



ACTIVE LIVING
RESEARCH

Promoting activity-friendly communities.

Welcome to Active Living Research 101

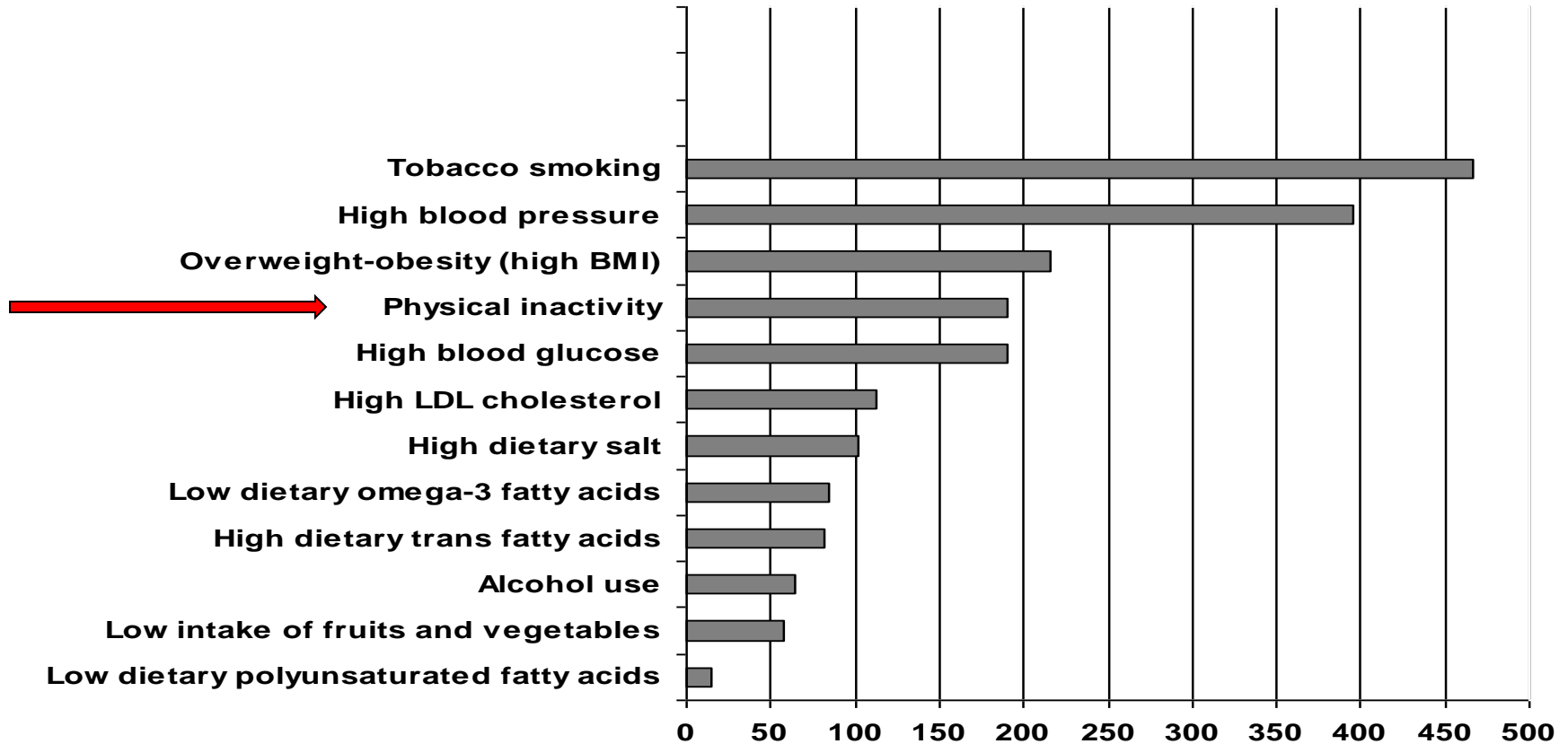
James F. Sallis, Ph.D., Active Living Research, UCSD

Daniel A Rodriguez, Ph.D., Carolina Transportation Program,
U of North Carolina

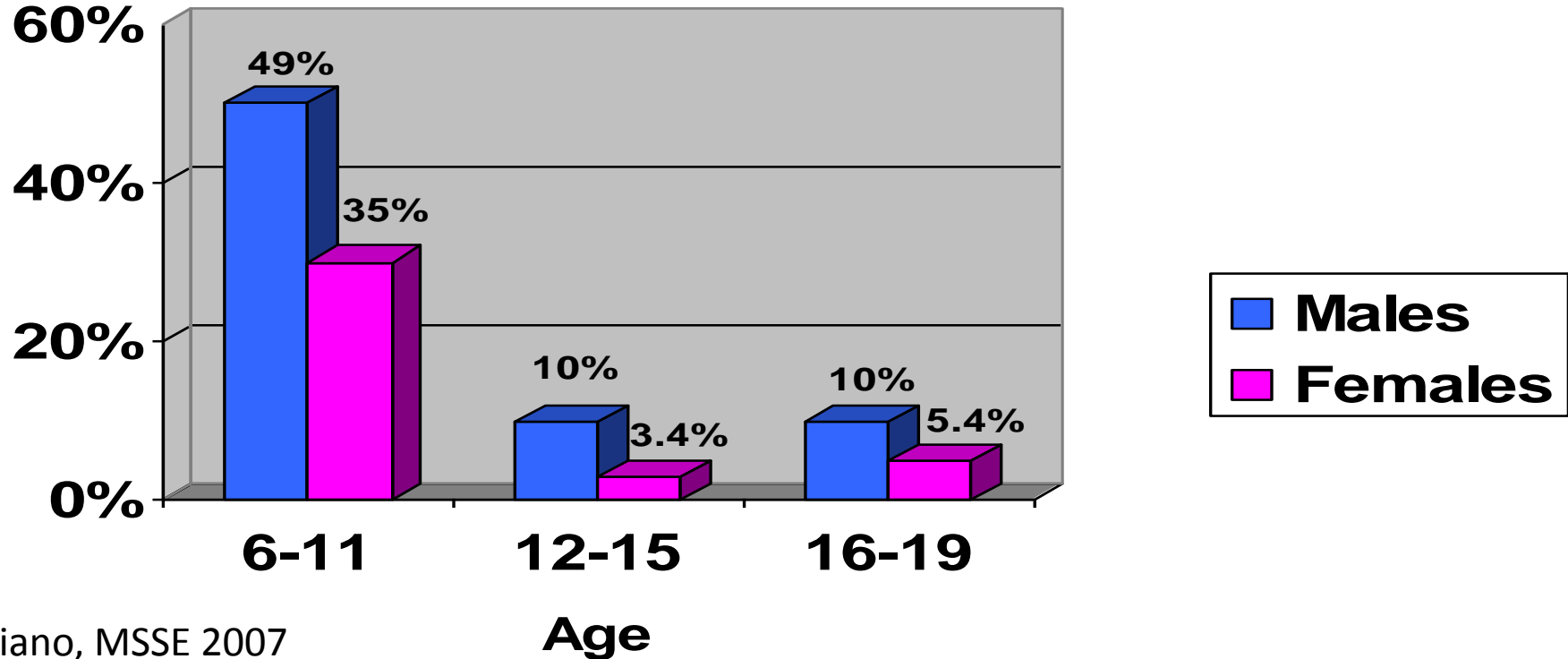
Goals of ALR 101

- Why focus on active living?
- Why focus on environments & policies?
- Goals of ALR
- What ALR does
- Who is involved in ALR
- What ALR has accomplished
- Current activities
- How can you participate in ALR?

Deaths (thousands) attributable to individual risk factors in both sexes

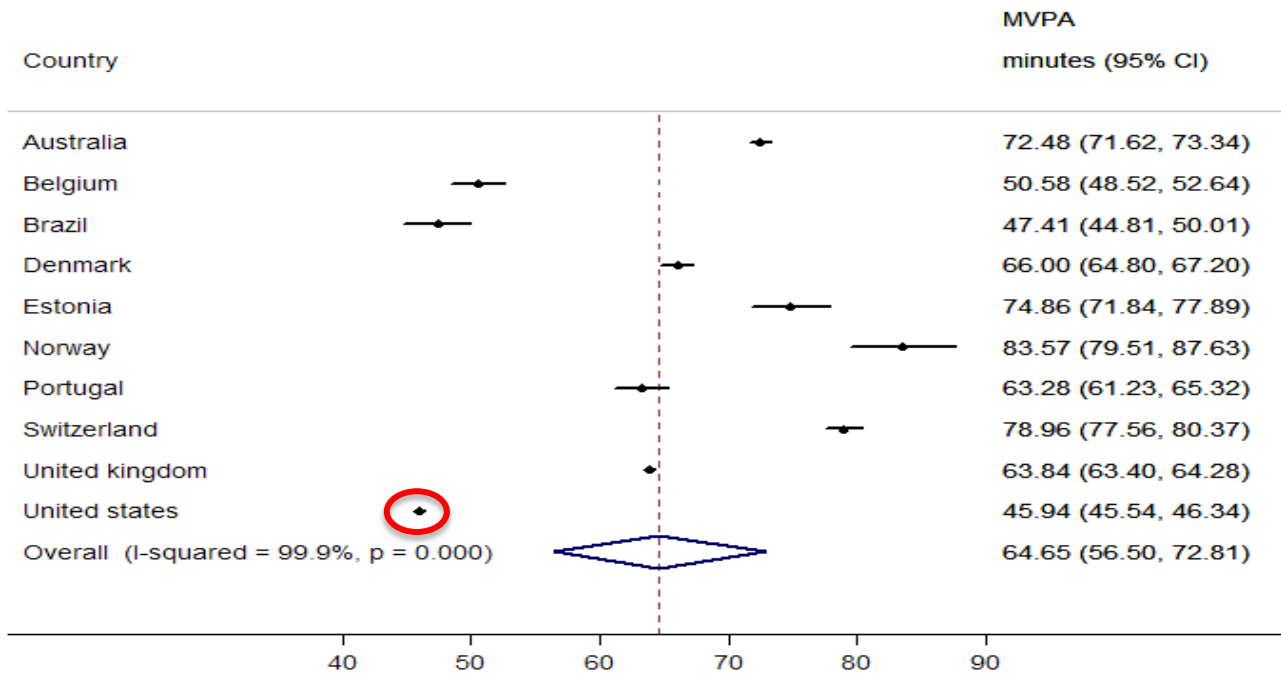


**Percentage of youth ages 6-19 meeting 60 min/day
physical activity guidelines.
Based on accelerometers. NHANES 2003-4**

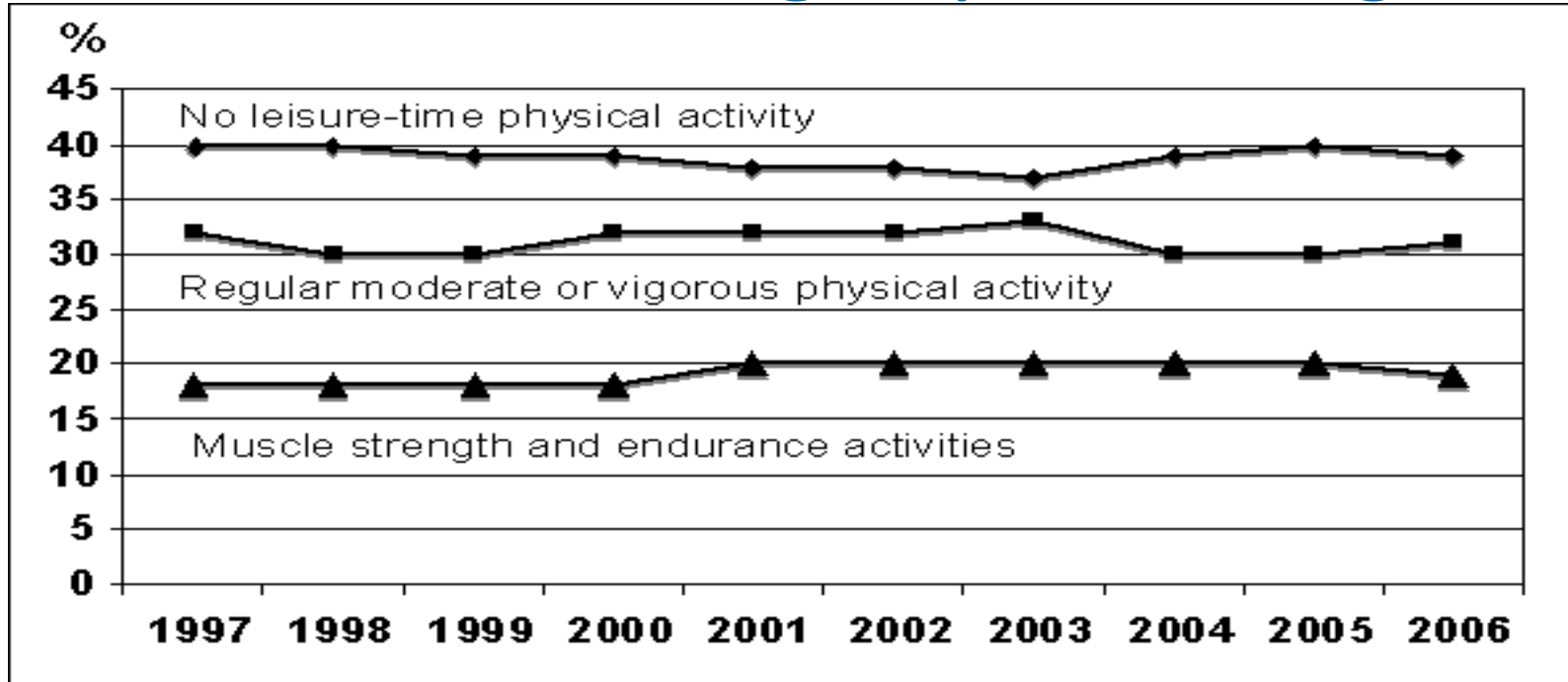


Accelerometer-based MVPA for Adolescents. From Hallal, Lancet, 2012

Time Spent in MVPA
adjusted for age, sex



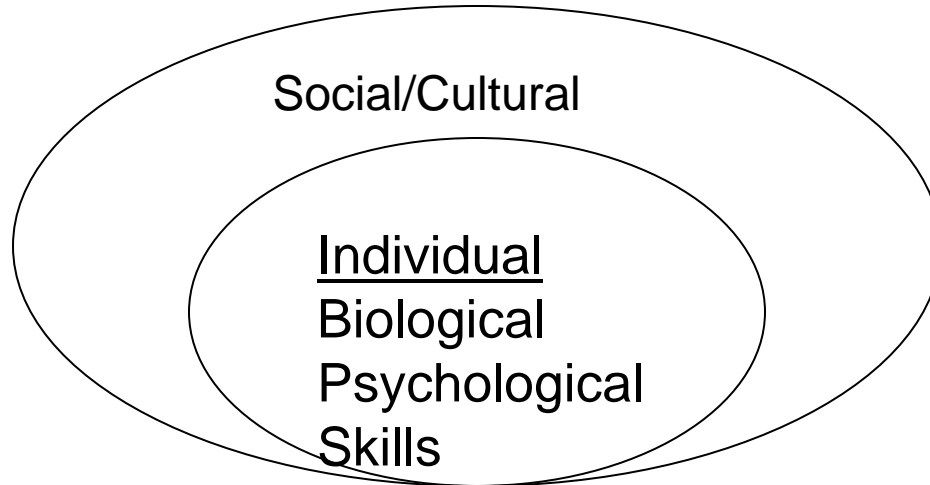
How are we doing in promoting PA?



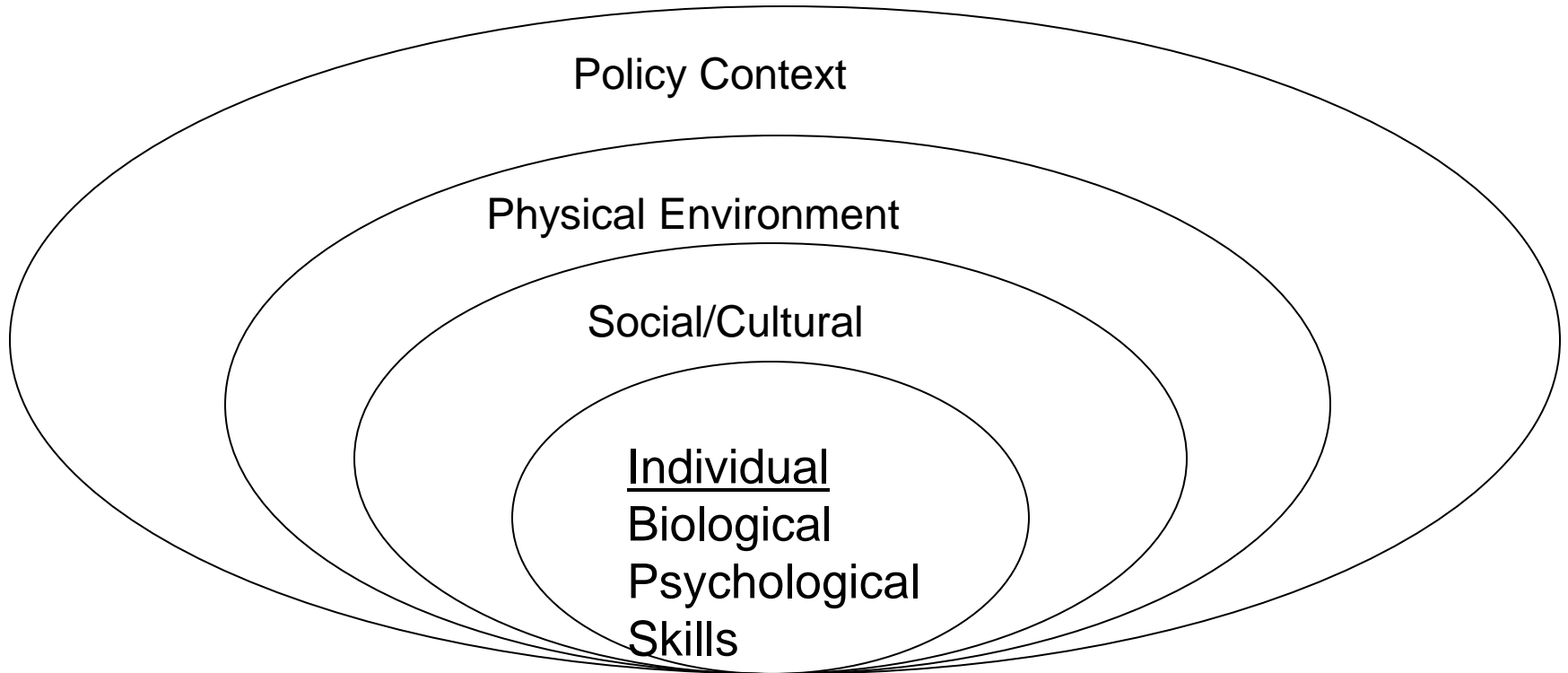
**Reported Physical Activity by Adults in the USA:
1997-2006 The Healthy People 2010 Database**

Healthy People 2010 Database (DATA2010) for men and women combined

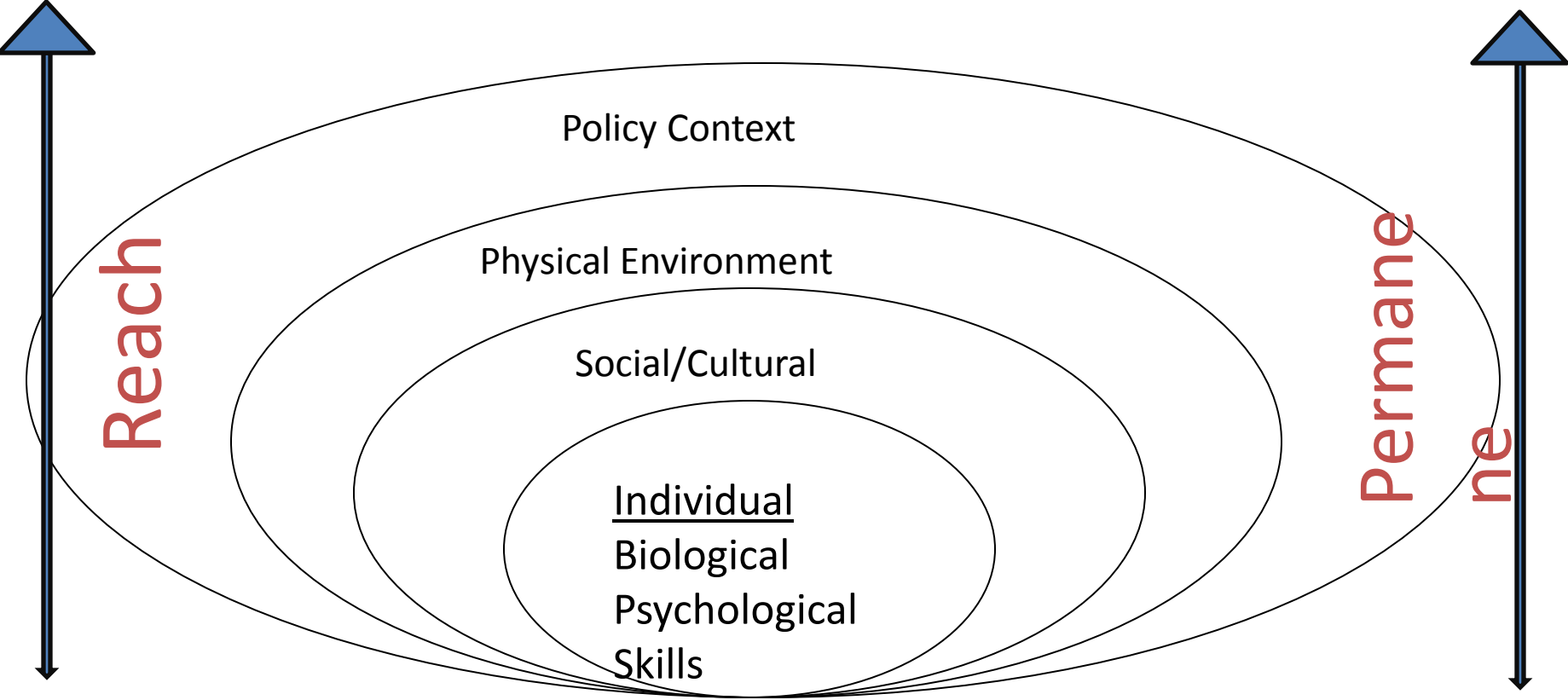
Most Models of Health Behavior



An Ecological Model of Health Behavior



An Ecological Model of Health Behavior



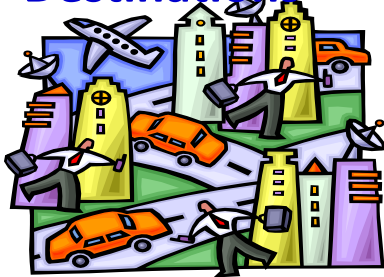
Practical Policy Rationale for PA Environment & Policy Research

- IOM, CDC, Surgeon General, AHA, WHO, National PA Plan, and many other groups recommend policy changes as essential for improving PA, diet, and obesity.
- Policy initiatives with the intent to change PA and obesity are occurring in governments, school districts, and industry.
- Evidence is needed as a basis for this work

Elements of An Active Living

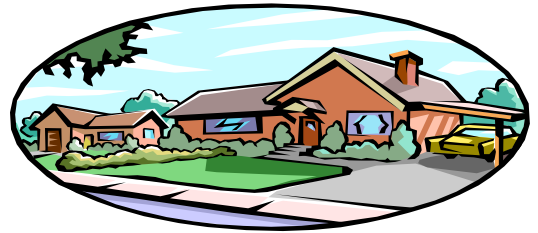
Community

Comm Design
Destinations



Transportation System

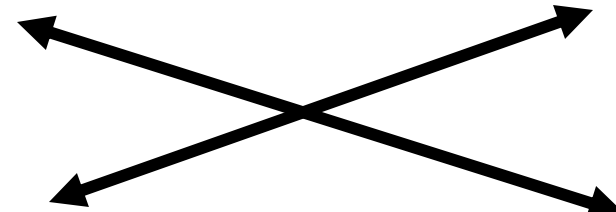
Home



School & Preschool



Park & Rec



Active Living Research

Goals: 2001-2015

- Establish a strong research base
 - Administer a \$28 million research budget
 - Contribute to healthy weights for all children
 - Focus on ethnic, racial, & income groups at highest risk of obesity
- Build a transdisciplinary & diverse field of researchers
- Stimulate & inform policy change

Building Evidence

- Calls for proposals 1-10 & Rapid Response
 - 230 grants funded. Almost 400 papers published
- Conference
 - Only venue for all relevant disciplines to come together
 - Highly competitive abstract selection
 - Best papers in journal supplement with wide distribution
- Website
 - Free access to journals
 - Conference slides from all years
 - Measurement resources

Progression of Research

- Begin with measurement development
- Correlational studies, because randomized trials are rarely possible
- Understanding environmental disparities
- Rapid response grants to evaluate policy & environment changes
- Economic studies because \$ drives decisions

Evaluation of Active Living Research

Ten Years of Progress in Building a New Field

Dianne C. Barker, MHS, Marjorie A. Gutman, PhD

(Am J Prev Med 2014;46(2):208–215) © 2014 American Journal of Preventive Medicine

“ALR has probably done more to move this whole field of active living forward than anything before or anything that has come since.”

Number of Competitive Grants by Topic Area

Note: Grants could be coded in multiple categories.

	ALR I (n=91)	ALR II (n=123)
Built Environment	65	46
Health, Economics, Policy Process	4	29
Recreation	24	26
Schools	18	65
Social Environment, including crime, disorder	11	31

- In the 2006 evaluation, 26% of grantees were people of color.
- In the 2011 evaluation, that increased to 34%

2011 Grantee Survey Respondents by Race/Ethnicity

Grantee Race/ethnicity	%
American Indian/Alaska Native	2
African American	9
Asian	10
Latino/Hispanic	9
Multiple race/ethnicity	3
White	66

Field Building: Cultivating New Relationships

- Architecture
- Environment & Behavior
- Geography
- Landscape Architecture
- Parks & Recreation
- Planning
- Transportation
- Criminology
- Economics/Law/Policy
- Advocates/Policymakers



Building a Transdisciplinary Field

- Multidisciplinary advisory committee
- Recruiting non-traditional partners through talks at conferences
- Broad distribution of Calls for Proposals
- Seminar Program with many organizations to bring speakers from other fields
- Principal Investigators from 25+ fields

ALR Conference Evaluations:

75-95% rated 4 or 5 across years

Conference Goals

Stimulated ideas likely to lead to changes in my research

Learned new concepts from another discipline likely to enhance my work

New contacts might lead to collaboration

Builds capacity to conduct transdisciplinary studies

Research is not easy to put into practice



Communicating Results: Getting the word out

- Website: about 12,000 visits per month
 - Research briefs are widely downloaded
 - Measures are very popular
 - Participate in MOVE! blog
- Webinar series: www.dialogue4health.org
- ALR Newsletter: sign up
- Facebook, Twitter, Youtube

Translating Research into Policy

- Regular input from policy makers on research priorities & communication strategies
 - DO policy-relevant research
- Research briefs for policymakers & advocates
- Sessions at ALR Conference with policymakers
- Research Translation Grants to communicate results from ALR grants
- Lay summaries of ALR journal articles & grants

Conference Brings Together Researchers & Practitioners

- Presentations & workshops invited from practitioners & researchers
- Practice/policy and research presentations integrated in same sessions
- Dots on name badges. Mingle with both colors
- Goals
 - Practitioners & policy makers generate new research ideas
 - Researchers communicate useful findings

Impact of Park Renovations on Park Use and Park-based Physical Activity

Deborah Cohen, Bing Han, Jennifer Isacoff, Bianca Shulaker,
Stephanie Williamson,
Terry Marsh, Thom McKenzie, Rajiv Bhatia, Megan Wier

RAND Corporation

Funded by RWJF- Active Living Research

Objective

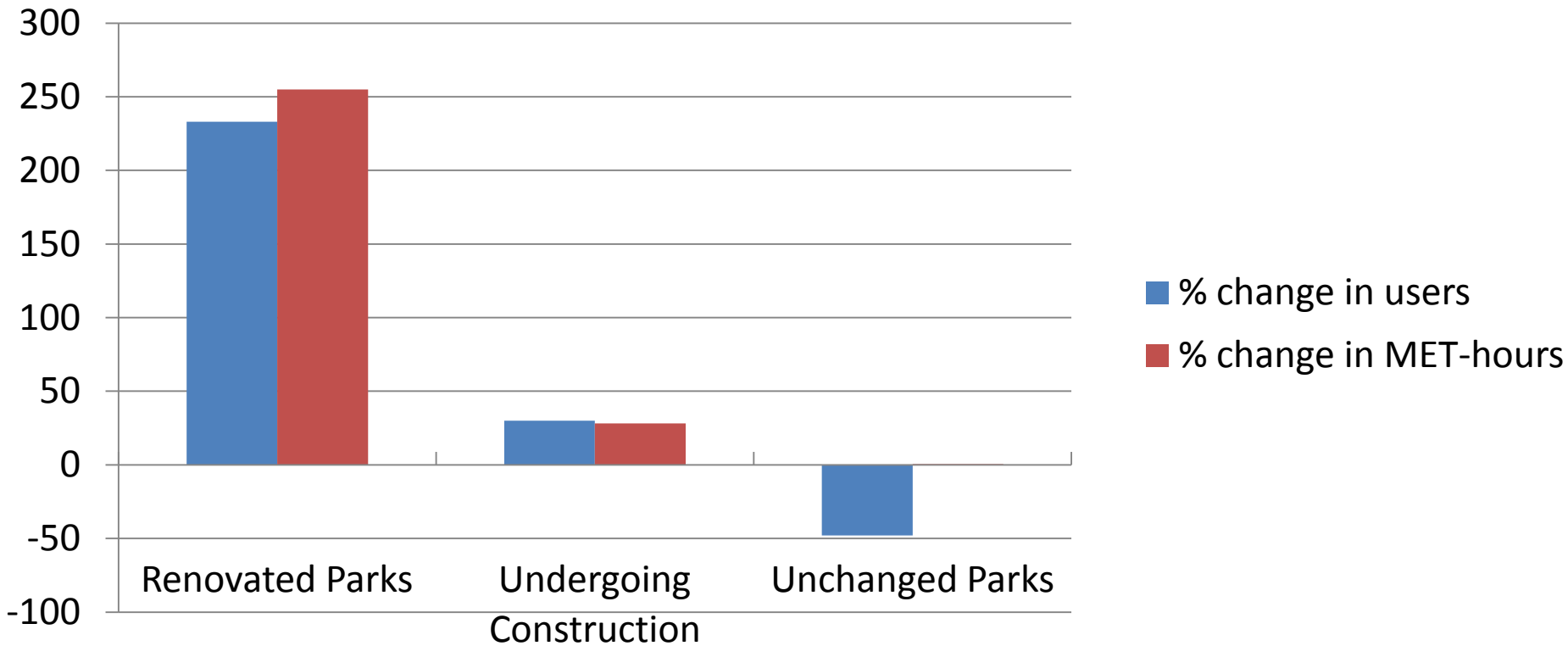


To determine the impact of park renovations on park use and physical activity among park users, especially youth, by studying 6 parks.

- Two parks underwent extensive renovations
 - installation of completely new play equipment,
- Comparison parks had no changes or construction was in progress
- All parks in urban, low-income neighborhoods




Changes In the Number of Park Users and MET-hours Gained




What we know through ALR-funded research on built environment

- **Baltimore**
- Interviews with African American high school students
- Key environmental barriers to PA
 - Lack of places for PA
 - Crime, violence, drugs
 - Unsafe places for PA

ADOLESCENT MATTERS
Issue Focus



SPRING 2009

 CENTER FOR
 ADOLESCENT
 HEALTH

**BALTIMORE CITY'S PARKS AND RECREATION CENTERS:
 AN UNDERUTILIZED RESOURCE FOR URBAN TEENS**

Baltimore City's system of more than 300 city parks and 45 recreation centers offers urban youth 6,000 acres of green space and plentiful ways to exercise their bodies and minds.

The opportunities for physical activity found at parks and recreation centers are more important than ever for Baltimore's youth. Obesity rates in the city are rising, especially among adolescents. Eighteen percent are overweight, according to the 2007 Youth Risk Behavior Surveillance Survey. Moreover, green spaces may help young people think more clearly and cope more effectively with life's stresses.

Baltimore City youth are not using indoor and outdoor public spaces for physical activity as much as they could. Only 35 percent of adolescent girls in the BALTS study report they frequent recreation centers, as opposed to 52 percent of boys. Park usage is 54 percent for the girls and 66 percent for the boys surveyed.

The BALTS study of 350 high school students in Baltimore documented what draws teens to Baltimore's parks and recreation centers and what drives them away.

ABOUT THIS STUDY


Material for this Issues Focus comes from a survey of 350 youth ages 14 to 18 from two Baltimore City public high schools, 48 in-depth interviews with these youth, and observations of recreational facilities. The study, conducted by Amy Vestine Fiesh, was part of the Baltimore Active Living Teens Study (BALTS), led by Carolyn Vorhees of the University of Maryland.

"There's a lot of glass. There's trash and needles and things. You have to have somebody clean up and walk the entire field before you can do anything. It's really more trouble than it's worth." —Young man, 17

TEENS SAY PARKS ARE NOT SAFE, PRETTY, OR CLEAN

	% agree
Parks are not safe,*	98
There are unsafe people at parks.	49
Parks are not pretty,*	98
Parks are not clean,*	90
Parks have the facilities that I like to use.	45
Parks are poorly maintained.	45
Parks get a lot of use*	84

*There has been no trend.



ALMOST HALF OF TEENS HAVE USED PUBLIC RECREATION CENTERS

	% agree
I use recreation centers for physical activity.	42
Recreation centers are open when I want to use them.	40
It is too expensive to use recreation centers.	15
Recreation centers have facilities I like to use.	60

ACKNOWLEDGEMENTS

The Center for Adolescent Health is a member of the Prevention Research Centers Program, supported by the Centers for Disease Control and Prevention.

Cooperative agreement number 1-048-0P-000000. Additional funding for this project is provided by The Charles D. and Family Foundation, The Sigmond and Barbara K. Shapiro Fund, the Robert Hood.

Johnson Foundation Active Living Research Program (Grant # 05761) and Grant # 02380.

Authors:
 Joyce Blanchard, Amy Vestine Fiesh, PhD

What we know through ALR-funded research on built environment

- Rural Mississippi, Kentucky, South Carolina and California
- Input from children & parents
- Barriers to activity
 - no shoulders on roads
 - heavy truck traffic
 - no access to school grounds
 - lack of parks
 - lack of safety, crime and wild animals



What we know through ALR-funded research on PA/PE in schools

Texas

Evaluation of State Law on PA and Coordinated School Health Policy

- 97% of principals & district officials are aware of physical activity requirements
- 179 average minutes of structured student physical activity per week
 - Exceeding the 135 minutes required by the bill
- Strong implementation of policy was due to support from local community organizations

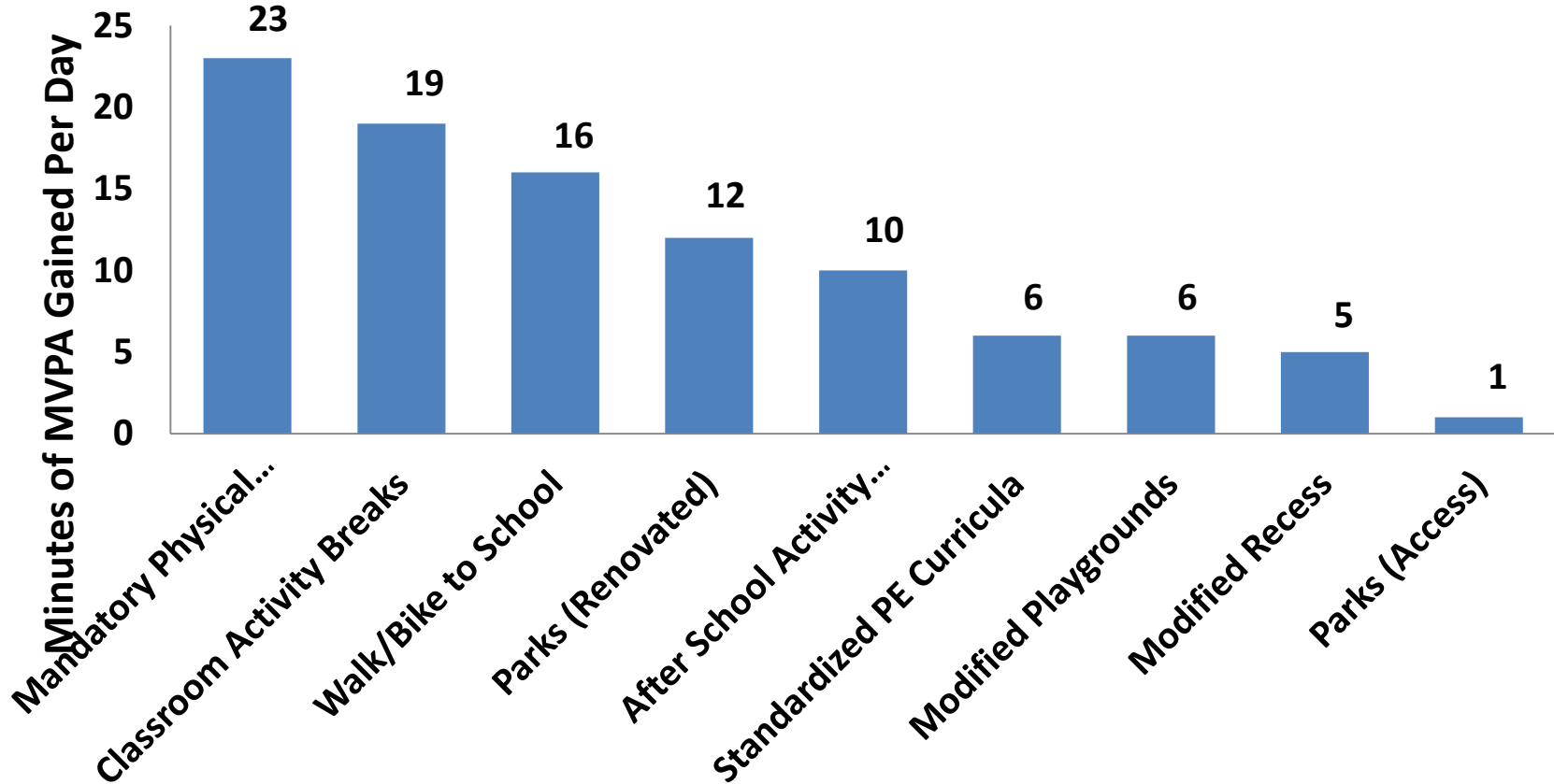
Estimated Energy Expenditures for School-Based Policies and Active Living

David R. Bassett, PhD, Eugene C. Fitzhugh, PhD, Gregory W. Heath, DHSc, MPH,
Paul C. Erwin, MD, DrPH, Ginny M. Frederick, MS, Dana L. Wolff, MS,
Whitney A. Welch, MS, Aaron B. Stout, MS

(Am J Prev Med 2013;44(2):108–113)

- ALR Commissioned Analysis
- Substantial media coverage
- Lay summary on ALR website

Bassett et al. Am J Prev Med. 2013



Research Briefs & Syntheses

- Parks
- Economic benefits of open space & walkable communities
- Transportation policies
- Active travel to school
- Power of Trails
- Active education
- After school programs
- School PA policies
- Playgrounds
- Environmental disparities
- Recess
- Counting bikes & peds
- Classroom activity breaks
- Bicycle interventions
- Sedentary behaviors

Our research is being used

9, 2010

Line



Prius recall
Call of 200,000
to come, 1B

War critic
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lies at 77

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traffic in Haiti
math, lack of jobs, es-
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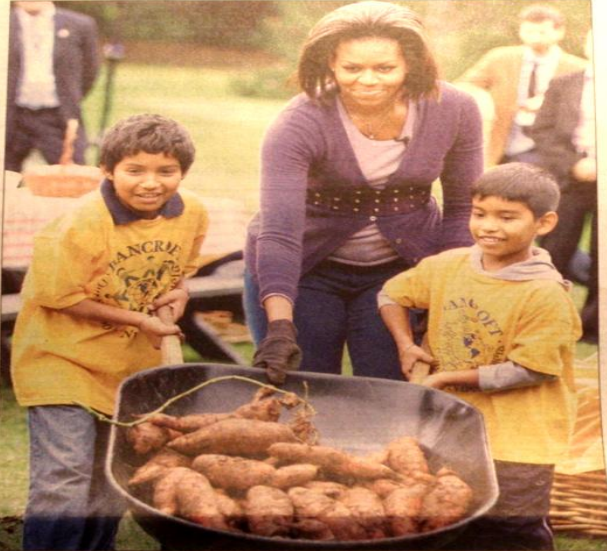
R debut set
hevy in the Nation-
day. 1C.

Why Boys Fall
males attend, grad-
cills demands. 4D.

Super
collectible

USA TODAY interview

First lady says: 'Let's move' on child obesity



Getting the program rolling: Michelle Obama helps students from Washington's Bancroft Elementary School harvest sweet potatoes from the White House garden Oct. 29.

Obama's mission: End problem in a generation
Today, the self-described "mom in chief" is launching Let's Move, a campaign to help other parents deal with a national health crisis she describes in epic terms.
The goal: to eliminate childhood obesity as a

Air sca stir ove

Space
issue;

By Thomas Fray
USA TODAY

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2/9/10

- CDC: Communities Putting Prevention to Work (\$200M)
- CDC: Community Transformation Grants (\$100M)
- Health Dept capacity
- Foundation projects
- NIKE Designed to Move
- Urban Land Institute

How can I participate in ALR?

- Stay informed and interact through social media, MOVE! blog, webinars, newsletter
- Meet 20 new people during the conference & be open for new collaborations
- If practitioner, learn about and use evidence in your work
- If researcher, get study ideas from practitioners
- If researcher, do policy relevant research, and communicate your findings to lay audiences



ACTIVE LIVING RESEARCH

Promoting activity-friendly communities.

Transportation and land use planning for active living –background and opportunities

February 23, 2015

Outline

- What is planning?
- Transportation
- Land use
- Concluding thoughts

What is planning?

- Works to improve the welfare of people and their communities by creating more convenient, equitable, healthful, efficient, and attractive places for present and future generation
 - Offering improved choices for where and how people live
 - Helping communities envision their future
 - Balancing new development and essential services, environmental protection, and change

Planning areas

- Transportation
- Land use/development
- Environmental; Community development; Housing; Economic development



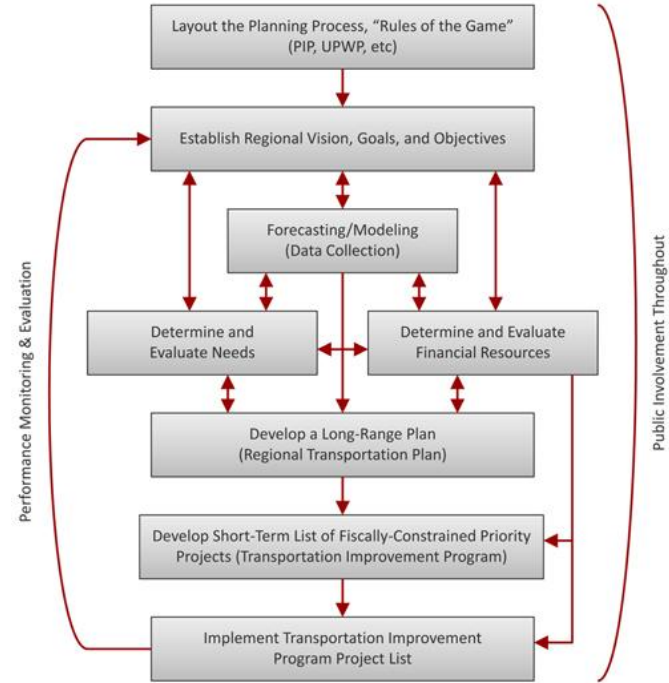
Transportation planning

February 23, 2015 www.activelivingresearch.org

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Transportation planning

- Long & short range
 - “Rational”
 - Continuous
 - “Comprehensive”
 - Financially constrained



<http://www.sjtpo.org/MPOProcess.html>

Washington DC Metro, 1982



Washington DC Metro, 2015



Washington DC Metro, 2050?



Transportation

- Also involved in operations
 - Traffic light timing and synchronization
 - Arrangement of travel lanes
 - Crosswalk striping
 - Often sidewalks
 - Bus stop locations
 - Curb cuts/driveways

Why does it matter?



Image sources: www.pedbikeimages.org \ Thomas, Speer, & Schneider

The potential

Of all trips:

39%

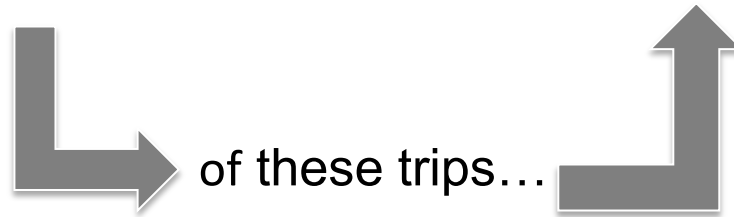
are less than 3 miles

17%

are less than 1 mile

47%

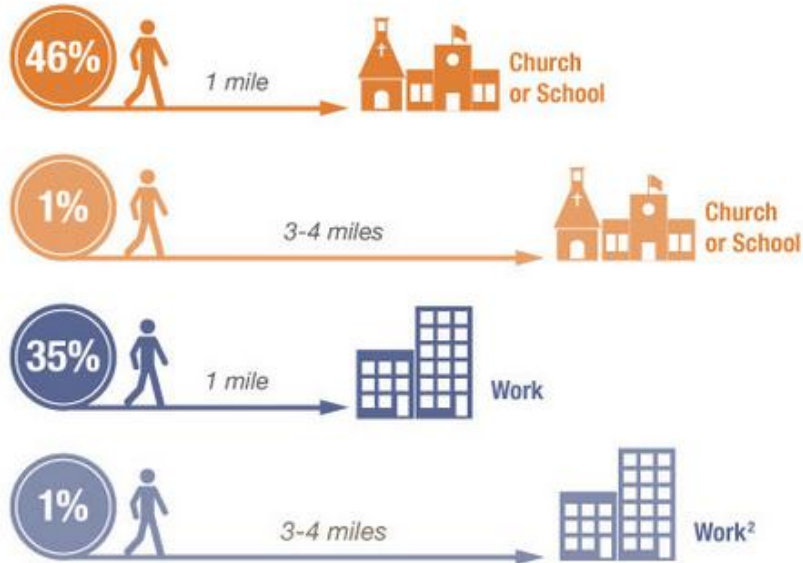
are driven



National Household Travel Survey (2009)

People say they will walk

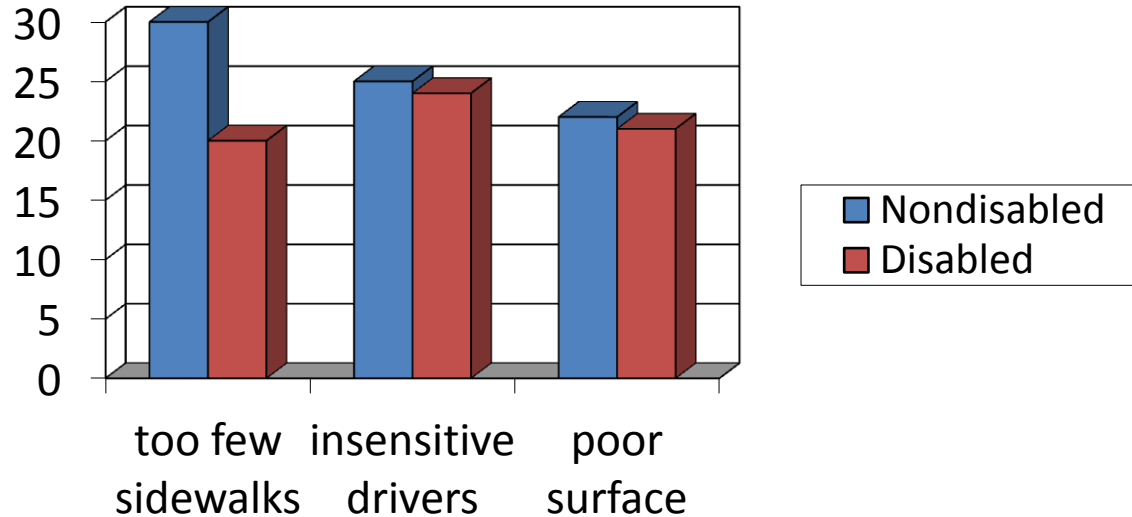
STUDIES SHOW PEOPLE WILL WALK TO DESTINATIONS:



Centers for Disease Control and Prevention 2012, newpublichealth.org
Source: Smart Growth America, 2014.

Top concerns: pedestrians

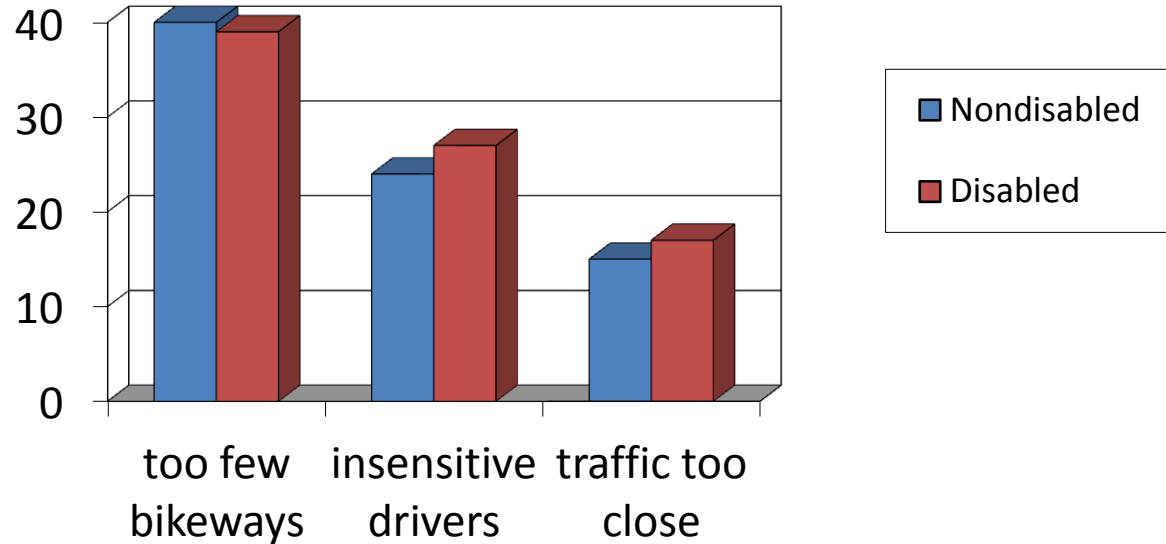
% respondents



Source: 2002 Natl. Transportation Availability & Use Survey

Top concerns: bicyclists

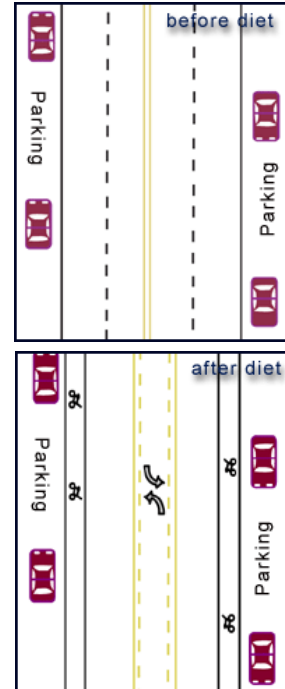
% respondents



Source: 2002 Natl. Transportation Availability & Use Survey

Policy example 1: Road diets

- Convert travel lanes into
 - Bike lanes
 - Bus lanes
 - Center turn lanes or medians
 - Sidewalks/wider sidewalks
 - Landscaping
 - On-street parking



Typical case

before



after



4th Plain St, Vancouver WA

before



- ADT 17,000

after



- Crashes reduced 52%
- Speed reduced 18%
- No traffic diversion

Baxter St, Athens GA

before



- ADT 20,000

Courtesy of Jennifer Rosales and David Clark.

after



- Crashes reduced 50-60%
- Speed reduced
- 4% of traffic diverted

Charlotte



Source: Schneider 2009

Charlotte



Source: Schneider 2009

Charlotte



Source: Schneider 2009

Benefits: Safety

- Fewer lanes & slower speeds means fewer & less severe crashes

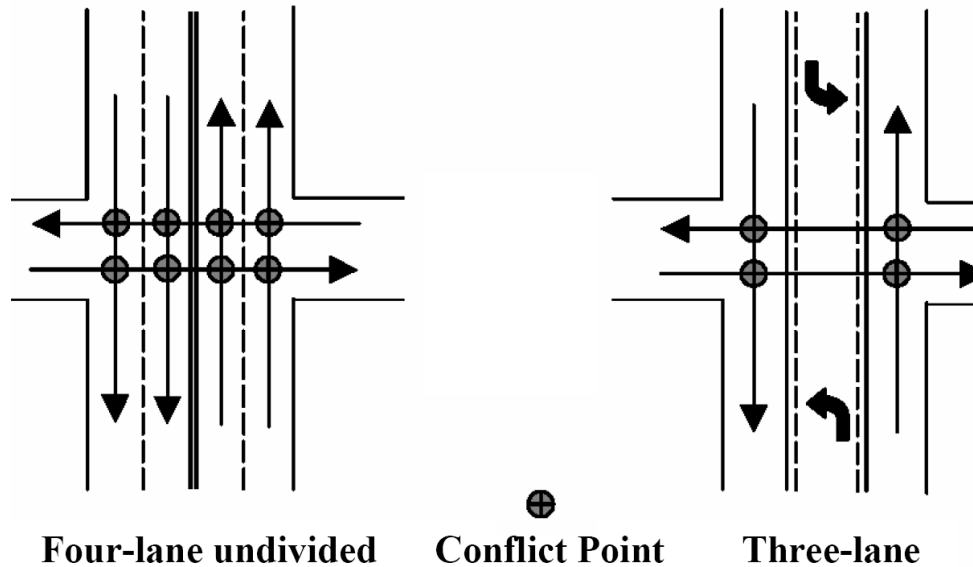
City	Number of Crashes (Road Diets)	Number of Crashes (Comparison Sites)
Bellevue, WA	134	307
Mountain View, CA	20	134
Oakland, CA	443	2,067
San Francisco, CA	450	1,339
Seattle, WA	969	4,485
Sunnyvale, CA	52	224
Total	2,068	8,556

Based on study of 12 road diet study segments and 25 comparison segments.

Source: Summary Report: Evaluation of Lane Reduction "Road Diet" Measures and Their Effects on Crashes and Injuries (FHWA-HRT-04-082)

Benefits: Safety

- Fewer lanes means fewer conflicts



Four-lane undivided
Source: Michael Ronkin, ODOT

Conflict Point

Three-lane

Benefits: improved walkability

- Fewer lanes, narrower lanes, & medians →
 - reduced crossing distance
 - Reduced risk of ‘multiple threat’ crash types
- Reduced travel speeds →
 - Fewer & less severe crashes; less scary walking conditions!
- More room for sidewalks →
 - More room for pedestrians; greater aesthetic appeal
 - Better quality sidewalks, higher walkability
- On-street parking → Buffer from car traffic

Impacts on traffic capacity

- Little to no reduction in capacity in most cases, but depends on
 - # of mid-block left turns
 - Intersection configurations & signal timing
 - Density of driveways & side streets



Reinventing the roadway: Transform a 5-lane commercial strip to ...



...a safer road for everyone

Policy example 2: Complete Streets



Source: Smart Growth America, 2014.

Photo: Dan Burden

- Ensure that the entire right-of-way is planned, designed, built, operated, and maintained to provide safe access for all
- Complete Streets are for everyone, no matter how they travel

Who wants Complete Streets?

47%

of older Americans say it is unsafe to cross a major street near their home.

54%

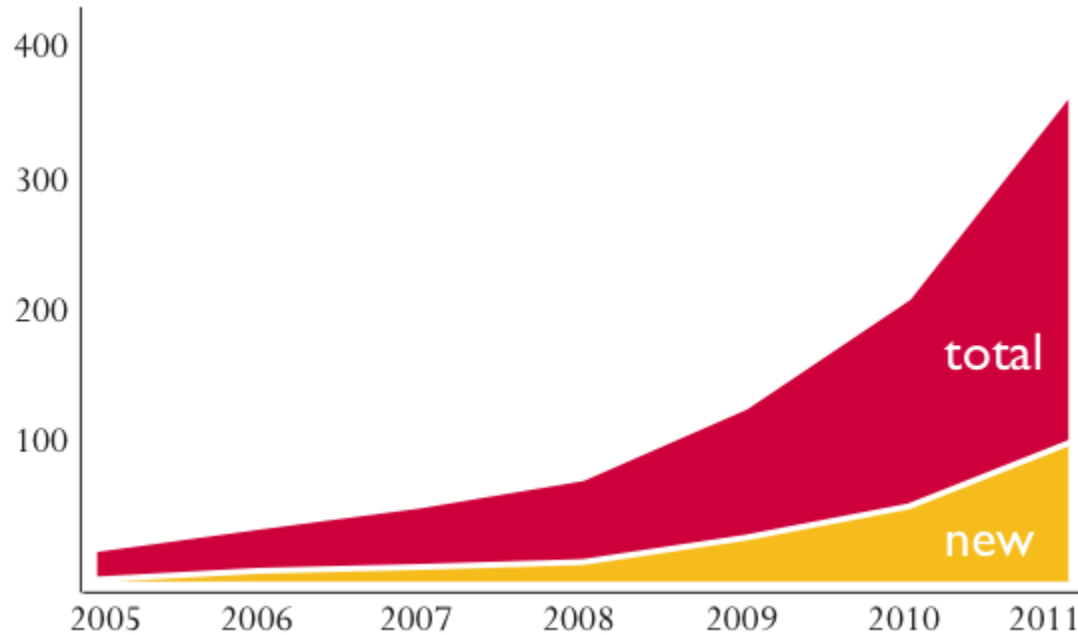
of older Americans living in inhospitable neighborhoods say they would walk and bike more often if the built environment improved.

56%

express strong support for adoption of Complete Streets policies.

Planning Complete Streets for the Aging of America, AARP

Policy adoption grows



Source: Smart Growth America, 2014.

Policies adopted at all levels

By the end of 2011:

States : 28*

MPOs : 33

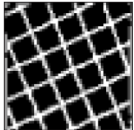



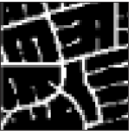
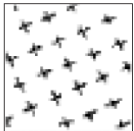
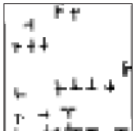
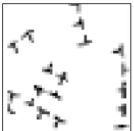
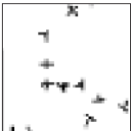
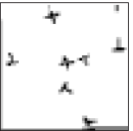
Counties : 31

Cities : 268

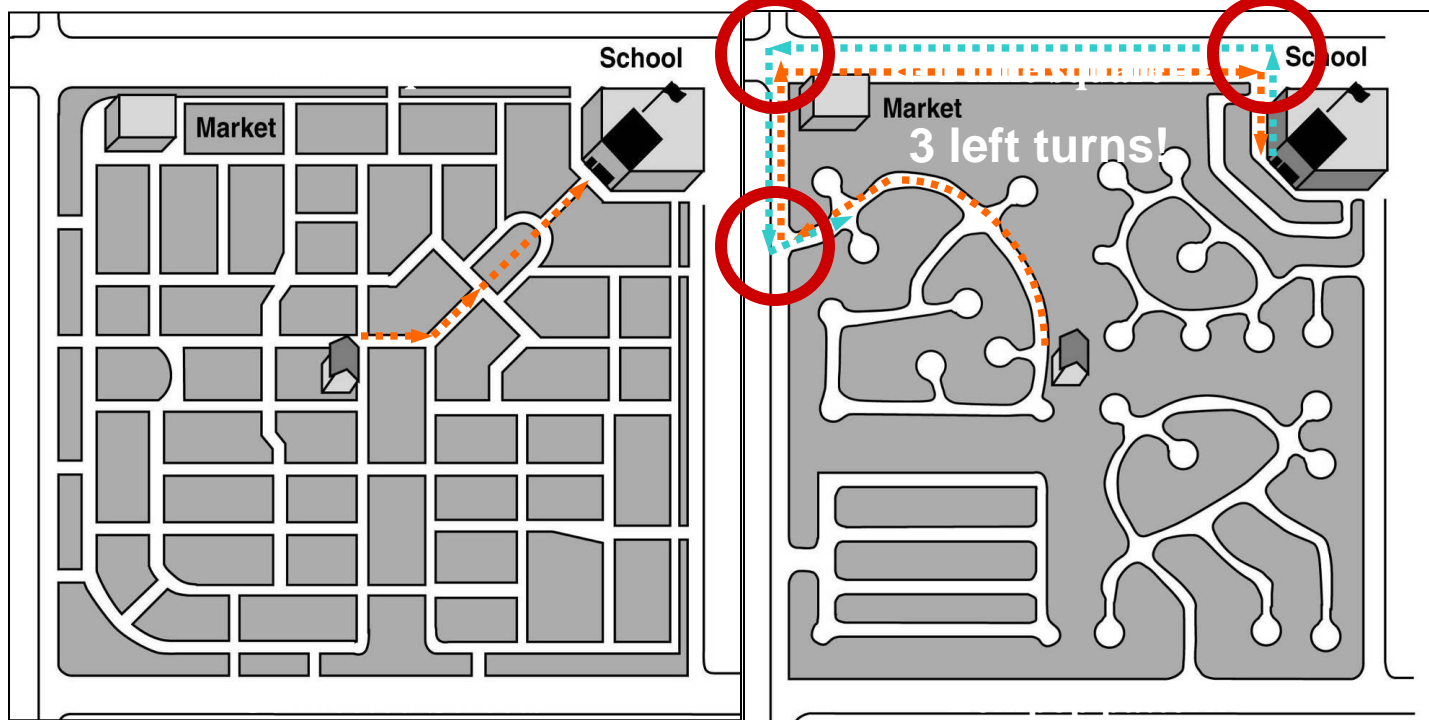
Total : 359

**Including Commonwealth of Puerto Rico and the District of Columbia*

Policy example 3: Connectivity

	Gridiron (c. 1900)	Fragmented Parallel (c. 1950)	Warped Parallel (c. 1960)	Loops and Lollipops (c. 1970)	Lollipops on a Stick (c. 1980)
Street Patterns					
Intersections					
Linear feet of streets	20,800	19,000	16,500	15,300	15,600
Number of blocks	28	19	14	12	8
Number of intersections	26	22	14	12	8
Number of access points	19	10	7	6	4
Number of loops and culs-de-sac	0	1	2	8	24

Source: Frank, L., Kavage, S., & Litman, T., 2006.



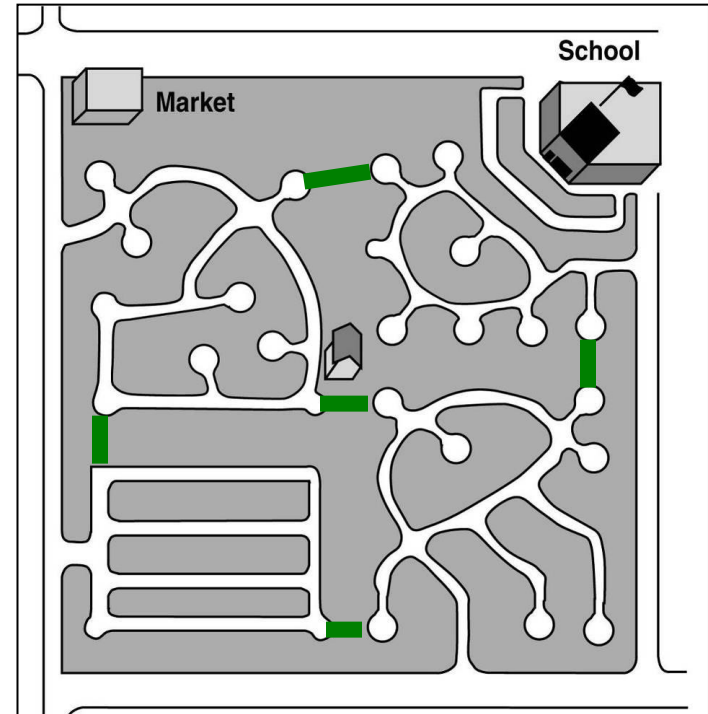
Source: PBIC/FHWA, 2009

Connectivity creates a pedestrian-friendly street system by:

- Reducing walking distances
- Offering more route choices, more quiet local streets
- Dispersing traffic – reducing reliance on arterials for all trips

Increasing Connectivity

- Can you increase connectivity with paths & greenways?
 - Reduces walking distances: YES
 - Offers more route choices: YES
 - Disperses traffic: NO



Source: PBIC/FHWA, 2009



Land use planning

February 23, 2015 www.activelivingresearch.org

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Land use planning

- With varying time horizons
 - Long term, implementation, and enforcement
- At various scales (“ecology of plans”)
 - General plan/Land use plan
 - Small area↕/neighborhood plan
- Often within “Comprehensive Plan”

MetroFuture Growth and Preservation Areas

Targeted Growth Areas



Metropolitan Core



Job growth built around medical and educational institutions, and other major industries

Improved schools, safety, parks attract families and retirees

Build on role as the "hub" of the regional transportation network

Regional Hubs



Rebirth of industrial cities and downtowns

Focused growth in major suburban economic centers

Best prospects for new transit outside of Metro Core

Suburban Centers



Maximize potential of major town centers and existing transit

Mixed-use growth expands housing choice and tax revenue

New local bus connections and bike/pedestrian paths

Priority Conservation Areas



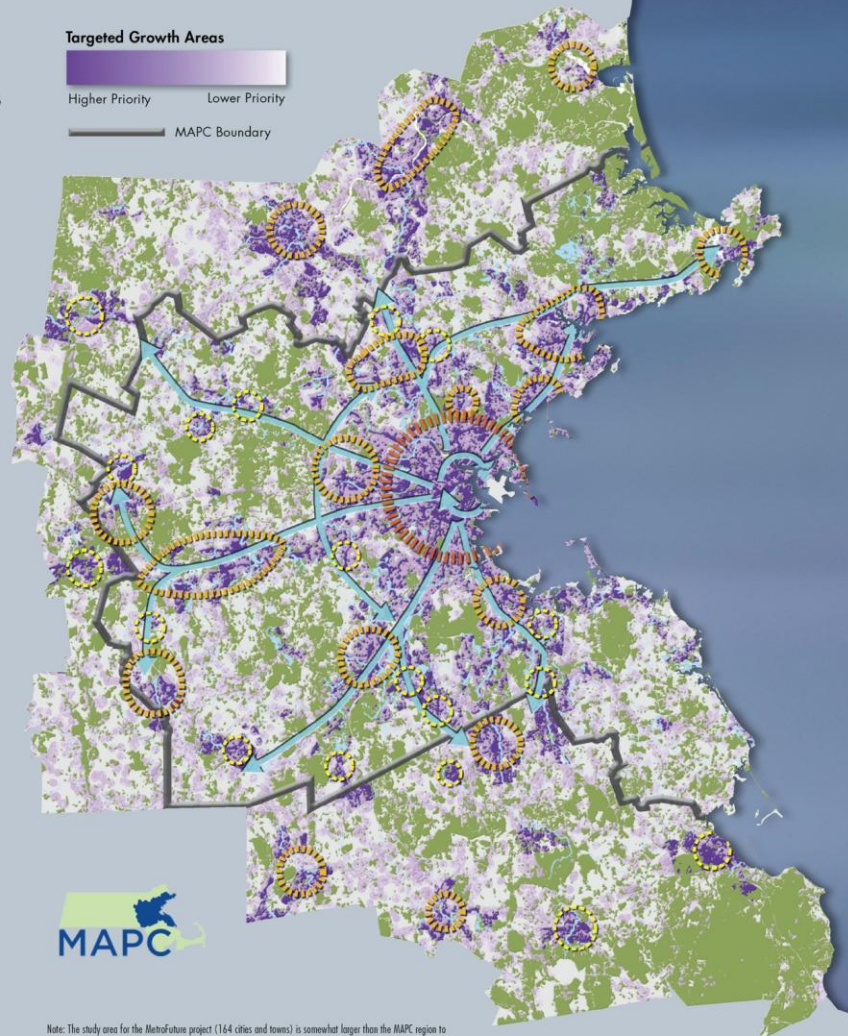
Areas with significant natural, scenic, agricultural, and recreational values

Transportation Corridors



Multi-modal investments to support growth

New transit allows people to circulate around MetroCore, as well as "in and out."



Note: The study area for the MetroFuture project (164 cities and towns) is somewhat larger than the MAPC region to account for trends that do not recognize regional boundaries and to ensure compatibility with the Regional Transportation Plan being developed concurrently by the Boston Region Metropolitan Planning Organization.

Land uses and walking

- Non residential land uses, land-use diversity, positively associated with walking for transportation
- A careful mix of land uses in a neighborhood can encourage physical activity

A National View

- 2011 APA survey <http://planning.org/research/publichealth/pdf/surveyreport.pdf>
 - 890 responses to survey of comprehensive planners
 - Original aim was to examine how health was incorporated into plans

A National View

Table 1. Top 10 most cited public health topics in comprehensive plans

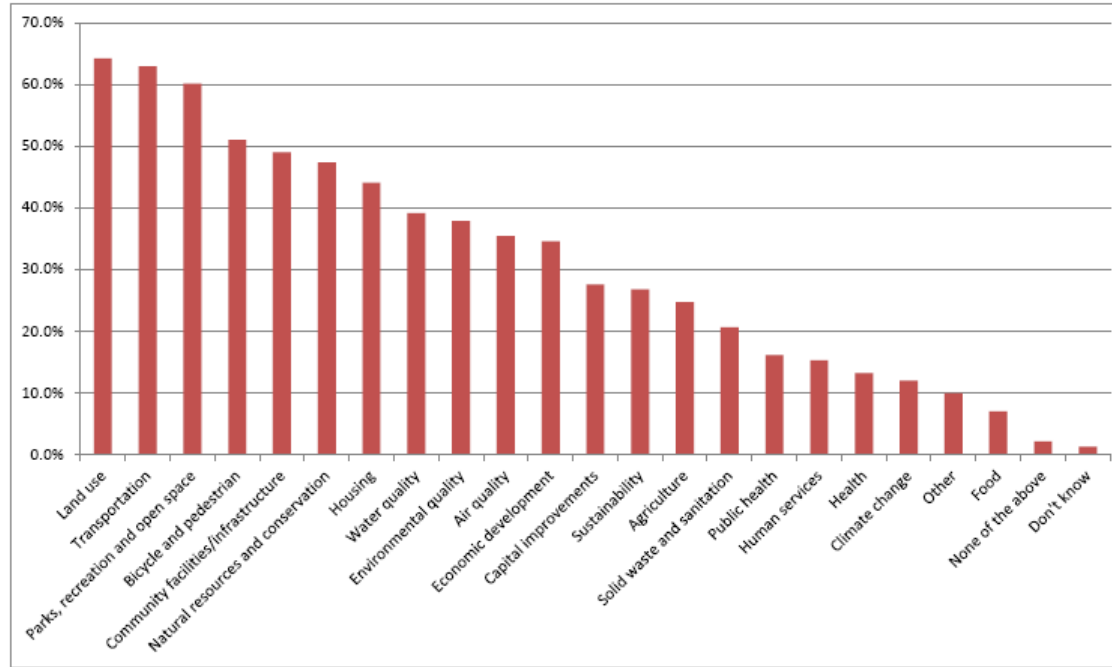
Topic	Number of Respondents	Percent of Respondents
Recreation	183	75.3%
Public Safety	168	69.1%
Clean Water	165	67.9%
Active Transportation	161	66.3%
Clean Air	140	57.6%
Emergency Preparedness	111	45.7%
Active Living	107	44.0%
Physical Activity	104	42.8%
Environmental Health	95	39.1%
Aging	82	33.7%

**Respondents were able to select more than one response.*

Source: APA, 2011

A National View

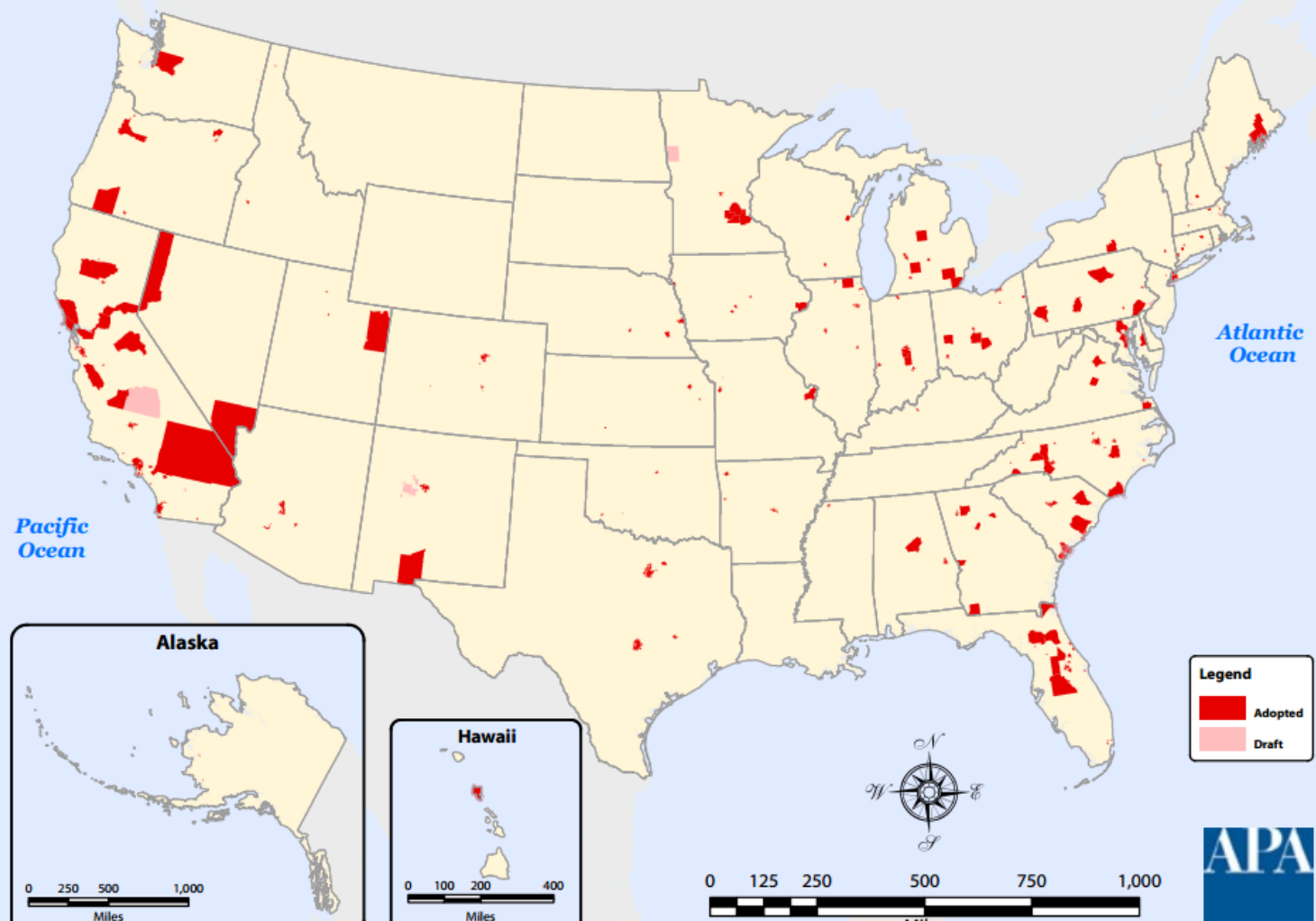
Figure 5. Location of public health components in different elements of the comprehensive plan



*Respondents were able to select more than one response.

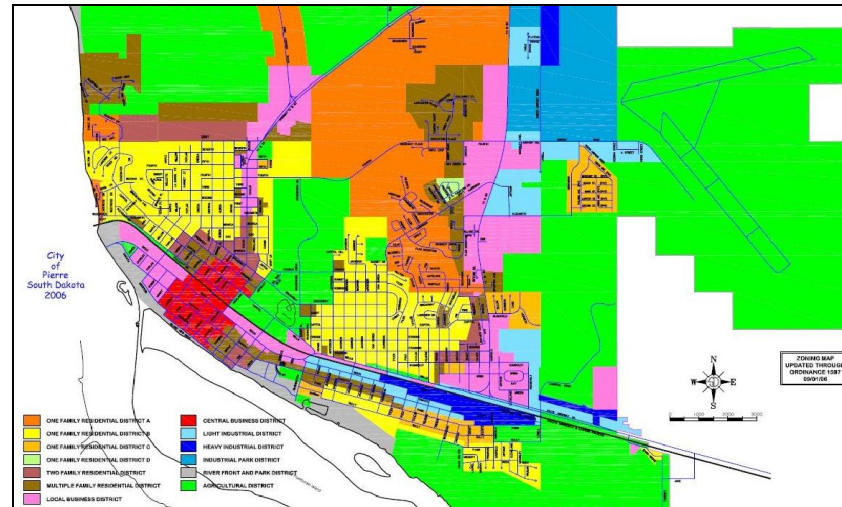
Source: APA, 2011

Comprehensive plans that explicitly address public health



Zoning

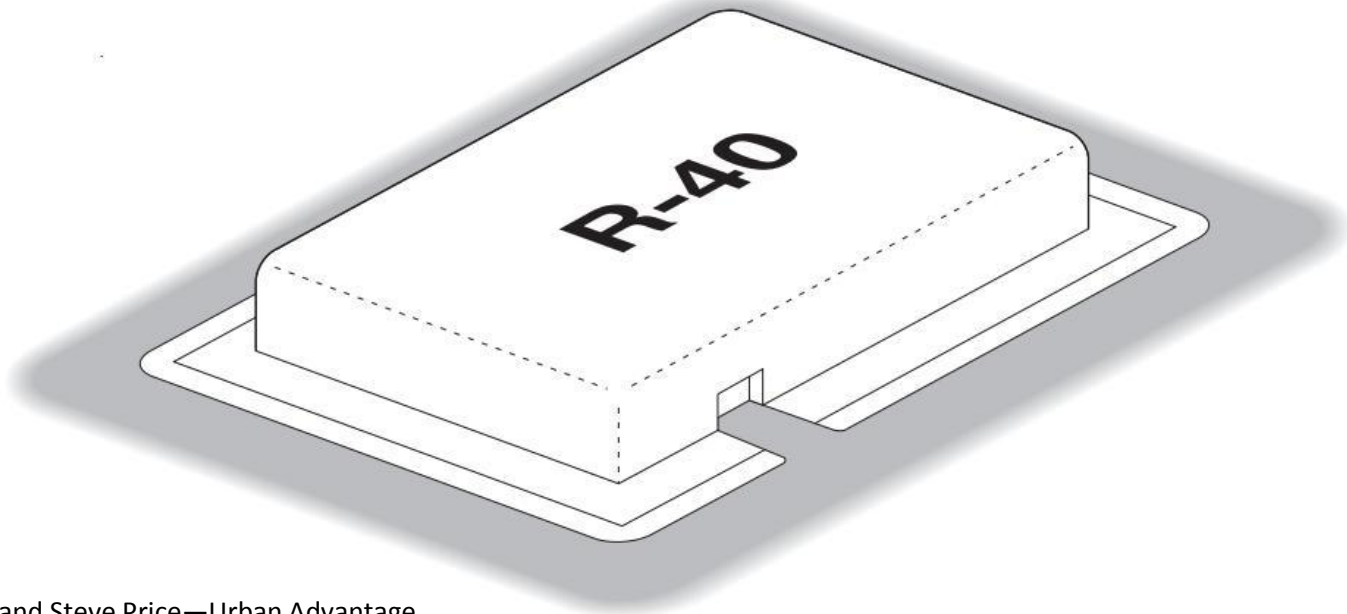
- **Conventional zoning** focus primarily on establishing single-use district and regulations for each use



Source: City of Pierre, SD

How zoning defines a one-block parcel

Density, use, floor-area-ratio (FAR), setbacks, parking requirements, and maximum building height(s) specified.



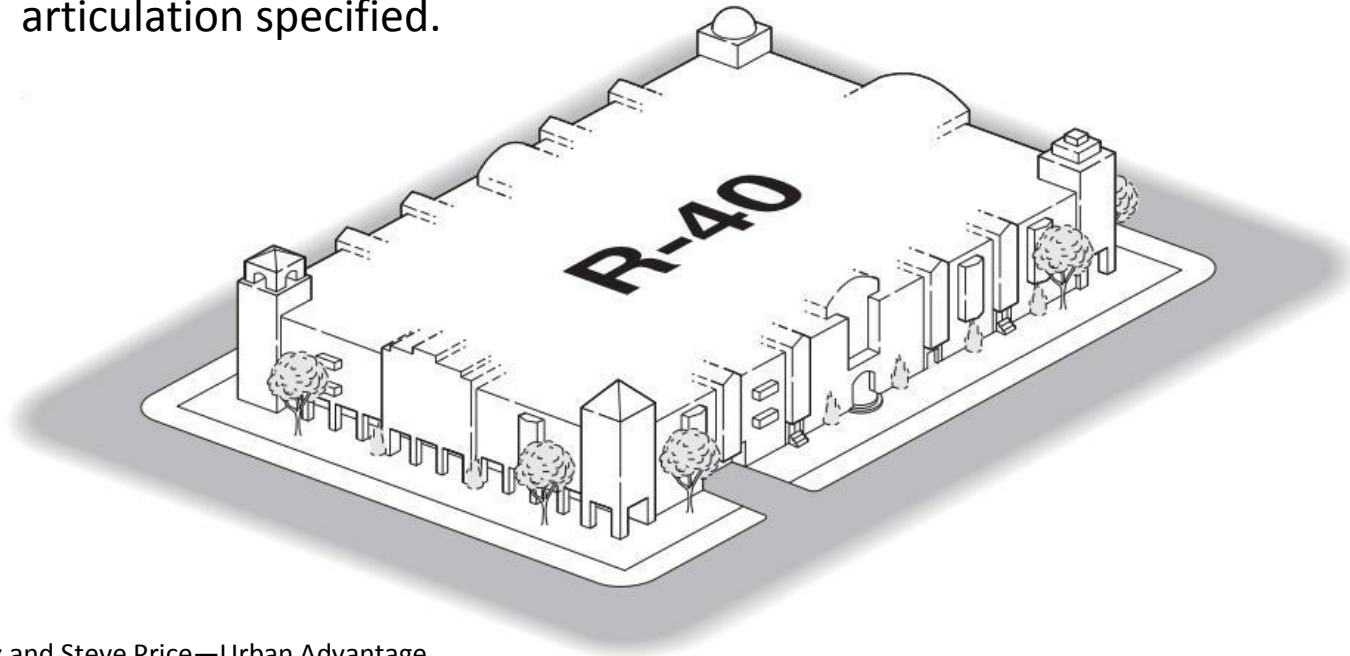
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What and how...parcel-level tools and applications

- Mixed land uses
 - Allowing residential above commercial
 - Ground floor commercial/retail requirements
- Residential compact development
 - Density bonuses, lower min lot sizes, increase FAR, allow accessory dwelling units
 - Reducing required setbacks

How design guidelines define a one-block parcel

Density, use, FAR, setbacks, parking requirements, maximum building height(s), frequency of openings, and surface articulation specified.



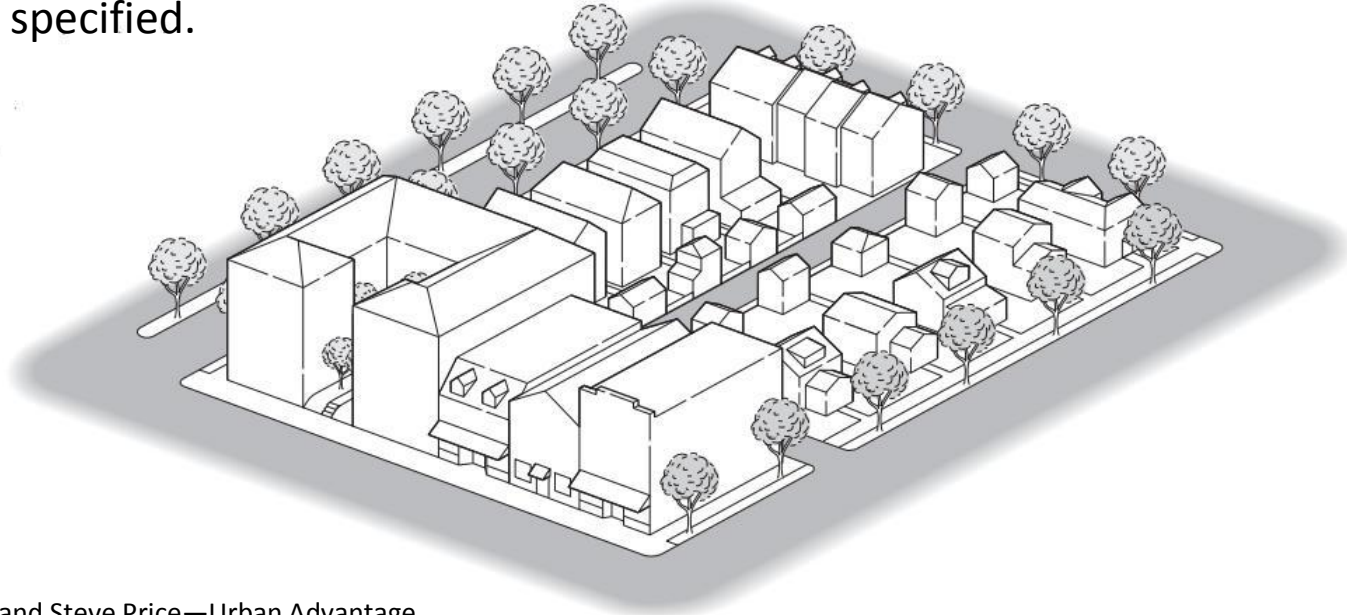
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Zoning

- **Form based codes** focus first on the design of spaces, buildings, and streets, and focusing second on land uses
 - Regulate the form, scale and mass of buildings rather than the use
 - Typically presented with both diagrams and words

How form-based codes define a one-block parcel

Street and building types (or mix of types), build-to lines, number of floors, and percentage of built site frontage specified.



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Concluding thoughts

- Plans as policies, as interventions, or as preservation of status quo?
- Plans as tools to harness community participation or to maintain existing structures?
- Once you have a plan, then what?