In a nutshell, complete streets are...

... roadways designed and operated to safely and comfortably accommodate all users of all ages and abilities, including cyclists, pedestrians, transit riders, elderly, delivery and service personnel, and emergency responders; and to accommodate and slow storm water runoff as part of a comprehensive storm water management system.
Why invest in complete streets?

**Quality of Life**
- Between 2001 and 2009, America’s 16-34 year olds were driving less and walking, bicycling and taking transit more.
- By 2025, nearly 1 in 5 Americans will be 65 or older.
- 56.7 million Americans (18.7%) have some type of disability.

**Economic Benefits**
- In Cuyahoga County, about 14% of households do not own a car.
- Americans spent an average of 18 cents of every dollar on transportation.
- 11% higher home value for every half mile closer to trail.
- The Healthline helped spur $4.3 billion in development projects in the corridor.

**Active Living**
- Approximately 40% of all trips are less than two miles in length—which represents a 30-minute walk.
- 17% of children aged 2 to 19 are obese. The prevalence of obesity among American youth has tripled since 1980.

**Environment**
- Motor vehicle emissions represent 31% of total carbon dioxide, 81% of carbon monoxide, and 49% of nitrogen oxides.

**Safety**
- Well-designed bicycle-specific infrastructure tends to reduce injury and crash risk by about 50%.
- More than 40% of pedestrian fatalities occur where there is no available crosswalk.

---

Steps to Implementing Complete Streets

1. Collaborating
   - Local Communities
   - Regional Networks

1. Adopting a policy
   - Legislative
   - Resolution
   - Planning Documents
   - Tax District

3. Changing Procedures & Implementing Design
   - Road Projects – criteria for selecting, checklists, signalization
   - Design Guidelines – including streetscape
   - Codes and Procedures – stormwater, parking, bicycle facilities
   - Traffic enforcement – parking, speed, bicycle clearance

4. Applying for funding

5. Measuring performance
Cuyahoga County Toolkit for Complete Streets Implementation

- 59 communities with different levels of
  - Commitment
  - Interest in complete streets

- Home Rule in Ohio

- County can legally provide
  - Advocacy for benefits of complete streets
  - Technical assistance with plans and policies
  - Improvements to County roads if approached by community

Thus a toolkit:
- Provides options for different needs and starting points
- Offers starting point for conversation between communities and county
Principles of toolkit

- Easy to read/ lots of graphics
- Targeted to communities with different levels of commitment

- Primary audience: planners, engineers, elected officials, advocates
- Each chapter able to stand alone for future updates
When to Include Complete Streets (or is my project too far down the road?)

Include complete streets considerations as early as possible in the project development process:

**Planning, and Scoping**
- $ less expensive/cost savings possible
- Meaningful and extensive integration of complete streets elements possible

**Leverage STP dollars**
- Complete streets elements can be designed and built for the same or less costs than if they are considered later in the project

**Preliminary Engineering and Design**
- $$$ higher costs
- Minor improvements for all users of the road possible

**Final Design**
- Projects that are too far down the road can still include some complete streets elements such as striping and signing.
Toolkit Outline

- Chapter 1: Background
- Chapter 2: Planning a Road Project
- Chapter 3: Complete Streets Typology
- Chapter 4: Design Elements
- Chapter 5: Steps to Implementation
Complete Streets Planning Process

Step 1: Analyze existing and future transportation context

A. Development Patterns
   - Commercial, Retail, Office
     - Business District
   - Neighborhood Center/Old Main Street
   - Lifestyle Center
   - Strip mall, big box stores, indoor malls
   - Neighborhood/Residential
     - Single-Family Residential
     - Multi-Family Residential
   - Industrial
   - Semi-rural
     - Others: Institutional, Schools, Parks

Utilize land use and zoning maps to determine development patterns

See Chapter 2.1 and Chapter 3

B. Street Network
   - Could the road project provide improved multimodal access to
     - Greenways/Park
     - Regional Bicycle Network
     - Transit
     - Stores, libraries, jobs and other destinations within 1 mile radius
     - Schools
     - Other

Utilize RTA, Metroparks, and NCDOT maps to identify regional priorities

See Chapter 2.2 and Chapter 3

C. Type of Road Project
   - The type of road project shapes the design elements possible
     - Maintenance
     - Resurfacing, Restoration, Rehabilitation
     - Reconstruction
     - New Construction

See Chapter 2.3

Step 2: Determine desired mode priorities

D. Priorities for Public Investment

See Chapter 3 for suggested priorities by development pattern

Step 3: Review existing roadway conditions

E. Roadway Dimensions

See Chapter 3 for pavement width by development pattern

Step 4: Select complete streets elements

F. Design Elements

Road or Lane Diet
- Pedestrian Facilities
- Transit Facilities
- Bicycle Facilities
- Water Management and Landscaping
- Parking Management

See Chapter 3 and Chapter 4 for design element options
Step 1 – Analyze Network and Needs:

Consider the Street Network

Different Patterns throughout the County

Consider Parallel Routes
Step 2 – Mode Priorities:
Impact of Mode Priorities on Design Choices
Step 3 – Existing Conditions:
**Reviewing the Existing Road Conditions**

<table>
<thead>
<tr>
<th>Land Use Based</th>
<th>Network Based</th>
<th>Roadway Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial</td>
<td>Commuter</td>
<td>Large</td>
</tr>
<tr>
<td>Industrial</td>
<td>Boulevard</td>
<td>5 or more traffic lanes</td>
</tr>
<tr>
<td>Semi-rural</td>
<td>Neighborhood Connector</td>
<td>Medium</td>
</tr>
<tr>
<td>Subdivision / Cul-de-sac</td>
<td>Transit Spine</td>
<td>3 – 5 traffic lanes</td>
</tr>
<tr>
<td>Residential Lane</td>
<td>Access/ Alleys</td>
<td>Small</td>
</tr>
<tr>
<td></td>
<td>Bridges</td>
<td>2 – 3 traffic lanes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Very Small</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 – 2 traffic lanes</td>
</tr>
</tbody>
</table>
Step 3 – Existing Conditions:

Street Typology (Land Use Based)

<table>
<thead>
<tr>
<th>Street Typology</th>
<th>Main Focus</th>
<th>Primary Users</th>
<th>Secondary Users</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial</td>
<td>Shopping, entertainment, commercial activity</td>
<td>![Person] ![Car] ![Bike]</td>
<td>![Bus] ![Truck]</td>
</tr>
<tr>
<td>Industrial</td>
<td>Connectivity of industrial areas</td>
<td>![Person] ![Car] ![Truck]</td>
<td>![Bus] ![Bike]</td>
</tr>
<tr>
<td>Semi Rural</td>
<td>Narrow lanes, natural edges, non-standard traffic</td>
<td>![Car] ![Bike]</td>
<td>![Person] ![Truck]</td>
</tr>
<tr>
<td>Subdivision / Cul-de-sac</td>
<td>Low speed, low volume, limited through-traffic. High volume of pedestrians and children</td>
<td>![Person] ![Car] ![Bike]</td>
<td>![Bus] ![Truck]</td>
</tr>
<tr>
<td>Residential Lane</td>
<td>Very small, private or public street, limited access to homes</td>
<td>![Person] ![Car] ![Bike]</td>
<td>![Bus] ![Truck]</td>
</tr>
</tbody>
</table>
## Street Typology (Network Based)

<table>
<thead>
<tr>
<th>Street Typology</th>
<th>Main Focus</th>
<th>Primary Users</th>
<th>Secondary Users</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commuter</td>
<td>Pleasant, safe, quick method of transportation</td>
<td>🚌 🚗 🚴♂️</td>
<td>🚷 🛡️</td>
</tr>
<tr>
<td>Boulevard</td>
<td>Multiple lanes with a median, slow speeds, enhanced landscaping</td>
<td>🚗 🚴♂️</td>
<td>🚷 🛡️</td>
</tr>
<tr>
<td>Neighborhood Connector</td>
<td>Connect neighborhoods to businesses</td>
<td>🚴♂️ 🚷 🚗</td>
<td>🚷 🛡️</td>
</tr>
<tr>
<td>Transit Spine</td>
<td>Current or future express bus or rapid transit corridor (GCRTA)</td>
<td>🚴♂️ 🚷 🚗</td>
<td>🚷 🛡️</td>
</tr>
<tr>
<td>Access and Alleys</td>
<td>Local access for commercial, residential, or industrial areas</td>
<td>🚗 🛡️</td>
<td>🚷 🛡️</td>
</tr>
<tr>
<td>Bridges</td>
<td>Used by all users, provides safe passage over an obstacle</td>
<td></td>
<td>Depends on location in network</td>
</tr>
</tbody>
</table>
### Suggested Design Elements for Medium Commercial Street

<table>
<thead>
<tr>
<th>Right of Way Considerations (Section 4.1)</th>
<th>Pedestrian Facilities (Section 4.2)</th>
<th>Transit Facilities (Section 4.3)</th>
<th>Bicycle Facilities (Section 4.4)</th>
<th>Landscaping and Storm water (Section 4.5)</th>
<th>Parking Management (Section 4.6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Road Diet</td>
<td>- Sidewalks</td>
<td>- Transit center</td>
<td>- Bike Lanes</td>
<td>- Bioretention cells</td>
<td>- Metered on street</td>
</tr>
<tr>
<td>- Lane Diet</td>
<td>- Sidewalk furniture</td>
<td>- Furniture at stops</td>
<td>- Painted Bike Boxes</td>
<td>- Permeable pavers</td>
<td>- Valet parking</td>
</tr>
<tr>
<td>- Traffic Calming</td>
<td>- Signalized Crosswalks</td>
<td>- Real-time information</td>
<td>- Bicycle Parking</td>
<td>- Tree boxes</td>
<td>- Idle engine restrictions</td>
</tr>
<tr>
<td>- One Way Traffic</td>
<td>- Pedestrian signals</td>
<td>- Smart-pay systems</td>
<td>- Floating Bike Lanes</td>
<td>- Vegetated biofilter</td>
<td>- Parallel Parking</td>
</tr>
<tr>
<td>- Weekend Driving Restrictions</td>
<td>- Chicanes</td>
<td>- ADA access</td>
<td>- Bike signals</td>
<td>- Green parking</td>
<td>- Driver’s side door buffer</td>
</tr>
<tr>
<td>- Street lighting</td>
<td>- Scramble Phase</td>
<td></td>
<td>- Cycle Track</td>
<td>- Vegetated Roofs</td>
<td></td>
</tr>
<tr>
<td>- Speed reduction</td>
<td>- Winter maintenance</td>
<td></td>
<td></td>
<td>- Stormwater planters to structure</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Intersection treatments: narrow</td>
<td></td>
<td></td>
<td>on-street parking</td>
<td></td>
</tr>
<tr>
<td></td>
<td>and raised crosswalks at intersections</td>
<td></td>
<td></td>
<td>- Rain gardens</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Pedestrian scaled lighting</td>
<td></td>
<td></td>
<td>- Street Furniture</td>
<td></td>
</tr>
</tbody>
</table>

- Road Diet
- Lane Diet
- Traffic Calming
- One Way Traffic
- Weekend Driving Restrictions
- Street lighting
- Speed reduction
- Sidewalks
- Sidewalk furniture
- Signalized Crosswalks
- Pedestrian signals
- Chicanes
- Scramble Phase
- Winter maintenance
- Intersection treatments: narrow and raised crosswalks at intersections
- Pedestrian scaled lighting
- Transit center
- Furniture at stops
- Real-time information
- Smart-pay systems
- ADA access
- Bike Lanes
- Painted Bike Boxes
- Bicycle Parking
- Floating Bike Lanes
- Bike signals
- Cycle Track
- Bioretention cells
- Permeable pavers
- Tree boxes
- Vegetated biofilter
- Green parking
- Vegetated Roofs
- Stormwater planters to structure on-street parking
- Rain gardens
- Street Furniture
- Metered on street
- Valet parking
- Idle engine restrictions
- Parallel Parking
- Driver’s side door buffer
Right of Way Considerations

Road Diet vs. Lane Diet

Pedestrian Facilities

Midblock Signalized Crosswalk

Cleveland Heights, Lee Rd Library

Refuge Islands

Traffic Calming Chicane

Source: Boston Complete Streets Guidelines
Transit Facilities

**Shelters and Information**
- Cleveland Heights

**Protected Bus Way**
- Cleveland Heights

Bicycle Facilities

**Buffered Bike Lane**
- Cleveland Heights, Edgehill

**Bicycle Parking**
- City of Columbus
Storm Water Management

Vegetated Biofilter

Permeable Pavement

City of Columbus

City of Columbus
Cost Concerns

Based on current Northeast Ohio price estimates

- **New Intersection Signalization**: $60,000 Each
- **Roadway Lighting**: $250,000 per mile
- **Landscaping**: $250,000 per mile
- **34' New Pavement**: $2,000,000 per mile
- **New Sidewalk**: $200,000 per mile per side
- **Private Utility Relocation**: $1,000,000 per mile
- **New Storm Sewer**: $700,000 per mile
- **New Sanitary Sewer**: $800,000 per mile
- **New Water Line**: $650,000 per mile
- **New Full Width Right of Way (54')**: $180,000 per mile Low End Residential
  $5,000,000 per mile High End Business
Financing Alternatives

- No single designated source of money for funding Complete Streets projects.
- Infrastructure and facilities that contribute to Complete Streets may be funded from several existing sources. Examples include:

**Local**
- County Bridge Program (County)
- Road and Bridge Program (County)
- General fund (County and City)

**State**
- Safety Program (ODOT)
- Ohio State Infrastructure Bank (SIB)
- State Capital Improvement Program
- Recreational Trails Program (ODNR)
- Clean Ohio Trails Fund
- Ohio EPA Surface Water Improvement Fund
- Ohio EPA 319 Grants

**Federal**
- Transportation Alternatives (TA)
- Safe Routes to School Program (SRTS)
- Surface Transportation Program (STP)
- Congestion Mitigation Air Quality (CMAQ)
- Federal Transit Administration (Transit)
- Community Development Block Grant (CDBG)

**Nonprofit/Foundations/Private Sector**
Role of Planning Commission

- Begins a regional identity for transportation network: all about connectivity
- Provide starting point for conversation with interested communities in master plans
- Leverage the funding: roadway, amenities, streetscape, stormwater, transit and others

Role of Department of Public Works (DPW)

- Guidance Document presents overall concepts and recommendations but each Community will incorporate to the level they chose
- After adoption by each Community, DPW can provide technical input into design and funding
Lessons learned: Developing a toolkit

- From County perspective
  - Builds organizational capacity for infrastructure planning
  - Provides starting point for conversation with interested communities
  - Establishes inter-departmental collaboration
  - Begins a regional identity for transportation network

- From a City’s perspective:
  - Provides an advanced starting point for building complete streets, adopting policies, or changing procedures
  - Opens door for conversations about complete streets
  - Not “on an island”; strength in numbers with neighboring communities and region
  - Gives higher level of assurance to the community and community leaders who may be less familiar with the Complete Streets concept.
Lessons learned: Developing a toolkit

• Suggestions:
  • It is more than bike lanes!
  • Every street is unique, but seek the typology based on land use, existing right-of-way and function
  • Find, consult and use the best practices
  • Leverage the funding: roadway, amenities, streetscape, stormwater, transit and others
  • Build a network – all about connectivity
  • Sell the benefits of complete streets first
Project Team Complete Streets Toolkit:

Office of County Executive Ed FitzGerald: Jennifer Scofield

Cuyahoga County Planning Commission: Glenn Coyne (Executive Director), Alison Ball, Meghan Chaney, Michael Melko, Claire Kilbane, Dan Meaney, Robin Watkins

Cuyahoga County Department of Public Works: Bonnie Teeuwen (Director of Public Works), Gayle Lewin (project coordinator), Stan Kosilesky, David Marquard

Technical Assistance: Jacob VanSickle (Bike Cleveland), Smart Growth America, North East Ohio Sewer District, Cleveland Metroparks, Greater Cleveland Regional Transit Authority