
IDAHO
SMART
GROWTH
encouraging vibrant communities through sensible growth
Health –Land Use –
Safe Routes to School
What is the Connection?
www.idahosmartgrowth.org

The Problem - Health

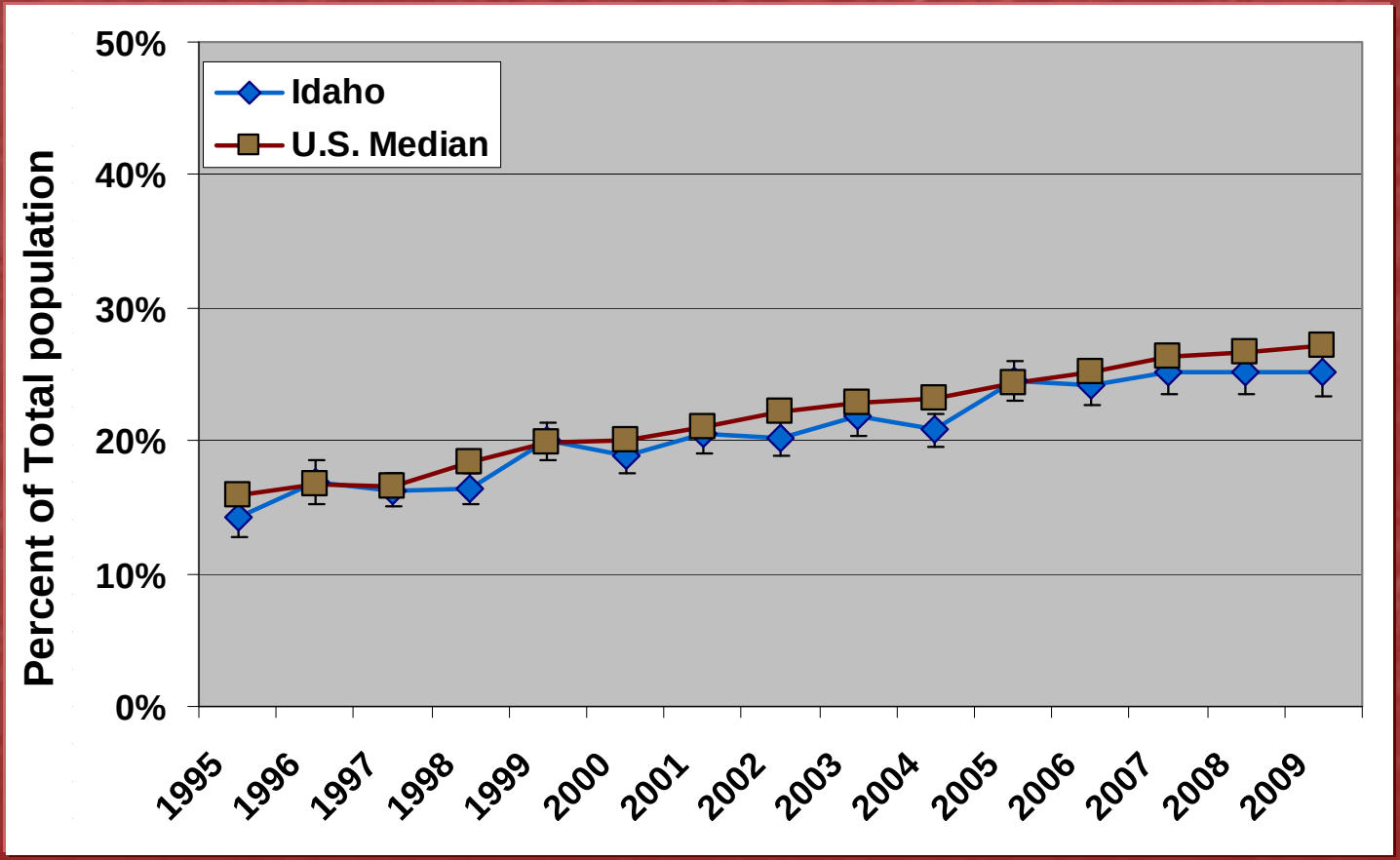
A new epidemic in the US - Obesity

- **Chronic Disease**

The Consequences

Health impacts of low activity

- Obesity in Idaho is reaching epidemic proportions

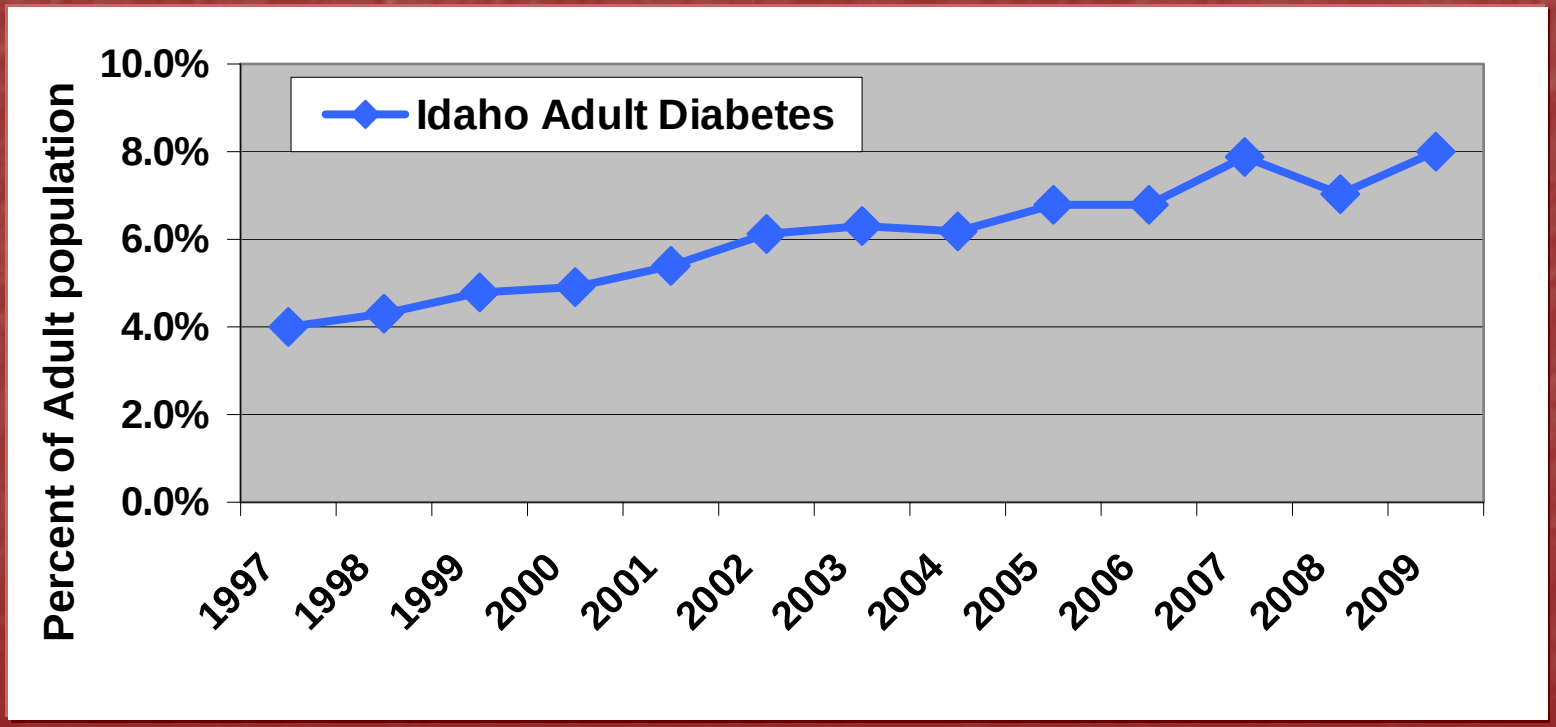


Source: Idaho BRFSS, Bureau of Vital Records and Health Statistics U.S. Source: BRFSS (median), Centers for Disease Control and Prevention

The Consequences

Health impacts of low activity

Increased Diabetes in Idaho, Diabetes has doubled in 13 years from 4% in 1997 to 8% in 2009



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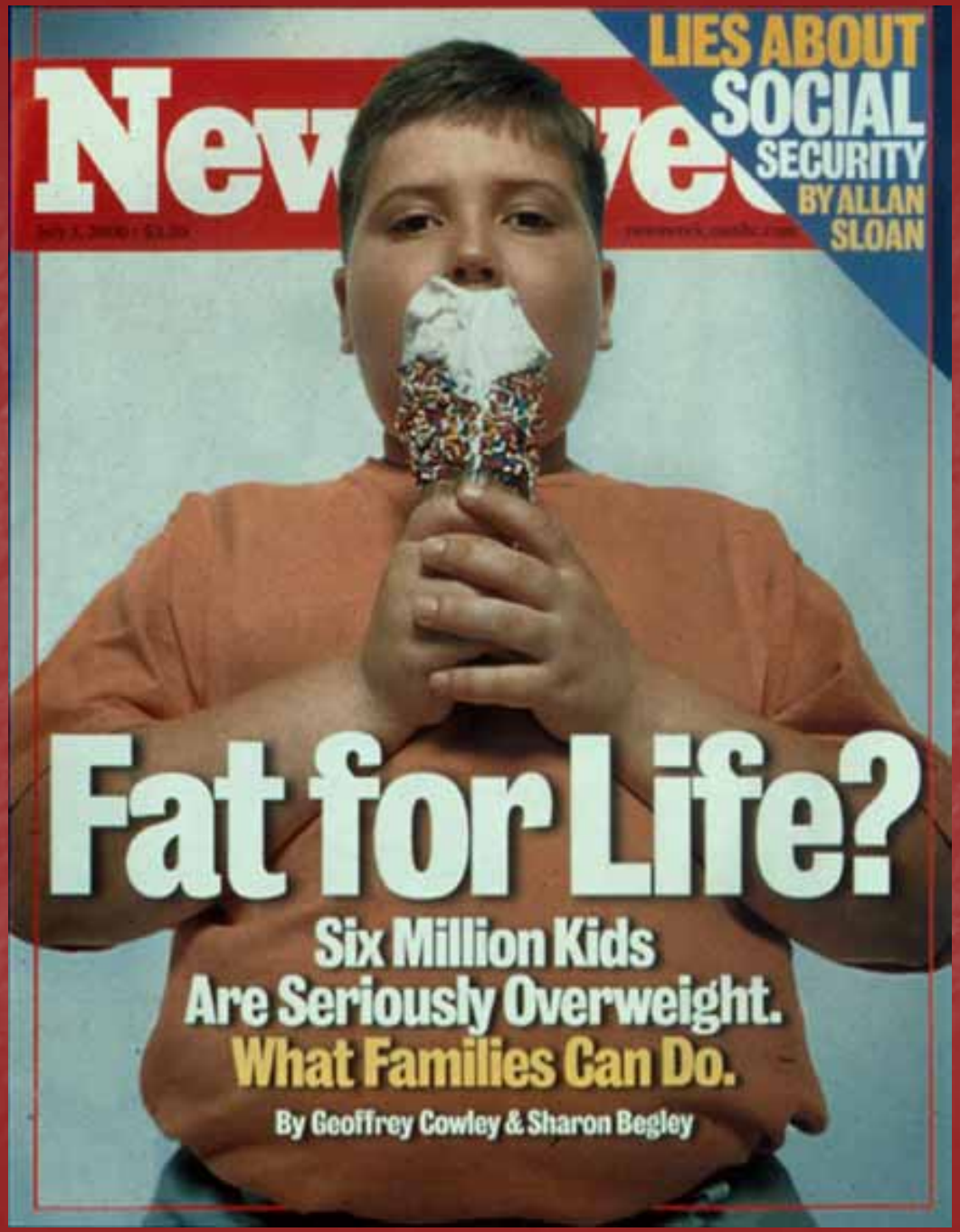


Affects our kids

Childhood Obesity

= increased Type II Diabetes and other Chronic Disease

Conventional Response to Promoting Physical Activity

Organized sports/ vigorous activity

- **Instead of Routine Behaviors**

Glamorizing pro athletes

- **Unrealistic Identity**

Exercise as added activity

- **Must "find the time"**

A New Public Health Approach

Active Community Environments:

- Growing interest among policymakers and public.
- "Collateral benefits" of community design
- Action at the state and local level – not national

Active Community Environments

"Places where people of all ages and abilities can easily enjoy walking, bicycling, and other forms of physical activity as part of a daily routine."

CDC

Old Approach

Changes in individual behavior

Proactive encouragement by health care providers

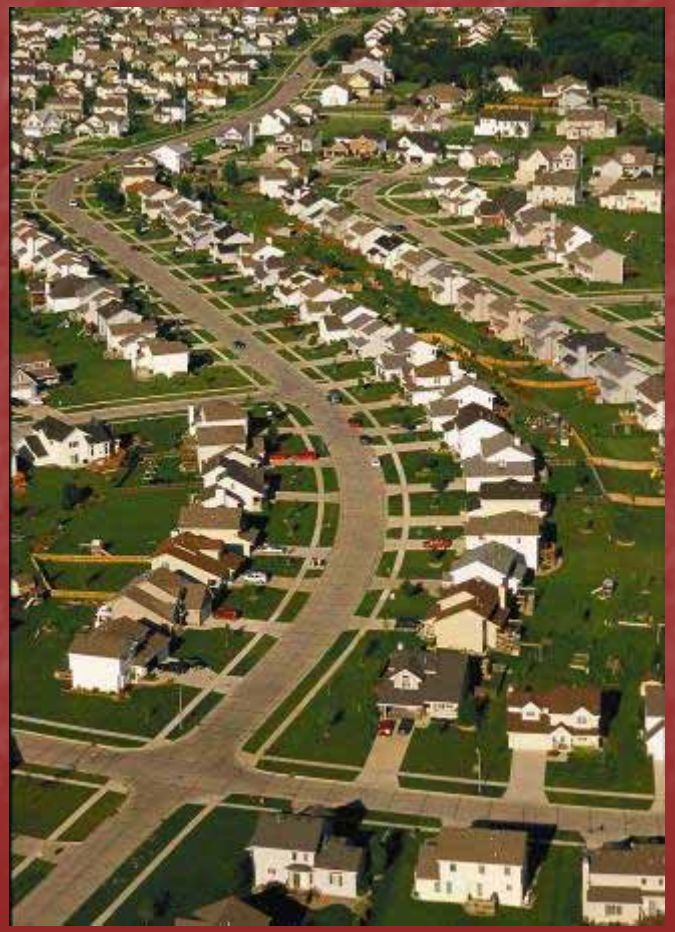
A New Approach

Community designs that make walking & biking safe, easy & enjoyable!

The Problem – Land Use

Land use practices have converged to generate haphazard, inefficient, and unsustainable urban sprawl:

- Regulations isolate employment, shopping, services, housing from each other
- Transportation policy aimed at automobile access open increasing expanses of land to low-density growth.



Land Use

What does it look like?

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

Consequences of sprawl

Affects all of these factors

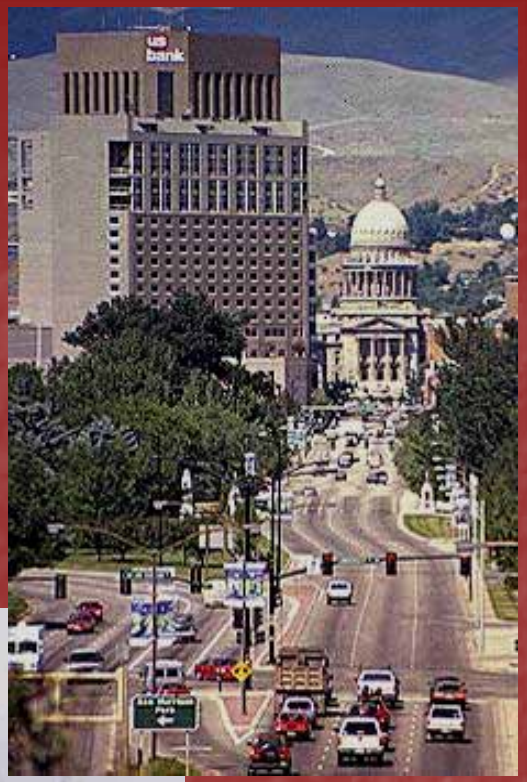
- ↑ Air pollution
- ↑ Greenhouse gas emissions
- ↑ Transportation costs
- ↓ Physical activity
- ↑ Car crashes
- ↑ Pedestrian/bike injuries
- ↓ Water quantity and quality
- ↓ Mental health
- ↓ Social capital

The Consequences Air Pollution

Major pollutants of concern:

- ozone
- NOx
- CO
- particulates
- hydrocarbons
- lead
- Sox
- allergens

From cars and trucks



Other Consequences

The average household spends $6,000 per year on each car owned.

- More cars and car use = lower disposal income.

Relationship Between Sprawl and Physical Activity, Obesity, and Morbidity, American Journal of Health Promotion, Sept 2003

Sprawl and income inequality

Other Consequences

People in Sprawling Communities:

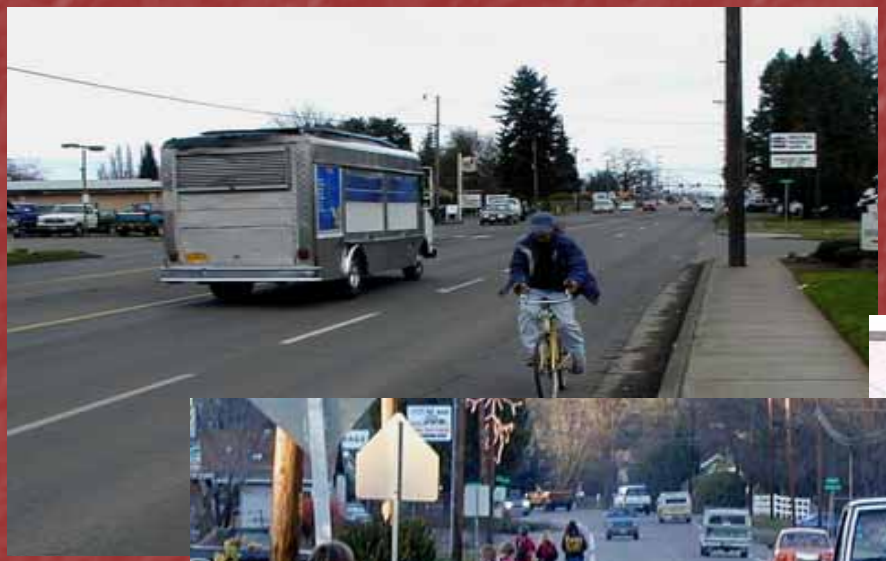
- Walk less
- Weigh more
- Have higher blood pressure

Relationship Between Sprawl and Physical Activity, Obesity, and Morbidity, American Journal of Health Promotion, Sept 2003

The Consequences

Walk and Bike less in sprawl conditions

- Pedestrian and Bicycle Infrastructure is inadequate/incomplete



Other Consequences

Increased

- Car, bicycle, pedestrian Accidents

Other Consequences

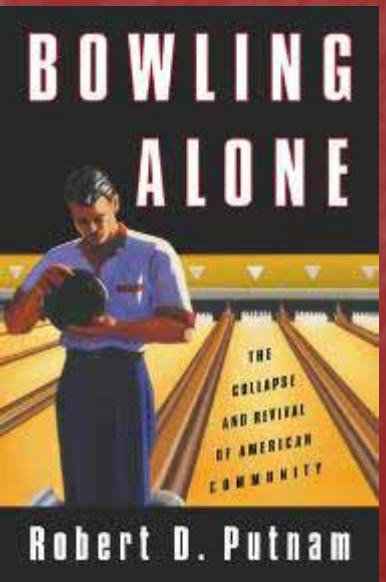
Decreased

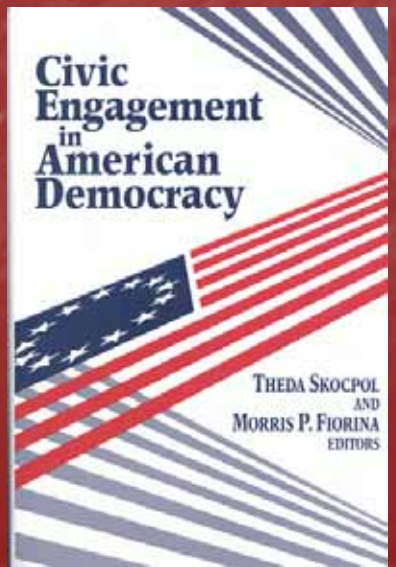
- Water Quality and Quantity

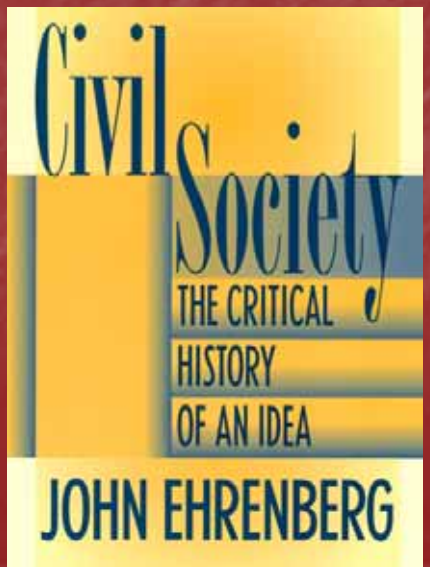
What is Social capital?

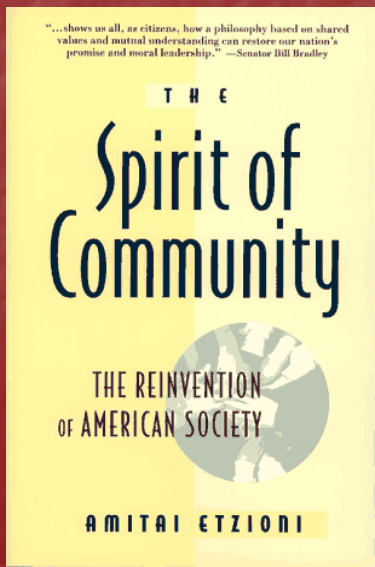
Social capital defined as:

- Social networking and engagement
- Civic Engagement
- Trust and reciprocity









The Consequences of a loss of Social Capital

- More driving time means less time with family, friends, and civic organizations.
  - Putnam: every 10 minutes of commute time means a 10% decline in social capital
- Suburban voters tend to favor more individualized, less collective solutions.
- Residential stability across the lifespan is compromised: elders cannot age in place.
- Aggravated income inequality

The Consequences

Children lose independence and mobility

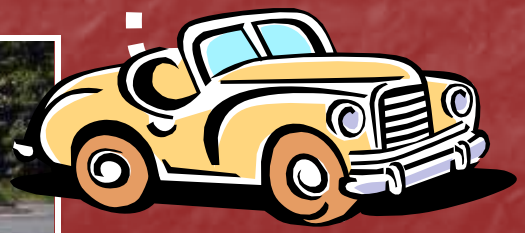
- Kids must rely on adults to drive them

Home

School

Shops

Recreation



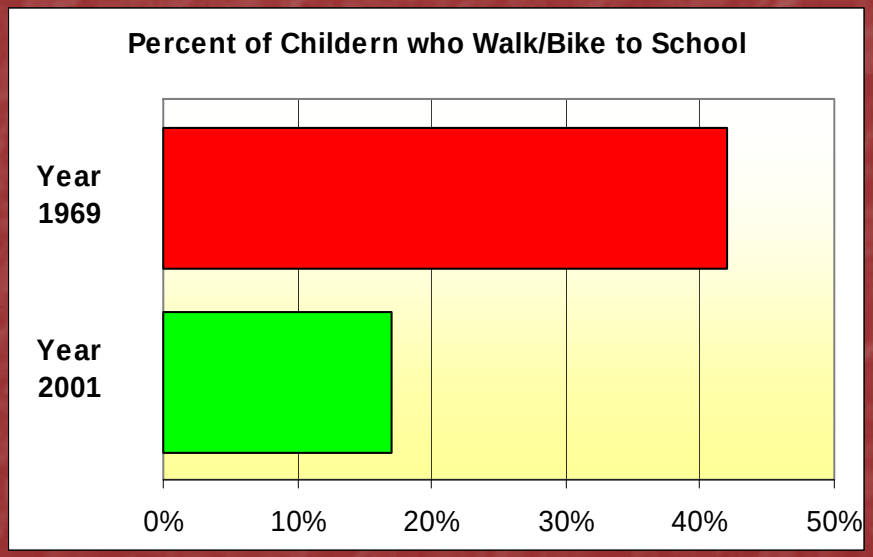
Everything is a Drive Away

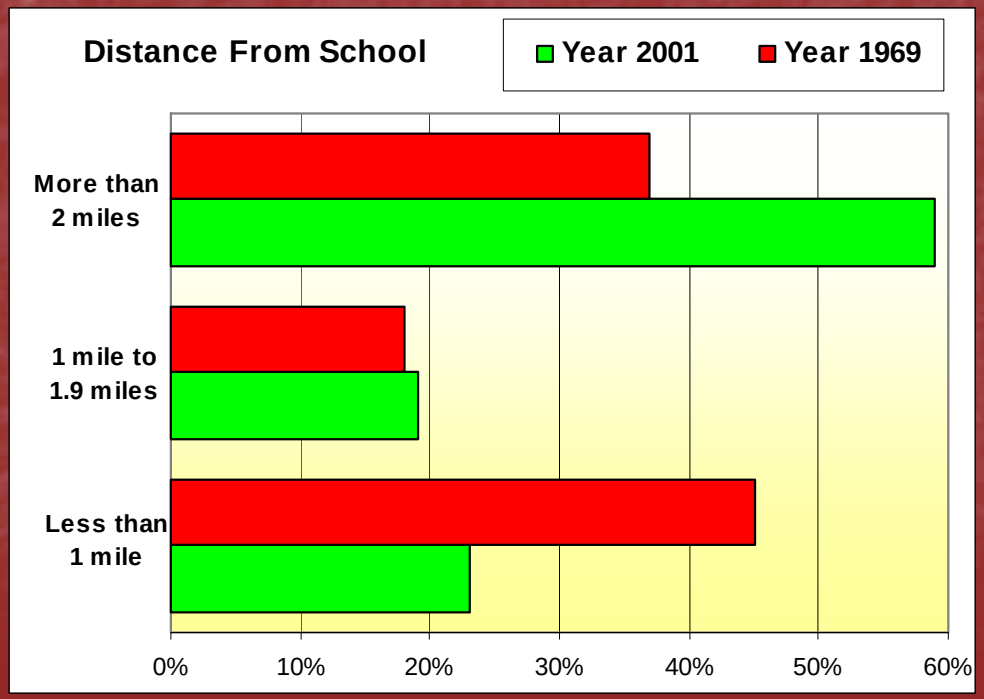
Library

The Problem - Schools

Fewer children walking or biking to school

- Percent of kids walking to school dropped 23% between 1969 and 2001 while distance to school increased by over 50%





Source: CDC 2005 and National Household travel survey

The Causes

School Sites have moved and grown larger

- Schools sited on overly large sites far from the neighborhoods and students they serve

Site boundary

½ mile walking radius

1 mile walking radius

School Siting Obstacles

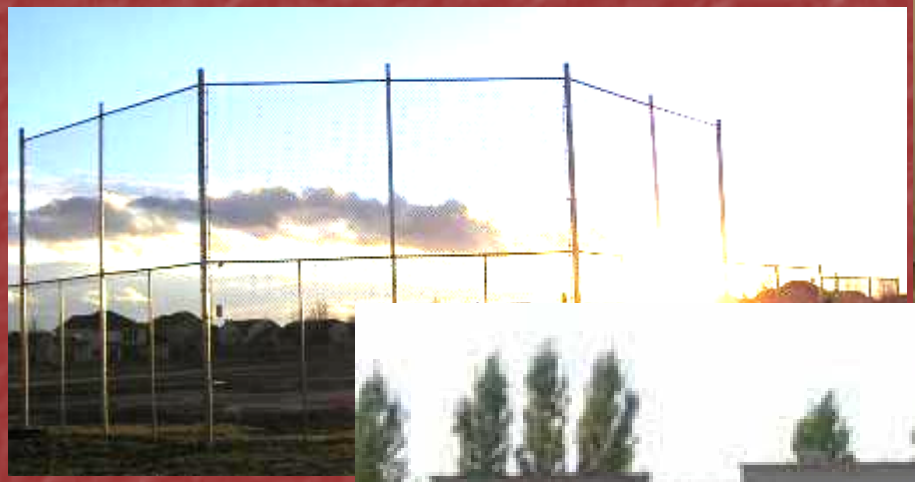
School based obstacles affect ability to establish small walkable schools:

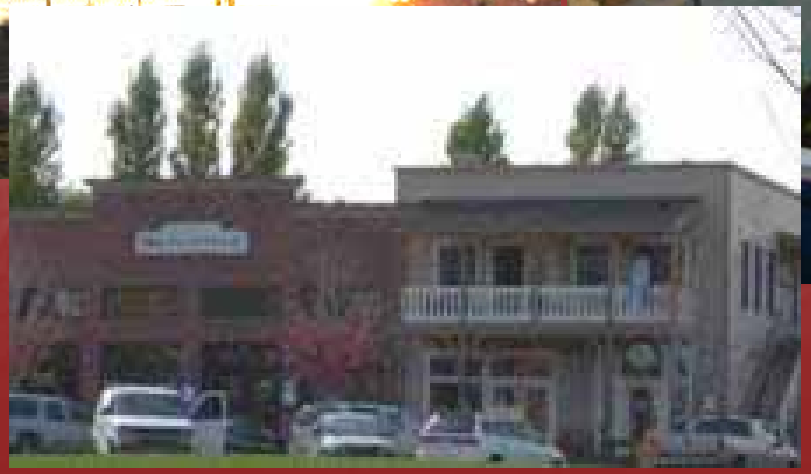
- Administrative costs
- Land costs
- Excessive size requirements
- Busing reimbursement policies
- Choice schools

School Siting Obstacles

Barriers to establishing walkable schools

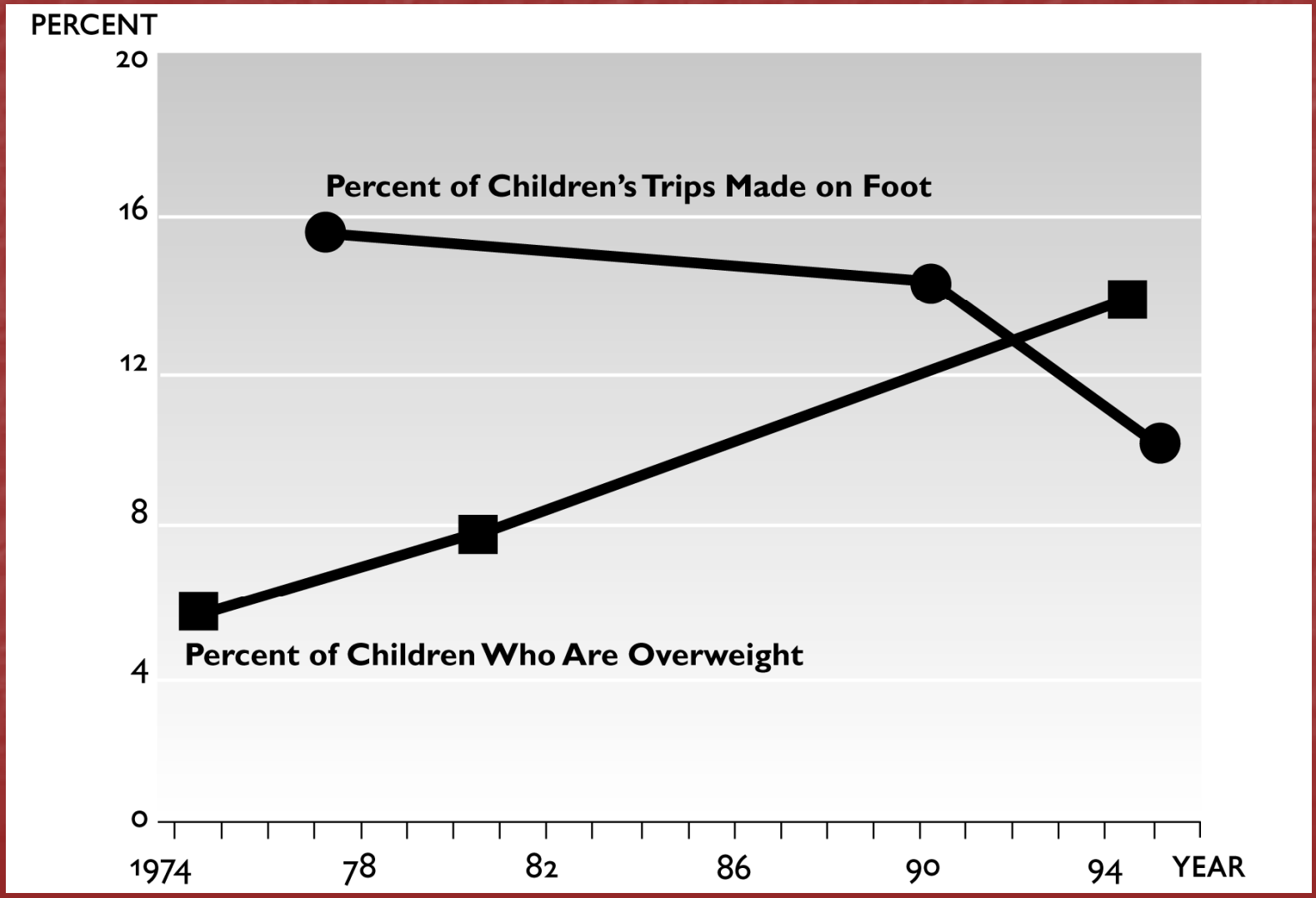
- Educational program needs
- Athletic field needs/wants
- School choice





The Consequences

Correlated increase in children overweight



Source: Surface Transportation Policy Partnership, *Mean Streets* 2000

The Consequences

Congestion at schools is worsening

- up to 25% of peak hour trips are created by parents driving kids to school

= increases of asthma and other chronic respiratory diseases.

Improved School Siting Process

Community wide Preferences should drive outcome, Consider:

- School size/Site size
- Renovation opportunities
- Cost tradeoffs
- Meeting everyone's goals
- Facility sharing/Athletics
- Walking/biking priorities
- Other community goals

Solution

Smart Growth =

- **Better Health**
- **Lower Costs**
- **Higher Quality of Life**

What is Smart Growth

Asks how and where new development should be accommodated. Can be measured by:

Four D's

- Density
  - Compact
- Diversity
  - Mixed Use
- Design
  - Streets, Setbacks, Pattern
- Destinations
  - Walk distance to needs

The Four D's

Density

- Can be very well designed
- Can fit into a neighborhood

Guess the number of units per acre?

Source: Consequences of Residential Infill in the Treasure Valley, Idaho Smart Growth 2007

The Four D's

Is Density really a 4-letter word?

Higher AVERAGE densities are needed, not uniform high density everywhere

The Four D's

Diversity

- Mix of housing types offers ability to age in place






The Four D's

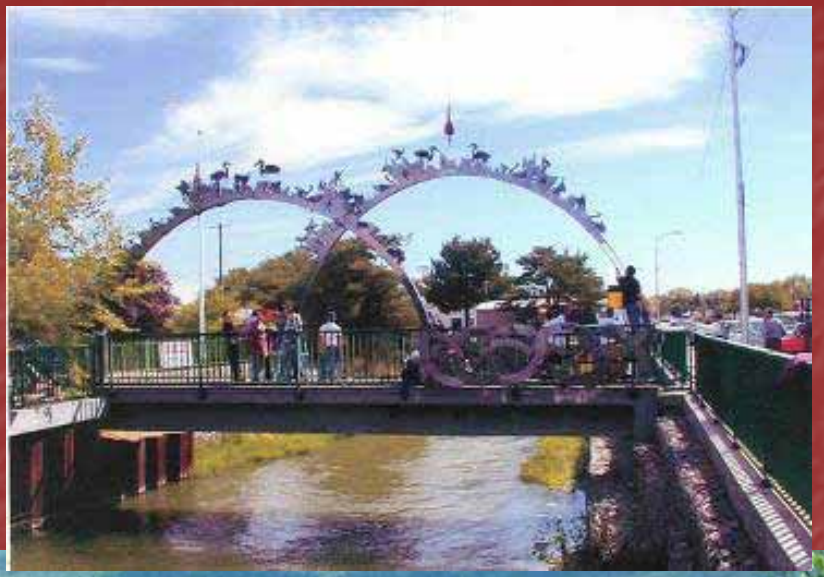
Diversity

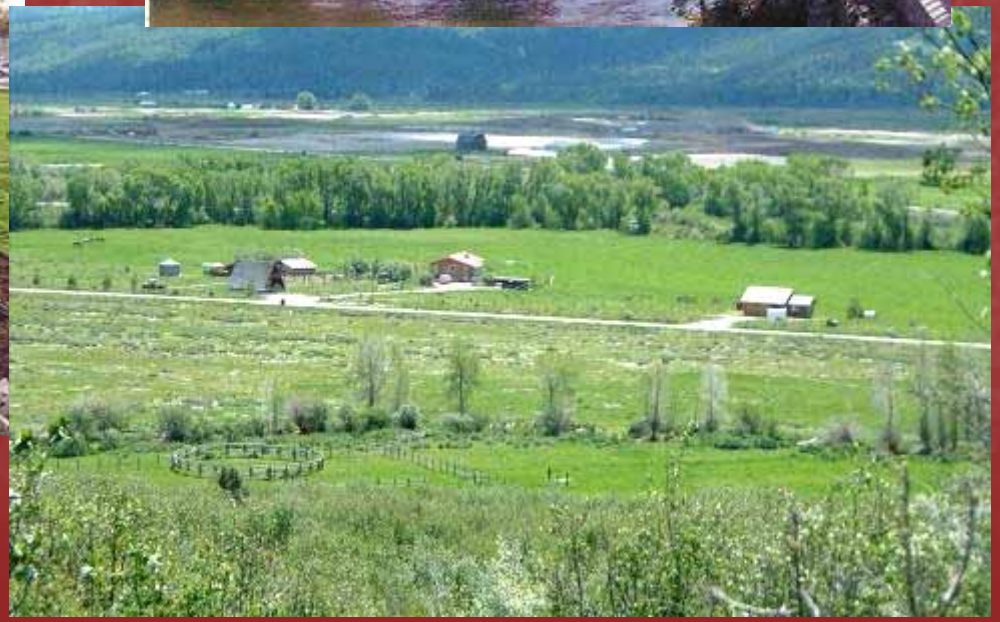
- Mix of Uses offers useful destinations that are nearby generate more walk trips

The Four D's

Diversity

- Includes good public art, greens and open space

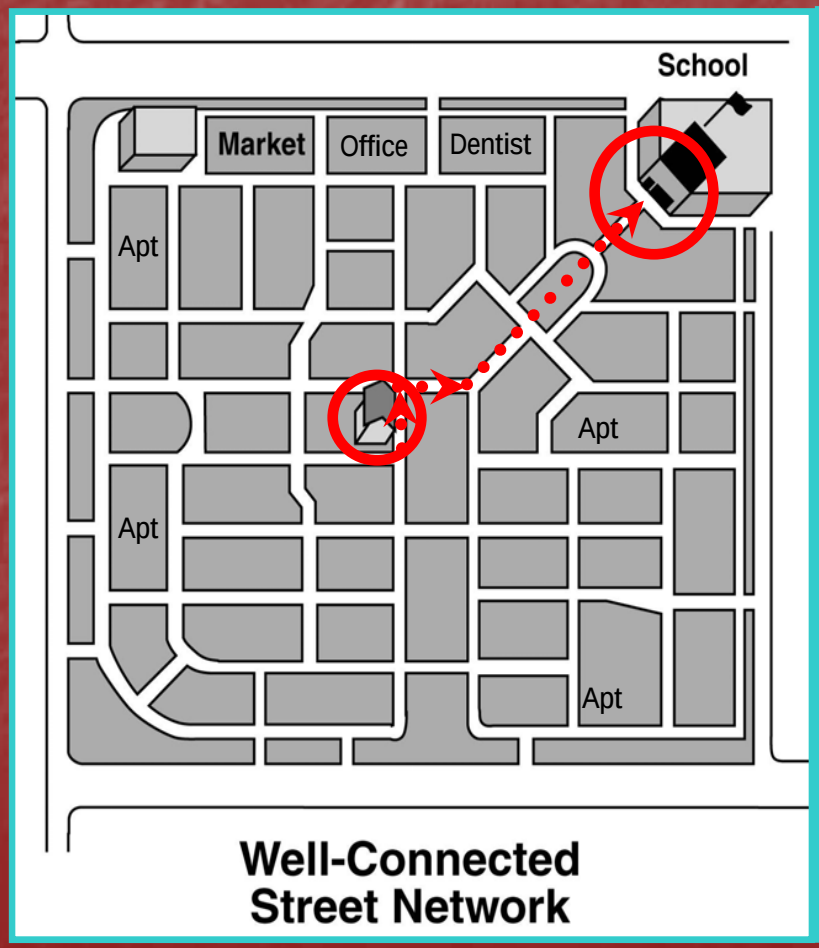


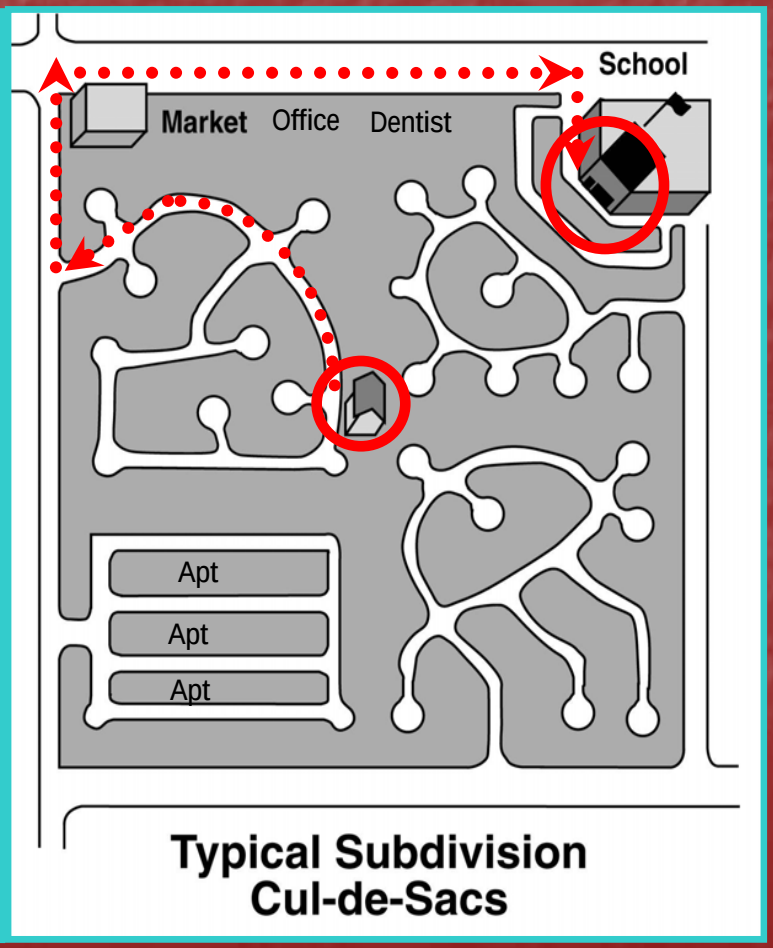


The Four D's

Design

- Accessibility through connected systems

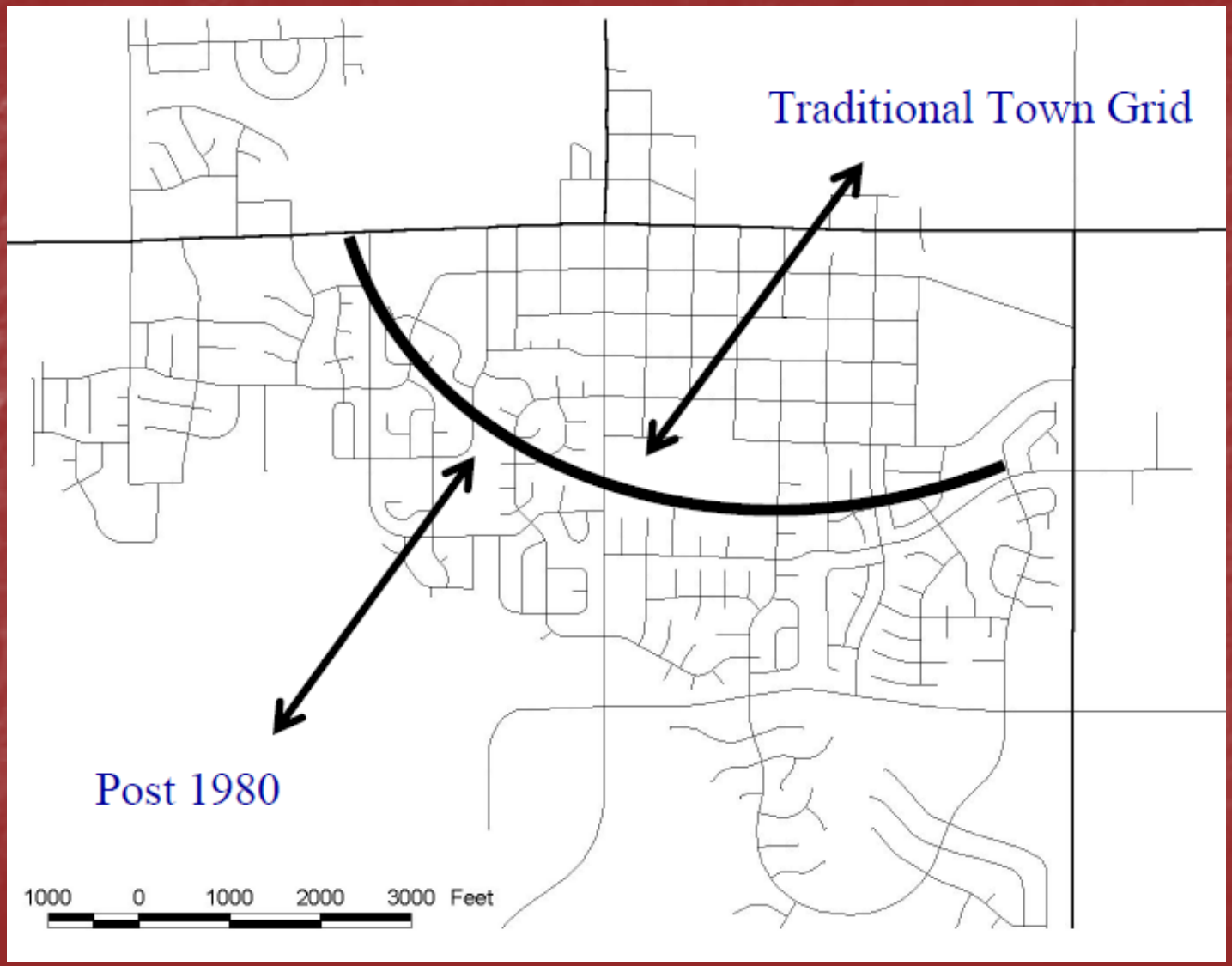




Street Connectivity

"A well-connected network of small streets is safer and provides more capacity and mobility than a limited network of wide streets."

Jim Charlier, Charlier and Assoc.



Connectivity Study CA

24 CA cities analyzed at block level

12 "Safe Cities" (severe/fatal crash rates 1/3 state avg)

12 "Less Safe Cities" (severe/fatal crash rates near the state avg).

- **Safe Cities**
  - Avg intersection density – 106/sq mi
  - Walk/bike/transit mode share – 16 %
  - Fatality rate per 100,000 people – 3.2 / yr
- **Less Safe Cities**
  - Avg intersection density – 63/sq mi
  - Walk/bike/mode share – 4 %
  - Fatality rate per 100,000 people – 10.5 / yr

Interestingly, the safe cities were well established prior to 1950; the less safe cities were largely developed after that time

Street Connectivity

Impacts of Poor Connectivity

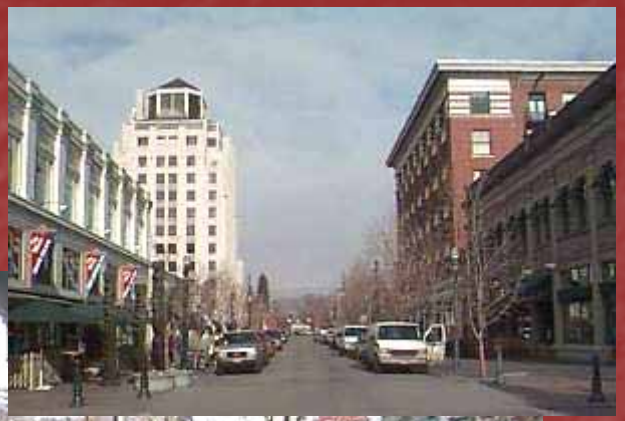
- Massive, congested arterials
- Increased driving/household
- Transit voids
- Inactive living
- Poor emergency service access
- Reduced travel safety

Measure	Standard	Notes
Connectivity	1.4 minimum	Links/nodes - excludes links on perimeter highways
Intersections/Square Mile	250 minimum	Including perimeter intersections
Block perimeter	1,400 ft. Maximum	Measured at street centerline
Block Length	500 ft. Maximum	
Emergency Access	10% Maximum	% of parcels that are inaccessible if one street is blocked
Proximity	65%	% of DUs within ¼ mile of village nodes

Street design supports walking/biking

Perceptual qualities of the street influence use:

- Interesting streets maintain visual & sensory stimulus
- Calm, narrow, and complex streets
- Have amenities i.e. trees, furniture, crosswalks, sidewalks, bikeways



Smart Growth Best Practices

- **Based on the 10 principles of smart growth recognized nationally**
- **Identifies policies and regulations**
- **Identifies examples in Idaho.**

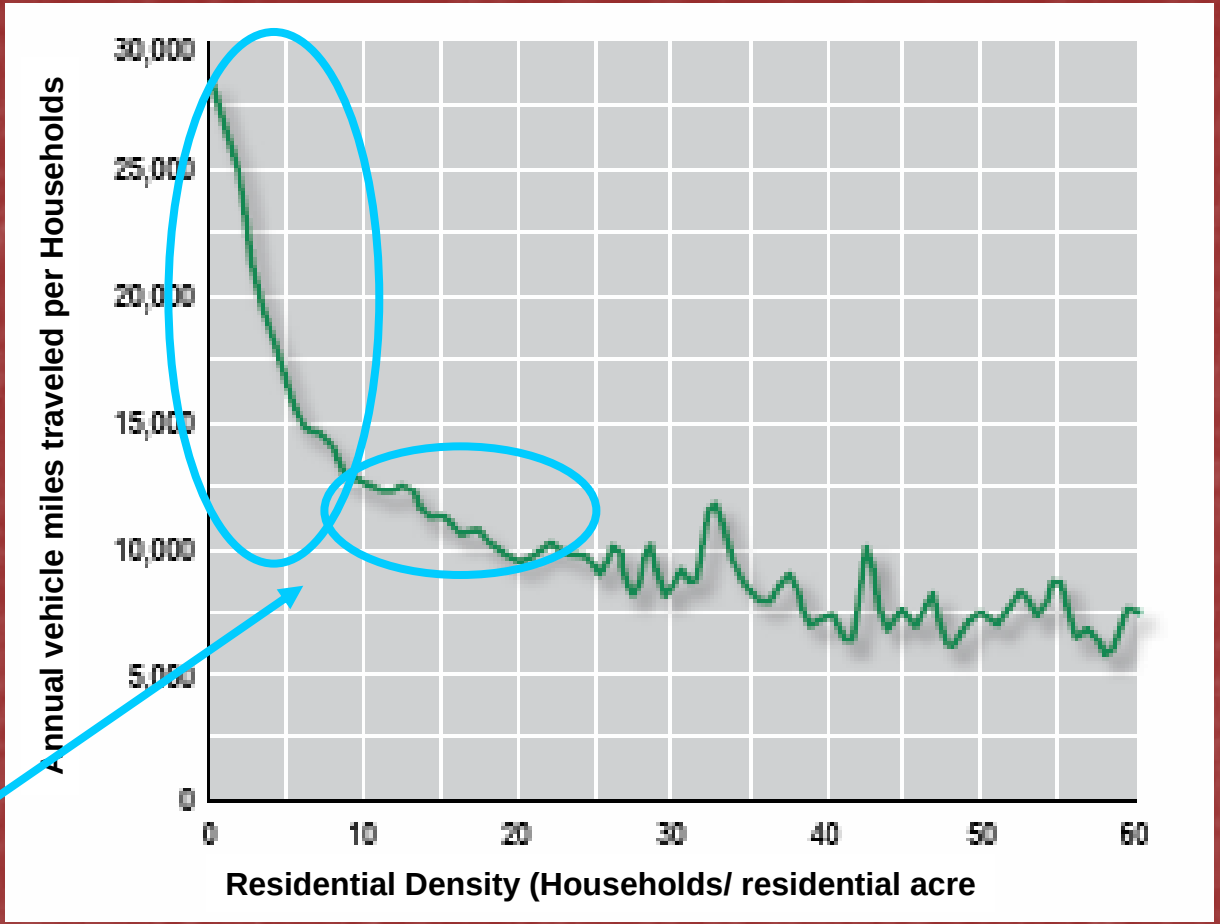
Find at:
http://www.idahosmartgrowth.org/index.php/resources/resource/best_practices/

Does it Work?

Density

- Changes at lower end make a big difference in the # of miles traveled per year

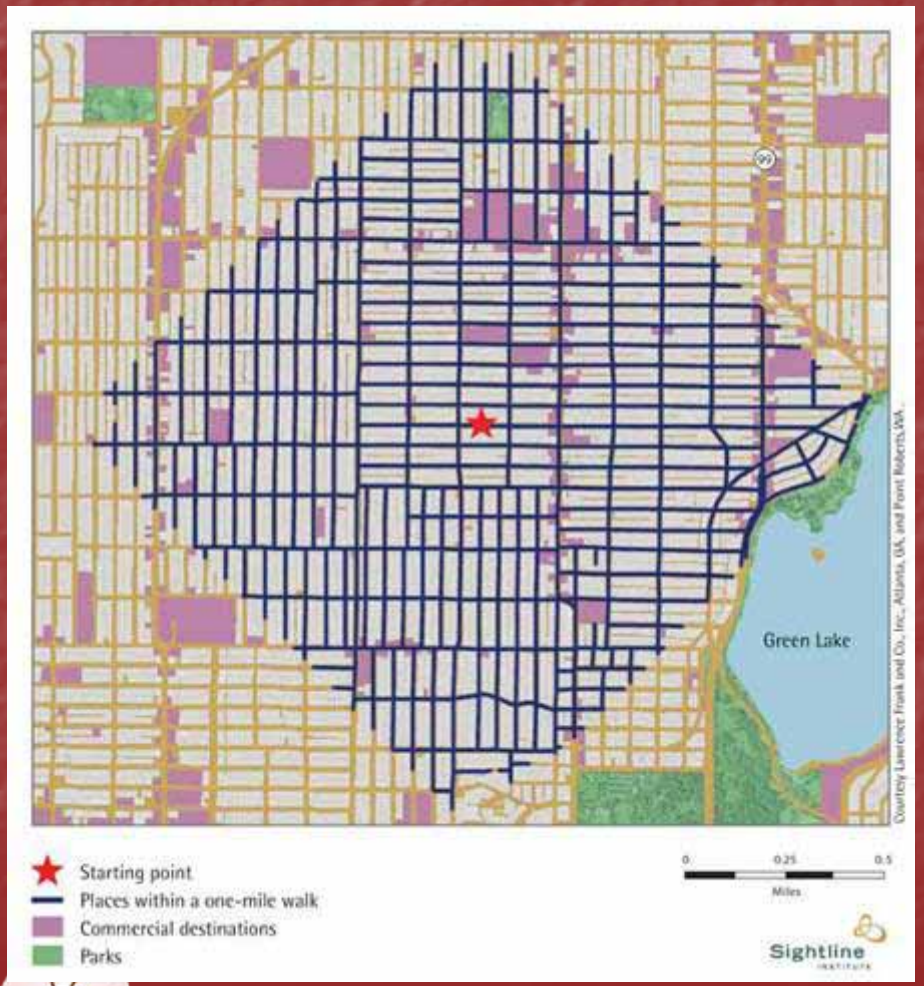
Biggest gains at lowest levels

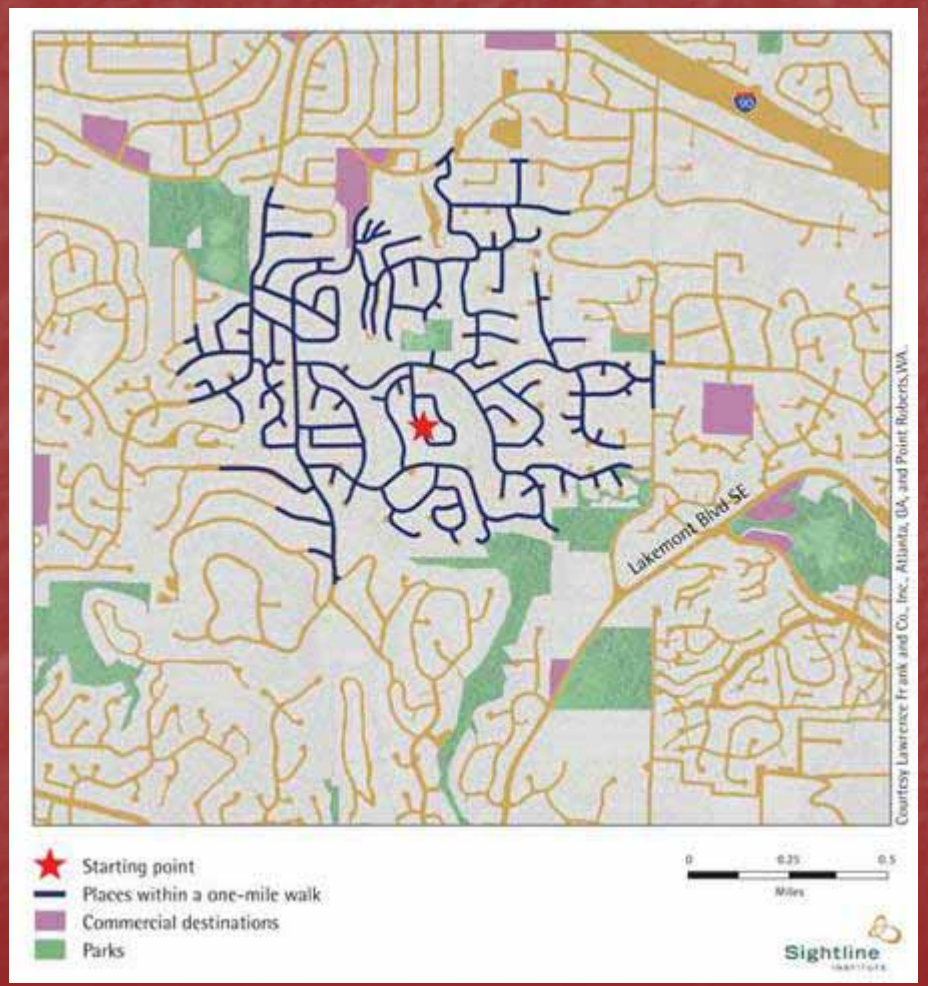


Source: Massachusetts data registry of motor vehicles 2005-2007

More Places within Walking Distance

In Seattle, 5% increase in walkability = 32% increase in minutes of walking or biking and a reduction in BMI

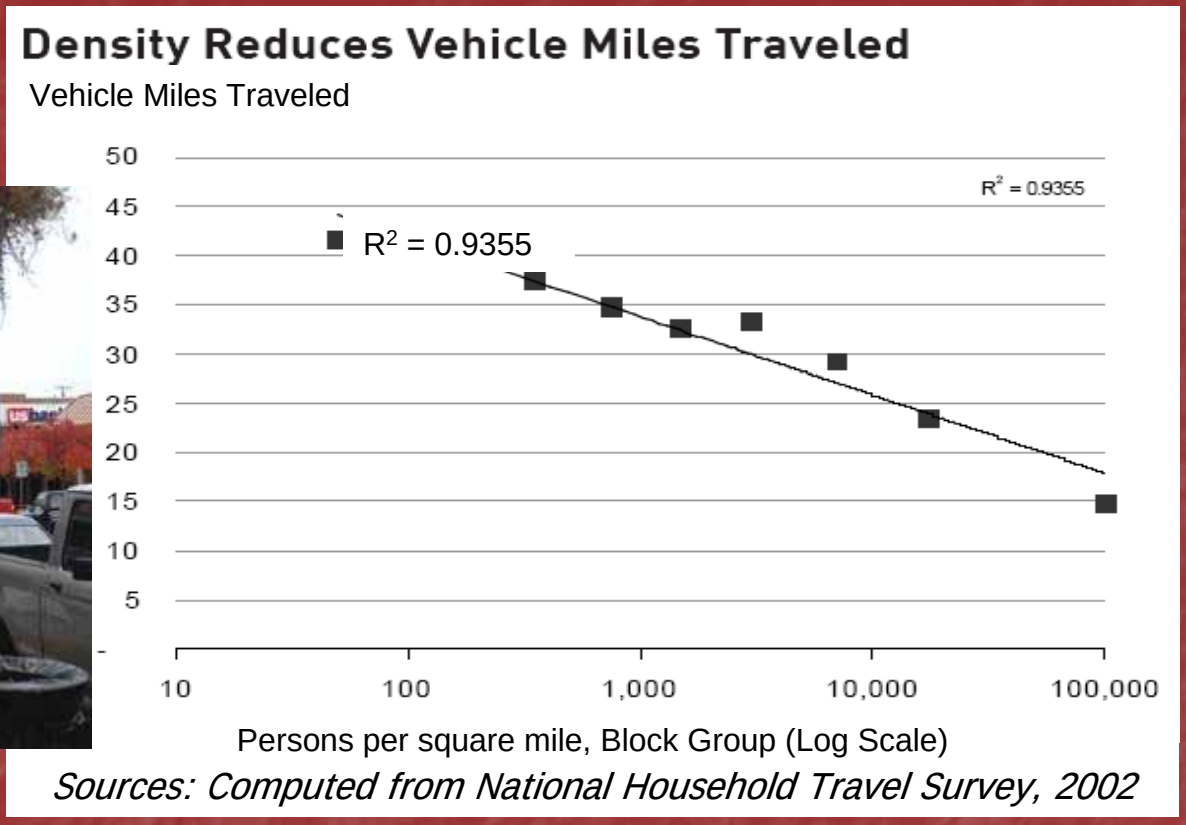




Source: Lawrence D. Frank et al., "Many Pathways from Land Use to Health: Associations …," *Journal of the American Planning Association* 72, no. 1 (2006): 75-87.

Does it Work?

Density reduces driving

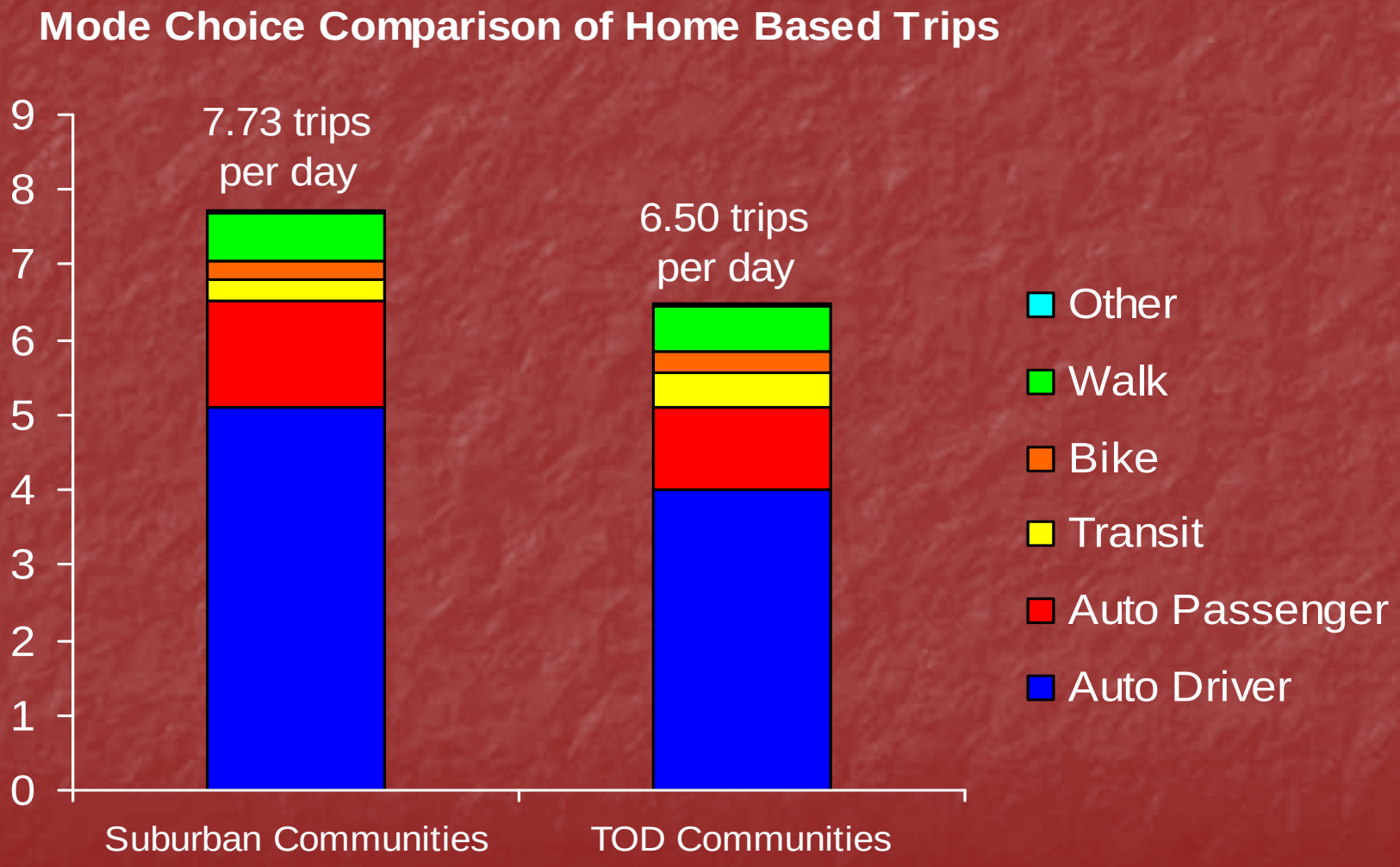


Sources: Computed from National Household Travel Survey, 2002

People who live in smart growth communities drive fewer miles daily and use less energy for both transportation and housing, than sprawling communities.

Source: Growing Cooler Report; Compact Development Key to Mitigating Climate Change, www.uli.org.

It Works - Fewer Trips per Day



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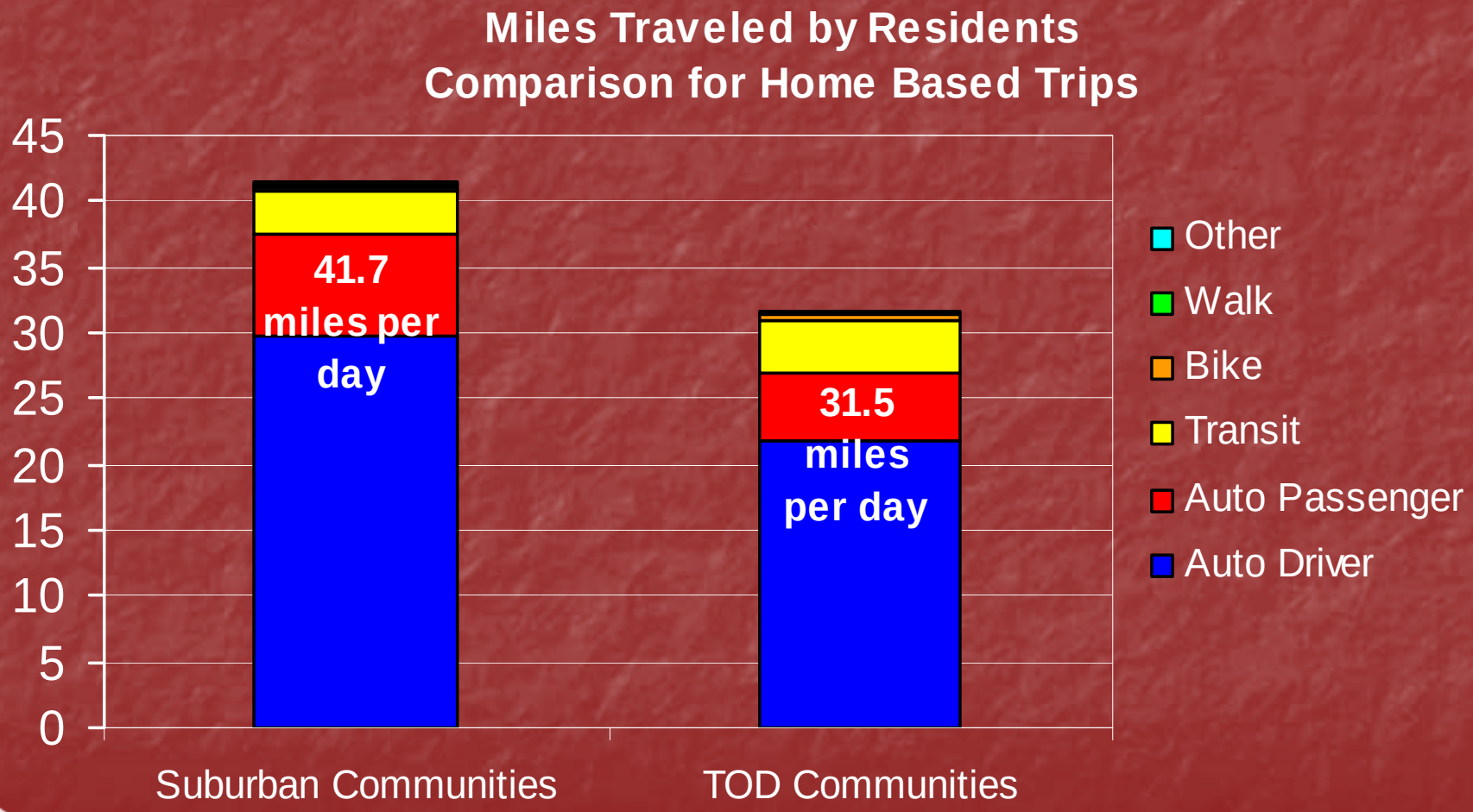
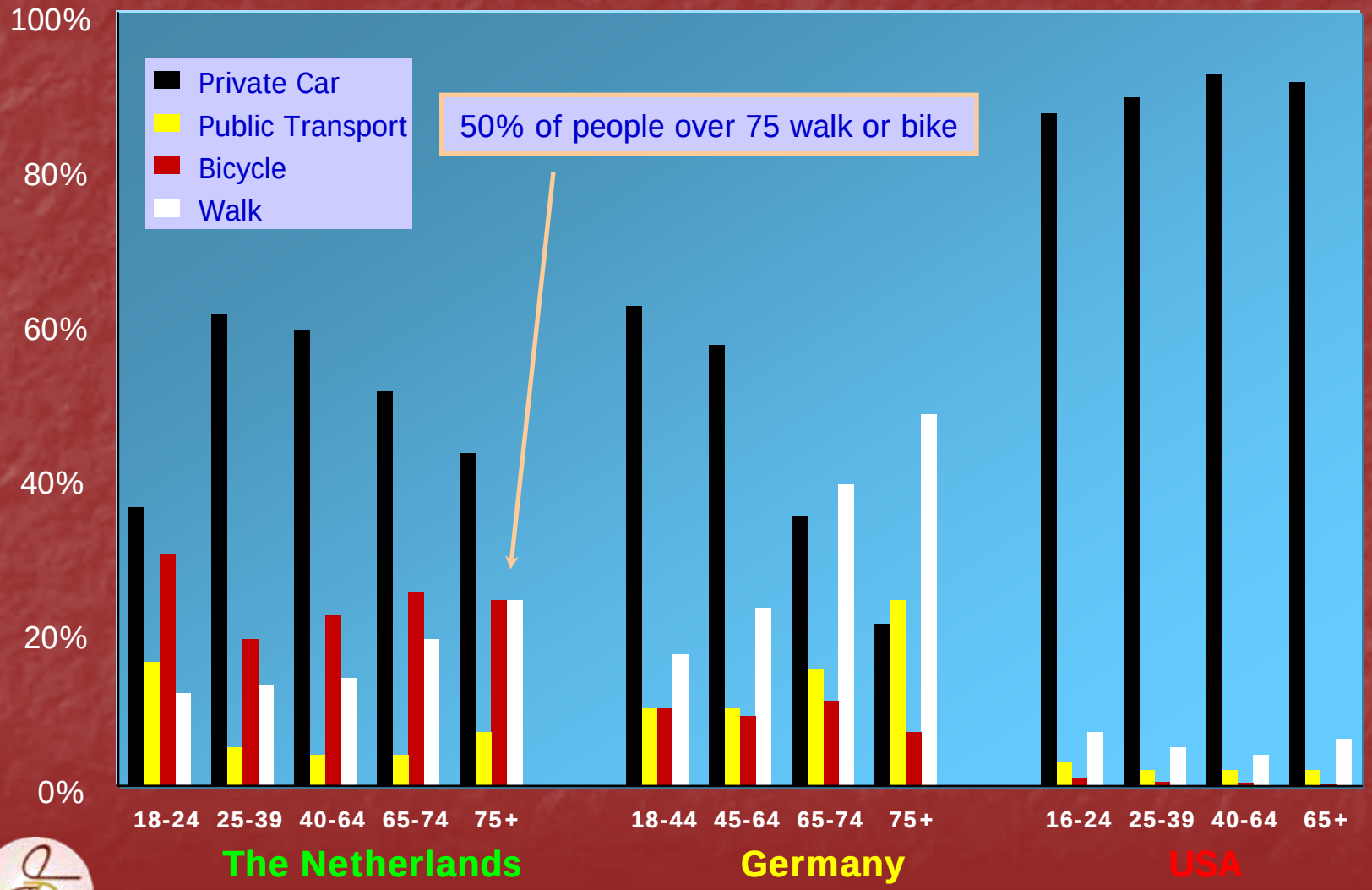


The European Experience



Do the Four D's Work?

They affect auto use, walking, biking /capita

Environmental Characteristic	Elasticity VT Per Capita	Elasticity VMT per Capita
Density	4% to 12%	1% to 17%
Diversity	1% to 11%	1% to 13%
Design	2% to 5%	2% to 13%
Destinations	5% to 29%	20% to 51%

Sources: 4D National Syntheses, Twin Cities, Sacramento, Location Efficiency

Sacramento Results – Auto Use

% Change from Existing

Scenario	Total VT/Day	Total VMT/Day
Current Trends	+140%	+120%
Density Only	+114%	+89%
Dense & Smart Growth	+91%	+62%
Land Use Balance	+111%	+74%

When population doubles, there will be a big increase in auto use under any scenario

But 4D model shows smart growth policies could reduce the growth significantly

Source: 4D study Sacramento, Fehr and Peers 2008

Sacramento Results – Non-Motorized

Walking/Biking, etc.

Scenario	Sac County	Total Region
Existing	6.6%	6.4%
Current Trends	5.1%	4.8%
Density Only	11.6%	8.9%
Dense & Smart Growth	23.5%	18.0%
Land Use Balance	13.9%	10.6%

The 4D's have major impacts on the percentage use of walking and biking that would not be detectable using a conventional model

Source: 4D study Sacramento, Fehr and Peers 2008

Sacramento Resulting Mode Split

Scenario	Auto	Transit	Non-Motorized
Existing	92.2%	1.1%	6.6%
Current Trends	93.8%	1.1%	5.1%
Density Only	84.9%	2.4%	12.5%
Dense & Smart Growth	71.1%	5.4%	23.5%
Land Use Balance	83.0%	3.0%	13.9%

4D model does not forecast the demise of the auto mode, even under the most aggressive scenario.

But it does suggest that a more balanced mode split is achievable in Sacramento

Source: 4D study Sacramento, Fehr and Peers 2008

Complete Streets Policy

Ensures that the entire roadway right of way is routinely designed and operated to enable safe access for all users.

What is a Complete Street?

Separated and/or wider sidewalks

Traffic calming

Narrower traffic lanes

Bike lanes

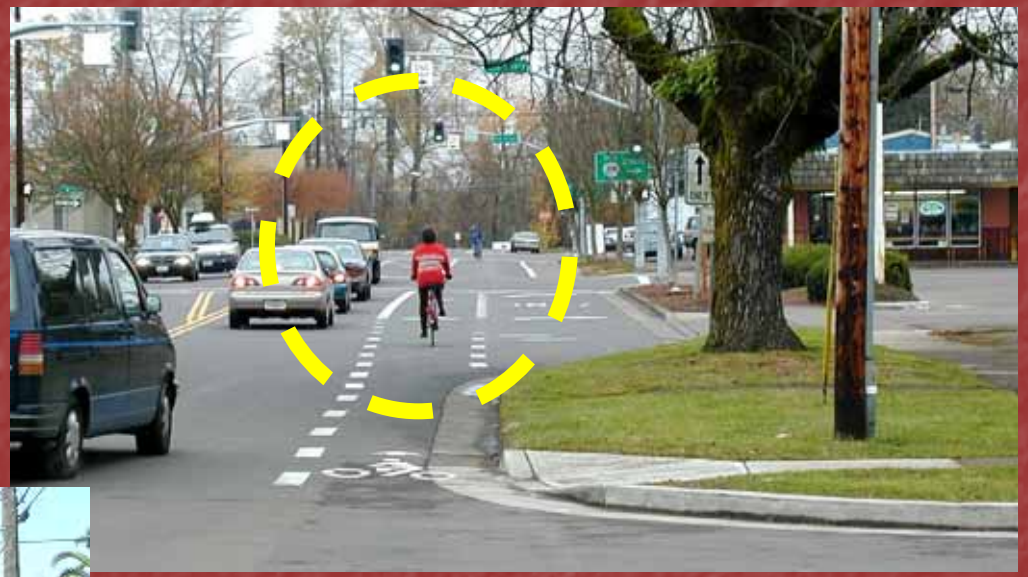
How a Complete Street looks

Street Design features That Promote walk/bike trips

Refuge islands create safe zones for pedestrians

Street Design features That Promote walk/bike trips

Bike lanes create safe space for cyclists



Traffic circles slow down cars and calm traffic

Street Design features That Promote walk/bike trips

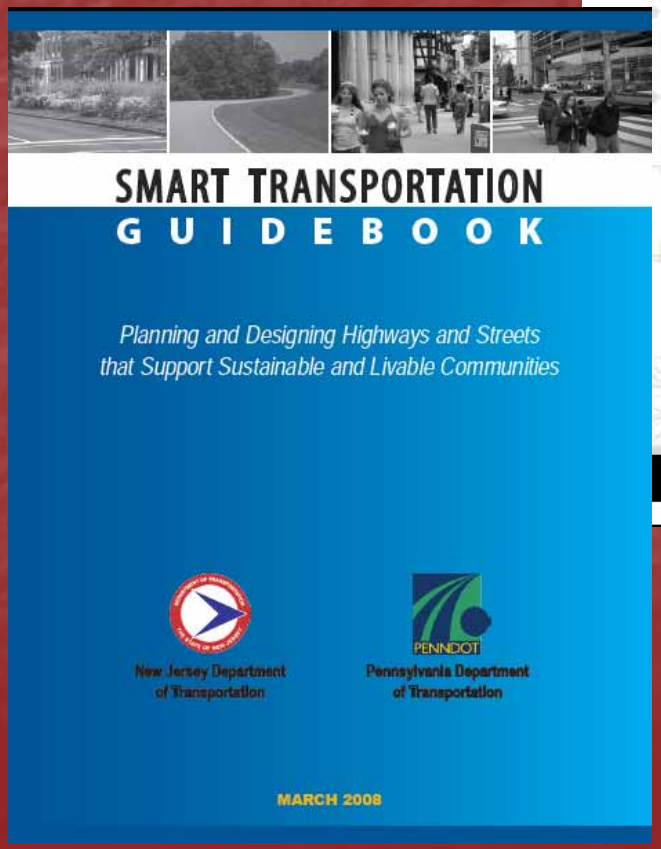
Median islands promote pedestrian safety

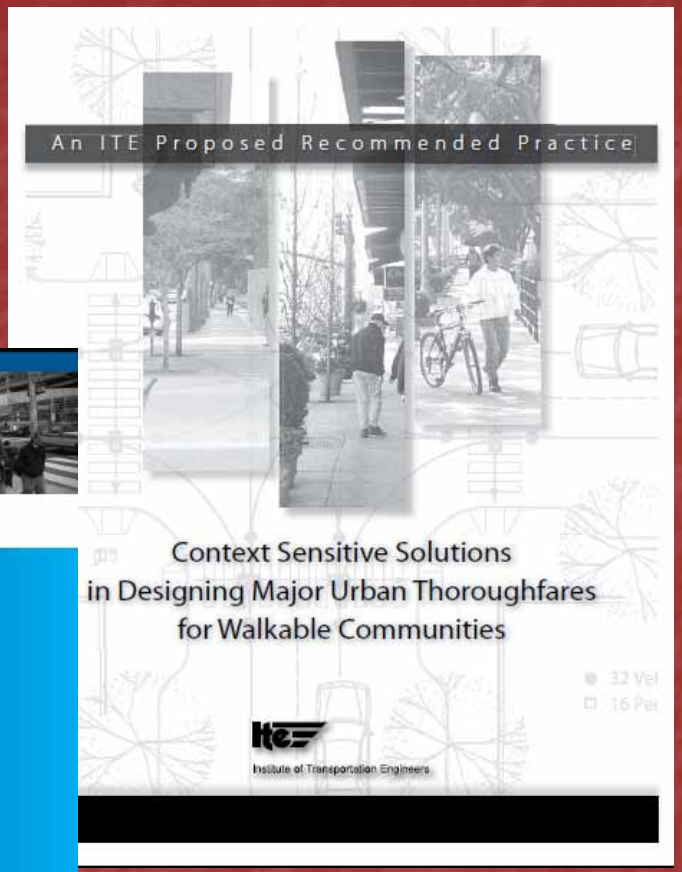
Curb extensions create shorter crossing distance

Use Best Practices

Standards changing quickly.

- Update design standards with latest best practices, keep up with changes allow flexibility





Prioritize Schools

At Schools First, save $

- e.g. Signs, Striping, Crosswalks, Medians to slow traffic

Safe Routes to School (SR2S) Federal Transportation Law

SAFETEA-LU

Sections(s):

1101(a)(17), 1404

- A Program to Enable Children to Walk and Bike to School Safely

SR2S Federal Funding in Idaho

Minimum Guarantee - $1 million

- Based on a ratio of student population K-8 to total state population

Idaho receives

$1 million

per year

The Intersection of Public Health, Schools, and Sprawl

Potential intersections for decision makers:

- Zoning decisions
- School location and size
- Green/openspace preservation efforts
- Alternative transportation decisions
- Design issues e.g. sidewalks, bikepaths, crossings
- Watershed protection programs
- Air Quality programs
- Public education

Public health officials do not just work in the Health Department. They also include:

- Urban planners
- Transportation engineers
- Landscape architects
- Developers
- Lenders
- Neighborhood activists

…and many others.

Smart Growth Achieves the Right Balance

Smart Growth Enhances Our Communities

Source: www.urban-advantage.com

Thank you!

For more information:

Idaho Smart Growth

(208)333-8066

www.idahosmartgrowth.org