

Complete Streets:

From Concept to Adoption

Lisa Koch, AICP
Senior Planner
Parsons Brinckerhoff

Joe Rexwinkle, AICP
Planner II
City of Leawood, Kansas

Presentation Outline

1. What is a Complete Street?
2. Complete Streets Statistics
3. Examples of Incomplete Streets
4. Standards for User Groups
5. Examples of Complete Streets
6. Creating a Complete Streets Policy
7. Wrap Up – Costs and Benefits

1. What is a Complete Street?

A Complete Street is safe, comfortable, and convenient for travel via auto, foot, bicycle, and transit.

- Complete Street policies ensure that all right of way is routinely designed and operated to enable safe access for all users.
- Complete Streets create a complete network of roads that serve all users.

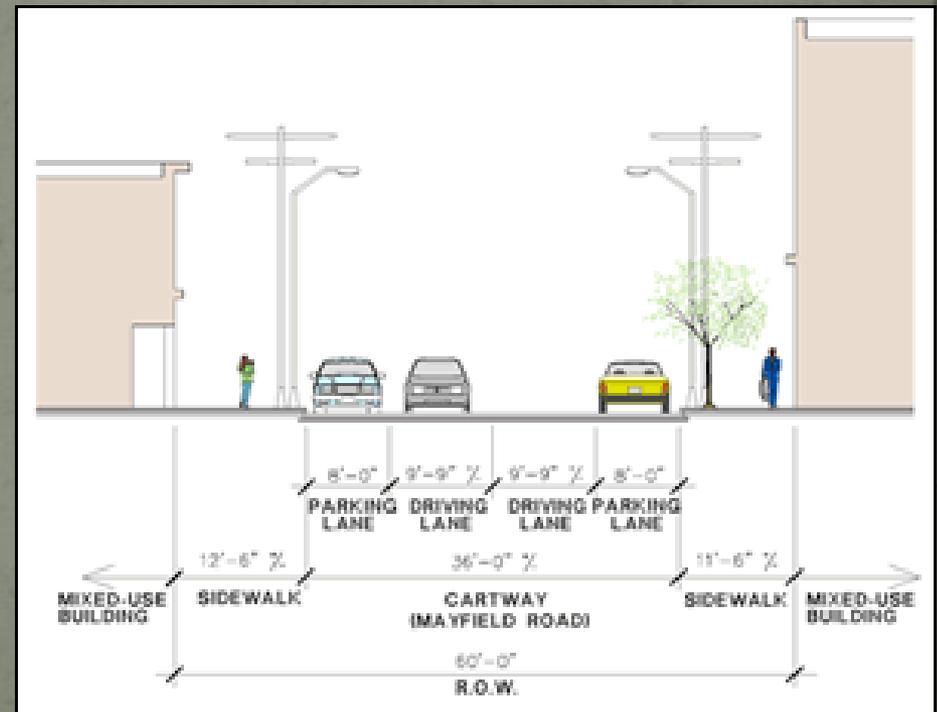


Image: <http://www.littleitaly redevelopment.org>

2. Complete Streets Statistics

- 52% of Americans want to bike more (America Bikes Poll)
- 55% of Americans would prefer to drive less and walk more (STPP Poll)



Image: <http://www.sfgate.com>



Image: <http://www.blogs.move.com>

2. Complete Streets Statistics

- 25% of walking trips take place on roads without sidewalks or shoulders.
- Bike lanes are available for only about 5% of bike trips.

(Source : National Survey of Pedestrian & Bicyclist Attitudes and Behaviors, 2003)



Image: <http://www.completestreets.org>

2. Complete Streets Statistics

About one-third of Americans are non-drivers:

- 21% of Americans over age 65
 - 50% of Americans will be over 55 in 2030
- All children under age 16
- Many low-income Americans cannot afford automobiles
- Many people with disabilities cannot drive.
 - 20% of Americans have a disability that limits their daily activities

More than 50% of non-drivers stay home on a given day because they lack transportation options.

2. Complete Streets Statistics

Of all trips:

40% are two miles or less and 20% are one mile or less



Image:
<http://www.streetsblog.org>

65 % of trips under one mile are now taken by automobile.

Source: 2001 NHTS,
National Personal Transportation Survey

3. Examples of Incomplete Streets

What's wrong with this picture?



Image: <http://www.completestreets.org>

3. Examples of Incomplete Streets

What's wrong with these pictures?



3. Examples of Incomplete Streets

What's wrong with this picture?



Image: <http://www.completestreets.org>

4. Standards for User Groups

2000 USDOT Recommended Guidance:

Bicycle and pedestrian ways shall be established in new construction and reconstruction projects in all urbanized areas unless one or more of three conditions are met:

- Non-motorized users are prohibited
- Excessive cost
- Absence of need now and in the future

4. Standards for Pedestrians

- Pedestrian Characteristics
 - Children, the elderly, and people with vision impairments typically more reliant on this form of transportation.
 - Majority of walking trips are .25 miles or less
 - 1 mile is generally the limit of distance people are willing to walk
 - Average walking speed is 4ft/second
 - 5 ft of space is needed for two people walking side by side or passing one another

4. Standards for Pedestrians

- Characteristics of Pedestrian-Friendly Communities
 - Continuous systems with much connectivity
 - Pedestrian-oriented land uses and supportive land use patterns
 - Multimodal considerations with accessibility to transit
 - Attractive spaces
 - Sense of security and visibility
 - Properly maintained



4. Standards for Pedestrians

- Designing Roadways to Accommodate Pedestrians
 - Elements to consider:
 - Speed management
 - Roadway widths
 - Curbs
 - Sight distances and sight lines
 - Intersection Design
 - Midblock Crossings
- Types of Pedestrian Facilities
 - Sidewalks
 - Off road paths
 - Shared-use paths
 - Shared Streets



Images: PBIC Image Library

4. Standards for Pedestrians

- Sidewalk Design
 - Sidewalk widths
 - Minimum 4 ft, 6-8 desirable
 - Buffer widths
 - 2-6 ft depending on location
 - Driveway access management
 - Restrict multiple conflict points
 - Grade and crossing slope
 - Maximum grade of 5% unless along roadway
 - Surface treatments
 - Smooth and continuous
 - Concrete and asphalt preferred



Pedestrian Median Refuge



Raised islands placed in the center of the street at intersections or midblock to help protect crossing pedestrians from motor vehicles, allowing pedestrians to cross one direction of traffic at a time.

4. Standards for Bicycles

- Bicycle Users
 - Advanced or Experienced
 - Basic or Less Confident
 - Children
- Accommodating those with moderate skills will meet the needs of most riders.



4. Standards for Bicycles

- Types of Facilities
 - Shared Roadway (No bikeway marking)
 - Signed Shared Roadway
 - Bike Lane
 - Shared Use Path
- Be consistent when designing bicycle network



Images: PBIC Image Library

4. Standards for Bicycles

When selecting the appropriate facility consider:

- Skill level of user
- Directness
- Accessibility
- Stops
- Conflicts
- Traffic volumes and speeds
- Bridges
- Intersection conditions



Images: PBIC Image Library

4. Standards for Bicycles

- Design of Shared Roadways
 - Paved shoulders
 - Increased lane width
 - On-street parking
 - Pavement surface quality
 - Drainage inlet grates
 - Also, improved railroad crossings, sight distance, and signal timing



Image: PBIC Image Library

4. Standards for Bicycles

- Criteria for Signed Share the Road
 - Complete and direct route
 - Completes discontinuous segments of other facility types
 - Traffic control devices along route enhance bicycle travel
 - No or low levels of street parking
 - Smooth surface
 - Maintenance planning
 - Wide curb lanes or shoulders



4. Standards for Bicycles

- Design Criteria for Bike Lanes
 - Widths
 - 5 ft: Recommended width
 - 4 ft: Roadways with no curb and gutter
 - Separate from travel lane with 6" striping
 - Watch for potential obstructions
 - Create adequate drainage



Images: PBIC Image Library

4. Standards for Bicycles

- Design Criteria for Shared Use Paths
 - Separation between path and roadway
 - Width and Clearance
 - Design speed
 - Horizontal Alignment
 - Grade
 - Sight Distance
 - Path-roadway intersections
 - Signage, markings, pavement type, and lighting



Images: PBIC Image Library

Bicycle Boulevard



A street segment, or series of contiguous street segments, that has been modified to accommodate through bicycle traffic but discourages through motor traffic.

Source: ITE Complete Streets Manual

Bicycle Lane



A portion of a roadway which has been designated by pavement markings and, if used, signs, for the preferential or exclusive use of bicyclists.

Source: ITE Complete Streets Manual

Bicycle Lockers



A secure, lockable container used for long term individual bicycle storage.

Source: ITE Complete Streets Manual

Bicycle Paths/Sidepaths



A pathway that is exclusively used by bicyclists, where a separate, parallel path is provided for pedestrians and other wheeled users. Most pathways are shared between bicyclists and other users: see Shared Use Path.



Bicycle Parking Rack



A stationary fixture to which a bicycle can be securely attached.

Source: ITE Complete Streets Manual

Designated Bicycle Routes



A roadway or bikeway designated by the jurisdiction having authority, either with a unique route designation or with BIKE ROUTE signs, along which bicycle guide signs may provide directional and distance information. Signs that provide direction, distance, and destination information for cyclists do not necessarily establish a bicycle route.

Rumble Strips



A textured or grooved pavement treatment designed to create noise and vibration to alert motorists of a hazard.

Source: ITE Complete Streets Manual

Shared Roadways / Lanes / Markings



A roadway that is open to both bicycle and motor vehicle travel. This may be an existing roadway, a street with wide curb lanes, or a road with paved shoulders.

4. Standards for Vehicles

Drivers:

- Largest vehicle to use facility on a regular basis should be the design vehicle.
- Decisions should depend on:
 - Frequency of larger vehicles
 - Amount of other traffic
 - Character of area



Image: Dan Burden

Curb Extensions



A traffic calming measure, primarily used to extend a sidewalk, reducing the crossing distance and allowing pedestrians and motorists to see one another when vehicles parked on-street would otherwise block visibility.

Source: City of Glendale, CA Safe and Healthy Streets Plan

4. Standards for Transit Facilities



- Types of Transit
 - Commuter Rail
 - Streetcar/Light Rail
 - Fixed Route Bus
 - Complementary Paratransit
 - Bus Rapid Transit (BRT)
 - Demand Response / Paratransit

Transit Users:

- Commuter
- Choice Rider
- Transit Dependent

4. Standards for Transit Facilities

Transit Stops

- Bus cut-outs reduce congestion
- Transit signage should provide clear information about routes
- Paved landings provide accessibility for individuals using wheelchairs.
- Stops should be inviting and comfortable places to wait
 - Shelters
 - Benches
 - Route maps
 - Garbage cans
- Connectivity from transit stops to neighborhoods and commercial districts.

4. Standards for Transit Facilities

- Encouraging Successful Transit Systems
 - Commuter (Rail/Bus)
 - Park and Ride Lots
 - Efficient operating strategy
 - Reliability: time and seating
 - Guaranteed ride home
 - Origins and destinations are convenient
 - Limit parking (or increase price of parking) at destination
 - Vehicles and stops should be clean and comfortable
 - Marketing to choice riders!

4. Standards for Transit Facilities

- Encouraging Successful Transit Systems
 - Fixed Route Bus
 - Vehicles, stations, and stops should be clean and comfortable
 - Short headways
 - Routes are sensitive to community needs.
 - Evening and weekend service.
 - Connections are convenient and reliable.
 - Safe and polite drivers
 - Accessible to people with special needs
 - Paratransit
 - Reduced call-ahead time
 - Accessible vehicles
 - Safe and polite drivers

Tools in creating Complete Streets

- Designating appropriate streets as Complete Streets
 - Not necessary for any or all streets to be complete streets
 - Should connect destinations
 - Should form a network of complete streets by providing connections through the community and to existing or planned routes in adjacent communities.
- Proper design.
 - Balanced design that accommodates all users.
 - Context sensitive – not all elements of a complete street are necessary on all complete street routes.
- Private property improvements:
 - Bicycle racks
 - Pedestrian-scaled lighting
 - Connections to public sidewalks

Putting it all together...

THE STREET OF THE FUTURE IS A LIVABLE STREET

by CARLY CLARK and AARON NAPARSTEK

BEFORE AFTER NOW WHAT?

PEDESTRIAN STREET LAMPS

It's a city, not a highway. Lighting shouldn't be just for cars.

VENDORS

For thousands of years before the advent of the automobile, urban streets were a scene of vibrant civic and economic life. Vendors help make streets into destinations rather than places to be driven through.

DEDICATED BUS LANES

Why should a single-passenger SUV be allowed to delay the morning commute of 60 bus riders? Dedicated lanes get buses out of traffic and make transit trips fast and predictable.

SEPARATED BIKE LANES

Bikes are the cleanest, healthiest, and most inexpensive mode of urban transportation. Dedicated lanes provide physical protection for cyclists and encourage bike use.

TRAFFIC LIGHTS WITH A LEADING PEDESTRIAN INTERVAL

By showing a walk signal a few seconds before turning cars are given a green light, LPI lights allow pedestrians time to enter a crosswalk before traffic makes them impassable.

SPEED BUMP

Slow down or pay the price.

STREET TREES AND PLANTINGS

Not only do they provide shade and oxygen and make the street look nicer, it's been shown that urban trees increase traffic safety and improve business.

RAISED, TEXTURED CROSSWALKS

Raising and texturing crosswalks creates a natural speed bump and makes pedestrians more visible to motorists.

BOLLARDS

These short vertical posts protect pedestrians at dangerous intersections and prevent motorists from parking on sidewalks.

CURB EXTENSIONS

Also known as BULB-OUTS or NECKDOWNS. They decrease pedestrians' exposure to traffic by reducing crossing distances. By narrowing the street, they help reduce drivers' speeds, as well.

Source: GOOD Magazine, 2009

5. Examples of Complete Streets



Bridgeport Way, University Place, Washington

5. Examples of Complete Streets



5. Examples of Complete Streets



5. Examples of Complete Streets



5. Examples of Complete Streets



5. Examples of Complete Streets



6. Completing a Complete Streets Policy

Refresher: What is a Complete Streets Policy?

- A complete streets policy ensures that the entire right of way is routinely designed and operated to enable safe access for all users.



Image <http://www.sightline.org>

6. State Level Legislation

State Laws

- Oregon (1971)
- Florida (1984)
- Massachusetts (1996)
- Rhode Island (1997)
- Vermont (2002)
- Illinois (2007)
- Wisconsin (2008)
- California (2008)
- Connecticut (2009)
- Hawaii (2009)
- Delaware (2009)

State Level Policies

- Minnesota (2010)
- Maryland (2000)
- Michigan (2010)
- Colorado (2010)
- Kentucky (2002)
- South Carolina (2003)
- Tennessee (2003)
- Virginia (2004)
- Pennsylvania (2007)
- New Jersey (2009)
- North Carolina (2009)
- Louisiana (2010)

6. Local Level Action

175 local governments have taken action across the US

- DeSoto, MO (ordinance)
- St Louis, MO (ordinance)
- Lee's Summit, MO (plan)

- Scottsdale, AZ (plan)
- Rochester, MN (policy)
- Columbia, MO (ordinance)
- Ferguson, MO (ordinance)
- Bozeman, MT (resolution)
- Des Moines, IA (resolution)
- Edmond, OK (resolution)
- Festus, MO (resolution)
- Iowa City, IA (resolution)
- New Haven, CT (resolution)
- Albert Lea, MN (ordinance)
- Issaquah, WA (ordinance)
- Kirkland, WA (ordinance)
- Redmond, WA (ordinance)
- Renton, WA (ordinance)
- Topeka, KS (resolution)
- St Joseph, MO (resolution)
- Little Rock, AR (resolution)
- Newport, RI (resolution)
- Roswell, GA (resolution)

- Chicago, IL (policy)
- Rockville, MD (law)
- Philadelphia, PA (law)
- Decatur, GA (plan)
- Charlotte, NC (plan)
- Champaign, IL (plan)
- Hendersonville, TN (plan)
- West Palm Beach, FL (plan)
- Santa Barbara, CA (plan)
- New Haven, CT (design guide)
- New York City, NY (design guide)
- Seattle, WA (ordinance)
- Everett, WA (resolution)
- Golden, CO (resolution)
- Madison, WI (resolution)
- Mesilla, NM (resolution)

6. Pending Action

- State of Missouri
- State of New York
- State of Texas
- State of West Virginia
- State of Indiana
- Anchorage, AK
- Los Angeles, CA
- Dallas, TX
- Highland Park, IL
- Lawrence, KS

6. Federal Legislation

- **H.R. 1442, Complete Streets Act of 2009**
 - Introduced before Congress on March 11, 2009 and referred to Committee.
 - Currently before the House Transportation & Infrastructure Committee and the House Transportation & Infrastructure, Subcommittee on Highways & Transit.
 - If approved in current form, the act would require states to adopt complete streets policies that ensure that all users are accommodated in transportation project planning and construction in order to be eligible for federal transportation funding.

7. Completing a Complete Streets Policy

The best Complete Streets Policies...

- Set forth the reasons for policy adoption
- Set basic, fundamental requirements
- Require collaboration between land use planning, engineering and transportation planning agencies
- Are reviewed and approved by all relevant public committees, commissions and governing bodies
- Permit exceptions, but only with high-level approval
- Followed by creation of a Complete Streets plan

7. Completing a Complete Streets Policy

Challenges to Having a Successful Complete Streets Policy:

- Implementation
 - Standard street design and construction
- Training and learning to balance needs
- Sidewalk construction and maintenance responsibility
- The role of land use
 - Is it pedestrian-oriented, transit-supportive, bicycle friendly?
- Retrofitting incomplete streets
 - Not all streets can be complete, particularly existing streets
- Accommodating transit

8. Leawood Complete Streets Policy

- Bicycle Friendly Committee
 - Application for Bicycle Friendly Community Designation
 - Initiated policy development
 - Recommended policy to Parks Committee
- Parks & Recreation Committee
- City Council
- Planning Commission
 - Staff held two work sessions with Commission prior to final vote
- City Council
 - Policy adopted May 16, 2011

9. The Case for Complete Streets Plans

- Plans allow for a thoughtful, deliberate process:
 - Identify of corridors connecting destinations
 - Public participation process >> greater legitimacy and buy-in
 - Prioritization >> maximize return on investment
 - Identify necessary infrastructural elements
 - Allow for context-sensitive design
 - Identify private site development standards that compliment complete streets
 - Identify needed public education measures for all users
 - Identifies performance measures and benchmarks
 - Allow integration of policy within fiscal, planning, and public safety framework
 - CIP
 - Comprehensive Plans, Zoning Ordinances
 - Public Works design manuals
 - Traffic laws and police protocol (i.e. public safety/education)

10. Leawood's Policy

What is a complete street?

“A complete street is one that is designated, designed, and operated to safely accommodate multiple users, which may include but is not limited to: motorists, pedestrians, bicyclists, transit riders, and people of all ages and abilities.”

What is the public benefit?

“Complete Streets promote public health, economic development, reduced transportation costs, enhanced connectivity, environmental sustainability, and more livable communities.” Complete Streets create safe routes for children to walk and bicycle to school.”

10. Leawood's Policy, cont.

Who is responsible?

Transportation and land use planning staff, in coordination with the involvement of the citizens of Leawood, and recommendation of the Planning Commission, Public Works Committee, Parks and Recreation Advisory Board, Sustainability Advisory Board and Bicycle Friendly Committee shall develop a Complete Streets Plan

10. Leawood's Policy, cont.

- Requires plan to identify necessary changes to policy and regulatory documents.
- Calls for updates to all city policies and regulations as necessary to implement policy and subsequent plan.
- Requires inclusion of improvements into the CIP.
- Requires private development standards that facilitate development of a complete streets network.
- Requires development of performance measures and implementation strategies.
- Allows for amendments to policy and subsequent plans to accommodate changing conditions and best practices.

10. Leawood's Policy, cont.

- Requires coordination with other jurisdictions and transportation planning agencies outside of the City.
- Recognizes that all streets are different and requires that the plan be flexible enough to permit context-sensitive design.
- Requires presentation of annual progress report before the Planning Commission and City Council regarding the development and implementation of plan.
- Recognizes that improvements will be made incrementally, over time.
- Allows flexibility in obtaining financing for complete streets improvements.

11. Wrap Up – Costs and Benefits

The Economic Argument:

- Alternative modes save money in the long run:
 - Less vehicle use = less money spent on maintenance
 - Less congestion = less need for lane expansion
- Increased pedestrian and bicycle activity in commercial areas increase business sales. (Drennen, Emily. Economic Effects of Traffic Calming on Urban Small Businesses. 2003.)
- Studies show that property values are substantially higher in walkable areas compared to similar properties in less walkable areas. (CEO's for Cities)
- Transportation is rapidly becoming the largest family expense. Complete Streets provide inexpensive and healthy travel options that help reduce congestion. *Center for Housing Policy. "A heavy load: the combined housing and transportation burdens of working families." 2006*

11. Wrap Up – Costs and Benefits

The Public Health Argument

- Obesity-related health costs our country \$270 billion per year in increased medical costs and loss of economic productivity.
- Multiple studies have shown a direct link between conventional street design and obesity.
- Walking, bicycling and other forms of cardiovascular activity help prevent obesity, diabetes, high blood pressure, and many forms of cancer.
- One study found that 43 % of people with safe places to walk within 10 minutes of their home met recommended activity levels, while just 27% of those without safe places to walk were active enough.
- Residents are 65% more likely to walk in a neighborhood with sidewalks. (Source: <http://www.completestreets.org>)
- **Manhattan, New York, has the lowest obesity rate of any county in the United States. Why?**

11. Wrap Up – Costs and Benefits

The Safety Argument

- Crashes involving pedestrians are more than twice as likely in places without sidewalks.
- Pedestrian and bicyclist death rates are six times higher in the US than Germany and The Netherlands, where complete streets are common.
- A recently published international study found that as the number and portion of people bicycling and walking increases, deaths and injuries decline.
- Designing intersections for pedestrian travel can reduce pedestrian risk by 28%. (Source: King/Ewing 2003)



11. Wrap Up – Costs and Benefits

The Accessibility Argument:

- 40% of the US public does not have the ability to drive.
(Source: US Census Bureau, 2006)
- 20% of Americans have a disability that limits their daily activities.
- Complete Streets contain infrastructural improvements that accommodate persons with disabilities.
- Complete Streets allow for more independence, because people with disabilities can travel easily via transit or walking.



7. Wrap Up – Thanks!



Questions?

Lisa Koch, AICP
Senior Planner
Parsons Brinckerhoff
kochls@pbworld.com

Joe Rexwinkle, AICP
Planner II
City of Leawood, Kansas
joer@leawood.org

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