

Brownfields 2006



Designing with Public Health in Mind
Boston, Massachusetts

November 15, 2006





Designing with Public Health in Mind

Goals –

- Introduce charrette concept
- Teach practical sustainable design concepts, tools and techniques that maximize public health outcomes during brownfield redevelopment
- Discuss a range of measurable public health endpoints as goals of redevelopment design





Designing with Public Health in Mind

The Planning Team –

- Karen Bandhauer, US EPA
- Ann Carroll, US EPA
- James Vanderkloot, US EPA
- Cynthia Greene, US EPA
- James Byrne, US EPA
- Carol Tucker, US EPA
- Laurel Berman, Oak Ridge Fellow, ATSDR
- Professor Ray Isaacs, University of Wisconsin, Milwaukee
- Professor Niall Kirkwood, Harvard Graduate School of Design
- Michael Malinowski, Redevelopment Authority, Attleboro, MA





Designing with Public Health in Mind

Speakers and Presenters

- Dr. Tina Forrester, ATSDR
- Professor Niall Kirkwood, Harvard Graduate School of Design
- Professor Ray Isaacs, University of Wisconsin, Milwaukee
- Michael Malinowski, Redevelopment Authority, Attleboro, Massachusetts
- Mayor Kevin J. Dumas, Attleboro, Massachusetts





Designing with Public Health in Mind

Architecture and Design Facilitators

- Ray Dunetz, Ray Dunetz Landscaping
- Nancy ?, Ray Dunetz Landscaping
- James Batchelor, Arrowstreet
- Jill Desimini, Stoss Landscape Urbanism
- Chris Musskopf, Stoss Landscape Urbanism
- Joseph MacDonald, PhD, AICP, American Planning Association
- Lyn Billman-Golemme, AICP, Billman-Golemme Associates
- Peter Lowitt, AICP, Devens Enterprise Commission
- John Monroe, National Park Service -- Rivers & Trails
- Richard Krauss, A.I.A., Arrowstreet
- Steve Yavanian, Harvard Graduate School of Design
- Suzanne Hague, Harvard Graduate School of Design
- Ruth Silver, Harvard Graduate School of Design





Designing with Public Health in Mind

Public Health Support

- Henry Nehls-Lowe, Wisconsin Health
- Liz Evans, Wisconsin Health
- Brendan Boyle, Michigan Health
- Martha Berger, US EPA
- Suzi Ruhl, JD, MPH, Environmental Law Institute
- Laurel Berman, Oak Ridge Fellow, ATSDR



What is a Brownfield Site?

A Brownfield is “real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.”

Small Business Liability Relief and Brownfields Revitalization Act of 2001



Land Redevelopment and Public Health: Opportunities for Designing and Building Healthy Places

Tina Forrester, Ph.D.

**Agency for Toxic Substances and Disease
Registry**



Brownfield Redevelopment: Public Health Goals:



Disease Prevention and Health Promotion

Source: Smart Growth
and Neighborhood
Conservation, Maryland





Northwestern Barrel Co, circa 1955

Northwestern Barrel Co

- Barrel reclamation 1940 to 1964
- 40 apartments built in 1964
- 1996 investigation found high levels of contamination in soils
- Urgent Public Health Hazard
- Condo residents worried about their health and property values
- 1997 to 2002 removal $> 180,000 \text{ yd}^3$

Northwestern Barrel Co

- 1997 removal released solvents, caused odor & health complaints
- Outdoor Inhalation exposures not a health hazard
- Indoor vapor intrusion ruled out in 2003.
- Cleanup of residential soils continuing in 2005.

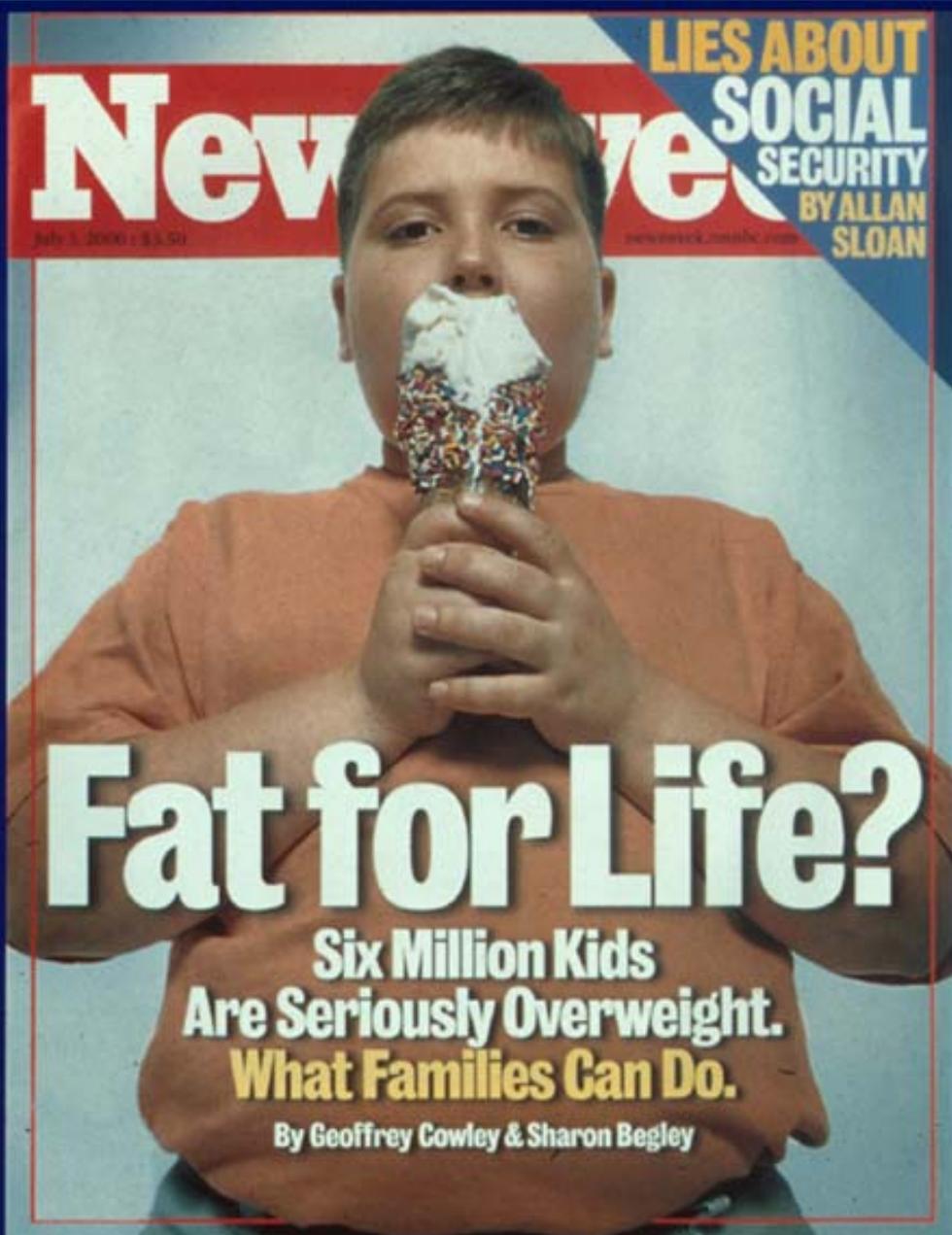


New

**LIES ABOUT
SOCIAL
SECURITY
BY ALLAN
SLOAN**

July 3, 2006 | \$3.50

newsweek.com



Fat for Life?

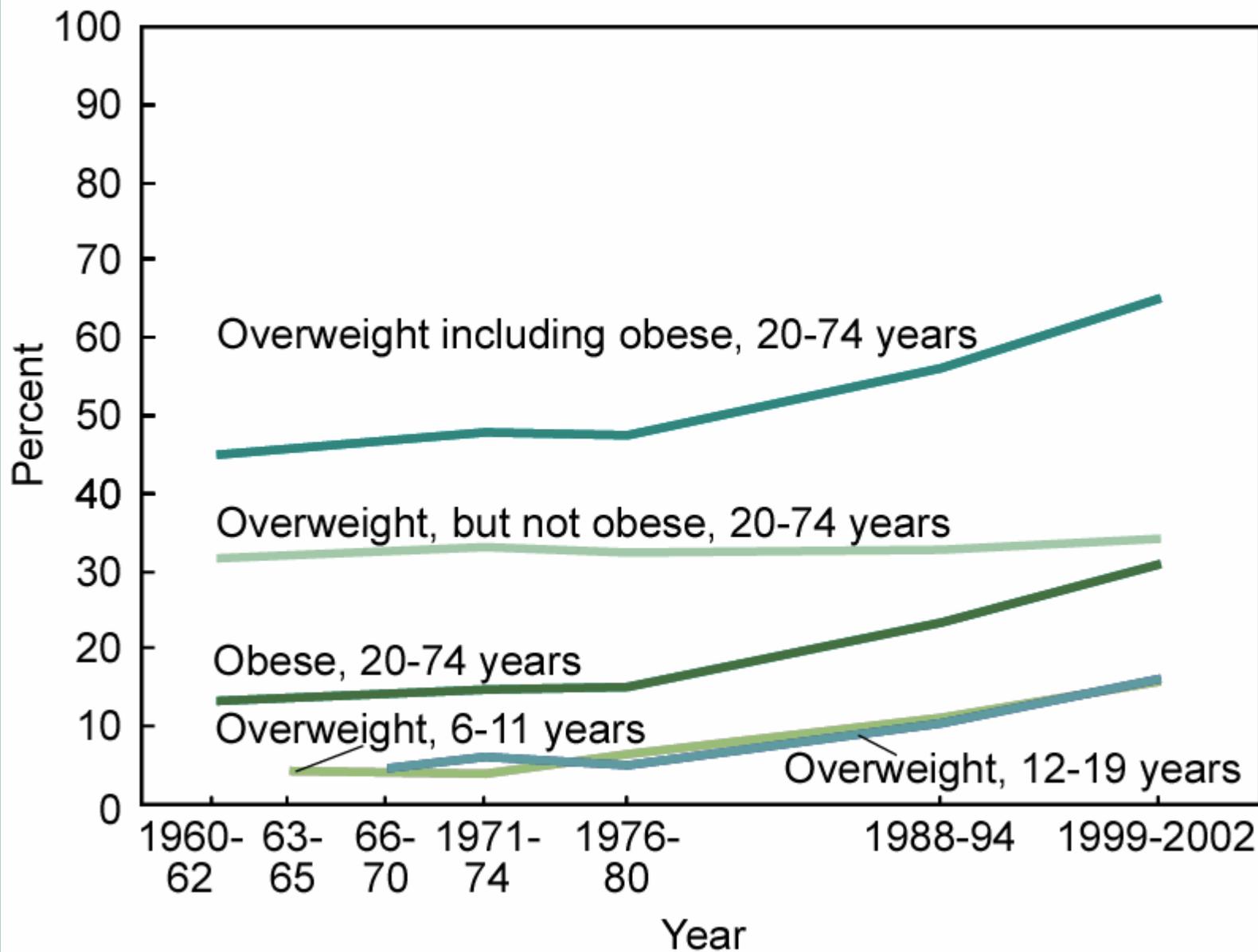
**Six Million Kids
Are Seriously Overweight.
What Families Can Do.**

By Geoffrey Cowley & Sharon Begley



ATSDR
AGENCY FOR TOXIC SUBSTANCES
AND DISEASE REGISTRY

Overweight and obesity



SOURCE: Centers for Disease Control and Prevention, National Center for Health Statistics, *Health, United States, 2005*, figure 15

Overweight

Increasing weight associated with:

- ↑ risk of overall mortality (up to 2.5-fold at age 30-44, less at older ages)
- ↑ risk of cardiovascular mortality (up to 4-fold at age 30-44, less at older ages)
- ↑ risk of diabetes (up to 5-fold)
- ↑ risk of hypertension
- ↑ risk of some cancers
- ↑ risk of gall bladder disease

Source: Willett et al., *New Eng J Med*, 1999

Physical Activity

A sedentary lifestyle increases the risk of

- overall mortality (2 to 3-fold)
- cardiovascular disease (3 to 5-fold)
- some types of cancer, including colon and breast cancer

The effect of low physical fitness is comparable to that of hypertension, high cholesterol, diabetes, and even smoking.

Sources: Wei et al., *JAMA* 1999;
Blair et al., *JAMA* 1996

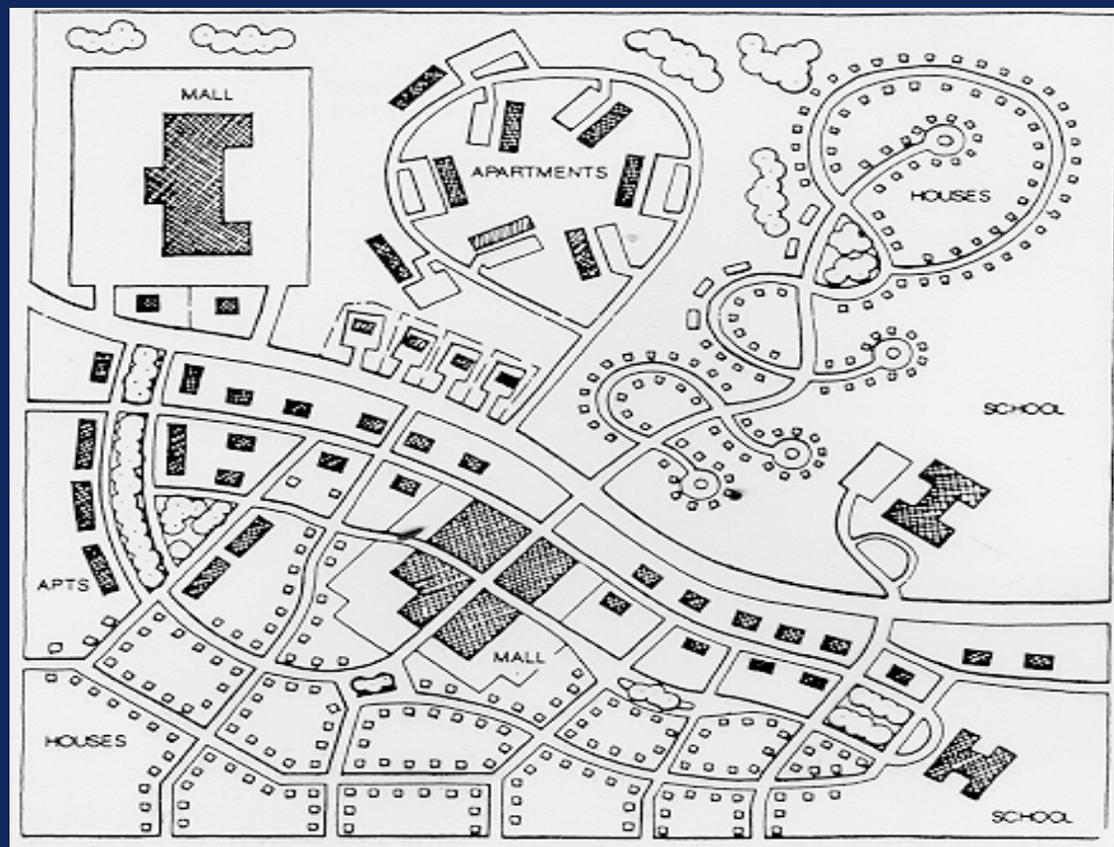


Walkable Community Designs: Connectivity and Physical Activity

Suburban
Development



Traditional
Neighborhood



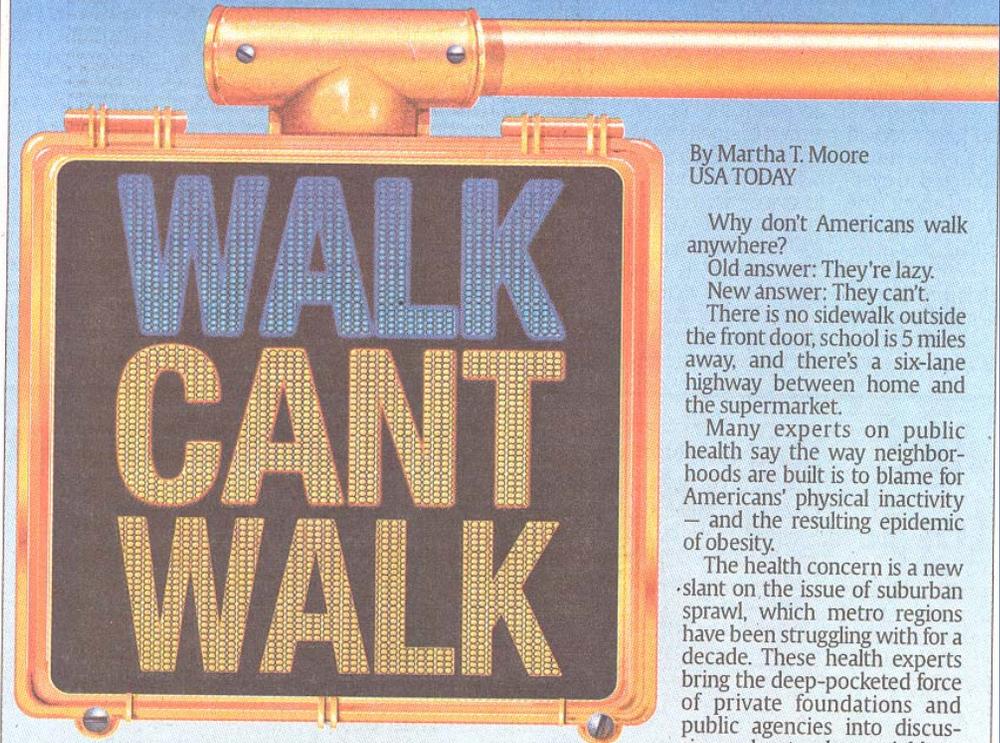
Drawing by Duany Plater Zyberk,
in ITE Journal 1989;59:17-18



The result



April 22, 2003



By Martha T. Moore
USA TODAY

Why don't Americans walk anywhere?

Old answer: They're lazy.

New answer: They can't.

There is no sidewalk outside the front door, school is 5 miles away, and there's a six-lane highway between home and the supermarket.

Many experts on public health say the way neighborhoods are built is to blame for Americans' physical inactivity — and the resulting epidemic of obesity.

The health concern is a new slant on the issue of suburban sprawl, which metro regions have been struggling with for a decade. These health experts bring the deep-pocketed force of private foundations and public agencies into discussions about what neighborhoods should look like.

The argument over whether suburbs are bad for your health will hit many Americans precisely where they live: in a house with a big lawn on a cul-de-sac.

"The potential for actually tackling some of these things, with the savvy of the folks who have tackled tobacco, is enormous," says Ellen Vanderslice, head of America Walks, a pedestrian advocacy group based in Portland, Ore.

A study by the federal Centers for Disease Control and Prevention is tracking 8,000 residents of Atlanta to determine whether the neighborhood they live in influences their level of physical exercise. The Robert Wood Johnson Foundation in New Jersey,

**Cover
story**

Please see COVER STORY next page ▶





Crown Quality
CLEANER
Dry Cleaning Service

FOOD STORE







Durham, NC

Underutilized Urban Housing Stock





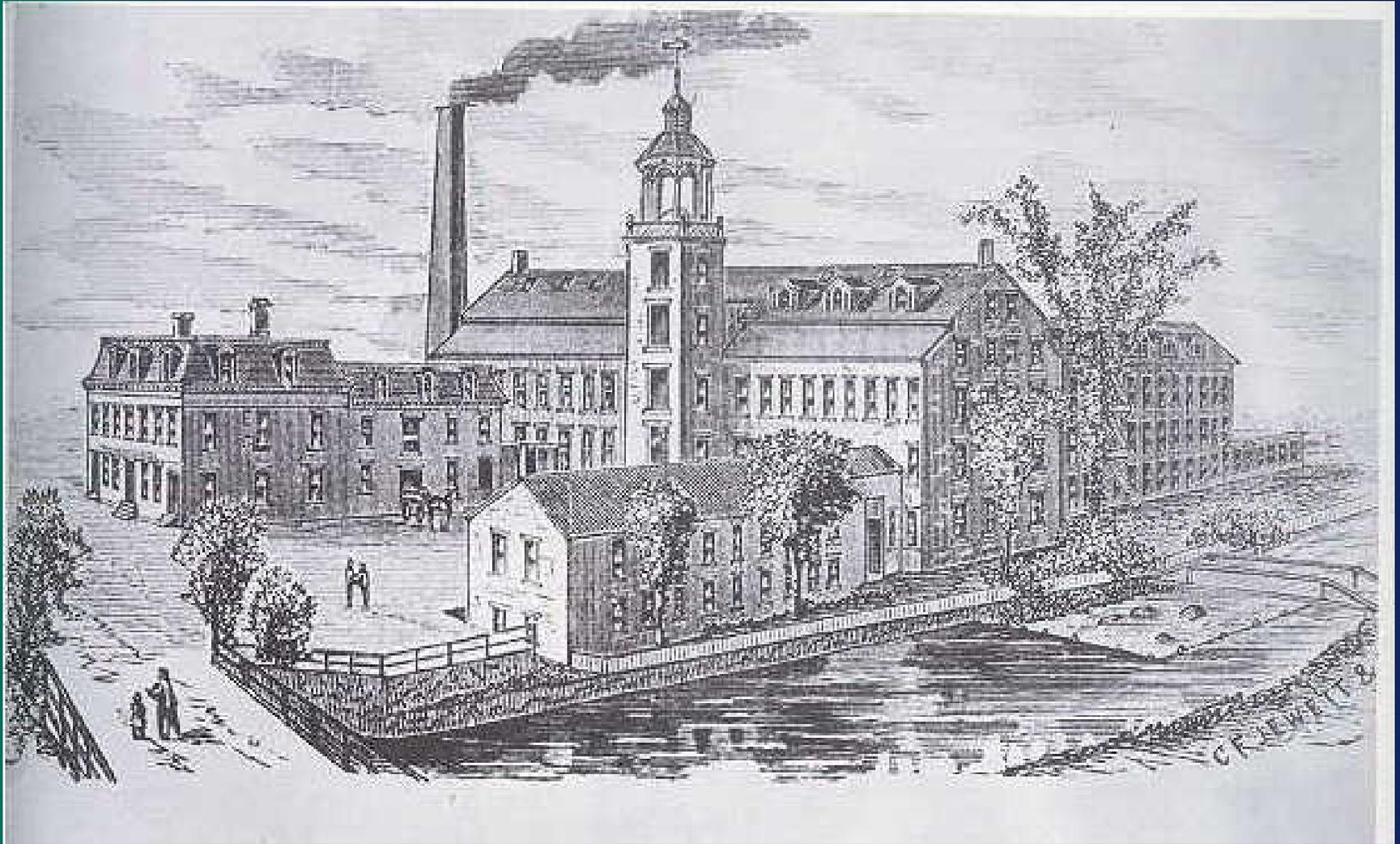
DESIGN CHARRETTE

Public Health and Brownfields

Professor Niall Kirkwood, Harvard Design School
US EPA Brownfield Conference, Boston, 15 November 2006



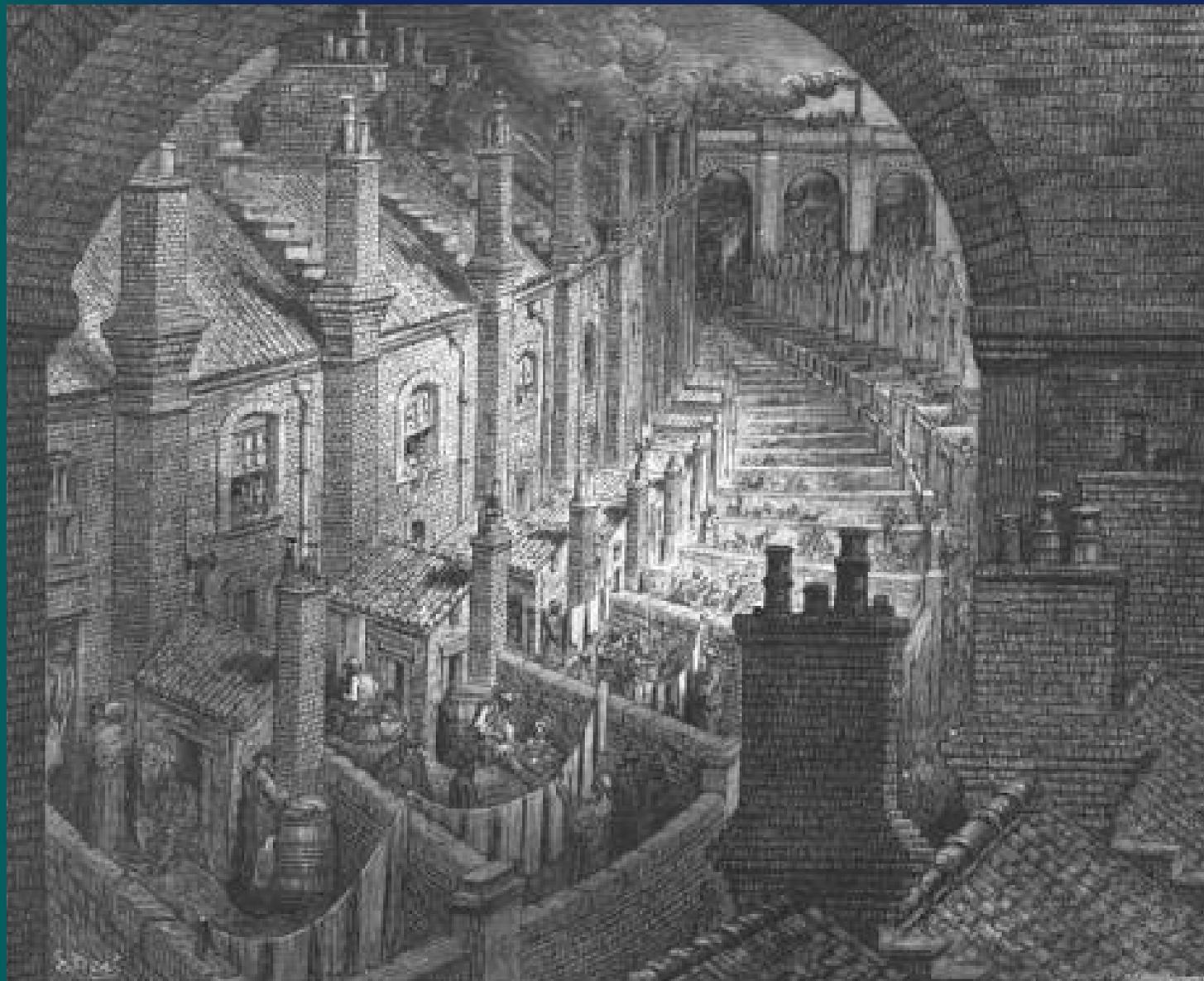






Professor Niall Kirkwood
Presentation





Professor Niall Kirkwood
Presentation





Professor Niall Kirkwood Presentation





Brownfield Sites Evolution (1985- 2006)

- Environmental Cleanup
- Market Development
- Community Restoration
- Regional Growth
- Interim Planning
- Sustainable Design
- Public Health and Livability





MAXPAK REDEVELOPMENT





MAXPAK REDEVELOPMENT

Designing Healthy Places

- Contact with natural systems
- Buildings and infrastructure
- Public space and genius loci
- Urban form



Ray Isaacs Presentation



People who live in sprawling environments are more likely to walk less and have higher rates of obesity than those who live in more compact environments.

Ewing, et al. 2003



Ray Isaacs Presentation



Pleasant, Quiet Rooms
Adjacent to Street

Adequate Parking
Sidewalks Safe for Play
Emission Free Air
No Noise, Vibrations

Safe Environment for
Elderly, Handicaps
Clean Streets

Many Outdoor Activities
Like Gardening
Conversation with Neighbors

BEFORE TRAFFIC IMPACTS

The Ecology of the Street: a street is more than just a viaduct.

Appleyard, 1980

Ray Isaacs Presentation



People who live in sprawling environments are more likely to walk less and have higher rates of obesity than those who live in more compact environments.

Ewing, et al. 2003



Ray Isaacs Presentation



Land Used Mix



Density

Connectivity

Ray Isaacs Presentation



Scale, enclosure, space, some separation, sunlight, interest (physical and social), transparency, access, destinations...

...and OTHER PEOPLE.



Ray Isaacs Presentation



Design <> Policy: Transportation

Shifting the balance physically and perceptually



Ray Isaacs Presentation



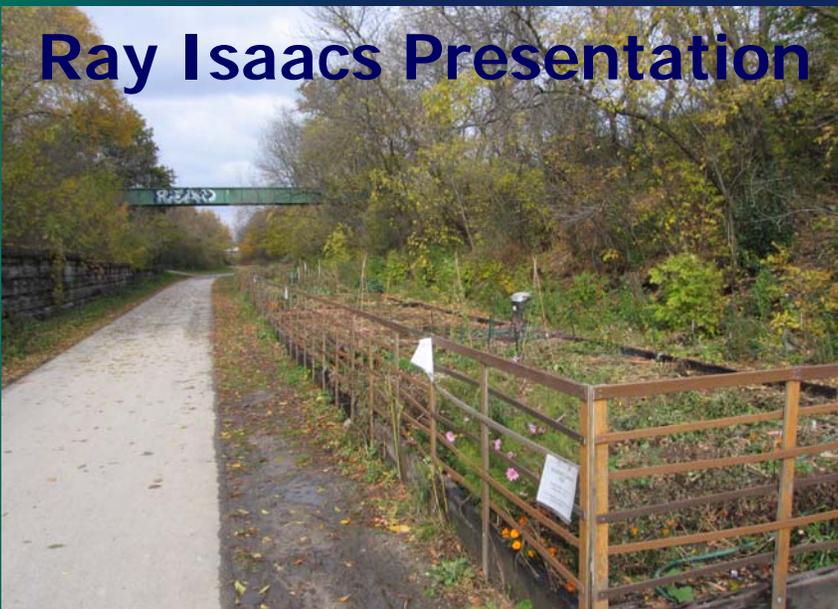
Design <> Policy: Open Space in the Mix

Physical activity, yes, but also Psychological Health ...*Kaplan and Kaplan*





Ray Isaacs Presentation



Design <> Programming: building activity into the design

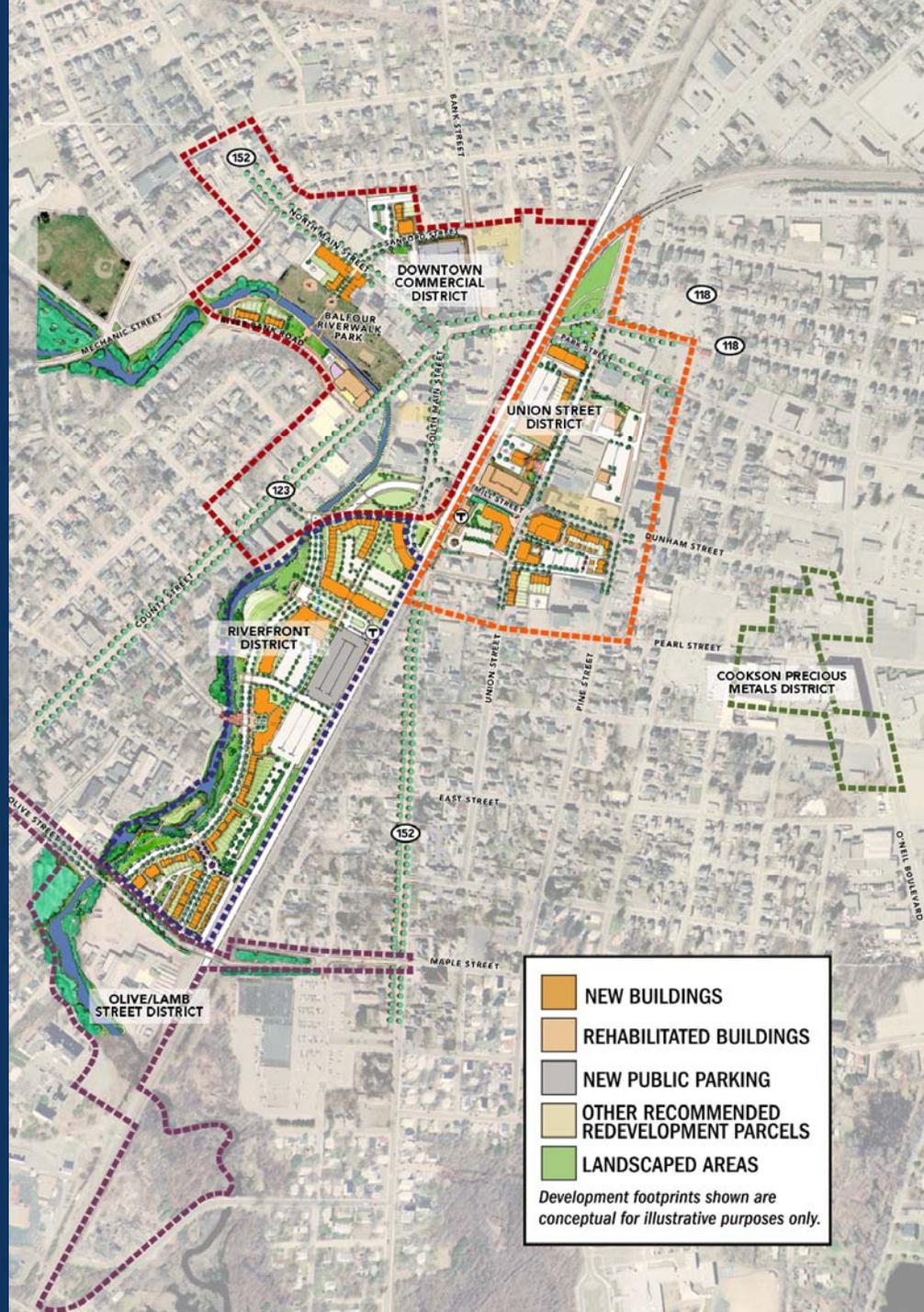
An often underrated aspect of creating sustainable, healthy places



Michael
Malinowski,
Attleboro,
MA



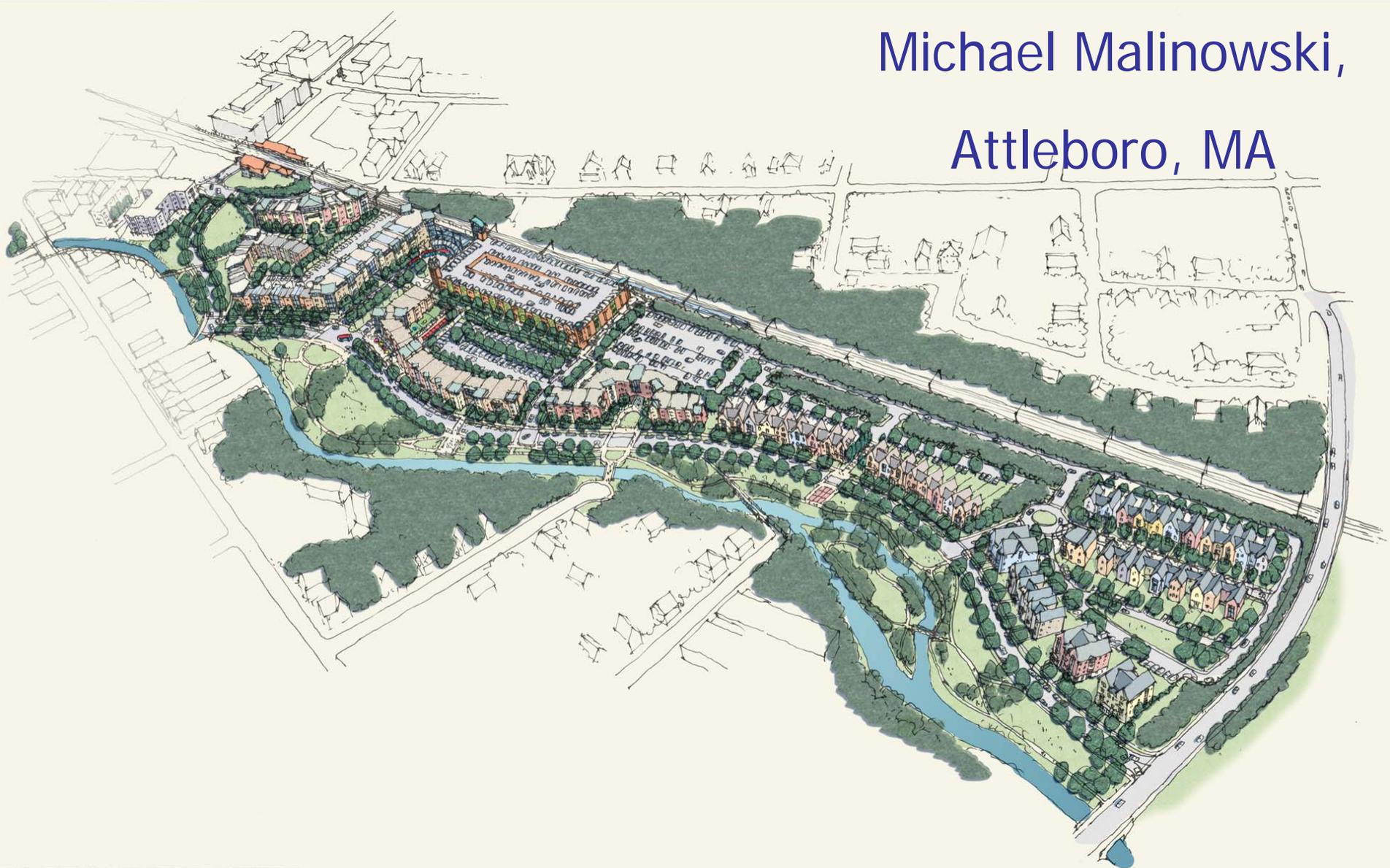
Michael Malinowski, Attleboro, MA



Michael
Malinowski,
Attleboro, MA



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