Rutgers
Voorhees Transportation Center

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Designing Streets for People LLC


CAUTION
DEAF
AND
BLIND
CHILDREN


BUS STOP


END
BIKE ROUTE

We know how to build right

Yet many roads are built like this

Recently completed IL 64 expansion with destinations on both sides of the road. Can you spot the pedestrian?

What is a Complete Street?

A Complete Street is safe, comfortable & convenient for travel via automobile, foot, bicycle, & transit

What is a Complete Streets policy?

Ensures that the entire right-of-way is designed for all users

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Ensures that the entire right-of-way is designed for all users

Complete streets policies provide for **all users**

Why have a complete streets policy?

- To make the needs of all users the **default** for **everyday** transportation planning practices

Why have a complete streets policy?

- To gradually create a complete network of roads that serve all users

Why have a complete streets policy?

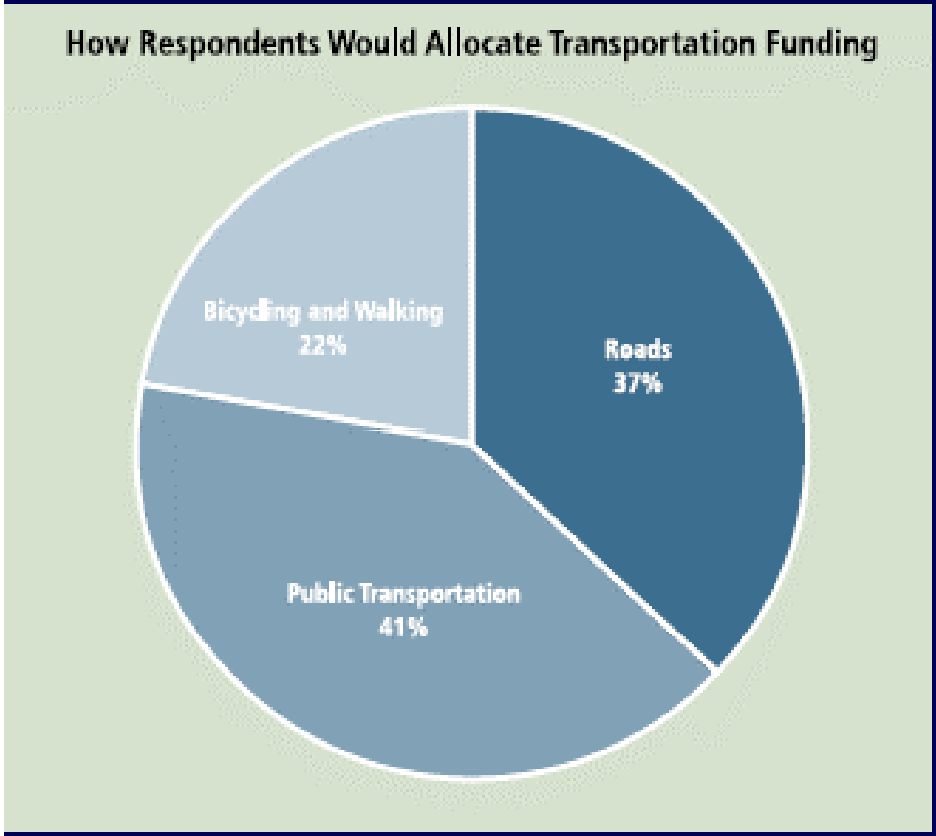
To shift transportation investments so they create better streets opportunistically

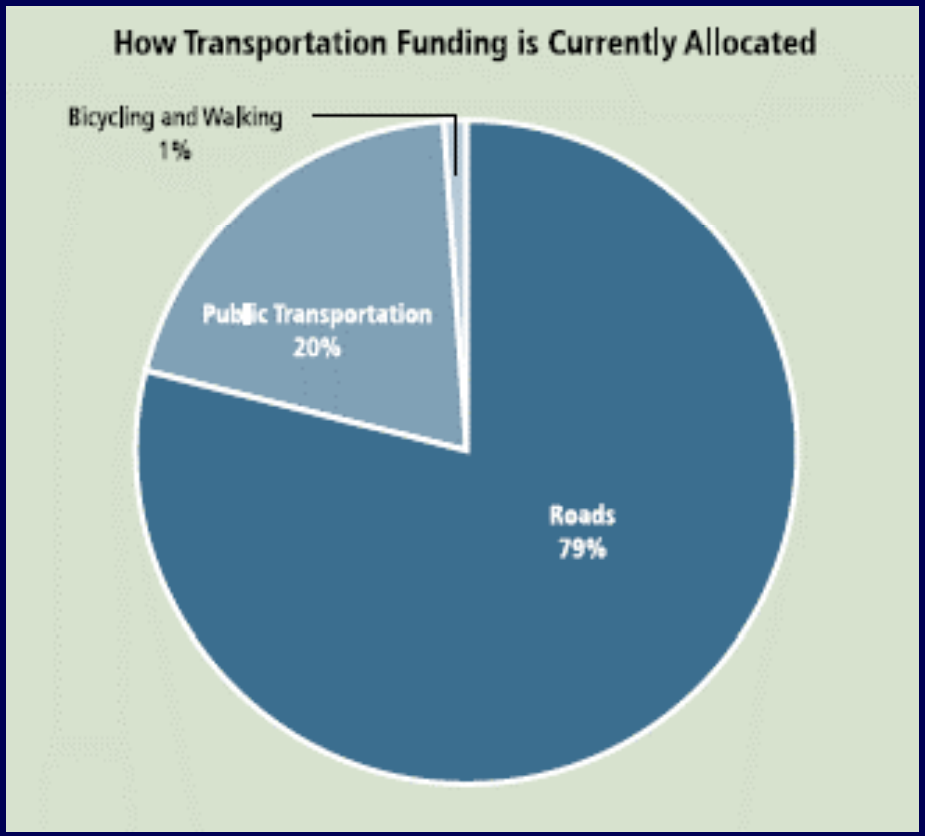
Why have a complete streets policy?

- **To save money:**

  Retrofits cost more than getting it right initially

Americans want complete streets





Roads	**37%**
Public Trans	**41%**
Bike/walk	**22%**

Roads	**79%**
Public Trans	**20%**
Bike/walk	**1%**

From Active Transportation for America: the case for Increased federal investment in bicycling and walking. RTC 2008

Everyone wins with Complete Streets

Benefits: older Americans

- 21% over 65 do not drive
- Over 50% of non-drivers stay at home on a given day because they lack travel options
- 54% of older Americans living in inhospitable neighborhoods say they'd walk and ride more often if things improved

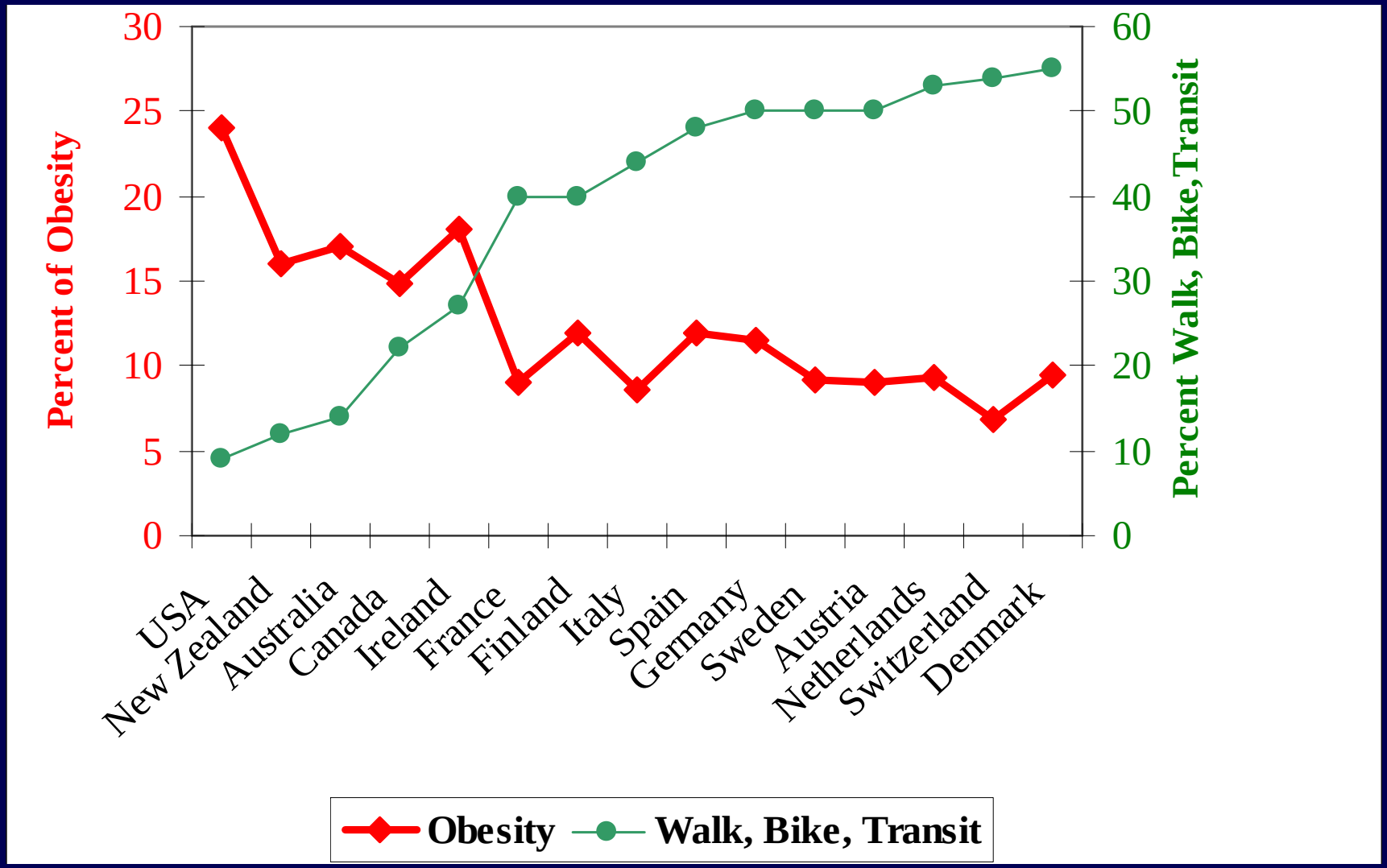
Benefits: health

- Now Americans move without moving
- 60% are at risk for diseases associated with inactivity:
  - Obesity
  - Diabetes
  - High blood pressure
  - Other chronic diseases

Benefits: physical activity

- Residents more likely to **walk** in a neighborhood w/ **sidewalks**
- Cities with more **bike lanes** have higher levels of **bicycling**
- 1/3 of regular **transit users** meet **minimum daily physical activity** requirement during their commute

Benefits: physical activity



Source: Pucher, "Walking and Cycling: Path to Improved Public Health," Fit City Conference, NYC, June 2009

Benefits: safety

- **Intersections** designed for pedestrians can reduce pedestrian risk by 28%
- **Sidewalks** reduce pedestrian crash risk by 88%

Benefits: people with disabilities

- Improved mobility for disabled people and reduced need for expensive paratransit service

Benefits: better use of transit funds

A year of paratransit service for a daily commuter: $38,500

Making a transit stop accessible: $7,000-$58,000

Source: Maryland Transit Administration

Benefits: the environment

- Fewer emissions
- Less noise pollution
- Less wear & tear on our roads
- Less need to widen roads

Benefits: Less need to widen roads

Trips in metro areas:

- **50%** - less than 3 miles
- **28%** - less than 1 mile:
  - **65%** of trips under 1 mile are now taken by car

Benefits: the economy & your wallet

- **Multi-modal streets:**
  - **Increase home values**
  - **Revitalize retail**
  - **People can leave their car at home**

CS changes intersection design

CS changes bicycling


HAVERTYS

CS changes transit


MadisonStore.com
Madison Metro

CS changes accessibility

Complete Streets is NOT:

- A design **prescription**
- A mandate for **immediate** retrofit
- A **silver bullet**; other initiatives must be addressed:
  - *Land use (proximity, mixed-use)*
  - *Environmental concerns*
  - *VMT reduction (ie, pricing, gas taxes)*

✓ (but complete streets will help!)

What does a complete street look like?

- **One size doesn't fit all:**
  - **Complete Streets doesn't mean every street has sidewalks, bike lanes and transit**

What does a complete street look like?

There is no magic formula

The many types of Complete Streets

One crossing completes a Safe Route to School

The many types of Complete Streets

Shoulder bikeways on rural roads

The many types of Complete Streets

Busy multi-modal thoroughfares

The many types of Complete Streets

Transit routes

The many types of Complete Streets

Suburban thoroughfares

The many types of Complete Streets

Residential skinny streets

The many types of Complete Streets

Low traffic streets

The many types of Complete Streets

Historic Main Street

Complete Streets & Context Sensitive Solutions

- Complete Streets doesn't mean **every street** has sidewalks, bike lanes, transit
- Context sensitivity:
  1. External context: land use
  2. Internal context: who is **likely to use** the street - bicyclists, pedestrians, transit users, drivers?

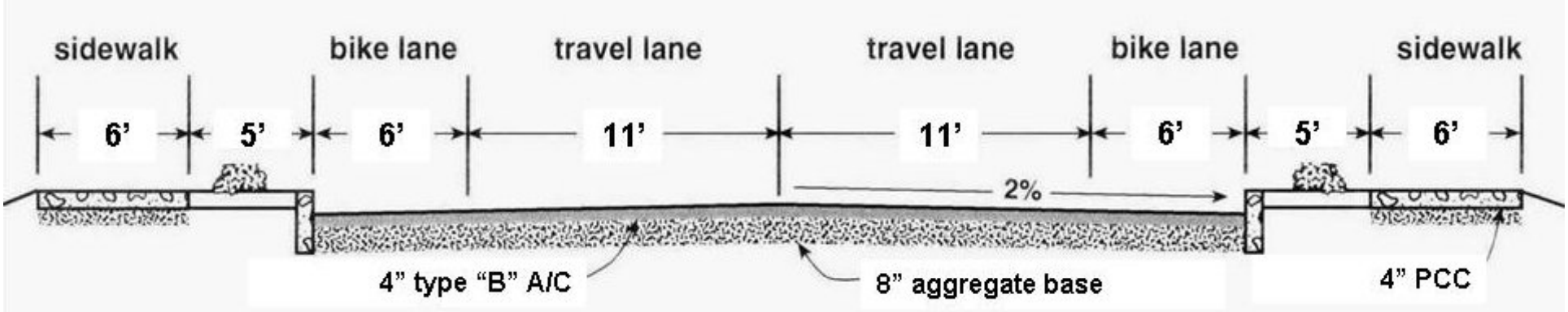
Illustration: AARP

What do the design guides tells us?

The AASHTO "Green Book" states:

"*Sidewalks are integral parts of city streets*"

Not added to – a part of!



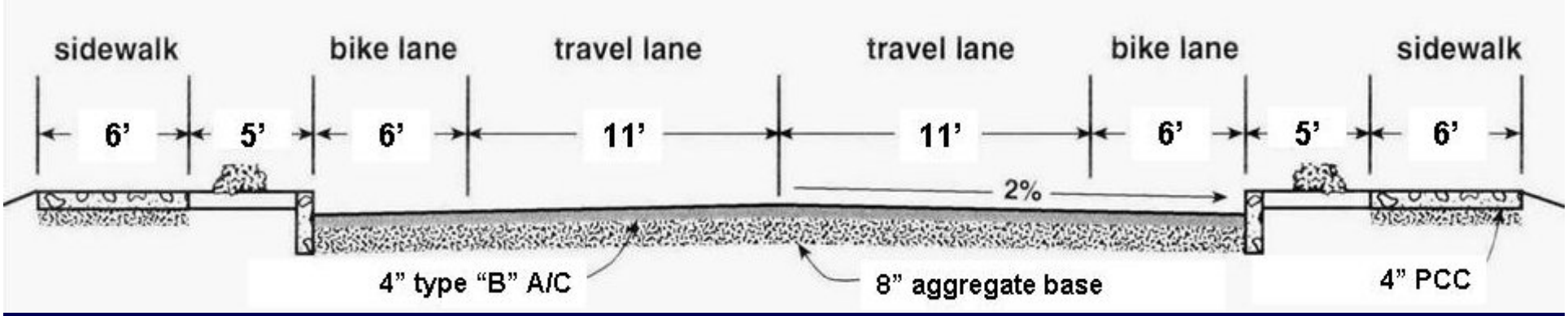
"*Shoulders are desirable on <…> urban arterials*"

Bike lanes are shoulders reserved for bicycle use!

AASHTO: American Association of State Highway and Transportation Officials
Green Book: A Policy on Geometric Design of Highways and Streets

Permission

Many transportation engineers and planners know how to build good streets; they're seeking permission to do so

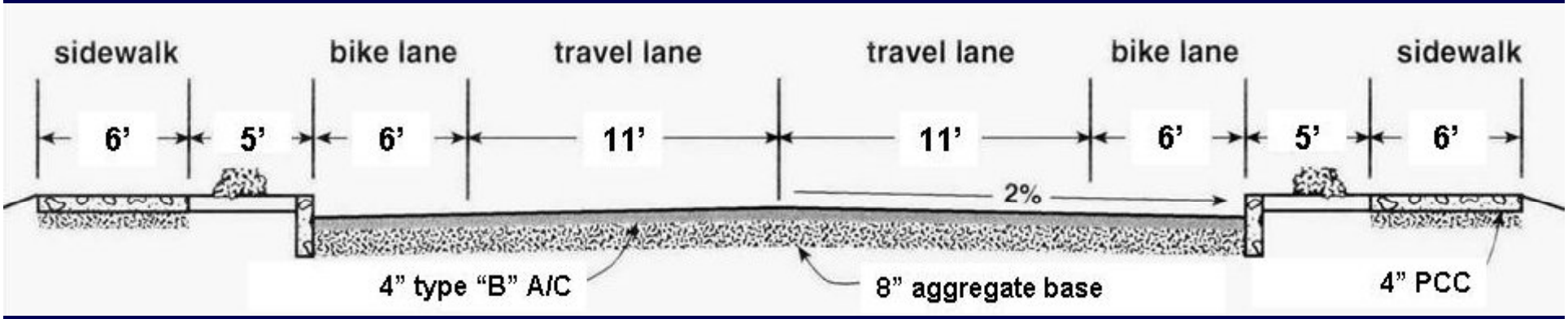


What about funding?

- Complete streets is about using existing resources differently:
  - STP, Equity Bonus, CMAQ, TE, State, Bond measures, gas tax, sales taxes, and now the stimulus $... the usual suspects
- While retrofit funding is important, it is not necessary to get started
- Additional funding is not needed

Does it cost more?

1. Avoid costly retrofits
2. Minimal additional funding
3. Save money with better design
4. Better benefit/cost: more people use street



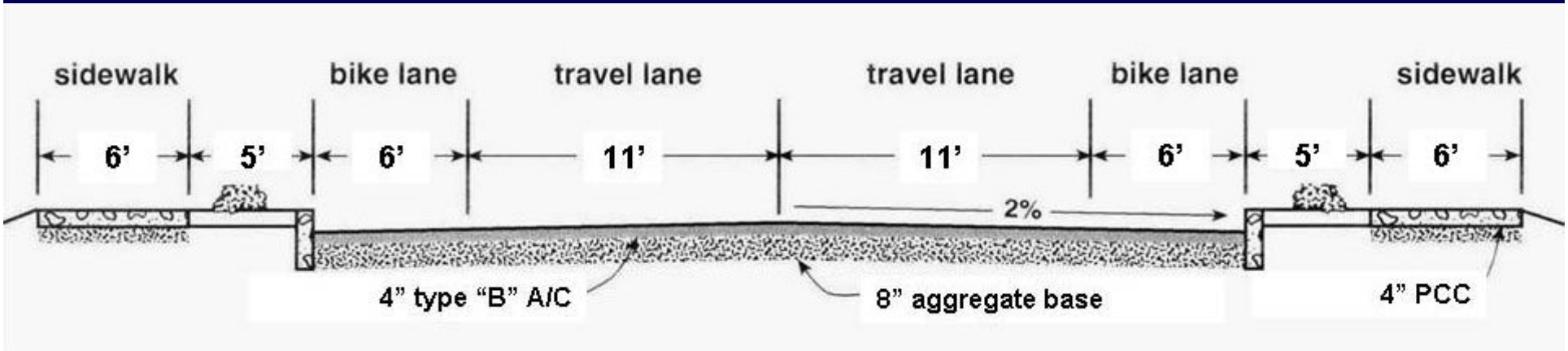
Reverses Burden of Proof

- Not justification FOR ped, bike transit
- Assume Complete Streets and explain why ped, bike transit not included

Common decision-making processes

Based just on:

- **The original "project scope"**
- **"Checklists"**
- ***Can we instead balance needs?***
  - ***Invest wisely?***
  - ***Make the project scope more complete?***
  - ***Complete Streets is the answer***



Decisions Based on Project Scope: Checklists & triggers

Old way: Project scoping checklist **requires justifying** sidewalks, bikeways, transit

- Check **No,** end of story

New way: Reverse burden of proof

- Assume **Yes**, or justify why **not**

Reversed burden of proof assumes sidewalks, bikeways, transit…

… with exceptions:

- No expected users = **no need**, *even in the future*
- Costs disproportionately high **relative to need**, or
- Other factors indicate **no need**, *even in the future*

No sidewalks needed

Slow speed, no need for bike lanes

Performance Measures

- Performance measures – are we measuring what matters?
- What should we measure to ensure Complete Streets?

What each mode needs

All travelers seek a similar experience:

- Convenience
- Safety
- Comfort
- Access
- Reasonable travel time
- Low cost
- Reliability
- Speed?

Different goals => different outcomes

Both designs based on same design manuals

What should the street do?

We need to ask for more than

- More pavement
- More capacity

What else could we measure on a street project?

Sample Measures

- Reduced speed
- Reduced crashes
- Increase on-street parking use
- Increase walking
- Increase bicycling
- Decrease noise
- Increase neighborhood and business satisfaction

Case study: Edgewater Drive (Orlando FL) Resurfacing Project

- Repaving project scheduled in FDOT 5-year work plan
- FDOT open to 3-lane option if City takes over jurisdiction
- Changes must be accepted by neighborhood and business associations; city must conduct before/after studies

Before

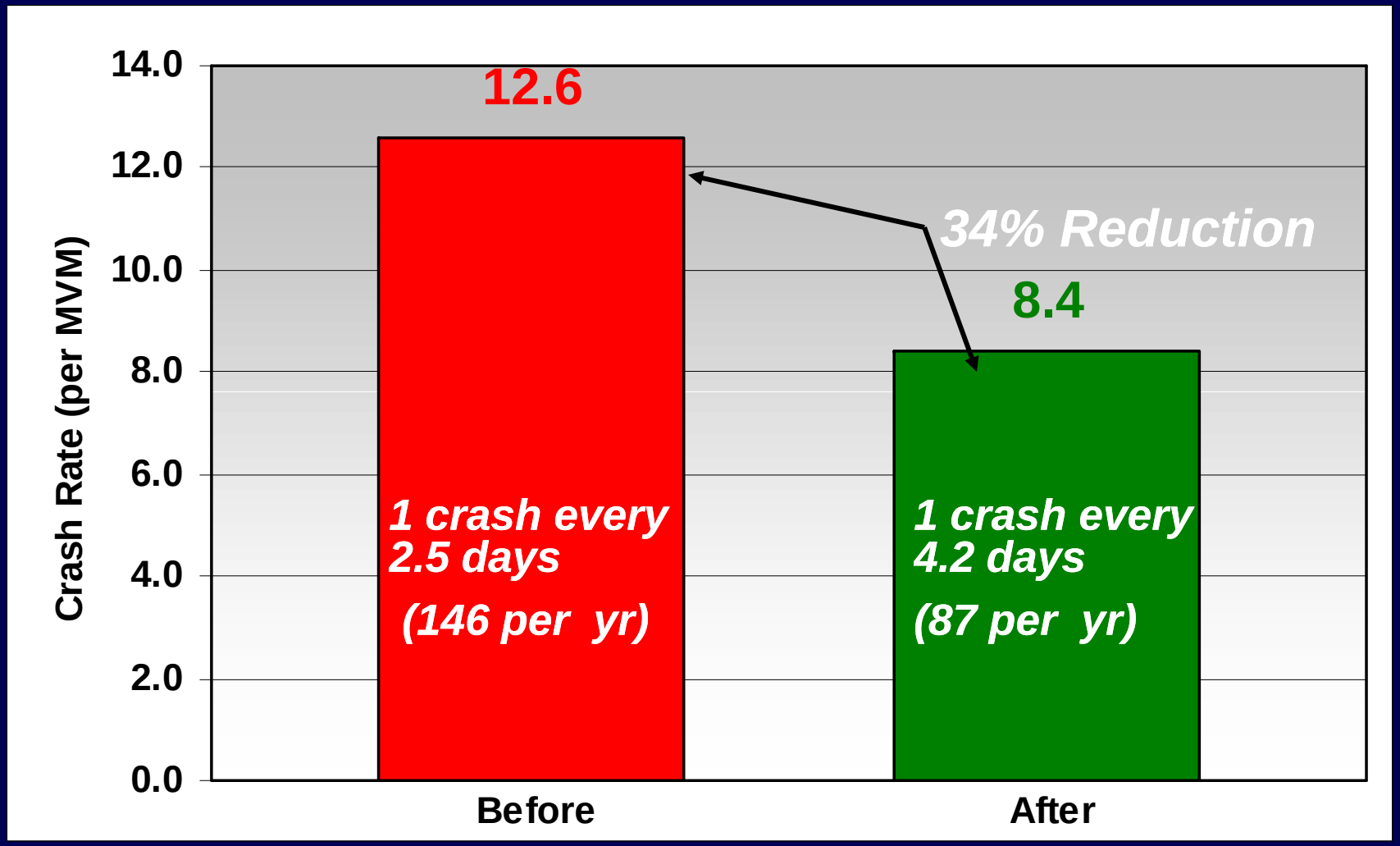
Concept

Reality: Before

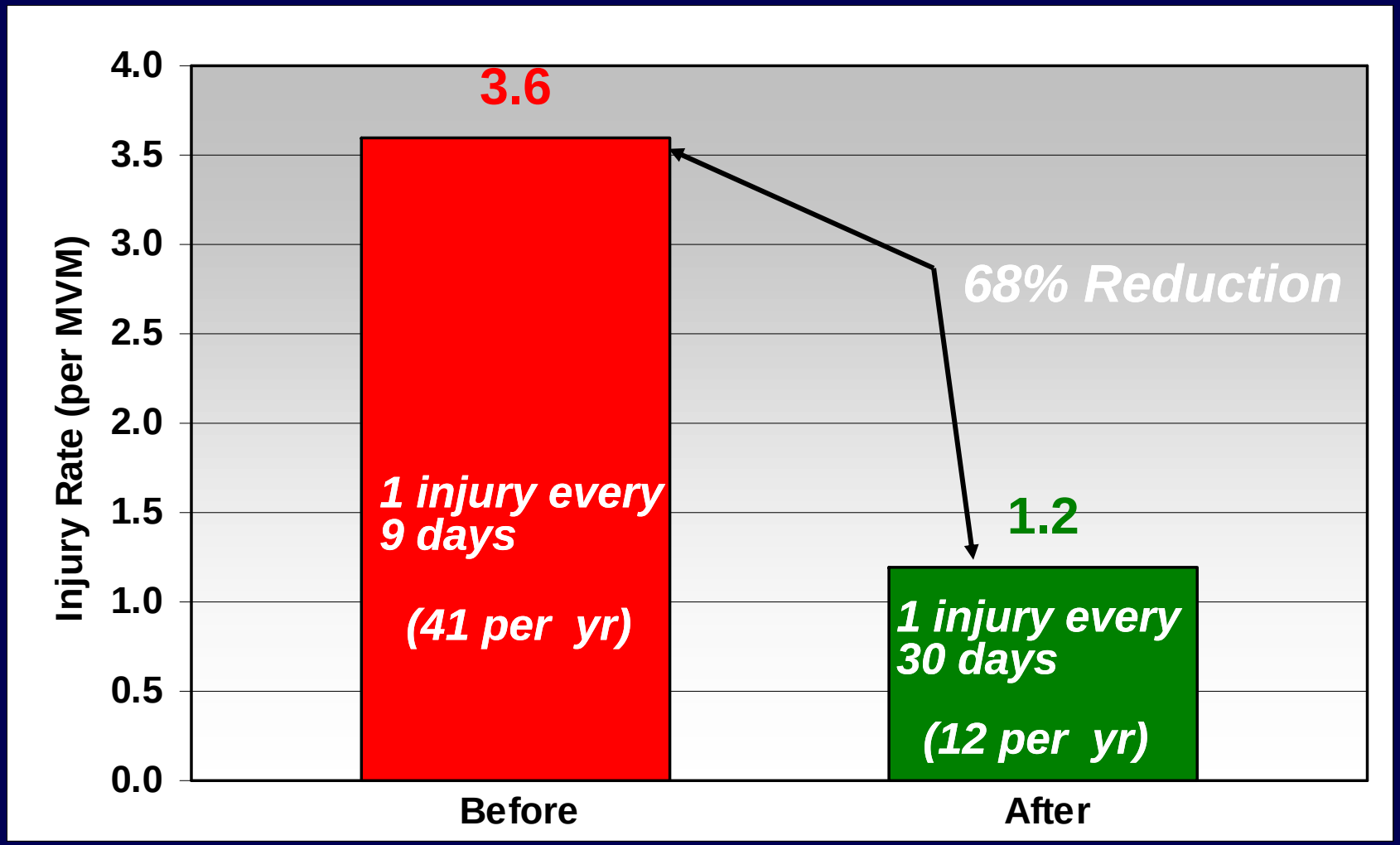
Reality: After

Springfield Avenue/ Rt 124 Maplewood, NJ

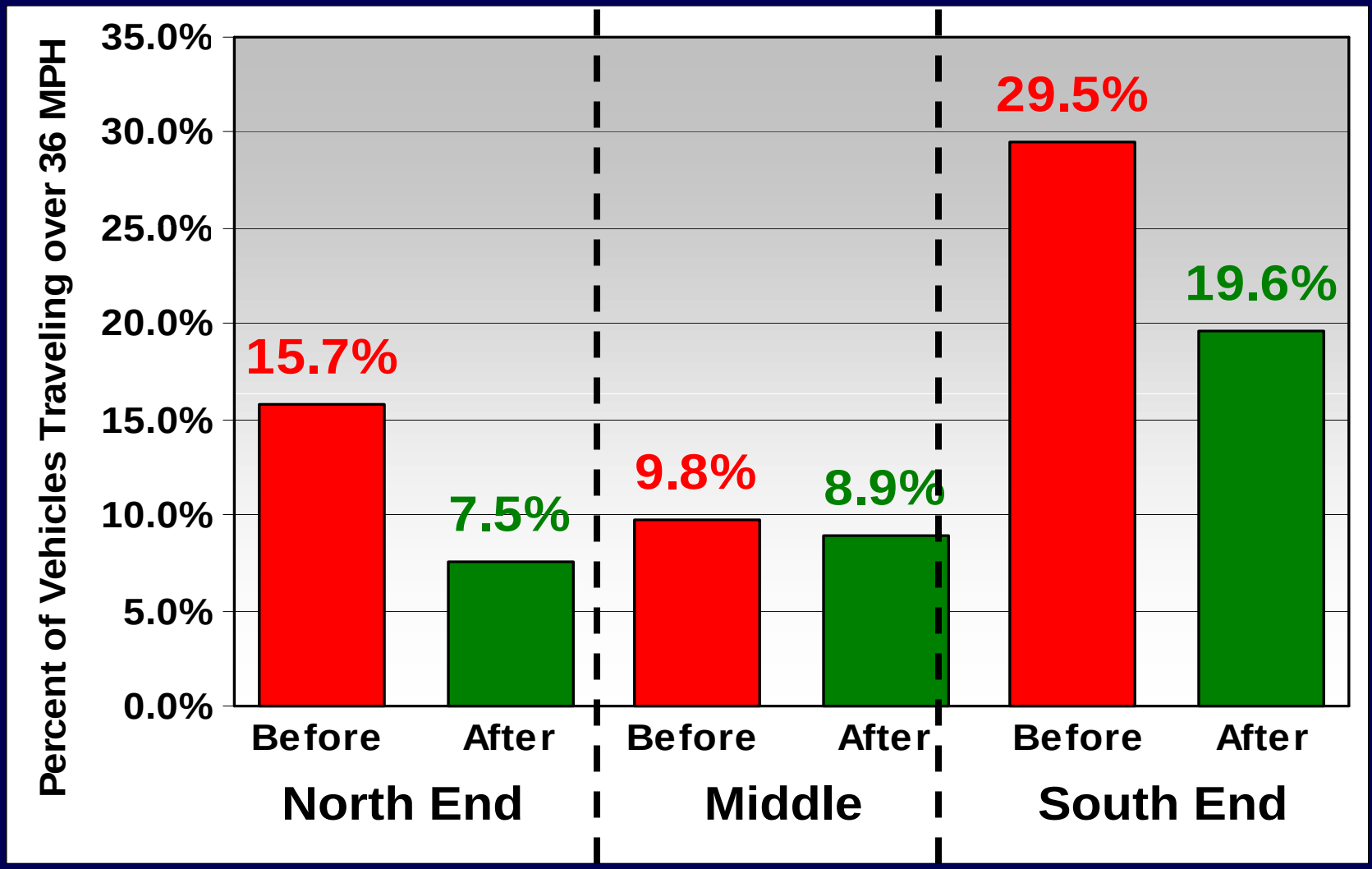
Before/after studies: 1. Crash rate



Before/after studies: 2. Injury rate

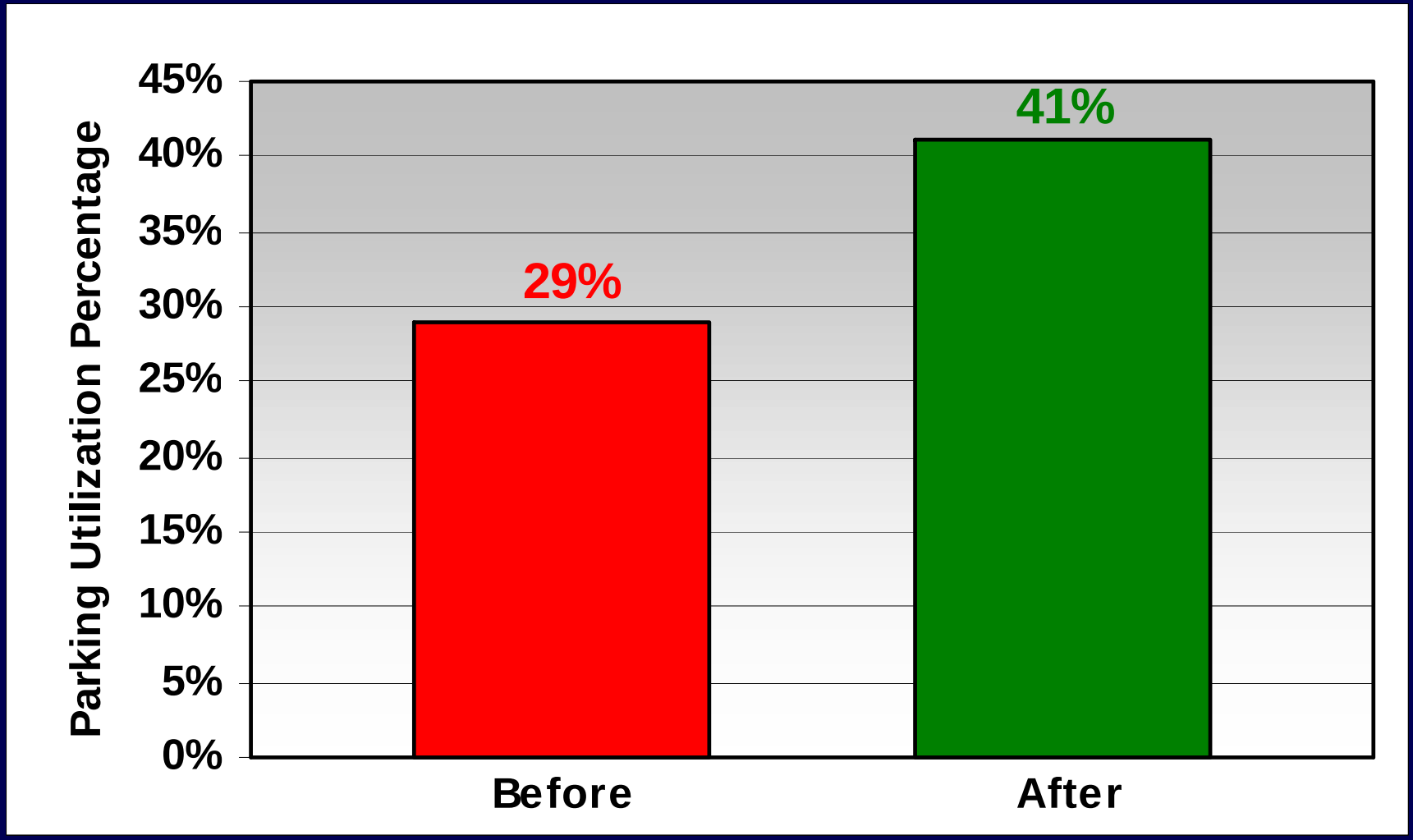


Before/after studies: 3. Speeding analysis

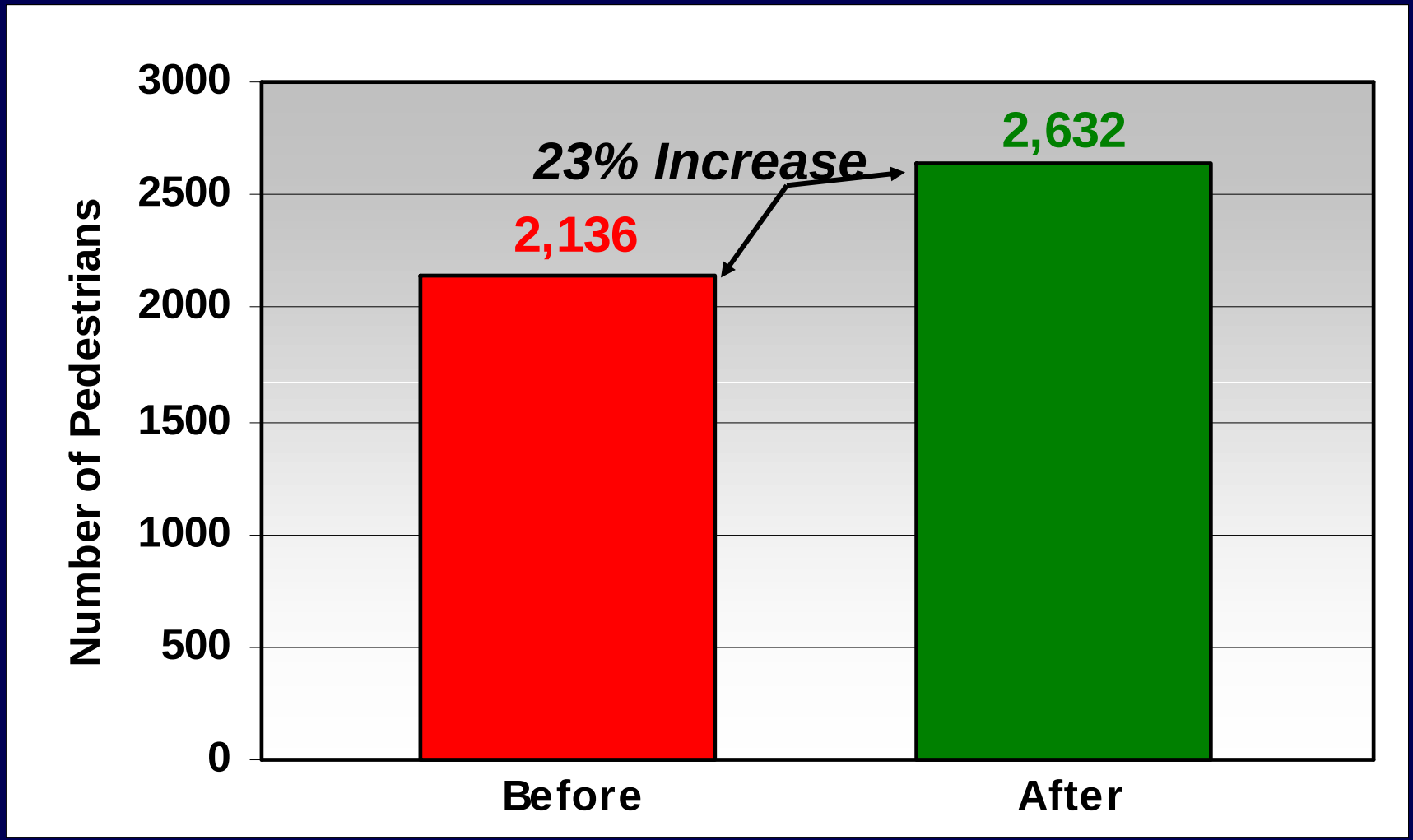


Before/after studies: 4. Traffic volumes

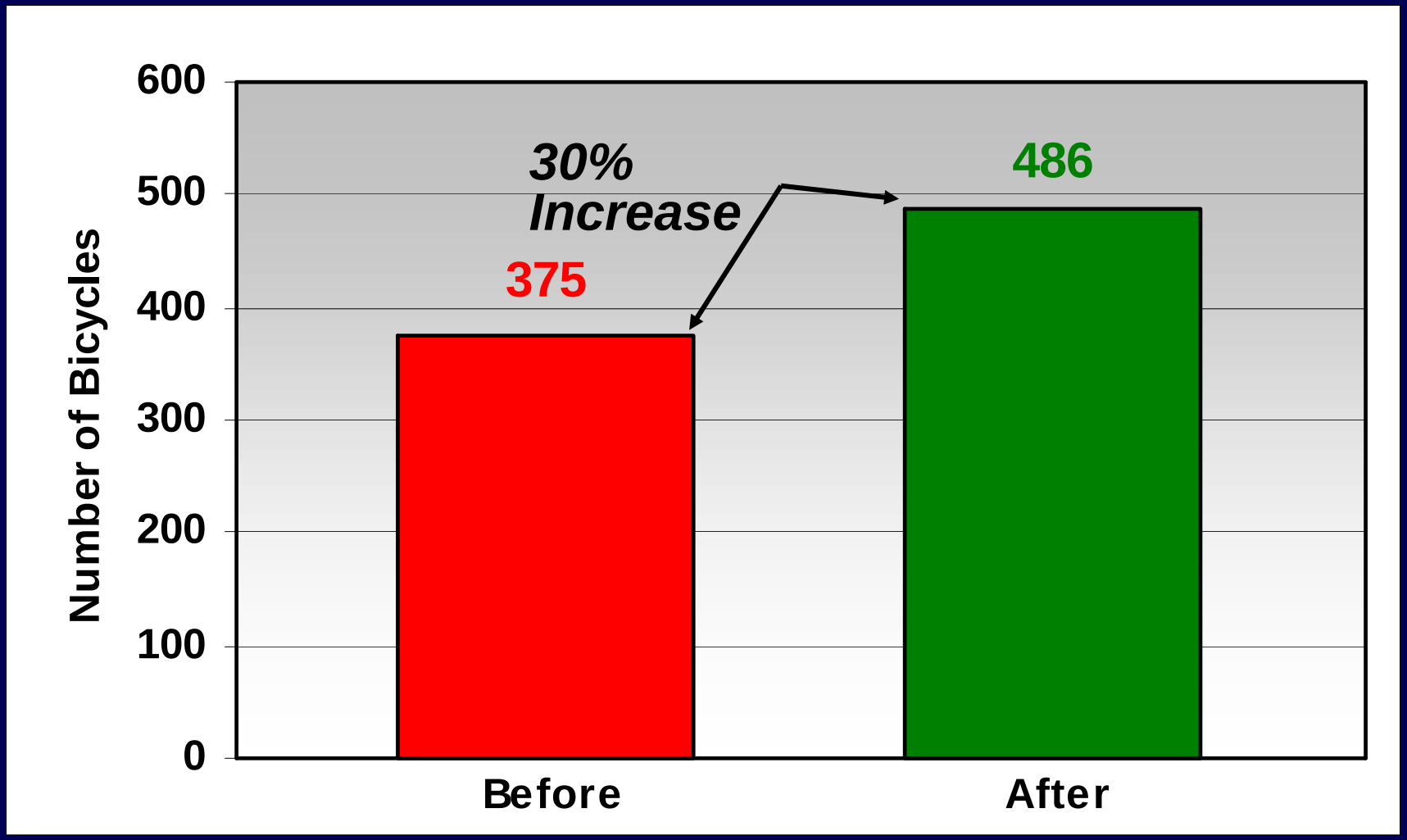
Before/after studies: 5. On-street parking utilization



Before/after studies: 6. Pedestrian volumes



Before/after studies: 7. Bicyclist volumes



Does the street benefit the community?

Which shopping mall do you want in your community?

Does the street design reduce crashes?

Does the street treat all travelers fairly?

Complete Streets Goal

Wise investments that will enhance the entire community

Sample performance measures from other workshops

1. Reduced crashes, before and after– vehicle, pedestrians, bicyclists
2. Increase in ped, bike and transit users
3. Adopt and use Level of Service for non-car users
4. Increase in business occupancy rates / increased real estate values
5. Recruit/retain desirable employees
6. Improved air quality
7. Improved health; lower obesity rates
8. Connectivity – do sidewalks/bike lanes/transit connect?
9. Are other communities looking to us as a model
10. Acceptance by politicians, funders, builders, all stakeholders
11. Fewer DUI citations – walk from tavern

Transformative Moment

- Faltering national **economy**.
- Increasing **gas prices** (Plan B).
- **Obesity** epidemic (CDC now recommends CS to prevent obesity).
- Growing awareness: **quality of life** an engine.
- Climate change & **sustainability**.

Complete Streets

- Are sensitive to the community
- Serve adjacent land uses
- Serve all who potentially will use the street