



U.S. Department of Transportation
Federal Highway Administration




Complete Streets



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Outline

- What is a Complete Street?
- Users and their Needs
- A Complete Network
- Elements of a Complete Streets Policy



What is a Complete Street?

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

What is a Complete Streets policy?

Complete Streets policies provide for all users



What is a Complete Streets policy?

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




What is a Complete Streets policy?

Make the needs of all users the default:


- No need to prove ped, bike, transit, & freight facilities are needed
- Rather, it's assumed they're needed unless proven otherwise



Why have a Complete Streets policy?

- To shift transportation investments
- Create better streets opportunistically
 - Planning
 - Construction
 - Operations, and
 - Maintenance activities

What does a Complete Street look like?



One size doesn't fit all

The Many Types of Complete Streets



Shoulders on Rural Roads

The Many Types of Complete Streets



A Slow-Speed Shared Street

The Many Types of Complete Streets



Commercial Neighborhood with Mid-Block Crossing

The Many Types of Complete Streets



High Density Neighborhood with Mid-Block Crossing

The Many Types of Complete Streets



Historic Main Street

The Many Types of Complete Streets



Transit Route on an Urban Arterial

The Many Types of Complete Streets



High Density Neighborhood with One-way Protected Bike Lane, Parking, and Sidewalk

The Many Types of Complete Streets



A Two-Way Protected Bike Lane Through Downtown

The Many Types of Complete Streets



A Roundabout with Space for Over-size Trucks

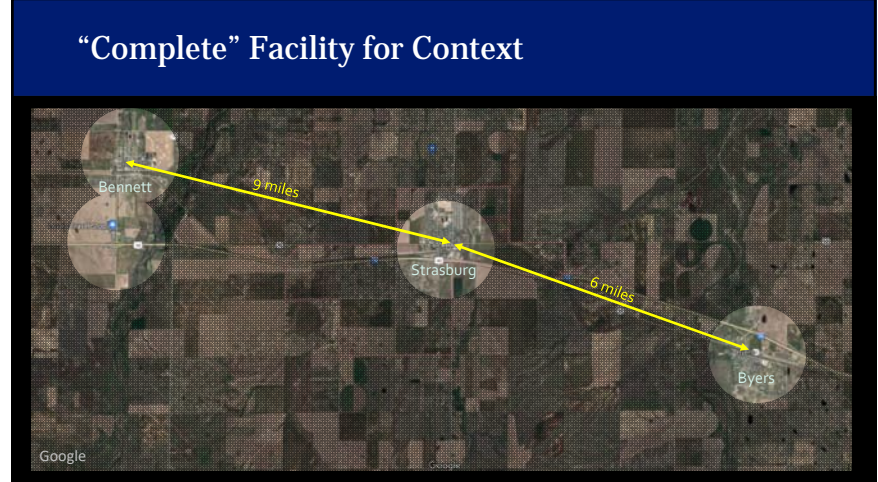
The Many Types of Complete Streets



A Natural Drainage System as Part of a Complete Street

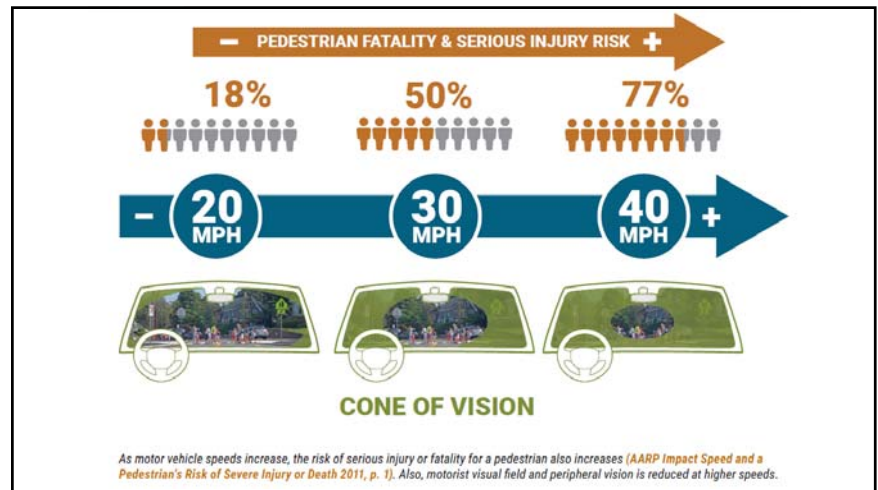
“Complete” for Context





Users and their Needs

- Motorists
- Pedestrians
- Bicyclists
- Transit
- Freight
- ADA
- Law enforcement
- Maintenance
- Emerging technology



Sidewalk Zones

The sidewalk corridor extends from the edge of roadway to the right-of-way and is divided into four zones:

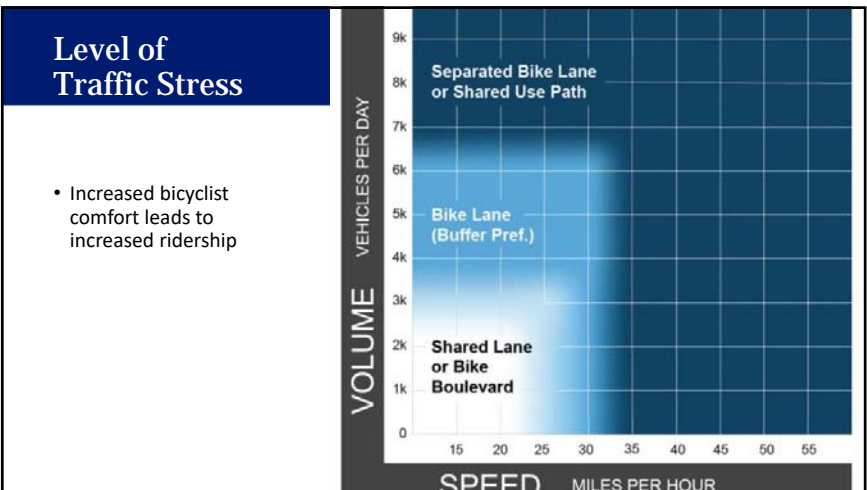
- Curb zone
- Furniture zone
- Pedestrian zone
- Frontage zone

The diagram illustrates the four zones of a sidewalk corridor. From left to right: the Furniture Zone (also labeled as Curb Zone) contains a tree and a person in a wheelchair; the Pedestrian Zone contains a person walking; and the Frontage Zone contains a storefront with a person standing outside. A double-headed arrow at the bottom indicates the Total Width of the entire sidewalk corridor.

Level of Traffic Stress

Four photographs illustrate different levels of traffic stress:

- Top-left: A street with a low volume of traffic and a wide sidewalk, labeled "Comfortable for children".
- Top-right: A street with a moderate volume of traffic and a wide sidewalk, labeled "Comfortable for most adults".
- Bottom-left: A street with a high volume of traffic and a narrow sidewalk, labeled "Typical of most U.S. facilities".
- Bottom-right: A street with a very high volume of traffic and a narrow sidewalk, labeled "'Strong and fearless' or those who absolutely have to".



STEP's Spectacular Six

- Crosswalk Visibility Enhancements
- Raised Crosswalks
- Pedestrian Refuge Islands
- Rectangular Rapid Flashing Beacon
- Pedestrian Hybrid Beacon (PHB)
- Road Diets

The icon consists of a stylized teardrop shape containing six circular icons representing the measures listed: a person walking, a raised crosswalk, a refuge island, a flashing beacon, a hybrid beacon, and a road diet.

EDC

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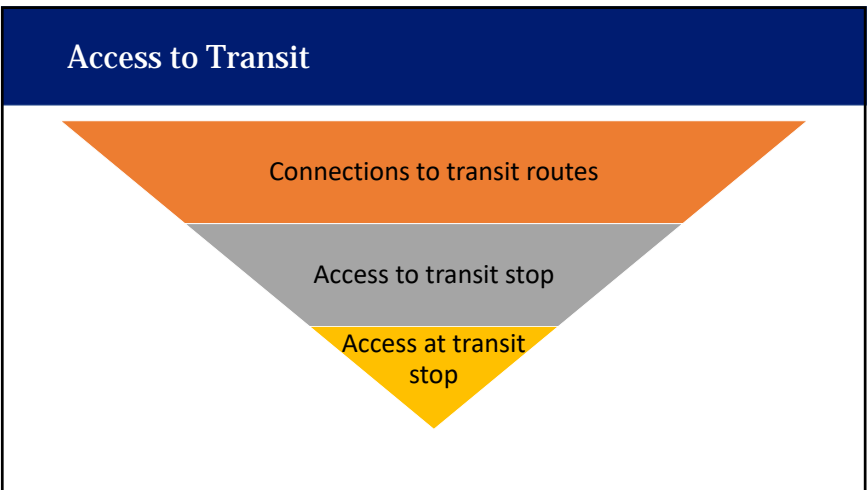
Freight Network: City of Seattle

- Major Truck Street
 - Arterial street that has significant truck traffic
 - Also includes some State and US Routes
 - Criterion for
 - Design
 - Traffic management
 - Pavement
 - Repairs

City of Seattle

Policies to manage freight operations:

- Reserve some on-street parking for commercial vehicles
- Require permits for over-size trucks
- Require new developments to provide off-street truck loading areas
- Retain alleys for truck deliveries and garbage/recycling collection
- Provide signage for truck drivers to identify appropriate routes and note prohibitions
- Provide businesses with information regarding route closures and detours early enough for them to adjust routes or delivery schedules if requires
- Provide real-time information about incidents that will disrupt traffic operations



Catchment Area

- The catchment area is defined as the area served by transit
- Transit access considers elements within catchment area
- In general, people are willing to:
 - Walk ¼ mile to access local bus
 - Walk ½ mile to BRT or rail transit
 - Bike 1-3 miles
 - Drive 15 miles

Site Design

- Set-backs
- Walkable access to store front
- Driveways
- Parking (cars, bikes, & sharing economy)
- Commuter services
 - Repair stations
 - Showers
- Off-street transit stops
- Off-street loading



Local Example

- Context cues for motorists
- Pedestrian access from sidewalk
- Bike rack
- Parking on side
- Curb ramps at driveways



Local Example

Advantages


- Pedestrian island
- RRFB
- High visibility cross-walk
- Buffered bike lanes
- Turning space



Local Example

Opportunities

- Ped signal resting on green
- Truck apron
- Ped access to businesses
- Two stage turn boxes for bicyclists
- Pedestrian-scale lighting
- Mid-block crossing



A Complete Network

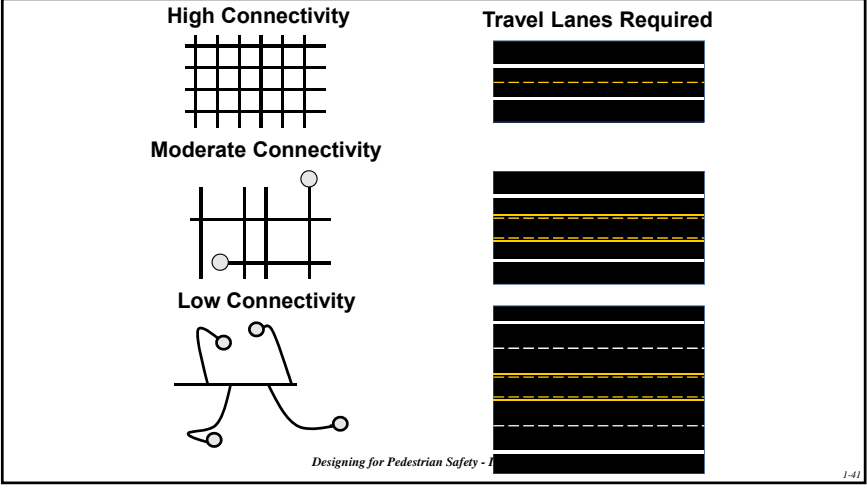
Why do we have cities?

To minimize travel and maximize exchange

How have we built our cities?

To facilitate longer travel distances

- Connectivity creates a walkable street system by:
- Reducing travel distances;
- Offering more route choices on quiet local streets;
- Dispersing traffic – reducing reliance on arterials for all trips



Reducing Travel Demand Through Land Use

- The problem:
 - Commercial activities concentrated in auto-dominated corridors.
 - Segregated land uses
 - Result: long travel distances, not conducive to walking

Potential solutions?

1. Allow small-scale retail in neighborhoods
2. Create neighborhood parks
3. Site school closer to residences & parks

ZONING LEGEND

- Commercial
- Industrial
- Residential
- Open Space

Neo-traditional Development

Madison WI

Destinations are close to residential area

Manufacturing District


- Prevent encroachment of incompatible land uses
- Buffer sub-zones
- Performance criteria for each zone

City of Chicago Industrial Corridors

Source: City of Chicago.

Complete Network

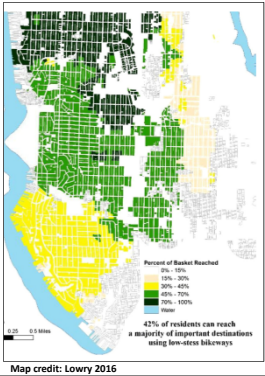
- Network for each mode
- Not all users are prioritized on all corridors
- Always provide access:
 - Across low-comfort corridors
 - Along key links



Source: METRANS Transportation Center

What is Multimodal Connectivity?

- **Networks** are accessible, interconnected transportation facilities that allow all users to safely and conveniently get where they want to go.
- **Connectivity** is the extent to which users can make comfortable trips from beginning to end when traveling to destinations throughout a community.



Map credit: Lowry 2016

Elements of a Complete Streets Policy



An Ideal Complete Streets Policy



- 1) Sets a **vision**
- 2) Includes **all users and modes**
- 3) All **projects and phases**
- 4) Clear, accountable **exceptions**
- 5) Connected **network**
- 6) Other **jurisdictions**, involved in the process
- 7) Inclusive **design guidelines - flexible**
- 8) Is **context-sensitive**
- 9) Sets **performance measures**
- 10) Includes **implementation steps**