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 Tippett - 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)
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

Recommendation: create minimum 8' sidewalk entire length of bus stop

1.8 m (6')
2.4 m (8')
1.5 m min. (5')

NEIGHBORHOOD CENTER
TRANSIT STOP
CONNECTOR

PARK

PREFERRED
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

- Rural Road
- Freeway
- Main Street
- Avenue
- Boulevard
- Parkway
- Local Street (Subdivision Street)
- Local
- Collector
- Arterial
- Pedestrian/Bicycle-Oriented
- Auto/Truck-Oriented

Street Design Type

Functional Classification
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**
- With Pedestrian Street Lighting and Shared Vehicle Zone
- Without Pedestrian Street Lighting and With Bicycle Zone

**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.

**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 handscaped area along the edge of a roadway and could include grass, landscaping trees (as permitted) or handscaped 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

<table>
<thead>
<tr>
<th>Development Zone</th>
<th>Sidewalk Zone</th>
<th>Green Zone</th>
<th>Parking/Transit Zone</th>
<th>Shared Motor Vehicle Zone</th>
<th>Green Zone</th>
<th>Parking/Transit Zone</th>
<th>Motor Vehicle Zone</th>
<th>Green Zone</th>
<th>Bicycle Zone</th>
<th>Development Zone</th>
</tr>
</thead>
<tbody>
<tr>
<td>(feet)</td>
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</tr>
<tr>
<td>Business Arterial</td>
<td>8' 12&quot;</td>
<td>4' 8&quot;</td>
<td>8' 10&quot;</td>
<td>10' 12&quot; lanes</td>
<td>4' 6&quot;</td>
<td>(See Note 3)</td>
<td></td>
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</tr>
<tr>
<td>Business Collector</td>
<td>6' 10&quot;</td>
<td>6' 8&quot;</td>
<td>8' 10&quot;</td>
<td>10' 11&quot; lanes</td>
<td>4' 6&quot;</td>
<td>(See Note 3)</td>
<td></td>
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</tr>
<tr>
<td>Business Local</td>
<td>5' 10&quot;</td>
<td>4' 8&quot;</td>
<td>8' 10&quot;</td>
<td>10' 11&quot; lanes</td>
<td>4' 6&quot;</td>
<td>(See Note 3)</td>
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<tr>
<td>Residential High Density Arterial</td>
<td>8' 10&quot;</td>
<td>4' 8&quot;</td>
<td>8' 10&quot;</td>
<td>10' 11&quot; lanes</td>
<td>4' 6&quot;</td>
<td>(See Note 3)</td>
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<tr>
<td>Residential High Density Collector</td>
<td>8' 10&quot;</td>
<td>4' 8&quot;</td>
<td>8' 10&quot;</td>
<td>10' 11&quot; lanes</td>
<td>4' 6&quot;</td>
<td>(See Note 3)</td>
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</tr>
<tr>
<td>Residential High Density Local Residential Medium Density Arterial Residential</td>
<td>6' 8&quot;</td>
<td>4' 8&quot;</td>
<td>8' 10&quot;</td>
<td>10' 11&quot; lanes</td>
<td>4' 6&quot;</td>
<td>(See Note 3)</td>
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<tr>
<td>Medium Density Collector Residential</td>
<td>6' 8&quot;</td>
<td>4' 8&quot;</td>
<td>8' 10&quot;</td>
<td>10' 11&quot; lanes</td>
<td>4' 6&quot;</td>
<td>(See Note 3)</td>
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<tr>
<td>Medium Density Local</td>
<td>6' 8&quot;</td>
<td>4' 8&quot;</td>
<td>8' 10&quot;</td>
<td>10' 11&quot; lanes</td>
<td>4' 6&quot;</td>
<td>(See Note 3)</td>
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</tbody>
</table>

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'. Sharrow 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

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

<table>
<thead>
<tr>
<th>Green Zone (feet)</th>
<th>Shoulder Zone (feet)</th>
<th>Motor Vehcile Zone (lane width-feet)</th>
<th>Bicycle Zone (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Countryside Arterial</td>
<td>See Note 6</td>
<td>6'-8'</td>
<td>12'</td>
</tr>
<tr>
<td>Countryside Collector</td>
<td>See Note 6</td>
<td>6'-8'</td>
<td>12'</td>
</tr>
<tr>
<td>Countryside Local</td>
<td>See Note 6</td>
<td>6'-8'</td>
<td>10'-11'</td>
</tr>
</tbody>
</table>

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".

Complete Streets - Street Type Webinar #6  
Page 25 of 35  
11/16/10
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

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.

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.

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

Jay A. Bennett, PE, NCDOT – Roadway Design, jbennett@ncdot.gov

Tracy Newsome, Ph.D., Transportation Planning and Design Division, City of Charlotte, tnewsome@ci.charlotte.nc.us

Marsha Kaiser, AICP, Project Manager, Parsons Brinckerhoff

Experience with Contextually Complete Streets

Questions?