



Complete Streets



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New Partners for Smart Growth -- 10th Annual Meeting

Friday, February 4, 2011

Charlotte, North Carolina





Complete Streets



Transforming to the Complete Streets State

Transportation Networks

Complete Streets Implementation Steps

Process – Creating a Better Street Network

Street Classifications

Implementation Plan and Moving Forward

Conclusions

State Network

State-Maintained Roads = 79,185 miles

(Interstate Routes = 1,131 miles)

(Interstate Business Routes = 70 miles)

(US Routes = 5,602 miles)

(NC Routes = 8,116 miles)

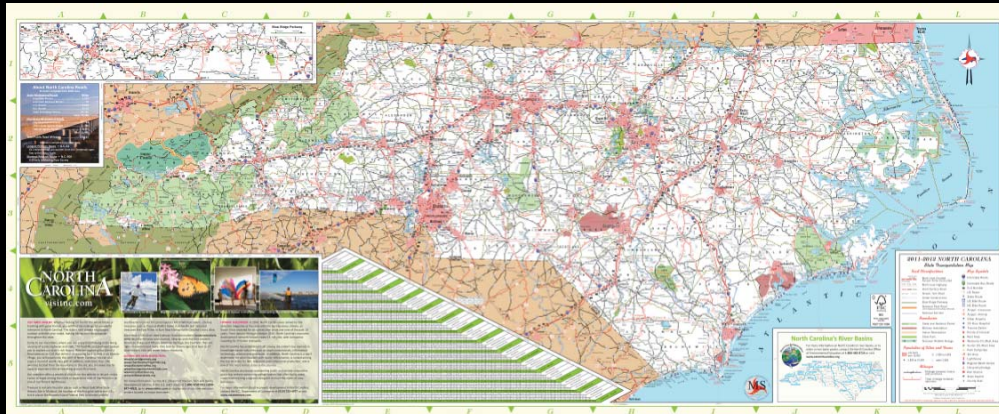
(State Secondary Routes = 64,266 miles)

Non-State-Maintained Roads = 26,000 miles

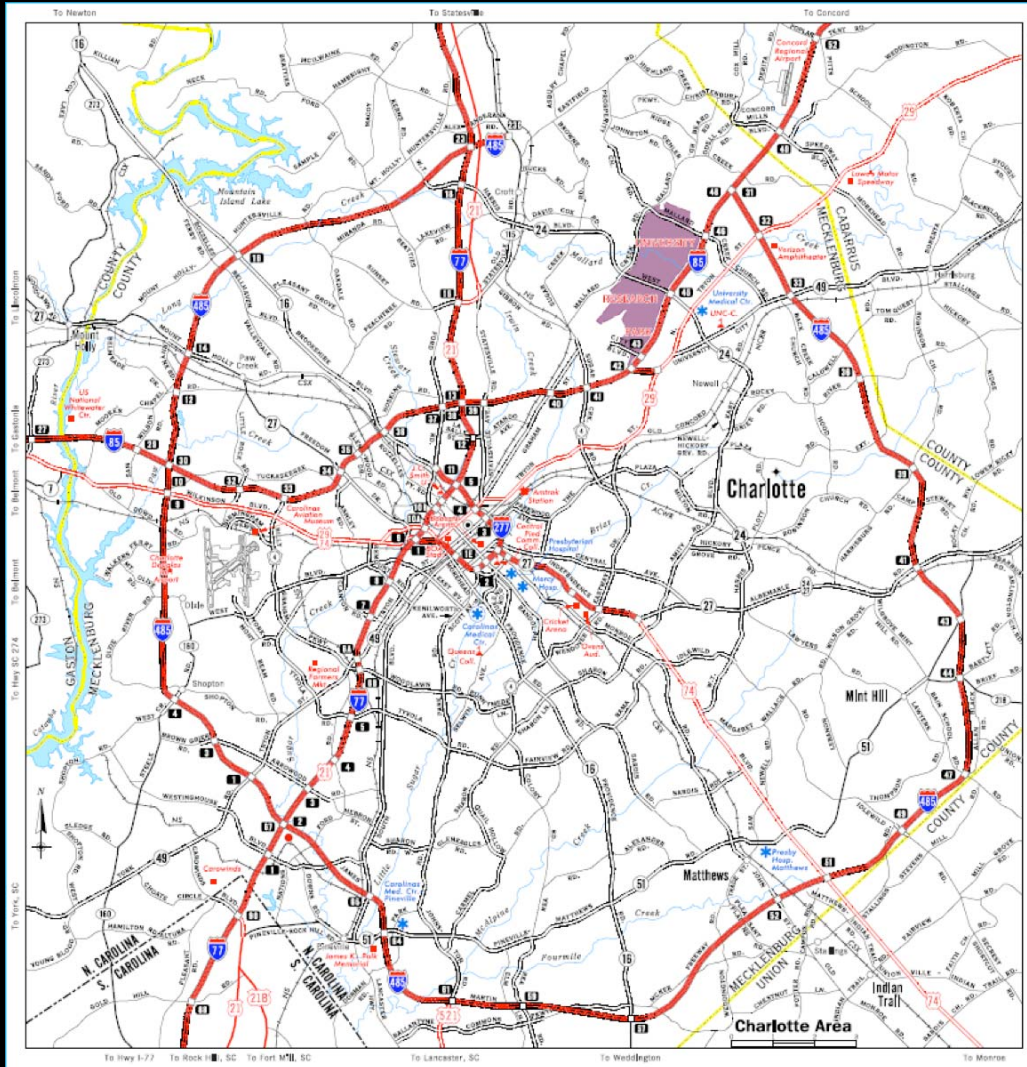
(City-Maintained Streets = 21,782 miles)

(Other State Agency Roads = 748 miles)

(Federal Agency Roads = 3,470 miles)



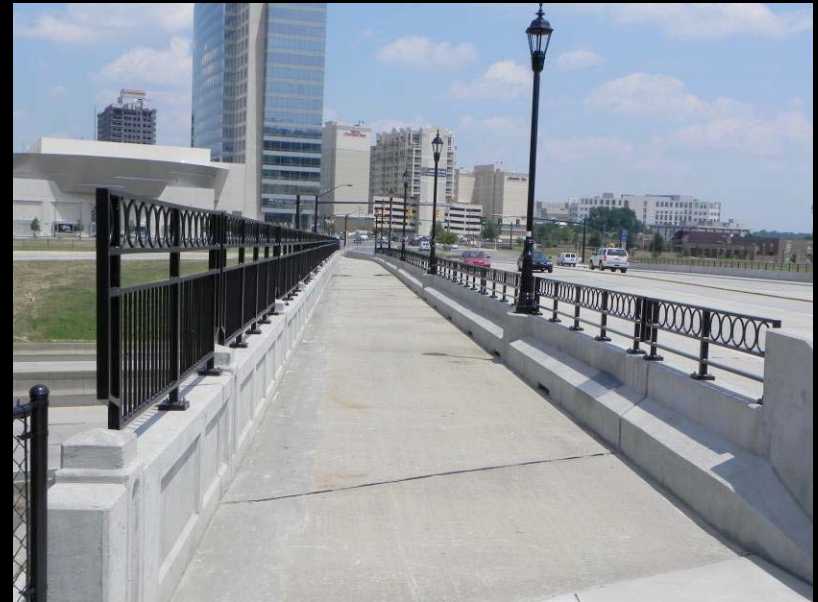
Charlotte's Network



Charlotte-Maintained Streets =
2,392 miles (thoroughfares = 250
mi., local streets = 2,142 mi.)

State-Maintained Streets
(Including ETJ) = 805 miles
(thoroughfares = 362 mi., local
streets = 443 mi.)

Complete Streets are planned, designed and operated to enable safe, attractive, and comfortable access and travel for individuals of all ages and abilities , including pedestrians, bicyclists, transit users, and motorists.



Complete Streets Implementation Steps

1) Change Procedures

(Develop planning and design guidelines to support the Complete Streets Policy adopted in July 2009)



Complete Streets Advisory Group

Jay Bennett – Roadway Design Unit (Co-Chair)

Tracy Newsome - Charlotte Department of Transportation (Co-Chair)

Kumar Trivedi – Bicycle and Pedestrian Division

Joey Hopkins – Deputy Division Engineer, Division 5

Andy Bailey – Senior Planner, Transportation Planning Branch

Kevin Lacy – Transportation Mobility and Safety

Eric Midkiff – Project Development Unit Head, Central Region, PDEA

Miriam Perry – Public Transportation Division

Hanna Cockburn - Piedmont Triad Council of Governments

John Tippet - Western Piedmont Council of Governments

Mike Kozlosky - Wilmington MPO

Carrie Reeves - City of Greensboro DOT

Margaret Bessette - City of Winston-Salem

John Tallmadge – Triangle Transit

Odessa McGlown – Quality Enhancement Unit

Jerry Higgins - Communications Office

Joseph Geigle - Federal Highway Administration

Complete Streets Implementation Steps

2) Training

(Training will be developed for various internal and external stakeholders after the Guidelines are completed – late summer or early fall 2011)



Complete Streets Implementation Steps

3) Re-writing Manuals

(starts late summer and early fall 2011)



Complete Streets Implementation Steps

- 4) Create New Performance Measures
(Number of Projects Incorporating Complete
Streets Elements,
Number of Intersections Incorporating
Complete Streets Elements,
Effectiveness of Complete Streets Training)

Guideline Development

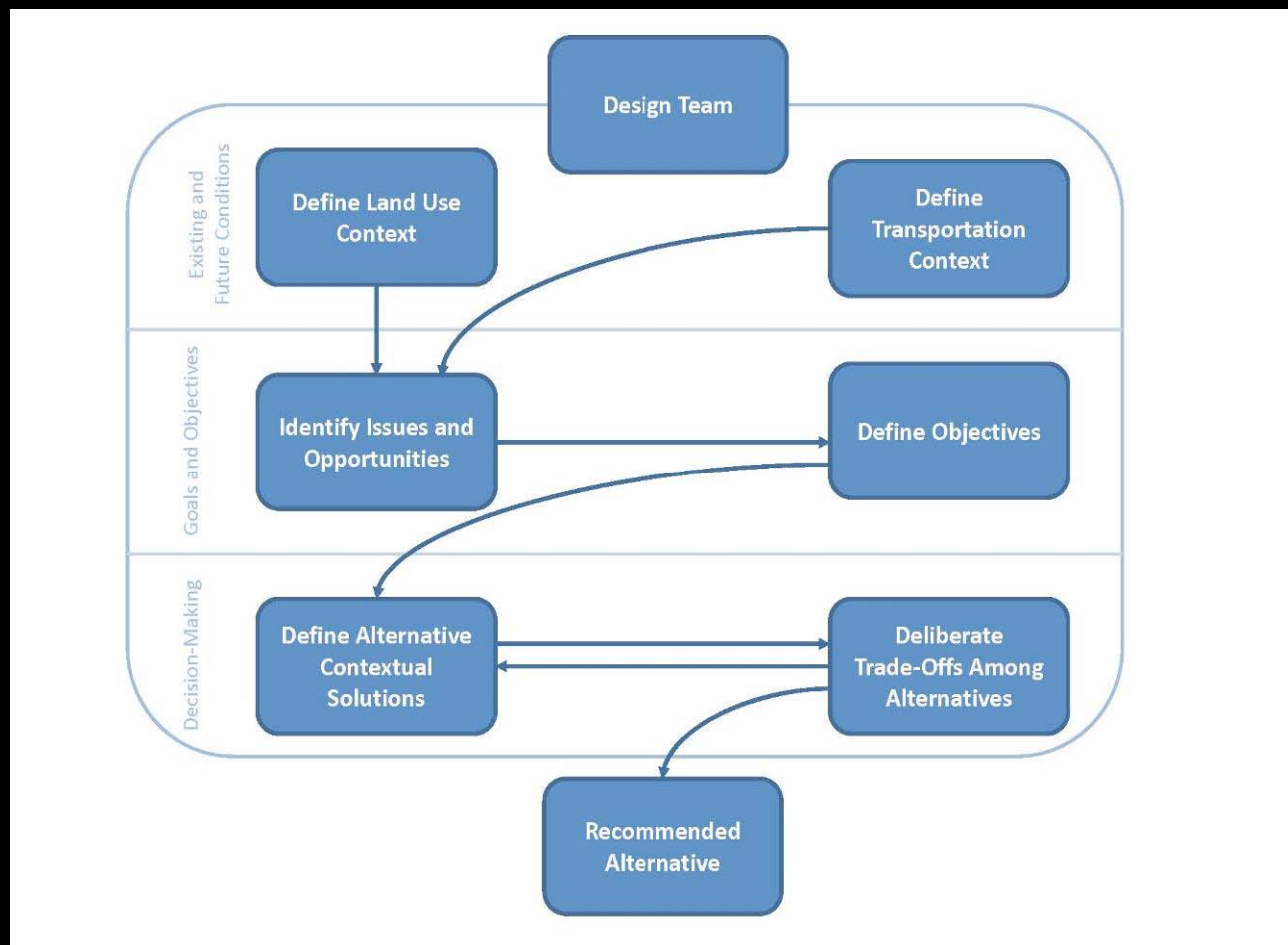
(what do we hear?)

- Complete Street Guidelines should be flexible
- Complete Street Guidelines should be based on context, in terms of location (urban and rural)
- How are projects going to be funded? (Cost sharing and spatial constraints for future transportation improvement projects have to be addressed)
- Streets should be multi-modal
- Public input for design often happens too late in the plan development process
- Project planning and design process needs to be more balanced and collaborative

Creating a Better Street Network (combining the planning and design process)

- Follow a series of steps for all street projects to help establish a shared solution for the transportation facility
- The key = evaluate the existing and future users of the street and determine how to make the facility safe and accessible for these users

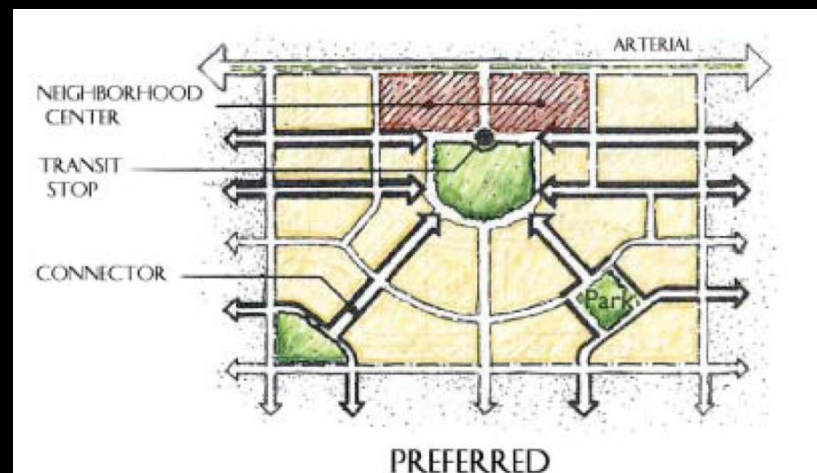
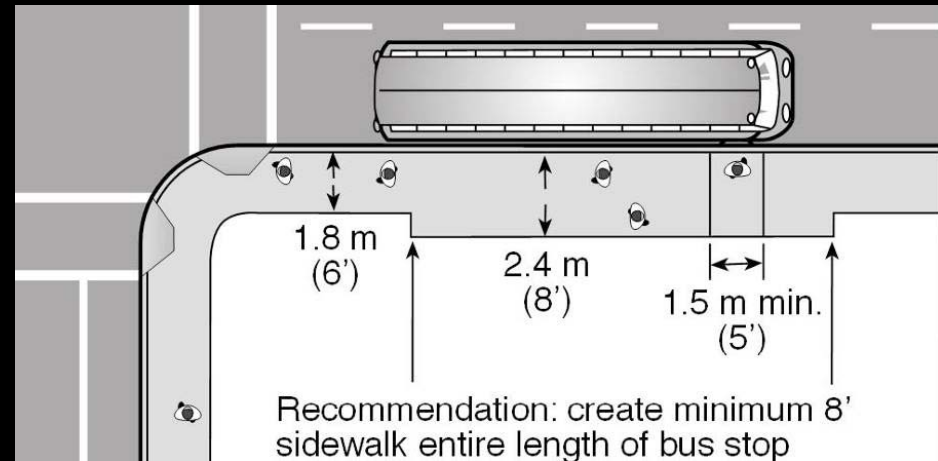
Creating a Better Street Network



Creating a Better Street Network



T. Y. Lin International



Creating a Better Street Network

- Existing and Future Conditions (define land use context, define transportation context)
- Goals and Objectives (identify issues and opportunities, define objectives)
- Decision-Making (define contextual solutions, define trade-offs, alternatives)
- Team comes to a recommended alternative

Guideline Development

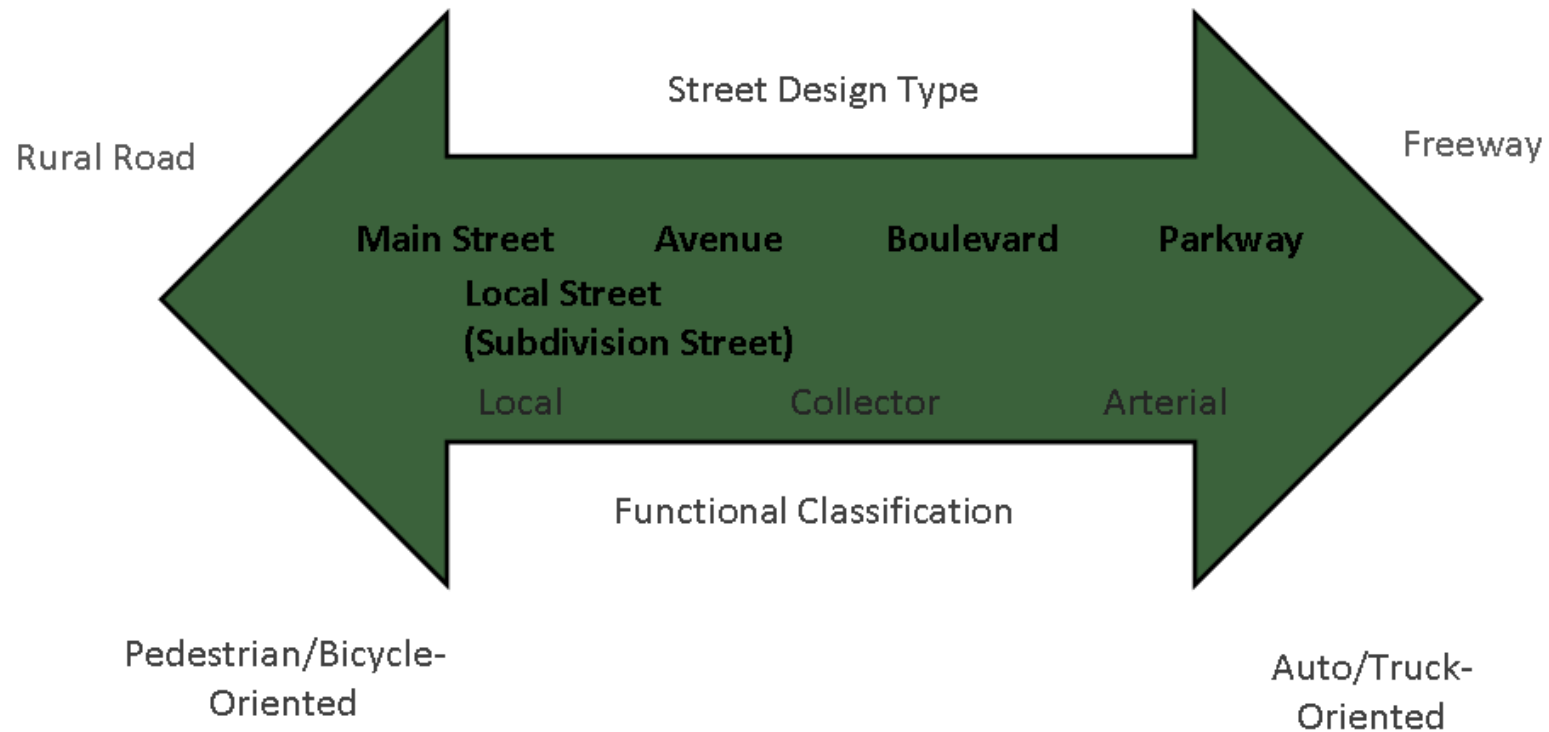
(where are we now?)

February 2011:

Providing the content for the planning and design guidelines to stakeholders

- Reviewing draft content and framework in February 2011
- Finalize guidelines by spring 2011

Functional Classification and Street Type



Interstate I-277 Charlotte

(functional classification interstate/freeway)



US 70

(Complete Street -- street type Parkway)



US 70 Glenwood Avenue Raleigh

(Complete Street -- street type Boulevard)



South Boulevard Charlotte

(Complete Street -- street type Boulevard)



Old Pineville Road Charlotte

(Complete Street -- street type Avenue)



Hillsborough Street Raleigh

(Complete Street -- street type Avenue)



S. Tryon Street Charlotte

(Complete Street -- street type Main Street)



Front Street Wilmington

(Complete Street -- street type Main Street)



Residential Street Charlotte

(Complete Street -- street type Local Street)



State Secondary Route

(Complete Street -- street type Rural Road)



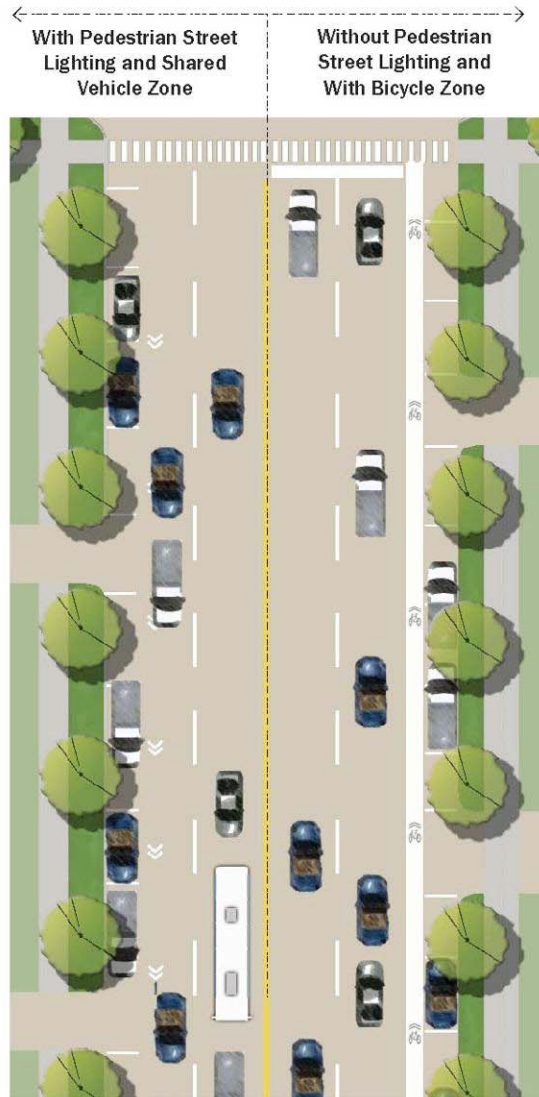
State Secondary Route

(Complete Street -- street type Rural Road)



URBAN / SUBURBAN AVENUE

PLAN VIEW



Complete Streets - Street Type Webinar #6

KEY ELEMENTS

- May function as an arterial, collector or local street, but generally at low to moderate speeds.
- An urban street serving a range of traffic levels within and between various area types.
- Characterized by wide sidewalks and bicycle facilities.
- May have on-street parking.
- Transit stops, shelters and other amenities located along the roadway, preferably within the right of way. Dedicated bus lanes may be considered as well as turn-ins or turn-outs to assist with traffic flow.



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STREET CROSS SECTION ZONES

Development Zone: Development should be oriented toward the street with good functional and visual connection to the street.

Sidewalk Zone: The pedestrian walk area is of sufficient width to allow pedestrians to walk safely and comfortably.

Green Zone: The landscaped or hardscaped area along the edge of a roadway and could include grass, landscaping trees (as permitted) or hardscaped treatments. The green zone may serve as an extension of public space usable by adjacent businesses (as permitted). Provision for electrical should be considered for pedestrian or decorative lighting.

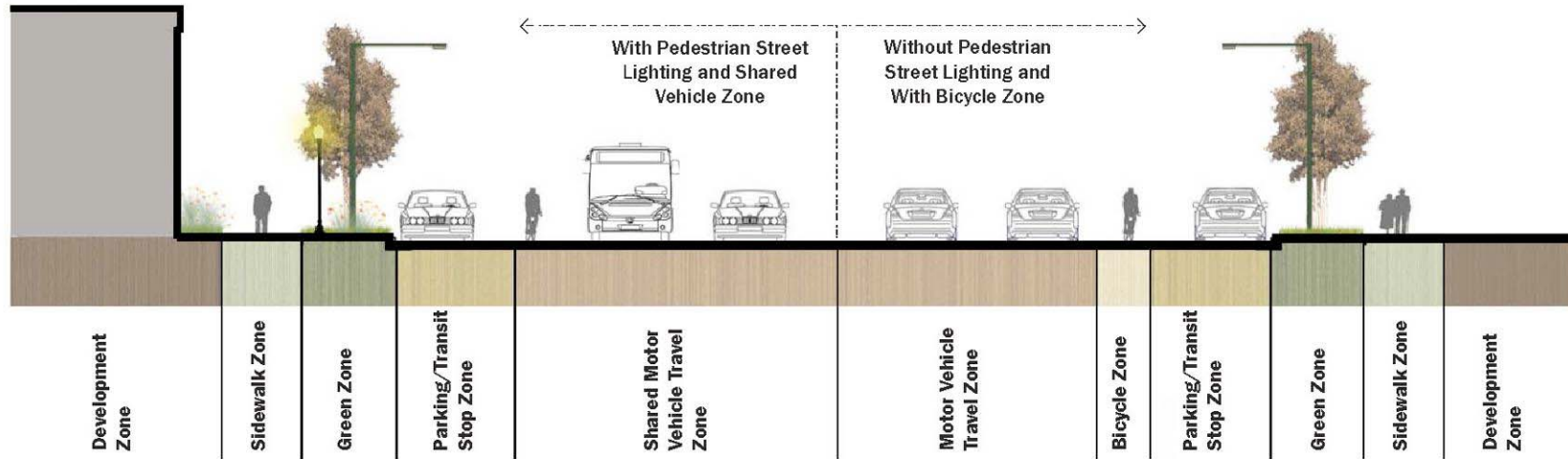
Parking/Transit Zone: On-street parking is optional and should be considered in relation to providing convenient access to adjacent land uses. The zone width and layout may vary depending on the type of parking provided.

Bicycle Zone: Accommodation for bicyclists either in a separate zone or within the shared vehicle zone.

Motor Vehicle Zone: The primary travel way for vehicles. The number of lanes will vary by capacity needs. A shared zone has mixed traffic (cars, trucks, buses and bicycles).

URBAN / SUBURBAN AVENUE

STREET CROSS SECTION



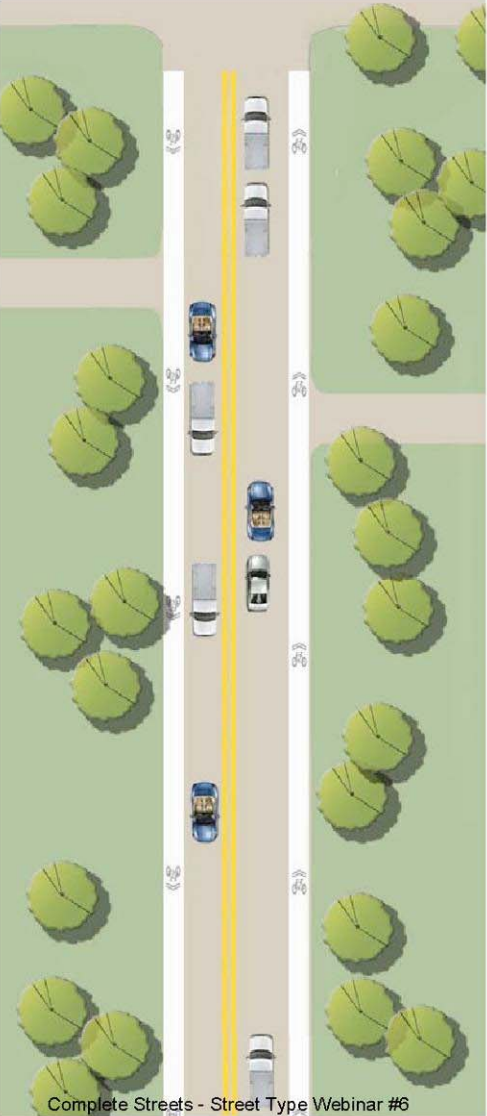
	Sidewalk Zone (feet)	Green Zone (feet)	Parking/ Transit Zone (feet)	Motor Vehicle Zone (lane width-feet)	Bicycle Zone (feet)
Business Arterial	8'-12'	4'-8'	8'-10'	10'-12' lanes	4'-6' bicycle lanes (See Note 3)
Business Collector	6'-10'	6'-8'	8'-10'	10'-11' lanes	4'-6' bicycle lanes (See Note 3)
Business Local	5'-10'	4'-8'	8'-10'	10'-11' lanes	4'-6' bicycle lanes (See Note 3)
Residential High Density Arterial	8'-10'	4'-8'	8'-10'	10'-11' lanes	4'-6' bicycle lanes (See Note 3)
Residential High Density Collector					
Residential High Density Local	6'-8'	4'-8'	8'-10'	10'-11' lanes	4'-6' bicycle lanes (See Note 3)
Residential Medium Density Arterial					
Residential Medium Density Collector					
Residential Medium Density Local					

Notes:

1. The back of sidewalk does not necessarily indicate the right-of-way edge.
2. Green zone may include landscaping, lighting, street furniture and pedestrian/bike/transit amenities.
3. Bicycle lanes are the preferred treatment but 2-4' shared lanes are allowed. In a shared lane scenario the outside lanes should be 14'. Sharrows can be used on roads < 35 MPH.
4. In the motor vehicle zone and the bicycle zone, the gutter pan is not considered part of the lane width.
5. May or may not have intermittent medians.
6. Pedestrian lighting would be appropriate adjacent to development.

RURAL ROAD

PLAN VIEW



KEY ELEMENTS

- May function as an arterial, collector or local road, but with a range of speeds.
- A road outside of cities and towns serving a range of traffic levels in a country setting.
- Paved shoulders can be used to provide bike and pedestrian access.
- Accommodates bus facilities including turnouts as appropriate. Public transit stops and shelters should be clearly marked and ideally placed within the right of way.

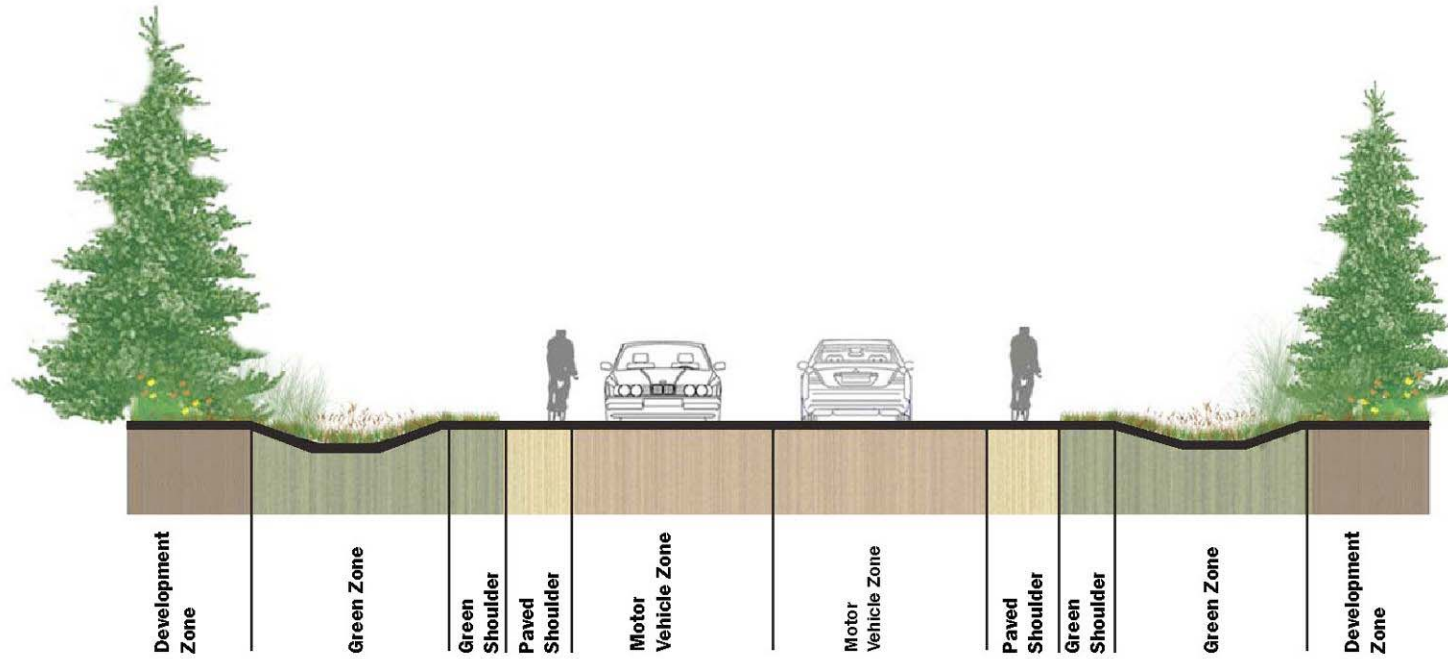


STREET CROSS SECTION ZONES

-  **Development Zone:** Uses are typically set back from the street.
-  **Green Zone:** The landscaped area along the edge of a roadway and could include grass, landscaping or trees (as permitted). Serves as drainage conveyance.
-  **Shared Vehicle Zone:** The primary travel way that includes mixed traffic (cars, trucks, buses and bicycles). The number of lanes will vary by capacity needs.
-  **Bicycle Zone:** A zone for bicyclists separate from vehicular traffic.

RURAL ROAD

STREET CROSS SECTION



	Green Zone (feet)	Shoulder Zone (feet)	Motor Vehicle Zone (lane width-feet)	Bicycle Zone (feet)
Countryside Arterial	See Note 6	6'-8'	12'	4'-6' bicycle lanes (See Note 2)
Countryside Collector	See Note 6	6'-8'	12'	4'-6' bicycle lanes (See Note 2)
Countryside Local	See Note 6	6'-8'	10'-11'	4'-6' bicycle lanes (See Note 2)

Notes:


1. Green zone may include landscaping and pedestrian/bike/transit amenities.
2. Paved shoulders in conjunction with standard bicycle markings should be used in place of bicycle lanes. On rural roads with lower access densities, higher speeds, and higher volumes, a separate 10-12' multi-use path could be considered in place of the bicycle and sidewalk zones
3. Median zone requirements vary depending upon median treatment (hardscape, landscape, drainage, curb & gutter, or trees).
4. Provide a minimum width equal to the clear zone requirement. Additional width will be required if planting trees beyond the clear zone of a caliper (at maturity) greater than 4".

Key Issues for NCDOT to Address as policy and guideline implementation moves Forward

- Need public involvement in the process moving forward (providing suggestions on items they feel merit further review or work – DOT Policies – Practices – etc.)
- Support for flexibility in application and the enhanced importance of local participation in:
 - land use and infrastructure improvements
 - early communication, coordination, collaboration and win-win decisions
- Moving beyond the complete streets planning and design guidelines and moving toward implementation and policy updates relative to project funding, maintenance, cost sharing and project prioritization


North Carolina's Complete Streets Web Page

<http://www.nccompletestreets.org>



North Carolina **complete**streets

[Home](#) [What are Complete Streets?](#) [Background and Purpose of the Guidelines](#) [Complete Streets Policy](#) [Links](#)



The N.C. Department of Transportation adopted a "Complete Streets" policy in July 2009. The policy directs the Department to consider and incorporate several modes of transportation when building new projects or making improvements to existing infrastructure.


stakeholder interview results

advisory group members

Hillsborough Street in Raleigh
Source: *Center for Transportation and the Environment*

Under the new policy, the Department will collaborate with cities, towns and communities during the planning and design phases of projects. Together, they will decide how to provide the transportation options needed to serve the community and complement the context of the area.


We are developing planning and design guidelines to support this policy. These planning and design guidelines will not only be distributed throughout the Department, but also to local governments to aid as they work with us to create Complete Streets in their communities.



Colony Road in Charlotte
Source: *www.thestar.com*

The benefits of this new approach include:

- Making it easier for travelers to get where they need to go;
- Encouraging the use of alternative forms of transportation;
- Building more sustainable communities;
- Increasing connectivity between neighborhoods, streets, and transit systems;
- Improving safety for pedestrians, cyclists, and motorists.



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Implementation of Complete Streets



Delivering a program that builds on current initiatives, creates trust, partnerships, and is embraced by the community, leadership and governmental staff.

Complete Streets

NCDOT becoming more than just a **Highway**
Department



Complete Streets – Co-Chairs

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Marsha Kaiser, AICP, Project Manager, Parsons Brinckerhoff
Experience with Contextually Complete Streets

Questions ?