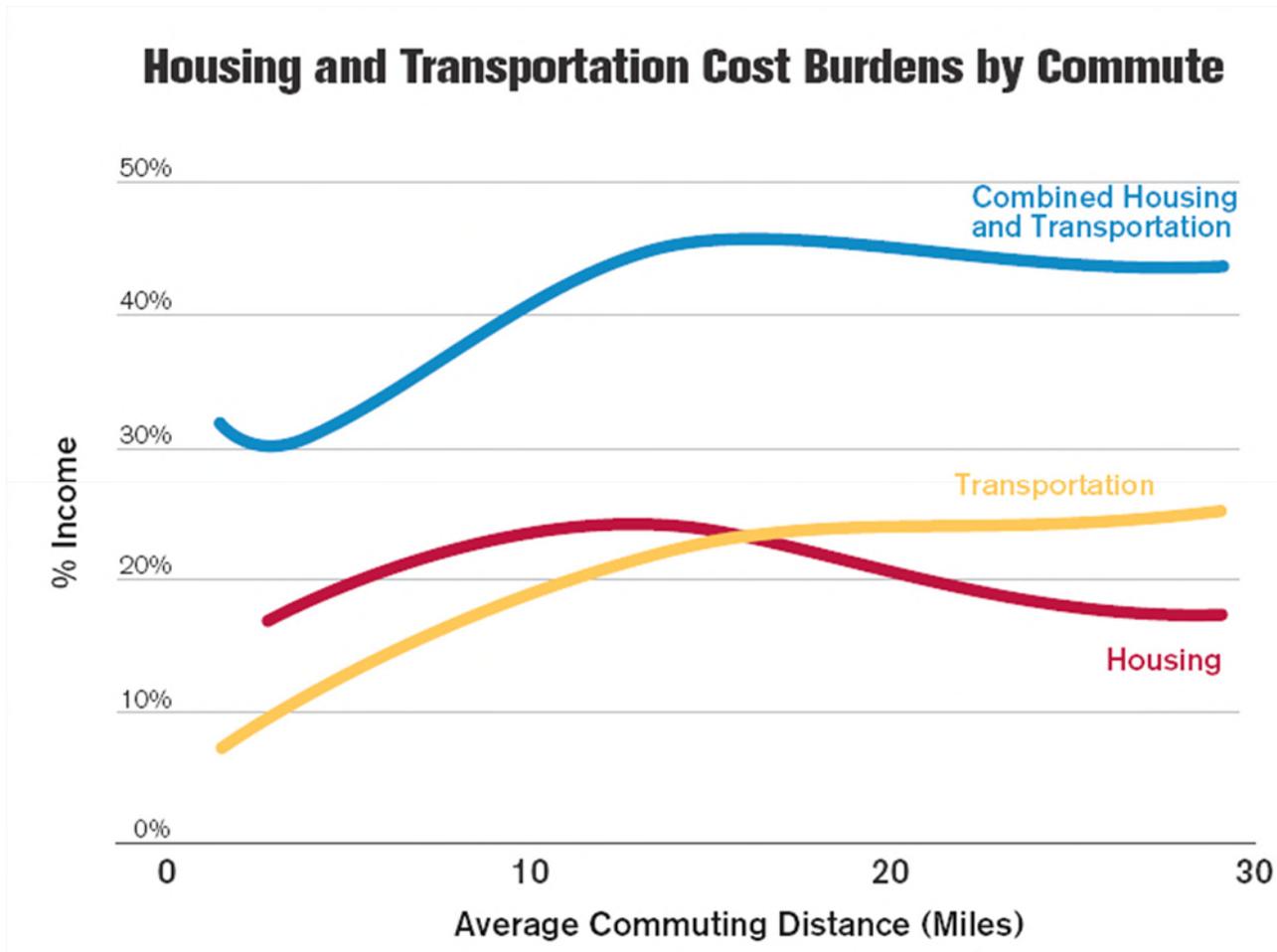
# A History of More Driving

**Growth of Population, Vehicle Registration, and VMT in the United States relative to 1980 Values**



Source: FHWA, 2005.

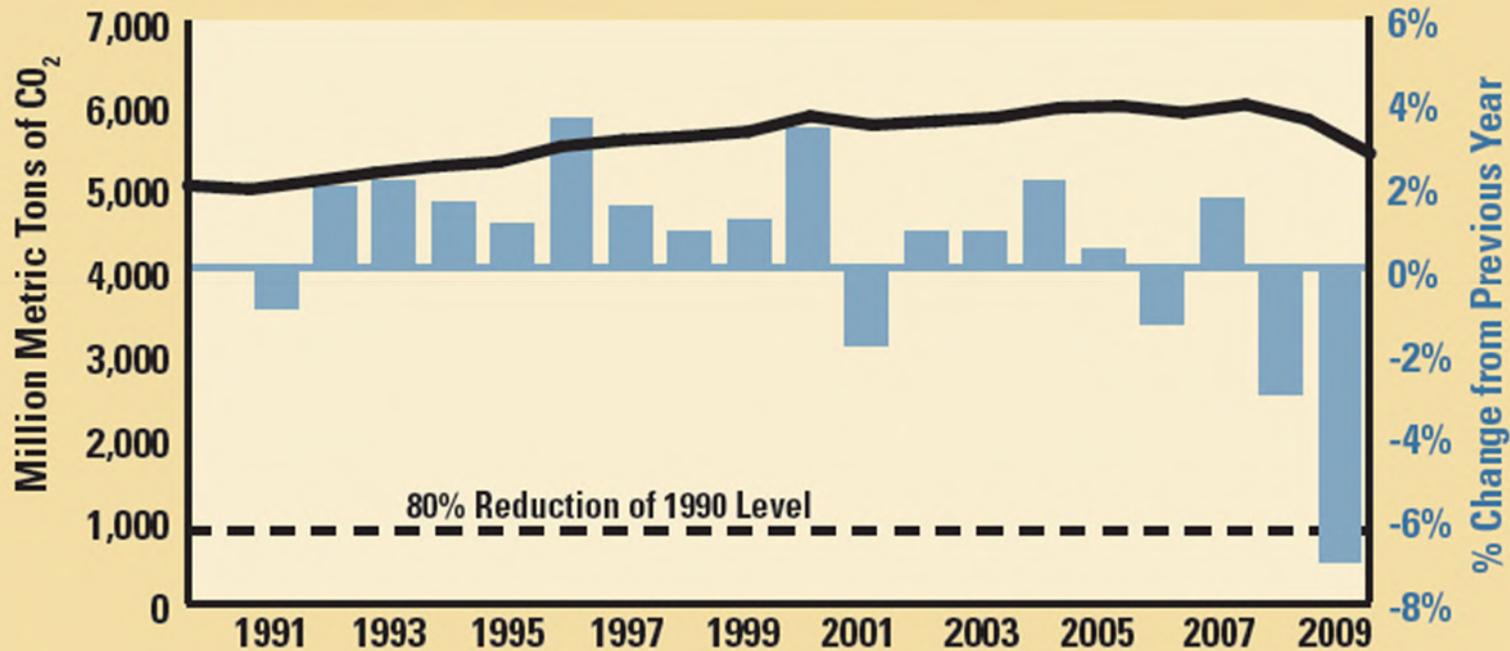
# Redefining Affordability



Source: ULI, Beltway Burden

# The New Normal?

**U.S. Energy-Related CO<sub>2</sub> Emissions and Annual Percentage Change, 1990–2009**



Source: U.S. Energy Information Administration, *Monthly Energy Review*, April 2010.

# Metro Metrics

Vancouver's 2008 Average Annual Metro Metrics

**Population** 2.25 million  
50% urban; 50% metropolitan  
1.6% annual growth  
52% non-English as first language  
70% are creative professionals  
33% languages spoken

**Murders** 62 per year  
**Smoking** Banned in all bars and restaurants  
**Last Call** 2:00 am  
**Vehicles** 3 minutes of idling allowed  
**Homeless** 30% are Aboriginal persons  
**Homes** \$500,000 average price

**Land** 28% of regional land is developed  
50% of developed land is residential  
84% of growth is outside of Vancouver City

**Location** 38 miles from U.S. border  
**Governance** 21 municipalities  
30% voter turnout of eligible voters  
**Landfill Waste** 641 kg per capita

**Households** \$49,600 average annual income  
18.5% of income spent on transportation  
**Schools** 36% children walk to school  
**Recreation** Ski, hike, sail on same day

**Port** \$43 billion in trade  
82 million tons of cargo  
3 day average container dwell time  
**Energy** 22% Hydroelectric  
49% Natural Gas  
22% Gasoline

**GHG Emissions** 41,013 metric tons from government sources  
50% of that from goods & services  
6.3% per capita reduction (1991-1999)  
**Economy** 57% of British Columbia GDP is arts and culture  
11% largest film industry in North America  
4.1% unemployment (2006)

**Airport** 872 international flights per week  
Fixed-rail rapid transit to downtown (2009)  
**Climate** Warmest city in Canada

# The City Wild

Weaving together regional water management, habitat protection, and recreation, the Xochimilco park outside Mexico City has put Mexican landscape design on the international map.



16 Creating Blue + Green Change

The City Wild 17

# Water, Power, Light.

The 214-turbine King Mountain Wind Ranch in Texas has a 278.2-megawatt (MW) capacity, of which 76.7 megawatts are purchased and used by the city of Austin to power 55,000 homes.



# Getting Around



The proposed City Car is a stackable electric two-passenger vehicle that could maximize scarce urban parking. Innovative transportation alternatives can enhance mobility and save money.

Creating Blueprints

The City in 2015 | 001

# Whole Buildings

The Bosco Verticale (Vertical Forest) in Milan, Italy, includes two residential towers whose facades will be completely covered in a variety of flora and utilize on-site wind power.

Creating Blueprints for Change

The City in 2050 | ULI



# Full-Spectrum Housing

Creating Blueprints for Change



Chimney Pot Park in Salford, England, was earmarked for demolition but then adaptively transformed into high-density terraced housing.

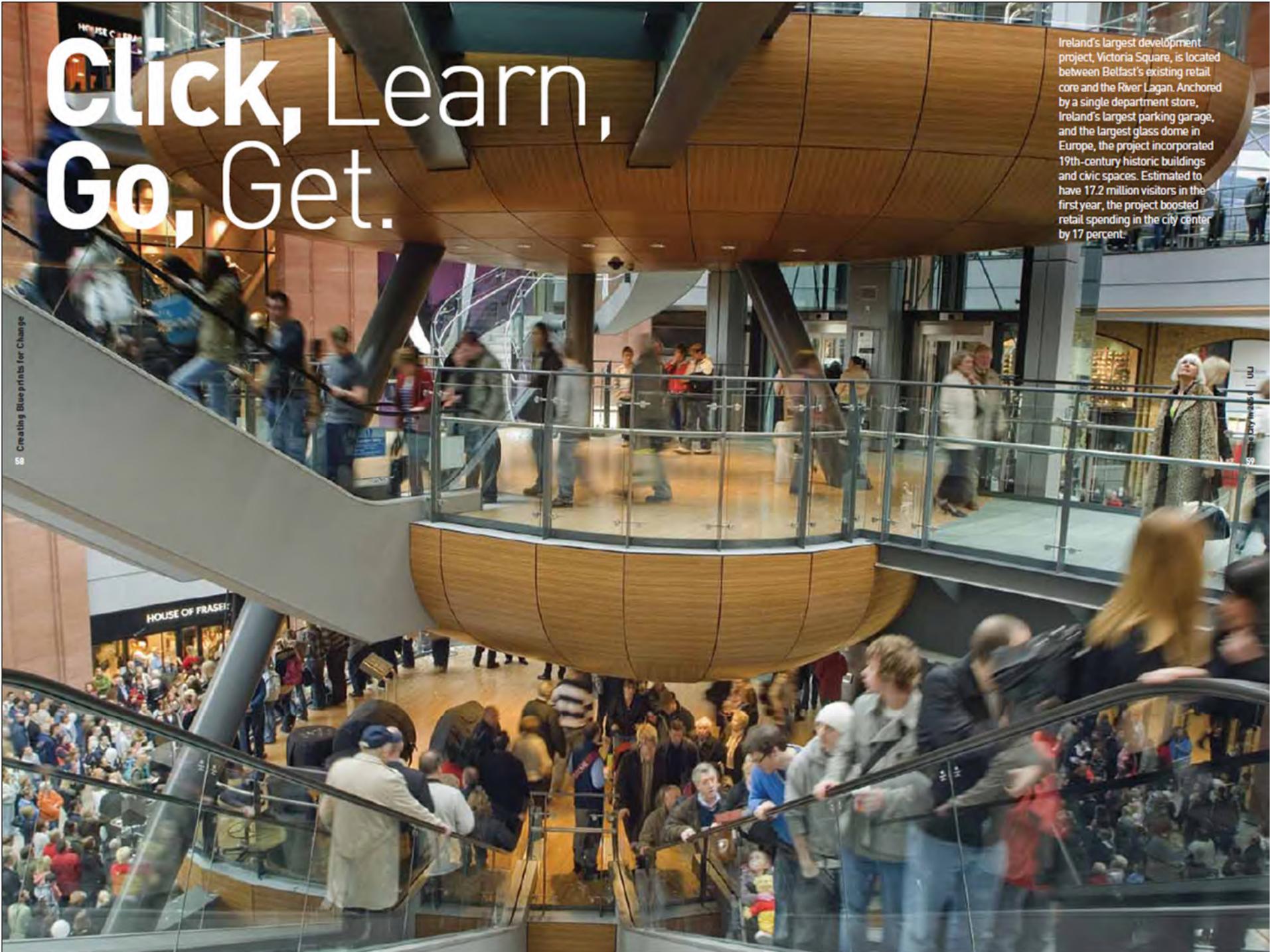
# Plan It. Build It.

Located in San Francisco Bay, the redevelopment of Treasure Island aims to remake the former Navy base as a LEED-ND certified mixed-use community. The redevelopment plan calls for nearly 60 percent of the 500-acre (81-ha) site to remain open space for recreation facilities, wildlife habitat, and local farms.



# Click, Learn, Go, Get.

Ireland's largest development project, Victoria Square, is located between Belfast's existing retail core and the River Lagan. Anchored by a single department store, Ireland's largest parking garage, and the largest glass dome in Europe, the project incorporated 19th-century historic buildings and civic spaces. Estimated to have 17.2 million visitors in the first year, the project boosted retail spending in the city center by 17 percent.



# How will we live, work, and play in 2050?



Age 45

**I will balance my day job with volunteer work helping new immigrants living in the neighborhood.**

I will be on the global medical research team for an international university consortium and travel to Abu Dhabi every six months for business strategy meetings.



Age 14

**I will go on a student exchange program to Hyderabad, India.**

I will live in the same suburban community my parents grew up in, but now we have another family living in the apartment above the garage.

I will walk to school.



Age 36

**I will share my apartment with two college students.**

I will pick up vegetables from the community garden on my way back from the high-speed rail station.

I will have just completed my second PhD, thanks to my parents' wind energy income.



Age 30 and 4

**I will drop my son off at day-care and return home to work.**

I will fly on a business trip once a year to participate in the global staff retreat.

I will spend weekends walking with my son down to the town center where his 110-year-old great grandmother lives.



Age 68

**I will retire and start a company that provides job re-training counseling.**

I will work out of my garage, but conduct meetings at the neighborhood business center.

I will use my "wrist watch" to call the hydrogen-fueled personal mobility shuttle to get me to the golf course.



Age 91

**I will finally sell that old electric-hybrid jalopy to the automobile recycling center!**

I will live in a mixed-generation housing community that was developed in conjunction with the new regional clinic.

I will spend Wednesday afternoons with friends going on electric go-cart safaris in the regional park.



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