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.
What is a Complete Streets policy?

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

How Respondents Would Allocate Transportation Funding

- Roads: 37%
- Public Transportation: 41%
- Bicycling and Walking: 22%

How Transportation Funding is Currently Allocated

- Roads: 79%
- Public Transportation: 20%
- Bicycling and Walking: 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 with **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
CS changes transit
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?
What do the design guides tell 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.

- Sidewalk: 6’
- Bike lane: 5’
- Travel lane: 6’ 11’ 6’
- 2% grade
- 4” type “B” A/C
- 8” aggregate base
- 4” PCC
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
Reality: Before
Reality: After
Springfield Avenue/ Rt 124 Maplewood, NJ
Before/after studies: 1. Crash rate

- **Before:** 12.6 crashes
- **After:** 8.4 crashes

**34% Reduction**

- **Before:** 1 crash every 2.5 days (146 per yr)
- **After:** 1 crash every 4.2 days (87 per yr)
Before/after studies: 2. Injury rate

- Before: 1 injury every 9 days (41 per year)
- After: 1 injury every 30 days (12 per year)

68% Reduction
Before/after studies: 3. Speeding analysis

North End
- Before: 15.7%
- After: 7.5%

Middle
- Before: 9.8%
- After: 8.9%

South End
- Before: 29.5%
- After: 19.6%
Before/after studies: 4. Traffic volumes

- Before: 20,500 vehicles per day
- After: 18,100 vehicles per day
- Now: 21,000+ vehicles per day
Before/after studies: 5. On-street parking utilization

Before: 29%

After: 41%
Before/after studies: 6. Pedestrian volumes

23% Increase

2,136

2,632

Number of Pedestrians

Before

After
Before/after studies: 7. Bicyclist volumes

30% Increase

Before: 375
After: 486
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

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** engine.
- Climate change & **sustainability**.
Complete Streets

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