

## Development Patterns and Children's Health



Tim Torma  
EPA Smart Growth Program  
October 12, 2007

A brief look at development patterns and health with a focus on school siting.

## Growth Patterns Influence Community Goals

- Public health
- Economic development
- Efficient use of tax dollars
- Open space and farmland preservation
- Traffic congestion
- Air and water quality
- Revitalization of downtowns & existing neighborhoods
- Community character
- Quality of life

## Three distinct growth trends over the last 50 years

1. Employment and population growth heavily favored medium and large metropolitan regions over nonmetropolitan areas.
2. Within metropolitan regions, most growth occurred in low-density development at the fringe of urbanized areas.
3. Emphasis on automobile travel at the expense of other modes.

We've known about this pattern and its impacts on the environment for a long time.

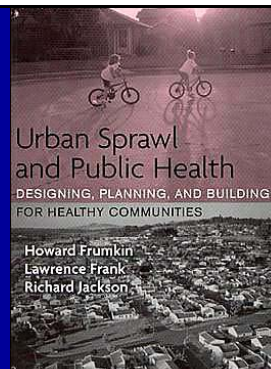
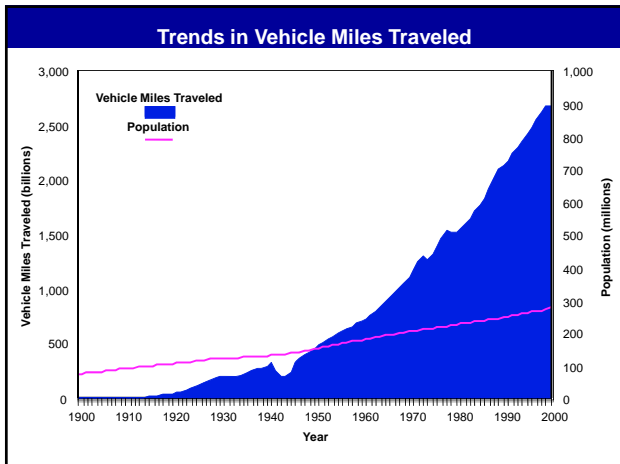
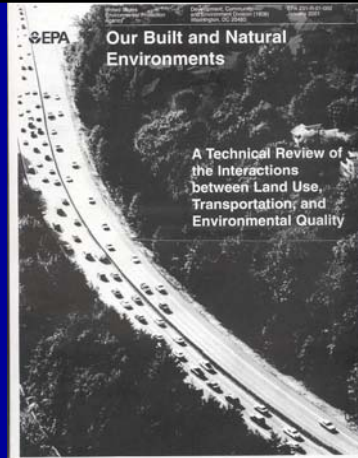
It has been studied – a lot.



"The results of the study . . . show a surprising consistency: 'planning' to some extent, but higher densities to a much greater extent, result in lower economic costs, environmental costs, natural resource consumption, and some personal costs for a given number of dwelling units."



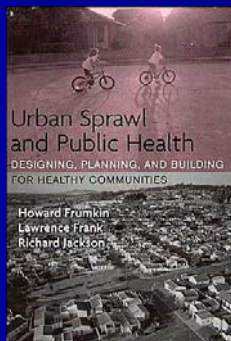
“More-compact development patterns produce savings that are both profound and measurable.”



“We are only now realizing that the way we have built ... over the last half century has been extremely costly...to human health and well-being.”

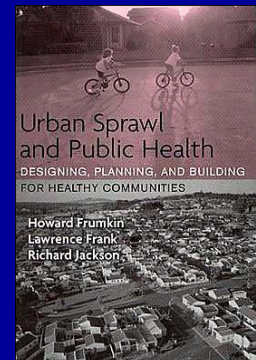
## Health Outcomes Linked with Land Use and Community Design

- Air pollution and related illnesses.
- The decline in physical activity.
- Obesity and its attendant diseases.
- Injuries related to auto dependence.
- Threats to water quantity and quality.
- Mental illnesses.
- Erosion of social capital.



## Health Outcomes Linked with Land Use and Community Design

- The authors issue a call for rebuilding American communities using smart growth strategies such as:
  - mixing land uses,
  - decreasing automobile dependence by providing more transportation choices,
  - increasing density balanced by preservation of open spaces.



Let's turn the focus to schools –  
how and where we've been  
building them.

## The Demand for Facilities

- Over half of our school facilities are at least 40 years old.
- Nationwide, the student population is growing and will continue to do so until at least 2013.
- We spend over \$40 billion per year on school construction



We're going to  
continue to see a lot of  
this type of activity.

During this time of great  
investments in school building...

- 1969: 48% of all children walked or biked to school
- 2002: 14% of kids walk or bike to school
- This is an extraordinary shift.
- It's almost as if we planned it that way.

## Hmmm...Why can't Johnny walk to school?

- "National No Child Shall Bike or Walk to School Campaign"
- Top 11 strategies for implementing the campaign.

## Strategy #1: Bigger Schools



[www.governing.com/articles/3schools.htm](http://www.governing.com/articles/3schools.htm)

## Strategy #1: Bigger Schools

- 1930 = 262,000 Schools
- 2002 = 91,000 Schools
- Student population over the same time:  
up from 28 million to 53.5 million
- Largest U.S. high school in 2003-04:  
5,299 students (CA).

Dorman High School in Spartanburg, SC



## Strategy #2: Mandate Minimum Acreage for School Sites



27 states have **mandatory** minimum acreage requirements.

## Strategy #3: Locate Schools Far From the Students they Serve

- Side benefits = demand for new:
- Roads
  - Sewer lines
  - Utilities
  - Other infrastructure and services



## Strategy #3: Locate Schools Far From the Students they Serve



Image from the Metropolitan Design Center Image Bank.  
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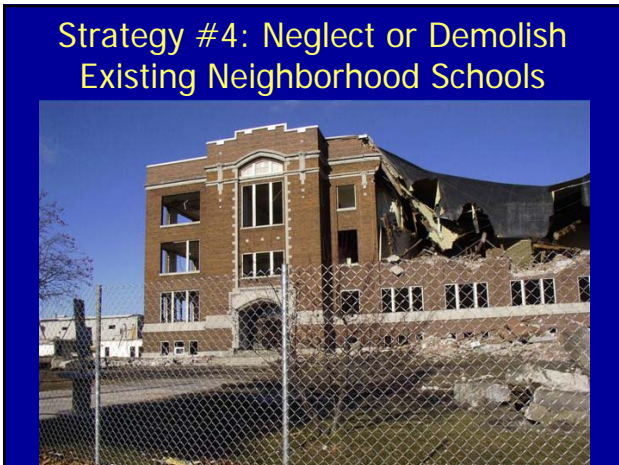
#1 Barrier? Distance to School

## Strategy #4: Neglect or Demolish Existing Neighborhood Schools



## Strategy #4: Neglect or Demolish Existing Neighborhood Schools





## Strategy #5: Locate Schools On Unwalkable Roads

- A pedestrian hit at 40 mph has an 85% chance of being killed.
- At 20 mph the fatality rate is only 5%



(FHWA, Pedestrian Facilities Users Guide, 2002)

## Strategy #6: Decrease "Pedestrian Route Directness" Around Schools



## Strategy #7: Do Not Provide Sidewalks or Crosswalks



## Strategy #7: Do Not Provide Sidewalks or Crosswalks



PHOTO BY STEVE RINGMAN / THE SEATTLE TIMES

## Strategy #8: Creative Approaches to the Sidewalk Problem



Image courtesy of National Center for Biking and Walking.

## Strategy #8: Creative Approaches to the Sidewalk Problem



Image courtesy of National Center for Biking and Walking

## Strategy #8: Creative Approaches to the Sidewalk Problem



## Strategy #8: Creative Approaches to the Sidewalk Problem



Richard Drudl



## Strategy #8: Creative Approaches to the Sidewalk Problem



Photo: Michael Tobis  
University of Chicago

## Strategy #9: Simply Prohibit Walking and Biking to School



Wauconda (IL) School Bans Bikes  
...and the school's bicycle ban is on the wrong track!

BY STEVEN J. BORN, CHICAGO AND BICYCLE FEDERATION

The attack came from the most unexpected source: Still, barely two months into my job of expanding opportunities for bicyclists in the north and northwest suburbs, Wauconda schools banned bikes for all students from fifth grade through high school. No bikes on school grounds under threat of suspension.

As I sat at the school board meeting, listening to the superintendent's rationale for the ban and the parents' impassioned pleas for a reversal, I saw the 30 or so wide-eyed, extraordinarily quiet children watching as one of the most cherished and precious rights of childhood was being stolen from them.

I recalled the movie "Footloose," where the Kevin Bacon character moves to a small town that has prohibited its children from dancing. The audience could never at the self-righteous, unwelcome adults who thought they could break the spirit of their

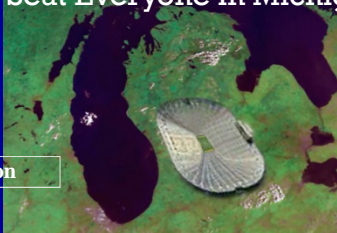
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## Strategy #10: Base School Siting Decisions on Desire for Massive Athletic Facilities

- Two recent studies in MI both found that desire for large athletic facilities was a significant factor leading to mega-schools on large sites.

## Strategy #10: Base School Siting Decisions on Desire for Massive Athletic Facilities

University Of Michigan Expands Michigan Stadium To Seat Everyone In Michigan



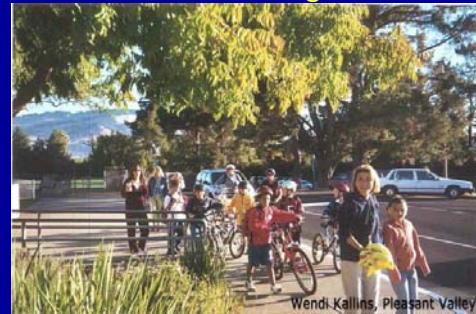
The Onion

## Strategy #11: Show Children Innovative Alternatives to Walking



- Thanks, intellectual credit and apologies to Dr. Howard Frumkin of CDC for inspiring the preceding series of slides.

## Trouble Brewing – No Walk Campaign Threatened by Insurgents



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**NEW Task Force.** U.S. DOT has formed a National Safe Routes to School Task Force as called for in law. Click link above to learn more about the Task Force and how you can make comments.

**National Safe Routes To School Clearing House.** A centralized resource of information on successful Safe Routes to School programs, strategies and state specific information.

Items	Overview	Guidance	Funding	FAQs	Resources
<p><b>Safe Routes To School</b></p> <p>Many of us remember a time when walking and bicycling to school was a part of everyday life. In 1969, about half of all students walked or bicycled to school.<sup>1</sup> Today, however, the story is very different. Fewer than 15 percent of all school trips are made by walking or bicycling, one-quarter are made on a school bus, and over half of all children arrive at school in private automobiles.<sup>2</sup></p> <p>This decline in walking and bicycling has had an adverse effect on traffic congestion and air quality around schools, as well as on the health of children and the environment.</p>					

**Contacts**

Each State administers its own program. Contact your State **Safe Routes To School State Coordinator** for guidance on policies and project eligibility requirements in your State.

**Origins Of The Program**

The SR2S Program was established in August 2005 as part of the most recent federal transportation re-authorization legislation—SAFETEA-LU. This law provides multiple funding for the

## Voters say no to 'mega-campus'

Challengers overwhelm incumbents to win seats on Pottstown School Board

By Evan Brandt  
ebrandt@postpress.com

POTTSTOWN — Voters swept from office Tuesday the incumbent school board team that had advocated closing the borough's five elementary schools.

Instead, voters chose by a roughly 4-to-1 margin the team that championed saving those schools.

Official results tabulated at Republican campaign headquarters showed a whopping 78 percent of the voters favoring the challengers — Dennis Wausonick, Julie Wilson, Michele Parzonek, Rick Hans and Nat White.

They handily defeated the team of one-term incumbents led by Barry Robertson, James Senock, Philip Thies, Beulah Barnhill and Cathy Skilnik.

Both teams "cross-fired" for both the Republican and the Democratic line on the November ballot.

The challengers' overwhelming majority on both ballot lines makes the November election a foregone conclusion.

"I got fed up. I understand that," Robertson said from his house after the results had become official.

"Of all the elections I've been in, this is the most exciting," said Hans, a former school board member who "came out of retirement" because the issue meant so much to me "to run for a fourth time."

"It was exciting because the people spoke," Hans said.

What they spoke about was the rejection of the

**STOP THE \$54 MILLION MEGA-CAMPUS! VOTE FOR THE NEIGHBORHOOD SCHOOLS TEAM!**

Democratic Ballot: Pottstown School Director: Dennis L. Wausonick (✓)

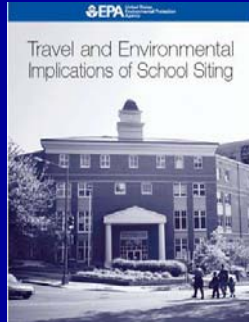
Republican Ballot: Pottstown School Director: Julie Wilson (✓)

Pottstown School Board challenger Michele Parzonek, above, greets voters in front of a sign, telling voters to stop the \$54 million proposed mega campus in Pottstown. At right, the five rival challengers celebrate their victory. From left are Richard Hans, Julie Wilson, Nat White, Dennis Wausonick and Michele Parzonek smile and talk about the favorable results as they come in.



## EPA has verified the effectiveness of many of these strategies

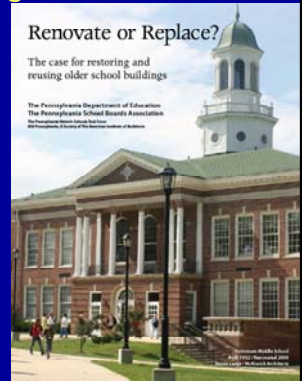
- School location and design DO affect the environment
- Schools built close to students, in walkable neighborhoods
  - Can reduce traffic
  - Yield increase in walking and biking
  - Reduce emissions



[www.epa.gov/smartgrowth/publications.htm](http://www.epa.gov/smartgrowth/publications.htm)

## Public Health Officials and School Siting

- Trend towards big schools on the edge of towns has multiple health considerations
- Health departments are already engaged in the "Safe Routes to School" movement
- Next: engage on school siting
- Health departments can influence these conversations



**ICMA**  
International City/County Management Association

### Creating a Regulatory Blueprint for Healthy Community Design

A Local Government Guide to Reforming Zoning and Land Development Codes

*zoning and other conventional land development codes control the physical form of communities. They should be revised to encourage, incentivize, and regulate healthy and vibrant places through the use of walking, biking, transit, and other active transportation modes. In the past few years, a growing number of planners, architects, designers, and local government officials have become disinterested with zoning, zoning codes, and other land development codes. Programs of smart growth and other reforms suggest that changes in these land use codes can serve as a catalyst for neighborhood revitalization, environmental protection, and economic vitality. In addition, a growing number of public health experts view the reform of zoning and other codes as a critical step in planning and creating healthy and vibrant communities. This report provides a framework for reforming zoning and other land development codes to encourage the design of new compact, vibrant, and healthy communities.*

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<http://icma.org/main/Id.asp?Idid=19338&hsid=1&tpid=31>

### Expert tests walking routes

Urban designer Dan Burden will speak today at a workshop at The Forum at 9 a.m.

08/21/06

By Chris Fincher

Respond to this story

Email this story to a friend

.... Parents and city officials walked in the tiny footsteps of children Wednesday to determine if their commute to school is as safe as it could be.

About 20 people, including parents and neighbors, joined in the field trip around Elm Street Elementary School led by Dan Burden, an urban designer from Florida who specializes in walkable communities.

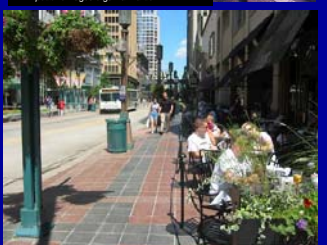
Other walks took place around parks and school districts in Cave Spring, ...



Dan Burden leads a group doing a walkability test.

**"Burden will be a featured speaker at a workshop hosted by the district health administration today at The Forum."**

The pedestrian/bicyclist is an indicator species for a healthy, livable, place.



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EPA is a sponsor of the "Reclaiming Vacant Properties: Strategies for Subdividing America's Neighborhoods" GIS Database conference, which will take place September 24-25, 2007, in Pittsburgh, PA.

EPA is accepting applications for the Excellence in Building Healthy Communities for Active Aging awards. The awards recognize outstanding community planning and strategies that support active aging. Applications are due Oct. 17, 2007.

**About Smart Growth**

Learn about smart growth issues and environmental benefits. Find information about specific topics, resources, and examples of smart growth development, including the National Award for Smart Growth Achievement.

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Find tools and information to help you

**Newsroom**

Six communities selected to receive Smart Growth Implementation Assistance (7/07)

more...

## For more information...

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– [www.epa.gov/smartgrowth/schools](http://www.epa.gov/smartgrowth/schools)