

# Planning and Designing for Active Living

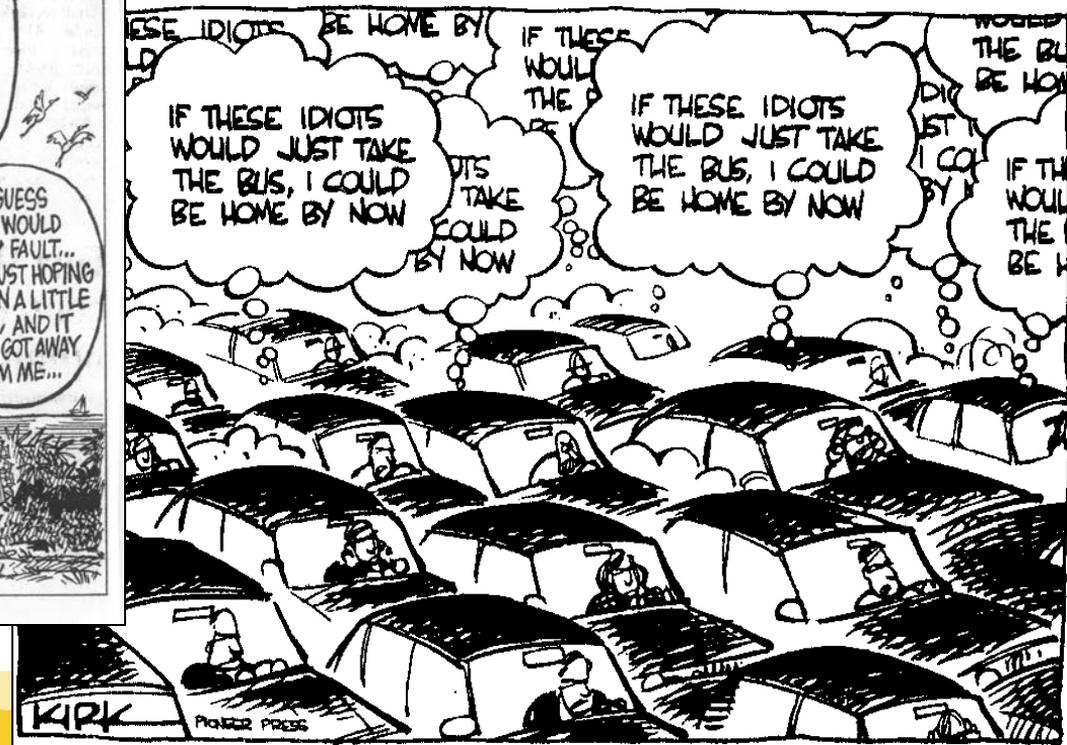
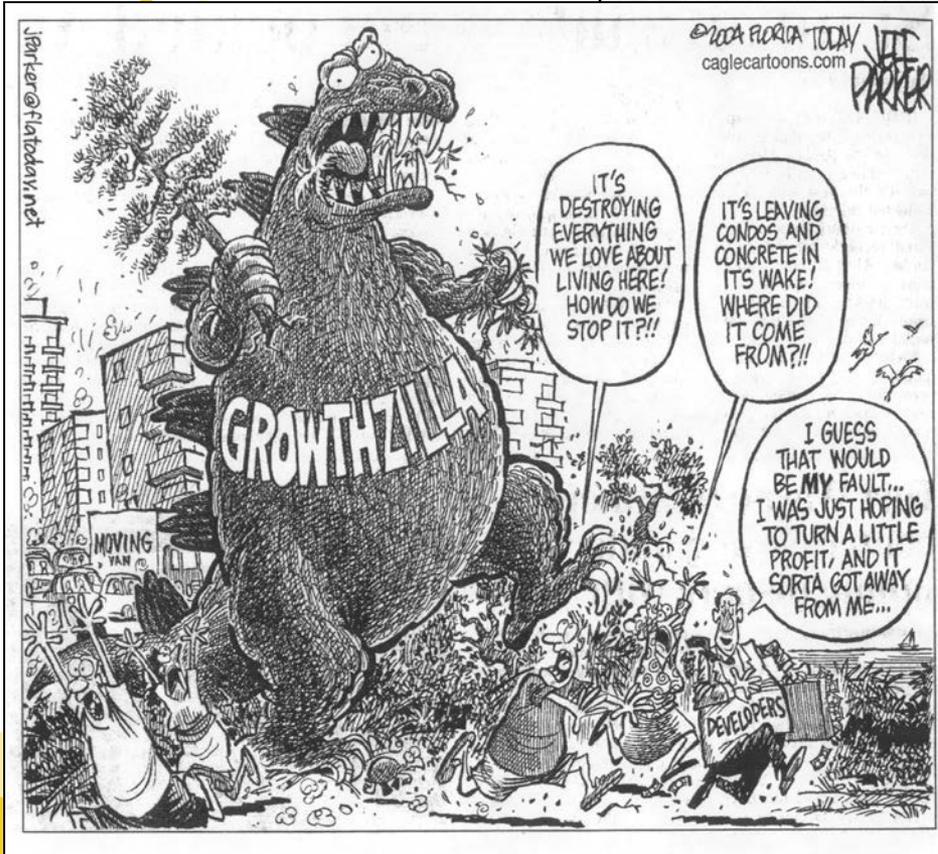


**Pete Fritz, AICP, RLA**  
Healthy Communities Planner  
Indiana State Department of Health  
Division of Nutrition and Physical Activity

# Study finds sprawl bad for your health

Roland Sturm, who co-authored the study.

The report was based on data from the Healthcare for Communities survey that questioned a national representative group of more than 8,600 adults in 38 metropolitan areas about their physical and mental health.



# The 5 Ps in Creating Active Communities

- This Session will Explore:
  - **Policies**-that support and encourage active communities.
  - **Plans**-that create a vision of what could be.
  - **Programs**-that promote active living environments.
  - **Projects**-that implement community change.
  - **Performance measures**-to make sure it all works.



# Policies that Support and Encourage Active Communities

- Complete Streets Policy
- Sidewalk Program
- Unified Development Ordinance
- Shared Use Agreements
- Re-thinking Vehicle Level of Service as a Design Tool

# Complete Streets Policy Changes the Process for Road Design

The old way is to determine the project scope for vehicles, then require proof that other modes are necessary.

The new way is to assume that ALL modes will be required and justify why not to include them.





# Complete Streets Create Safe Roadways

Sidewalks reduce  
pedestrian crashes 88%.

Medians reduce  
crashes 40%

Road diets reduce  
crashes 29%

Countdown signals  
reduce crashes 25%





# Sidewalk Program

- Adopt a unified sidewalk program that applies to all land uses in the city that guarantees sidewalk construction and maintenance.
  - Create a sidewalk inventory for the community.
  - Minimize or eliminate sidewalk waivers.
  - Clearly define who is responsible for sidewalk maintenance and construction.
  - Determine a defensible and sustainable process to fund ongoing sidewalk maintenance.
  - Construct safe roadway crossings connecting sidewalks.



# Unified Development Code

- Include bike parking requirements in the UDO
- Include sidewalk regulations and waiver criteria in the UDO







# Vehicle Level of Service Should NOT be a Primary Design Tool

Designing to LOS C for the peak ½ hour for the next 20 years is wasting money.

Creates unnecessary pavement.

Increases pedestrian crossing times.

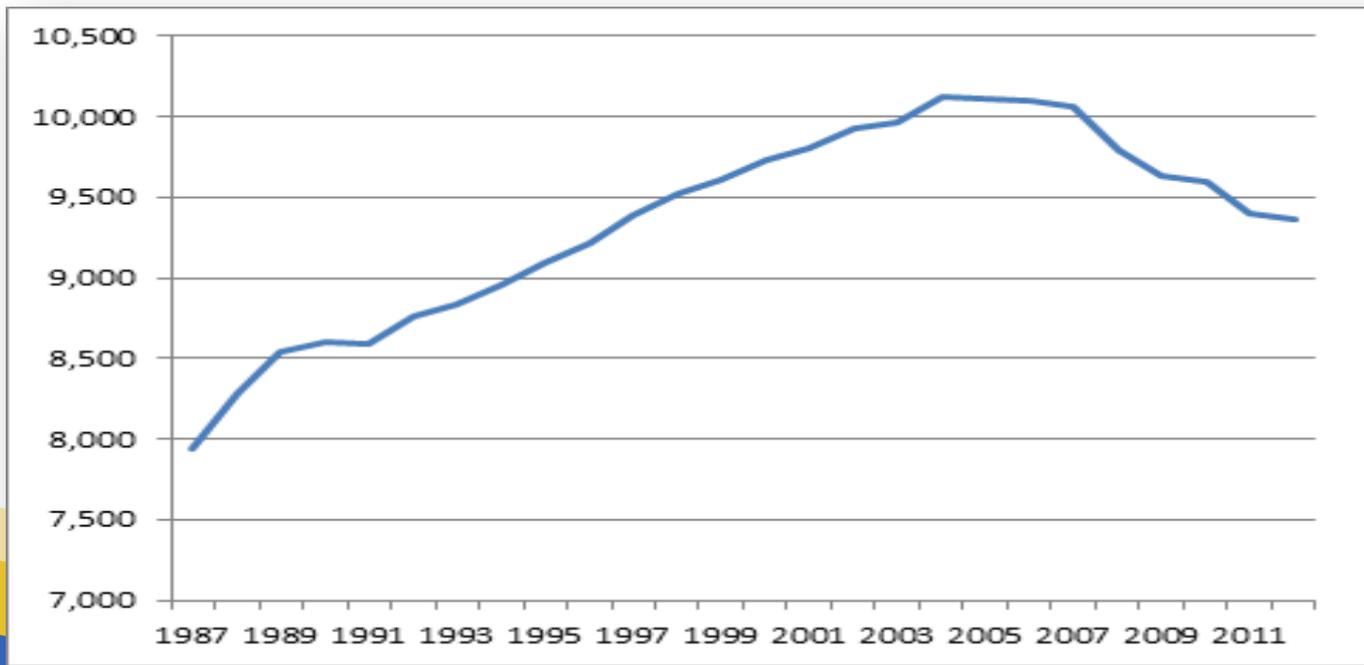
Increases operating speeds for other 23 hours a day.

Designing to a LOS D  
creates a safer roadway  
for all users.



# Will Traffic Volumes Always Increase? Probably not.

Since 2005 US Vehicle Miles Traveled has been declining even as gas prices have stabilized and the economy is recovering.





# Plans-that create a vision of what could be

- Bicycle and Pedestrian Plans
- Transportation and Thoroughfare Plans
- Comprehensive Plans
- Safe Routes to School
- Food Access Planning

THE ROLE OF

# Communities

IN PROMOTING PHYSICAL ACTIVITY

## WALKABLE COMMUNITIES

People who live in walkable neighborhoods are

**2 times**

as likely to get enough physical activity as those who don't.

## JOINT USE

The number of children who are physically active outside is

**84%**

higher when schoolyards are kept open for public play.

## TRAILS

People who live near trails are

**50%**

more likely to meet physical activity guidelines.

## RECREATIONAL FACILITIES

Teens who live in poor or mostly minority neighborhoods are

**50%** less likely to have a recreational facility near home.

Active Living Research

[www.activelivingresearch.org](http://www.activelivingresearch.org)

Sources: TRAILS: Huston S, Evenson K, Bors P, et al. "Neighborhood Environment, Access to Places for Activity, and Leisure-Time Physical Activity in a Diverse North Carolina Population." *American Journal of Health Promotion*, 18(1): 58-69, September/October, 2003. WALKABLE COMMUNITIES: Frank LD, Schmid TL, Sallis JF, Chapman J, Saelens BE. Linking objectively measured physical activity with objectively measured urban form. Findings from SMARTRAQ. *American Journal of Preventive Medicine* 2005; 28(2S2):117-125. JOINT USE: Farley T, Meriwether R, Baker E, Watkins L, Johnson C, Webber L. Safe play spaces to promote physical activity in inner-city children: Results from a pilot study of an environmental intervention. *Am J Pub Health*. 2007;97:1625-1631. RECREATIONAL FACILITIES: Gordon-Larsen P, Nelson MC, Page P, Popkin BM. "Inequality in the Built Environment Underlies Key Health Disparities in Physical Activity and Obesity." *Pediatrics*, 117(2): 417-424, 2006.



# Collaboration in Local Planning

- Comprehensive Plans
- Sustainability Plans
- Redevelopment Plans
- Neighborhood Plans
- Functional Plans
  - Health services
  - Bicycle and pedestrian plans
  - Transportation/Corridor plans
  - Transit
  - Trails and Parks
  - Housing
  - Economic development
  - Schools and campuses



*"Norman won't collaborate."*



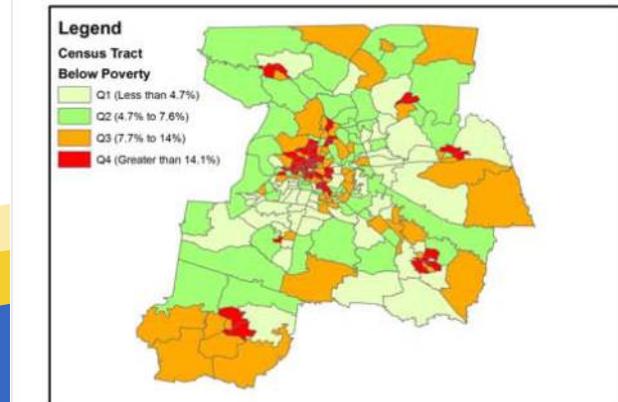
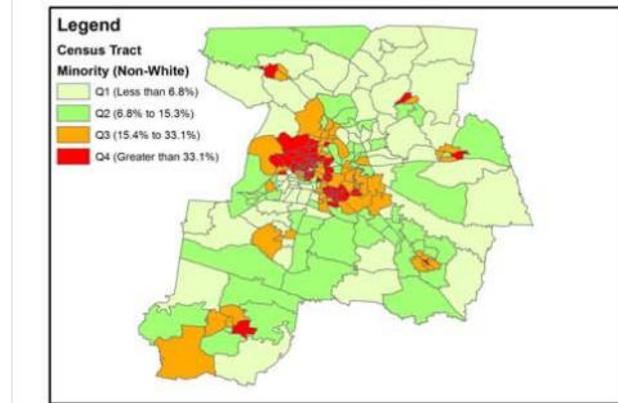
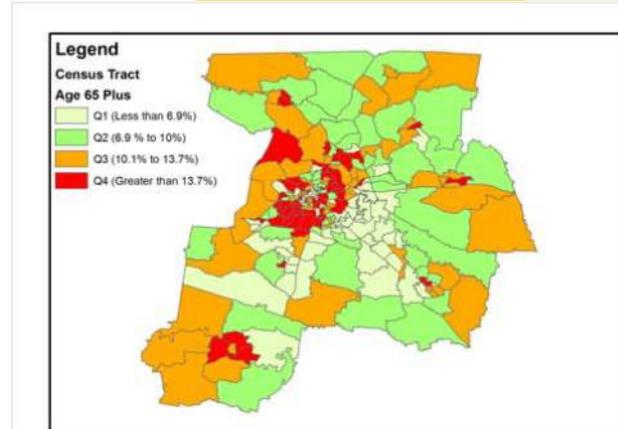
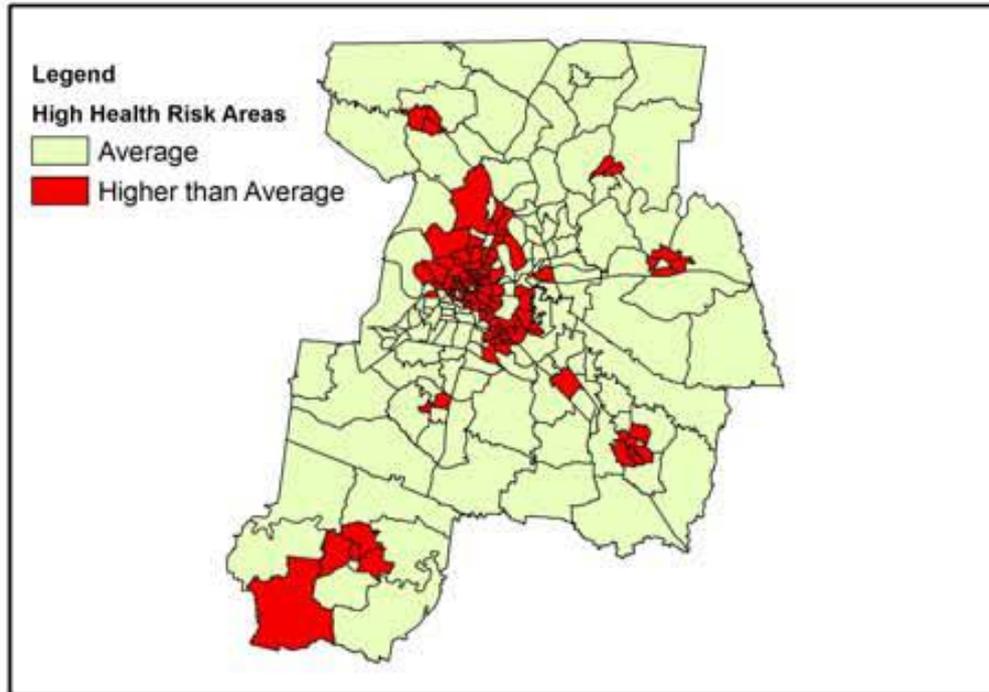
# Plans-that create a vision of what could be

- Include community health organizations, such as hospitals and local health departments, as part of the advisory committee for planning efforts. Incorporate their input into the final planning documents.



# Mapping Health Disparities

- Nashville Tennessee  
Bike and Pedestrian Plan
  - Nashville MPO prioritized projects based upon serving areas with health disparities





# How to Implement a Plan?

- Focus on IMPLEMENTATION!
- Name a staff person in charge; create an advisory committee(s).
- Start with “low-hanging fruit” to build support.
- Be opportunistic; strategize retrofit funding.





# Utilize Non-traditional Funding Strategies

- Public/Private Partnerships
- Hospital Community Benefit Funding
- Dedicated Funding for Active Transportation Projects





# Use the 5 E's for Planning and Implementation of Active Living Environments

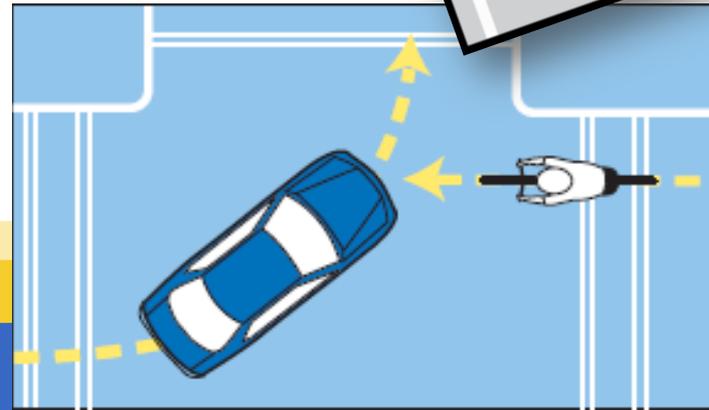
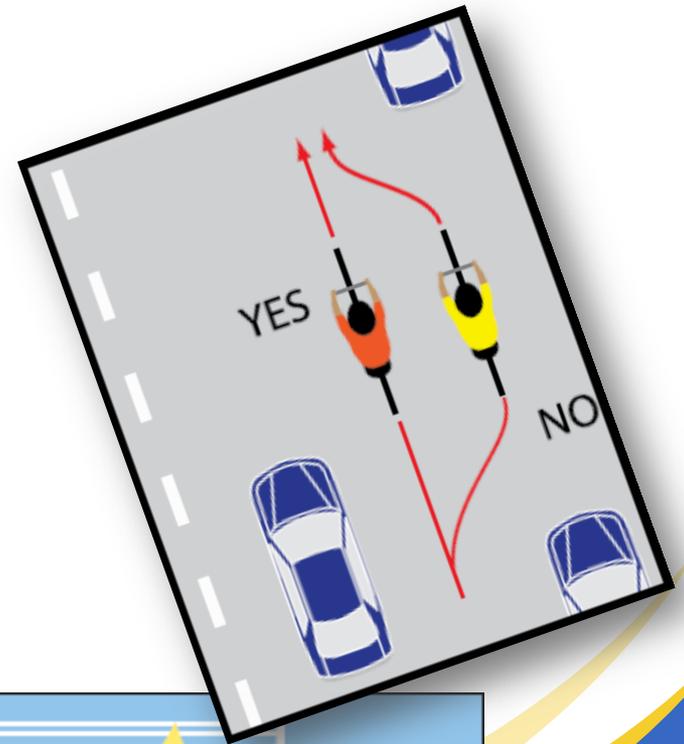
- The 5 E's
  - Engineering
  - Education
  - Encouragement
  - Enforcement
  - Evaluation





# Education

- Adult Cyclists and Walkers
- Children
- Motorists
  - Share the road
  - Crosswalk rules, etc



# Encouragement

- National Bike Month events
- Bike to Work day/bike commuter incentives
- Community bike rides, walking clubs
- Safe Routes to School program
- Bike and Walk Maps





# Enforcement is a Critical Element for Implementing Your Efforts

- Police on Bikes
- Officers trained on Share the Road enforcement
- Targeted enforcement campaigns

## BICYCLIST VIOLATIONS

	Failure to observe red light or stop sign.
	Riding on the wrong side of the road. Bicyclists should ride with traffic, not against it.
	Blocking traffic on a busy road. Ride single file, unless riding two abreast does not impede normal and reasonable traffic flow.
	Failure to signal. Bicyclists should use hands signals to let motorists know what they plan to do.
	No headlight and rear reflector for night riding.
	Trick riding, weaving on the road, hitching ride on a moving vehicle.
	Wearing earphones while bicycling

## MOTORIST VIOLATIONS

	Failure to pass a bicyclist safely. Bicyclists need at least three feet of space to be safe, more if the vehicle is traveling fast.
	Passing a bicyclist, then turning right into the path of the bicyclist.
	Failure to yield when making a left turn in front of a bicyclist.
	Opening door into bicyclist's path.
	Failure to scan for bicyclists at crosswalks, failure to stop at the line.
	Parking in bike lanes.
	Speeding. Higher the speed, the greater the chance of serious injury or death for bicyclists.

THE ROLE OF

# Schools

IN PROMOTING PHYSICAL ACTIVITY

## RECESS

Students who get at least

**20** minutes of  
recess per day

have a lower body mass index  
percentile than their peers.



## SAFE ROUTES TO SCHOOL

Students who walked  
to school every day had

**24**

more minutes of  
physical activity  
per day.



## P.E.

In states with P.E.  
requirements, high  
school girls were active

**37**

more minutes  
per week.

## ACHIEVEMENT

Teens who were  
active in school were

**20%**

more likely to  
earn an "A" in  
math or English.



Active Living Research

[www.activelivingresearch.org](http://www.activelivingresearch.org)



# Safe Routes to School

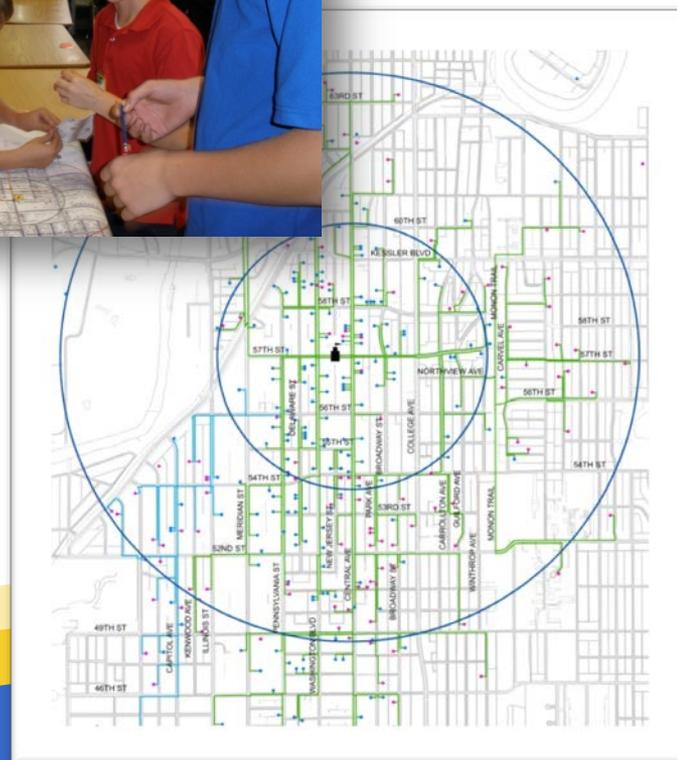
- Safe Routes to School Plans encourage active transportation to school.





# Safe Routes to School

- Consider both planning and infrastructure
- Plans address 5 E's
  - Engineering
  - Education
  - Encouragement
  - Enforcement
  - Evaluation
- Ongoing implementation focus





# Sate Routes to School Non-Infrastructure Program



**West Lafayette  
Comprehensive Safe Routes Plan.  
January 2010**

ISDH has a two year agreement with the Indiana Department of Transportation to promote the program.



THE ROLE OF

# Parks and Recreation

IN PROMOTING PHYSICAL ACTIVITY

## RACIAL DISPARITIES

**70%** & **81%**

of African-American neighborhoods of Hispanic neighborhoods

lack recreation facilities, compared to 38% of white neighborhoods.

## OPEN SPACE

Youths in neighborhoods with 7 recreational facilities were

**26%** more likely to be active 5 times per week than those in areas without facilities.

## TRAILS

A study in Nebraska found that for every \$1 spent on trails, there was almost

**\$3** in savings in direct medical costs.

## PROPERTY VALUES

Homes near parks can sell for up to

**\$2,262**

more than homes without parks nearby.

Active Living Research

[www.activelivingresearch.org](http://www.activelivingresearch.org)

Sources: RACIAL DISPARITIES: Moore LV, Diez Roux AV, Evenson KR, et al. "Availability of Recreational Resources in Minority and Low Socioeconomic Status Areas." American Journal of Preventive Medicine, 34(1): 16-22, 2008. PROPERTY VALUES: Bolitzer B and Netusil N. "The Impact of Open Spaces on Property Values in Portland, Oregon." Journal of Environmental Management, 59(3): 185-193, July 2000. OPEN SPACE: Gordon-Larsen P, Nelson M, Page P, et al. "Inequality in the Built Environment Underlies Key Health Disparities in Physical Activity and Obesity." Pediatrics, 117(2), 417-424, 2006. TRAILS: Wang G, Mocerca CA, Scudder-Soudle B, et al. "A cost-benefit analysis of physical activity using bike/pedestrian trails." Health Promotion Practice, 6(2): 174-179, 2005.

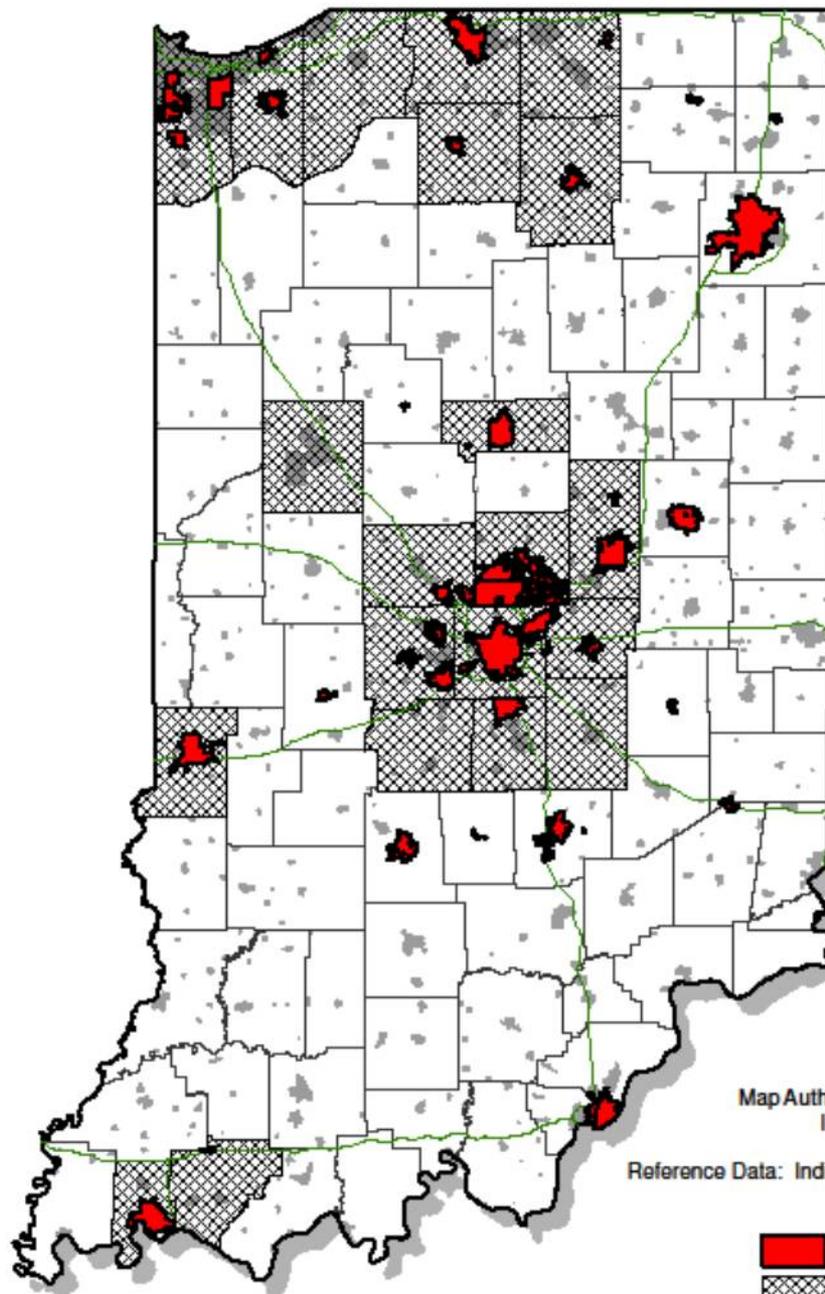


## Plans-that create a vision of what could be

- Parks and Recreation Plans should include active living goals, objectives and policies.



Bicycle and trail plans can be a key element of park planning.



Map Author: Nutrition and Physical Activity,  
Indiana State Department of Health  
Program Data: INDOT and ISDH  
Reference Data: Indiana Geographic Information Office  
August 2013

**Red** bike and trail plans cities  
**Cross-hatched** bike and trail plans counties  
**Gray** Incorporated areas





# Small Pocket Parks Create Destinations



Trust for Public Land, Chicago



Gayle Dufour



## Plans-that create a vision of what could be

- Food Access Planning can encourage active lifestyles and support better health for active living.
- Food access goals, objectives and strategies should be included in planning documents.



# Community Setting

- Community Gardens
- Farmers Market Electronic Benefit Transfer (EBT)





# School Setting

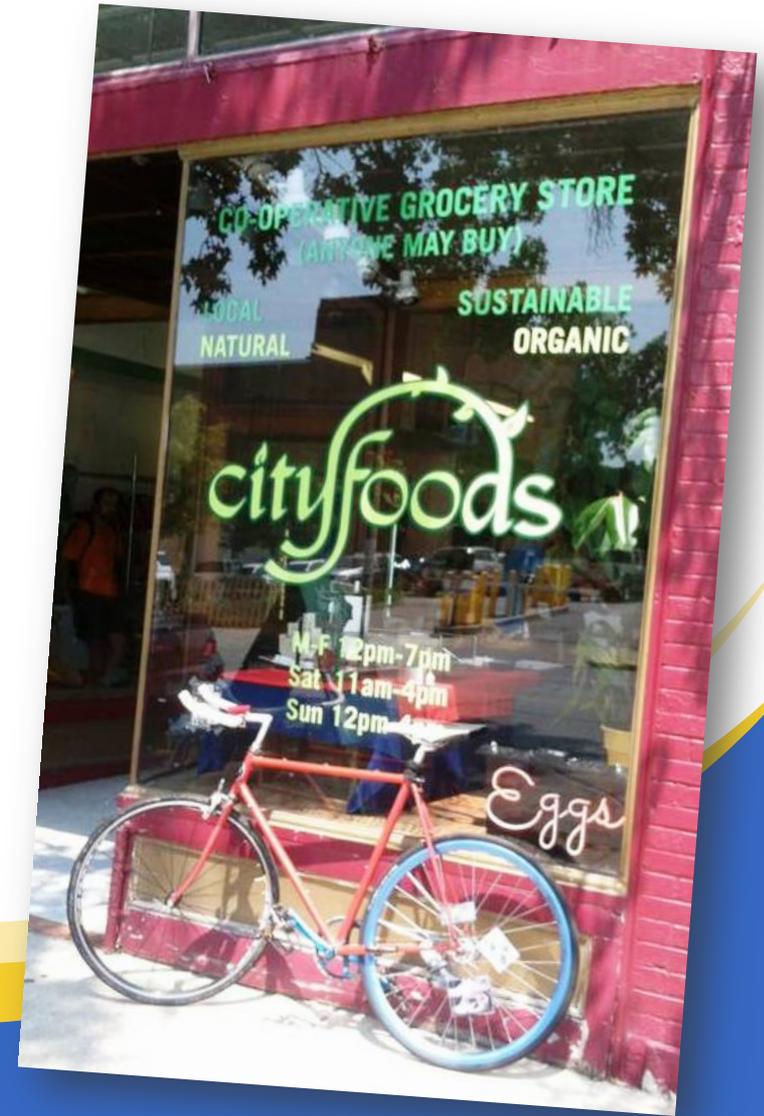
- School Gardens
- Farm to School Programs





# Local Food Promotion

- Food Cooperatives
- Community Supported Agriculture





Indiana State  
Department of Health  
Division of Nutrition  
and Physical Activity

# Indy Urban Acres 8 Acre Organic Farm

A Partnership between  
Indy Parks, IU Health,  
Indianapolis Parks  
Foundation and  
Gleaners Food Bank.

Produced 35,000  
pounds of produce in  
2012.





# Programs that Integrate Active Living into Existing Activities

- Bicycle-friendly Communities
- Walk-friendly Communities
- Safety Education



# Bicycle Friendly Communities

Opportunities for  
Promotion and  
Recognition

SHOP | DINE  
**BIKE** **LB**



# Bicycle Safety and Education Programs

- ISDH has partnered with Bicycle Indiana to fund bicycle safety and education activities throughout the state for the last eight years.

**Bike Smart and Stay Safe**

**Always Wear Your Helmet** - Set a good example to others by wearing a helmet every time you bicycle.

**Ride on the Right** - Always ride with traffic.

**Obey All Traffic Laws** - Stop at stop signs and stoplights and obey one-way street signs.

**Signal and Look Before Turning**

**Ride in a Predictable Manner** - Ride in a straight line. Don't weave between parked cars.

**Use Headlights and Taillights at Night** - Wear light-colored clothing.

**Yield to Pedestrians** - Pedestrians have the right of way.

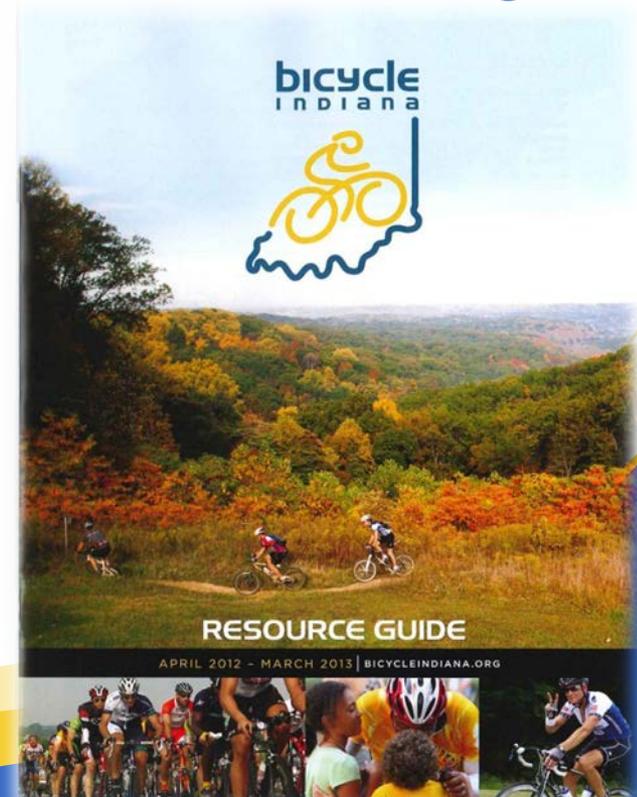
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**IC 9-21-9-37 Pedestrians and children; due care; caution**  
Sec. 37. Notwithstanding other provisions of this article or a local ordinance, a person who drives a vehicle shall do the following:  
(1) Exercise due care to avoid colliding with a pedestrian or a person propelling a human-powered vehicle, going on a suitable equestrian when necessary.  
(2) Exercise proper caution upon observing a child or an obviously confused, incapacitated, or intoxicated person.

**bicycle Indiana**  
222 E. Second Street, 1100  
Indianapolis, Indiana 46204  
(317) 466-6701  
(800) 888-1110  
[www.bicycleindiana.org](http://www.bicycleindiana.org)  
[info@bicycleindiana.org](mailto:info@bicycleindiana.org)

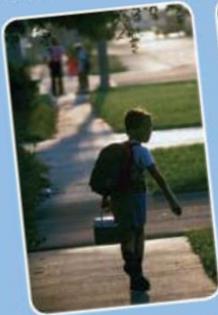
The Indiana Bicycle Laws Card is published and distributed by Bicycle Indiana. This publication is funded by Bicycle Indiana and Township Law as part of Bicycle Indiana's education and outreach programs.

**SEVENTH LAW GROUP**  
ATTORNEYS AT LAW  
[www.seventhlaw.com](http://www.seventhlaw.com) 800.333.8888



# Pedestrian Safety Programs

## How to Develop a Pedestrian Safety Action Plan



## Toolbox of Countermeasures and Their Potential Effectiveness for Pedestrian Crashes

### Introduction

This issue brief documents estimates of the crash reduction that might be expected if a specific countermeasure or group of countermeasures is implemented with respect to pedestrian crashes. The crash reduction estimates are presented as Crash Modification Factors (CMFs). Some of the crash reduction estimates are also presented in terms of left-turn crashes, certain crash severities, or total crashes.

Traffic engineers and other transportation professionals can use the information contained in this issue brief when asking the following types of question: What change in the number of pedestrian crashes (and/or other crash types) can be expected with the implementation of the various countermeasures?

### Crash Modification Factors (CMFs)

A CMF is the proportion of crashes that are expected to remain after the countermeasure is implemented. For example, an expected 20 percent reduction in crashes would correspond to a CMF of  $(1 - 0.20) = 0.80$ . In some cases, the CMF is negative, i.e. the implementation of a countermeasure is expected to lead to a percentage increase in crashes. One CMF estimate is provided for each countermeasure. Where multiple CMF estimates were available from the literature, selection criteria were used to choose which CMFs to include in the issue brief:

- First, CMFs from studies that took into account regression to the mean and changes in traffic volume were preferred over studies that did not.
- Second, CMFs from studies that provided additional information about the conditions under which the countermeasures was applied (e.g. road type, area type) were preferred over studies that did not.

Where these criteria could not be met, a CMF may still be provided. In these cases, it is recognized that the estimate of the CMF may not be as reliable, but is the best available at this time. The CMFs in this issue brief may be periodically updated as new information becomes available. The Desktop Reference for Countermeasures includes most of the CMFs included in this issue brief, and adds many other CMFs available in the literature. A few CMFs found in the literature were not included in the Desktop Reference. Those excluded CMFs were considered to have smaller sample sizes or too large a standard error to be meaningful, or the original research did not provide sufficient detail for the CMF to be useful.

A CMF should be regarded as a generic estimate of the effectiveness of a countermeasure. The estimate is a useful guide, but it remains necessary to apply engineering judgment and to consider site-specific environmental, traffic volume, traffic mix, geometric, and operational conditions which will affect the safety impact of a countermeasure. Actual effectiveness will vary from site to site. The user must ensure that a countermeasure applies to the particular conditions being considered. The reader is also encouraged to obtain and review the original source documents for more detailed information, and to search databases such as the National Transportation Library (ntlsearch.bts.gov) for information that becomes available after the publication of this issue brief.



## Reduce Transportation Costs

The annual cost of owning a car is \$9,000—this is a lot of money lost that could otherwise be spent locally!

You can save \$10 each day on a round-trip bike commute of 10 miles.





# Projects- that Implement Community Change

- Road Diets
- Traffic Calming
- Sidewalk and Trail Improvements
- Parklets
- Wayfinding
- Complete Streets Implementation



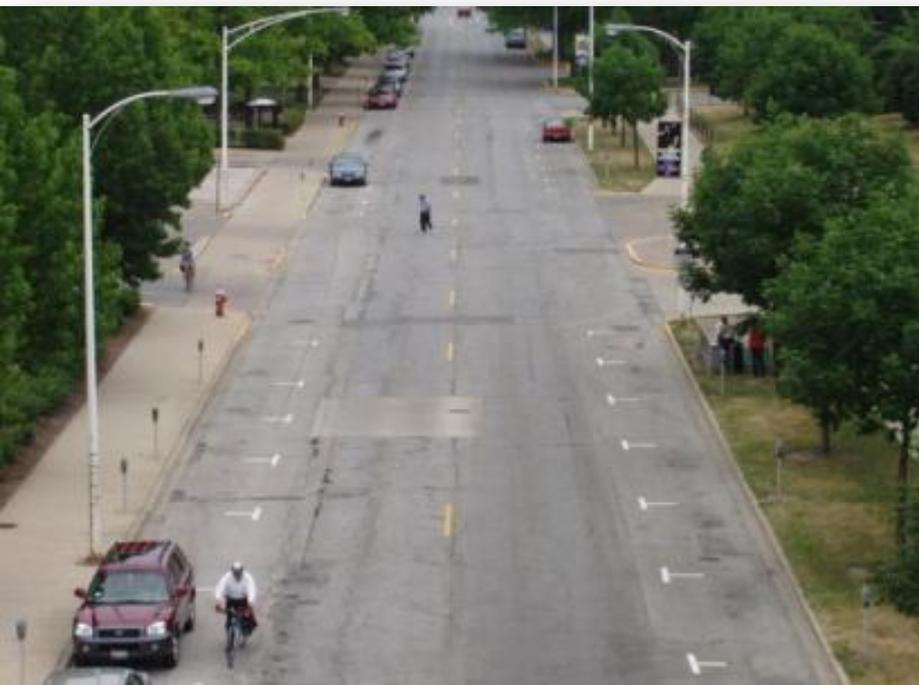
# Road Diets



Road diets reduce crashes 29% per mile of roadway (USDOT FHWA)



# Reducing Lane Widths



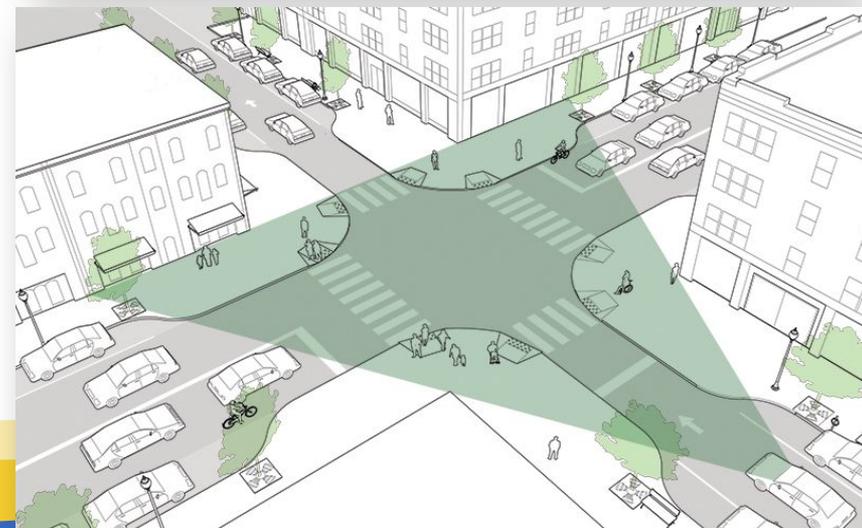
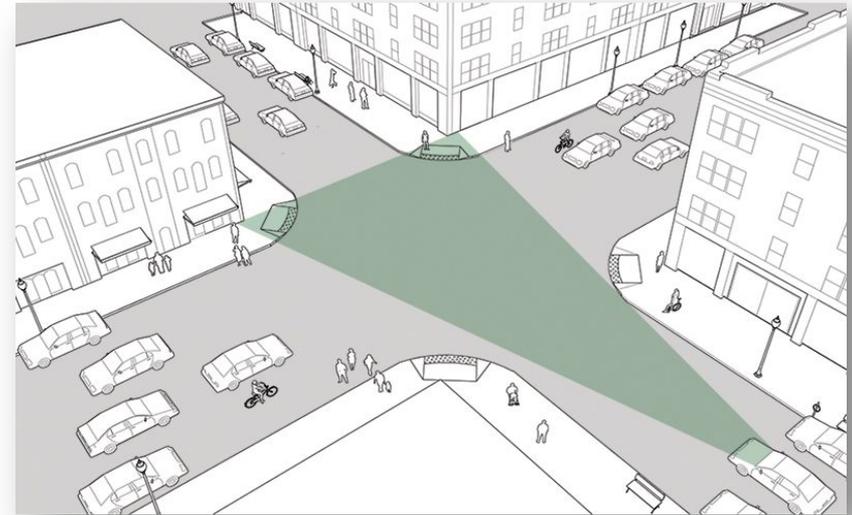
Reduce lane widths to accommodate bicyclists



# Traffic Calming at Intersections

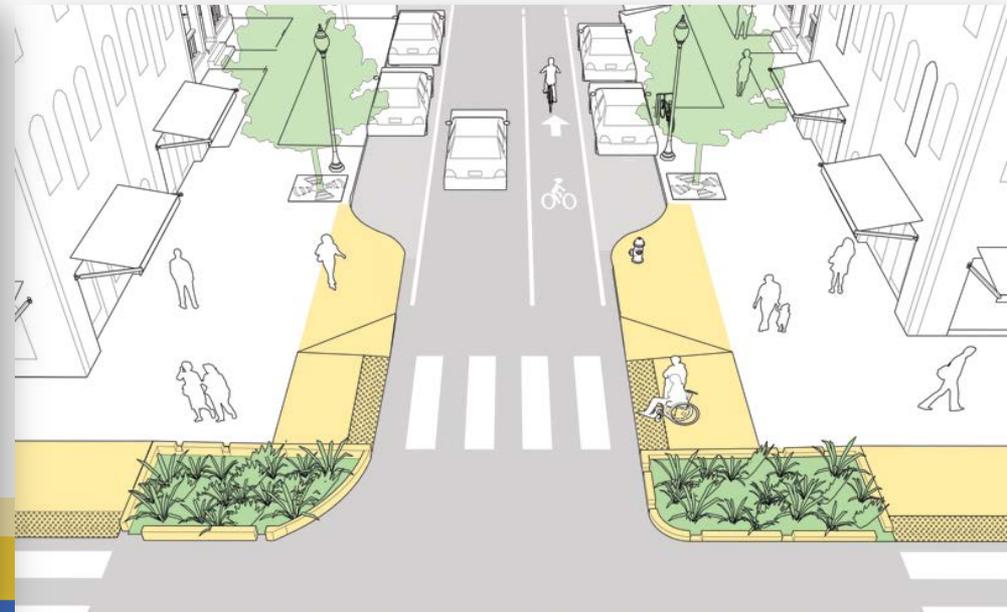
Higher speeds at intersections reduce drivers peripheral vision.

Slow speeds and daylight intersections by removing parking within 20-25 feet of the intersection and extending the curbs.



# Curb Extensions can Create Gateways

Curb extensions can be used to define gateways into commercial areas and contain landscaping and amenities.



# Curb Extensions, Bumpouts or Neckdowns

Reduces crossing distance.

Improves sight distance and sight lines.

Prevents parked cars from blocking crosswalks.

Creates space for curb ramps, landings and landscaping.





# Curb Extensions, Bumpouts or Neckdowns

Bioswales and  
raingardens  
mitigate runoff  
entering  
storm sewers.





# Pinchpoints

Pinchpoints create a good area for mid-block crossings, bike parking, tree placement and pedestrian amenities.





# Parklets



Curbsides and parklets have the potential to host a variety of uses beyond parking



# Traffic Calming





# Streets as Public Places



Remove curbing, utilize permeable paving and traffic calming to slow vehicles



# Complete Streets can Transform Neighborhoods

Broad Street, Memphis, TN



A bicycling & arts district took  
Broad Street from disinvested...



# Complete Streets can Transform Neighborhoods

Broad Street, Memphis, TN



...to thriving.



# Complete Streets can Transform Neighborhoods

\$12 Million in private  
investments

16 new businesses

29 new construction and  
renovation projects

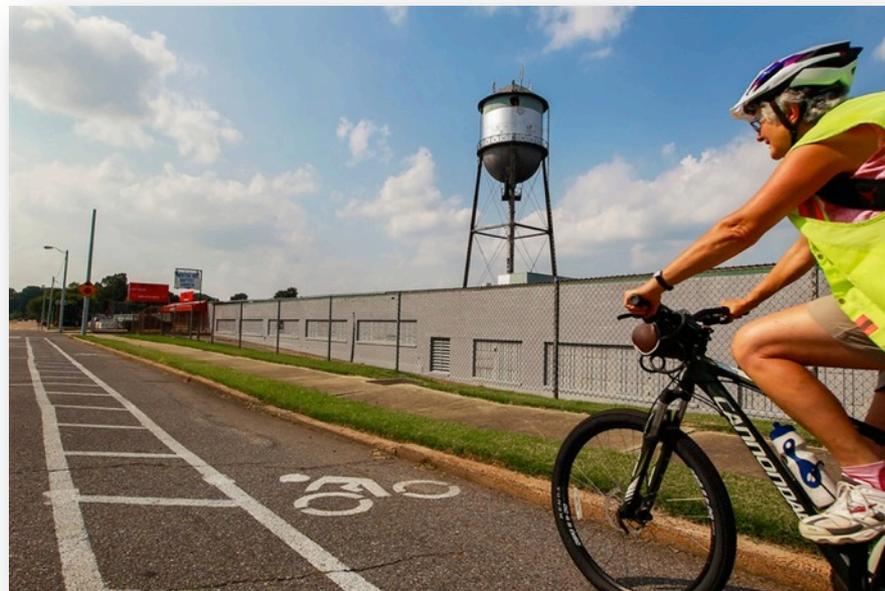


Photo: Lance Murphy



## Complete streets can Transform Neighborhoods

“Two years ago, everyone was concerned bikes would take away from business, and we quickly saw it was helping business twofold.

You had people biking, but it also helped narrow the street and slow people down. All of a sudden, **people were noticing your business that had never noticed it before** because they were speeding by at 45 or greater.”

**Business revenues have grown 30% per year.”**

— Pat Brown  
T Clifton Gallery Owner  
VP of the Broad Business Associa



# Tools for Implementing Projects



## 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



  
U.S. Department  
of Transportation  
Federal Highway  
Administration

## A Guide for Maintaining Pedestrian Facilities for Enhanced Safety

October 2013



# Performance Measures

## -to make sure it all works

- Active Living Measures of Community Health
- Pedestrian and Bicycle Crash Data
- Number of Accessible Design Features
- Number and Percentage of Vacant and Abandoned Buildings
- Park and Recreation Data

# Performance Measures

Many communities have chosen to realign the performance measures with broader aims, including public health, economic growth, sustainability and mode shift.



Vehicle Level of Service: A



Vehicle Level of Service: F



# Active Living Measures of Community Health:

- Number of students walking and/or bicycling to school
- Number of bicycle commuters
- Number of parks per capita and distance to closest parks
- Number of miles of sidewalks, trails & greenways
- Transit system and ridership
- Vehicle miles traveled to work

As these measures increase there are positive impacts on air quality, obesity, asthma, chronic disease, tree canopy, etc.

## Your Challenge:

### Create a More Active Community with

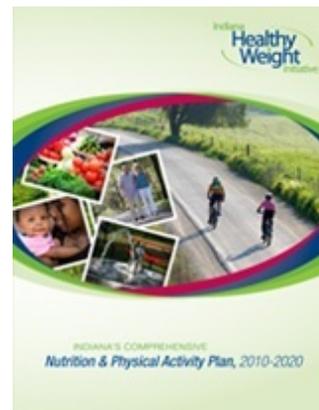
- **Sense of Urgency**-Community change to accommodate active living will likely not happen without deliberate, urgent effort.
- **Political Will**-Politicians need to consider more than the naysayers and do what is right.
- **Leaders**-Leaders need to step up and help, nothing will get done without good leadership.
- **Doers**-These are people who get things done in the community, make things happen and inspire others to follow them.
- **Public Participation**-Helps to create support from the community and creates an engaged citizenry.





Indiana State  
Department of Health  
Division of Nutrition  
and Physical Activity

# Indiana Resources



Indiana State  
Department of Health  
Division of Nutrition  
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Contact :

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Indiana State  
Department of Health

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