



# BICYCLE AND PEDESTRIAN SAFETY STRATEGIES IN NORTH CAROLINA: STATEWIDE INPUT AND PRIORITIES

## APPENDICES

Prepared By:  
Sarah O'Brien and Kristy Jackson  
Institute for Transportation Research and Education  
North Carolina State University



For:  
Division of Bicycle and Pedestrian Transportation  
North Carolina Department of Transportation



## **APPENDIX A: QUESTIONNAIRE PRESS RELEASE**

Contact: Communications Office, (919) 733-2522

### **NCDOT SEEKS PUBLIC'S HELP IN IMPROVING BICYCLE AND PEDESTRIAN SAFETY IN NORTH CAROLINA**

**RALEIGH** — Do you walk or ride a bicycle in North Carolina? If so, here's your chance to tell the N.C. Department of Transportation how it can help improve your overall experience. The department is giving the public an opportunity to voice needs and concerns related to bicycle and pedestrian safety through an online survey launched this week.

"Building a safer transportation network is a primary goal of our department, and meeting the safety needs of our state's bicyclists and pedestrians is a key part of that," said Deputy Secretary of Transit Jim Westmoreland. "The feedback we receive from this survey will allow us to better plan to meet these needs, and in turn improve the overall biking and walking experience in North Carolina."

The survey is open to all North Carolina residents and visitors until Feb. 8, and can be accessed on NCDOT's Division of Bicycle and Pedestrian Transportation website at [www.ncdot.gov/bikeped](http://www.ncdot.gov/bikeped).

The results of the survey will be used to identify key problems and emerging concerns, prioritize safety issues and determine the level of public support for future investment in the state's bicycle and pedestrian network. The survey results will be used as a primer to a series of roundtable discussions scheduled for later this year.

The survey is being administered in partnership between NCDOT and the Institute for Transportation Research and Education's Bicycle and Pedestrian Program at North Carolina State University. For more information, contact Sarah O'Brien at (919) 515-8703 or [skworth@ncsu.edu](mailto:skworth@ncsu.edu), or Helen Chaney with NCDOT at (919) 807-0780.

\*\*\*NCDOT\*\*\*

Julia Merchant  
Communications Officer  
North Carolina Department of Transportation  
919.733.2522  
[jcmerchant@ncdot.gov](mailto:jcmerchant@ncdot.gov)

## **APPENDIX B: STATEWIDE INPUT QUESTIONNAIRE FULL TEXT**

### 2011 NCDOT Statewide Public Input Questionnaire on Bicycle and Pedestrian Safety

Questionnaire text is for informational purposes, only.

1. Do you feel, in general, bicycling for daily needs (commuting to work, errands, etc.) in your community is: Very Safe; Somewhat Safe; Neutral; Somewhat Dangerous; Very Dangerous
2. Do you feel, in general, bicycling for recreation in your community is: Very Safe; Somewhat Safe; Neutral; Somewhat Dangerous; Very Dangerous
3. In general, how satisfied are you with the safety of the bicycle network in your community? Very Satisfied; Somewhat Satisfied; Neutral; Somewhat Unsatisfied; Very Unsatisfied
4. What are the top safety issues for bicyclists in your community?(Choose 4)
  - Speeding on main collector/arterial streets
  - Speeding in residential neighborhoods
  - High volume of vehicles on roadways desired for bicyclists' use
  - Lack of alternatives to cycling on main arterials
  - Unsafe intersections
  - Lack of on-roadway bicycle facilities (bike lanes, wide paved shoulders, shared lane markings, etc.)
  - Lack of bicycle paths and greenways separated from the roadway
  - Bicyclists' lack of use of safety equipment (helmets, reflective gear, headlights, etc.)
  - Motorists' or bicyclists' not sharing the road
  - Other: (fill in)
5. Do you agree that having a safe bicycle network contributes to your personal well-being and quality of life? Strongly Agree; Agree; Neutral; Disagree; Strongly Disagree
6. What are the most needed facility improvements to enhance bicyclist safety in your community?(Choose 3)
  - Bike lanes on collector/arterial streets
  - Signed bike routes on local streets
  - Bicycle accommodations at intersections
  - More paths and greenways separated from the roadway
  - Traffic calming (slowing or reducing motor vehicle traffic), where appropriate
  - Other: (fill in)

7. Funding to improve bicyclist safety should be prioritized on which types of facilities? (Choose 3)
  - Intersection improvements
  - Designated bicycle routes
  - Local and neighborhood streets
  - Arterials and major thoroughfares
  - New developments
  - Commercial districts and corridors
  - Path and greenway networks
  - Other: (fill in)
  
8. I would bicycle more for daily needs if safety issues in my community were addressed:  
Strongly Agree; Agree; Neutral; Disagree; Strongly Disagree
  
9. I would bicycle more for recreation if safety issues in my community were addressed:  
Strongly Agree; Agree; Neutral; Disagree; Strongly Disagree
  
10. Overall, what do you feel are the best solutions to improve bicycle safety? (Choose 4)
  - Improve roadway designs to accommodate cyclists as regular users and include bike lanes a standard feature on NC roadways.
  - Educate motorists on rights and responsibilities toward bicyclists.
  - Educate bicyclists on the rights and responsibilities of cycling.
  - Adopt local 'complete streets' policies and guidelines which incorporate safe access and design for all roadway users.
  - Revise state statutes/laws to increase bicyclist safety.
  - Retrofit existing roads to add wide paved shoulders or bike lanes.
  - Build more paths and greenways separated from the roadway.
  - Increase enforcement of existing traffic laws for motorists.
  - Increase enforcement of existing traffic laws for cyclists.
  - Other: (fill in)
  
11. Do you feel, in general, walking for daily needs (commuting to work, errands, etc.) in your community is:  
Very Safe; Somewhat Safe; Neutral; Somewhat Dangerous; Very Dangerous
  
12. Do you feel, in general, walking for recreation in your community is: Very Safe; Somewhat Safe; Neutral; Somewhat Dangerous; Very Dangerous
  
13. In general, how satisfied are you with the safety of the sidewalk network in your community? Very Satisfied; Somewhat Satisfied; Neutral; Somewhat Unsatisfied; Very Unsatisfied

14. What are the top safety issues for pedestrians in your community?(Choose 3)
- Speeding on main collector/arterial streets
  - Speeding in residential neighborhoods
  - Distance between pedestrian crossings (i.e. long blocks)
  - Motorists' failure to yield at pedestrian crossings
  - Unsafe roadway/intersection design
  - Lack of pedestrian crossings
  - Lack of pedestrian paths/sidewalks
  - Criminal activity along walking routes
  - Lack of accessibility (i.e. compliance with the American Disabilities Act)
  - Other: (fill in)
15. Do you agree that having a safe sidewalk network contributes to your personal well-being and quality of life? Strongly Agree; Agree; Neutral; Disagree; Strongly Disagree
16. What are the most needed facility improvements to enhance pedestrian safety in your community? (Choose 3)
- Sidewalks on collector streets and in commercial corridors
  - Sidewalks on local and neighborhood streets
  - Safer crosswalks
  - Better lighting
  - More recreational trails
  - Traffic calming (slowing or reducing motor vehicle traffic), where appropriate
  - Other: (fill in)
17. Funding to improve pedestrian safety should be prioritized on which types of facilities? (Choose 3)
- Intersection improvements
  - Local and neighborhood streets
  - Arterials and major thoroughfares
  - New developments
  - Commercial districts and corridors
  - Path and greenway networks
  - Compliance with ADA (Americans with Disabilities Act) accessibility guidelines
  - Other: (fill in)
18. I would walk more for daily needs if pedestrian safety issues in my community were addressed:  
Strongly Agree; Agree; Neutral; Disagree; Strongly Disagree
19. I would walk more for recreation if pedestrian safety issues in my community were addressed:  
Strongly Agree; Agree; Neutral; Disagree; Strongly Disagree

20. Overall, what do you feel are the best solutions to improve pedestrian safety? (Choose 4)
- Improve roadway designs to accommodate pedestrians as regular users and include sidewalks as a standard feature on NC roadways.
  - Educate motorists on rights and responsibilities toward pedestrians.
  - Educate pedestrians on their rights and responsibilities.
  - Adopt local 'complete streets' policies and guidelines which incorporate safe access and design for all roadway users.
  - Revise state statutes/laws to increase pedestrian safety.
  - Retrofit existing roads to add sidewalks.
  - Build more paths and greenways separated from the roadway.
  - Increase enforcement of existing traffic laws for motorists.
  - Increase enforcement of existing traffic laws for pedestrians.
  - Other: (fill in)
21. What do you feel are the top emerging safety issues for bicyclists and pedestrians? (Choose 3)
- Distracted drivers.
  - Expanding motor vehicle capacity of existing roadways and intersections without consideration for bicyclists and pedestrians.
  - Neighborhood development patterns and segregated land uses.
  - Lack of adequate funding for bicycle and pedestrian facilities.
  - Lack of public support and planning for bicycle and pedestrian facilities.
  - Inadequate data and reporting of crash incidents.
  - Inadequate education of bicycle and pedestrian safety skills, rules of the road, and responsibilities of all road users.
  - Other: (fill in)
22. The underlying safety problems for bicycle and pedestrian transportation in my community are best characterized by (Choose 4)
- Bicyclist/Pedestrian behavior
  - Insufficient bicycle and pedestrian education programs
  - Motorist behavior
  - Insufficient motorist education
  - Inadequate infrastructure/ facilities for walking and biking
  - Insufficient law enforcement
  - Land use, sprawling development patterns
  - Lack of bicycle and pedestrian connectivity between activity centers/commercial areas and residential neighborhoods
  - Lack of knowledge about existing multi-use paths, bicycle facilities, and bike routes (access to maps, way finding, etc.)
  - Lack of biking/walking culture and advocacy efforts
  - Other: (fill in)

23. Which choice best describes your walking habits?

- I walk mostly for daily needs (commuting to work, running errands, etc.)
- I walk mostly for recreation (physical activity, sport, hobby, etc.)
- I seldom walk

24. Which choice best describes your bicycling habits?

- I bicycle mostly for daily needs (commuting to work, running errands, etc.)
- I bicycle mostly for recreation (physical activity, sport, hobby, etc.)
- I seldom bicycle

## APPENDIX C: STATEWIDE INPUT QUESTIONNAIRE RESULTS

### 2011 NCDOT Statewide Public Input Questionnaire on Bicycle and Pedestrian Safety

#### 1. Do you feel, in general, bicycling for daily needs (commuting to work, errands, etc.) in your community is

Answer Options	Very Safe	Somewhat Safe	Neutral	Somewhat Dangerous	Very Dangerous	Rating Average	Response Count
	221	1889	1229	7719	4992	3.96	16050
	1.4%	11.8%	7.7%	<b>48.1%</b>	31.1%		
<i>skipped question</i>							339

#### 2. Do you feel, in general, bicycling for recreation in your community is

Answer Options	Very Safe	Somewhat Safe	Neutral	Somewhat Dangerous	Very Dangerous	Rating Average	Response Count
	580	3893	2090	7133	2605	3.45	16301
	3.6%	23.9%	12.8%	<b>43.8%</b>	16.0%		
<i>skipped question</i>							88

#### 3. In general, how satisfied are you with the safety of the bicycle network in your community?

Answer Options	Very Satisfied	Somewhat Satisfied	Neutral	Somewhat Unsatisfied	Very Unsatisfied	Rating Average	Response Count
	386	2106	2220	6084	5395	3.86	16191
	2.4%	13.0%	13.7%	<b>37.6%</b>	33.3%		
<i>skipped question</i>							198

#### 4. What are the top safety issues for bicyclists in your community? (Choose 4)

Answer Options	Response Percent	Response Count
Speeding on main collector/arterial streets	28.7%	4606
Speeding in residential neighborhoods	16.9%	2705
High volume of vehicles on roadways desired for bicyclists' use	41.4%	6639
Lack of alternatives to cycling on main arterials	55.8%	8940
Unsafe intersections	20.9%	3344
<b>Lack of on-roadway bicycle facilities (bike lanes, wide paved shoulders, shared lane markings, etc.)</b>	<b>82.2%</b>	13174
Lack of bicycle paths and greenways separated from the roadway	52.9%	8476
Bicyclists' lack of use of safety equipment (helmets, reflective gear, headlights, etc.)	7.7%	1228
Motorists' or bicyclists' not sharing the road	49.6%	7942
Other:	13.7%	2199
<i>skipped question</i>		363

5. Do you agree that having a safe bicycle network contributes to your personal well-being and quality of life?							
Answer Options	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Rating Average	Response Count
	10852	3542	920	211	376	1.47	15901
	<b>68.2%</b>	22.3%	5.8%	1.3%	2.4%		
<i>skipped question</i>							488

6. What are the most needed <u>facility improvements</u> to enhance bicyclist safety in your community? (Choose 3)		
Answer Options	Response Percent	Response Count
<b>Bike lanes on collector/arterial streets</b>	<b>84.2%</b>	13378
Signed bike routes on local streets	35.5%	5638
Bicycle accommodations at intersections	36.9%	5853
More paths and greenways separated from the roadway	63.8%	10129
Traffic calming (slowing or reducing motor vehicle traffic), where appropriate	33.1%	5254
Other:	12.0%	1912
<i>skipped question</i>		507

7. Funding to improve bicyclist safety should be prioritized on which types of facilities? (Choose 3)		
Answer Options	Response Percent	Response Count
Intersection improvements	28.7%	4518
Designated bicycle routes	58.3%	9160
Local and neighborhood streets	28.4%	4473
<b>Arterials and major thoroughfares</b>	<b>58.7%</b>	9223
New developments	8.9%	1398
Commercial districts and corridors	24.6%	3873
Path and greenway networks	56.4%	8873
Other:	6.5%	1029
<i>skipped question</i>		665

8. I would bicycle more for <u>daily needs</u> if safety issues in my community were addressed:							
Answer Options	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Rating Average	Response Count
	7383	4805	2123	689	509	1.85	15509
	<b>47.6%</b>	31.0%	13.7%	4.4%	3.3%		
<i>skipped question</i>							880

9. I would bicycle more for <u>recreation</u> if safety issues in my community were addressed.							
Answer Options	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Rating Average	Response Count
	8516	4637	1783	406	379	1.70	15721
	<b>54.2%</b>	29.5%	11.3%	2.6%	2.4%		
<i>skipped question</i>							668

10. Overall, what do you feel are the best solutions to improve bicycle safety? (Choose 4)		
Answer Options	Response Percent	Response Count
Improve roadway designs to accommodate cyclists as regular users and include bike lanes a standard feature on NC roadways.	83.7%	13033
Educate motorists on rights and responsibilities toward bicyclists.	49.7%	7747
Educate bicyclists on the rights and responsibilities of cycling.	26.9%	4197
Adopt local 'complete streets' policies and guidelines which incorporate safe access and design for all roadway users.	36.8%	5727
Revise state statutes/laws to increase bicyclist safety.	16.9%	2635
Retrofit existing roads to add wide paved shoulders or bike lanes.	69.8%	10879
Build more paths and greenways separated from the roadway.	54.9%	8553
Increase enforcement of existing traffic laws for motorists.	18.3%	2856
Increase enforcement of existing traffic laws for cyclists.	9.8%	1531
Other:	3.9%	605
<i>skipped question</i>		809

11. Do you feel, in general, walking for <u>daily needs</u> (commuting to work, errands, etc.) in your community is							
Answer Options	Very Safe	Somewhat Safe	Neutral	Somewhat Dangerous	Very Dangerous	Rating Average	Response Count
	1484	4925	2201	4517	1956	3.04	15083
	9.8%	32.7%	14.6%	29.9%	13.0%		
<i>skipped question</i>							1306

12. Do you feel, in general, walking for <u>recreation</u> in your community is							
Answer Options	Very Safe	Somewhat Safe	Neutral	Somewhat Dangerous	Very Dangerous	Rating Average	Response Count
	2682	6009	2133	3569	1107	2.64	15500
	17.3%	38.8%	13.8%	23.0%	7.1%		
<i>skipped question</i>							889

13. In general, how satisfied are you with the safety of the sidewalk network in your community?							
Answer Options	Very Satisfied	Somewhat Satisfied	Neutral	Somewhat Unsatisfied	Very Unsatisfied	Rating Average	Response Count
	1687	4367	2086	3809	3514	3.20	15463
	10.9%	28.2%	13.5%	24.6%	22.7%		
<i>skipped question</i>							926

14. What are the top safety issues for pedestrians in your community? (Choose 3)		
Answer Options	Response Percent	Response Count
Speeding on main collector/arterial streets	30.3%	4605
Speeding in residential neighborhoods	39.3%	5974
Distance between pedestrian crossings (i.e. long blocks)	11.8%	1801
Motorists' failure to yield at pedestrian crossings	44.5%	6769
Unsafe roadway/intersection design	30.2%	4593
Lack of pedestrian crossings	31.4%	4778
<b>Lack of pedestrian paths/sidewalks</b>	<b>62.6%</b>	9518
Criminal activity along walking routes	10.4%	1585
Lack of accessibility (i.e. compliance with the American Disabilities Act)	4.0%	613
Other:	6.1%	931
<i>skipped question</i>		1189

15. Do you agree that having a safe pedestrian network contributes to your personal well-being and quality of life?							
Answer Options	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Rating Average	Response Count
	10487	3915	713	94	144	1.40	15353
	<b>68.3%</b>	25.5%	4.6%	0.6%	0.9%		
<i>skipped question</i>							1036

16. What are the most needed facility improvements to enhance pedestrian safety in your community? (Choose 3)		
Answer Options	Response Percent	Response Count
<b>Sidewalks on collector streets and in commercial corridors</b>	<b>63.9%</b>	9636
Sidewalks on local and neighborhood streets	63.0%	9502
Safer crosswalks	41.3%	6224
Better lighting	28.4%	4280
More recreational trails	46.5%	7010
Traffic calming (slowing or reducing motor vehicle traffic), where appropriate	30.2%	4552
Other:	3.8%	576
<i>skipped question</i>		1304

17. Funding to improve pedestrian safety should be prioritized on which types of facilities? (Choose 3)		
Answer Options	Response Percent	Response Count
Intersection improvements	43.8%	6634
<b>Local and neighborhood streets</b>	<b>60.2%</b>	9115
Arterials and major thoroughfares	52.8%	7994
New developments	13.8%	2081
Commercial districts and corridors	31.6%	4785
Path and greenway networks	57.6%	8713
Compliance with ADA (Americans with Disabilities Act) accessibility guidelines	8.4%	1274
Other:	3.3%	500
<i>skipped question</i>		1260

18. I would walk more for <u>daily needs</u> if pedestrian safety issues in my community were addressed:							
Answer Options	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Rating Average	Response Count
	5562	5171	3314	803	296	2.02	15146
	36.7%	34.1%	21.9%	5.3%	2.0%		
<i>skipped question</i>							1243

19. I would walk more for <u>recreation</u> if pedestrian safety issues in my community were addressed.							
Answer Options	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Rating Average	Response Count
	6327	5413	2737	543	248	1.88	15268
	41.4%	35.5%	17.9%	3.6%	1.6%		
<i>skipped question</i>							1121

20. Overall, what do you feel are the best solutions to improve pedestrian safety? (Choose 4)		
Answer Options	Response Percent	Response Count
Improve roadway designs to accommodate pedestrians as regular users and include sidewalks as a standard feature on NC roadways.	78.3%	11848
Educate motorists on rights and responsibilities toward pedestrians.	36.6%	5534
Educate pedestrians on their rights and responsibilities.	15.4%	2331
Adopt local 'complete streets' policies and guidelines which incorporate safe access and design for all roadway users.	48.5%	7338
Revise state statutes/laws to increase pedestrian safety.	10.8%	1632
Retrofit existing roads to add sidewalks.	66.9%	10123
Build more paths and greenways separated from the roadway.	61.6%	9321
Increase enforcement of existing traffic laws for motorists.	19.7%	2988
Increase enforcement of existing traffic laws for pedestrians.	5.5%	825
Other:	3.8%	581
<i>skipped question</i>		1259

21. What do you feel are the top <u>emerging</u> safety issues for bicyclists and pedestrians? (Choose 3)		
Answer Options	Response Percent	Response Count
Distracted drivers.	67.7%	10302
Expanding motor vehicle capacity of existing roadways and intersections without consideration for bicyclists and pedestrians.	61.8%	9395
Neighborhood development patterns and segregated land uses.	18.8%	2861
Lack of adequate funding for bicycle and pedestrian facilities.	57.4%	8735
Lack of public support and planning for bicycle and pedestrian facilities.	43.1%	6550
Inadequate data and reporting of crash incidents.	3.3%	506
Inadequate education of bicycle and pedestrian safety skills, rules of the road, and responsibilities of all road users.	24.5%	3732
Other:	4.9%	744
<i>skipped question</i>		1181

22. The underlying safety problems for bicycle and pedestrian transportation in my community are best characterized by (Choose 4)		
Answer Options	Response Percent	Response Count
Bicyclist/Pedestrian behavior	16.7%	2530
Insufficient bicycle and pedestrian education programs	8.5%	1290
Motorist behavior	64.6%	9818
Insufficient motorist education	23.9%	3637
<b>Inadequate infrastructure/facilities for walking and biking</b>	<b>75.4%</b>	11451
Insufficient law enforcement	17.6%	2672
Land use, sprawling development patterns	26.2%	3980
Lack of bicycle and pedestrian connectivity between activity centers/commercial areas and residential neighborhoods	69.8%	10601
Lack of knowledge about existing multi-use paths, bicycle facilities, and bike routes (access to maps, way finding, etc.)	16.8%	2552
Lack of biking/walking culture and advocacy efforts	32.9%	4996
Other:	3.6%	541
<i>skipped question</i>		1194

23. Which choice best describes your walking habits?		
Answer Options	Response Percent	Response Count
I walk mostly for daily needs (running errands, commuting, etc.)	17.8%	2721
<b>I walk mostly for recreation (physical activity, sport, hobby, etc.)</b>	<b>71.8%</b>	10970
I seldom walk	10.4%	1597
<i>skipped question</i>		1101

24. Which choice best describes your bicycling habits?		
Answer Options	Response Percent	Response Count
I bicycle mostly for daily needs (commuting to work, running errands, etc.)	15.3%	2335
<b>I bicycle mostly for recreation (physical activity, sport, hobby, etc.)</b>	<b>65.5%</b>	10016
I seldom bicycle	19.2%	2937
<i>skipped question</i>		1101

25. Which best describes the community in which you live?		
Answer Options	Response Percent	Response Count
Urban	26.9%	4079
<b>Suburban</b>	<b>54.1%</b>	8221
Rural	19.0%	2885
<i>skipped question</i>		1204

26. Municipality:		
Answer Options	Response Percent	Response Count
[open field]		15185
<i>skipped question</i>		1204

27. Zip Code:		
Answer Options		Response Count
[open field]		15185
	<i>skipped question</i>	1204

28. Age:		
Answer Options	Response Percent	Response Count
Under 16	0.2%	26
16-20	1.1%	165
20-30	13.2%	2006
30-40	23.0%	3487
<b>40-50</b>	<b>25.7%</b>	3904
50-60	22.9%	3473
60-70	11.7%	1777
Above 70	2.3%	347
	<i>skipped question</i>	1204

29. Gender:		
Answer Options	Response Percent	Response Count
<b>Male</b>	<b>56.7%</b>	8605
Female	43.3%	6580
	<i>skipped question</i>	1204

## APPENDIX D: ROUNDTABLE SUMMARIES



## 2011 NCDOT BICYCLE AND PEDESTRIAN SAFETY SUMMIT

### DURHAM ROUNDTABLE SUMMARY

**Date:** February 15, 2011

**Location:** Durham City Hall

#### Participants:

Loretta Barren	Siobhan Davis	Sig Hutchinson	Al Schroetel
Philip Bors	James Dunlop	Ed Johnson	Pete Schubert
Wally Bowman	Fleming El-Amin	Ken Kaye	Nina Szlosberg-Landis
Jeff Brubaker	Charles Flink	Steven Lambert	Steven Waters
Alison Carpenter	Ed Harrison	Dale McKeel	Robert Will
Len Cone	Roger Henderson	Felix Nwoko	Tony Wyatt
Jeff Cox	Peggy Holland	Ken Putnam	
Candace Davis	Reed Huegerich	Janet Robertson	

#### Hosts, Facilitators, Staff:

Jim Westmoreland	Kristy Jackson	Judi Wallace	Ralph Womble
Kumar Trivedi	Ann Hartell	Hanna Cockburn	
Sarah O'Brien	Helen Chaney	Walt Thomas	

#### Motorist Focus Group

##### Selected Issues/Problems followed by selected Solutions/Strategies:

- 1. Funding Resources:** Planning, designing, building and maintaining infrastructure  
 Advocate for larger percent of transportation dollars for bicycle/pedestrian projects and optimize delivery process
- 2. New and improved flexible standards:** building codes, site design, land use, parking lots, greenways, crossings, connectivity, and complete streets  
 Improve bicycle and pedestrian access and connectivity through access management;  
 Improve existing infrastructure by adding wide shoulders.
- 3. Infrastructure:** add sidewalk, lane widths, shoulders, crosswalks, greenways with consideration for modal connectivity and continuity  
 Complete and implement complete streets policy. Encourage localities formally to adopt the policy and educate planners and engineers.

Bicycle and Pedestrian Safety Strategies in North Carolina: Statewide Input and Priorities

**4. Education:** need for education on multiple levels: cyclists, motorists, and pedestrians; engineers and planners; law enforcement; children in schools

Launch education initiative to target both internal and external audiences. Internal education: governmental staff members, engineers, planners, and law enforcement; External education: youth, motorists, pedestrians, cyclists, parents, and new drivers. Use PSAs, social media, laws and policies, and teach safety and skills.

**5. Legal:** Contributory Negligence Laws, judicial process, and distracted drivers

Change contributory negligence laws (HB813).  
Strengthen and pass distracted driving laws.

**Problems identified:**

- Contributory negligence laws
- Cyclists riding wrong way, not visible
- Laws not understood
- Parents teaching kids to ride on sidewalks
- Motorists distracted, speeding
- Traffic signals do not pick up cyclists
- Lack of pedestrian signals, sidewalks, crosswalks, lighting;
- Crosswalk and intersection treatment
- Motorist behavior and attitude
- Law enforcement treatment of cyclists
- Pedestrian behavior
- Inadequate building codes and site design requirements - private developments don't require sidewalks (land use) and inadequate facilities in parking lots
- Developers unwilling to pay for facilities and uneducated on bicyclist/pedestrian issues
- Plan reviewers don't understand bicycle/pedestrian issues and requirements
- Unequal modal treatment
- Attitudes between pedestrians and motorists, speed differential
- Segregated land uses and connectivity issues
- Building form
- ADA compliance issues
- Lack of data and publicity on crash statistics in parking lot
- Deficient data and quality of crash reporting
- Mailbox placement (opposite side of street)
- Need for education of NCDOT division staff and other NCDOT staff
- Update road standards
- Need strategies, tools, and consistency for greenway road crossings
- Reactive approach to bicycle and pedestrian needs

**Solutions:**

- Create model ordinance to share with local governments
- Encourage municipalities to develop and implement ADA transition plans
- NCDOT/Gov't pays for 100% of sidewalk cost
- Share data with public on how DWI and distracted driving cases are being handled
- Publicize crash statistics more widely
- Optimize the project delivery process
- Proactively add shoulder width

## **Pedestrian Focus Group**

### **Selected Issues/Problems followed by selected Solutions/Strategies:**

- 1. Education:** Everyone and all topics  
Develop a communication and education plan to promote safe walking. Communication plan may include using social media tools like Facebook, YouTube, and Twitter and promotional materials; target audiences include NC residents such as children via SRTS and drivers. Drivers may be targeted through an overhaul of driver’s education to a more comprehensive “mobility education” program that focuses on how to use all modes and interact with all modes safely (bus, bike, pedestrian, and car)
- 2. Design for Pedestrians:** Current standards have bias toward motor vehicles  
Use context sensitive pedestrian design with a 20-year use horizon for projects.
- 3. Funding formula:** Bicycle/pedestrian projects are not equally supported.  
Increase amount of funding for pedestrian needs by funding all modes equally; i.e. change the pedestrian policy so that NCDOT funds 100% of sidewalk construction when incidental to a highway improvement project and/or adjust the funding formula so that the local match percentages apply to all modes.  
Enhance multi-modal strategies of NCDOT and measure effectiveness of multi-modal efforts.
- 4. Communication, Coordination, and Technical Assistance**  
Create Memorandum of Understanding (MOU) to streamline bicycle/pedestrian project and greenway development among all NC agencies.
- 5. Policy impediments:** Some policies hamper development of a multi-modal system  
Implement policy for NCDOT to pay for 100% of sidewalk construction (see number 3 above)  
Use same funding formula for all modes of transportation (see number 3 above)

### **Problems identified:**

- Poor communication between NCDOT, county, school board, and residents
- Smaller communities disadvantaged in understanding NCDOT process
- Rural counties don’t have planners much less a transportation planner specifically
- State TIP process is unwieldy and does not reflect reality
- Mass transit issues – all trips start as pedestrian trips
- Distracted walking
- Health, weight loss, and environmental concerns – public education campaign tie in
- Walking is currently viewed as a 2<sup>nd</sup> class form of transportation; culture change is needed
- Lack of training and teaching for bicycle pedestrian planning/design at universities (specifically NCSU and UNC were noted)
- Scarce off-roadway facilities and lack of choice in travel routes
- Problems with intersection design and crossing treatments
- Poorly placed transit stops mean safety problems
- Speeding of motor vehicles
- Roadway standard currently has a berm width to support sidewalk construction
- Crashes in parking lots - reverse angle parking is typically discouraged
- Currently design and build for cars; results in multiple conflict points for pedestrians

- Concern with policies on where sidewalks are allowed, which may impact complete streets
- Maintenance requirements for sidewalk on state system roads may disproportionately affect smaller communities, who then do not build sidewalk because they don't have capacity to maintain it
- Lack of sidewalks and paths for pedestrians – need more facilities
- School siting policies make it difficult to meet the high priority needs to build walkways, sidewalk and trails to schools
- Current design of community fosters unhealthy citizens because they are unwalkable
- Complete streets may have an urban bias yet 45% of NC residents live in unincorporated areas.
- Land Use

#### **Solutions:**

- Change policy to stop accepting cul-de-sac roads and require connectivity.
- NCDOT should build multi-modal facilities in unincorporated areas and maintain them (i.e. build and maintain pedestrian and motor vehicle facilities equally.)
- Work with UNC system to implement and maintain multi-modal education
- Get university presidents and chancellors together for bicycle and pedestrian education
- Complete a foundation of pedestrian plans in all 100 counties
- Streamline NEPA/NCDENR process for bicycle and pedestrian projects to reduce administrative burden so that it is more proportionate the cost of the project
- Mobility education for transit, bicycle, pedestrian, and motor vehicle modes—in contrast to driver education.
- Safe Routes to School child education during school years.
- Material needs to be presented through social media such as Facebook, YouTube, Twitter, and PSA's; geared toward NC residents.
- Promote walking in communities
- Transportation demand management
- Build sidewalks within 2 miles of all school sites within the state
- Include multi-modal impact assessment: air quality, water quality, active living, etc.

### **Bicycle Focus Group**

#### **Selected Issues/Problems followed by selected Solutions/Strategies:**

##### **1. Funding**

Require state and local collaboration on “right-sized” design solutions. Collaboration to come up with the right project design will resolve the “double dipping” issue (large state funded projects first followed by local traffic calming expenses later.)

##### **2. Distracted Driving**

Penalty and Publicity. Require a larger penalty for distracted driving used to fund education programs for motorists who receive citations. Bring distracted driving issues into the public eye.

##### **3. Education**

Statewide education campaign focused on motorists and cyclists. Create a highly visual media campaign using social media and PSAs and an education program to address common misconceptions.

#### 4. Facilities

Create design guidelines, educate engineers, address complete streets and ensure connectivity for consistent planning and design across the state.

#### 5. Enforcement

Launch an enforcement program to train officers and educate those involved in the judicial process about bicycle and motorist issues.

#### Problems identified:

- Motorist and bicyclist distraction is growing: texting, talking on phones, GPS systems, and portable media devices (iPods)
- Difficulty in enforcement of distracted driving and need for stronger legislation
- Family cycling connectivity – lack of ‘door to greenway’ network and education about routes
- Need for cyclist education on best practices and laws of the road
- Need for police education; citations will have a deterrent effect on motorists; ticket cyclists as needed
- Need for motorist education including laws of the road, signage, and threat of action by police
- Cyclists and vehicles have difficulty seeing each other in traffic
- Bicycling is not viewed as a legitimate form of transportation; often motorists perceive cyclists as a nuisance.
- Hands on experience/practice is needed for effective cycling
- Enforcement of traffic laws is not consistent
- Lack of laws, laws which are hard to enforce, and laws that are difficult to understand
- Speeding and lack of police enforcement
- Inconsistent roadway design standards (routine accommodation of cyclists, consistent treatment of facilities across boundaries, and complete streets)
- Lack of connectivity within/between neighborhood destinations
- Planning does not routinely include cyclists and lacks design for younger riders (school travel).
- Increasing amount of traffic creates more conflict with bicycle (and other modes), especially at intersections
- Safety studies point to need for separated facilities (cycle-tracks and shared use paths)
- Lack of funding and accommodation for both short term (education/strategic enforcement) and long term (infrastructure) goals.

#### Solutions:

- Make stricter laws, increase penalties, step up enforcement to combat distracted driving.
- Change law to require bikes to have front and back strobe on public roads.
- Train law enforcement officers through the justice academy curriculum and educate within judicial system.
- Require cyclist education for police officers.
- Statewide Complete Streets campaign using mobile workshops to educate NCDOT staff and municipalities on the state’s forthcoming complete streets design guidelines.
- Continuous schedule of cyclist education classes hosted by bicycle shops.
- School programs to educate cyclists.
- Encourage rear strobe lights for bicyclists and mirrors.

- Implement local bicycle ambassadors to set an example and encourage safe cycling.
- Standardize curriculum that includes cyclists' rights for driver's education courses and remedial courses taught by community colleges to help citizens earn points back on their license.
- Create and distribute high impact Public Service Announcements through a professional marketing campaign that target the consequences of distracted driving and encourage safe cycling.
- Educate motorists by increasing the information about cycling on the driver's licensing exam and addressing misconceptions about cycling (e.g. riding against traffic, on sidewalk) through PSAs.
- Create child and adult cycling curriculum and engage in behavior change campaign with safety and education marketing through PSAs.
- Launch statewide bicycle and pedestrian safety campaign.
- Increase enforcement and ticketing of those who break bicycle and pedestrian laws.
- Use social media and advocacy to raise awareness of cycling educate on safety.
- Increase penalties to three points for distracted driving accidents for both motor vehicle crashes and bicycle-motor vehicle crashes.
- Prioritize connectivity of facilities.
- Improve design guidelines for facilities.
- Prepare local collector-connector street plans.
- Implement complete street policy.
- Maintain facilities.
- Implement road rating system for bicycle routes so DOT can maintain cycling routes, repave with smooth surfaces where needed, and widen shoulders when making improvements.
- Consistent planning and design.
- Ensure there is an advocate for facilities in the planning stage of roadway projects.
- Explore volunteers and clubs to do trail work to reduce costs.
- Increase 'payment in lieu of' requiring developers to provide facilities and utilize funds where priority is greatest.
- Realize funding efficiencies through correcting the "software" (educate people) instead of building the "hardware" (facilities).
- Engage developers in the funding and construction of new facilities.
- Ensure that transportation enhancement funding is available for bicycle and pedestrian projects in NC.
- Use economic development argument to increase cycling facilities and increase quality of life.
- Look to model programs to refine and implement selected solutions from 2011 Summit.



## 2011 NCDOT BICYCLE AND PEDESTRIAN SAFETY SUMMIT

### GREENVILLE ROUNDTABLE SUMMARY

**Date:** February 17, 2011  
**Location:** Edwin W. Monroe AHEC Conference Center

#### Participants:

Brad Beggs	Jason Galloway	Jack McCombs	Jennifer Smith
Denise Boswell	Steven Hardy-Braz	Andrew Thomas, Jr.	Linda Staab
Robert Brewington	Jerry Jennings	Kelly Ransdell	Daryl Vreeland
Haywood Daughtry	Mike Kozlosky	Suraiya Rashid	Ellen Walston
Jimmy Eatmon	Bob League	Lori Rhew	Adrienne Walters
Don Eggert	Greg Loy	James Rhodes	Emily Beddingfield

#### Hosts, Facilitators, Staff:

Kumar Trivedi	Ann Hartell	Hanna Cockburn	Bob	Mosher
Sarah O'Brien	Helen Chaney	Walt Thomas		
Kristy Jackson	Judi Wallace	Ralph Womble		

#### Media:

Andrea Blanford (WNCT)

#### Motorist Focus Group

##### Selected Issues/Problems followed by selected Solutions/Strategies:

##### 1. Speeding of vehicles, aggressive and distracted drivers

Enforce existing laws and get courts to follow through with prosecution and apply penalties.

Enact stronger laws

##### 2. Need for education, mutual understanding to change behavior, and cultural change

Create a program using a multi-faceted media approach that includes education for bicyclists, pedestrians, motorists, law enforcement, has a component to teach bicycle basics, has a component for P.E. and health in schools, includes more bicyclist and

pedestrian information in driver’s education, and promotes high visibility clothing and lights for the front and rear of a bicycle.

**3. Bicyclists not predictable or visible**

(Covered by solution #2)

**4. Prioritization on motor vehicles**

Comprehensive transportation planning and complete streets to include all modes and users

**5. Funding, infrastructure, and facilities not available**

**Problems identified:**

- Unpredictable bicyclist and pedestrian behavior.
- Visibility of cyclists and pedestrians
- Lack of understanding of bicycle and pedestrian rights.
- Lack of education, awareness, and enforcement.
- Many approaches to education and not using all of them.
- Wrong messages to motorists about bicyclists and pedestrians
- Enforcement of cyclists not a priority
- Motor vehicles are the enforcement priority, not enforcement for all modes.
- Infrastructure and facilities are not available
- Lack of funding
- Aggressive drivers
- Excessive speeding by motor vehicles
- Distracted drivers

**Pedestrian Focus Group**

**Selected Issues/Problems followed by selected Solutions/Strategies:**

**1. Lack of safe routes to school**

Establish and implement safe routes to schools within municipalities.

**2. Lack of education and awareness of pedestrian laws and the need for pedestrian safety**

Broad overhaul of state and local laws/policies for greater protection of pedestrians. Use a competitive program to develop a “Hollywood Style” statewide education campaign for target audiences using key messages.

**3. Lack of Funding**

Reallocate state and local funding to more closely match user percentages.

**4. Lack of facilities, including: high visibility crosswalks, push buttons, pedestrian signals, sidewalks, signs, and lighting.**

Reallocate state and local funding to more closely match user percentages. (Relates to Strategy #3)

**5. Lack of interagency coordination**

Develop a pedestrian safety task force to facilitate local and state agency coordination.

**Problems identified:**

- Drivers not aware or knowledgeable of laws when encountering pedestrians in crosswalk
- Lack of education as to safe driving practices and street crossing practices by pedestrians
- Pedestrian safety refresher course/training is needed for aging boomers
- Motorists and pedestrians not following rules
- Perception of people walking is tied into social/economic class and race
- Lack of data and planning in small municipalities, including GIS capabilities
- Sidewalks in poor condition
- Lack of infrastructure at schools
- 'Walk to School' Programs are not widespread throughout neighborhoods
- Cultural difficulties in parents thinking that it is ok for children to walk to school
- Lack of sidewalks and lighting
- Lack of education
- Lack of connectivity between sidewalks, between blocks and across roadways.
- Physical barriers for older pedestrians including the length of green cycle
- Schools being cited away from traffic calmed, sidewalk connected, residential areas
- Lack of good land use and planning with regards to walking as a mode of transportation
- Policies that hinder pedestrian transportation

#### Solutions:

- Increase cross-sector conversation and collaboration
- Change policies to improve/increase pedestrian activity (e.g. fee in lieu program to build sidewalks)
- Develop and procure a video game to emphasize proper bicycle and pedestrian etiquette
- Coordinate with DMV to include pedestrian and bicycle safety questions on initial driver's test and at renewal
- Statewide education campaign for pedestrian and bicycle safety including a media campaign with PSAs, an enforcement blitz, and K-5 curriculum.
- Create Hollywood style marketing on how to walk and drive
- Develop competitive safety message program to result in statewide PSAs
- Create inventory of pedestrian facilities
- Provide more planning grants
- Coordinate non-traditional sources for funding (e.g. wellness/health, commerce, and tourism)
- Implement 'vulnerable user law' similar to Oregon State
- Allocate more funds at state and local level

### Bicycle Focus Group

#### Selected Issues/Problems followed by selected Solutions/Strategies:

##### 1. Inconsistent design and inadequate facilities

Create a manual of uniform and innovative bicycle and pedestrian standards by NCDOT and disseminate to local governments.

##### 2. Lack of funding

Demonstrate economic benefits of bicycling (including tourism) through a cost benefit analysis and use it to prioritize existing funding.

##### 3. Lack of education for cyclists, motorists, law enforcement, and judicial system.

Bicycle education program through the school system, driver's education/exam, web resources, and the distribution of cycling laws with new bicycles at point of sale.

**4. Legal improvements (including increased penalties and/or enforcement in some cases) for drunk driving, helmets, distracted drivers, harassment hand signals, bike lights, and the current 2 foot passing standard.**

Identify gaps and provide model state and local laws. Increase penalties and provide better enforcement.

**5. Lack of vision, coordination, and communication**

Broaden the scope of the NC Bike Committee to include pedestrians and develop a statewide vision to be implemented on a local level. Involve multiple stakeholders and state/regional leadership from the beginning to increase ownership in the overarching vision for the future of bicycle and pedestrian transportation in the state of NC.

**Problems identified:**

- Law changes needed for hand signals, passing clearance, driver’s license testing, and harassment
- Penalties are not strict enough and court system does not follow through on convictions
- Bicycle lights not required
- Passing clearance of 2-feet by cars is not enough
- Distracted drivers (cell phone usage)
- Local ordinances do not consider cyclists (development standards, plan implementation)
- Difficult to enforce helmet law
- Drunk cyclists should have same penalty as motor vehicles.
- Stricter penalties needed for motorist crashes involving bicyclists and pedestrians
- Lack of motorist awareness of cyclists
- Bike to school initiatives need to be a program (not just a day) to tackle childhood obesity
- More educational outreach needed to cyclists, motorists, legislature, and local decision makers
- Driver’s bicyclist education needed
- Law enforcement needs training on bike/ped issues
- Funding is lacking for roadway improvements
- Inconsistent design standards in details such as railroad crossings, rumble strips, and sewer grates
- Lack of mandated facilities for walking and biking near schools
- Overall lack of cycling facilities
- Culture prioritizes motor vehicles
- Lack of coordination and communication between citizens, local government and NCDOT
- Lack of regional planning for connection of trails.
- Lack of overall vision for NC as a great place to bike and use of economic impact as a development strategy

**Solutions:**

- Develop model design guidelines using innovative designs.
- Ensure detailed plans for implementation
- Address the decline of North Carolina in the League of American Bicyclists Bicycle Friendly States Ranking
- Establish an NGO state biking advocacy group funded by ‘Share the Road’ license plates.
- Coordinate with tourism agencies
- Include bicycle lanes with resurfacing
- Take ‘Complete Streets’ from policy to implementation
- Use website to educate about local laws

- Improve driver’s licensing exam with respect to bicyclists and pedestrians.
- Incorporate some level of bicyclist and pedestrian education at elementary, middle, and high school levels.
- Bicycle education and communication of routes for tourists (brochures and packets in hotels and house rentals)
- Create and implement education program (videos, maps, website, give-aways, sponsored rides)
- Mandate bicyclist and pedestrian education for law enforcement and judges
- Create and distribute understandable, easy-to-read pamphlets and booklets.
- Include a copy of bicycle laws with every bicycle sold.
- Reprioritize existing funds
- Promote healthy environments by imposing soda tax, registration fee, bike tax, or some other tax
- Provide tax rebates to businesses for providing infrastructure
- Include bike facilities as a part of transportation funding
- Demonstrate economic benefits to creating a desirable bicycling environment and connect to tourism
- Bike tax or bike license to create funding for infrastructure improvements
- Enforce laws
- Review existing laws, ID gaps and inefficiencies and make changes to state laws
- Draft model laws for state and municipalities



## 2011 NCDOT BICYCLE AND PEDESTRIAN SAFETY SUMMIT

### WINSTON-SALEM ROUNDTABLE SUMMARY

**Date:** February 24, 2011  
**Location:** Bryce Stuart Municipal Building

#### **Participants:**

Leslie Armeniox	Jesse Day	Lynn Pitson	Charles von Isenberg
Kevin Bounds	Vickie Embry	Scott Sexton	Judi Wallace
Matthew Burczyk	Greg Errett	Mike Shaffner	Bob Collier
Mike Cardwell	David Hyder	Ted Silver	
Shea Cox	Dan Mikkelson	Jeff Sovich	

#### **Hosts, Facilitators, Staff:**

Kumar Trivedi	Kristy Jackson	Judi Wallace	Bill Woods
Sarah O'Brien	Helen Chaney	Hanna Cockburn	Ralph Womble

#### **Pedestrian Focus Group**

##### **Selected Issues/Problems followed by selected Solutions/Strategies:**

- 1. Lack of enforcement and education (multi-lingual) for pedestrians, motorists, law enforcement, planners, and engineers.**  
Create a public awareness campaign for pedestrian safety, promote walk-to-school day events, provide education on funding sources, and discourage passing stopped school buses.
- 2. Need for safe routes to school.**  
Facilitate interagency cooperation at state level on school siting, provide greenway linkages to schools, and rethink school transportation to include the use of public transit.
- 3. Funding deficiencies for current and future policies.**  
Prioritize funding to match policy priorities, expand locations where Powell Bill funds can be used, allow apportionment for fine money to be shared between municipalities and schools, and revisit NCDOT sidewalk policy to echo the policies set forth with the adoption of 'Complete Streets'.
- 4. Disconnect between land use and transportation planning**

Bicycle and Pedestrian Safety Strategies in North Carolina: Statewide Input and Priorities

Foster collaboration between agencies for land use and transportation planning, and incorporate “crime prevention through environmental design.”

#### 5. Lack of proper pedestrian infrastructure and connectivity

When designing cross-sections, factor in the anticipated number of bicyclists and pedestrians from the associated land uses, rather than using only traditional warrants. Streamline the approval/project development process including determining right-of-way for a project in advance.

#### Problems identified:

- Lack of pedestrian facilities.
- Issues with lighting and maintenance of facilities  
Signal timing is geared toward motorists and conflicts with pedestrian needs.
- Accessibility is lacking
- Visibility is often obscured by vegetation, lack of lighting, buildings, and street furniture.
- School sited in locations that are not walkable
- Disconnect between land use and transportation
- New development consists of low density, car-oriented development patterns which does not encourage walking.
- Lack of connectivity and accessibility of transit in the transportation network.
- Poor site design and access management
- Lack of funding
- Not enough funds available for retrofitting existing corridors
- Disproportionate funding for pedestrian needs
- Disincentive to provide pedestrian-scale lighting from utilities
- Lack of education and enforcement
- Car-oriented culture
- Pedestrian safety education needed for school aged children
- Need for statewide crossing guard training
- Citizens lack knowledge to make requests for pedestrian improvements
- Pedestrians lack education and awareness on their rights and responsibilities, behaving differently depending on the situation.
- Distracted drivers and pedestrians
- Language barriers exist to providing information
- Perception of crime along walking routes discourages walking
- Opposition to construction of greenways and sidewalks
- Motorists lack knowledge of pedestrian laws.

#### Solutions:

- Support insurance incentives for education of bicyclists, pedestrians, and motorists.

### Bicycle Focus Group

#### Selected Issues/Problems followed by selected Solutions/Strategies:

##### 1. Minimal consequences from law enforcement and prosecutors for drivers who hit cyclists.

Engage a legislative mandate to create a special unit of prosecutors to deal with bicycle/motor vehicle crashes at the district attorney level, similar to domestic violence or juvenile unit.

**2. Education is needed on regulations, responsibilities, and rules of the road for bicyclists, motorists, and law enforcement officers.**

Develop a bicycle and pedestrian safety education program that includes emphasis in schools (K-12), basic law enforcement training, drivers' licensing, helmet distribution, and includes more media coverage of problems and solutions.

**3. Failure to prioritize multi-modal transportation in planning, design, and implementation.**

Create mandatory policies (with clear exceptions) including changing language in many cases from 'should' to 'shall.' Track implementation to create accountability to the public for policies and create committed management/leadership.

**4. Transportation and land use planning fails to adequately address sprawl and urban form.**

Maximize partnerships between municipalities, counties, and NCDOT. Create infrastructure for door-to-door bicycling trips by designating routes, creating greenways, and installing bike lanes.

**5. Attitude of motorists and overall mindset toward cycling is not conducive to a safe environment for all road users.**

Create major education campaign using media that focuses on awareness and attitudes for both cyclists and motorists.

**Problems identified:**

- Lack of prosecution on motorist and cyclist violations.
- Lack of stiff laws and penalties for violations.
- Drivers often not cited for the fault and cases are not enforced with the same vigor as motor vehicle crashes.
- Motorists and bicyclists often do not understand their responsibilities and the law.
- Driver education program lacks information regarding cyclists and traffic laws.
- More facilities are needed for families (on and off roadway)
- Intersections present a huge barrier for bicycle and pedestrian travel.
- Streets are designed for high speed traffic and large volumes of motor vehicles.
- Roads need to be retrofitted to add bicycle facilities. Reasonable guidelines and good examples are lacking.
- Spatially on a roadway project, motor vehicles are considered first and the "leftovers" are given to cyclists and pedestrians.
- The emphasis continues to be on moving cars, not people.
- Lack of safe options, including greenways, for a wide range of cyclists from families to experienced cyclists.
- There is disconnect between transportation and land use planning which creates sprawling communities. Sprawling urban form does not promote biking and walking trips.
- Lack of safe networks to connect destinations.
- Drivers' have poor attitudes regarding cyclists' rights and often feel they should not even be on the road.
- Distracted drivers are an emerging issue and increasing concern for cyclist safety.
- Drivers do not expect to see cyclists and are unprepared to respond.
- Lack of bicycle racks at schools; no place for children to lock bicycle during the school day

## Solutions:

- Teach courtesy to both cyclist and motorists.
- 'Share the road' and 'bicycle traffic' signage.
- Make reflective tape and lights available for free to create more awareness of bicyclists at night.
- Make cyclists more accountable for behavior and attitude.
- Require more equipment for bicyclists to ride on the road.
- Improve partnerships between NCDOT and municipal planning.
- Make all public transit vehicles bicycle accessible.
- Use 'road diets' on 4-lane roads to create 3-lane roads (two travel lanes, one center turn lane) with bike lanes.
- Purchase more right-of-way on NCDOT projects to allow for side paths and bike trails.
- Require multi-modal planning for new development, new streets, redesigned streets, and anywhere there is such a trigger.
- Study good examples and adopt 'best practices' guidelines for retro-fitting existing roads to accommodate bicycles.
- Create Public Safety Announcements (PSAs) that use real-life stories of motor vehicle/bicycle crashes.
- Include cyclist 'rules of the road' and laws in drivers' education curriculum.
- Address bicycle and pedestrian issues during license renewal process.
- Make bicycle and pedestrian safety courses mandatory for elementary students.
- Teach bicycle education in grade school and similar education in drivers' education courses.
- Expand the 'Share the road' marketing campaign.
- Emphasize bicycle/pedestrian modules in basic law enforcement training.
- Create zones where cell phone use is illegal including school zones, work zones, and central business districts.
- Have police departments select a few issues to focus on for enforcement to address the lack of available officers.
- Speak at NC annual conference of district attorneys to educate on bicycle issues and encourage enforcement of the current laws.
- In the event of a crash, place the onus on the motor vehicle operator ('guilty until proven innocent') to protect vulnerable road users such as bicyclists and pedestrians.
- Increase fines and points for distracted driving and unsafe bicycling.



## 2011 NCDOT BICYCLE AND PEDESTRIAN SAFETY SUMMIT

### ASHEVILLE ROUNDTABLE SUMMARY

**Date:** February 23, 2011  
**Location:** Buncombe County Commissioners' Chambers

#### Participants:

Sue Anderson	Bucky Galloway	Kathy Molin	Jason Wilde
Janet Barlow	Don Kostelec	Jeff Moore	Gene Williamson
Mike Calloway	Garrett Male	Reuben Moore	Cecil Yount
Heather Cotton	Traci Malone	Claudia Nix	Jay Swain
Craig Friedrich	Terry March	Joel Setzer	
Carolyn Fryberger	Kris Merithew	Ryan Sherby	

#### Hosts, Facilitators, Staff:

Kumar Trivedi	Barb Mee	Hanna Cockburn
Sarah O'Brien	Helen Chaney	Bill Woods
Kristy Jackson	Judi Wallace	Ralph Womble

#### Motorist Focus Group

##### Selected Issues/Problems followed by selected Solutions/Strategies:

1. Value of bicycles and pedestrians as legitimate modes
2. Lack of well-designed facilities
3. TIP projects farther along in the process do not incorporate pedestrian and bicycle facilities as called for under the Complete Streets policy

The following address problem 1, 2, and 3:

Implement complete streets policy and include planning for bicyclists/pedestrians in projects between NCDOT and local governments (including those that are currently in the pipeline) using best practices for facility design, consideration for off-road facilities, and a public comment period.

NCDOT to maintain sidewalks in unincorporated areas.

Increased funding for bicycle and pedestrian facilities or reallocation of funding

4. Lack of cyclist education and "rules of the road"

Incorporate bicycle and pedestrian awareness into driver education and license renewal and create a public awareness campaign (posters/billboards) to educate

#### **5. Need for enforcement of laws relating to bicyclists and pedestrians**

Use Governor's Highway Safety Program to fund local enforcement programs for bicyclists, pedestrians, and motorists.

#### **Problems identified:**

- Design issues with bicycle lanes including back-out angle parking and places where cyclists merge with motor vehicle lanes.
- The ability to provide bicycle and pedestrian facilities with regard to topographic constraints and associated costs.
- Counties not accustomed to maintaining sidewalks
- Focus is on commuting cyclists, not recreational cyclists by NCDOT.
- Misconceptions about NCDOT building sidewalks in unincorporated areas.
- Visibility of pedestrians and cyclists
- Pedestrians not educated about laws or don't follow them.
- Problems with large event rides, number of cyclists, and motor vehicle speeds
- Officers are disinclined to ticket motorists who fail to yield to a pedestrian if an officer does not directly witness the event or if the pedestrian was not physically injured.
- Definition of responsibility for roadway and right of way in unincorporated areas

#### **Solutions:**

- Long range planning in rural areas (fiscal constraints)
- Roadway markings for awareness of bicyclists, including sharrows.
- Retest motor vehicle drivers.

### **Pedestrian Focus Group**

#### **Selected Issues/Problems followed by selected Solutions/Strategies:**

**1. Lack of well-designed pedestrian facilities (sidewalks, crosswalks, and pedestrian signals) that are ADA compliant.**

Prioritize and fix main corridors first so pedestrians can safely walk along and across them.

**2. Laws related to pedestrian safety are confusing, conflicting, out of date, and/or hard to enforce**

Evaluate existing statutes/administrative code to identify problems (conflicts, barriers to enforcement, infrastructure, and confusing language) and recommend changes to the general assembly.

**3. Lack of pedestrian and driver education**

Increase number of question on driver's exam and renewal that include pedestrians.

**4. Reprioritize state and local funding is needed to address pedestrian safety needs**

Local match for roadway projects should include whole project, not just sidewalks.

## 5. Lack of inter-agency coordination and planning that reflects the community vision

Clearly define roles and responsibilities in the planning stages and include an increase in the role of local planning.

### Problems identified:

- Lack of funding choices for pedestrian needs
- Lack of facilities (separating pedestrians from motorized vehicles) and connectivity in sidewalk network
- Signal timing often inadequate for older pedestrians
- Signals not timed for pedestrians
- Lack of right-of-way to build sidewalks and pedestrian facilities
- Distracted driving
- Motorists not yielding (including when turning 'right on red')
- Speeding of motor vehicles
- Lack of driver's education
- Lack of pedestrian education (safety)
- Pedestrian's gambling with traffic
- Pedestrians faulted for crashes
- Lack of enforcement related to pedestrian issues
- Lack of multi-agency interactions, vision, and coordinated planning
- Lack of flexibility in design to accommodate future development/travel patterns
- Lack of creativity in solutions that benefit all users
- Barriers on pedestrian walkways
- Inadequate maintenance on existing facilities

### Solutions:

- Greater flexibility in use of Powell Bill funds for land and facilities not currently fundable
- Increase ability for local governments to decide funding priorities
- Increase number of sidewalk projects (retrofit and new)
- Assess newly developed public infrastructure and facilities.
- Create additional revenue sources
- Develop a new attitude toward levels of congestion
- Include code in TIP that pedestrian needs must be identified and included in a project
- Fix existing, not just new facilities
- Revise design standards to include pedestrians and ADA compliance as a focus, not an afterthought.
- Review laws that affect the pedestrian environment (include utility regulation, fire codes which tend to create wide lanes, pedestrian laws, development regulations, etc).
- Task force to "coordinate" application of laws.
- General assembly or NCDOT study existing laws for needed changes
- Remedial knowledge testing at license renewal
- Create public services advertisements for pedestrian education
- Develop statewide media campaign designed to change behaviors of both pedestrians and motorists.
- Require coordination as part of complete streets policy
- Require an impact assessment for transportation and land use planning
- Strengthen the policy of 'encouraging shared driveways' to 'require shared driveways.'
- Disincentive to have pedestrian scale lighting due to utility companies' payment structure.

## **Bicycle Focus Group**

### **Selected Issues/Problems followed by selected Solutions/Strategies:**

- 1. Need for a cultural change in mindset from a car-centric to multi-modal society**  
Use a professional marketing/ad campaign to encourage shift in mindset  
Cyclist education in multiple languages for a range of ages, including a linkage to the NC Standard Course of Study for school aged children.
- 2. Lack of interagency coordination between universities, municipalities, and NCDOT when providing and maintaining facilities**  
Develop a Memorandum of Understanding among agencies which takes advantage of existing city/county powers and addresses roles and responsibilities regarding land use connections. It should be a living document to facilitate conversations and bring counties into the partnership more broadly than they are today.
- 3. Work zone management**  
Stronger regulations and requirements for utility encroachments and better inspection of the work of utilities and developers as the work in the right-of-way occurs.  
Strengthen bicycle and pedestrian guidelines for work zones.
- 4. Inadequate facilities including narrow roads with no shoulders, minimal right-of-ways, lack of bike racks, etc.**  
Consider cyclist needs in the planning/scoping process on primary and secondary roads and conditional guidance for inclusion of facilities from 'may' to 'shall.'  
Educate business owners on profit potential for including cyclist facilities.
- 5. Lack of enforcement**  
Develop credit training for continuing education of law enforcement officers and petition judicial system for appropriate support in bicycle/pedestrian cases.

### **Problems identified:**

- Lack of respect for bicyclists
- Liability fears
- Personal safety fears
- Lack of supportive state policies (growth management, off-site improvements, etc) to help change culture.
- Distracted driving and lack of law
- Lack of education for children, parents, and new drivers
- Lack of education for cyclists, motorists, law enforcement, legal system, and law makers and inadequate knowledge of traffic laws.
- Educational needs (riding wrong way and passing clearance)
- Poor construction practices (work zones, lane closures, detour routes)
- Lack of bicycle infrastructure and facilities (especially for children and families)
- Design of interface between greenway, railroad crossing, and roadway
- Shortcomings to bicycle facilities, network, access and planning.
- Limited innovative design in regards to bicycle facilities
- Lack of funding equity

- Lack of local and regional funding and priorities; lack of policies to raise funds.
- Clearance laws of 2 ft are not enough
- Lack of enforcement for bicycle and motorist laws including distracted and drunk drivers

### Solutions:

- Lobby for policy changes in enforcement
- Training, continuing education and professional development for law enforcement officers.
- Law enforcement outreach and liaisons within the State Highway Patrol
- User fee structure for facilities
- Post construction audit and evaluation of bicycle facilities to identify deficiencies
- Coordinate state road maintenance with local bicycle and pedestrian master plans
- Utilize vacant lots and buildings as bike parks
- Incentivize spot improvements
- Increase state amount for matching funds projects
- Involve cyclists in project development (planning and design)
- Train contract administrative staff regarding work zone management
- Create specialized bicycle and pedestrian guidelines
- Require an in-process evaluation of facilities
- Empower Division of Bicycle and Pedestrian Transportation on more projects
- Go beyond 'Complete Streets' and recognize need for 'Complete Communities'
- Seed committees power structures with cyclists to facilitate interagency coordination
- Increase partnerships
- Restructure NCDOT division offices to include a more substantial multi-modal component (pedestrian/bicycle person at the Division Level)
- Voluntary bicycle licensing using the fees for education. Use as a vehicle to give education about bicycling and reward individuals who purchase.
- Create public service announcements to facilitate cultural change, promote early education in schools, and increase emphasis in driver's education by including a bicycling question.
- Involving cell phone industry and insurance companies in preventing distracted driving, biking, and walking.
- Mandatory licensing of bicyclists that use public roadways



## 2011 NCDOT BICYCLE AND PEDESTRIAN SAFETY SUMMIT

### CHARLOTTE ROUNDTABLE SUMMARY

**Date:** March 02, 2011  
**Location:** Charlotte-Mecklenburg Government Center

#### **Participants:**

Neil Burke	LeRae Davis	Erika Martin	Bethany Wild
Pate Butler	Lindsey Dunevant	Dennis Rash	Dick Winters
Reuben Chandler	Judy Hawkins	Randy Sales	Kenneth Withrow
Vivian Coleman	Mark Helms	Dick Sesler	Martin Zimmerman
Robert Cook	Blair Israel	Dana Stoogenke	
Scott Correll	Josh King	Ken Tippette	

#### **Hosts, Facilitators, Staff:**

Sarah O'Brien	Ann Hartell	Judi Wallace	Bill Woods
Kristy Jackson	Helen Chaney	Hanna Cockburn	

#### **Motorist Focus Group**

##### **Selected Issues/Problems followed by selected Solutions/Strategies:**

- 1. Lack of funding and coordination contributes to poor context sensitive roadway design and connectivity for multi-modal transportation.**  
Increase funding to bicycle/pedestrian transportation and the variety of funding sources to build facilities for bicycling and walking including the implementation of Complete Streets Policy (also addresses 3,4) and retrofitting/maintaining shoulders.
- 2. Lack of cyclist group courtesy**  
Create grassroots cyclist etiquette through clubs, shops, advocacy groups, and cycling venues.
- 3. Lack of education**  
Advocate Safe Routes to School solutions where transportation funding is limited for busing students to school.  
Include education in drivers' education and include the dangers of distracted driving and how to interact safely with bicyclists/pedestrians. (also addresses #2,4)

Create licensing, registration, and inspection for cyclists to fund education programs.  
(also addresses #1)

**4. Cultural clash between motorized and non-motorized transportation on institutional and individual levels.**

Change the policies relating to land use, density, transportation, and sustainability.  
(addresses all)

**5. Lack of enforcement for illegal and bad behaviors**

Increased enforcement and stiffer penalties for offenses between motorists and bicyclists/pedestrians.

**Problems identified:**

- Motorists frustration with length of commute and the inconvenience of pedestrians and bicyclists to their travel time.
- Parental fear and resistance to children walking and biking.
- Lack of bicyclist and pedestrian facilities
- Increase in multi-modal transportation and motorists' ability to 'share the road.'
- Lack of understanding about who pays for the roadway.
- Lack of guidance for defensive cycling
- Poor visibility of pedestrians and cyclists
- Unpredictability of cyclists and pedestrians (including not using signals or actuation buttons)
- Too much focus on motor vehicles from the standpoint of culture and funding.

**Pedestrian Focus Group**

**Selected Issues/Problems followed by selected Solutions/Strategies:**

**1. Lack of land use policies and ordinances that encourage connectivity, better manage access and site design for pedestrian considerations, prevent sprawl, and mix land uses.**

Encourage infill development by changing school siting policies and changing legislation to allow local governments to assess impact fees. Develop and disseminate model policy modules or best practices to local governments.

**2. Lack of funding for pedestrian facilities due to the current way that funds are allocated/prioritized within NCDOT .**

Enhance collaboration between NCDOT and local governments by a) revising the sidewalk funding policy equity formula to better reflect the spirit of the Complete Streets policy; and b) incorporating "return-on-investment" procedures into the metrics of the SPOT prioritization process. A more holistic comparison of projects will help assess quality of life impacts from each by incorporating economic impacts or cost/benefit measures into the SPOT prioritization of projects.

**3. Lack of pedestrian culture in North Carolina due to historical mindsets, real and perceived risks associated with walking, and general lack of pedestrians (i.e. need to increase walkability to increase number of pedestrians for added benefit of 'safety in numbers').**

Focus on young children through Safe Routes to School initiatives and programs like walking school buses.

**4. Lack of complete streets/desire to retrofit existing streets so that they meet the needs of all users safely and efficiently through appropriate context sensitive design for rural, urban and suburban areas.**

At the state level, adopt complete streets design guidelines. Coordinate with local governments to encourage them to adopt complete streets policies, amend codes and ordinances to reflect these policies, and prioritize complete streets projects locally through capital improvements with available funding.

**5. Mutual awareness is lacking between bicyclists, drivers and pedestrians, and there is a general lack of enforcement which needs to address speeding, not yielding, and distracted driving/walking.**

Require more from all users of the roadway network (i.e. drivers, bicyclists and pedestrians) by setting tougher requirements for licensees, broadening Driver's Education to cover "mobility" education, and reviewing criteria for driver's license renewal to incorporate more than just vision and signage tests.

**Problems identified:**

- Lack of education, promotion, and awareness of livability through the built environment and understanding of how it contributes to quality of life.
- Lack of cross cultural sensitivity in pedestrian design and programs.
- Education for drivers, bicyclists, pedestrians, and the public in general on safety, rules, and laws.
- Money not available for low income groups
- Sidewalks contain obstructions and need repair.
- Poor connectivity of pedestrian networks and pedestrian ways through parking lots
- Poor access management
- Sprawling land use does not foster walking trips
- Sidewalk policies and ordinances at the county and local level are lacking.
- Lack of adherence to and enforcement of laws.
- Personal safety concerns (actual or perceived) prohibit people from walking.
- Lack of pedestrian infrastructure in high growth areas.
- Poor maintenance of existing pedestrian infrastructure.
- Safer crossings need for mid-block and street crossings for transit users
- Need for context sensitive infrastructure design
- Intersection activity (eg. Intersections are problematic because of both driver behavior, and physical environment/geometric design of some)
- Unwillingness of drivers' to yield to pedestrians
- Speeding traffic

**Solutions:**

- Brochures on pedestrian safety, public service announcements, and enforcement programs
- Post-mounted or near-side traffic signals
- Develop programs (public/private partnerships) for using alternative modes of transportation including company incentives to employees.
- Increase funding for retrofitting urban and suburban streets

- Develop, distribute, and promote a range of pedestrian friendly land use policy modules to municipalities and counties.
- Adopt policies, amend codes to reflect policies, and prioritize CIP projects with available funding.
- Revamp drivers' education program to addresses driver awareness.

## **Bicycle Focus Group**

### **Selected Issues/Problems followed by selected Solutions/Strategies:**

**1. Meaning of 'Share the Road' is not clear and violations not enforced.**

Use an annual targeted enforcement in which members of law enforcement issue tickets for violating specific safety issues related to 'Sharing the Road.'

**2. Insufficient detail and inaccurate reporting of crashes; lack of statistics regarding bicyclists in NC**

Work with State Highway Patrol board to develop a bicycle-specific form and education for bicycle-related crashes or revise existing form to capture more detail on crashes.

**3. Engineering lacks consideration in design for all modes**

Emphasize complete streets through design guidelines (on both state and local level), enhance connectivity through partnerships.

**4. Poor attitudes and behaviors on behalf of motorists and cyclists and refusal to behave civilly.**

Develop public safety campaign by using commercials and public service announcements to address attitudes and use with targeted enforcement (#1). Model after successful programs like "Click it or Ticket."

**5. Need for education and training of bicyclists and motorists**

Develop bicycle training course which helps a student earn points toward a driver's license and include information on driver's licensing exam.

### **Problems identified:**

- Bicycle facilities (including bicycle lanes) not incorporated into roadway projects
- Inappropriate street elements (4-way stops, problems with right-on-red)
- Intersection problems related to bicyclist safety
- Development without consideration for bicycle transportation in relationship to land use, especially on farm-to-market roads where development pressures are increasing
- Lack of funding for regional bicycle projects
- Little enforcement of children's helmet law.
- Inaccurate reporting leads to intimidation and misperceptions of safety.
- Lack of public education for cyclists in motorists, especially in drivers' education
- Lack of skills, awareness, and unsafe movements on behalf of bicyclists.
- Poor knowledge of laws on behalf of cyclists and motorists

- Bicycle safety education is needed during adolescent years (14-19) during license education or after a drivers' license is obtained
- Helmets not consistently worn by children, especially into teenage years.
- Lack of knowledge of suitable routes for bicycling
- Distracted drivers
- Mutual respect for the roadway on behalf of both bicyclists and motorists

### Solutions:

- Increased penalty when a crash involves texting or phoning
- Public outreach campaign on the dangers of distracted driving
- Develop more PSAs to encourage motor-vehicle and bicycle safety interaction on public roadways
- Add data fields for law enforcement officers reporting forms to include more accident information (location, cause, conditions, etc)
- Training on accident reporting when a cyclist is involved
- Encourage voluntary bicycle registration, potentially using a nominal fee, to keep statistics on number of bicyclists riding in the state to assess needs and extent of cycling. If money is collected, ensure its use is specific to a well-defined bicycle-specific purpose which involves safety and education.
- Initiate bicycle safety class in 5<sup>th</sup> grade, as a part of the NC Standard Course of Study.
- Implement bike skills training in elementary and middle schools that accrue to credits when obtaining a NC drivers' license.
- Emphasize bicycle safety in drivers' education course
- Develop regulation to increase connectivity on low volume streets for cyclists and other road users when building larger high-volume roadways like highways and interstates to avoid barriers to travel. Retrofit existing streets.
- Apply additional points if addressing bicycle safety during the SPOT prioritization process
- Coordination with NCDOT to include bicycle facilities in TIP projects, where applicable, and share costs
- Substitute roundabouts for some stop situations (address failure to stop at 4-way stops and left hand hook hazards) for the mutual benefit of both motorists and cyclists.
- Implement facilities as required in zoning and development standards to address connectivity.
- Use proper engineering techniques
- Educate NCDOT employees and engineers on importance of including safe design for bicycles and pedestrians in road design to address the current vehicular volume and capacity-driven mindset.

## **APPENDIX E: PRIORITY VOTING FULL TEXT**

### **PRIORITY VOTING**

Participants and facilitators who attended focus groups at the 2011 NC Bicycle and Pedestrian Safety Summit received a survey to further prioritize the strategies that came out of the regional roundtables that were held across the state. Some grouping of the solutions from the focus group discussions was necessary to combine similar ideas, reduce redundancy, and narrow the choices available to a reasonable number. The strategies are categorized for organizational purposes but in many cases, may relate to multiple categories. The following 3 sections give the text of the priority voting survey which was administered to participants online:

### **SECTION 1: SUMMARY OF STRATEGIES FROM THE MOTORIST FOCUS GROUP DISCUSSION**

Please choose the 5 strategies on this page that you feel should be a statewide focus for bicyclist and pedestrian safety in the next decade. There are no categorical restrictions.

#### **Facilities/Design**

- Improve bicycle and pedestrian access and connectivity through access management;
- Improve existing infrastructure by adding wide shoulders.
- Include unincorporated areas in NCDOT construction and maintenance of sidewalks.
- Implement complete streets policy and include planning for all modes in projects between NCDOT and local governments (including those that are currently in the pipeline) using best practices for facility design, consideration for off-road facilities, and a public comment period.

#### **Policies/Funding**

- Change the policies relating to land use, density, transportation, and sustainability to address cultural clash between motorized and non-motorized transportation.
- Increase funding to bicycle/pedestrian transportation and the variety of funding sources to build facilities for bicycling and walking including the implementation of Complete Streets Policy and retrofitting/maintaining shoulders.
- Advocate Safe Routes to School solutions where transportation funding is limited for busing students to school.
- Advocate for larger percent of transportation dollars and/or reallocate funding to provide more funding for bicycle/pedestrian projects; optimize delivery process.
- Encourage localities formally to adopt Complete Streets Policy and educate planners/engineers.

#### **Laws/Enforcement**

- When laws are enforced, get courts to follow through with prosecution and application of penalties.
- Enact stronger laws that target motorists' speeding, aggressive driving, and distracted driving.
- Change contributory negligence laws (HB813).

- Create licensing, registration, and inspection for cyclists to fund education programs.
- Use Governor’s Highway Safety Program to fund local enforcement programs for bicyclists, pedestrians, and motorists.
- Increase enforcement and create stiffer penalties for offenses between motorists and bicyclists/pedestrians.

#### **Education**

- Incorporate bicycle and pedestrian skills into driver education and license renewal.
- Include messages in drivers’ education about the dangers of distracted driving and how to interact safely with bicyclists/pedestrians.
- Create grassroots cyclist etiquette and education through clubs, shops, advocacy groups, and cycling venues.
- Use PSAs and social media to teach laws, policies, safety, and skills to youth, parents, motorists, pedestrians, cyclists, and new drivers.
- Create a public awareness campaign (media/posters/billboards) that includes education for bicyclists, pedestrians, motorists, and law enforcement, to teach the “rules of the road.” A key message for cyclists is to promote high visibility clothing and lights for the front and rear of a bicycle.
- Develop education program to teach bicycle basics with a component for P.E. and health in schools.
- Launch educational initiative on bicycle and pedestrian issues to reach internal audiences including: governmental staff members, engineers, planners and law enforcement.

### **SECTION 2: SUMMARY OF STRATEGIES FROM THE PEDESTRIAN FOCUS GROUP DISCUSSION**

Please choose the 5 strategies on this page that you feel should be a statewide focus for bicyclist and pedestrian safety in the next decade. There are no categorical restrictions.

#### **Facilities**

- Prioritize and fix main corridors first so pedestrians can safely walk along and across them.
- Establish and implement safe routes to schools within municipalities.
- When planning, use a 20-year horizon for projects. Design cross-sections to factor in the anticipated number of bicyclists and pedestrians from the associated land uses, rather than using only traditional warrants.
- Incorporate “crime prevention through environmental design” in land use and transportation planning.

#### **Education**

- Create a public awareness campaign for pedestrian safety that focuses on young children through Safe Routes to School initiatives (walk-to-school day events, walking school buses), creating awareness for the school bus stop arm law, and providing education on funding sources.
- Require more from all users of the roadway network by setting tougher requirements for licensees. Broaden Driver’s Education to cover “mobility” education (bus, bike, pedestrian,

and car), increase the number of questions that include pedestrians, and add reviewing criteria for driver's license renewal to incorporate more than just vision and signage tests.

- Use a competitive program to develop a "Hollywood Style" (e.g. professionally produced) statewide pedestrian education campaign for target audiences using key messages. Use social media tools and promotional materials to target NC residents including children and drivers.

### **Intergovernmental Cooperation**

- Facilitate interagency cooperation at state level on school siting, providing greenway linkages to schools, and rethinking school transportation to include the use of public transit.
- Create Memorandum of Understanding between NC agencies to foster collaboration between agencies for land use planning and streamlining bicycle/pedestrian project and greenway development.
- Develop a pedestrian safety task force to facilitate local and state agency coordination.
- Clearly define roles and responsibilities in the planning stages and include an increase in the role of local planning.

### **Funding/Policies**

- Prioritize funding to match policy priorities, expand locations where Powell Bill funds can be used, and allow apportionment for fine money to be shared between municipalities and schools.
- Improve multi-modal strategies for NCDOT by funding all modes equally. Address current funding bias toward motor vehicles by revisiting NCDOT's sidewalk policy to be more in line with the newly adopted Complete Streets Policy -- change the funding formula so that NCDOT funds 100% of sidewalk construction when incidental to a state roadway project, or adjust it so that the local match percentages apply to all modes (i.e. to the entire project).
- Enhance collaboration between NCDOT and local governments by incorporating "return-on-investment" procedures into the metrics of the SPOT prioritization process. A more holistic comparison of projects will help assess quality of life impacts from each by incorporating economic impacts or cost/benefit measures into the SPOT prioritization of projects.
- Encourage infill development by changing school siting policies and changing legislation to allow local governments to assess impact fees. Develop and disseminate model policy modules and best practices to local governments.
- At the state level, adopt complete streets design guidelines. Coordinate with local governments to encourage them to adopt complete streets policies, amend codes and ordinances to reflect these policies, and prioritize complete streets projects locally through capital improvements with available funding.

### **Laws/Enforcement**

- Overhaul local and state laws for greater protection of pedestrians. Evaluate existing statutes/administrative code to identify problems (conflicts, barriers to enforcement, infrastructure, and confusing language) and recommend changes to the General Assembly.

### **SECTION 3: SUMMARY OF STRATEGIES FROM THE BICYCLIST FOCUS GROUP DISCUSSION**

Please choose the 5 strategies on this page that you feel should be a statewide focus for bicyclist and pedestrian safety in the next decade. There are no categorical restrictions.

#### **Facilities**

- Create infrastructure for door-to-door bicycling trips by designating routes, creating greenways, and installing bike lanes.
- Emphasize 'Complete Streets' and consistent planning and design across the state through the adoption of design guidelines on both state and local level. Educate engineers and local governments to enhance connectivity through partnerships.

#### **Policies/Funding**

- Consider cyclist needs in the planning/scoping process on primary and secondary roads. Change conditional guidance in policies from 'may' to 'shall' for the inclusion of bicycle facilities (with clear exceptions). Track implementation to create accountability to the public for these policies and create committed management/leadership.
- Strengthen regulations and requirements for utility encroachments and developments. Inspect work in the public right-of-way as it occurs. Strengthen bicycle and pedestrian guidelines for work zones.
- Demonstrate economic benefits of bicycling (including tourism) through a cost benefit analysis and use it to prioritize existing funding.

#### **Education**

- Develop a bicycle and pedestrian safety education program through the school system (K-12) which links to the NC Standard Course of Study and includes helmet distribution.
- Create cyclist education materials in multiple languages for a range of ages (Child - Adult).
- Develop bicycle training course which helps a student earn points toward a driver's license.
- Include bicycling information on driver's licensing exam, distribute cycling laws with new bicycles at point of sale, and develop web resources which are easy to understand for cyclists/motorists.

#### **Laws/Enforcement**

- Engage a legislative mandate to create a special unit of prosecutors to deal with bicycle/motor vehicle crashes at the district attorney level, similar to domestic violence or juvenile unit.
- Educate law enforcement and those involved in the judicial process about bicycle and motorist issues. Petition the judicial system for appropriate support in bicycle and pedestrian cases.
- Develop a credit-based training program for continuing education of law enforcement officers which includes bicycle and pedestrian modules.
- Identify legislative gaps, research model state and local laws, and modify NCDOT laws for drunk drivers, helmet usage, distracted driving, harassment, hand signals, bike lights, and passing standards. Increase penalties and provide better enforcement.
- Require a larger penalty for distracted driving and use to fund education programs for motorists who receive citations. Use media to bring distracted driving issues into the public eye.

- Work with State Highway Patrol board to develop a bicycle-specific form and education for bicycle-related crashes or revise existing form to capture more detail on crashes.

### **Intergovernmental Cooperation**

- Develop a Memorandum of Understanding between relevant local and state agencies to address roles and responsibilities regarding land use, sprawl and urban form. It should be a living document to facilitate conversations and bring counties into the partnership more broadly than they are today.
- Require state and local collaboration on “right-sized” design solutions. Collaborate to come up with the right project design to resolve the “double dipping” issue (large state funded projects first followed by local traffic calming expenses later.)
- Broaden the scope of the NC Bike Committee to include pedestrians and develop a statewide vision to be implemented on a local level. Involve multiple stakeholders and state/regional leadership from the beginning to increase ownership in the overarching vision for the future of bicycle and pedestrian transportation in the state of NC.

### **Public Outreach**

- Educate business owners on profit potential for including cyclist facilities.
- Use a professional marketing/ad campaign to encourage shift in mindset from car-centric to multi-modal society.
- Create a highly visual statewide education campaign focused on motorists and cyclists to target awareness/attitudes using social media and PSAs. Include media coverage of problems, solutions, and education on common misconceptions.
- Develop public safety campaign by using commercials/PSAs to address safety issues related to ‘Share the Road’ and use with targeted enforcement. Model after successful programs like “Click it or Ticket.”

## **APPENDIX F: PRIORITY VOTING RESULTS**

### **Priority Voting - 2011 NC Bicycle and Pedestrian Safety Summit**

**Please select the Roundtable that you attended.**

Answer Options	Response Percent	Response Count
Durham	24.5%	24
Greenville	19.4%	19
Asheville	19.4%	19
Winston-Salem	15.3%	15
Charlotte	16.3%	16
Other - host/facilitator	5.1%	5
	<i>skipped question</i>	0

**1. Please choose the 5 strategies on this page that you feel should be a statewide focus for bicyclist and pedestrian safety in the next decade. There are no categorical restrictions.**

Strategy Options	Response Percent	Response Count
Implement complete streets policy and include planning for all modes in projects between NCDOT and local governments (including those that are currently in the pipeline) using best practices for facility design, consideration for off-road facilities, and a public comment period.	76.3%	71
Increase funding to bicycle/pedestrian transportation and the variety of funding sources to build facilities for bicycling and walking including the implementation of Complete Streets Policy and retrofitting/maintaining shoulders.	53.8%	50
Create a public awareness campaign (media/posters/billboards) that includes education for bicyclists, pedestrians, motorists, and law enforcement, to teach the "rules of the road." A key message for cyclists is to promote high visibility clothing and lights for the front and rear of a bicycle.	43.0%	40
Advocate for larger percent of transportation dollars and/or reallocate funding to provide more funding for bicycle/pedestrian projects; optimize delivery process.	36.6%	34
Incorporate bicycle and pedestrian skills into driver education and license renewal.	30.1%	28
Use PSAs and social media to teach laws, policies, safety, and skills to youth, parents, motorists, pedestrians, cyclists, and new drivers.	26.9%	25
Improve existing infrastructure by adding wide shoulders.	20.4%	19
Use Governor's Highway Safety Program to fund local enforcement programs for bicyclists, pedestrians, and motorists.	20.4%	19
Change the policies relating to land use, density, transportation, and sustainability to address cultural clash between motorized and non-motorized transportation.	19.4%	18
When laws are enforced, get courts to follow through with prosecution and application of penalties.	19.4%	18
Improve bicycle and pedestrian access and connectivity through access management.	18.3%	17
Develop education program to teach bicycle basics with a component for P.E. and health in schools.	18.3%	17
Encourage localities formally to adopt Complete Streets Policy and educate planners/engineers.	16.1%	15
Enact stronger laws that target motorists' speeding, aggressive driving, and distracted driving.	16.1%	15

Bicycle and Pedestrian Safety Strategies in North Carolina: Statewide Input and Priorities

Increase enforcement and create stiffer penalties for offenses between motorists and bicyclists/pedestrians.	16.1%	15
Include unincorporated areas in NCDOT construction and maintenance of sidewalks.	15.1%	14
Advocate Safe Routes to School solutions where transportation funding is limited for busing students to school.	11.8%	11
Include messages in drivers' education about the dangers of distracted driving and how to interact safely with bicyclists/pedestrians.	11.8%	11
Create licensing, registration, and inspection for cyclists to fund education programs.	9.7%	9
Launch educational initiative on bicycle and pedestrian issues to reach internal audiences including: governmental staff members, engineers, planners and law enforcement.	9.7%	9
Change contributory negligence laws (HB813).	6.5%	6
Create grassroots cyclist etiquette and education through clubs, shops, advocacy groups, and cycling venues.	4.3%	4
<i>skipped question</i>		5

**2. Please choose the 5 strategies on this page that you feel should be a statewide focus for bicyclist and pedestrian safety in the next decade. There are no categorical restrictions.**

Strategy Options	Response Percent	Response Count
Prioritize and fix main corridors first so pedestrians can safely walk along and across them.	49.5%	46
Improve multi-modal strategies for NCDOT by funding all modes equally. Address current funding bias toward motor vehicles by revisiting NCDOT's sidewalk policy to be more in line with the newly adopted Complete Streets Policy -- change the funding formula so that NCDOT funds 100% of sidewalk construction when incidental to a state roadway project, or adjust it so that the local match percentages apply to all modes (i.e. to the entire project).	49.5%	46
At the state level, adopt complete streets design guidelines. Coordinate with local governments to encourage them to adopt complete streets policies, amend codes and ordinances to reflect these policies, and prioritize complete streets projects locally through capital improvements with available funding.	48.4%	45
Require more from all users of the roadway network by setting tougher requirements for licensees. Broaden Driver's Education to cover "mobility" education (bus, bike, pedestrian, and car), increase the number of questions that include pedestrians, and add reviewing criteria for driver's license renewal to incorporate more than just vision and signage tests.	46.2%	43
Facilitate interagency cooperation at state level on school siting, providing greenway linkages to schools, and rethinking school transportation to include the use of public transit.	41.9%	39
Overhaul local and state laws for greater protection of pedestrians. Evaluate existing statutes/administrative code to identify problems (conflicts, barriers to enforcement, infrastructure, and confusing language) and recommend changes to the General Assembly.	38.7%	36
Use a competitive program to develop a "Hollywood Style" (e.g. professionally produced) statewide pedestrian education campaign for target audiences using key messages. Use social media tools and promotional materials to target NC residents including children and drivers.	26.9%	25
Establish and implement safe routes to schools within municipalities.	24.7%	23
Create a public awareness campaign for pedestrian safety that focuses on young children through Safe Routes to School initiatives (walk-to-school day events, walking school buses), creating awareness for the school bus stop arm law, and providing education on funding sources.	24.7%	23
Encourage infill development by changing school siting policies and changing legislation to allow local governments to assess impact fees. Develop and	24.7%	23

disseminate model policy modules and best practices to local governments.		
When planning, use a 20-year horizon for projects. Design cross-sections to factor in the anticipated number of bicyclists and pedestrians from the associated land uses, rather than using only traditional warrants.	23.7%	22
Create Memorandum of Understanding between NC agencies to foster collaboration between agencies for land use planning and streamlining bicycle/pedestrian project and greenway development.	22.6%	21
Prioritize funding to match policy priorities, expand locations where Powell Bill funds can be used, and allow apportionment for fine money to be shared between municipalities and schools.	21.5%	20
Enhance collaboration between NCDOT and local governments by incorporating “return-on-investment” procedures into the metrics of the SPOT prioritization process. A more holistic comparison of projects will help assess quality of life impacts from each by incorporating economic impacts or cost/benefit measures into the SPOT prioritization of projects.	20.4%	19
Clearly define roles and responsibilities in the planning stages and include an increase in the role of local planning.	14.0%	13
Develop a pedestrian safety task force to facilitate local and state agency coordination.	12.9%	12
Incorporate “crime prevention through environmental design” in land use and transportation planning.	<b>9.7%</b>	<b>9</b>
<i>skipped question</i>		<b>5</b>

<b>3. Please choose the 5 strategies on this page that you feel should be a statewide focus for bicyclist and pedestrian safety in the next decade. There are no categorical restrictions.</b>		
Strategy Options	Response Percent	Response Count
Emphasize ‘Complete Streets’ and consistent planning and design across the state through the adoption of design guidelines on both state and local level. Educate engineers and local governments to enhance connectivity through partnerships.	59.8%	55
Consider cyclist needs in the planning/scoping process on primary and secondary roads. Change conditional guidance in policies from ‘may’ to ‘shall’ for the inclusion of bicycle facilities (with clear exceptions). Track implementation to create accountability to the public for these policies and create committed management/leadership.	46.7%	43
Include bicycling information on driver’s licensing exam, distribute cycling laws with new bicycles at point of sale, and develop web resources which are easy to understand for cyclists/motorists.	43.5%	40
Develop a bicycle and pedestrian safety education program through the school system (K-12) which links to the NC Standard Course of Study and includes helmet distribution.	39.1%	36
Create infrastructure for door-to-door bicycling trips by designating routes, creating greenways, and installing bike lanes.	34.8%	32
Develop public safety campaign by using commercials/PSAs to address safety issues related to ‘Share the Road’ and use with targeted enforcement. Model after successful programs like “Click it or Ticket.”	27.2%	25
Broaden the scope of the NC Bike Committee to include pedestrians and develop a statewide vision to be implemented on a local level. Involve multiple stakeholders and state/regional leadership from the beginning to increase ownership in the overarching vision for the future of bicycle and pedestrian transportation in the state of NC.	25.0%	23
Require a larger penalty for distracted driving and use to fund education programs for motorists who receive citations. Use media to bring distracted driving issues into the public eye.	21.7%	20
Develop bicycle training course (similar to hunter safety course) which helps a student earn points toward a driver’s license.	20.7%	19

Bicycle and Pedestrian Safety Strategies in North Carolina: Statewide Input and Priorities

Identify legislative gaps, research model state and local laws, and modify NCDOT laws for drunk drivers, helmet usage, distracted driving, harassment, hand signals, bike lights, and passing standards. Increase penalties and provide better enforcement.	20.7%	19
Demonstrate economic benefits of bicycling (including tourism) through a cost benefit analysis and use it to prioritize existing funding.	18.5%	17
Educate law enforcement and those involved in the judicial process about bicycle and motorist issues. Petition the judicial system for appropriate support in bicycle and pedestrian cases.	18.5%	17
Use a professional marketing/ad campaign to encourage shift in mindset from car-centric to multi-modal society.	18.5%	17
Develop a Memorandum of Understanding between relevant local and state agencies to address roles and responsibilities regarding land use, sprawl and urban form. It should be a living document to facilitate conversations and bring counties into the partnership more broadly than they are today.	17.4%	16
Create a highly visual statewide education campaign focused on motorists and cyclists to target awareness/attitudes using social media and PSAs. Include media coverage of problems, solutions, and education on common misconceptions.	17.4%	16
Strengthen regulations and requirements for utility encroachments and developments. Inspect work in the public right-of-way as it occurs. Strengthen bicycle and pedestrian guidelines for work zones.	15.2%	14
Require state and local collaboration on “right-sized” design solutions. Collaborate to come up with the right project design to resolve the “double dipping” issue (large state funded projects first followed by local traffic calming expenses later.)	15.2%	14
Engage a legislative mandate to create a special unit of prosecutors to deal with bicycle/motor vehicle crashes at the district attorney level, similar to domestic violence or juvenile unit.	12.0%	11
Develop a credit-based training program for continuing education of law enforcement officers which includes bicycle and pedestrian modules.	9.8%	9
Create cyclist education materials in multiple languages for a range of ages (Child - Adult).	7.6%	7
Educate business owners on profit potential for including cyclist facilities.	6.5%	6
Work with State Highway Patrol board to develop a bicycle-specific form and education for bicycle-related crashes or revise existing form to capture more detail on crashes.	4.3%	4
<i>skipped question</i>		5