Building Community Health with Sticky Design

"But no one bikes or walks here, anyway!"

Des Moines, IA
Oct. 2014

www.markfenton.com

Typical challenges:

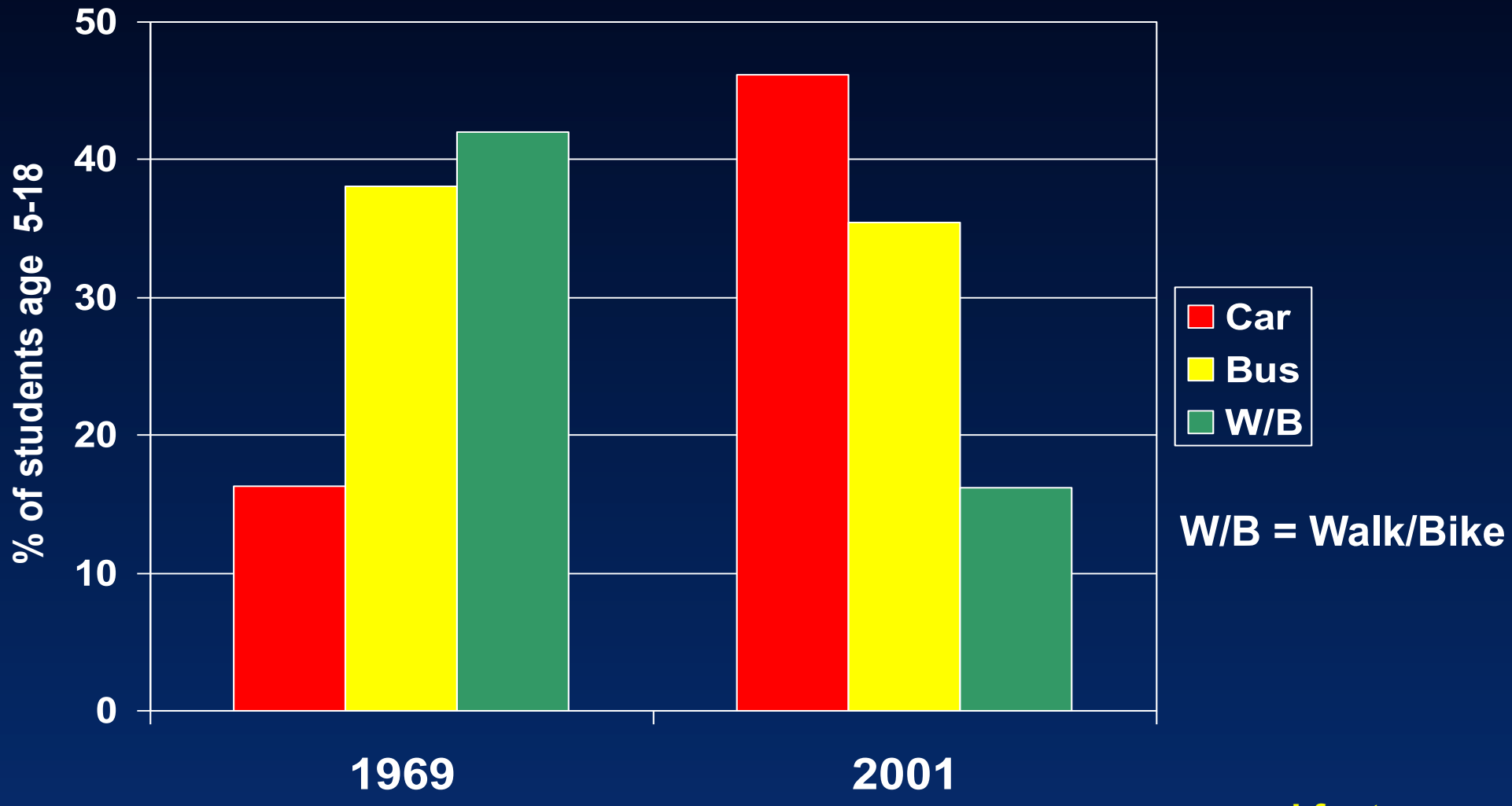
- Isn't health a result of **personal decisions & habits**?
- If we build it, **will they come**?
- Shouldn't the **free market** dictate how we build our cities & towns?
- What is the **prescription?** How do we **do it?** How can we **pay for it**?

Youthful recollections

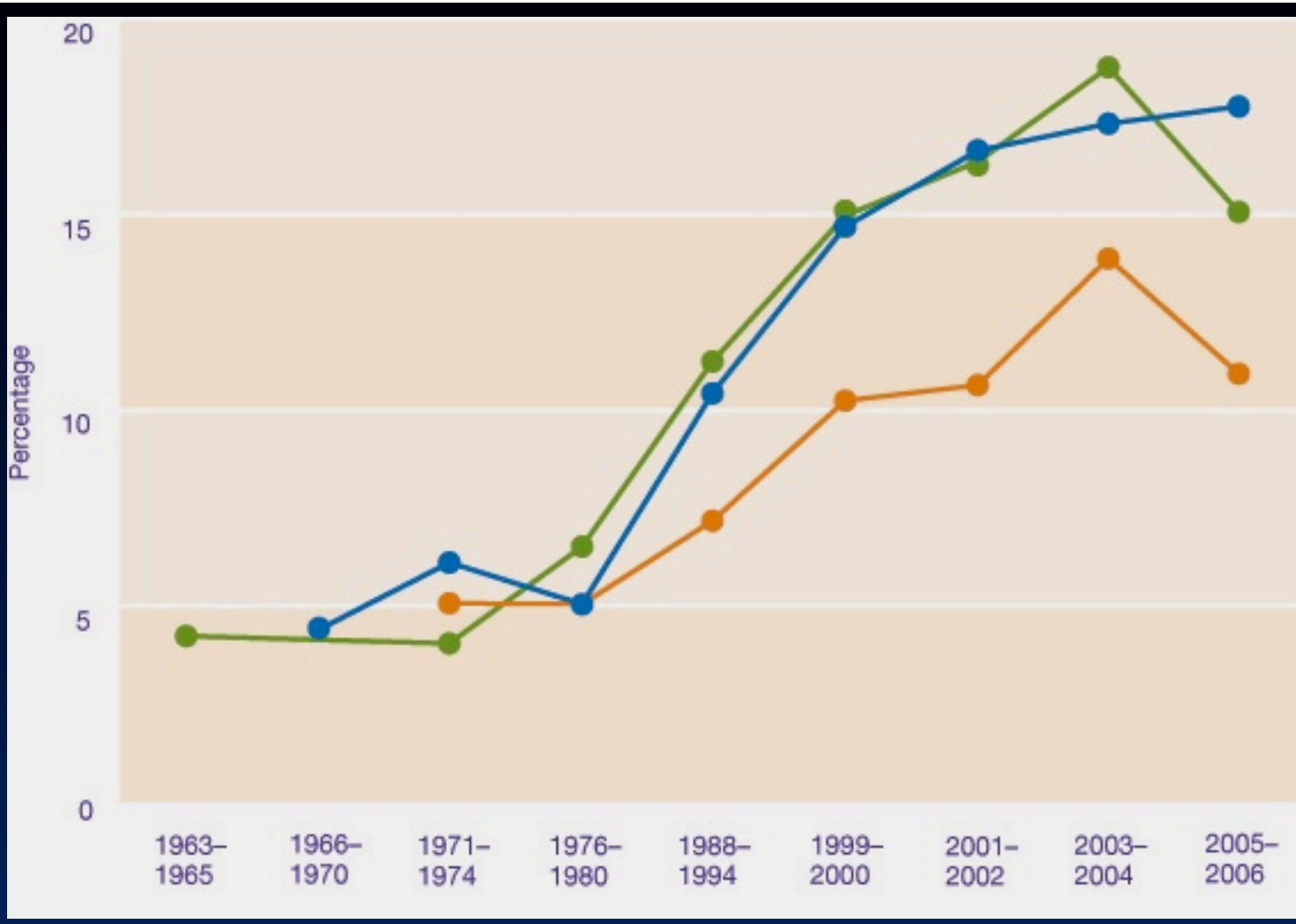
www.markfenton.com

Changes in Walking & Cycling to School, 1969 to 2001

Ham et.al., *Jour. of Physical Activity & Health*, 2008, 5, 205-215



Trends in Childhood Obesity & Overweight



CDC, National Center for Health Statistics. *National Health Examination Surveys (NHANES) II (ages 6–11) and III (ages 12–17), and NHANES I, II and III, and 1999–2006.*

www.rwjf.org/files/publications/annual/2008/year-in-review/

The real risk . . .

Lenore Skenazy
www.freerangekids.com

www.markfenton.com

A goal:

Change the conversation. It's *not* just an obesity epidemic. It's twin epidemics of physical inactivity and poor nutrition.*

* Two of the three biggest drivers of skyrocketing healthcare costs.

But in the end . . .

It's a matter of personal choice, isn't it?

The bad news in just three numbers:

30 minutes of daily physical activity recommended (**60** min. for youth).

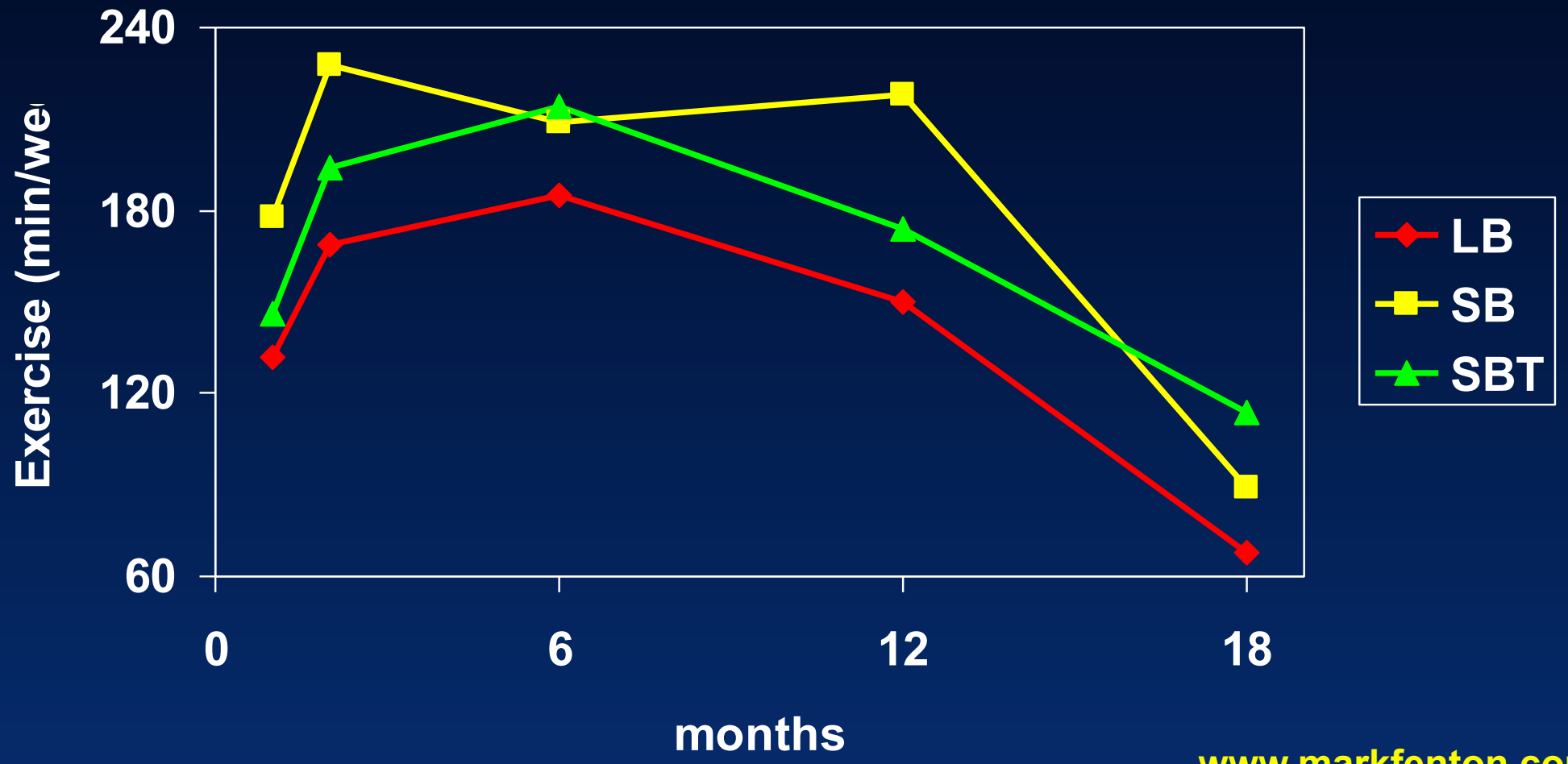
<20 % of American adults actually meet these recommendation (thru LTPA).

365,000 Estimated annual deaths in America due to physical inactivity & poor nutrition. (2nd only to tobacco.)

Exercise Participation

Effect of Short Bouts, Home Treadmills

(Jakicic et.al., *J. Amer. Med. Assoc.*, 282, 16)



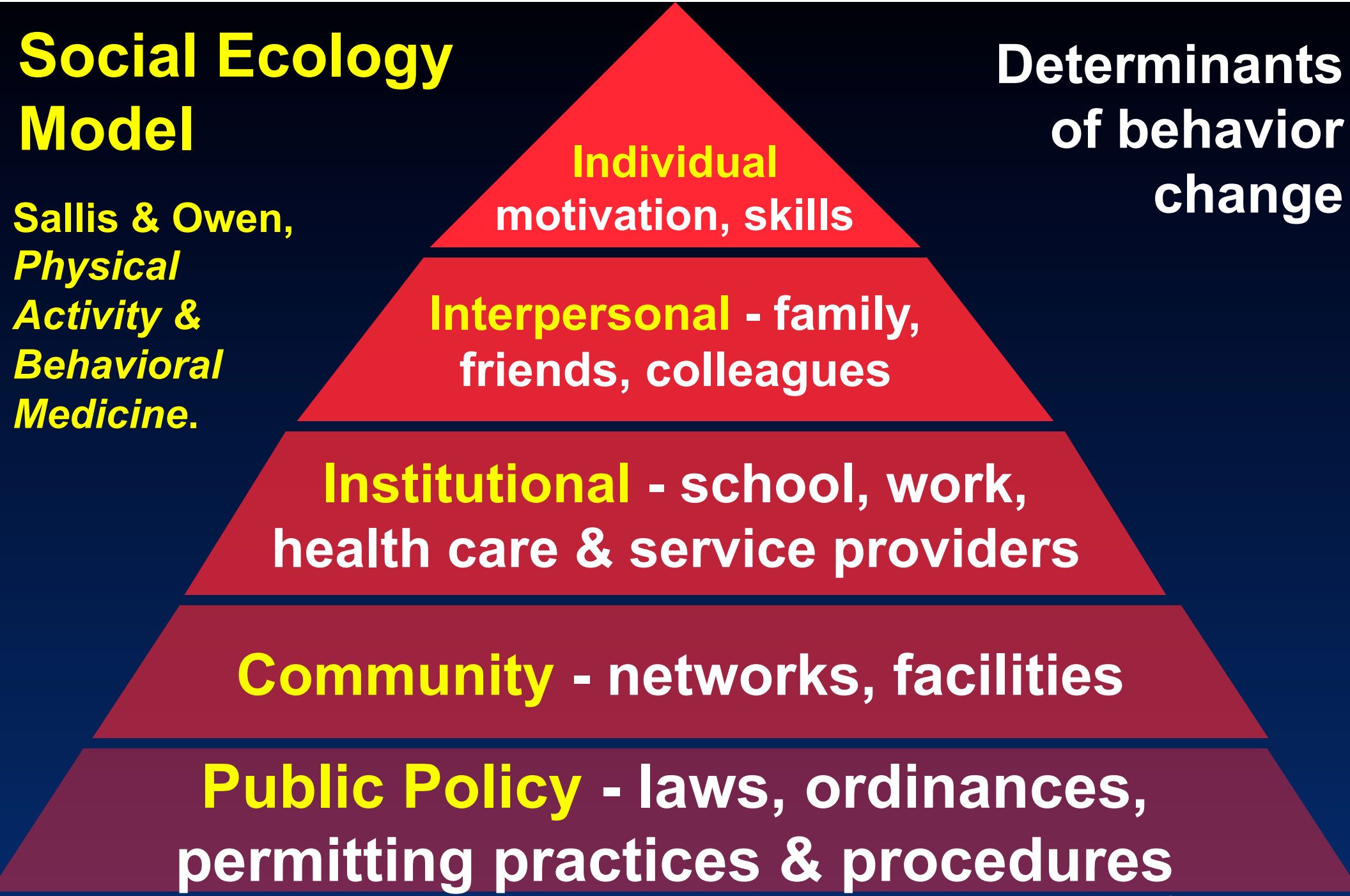
A realization:

Simply telling people to "exercise" is not enough. We need to support increases in routine, daily physical activity for everyone.

Social Ecology Model

Sallis & Owen, *Physical Activity & Behavioral Medicine*.

Determinants of behavior change



Socio-ecological successes?

Tobacco use

Seatbelts, child safety restraints

Water-borne disease

Recycling

Necessary and important, but not enough. >

< We must build communities where people are *intrinsically* more active.

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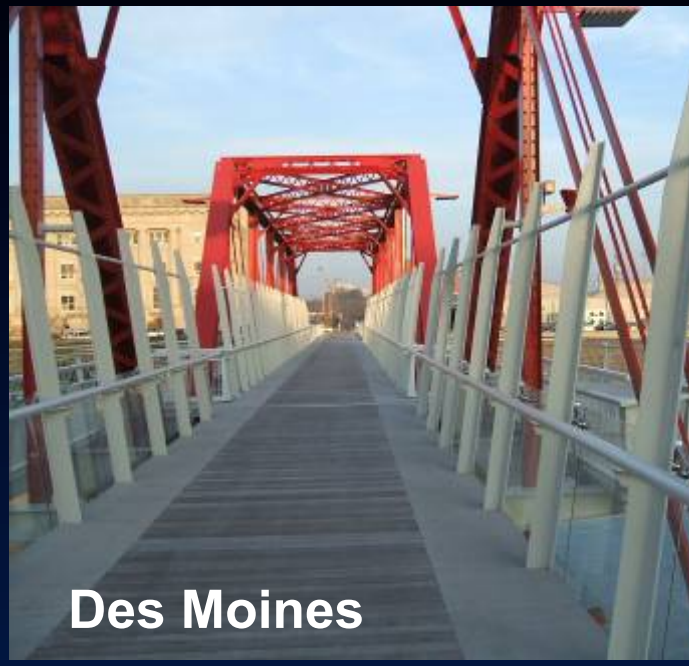
If we build it, will they come?

YES! Four elements:

1. Variety of uses within walk, bike, & transit distance.
2. Connecting facilities: trails, sidewalks, bike lanes, transit.
3. Destinations are functional & inviting for pedestrians, bicyclists, & transit users.
4. Safe & accessible for all ages, incomes, abilities


Des Moines

www.thecommunityguide.org

CDC Guide to Community Preventive Services

In planner language:

- Mixed of land use.
- Network of bicycle, pedestrian, & transit facilities.
- Functional site designs & details.
- Universal safety & access.

Elkader

Marshalltown

1. Compact & varied neighborhoods.

Compact neighborhoods & shared open space.

Schools, services *near housing*.

E.g. stores, post office, library, . . .

Traditional downtowns.

Housing above retail below.

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2. Network continuity & connectivity:

- Quality sidewalks in villages & neighborhoods.
- Connected streets, not cul-de-sacs. Bike lanes & wide shoulders.
- Access to trail, park,
- Affordable, reliable *transit*.

www.markfenton.com

Bicycle network options:

www.pedbikeinfo.org
www.bikewalk.org

Sharrow v

Protected Bike Lane >

www.markfenton.com

3. Site Design:

Which setting is more inviting for travel on foot & by bicycle?

Site design?
Research & practice suggest:

- Buildings near the sidewalk, not set back; parking on street or behind.
- Trees, benches, lighting, awnings, “human” scale.
- Details: bike parking, open space, plants, art, materials.

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Possible incentives:

- Decrease, share parking (include bike racks).
- Build-to, not set-back requirements.
- Multi-story, mixed use.
- Expedite permits.

Neenah WI


Appleton WI

Elected & appointed officials & staff must be supported if they are to act with vision & courage!

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4. Safety & access.

- Engineering can markedly improve safety.
- Increasing pedestrian and bike trips *decreases* overall accident & fatality rates.

Median islands


Roundabout (Neenah, WI)


Curb extensions

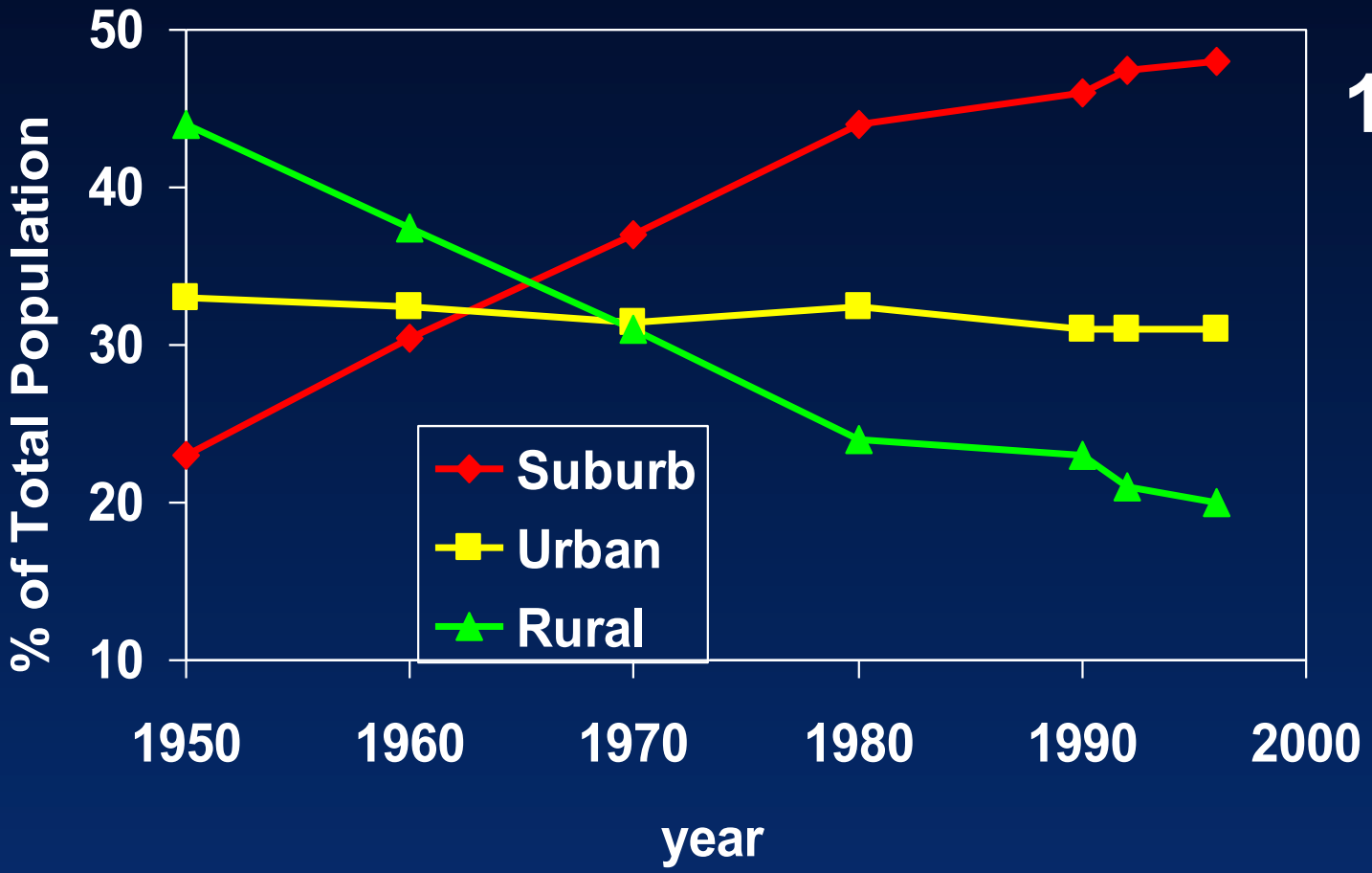
(Jacobsen P, *Injury Prevention*, 2003; 9:205-209.)

“But what about rural areas . . . ?”

Suburbanization of America

US population shift, 1950-1996

(after *Bowling Alone*, R. Putnam, 2000)



1. Suburbia is steadily consuming the landscape . . .

2. Rural areas are where we can affect the shape of development *before* it's done!

Four Elements of Healthy Community Design:

www.activelivingresearch.org

www.markfenton.com

Shouldn't the free market dictate how we build our cities & towns?

Economics. *Walking the Walk: How Walkability Raises Housing Values in U.S. Cities.* (CEOs for Cities report)*

Higher score = ↑ $4,000-$34,000 home value

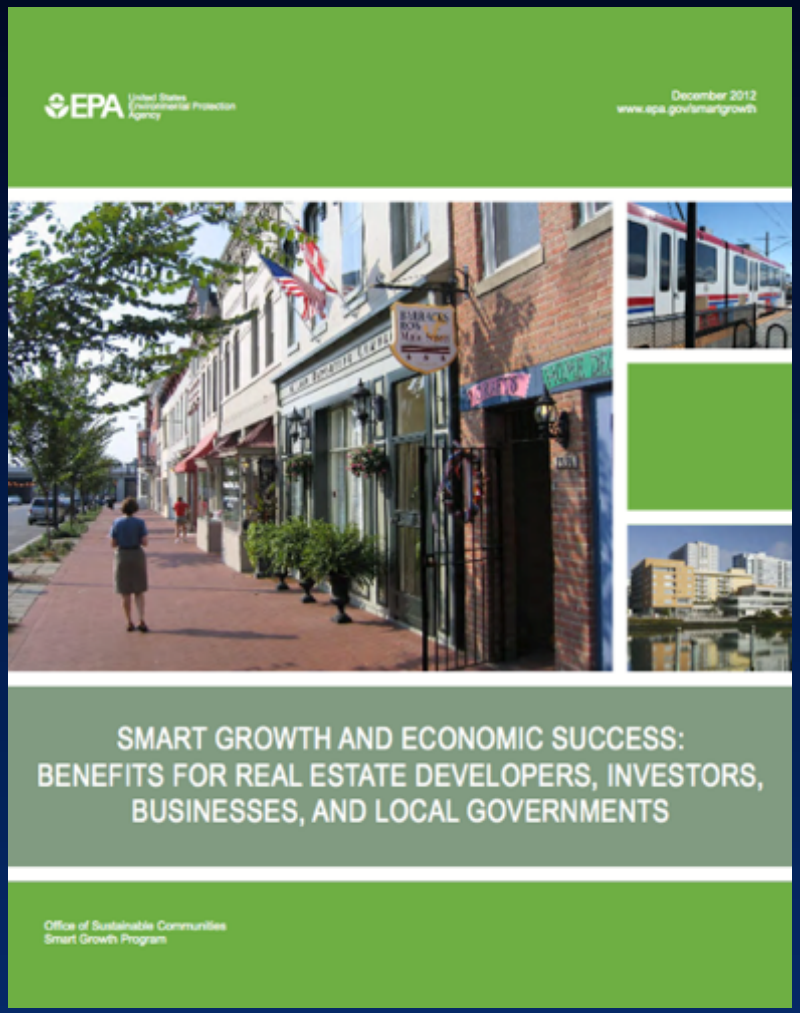
*www.ceosforcities.org/work/walkingthewalk

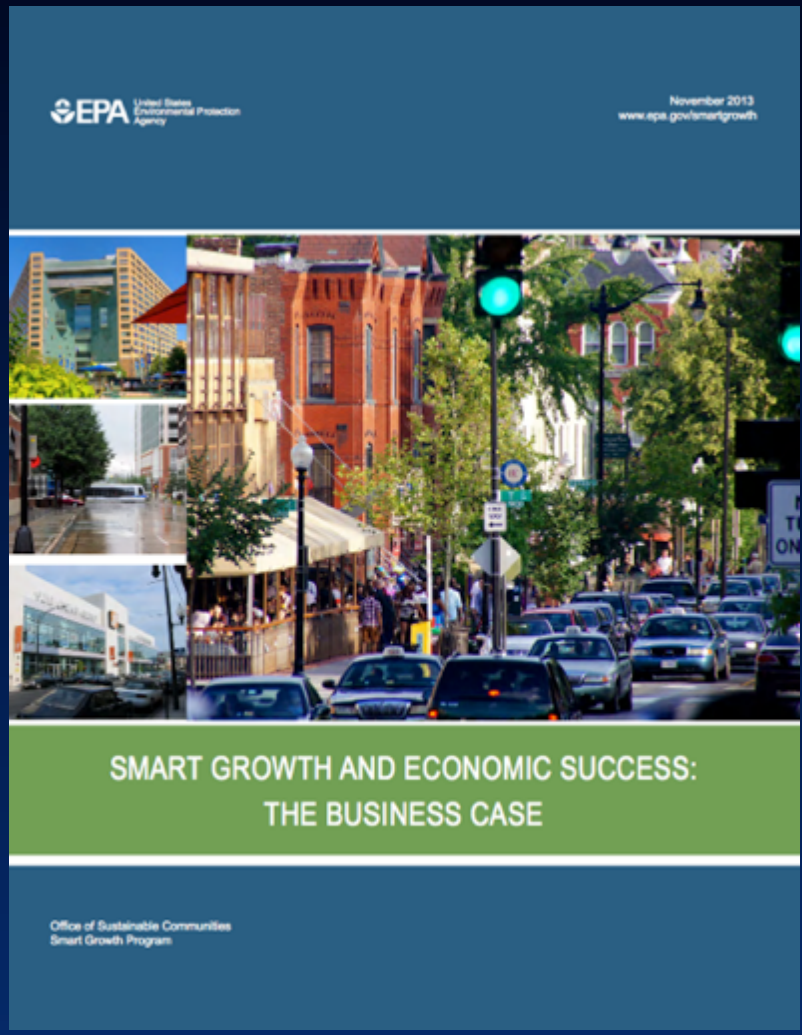
www.walkscore.com

Smart Growth & Economic Success

www.epa.gov/smartgrowth/economic_success.htm

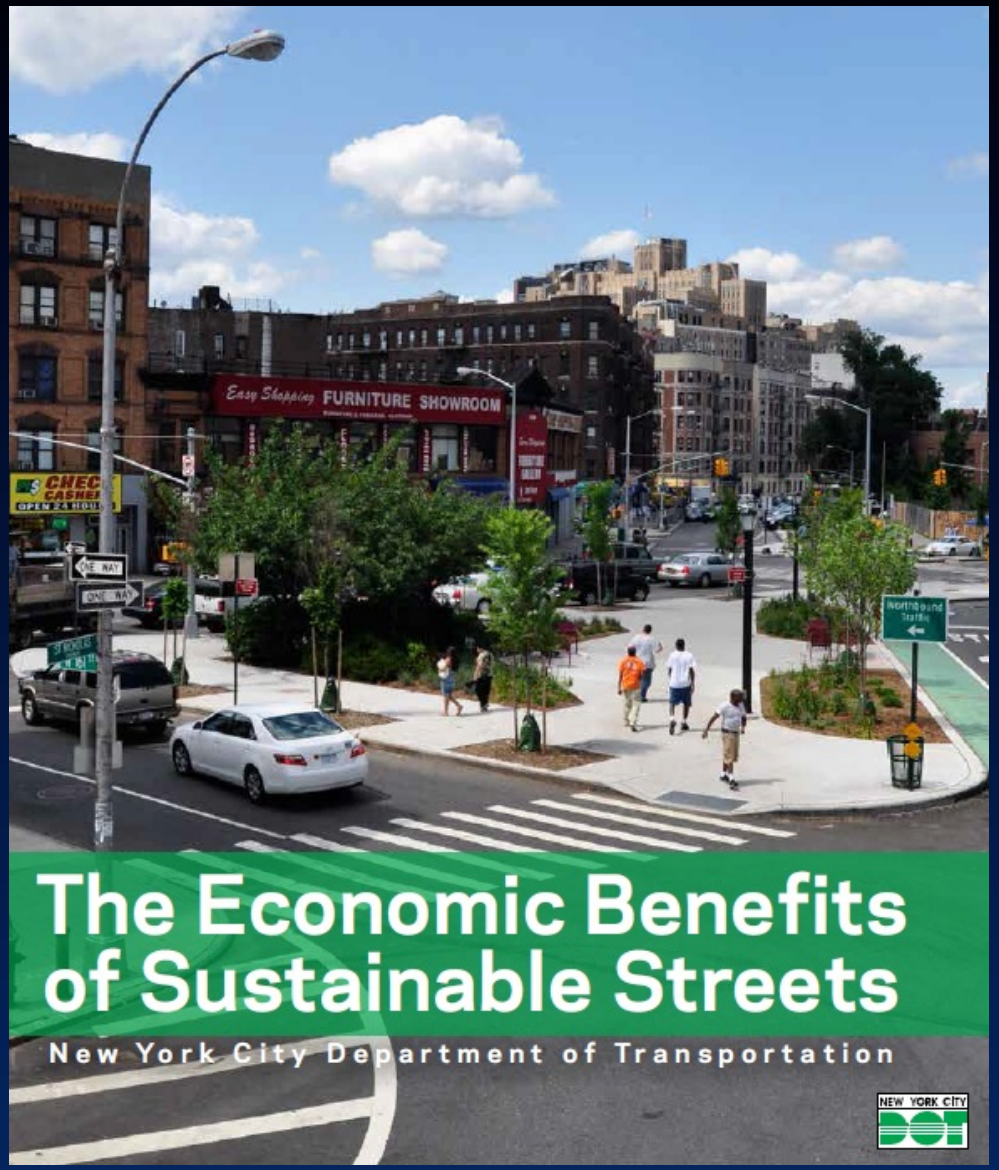
Dec. 2012 **Nov 2013**





Study of street redesigns in NYC:

- Pre- and post-project retail revenue.
- E.g. pedestrian plazas, bike paths, redesigned intersections, BRT . . .
- Improved areas *exceeded* borough & control area averages.



www.nyc.gov/html/dot/downloads/pdf/dot-economic-benefits-of-sustainable-streets.pdf

www.markfenton.com

Benefits of protected bike facilities . . .

BikeWalkAlliance.org
GreenLaneProject.org

- Support real estate values.
- Recruiting & retaining skilled employees.
- Healthier, more productive workers.
- Increased retail revenue.

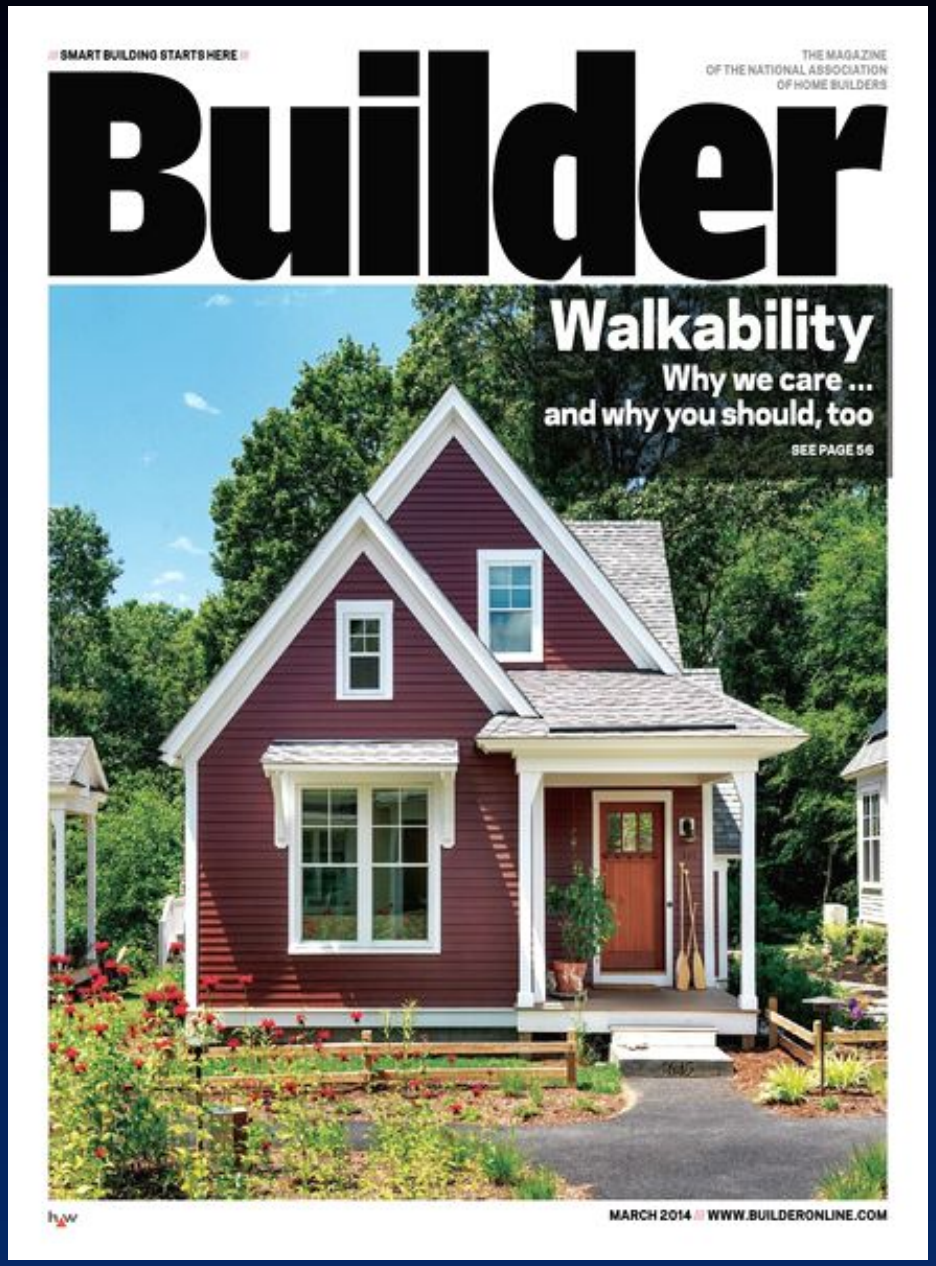
www.markfenton.com

On Common Ground, Nat'l Assoc. of Realtors

Summer 2010; www.realtor.org

The Next Generation of Home Buyers:

- **Taste for in-town living.**
- **Appetite for public transportation.**
- **Strong green streak.**
- **Plus, Americans are driving less overall!**



Walkability.

Why we care & why you should too!

Builder Magazine, Mar. 2014

- Consumer desire
- Flexibility in design
- Lower development costs . . .

www.markfenton.com

Where do businesses want to locate?

"Livable" communities, for employee health, satisfaction, retention.

What's happening?

1st & 2nd generation malls & big boxes are struggling.

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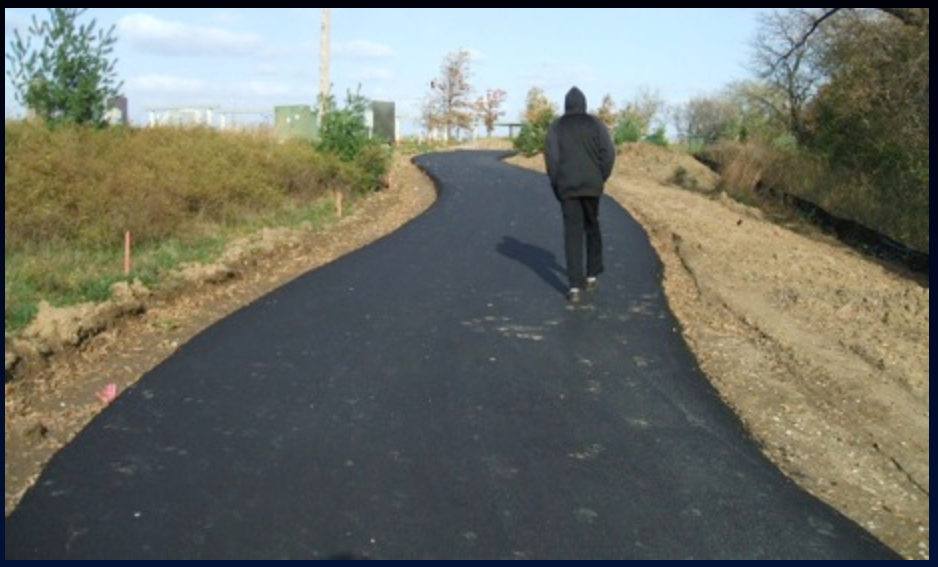
So how to get there?

Walk audits

Implementation

Work sessions



Stop winning battles . . .

But losing the war!

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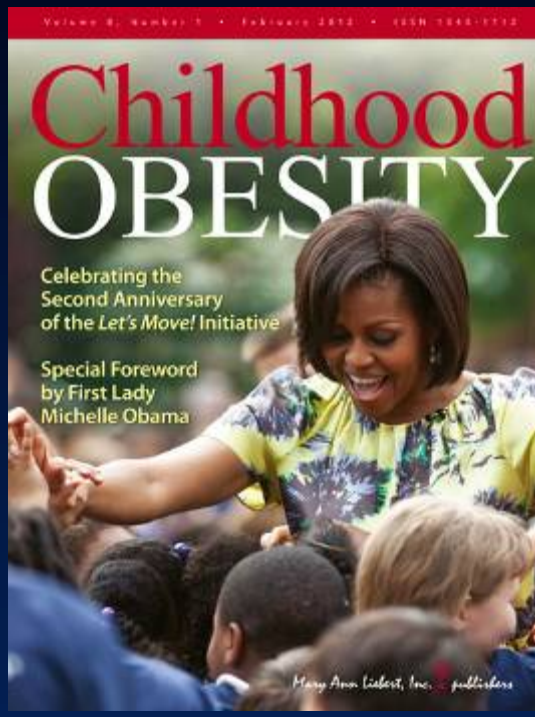
Support five national movements changing the physical activity landscape.

(Fenton, Community Design & Policies for Free Range Children, *Childhood Obesity* 8(1), Feb 2012)



1. Healthy planning & zoning.
2. Complete Streets.
3. Transportation trail networks.
4. Transit- & bicycle-friendly policies.
5. Comprehensive Safe Routes to School.

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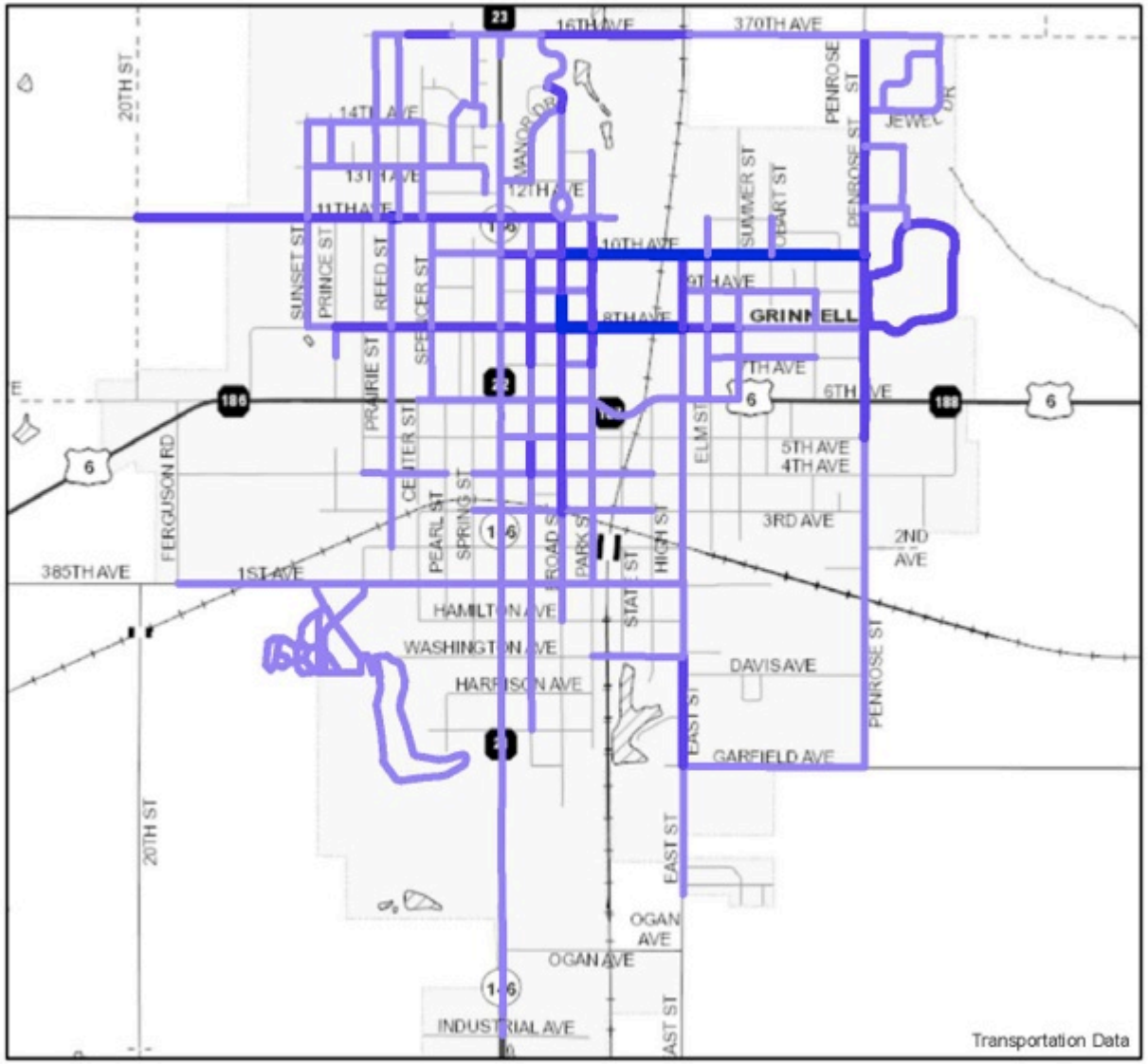
Complete Streets – start cheap if needed:

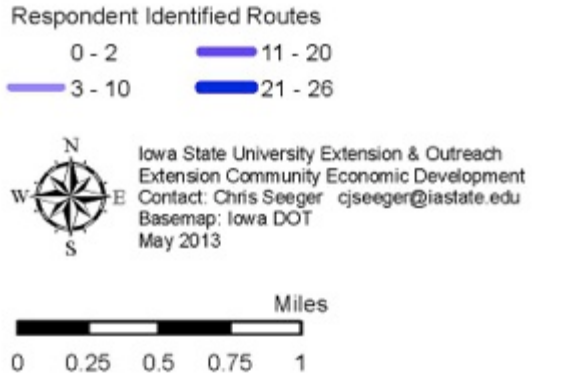
- Pedestrians, cyclists, transit riders, & drivers of all ages & abilities considered in every road project (new, repair, maintenance).
- Resolution > pilot projects > routine painting, paving, & maintenance.

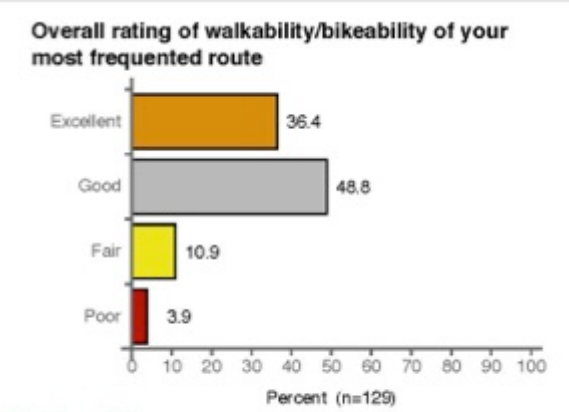
Lead walk audits on candidate Complete Streets in the community.

Create an inventory of street "completeness." E.g. IWALK (Iowans Walking Assessment Logistics Kit).

Community Survey - Most Frequent Routes





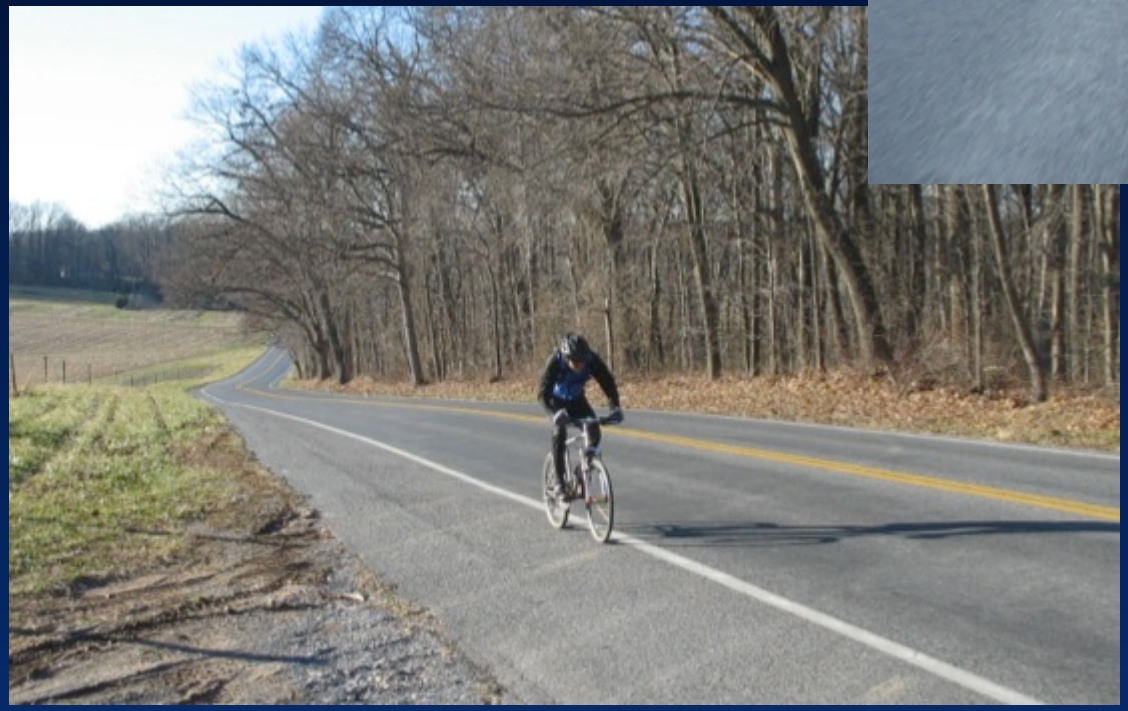


Paint missing lines.

Or move them.

Paint more crosswalks

Pave shoulders on rural roads; part if not entire shoulder.



First priority: routes to schools, housing, shopping centers.

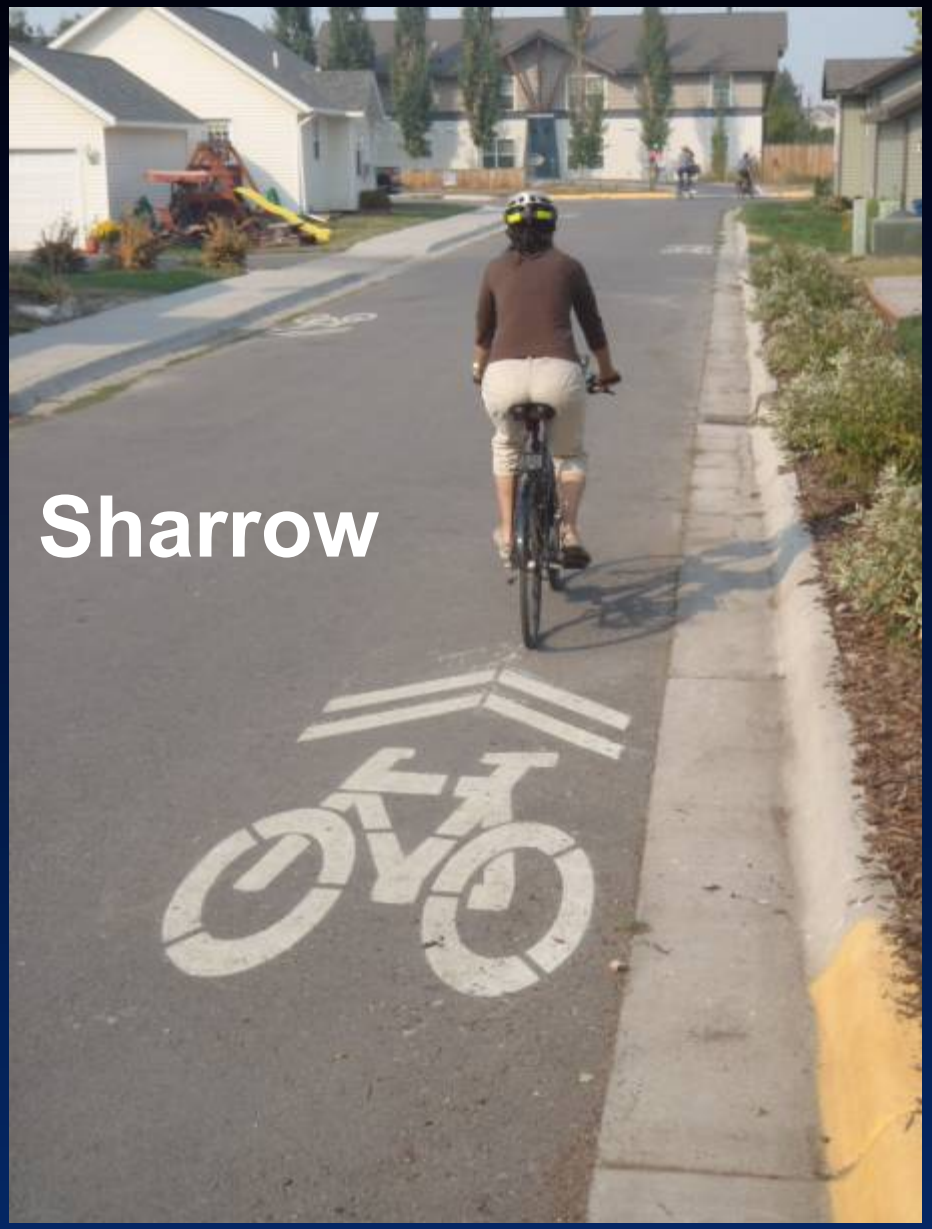
Reasons for shoulders?

- **Safety:** Vehicle recovery zone; accommodate driver error; space for evasive maneuvers; clearance for avoiding crossing peds & bikes; space for disabled vehicles, . . .
- **Capacity:** Easier exiting from travel lanes to side streets; greater effective turning radius for trucks; space for mail delivery & bus stops, . . .
- **Maintenance:** Structural support to lane edge; storm water discharge is further from lane; space for maintenance operations & signs, snow storage, & painting of fog lines.

(Michael Ronkin)

www.walkable.org/assets/downloads/22 Reasons for Paved Shoulders.pdf

Add sharrows or a bicycle lane . . .



Advanced bike box >

Protected bike lane v

Curb extension bike parking v

Curb extensions

Queens NY

www.markfenton.com

Build a parklet (or a few of them).

www.markfenton.com

Round-abouts; often to replace 4-way stop.

Glens Falls, NY

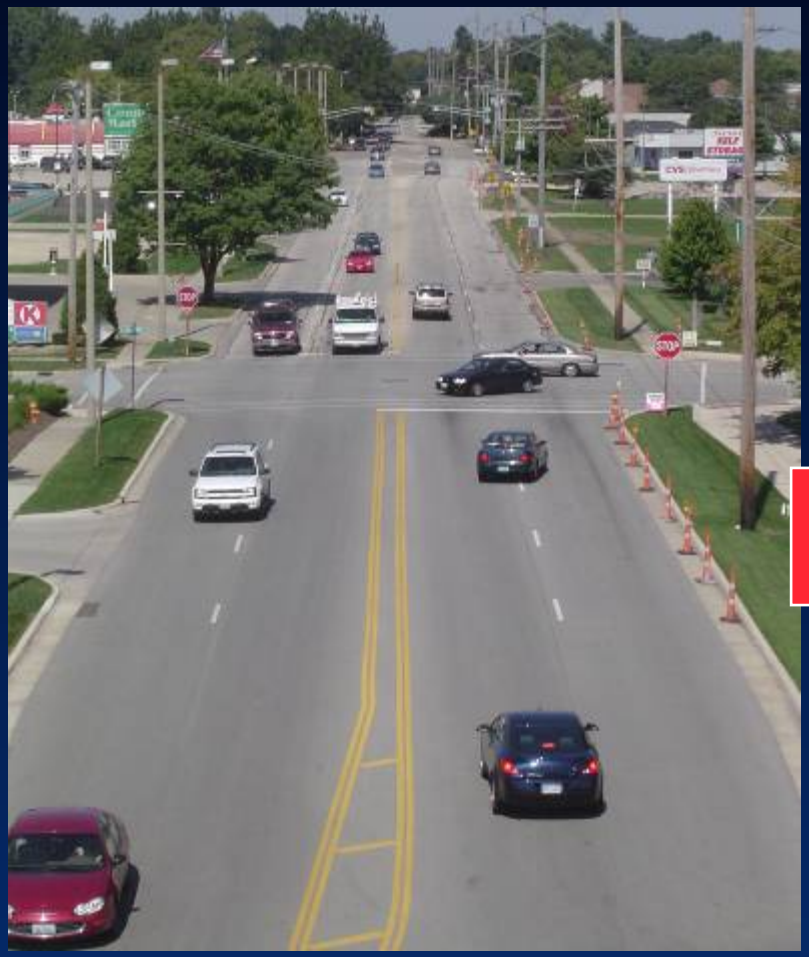
www.markfenton.com

Prove the big vehicles can make it (cones, hay bales).

Glens Falls, NY

Lane re-alignments

- 5 or 4 lanes reduced to 3, "road diets."



Urbana, IL; before & after.

- Reduces collisions & severity.
- Improves performance for pedestrians, bikes.

Install medians where no turns are possible on center lanes.

Include ped crossings where appropriate; ideally offset.

activelivingresearch.org/costs-pedestrian-and-bicyclist-infrastructure-improvements

Costs for Pedestrian and Bicyclist Infrastructure Improvements

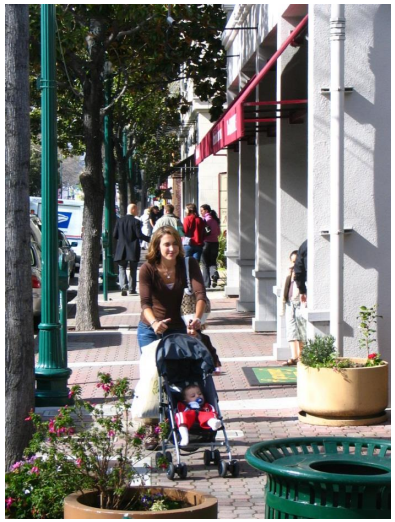
A Resource for Researchers, Engineers, Planners, and the General Public

Authors: Max A. Bushell, Bryan W. Poole, Charles V. Zegeer, Daniel A. Rodriguez

UNC Highway Safety Research Center

Prepared for the Federal Highway Administration and supported by the Robert Wood Johnson Foundation through its Active Living Research program

October, 2013



What's this going to cost?

- Webinar
- Summary
- Full report

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Pedestrian and Bicycle Infrastructure Costs in the US: A Sample of Cost Information

Infrastructure Facility	Median	Average	Minimum	Maximum	Cost Unit	Number of Sources (Observations)
Bicycle Locker	$2,140	$2,090	$1,280	$2,680	Each	4 (5)
Bicycle Lane	$89,470	$133,170	$5,360	$536,680	Mile	6 (6)
Bicycle Rack	$540	$660	$64	$3,610	Each	19 (21)
Concrete Sidewalk	$27	$32	$2.09	$410	Linear Foot	46 (164)
Curb and Gutter	$20	$21	$1.05	$120	Linear Foot	16 (108)
Curb Extension/ Choker/ Bulb-Out	$10,150	$13,000	$1,070	$41,170	Each	19(28)
Flashing Beacon	$5,170	$10,010	$360	$59,100	Each	16 (25)
High Visibility Crosswalk	$3,070	$2,540	$600	$5,710	Each	4(4)
Multi-Use Trail - Paved	$261,000	$481,140	$64,710	$4,288,520	Mile	11 (42)
Multi-Use Trail - Unpaved	$83,870	$121,390	$29,520	$412,720	Mile	3 (7)
Pedestrian Crossing	$310	$360	$240	$1,240	Each	4 (6)
Pedestrian Hybrid Beacon	$51,460	$57,680	$21,440	$128,660	Each	9 (9)
Pedestrian Rail	$95	$100	$7.20	$690	Linear Foot	29 (83)
Pedestrian Signal	$980	$1,480	$130	$10,000	Each	22 (33)
Raised Crosswalk	$7,110	$8,170	$1,290	$30,880	Each	14 (14)
Rapid Rectangular Flashing Beacon	$14,160	$22,250	$4,520	$52,310	Each	3 (4)
Shared Lane/Bicycle Marking	$160	$180	$22	$600	Each	15 (39)

First: Build a compact, interdisciplinary team targeting healthy design:

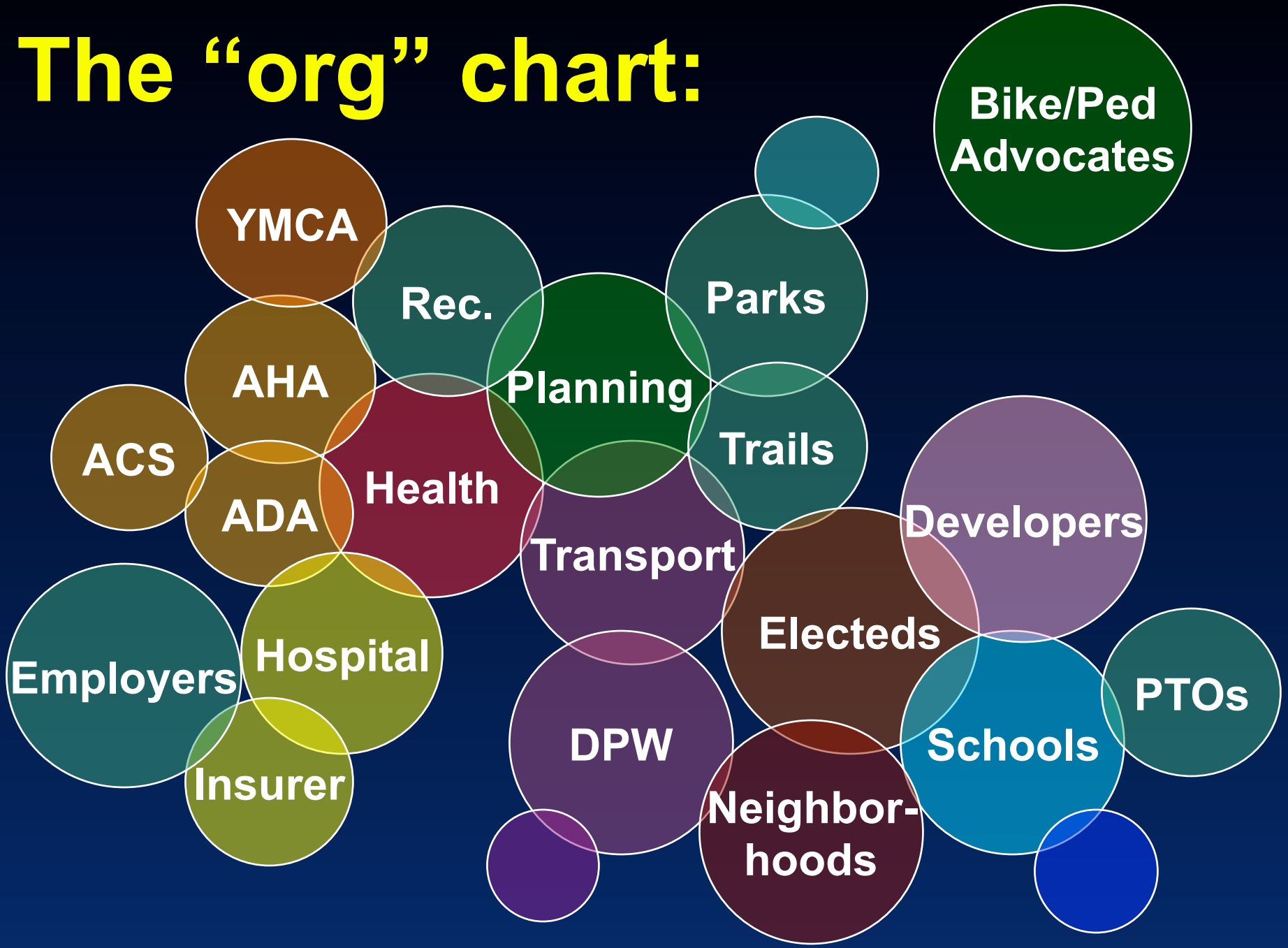
- Education, schools
- Planning & Zoning
- Engineering, DPW
- Parks, Recreation
- Public Health & Safety
- Historical preservation
- Social justice & equity
- Chamber of Commerce
- Developers, Lenders, Realtors
- Neighborhood Assoc., Church & Service Groups
- Environment, Conservation

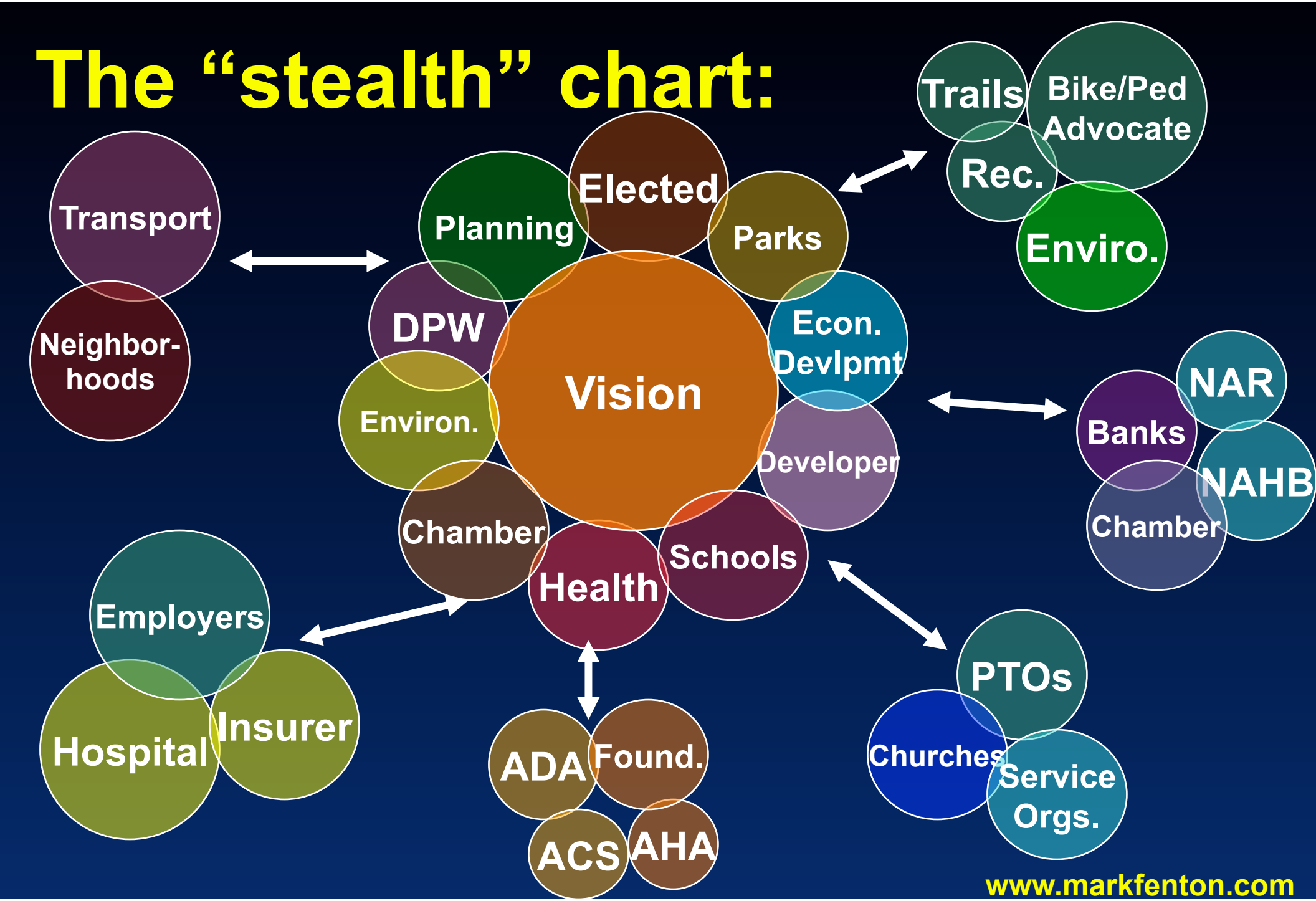
Policy information:

www.lgc.org

www.vtpi.org

The “org” chart:




The "stealth" chart:
Trails
Bike/Ped Advocate
Rec.
Enviro.
Transport
Neighbor-hoods
Planning
Elected
Parks
DPW
Vision
Econ. Devlpmt
Environ.
Developer
NAR
Banks
NAHB
Chamber
Chamber
Health
Schools
Employers
Hospital
Insurer
ADA
Found.
ACS
AHA
PTOs
Churches
Service Orgs.
www.markfenton.com

To be on the stealth leadership team people must:

- Fully embrace the **vision** of active, healthy community design.
- Be able to spend time on this as part of **job responsibilities**; not just volunteers.
- Have **community influence** and be able to **reach** critical partners.

Create action teams:

- Small, strong, well-connected leadership team.
- Tight, focused action teams on specific topics.
- No monthly meetings, just functionally targeted work.

State of the art land use planning & zoning ordinance:

- No more big box & strip malls—build villages!
- Neighborhood corner stores (w/ healthy choices) & pocket parks.
- Protect farmland, open space.
- Keep schools close to where kids live!

The biggies:

- Make **zoning** code & **subdivision** regs – require what you want!
- Require ***multi-modal transportation*** (not just traffic impact) **analysis** on all projects.

Carrots & sticks.

- Development boundaries.

- Minimize re-zoning of agricultural land.
- Purchase/transfer of development rights.

www.markfenton.com

Transfer of Development Rights

www.serconline.org/tdr/stateactivity.html

Parking principles: *

- Invest in alternatives first > transit!!!
- Adopt **market** based pricing strategies ($15-$20K/space/yr)
- Reinvest the $ locally.
- Get sophisticated: Shared parking, no minimums, better user information & designs!

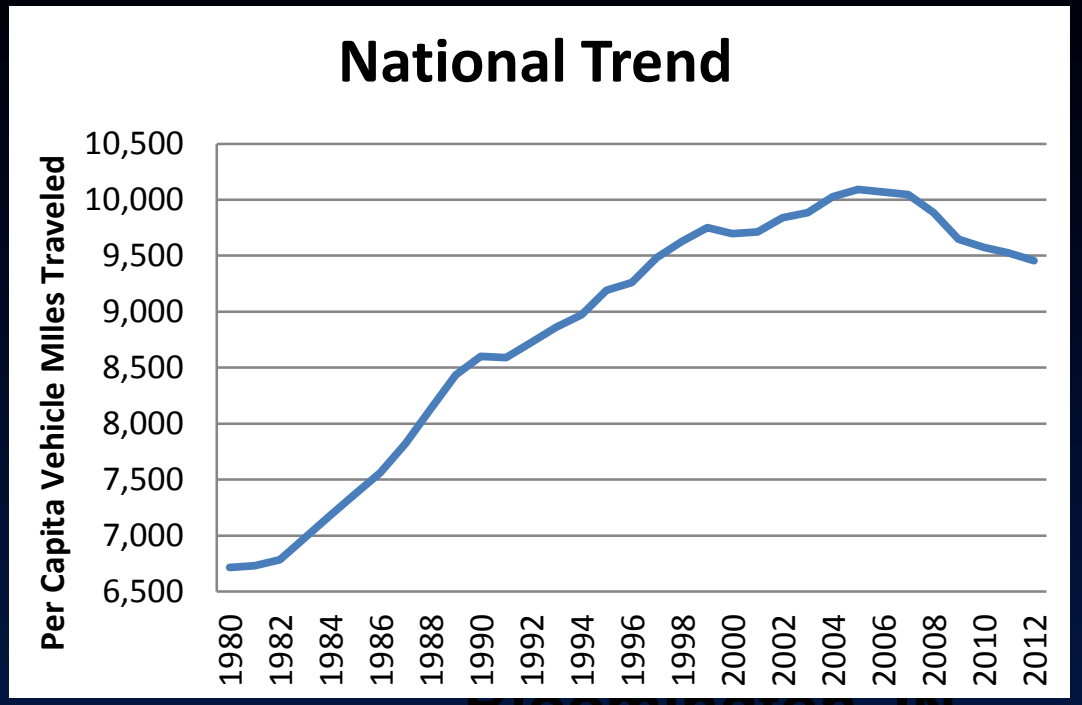
West Chester, PA

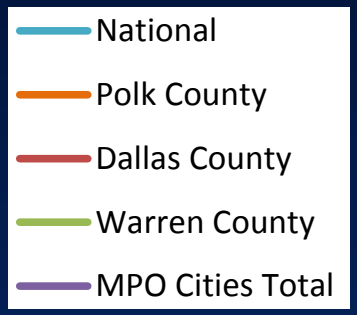
Wichita, KS

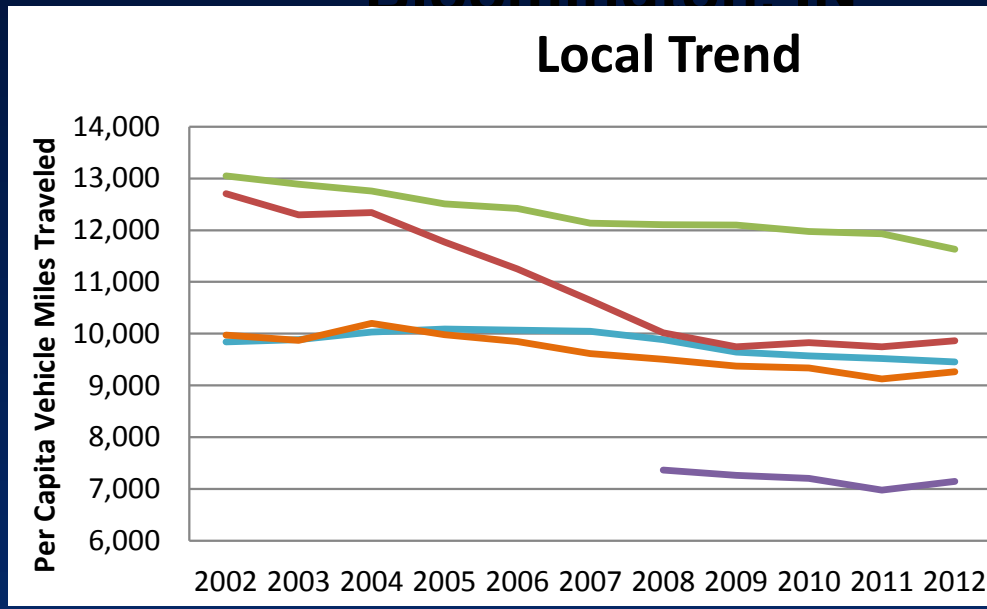
* May 2006 & 2008, *Planning* (D. Shoup)

Long range transport plan.

- No rezoning agriculture to residential, retail, commercial.
- Regional collaboration required.
- Don't presume VMT growth.
- Growth boundary?







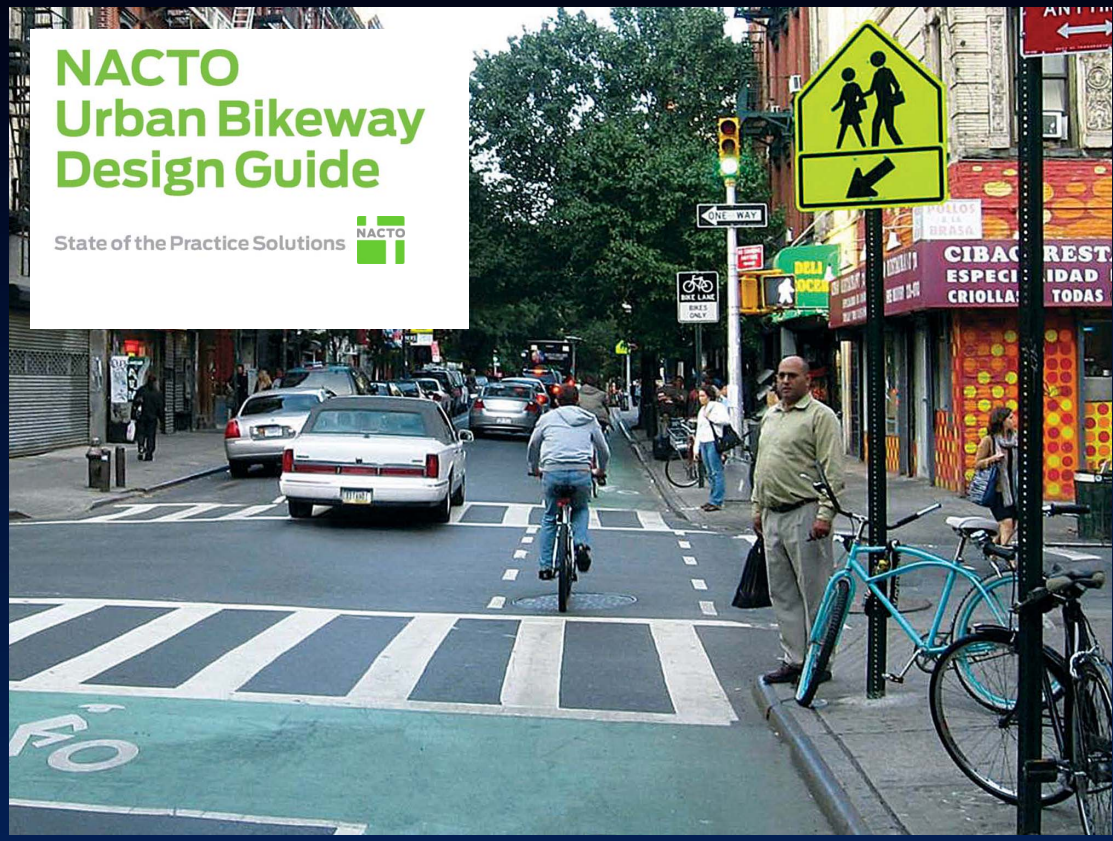
Institutionalize CS! E.g. Nashville, TN Metropolitan Planning Organization (MPO)

- 60% of scoring for Transport Improvement Plan (TIP) includes impacts to pedestrian, bike, & transit travel, not just motor vehicle LOS.

- Now, auto-only projects don't get funded.
- LRTP is a chance to set these priorities!

Update guidelines, design requirements.

NACTO Urban Street Design Guide



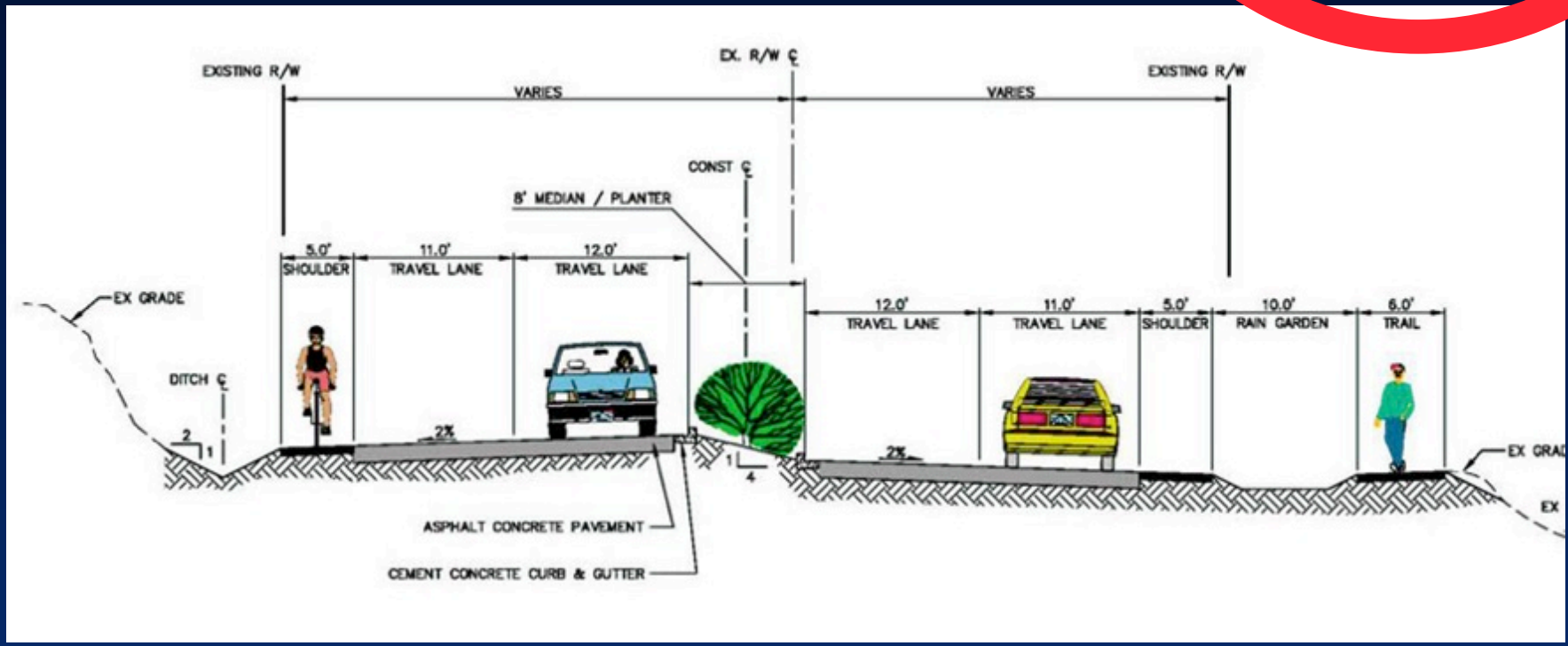
- Don’t reinvent the wheel! **Nat’l Association of City Transportation Officials** have compiled the evidence base and best practices.

www.markfenton.com

Design guidelines

Give engineers room to design solutions.

~~Local~~
~~Collector~~
~~Arterial~~



Planners, engineers job descriptions:

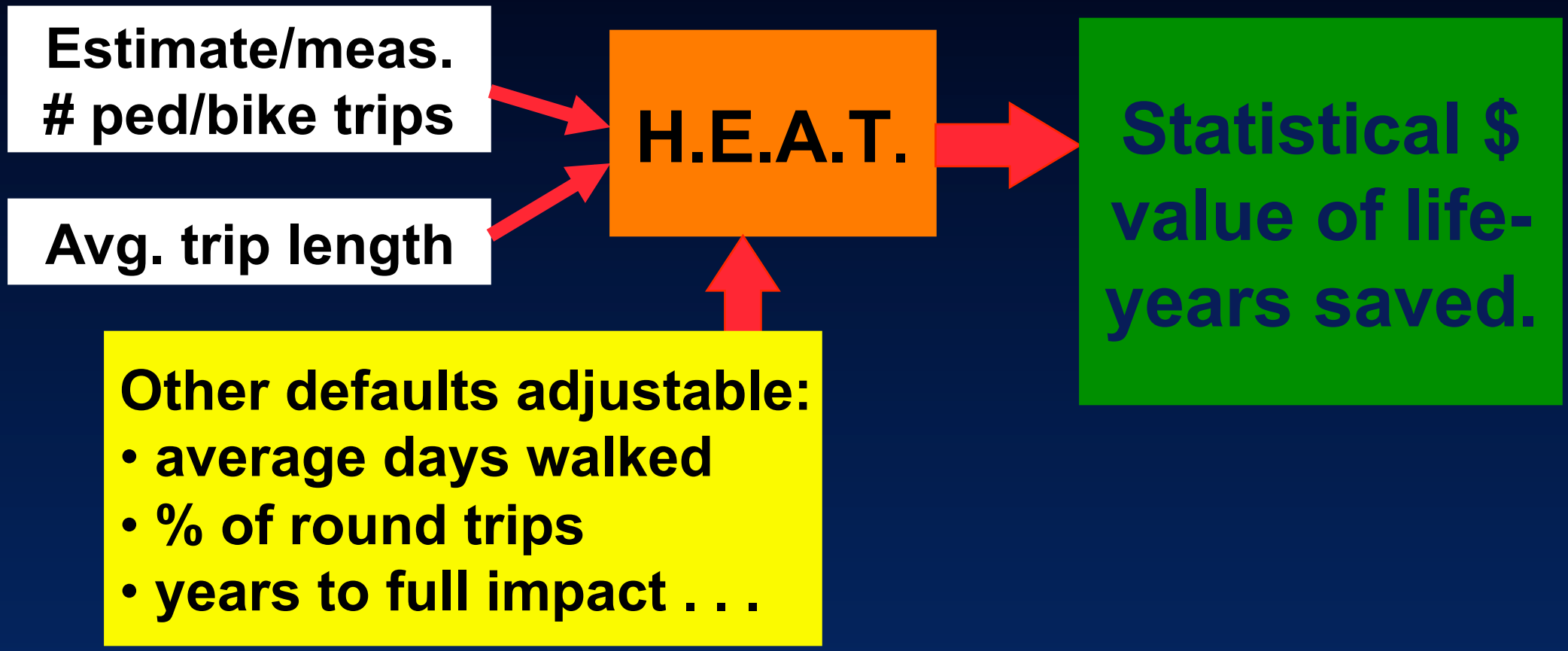
3 key words:

- Health
- Safety
- Welfare

Performance measures?

- Minimize VMT
- Minimize trip length
- Maximize ped, bike, transit
- Assess HEAT

E.g., Health Economic Assessment Tools; H.E.A.T. for Bicycling and Walking (WHO)



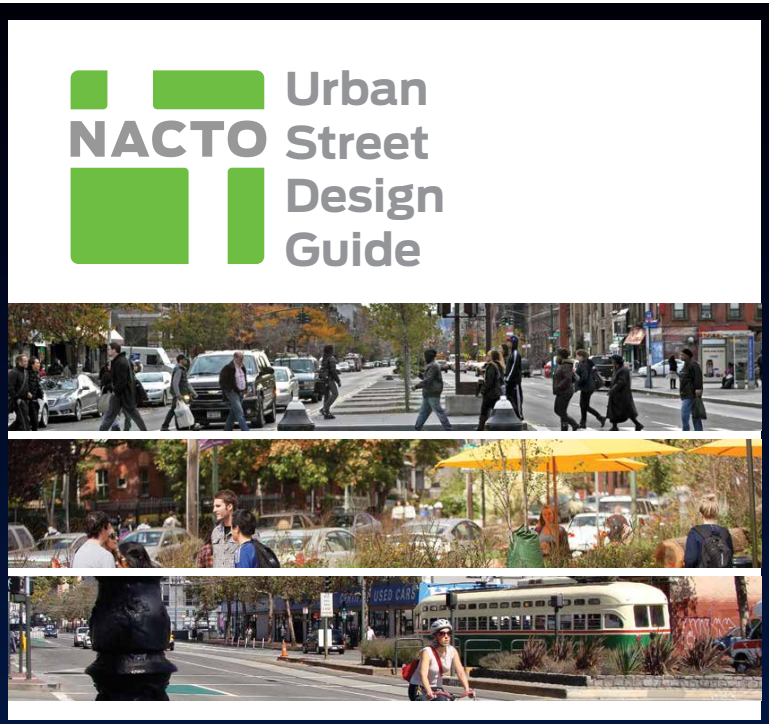
On-line tool: www.heatwalkingcycling.org

Market incentives.

- Location efficient mortgages.
- Congestion pricing.
- Tolls, HOV lanes . . .

The two questions that are NOT the real problem:

- **Technical**. How do we do it? What are best practices?
- **Financial**. How do we pay for it? Where's the money?



Olshansky et.al., "A Potential Decline in Life Expectancy . . ."
New Eng. J. of Med.,
March 17, 2005