



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

SYNTHESIS REPORT
MAY 1, 2011

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



ACKNOWLEDGEMENTS

ITRE would like to acknowledge those who provided support to the 2011 NC Bicycle and Pedestrian Safety Summit.

We would like to extend a thank you to the following communities where regional roundtables were held for the 2011 Summit and the individuals within those communities who assisted with making arrangements and on-the-ground assistance:

City of Durham and Dale McKeel
City of Greenville and Angela McWayne with Eastern Area Health Education Center
City of Asheville and Lucy Crown with Buncombe County
City of Winston-Salem and Matthew Burczyk
City of Charlotte and Scott Correll with Charlotte Department of Transportation

We would also like to specially thank the NCDOT Division of Bicycle and Pedestrian Transportation as well as our 2011 Summit presenters, facilitators, and additional persons who offered support:

| | |
|---|--|
| Ralph Womble, NCDOT Board of Transportation | Helen Chaney, DBPT Transportation Planner |
| Jim Westmoreland, NCDOT Deputy Secretary | Ann Hartell, ITRE Research Associate |
| Kumar Trivedi, DBPT Interim Director | Barb Mee, City of Asheville Transportation Planner |
| Hanna Cockburn, NC Bicycle Committee | Madeline Howell, DBPT Artist Illustrator |
| Judi Wallace, Wallace Consulting & Training | Vivian Coleman, CDOT Program Manager |
| Bob Mosher, DBPT Planning Program Manager | |

In addition, we would like to acknowledge the members of the NC Bicycle Committee for their assistance:

| | | | |
|----------------|---------------|---------|-----|
| Jennifer Smith | Dennis Rash | Claudia | Nix |
| Greg Loy | Dan Mikkelson | | |

EXECUTIVE SUMMARY

The Division of Bicycle and Pedestrian Transportation (DBPT) tasked the Institute of Transportation Research and Education (ITRE) with conducting a statewide public input process to inventory and prioritize specific strategies to key problems facing non-motorized safety in North Carolina. This report documents the public input process and the resultant strategies prioritized through this effort for further consideration for implementation by the NCDOT. It is also representative of statewide public input that should be used for planning purposes wherever bicycle and pedestrian safety is concerned.

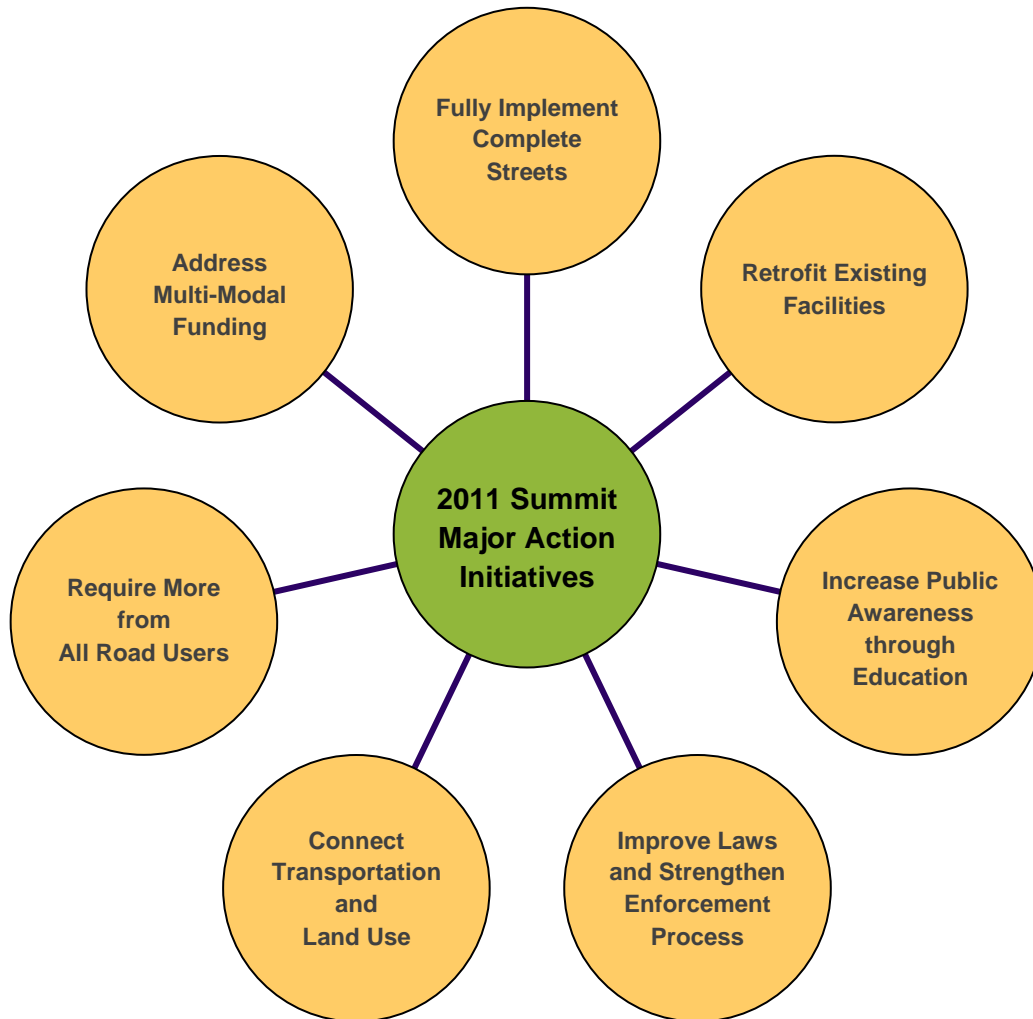
The timing for a statewide forum on bicycle and pedestrian safety is appropriate for several reasons:

- North Carolina's population is projected to increase by approximately 14% by 2020 primarily in urbanizing areas which means a likely increase in the amount of pedestrians and cyclists within these communities;
- Policies and partnerships at local, state and national levels are shifting transportation priorities to a more balanced and context-sensitive approach in meeting the needs of all users including bicycle and pedestrian modes;
- Rates of obesity are on the rise in North Carolina in both adults and children with a sedentary lifestyle cited as one of the main contributors. An increase in active transportation by making changes to the build environment can help curb the trend which has made nearly 2 in 3 adults in North Carolina overweight or obese.
- The NCDOT has not held a statewide public input process of this magnitude since 2000 and the results of this process are pertinent to informing future decision-making.
- Furthermore, based on the most recent data available from 2000 to 2008, while pedestrian crashes and fatalities per capita are trending down, bicycle crash rates are stagnant, and bicycle fatalities per capita are slowly rising.

The 2011 NC Bicycle and Pedestrian Safety Summit consisted of two separate but interrelated public involvement processes conducted in the winter of 2011 which are the foundation of this synthesis report: (1) a widely distributed statewide public input questionnaire which informed a (2) series of five regional roundtables held across the state. Ultimately a consensus on the strategies to carry forward to NCDOT was reached by roundtable participants through a process of priority voting. Several themes clearly emerged through the regional roundtable process. Problems and corresponding solutions coalesced around making improvements or creating a new approach to facilities, funding, policies, laws, enforcement, intergovernmental cooperation, design, education, and public outreach. These themes are further reinforced based on the results from the statewide questionnaire responses.

Having a comprehensive implementation at both the state and local level for the Complete Streets Policy adopted by NCDOT in July of 2009 is undoubtedly the highest priority identified. Next in importance is a message for NCDOT to reallocate more funds toward multi-modal projects; focus on retrofitting existing facilities with bicycle and pedestrian accommodations; and require more from all users of the roadway through changes in licensing. Other priorities include a desire for NCDOT to increase public awareness of bicycle and pedestrian safety issues through education; strengthen the

connection between transportation and land use through collaboration with local agencies; and work to improve existing laws and the enforcement process in North Carolina.



The diagram outlines the major action initiatives that will be presented to the BOT and should be considered by NCDOT for future implementation. It should be noted that implementation of the Complete Streets Policy is pertinent and synergistic to the other priority action initiatives.

The issues and concerns identified through the questionnaire are largely addressed by the action initiatives and corresponding strategies found within this report, reinforcing a broad public support to the following approaches. Ultimately, working to fulfill all seven major action initiatives recommended in this report will enhance the safety of all road users, improve the quality of life and health for the citizens and visitors, and ensure that North Carolina remains a desirable place in which to work, live, and play.

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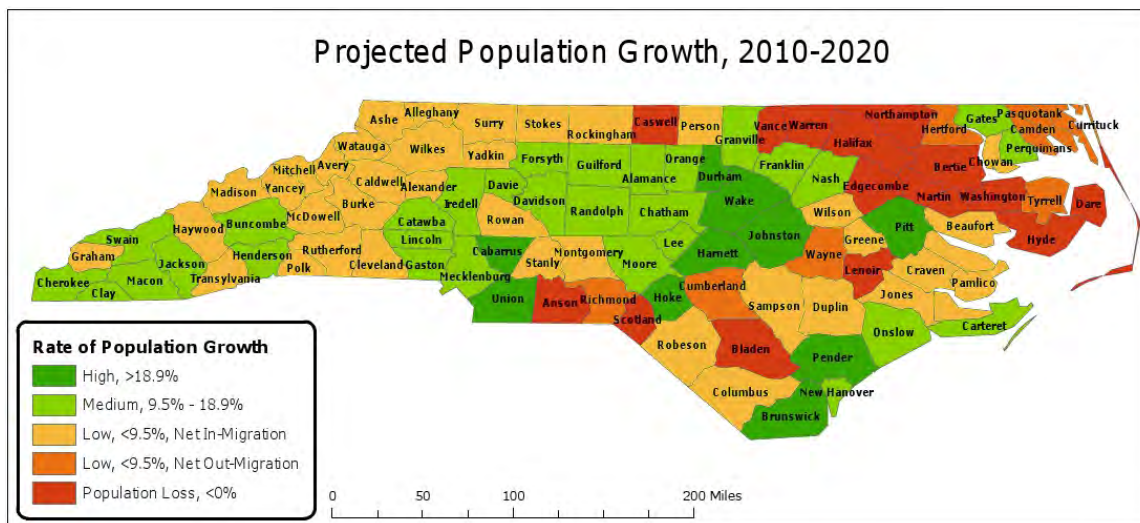
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INTRODUCTION

The North Carolina Board of Transportation (BOT) became concerned about the status of bicycle and pedestrian safety across the state when a member from the Triad area noted a rash of bicycle crashes and fatalities occurring in the fall of 2010. This prompted the North Carolina Department of Transportation (NCDOT) to look further into crash statistics statewide and open a dialogue for how bicycle and pedestrian safety concerns could be better addressed. The Division of Bicycle and Pedestrian Transportation (DBPT) tasked the Institute of Transportation Research and Education (ITRE) with conducting a statewide public input process to inventory and prioritize specific strategies to key problems facing non-motorized safety in North Carolina. This report documents the public input process and the resultant strategies prioritized through this effort for further consideration for implementation by the NCDOT.

The timing for a statewide discussion on bicycle and pedestrian safety is ripe for several reasons. North Carolina's population continues to grow and is projected to increase by 14.2% by 2020¹. Much of this growth is projected to occur in suburban and urbanizing areas of the state (**FIGURE 1**). Between 2000 and 2008, crashes with motor vehicles have resulted in over 1,500 pedestrian and 200 cyclist deaths². As the population grows, particularly toward more dense urban communities, the number of pedestrians and bicyclists is anticipated to rise. It is important to ensure that injury and fatality rates from non-motorized crashes do not.

FIGURE 1: NORTH CAROLINA ESTIMATED POPULATION GROWTH



Another opportunistic reason for this discussion relates to new policies and intergovernmental cooperation at state and national levels that are shifting the balance in transportation from predominantly thinking about “the highway” to considerations for “alternative” modes like walking, bicycling, and transit. This is partially caused by changes in behavior, a change in public attitude, and due to the relationships found between accommodating these modes and a positive quality of life. The BOT adopted the Complete Streets Policy in 2009, and guidelines for implementing this new policy are expected in the spring of 2011. This policy affirms NCDOT’s position to work in partnership with local communities to provide a multi-modal transportation network that accommodates the needs of all users. Building and retrofitting for a multi-modal transportation network also means figuring out inter-modal connectivity needs and to do so in the safest and most efficient ways possible. For example, successful transit and certain forms of rail are interdependent on providing a successful and safe pedestrian transportation network.

At the national level, the US Department of Transportation launched its Livability initiative in 2009 under a joint agreement with the Department of Housing and Urban Development and the Environmental Protection Agency through the Partnership for Sustainable Communities. Two of the Partnership’s Six Livability Principles are directly tied to increasing walking and biking: 1) *Providing more transportation choices*, and 2) *Valuing communities by investing in healthy, safety, and walkable neighborhoods – rural, urban and suburban*.

With 65% of North Carolina’s population either obese or overweight³ the North Carolina Alliance for Health has cited changes to the built environment that foster active travel as a policy priority for obesity prevention. Replacing car trips by increasing active transportation choices and increasing access to recreation can have multiple benefits including increasing levels of physical activity thereby reducing rates of obesity. An estimated 40% of all trips made by Americans under two miles,⁴ showing the vast potential to increase rates of active travel and combat North Carolina’s position as the 10th most obese state in the nation.⁵



Finally, North Carolina has not held a statewide forum on bicycle and pedestrian transportation issues since its first and only meeting of this kind in 2000. This document is representative of a public involvement process that identifies concerns, problems, and desires of the general public and stakeholders in North Carolina who participate in the modes of walking and biking. Results of this process should be used for planning purposes on a statewide level, including long range planning efforts,

and wherever bicycle and pedestrian safety is concerned. This input is also essential informing future decision-making and setting new goals for bicycle and pedestrian safety.

The goal from the NCDOT Pedestrian and Bicycling Safety Summit of 2000 was to reduce pedestrian and bicycle injuries and fatalities by 10% by January 2003. According to bicycle and pedestrian crash statistics in raw numbers for the snapshot of time between 2000 and 2003, not taking into account population growth rates over this period, the goal of the 2000 Summit was only partially met (**TABLE 1**). Although there was a decrease in the number of fatalities by 10% or more, the number of injuries did not meet this goal, and the overall number of crashes increased during this time period. No new goals have been set since the 2000 summit, but trends for bicycle and pedestrian crashes over a larger period of time illustrate what has happened since then, and give a better sense of these issues in North Carolina today.

TABLE 1: ACHIEVEMENT OF GOALS OF 2000 SUMMIT, REDUCING PEDESTRIAN INJURIES AND FATALITIES 10% BY JANUARY 2003

| | Bicycle Crashes | | | Pedestrian Crashes | | |
|----------------------------------|-----------------|------|----------|--------------------|------|----------|
| | 2000 | 2003 | % Change | 2000 | 2003 | % Change |
| Fatalities | 21 | 18 | -14.3% | 164 | 147 | -10.4% |
| Injuries* | 830 | 804 | -3.1% | 1975 | 2008 | +1.7% |
| Total Crashes | 905 | 914 | +1.0% | 2322 | 2441 | +5.1% |
| *Disabling, Evident, or Possible | | | | | | |

Source: NCDOT Bicycle and Pedestrian Crash Data Tool

STATE CRASH STATISTICS

Between the years 2000 and 2008, the trend has been a steady increase in the overall number of pedestrian and bicycle crashes and fatalities⁶. As North Carolina grows and the state urbanizes, there is more pressure to provide bicycle and pedestrian facilities. Most of the increase in crashes has been in urban areas. The following statistics represent the crashes that were reported.

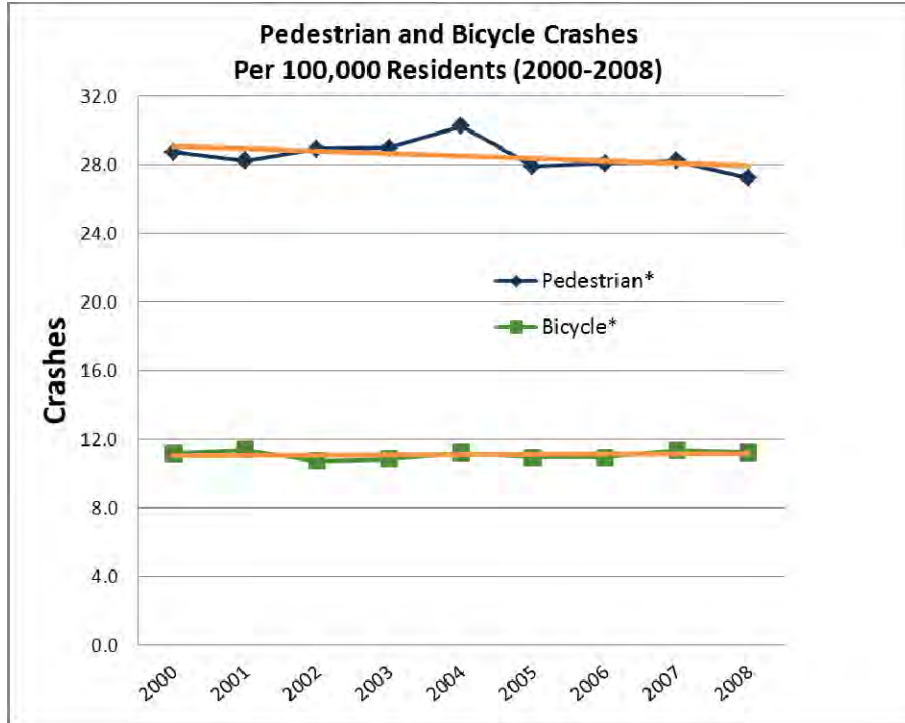
It is important to keep in mind the state's high growth rate when looking at these figures to see the overall trends in relation to the growth of the population. An analysis was conducted on the rate of crashes and fatalities per 100,000 residents for both pedestrians and bicyclists. The overall number of pedestrian crashes has decreased slightly with population growth while the number of bicycle crashes has kept pace (TABLE 2,

Figure 2). The data shows no evidence of a sustained decline in the overall number of bicycle crashes.

TABLE 2: BICYCLE AND PEDESTRIAN CRASHES PER 100,000 RESIDENTS (2000-2008)

| Crashes | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | Average (2000-2008) |
|------------|------|------|------|------|------|------|------|------|------|---------------------|
| Pedestrian | 28.7 | 28.2 | 28.9 | 29.0 | 30.3 | 27.9 | 28.1 | 28.2 | 27.2 | 28.52 |
| Bicycle | 11.2 | 11.4 | 10.8 | 10.9 | 11.2 | 11.0 | 11.0 | 11.4 | 11.3 | 11.12 |

FIGURE 2 GRAPH OF PEDESTRIAN AND BICYCLE CRASH RATES (2000-2008)



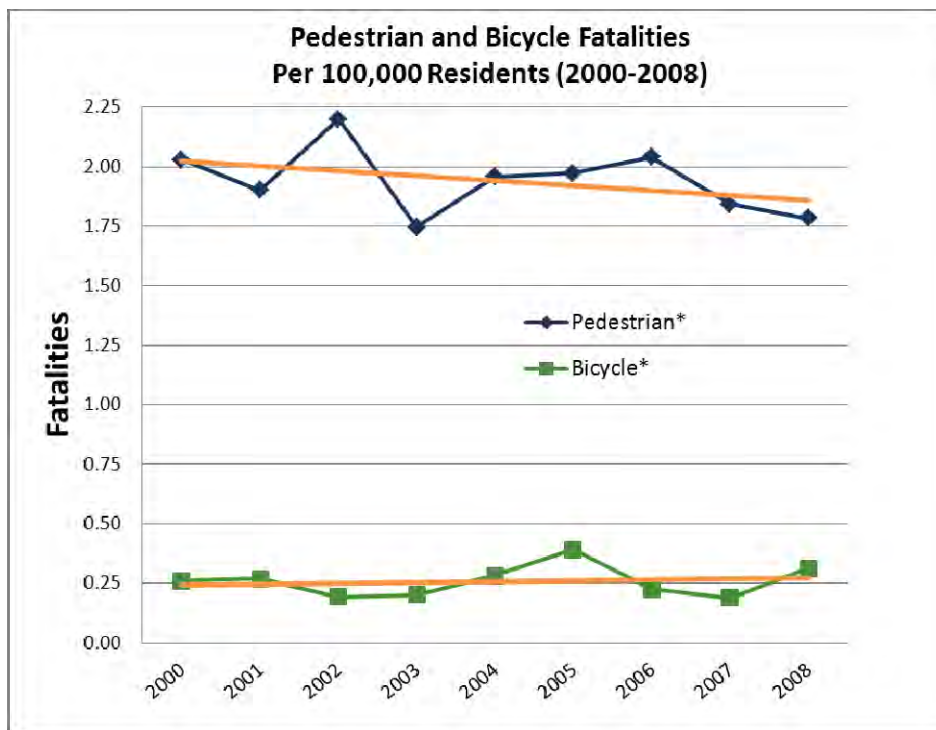
The trend has been an overall decrease in the rate of pedestrian fatalities despite population growth in the state while the number of bicycle fatalities per 100,000 residents has slightly increased over the last eight years of available data (TABLE 3, FIGURE 3).

TABLE 3: BICYCLE AND PEDESTRIAN FATALITIES PER 100,000 RESIDENTS (2000-2008)

| Fatalities | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | Average (2000-2008) |
|------------|------|------|------|------|------|------|------|------|------|---------------------|
| Pedestrian | 2.03 | 1.90 | 2.20 | 1.75 | 1.96 | 1.97 | 2.04 | 1.84 | 1.78 | 1.94 |
| Bicycle | 0.26 | 0.27 | 0.19 | 0.20 | 0.28 | 0.39 | 0.23 | 0.19 | 0.31 | 0.26 |

Source: NCDOT Bicycle and Pedestrian Crash Data Tool

FIGURE 3 GRAPH OF PEDESTRIAN AND BICYCLE FATALITY RATES (2000-2008)

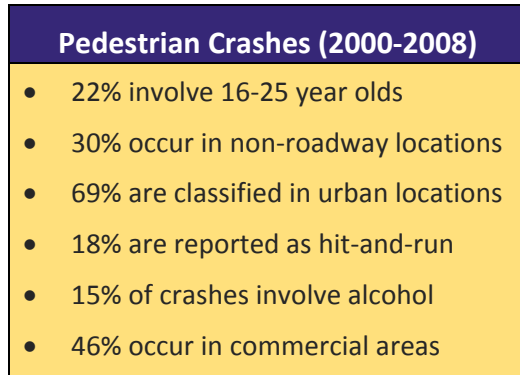


Even though North Carolina has seen a reduction in pedestrian crashes and fatalities per capita, the rate of pedestrian fatalities and serious injuries is still one of the highest in the country. The Federal Highway Administration identified North Carolina as one of thirteen “focus” states with above average pedestrian crash rates and has been working with the state to develop initiatives to reduce these crashes. According to 2009 data, North Carolina ranks 12th in pedestrian fatalities per capita (1.54 deaths per thousand residents) when compared with other states, and is above the national average (1.33)⁷.

High risk age groups and crash characteristics are also identified for the previous eight years for which data was available (2000-2008). A summary of this information for reported bicyclist crashes and pedestrian crashes can be found in **FIGURE 4** and **FIGURE 5**, respectively. For pedestrian crashes, 22%

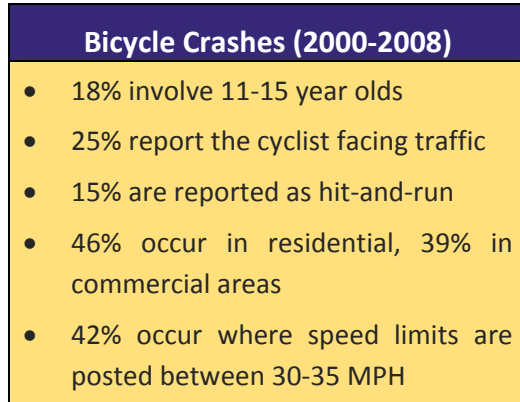
involved 16-25 year olds. Crashes typically occur in non-roadway locations (such as parking lots and driveways) and the majority are classified as being in urban areas where there are commercial uses. A large percentage of pedestrian crashes are reported as hit-and-run and a significant number involve alcohol on behalf of either the pedestrian or motorists.

FIGURE 4: SUMMARY OF PEDESTRIAN CRASH CHARACTERISTICS



For bicyclists, 11-15 year olds made up 18% of all crashes. One quarter of reported crashes occur with the cyclist facing traffic. Most crashes occurred in residential or commercial areas where posted speed limits are between 30-35 MPH. A notable percentage are reported as hit and run.

FIGURE 5: SUMMARY OF BICYCLE CRASH CHARACTERISTICS



It is important to keep in mind that while this crash data gives a glimpse into bicycle and pedestrian crashes, it is difficult to determine the number, severity, and circumstances of crashes that occur because traffic accident statistics for bicyclists and pedestrians are often incomplete. A high number of bicycle and pedestrian crashes go unreported to law enforcement and many that are involved in a crash do not seek medical treatment (in circumstances where the medical facility would report the crash) especially when only minor injuries are sustained.

NCDOT PEDESTRIAN AND BICYCLING SAFETY SUMMIT 2000 – THEN & NOW

The summit held in 2000 resulted in five major action initiatives that have served as a framework to improve bicycle and pedestrian safety over the last decade. When considering strategies to move forward over the next ten years, it is helpful to understand what came out of the 2000 summit, the progress accomplished since then, and problems that continue to persist. Below is a brief highlight of initiatives of the 2000 summit and resultant actions from NCDOT that address those initiatives.

1) Statewide legislation requiring children under 16 years of age to wear bicycle helmets.

In 2001, the General Assembly passed the Child Bicycle Safety Act, which directly meets the proposed action. Since its enactment, bicycle fatalities for children under age 15 have decreased by 60%.⁸ In addition to the Act, the Department of Motor Vehicles has, since 2005, made Share the Road license plates available to help fund bicycle education and safety initiatives, including a program to provide helmets at no cost to underprivileged children. The DBPT receives \$20 for each Share the Road plate purchased and a portion of the revenue is currently used to fund the Bicycle Helmet Initiative. Since 2007, the NCDOT has given away more than 4,800 helmets through the Bicycle Helmet Initiative. These helmets reach children through safety events, workshops, fairs, and bicycle rodeos conducted by schools, police departments, fire departments and other organizations and clubs across the state.



2) Improve school area traffic safety and provide safe facilities for children to walk and bike to school

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) provided the kickstart that North Carolina needed to target this action in a specific and strategic manner in 2005. The federally funded Safe Routes to School (SRTS) program has received over \$20 million in apportionments to-date, of which more than \$11 million have been committed to projects, programs and administration. Since the first call for applications was held in 2007, NCDOT has awarded 81 SRTS projects impacting 135 school areas across the state. These projects are all 100% federally funded. Fifty of these projects improve infrastructure within two miles of select schools through building sidewalk, marking crosswalks, installing pedestrian signal heads, constructing shared-use paths, striping bike lanes and more. Non-infrastructure projects awarded to 15 communities have enabled them to offer bicycle and pedestrian safety skills trainings; launch walking school bus or bike train programs; establish safety patrol or crossing guard programs; or other similar education, enforcement, and encouragement activities. The SRTS program also funded the development of SRTS Action Plans

for 16 communities. These plans provide each community a framework for identifying and prioritizing education, encouragement, and enforcement programs and engineering projects to implement and sustain local SRTS programs.

3) Prioritize pedestrian and bicycle transportation planning at the state and local level.

NCDOT’s SRTS program took a cue from the successful Bicycle and Pedestrian Planning Grant Initiative when structuring its Action Plan Service Award. The Division of Bicycle and Pedestrian Transportation (DBPT) launched its Planning Grant Initiative in 2004 and is now in its eighth funding cycle. To-date, over \$2.5 million has been awarded to 107 municipalities through this initiative, which enables them to develop either a comprehensive pedestrian or bicycle plan. Even communities that do not participate in the grant reimbursement program still gain value from this program through the many resources NCDOT makes available on its website. A detailed planning template, sample plans, links to other resources and technical assistance that the DBPT provides help communities plan for non-motorized transportation needs. Coordination between the Transportation Planning Branch, a funding partner for these plans, and the DBPT has resulted in better awareness and integration of bicycle and pedestrian transportation planning at a state level through Comprehensive Transportation Plans. Currently, NCDOT is considering ways to expand its services to meet bicycle and pedestrian planning needs. The DBPT has piloted the development of two regional bicycle plans as well as small area pedestrian safety access plans in efforts to reach communities and regions in the state with unique needs that cannot be met through the current scope of the Bicycle and Pedestrian Planning Grant Initiative.



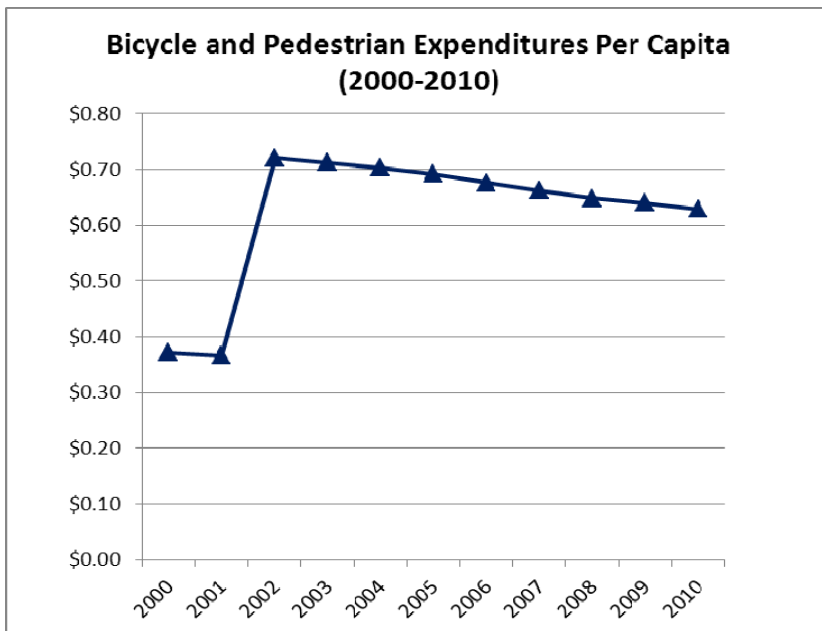
4) Direct more NCDOT funding toward building facilities for bicycling and walking and implementing safety education programs.

In 2002, the NCDOT doubled state funds set aside for bicycle and pedestrian programming to \$6 million annually. These funds go toward independent projects in the State Transportation Improvement Program (STIP) like shared-use paths, wide-paved shoulders, intersection improvements and more. In addition, some of this money is set aside annually for pedestrian hazard elimination projects, or spot safety projects. Examples include installing pedestrian countdown signals, marking crosswalks, and installing refuge islands. Safety education and research needs must also be met through this funding. Past research supported by these funds include “An Analysis of North Carolina Guidelines and Criteria for Establishing School Walk Zones” (2001), “Bicycling and Walking in North Carolina: Results of a Year 2000 Survey” (2002), and “The Economic Impact of Investments in Bicycle Facilities: A Case Study of the Northern Outer Banks” (2004). A portion of these funds are also used to maintain the content and

distribution of posters, pamphlets, handouts, manuals and crash data tools as well as produce new items.

Even in 2002, funding levels could not meet the demand for potential bicycle and pedestrian projects, educational and safety programs. Since 2002, state expenditures on bicycle and pedestrian needs has remained at approximately \$6 million annually⁹. This figure (comprised of state and federal funds) includes standalone projects including some non-infrastructure programs and is independent of other roadway improvements. Meanwhile, the demand for bicycle and pedestrian accommodations has continued to grow with more potential projects competing for less funding. As the population of North Carolina has increased, the level of expenditure per person has decreased due to stagnation in funding levels. **FIGURE 6** shows the downward trend in historical spending patterns per capita since 2002, taking into account population growth. Today in North Carolina, out of a transportation budget of nearly \$4 billion¹⁰, approximately \$0.63 per person is spent on bicycle and pedestrian needs.

FIGURE 6: PER CAPITA SPENDING ON BICYCLE AND PEDESTRIAN PROJECTS IN NORTH CAROLINA (2000-2010)



5) Plan and build more pedestrian- and bicycle-friendly corridors.

Several activities have been ongoing since the last summit in response to this action initiative. From 2004 to 2010, NCDOT has sponsored 62 workshops to train NCDOT staff, local agencies, public health professionals, law enforcement and consultants on a variety of bicycle and pedestrian transportation topics. These trainings give participants the guidance on how to properly plan for non-motorized transportation needs and the design tools to make sure projects are built to standards and nationally recognized best practices. A list of these courses is shown in **TABLE 4**.

TABLE 4 TRAININGS SPONSORED BY NCDOT FROM 2004 TO 2010

| Course Title | Year(s) Held | Total # Offered |
|---|--------------|-----------------|
| Pedestrian Planning and Design | 2004 - 2005 | 10 |
| Bicycle Planning and Design | 2005 - 2006 | 7 |
| Designing Pedestrian Facilities for Accessibility | 2006, 2010 | 3 |
| How to Develop a Pedestrian Safety Action Plan | 2006, 2008 | 4 |
| Pedestrian Road Safety Audits | 2009 | 1 |
| Designing Streets for Pedestrian Safety | 2010 | 6 |
| Safe Routes to School National Course | 2005 - 2010 | 31 |

Two overarching policies bookend procedural efforts made by the Board of Transportation to plan and build more pedestrian- and bicycle-friendly corridors within North Carolina since the 2000 summit. The first effort adopted one month before the 2000 summit is the BOT’s resolution on mainstreaming bicycle and pedestrian projects, “Bicycling and Walking in North Carolina, a Critical Part of the Transportation System”. Moving forward towards a more multimodal approach, the BOT adopted the Complete Streets Policy in 2009, which states, “This policy *requires* that NCDOT’s planners and designers *will consider and incorporate* multimodal alternatives in the design and improvement of *all* appropriate transportation projects within a growth area of a town or city *unless exceptional circumstances exist*” [emphasis added]. The guidelines for implementing the Complete Streets Policy are expected to come out this Spring and should shed light on how NCDOT will safely and efficiently accommodate all users within the transportation network. Other policies that support planning and building corridors to accommodate bicycle and pedestrian needs include the Pedestrian Policy Guidelines (updated in 2000) and the Context Sensitive Solutions Goals and Working Guidelines (created in 2002, updated in 2003).

OTHER OUTCOMES FROM THE 2000 SUMMIT

The 2000 summit identified seven topical issues that overlap or relate to the initiatives that arose via recurring themes during the meeting. One of these issues focused on bicycle and pedestrian safety education, which resulted in a specific priority aimed at helping law enforcement officers, transportation officials, public health officials and others in understanding the laws related to bicycle and pedestrian modes and how they can play a role in reducing crashes. NCDOT began addressing this priority in 2004 with the development of “A Guide to North Carolina Bicycle and Pedestrian Laws.” This guidebook provides general statutes, ordinances and other resources to serve as a reference document for education and enforcement of bicycle and pedestrian laws.



The second educational component that specifically targets law enforcement professionals was developed in conjunction with the NC Justice Academy. “Bicycle and Pedestrian Safety: The Role of Law Enforcement” was developed as a 2-hour block of instruction to be offered through the 2009 In-Service Training Curriculum of the Justice Academy. The full package includes instructor guidance, student lesson modules, a PowerPoint presentation, and opening video clips. This instruction was part of the 40-hour curriculum required by all law enforcement agency trainers in the state, so that they are able to offer the module through their local law enforcement agency training program.

¹ State of North Carolina Office of State Budget and Management. County/State Population Projections, County Population Growth: 2010-2020. Updated September 2010.

² NCDOT Bicycle and Pedestrian Crash Data Tool. Accessed March 2011.

³ Centers for Disease Control and Prevention. Behavioral Risk Factor Surveillance System. North Carolina – 2009 Overweight and Obesity (BMI).

⁴ Federal Highway Administration, National Household Travel Survey, 2001.

⁵ Trust For America's Health and the Robert Wood Johnson Foundation. F as in Fat: How Obesity Threatens America's Future. 2010.

⁶ NCDOT bicycle and Pedestrian Crash Data Tool. Accessed March 2011.

⁷ NHTSA 2009 Fatality Analysis Reporting System. Accessed March 2011.

⁸ Child Fatality Task Force. "Annual Report of the NC Child Fatality Task Force to the Governor and General Assembly". January 2011. Accessed March 2011.

⁹ NCDOT Statewide Transportation Plan, 2004. This figure consists of state and federal funds.

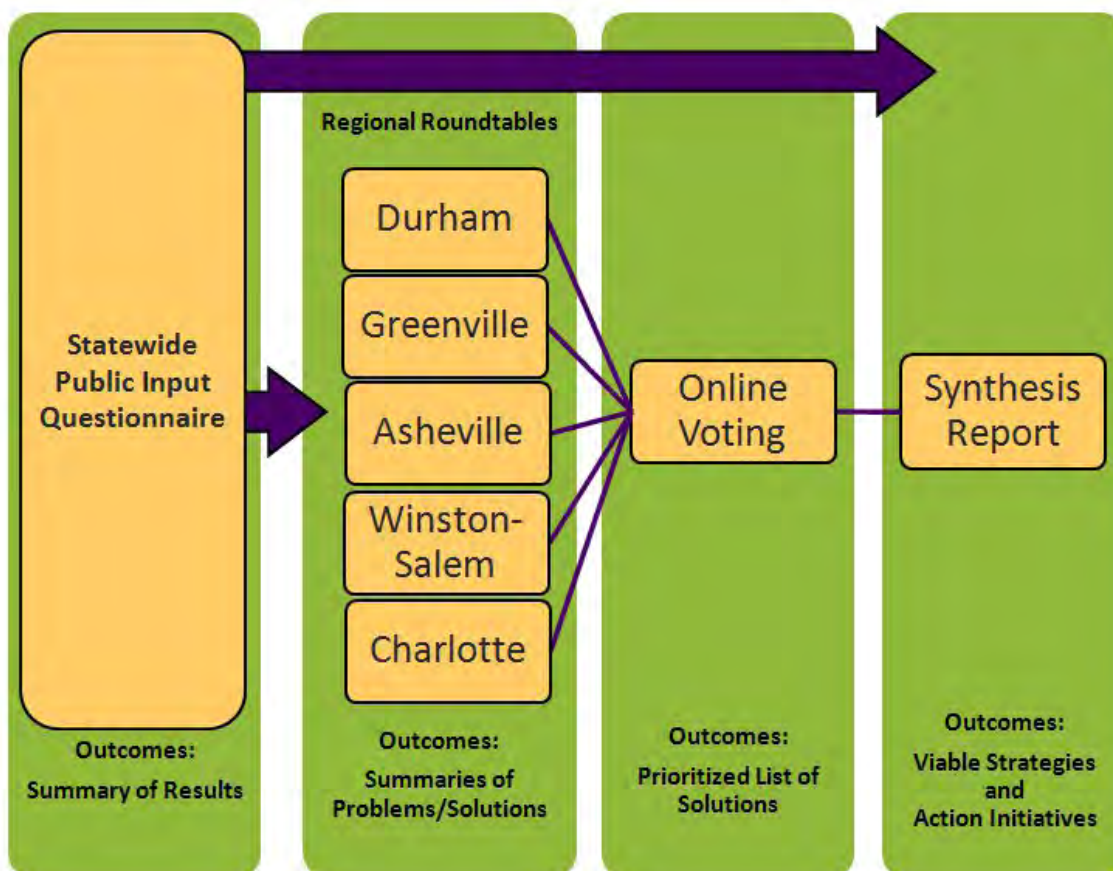
¹⁰ NCDOT Finance and Budget. Accessed 12 April 2011. www.ncdot.org/about/finance/

2011 NC BICYCLE AND PEDESTRIAN SAFETY SUMMIT

NCDOT has been working to improve bicycle and pedestrian safety by addressing the priorities outlined in 2000. The 2011 NC Bicycle and Pedestrian Safety Summit is the focus of a new statewide campaign to address present issues. The Summit consists of two separate but interrelated public involvement processes used to create the major action initiatives outlined in this report: a statewide public input questionnaire and series of regional roundtables.

A diagram of the overall public input process is included as **FIGURE 7**. The online statewide questionnaire engaged North Carolina's general public and served as a primer for the series of regional roundtable discussions held in five venues across the state. Specific approaches for each public input process are further discussed below. Results from both the online questionnaire and priority voting from the regional roundtable discussions serve as the basis for the recommendations provided in this report. Key findings and associated documentation from these two public input processes are synthesized and prioritized in this document as recommended strategies for NCDOT.

FIGURE 7: PUBLIC INPUT PROCESS



PUBLIC INPUT QUESTIONNAIRE ON BICYCLE AND PEDESTRIAN SAFETY

The purpose of the questionnaire was to obtain public input on transportation concerns and needs specific to bicycle and pedestrian safety in North Carolina. The questionnaire had several intentions: (1) to inform discussion on bicycle and pedestrian safety at the regional roundtables; (2) to obtain an assessment of user attitudes to better plan for the needs of non-motorized users; and (3) to gauge the level of public support for future investment in the state's bicycle and pedestrian network. The questionnaire was not a scientific sample of state residents but was designed to be quickly and easily disseminated and completed. Although open to all North Carolina residents, the target audience of the survey was individuals who already have a general interest in walking and biking, including those who commonly walk and/or bike. By gaining input from this subset of the population, the questionnaire primarily obtained information and attitudes surrounding the safety of walking and biking from those who regularly experience those modes of travel in North Carolina.



QUESTIONNAIRE APPROACH

The online questionnaire consisted of 30 questions on bicycle and pedestrian safety issues in North Carolina. These questions were organized into four sections: 10 bicycle transportation questions, 10 pedestrian transportation questions, 2 questions about overall bicycle and pedestrian safety concerns, and 8 questions about respondent characteristics and demographics. For questions relating to bicycle and pedestrian safety that were not on a rating scale, respondents were also given the option of providing open-ended responses.

The questionnaire was designed in and administered through SurveyMonkey®, a web-based survey tool, and was open for a four-week period from January 10 to February 8, 2011. See a print version of the online questionnaire in **APPENDIX B**. ITRE broadly disseminated an email announcement notifying individuals concerned about bicycle and pedestrian safety in North Carolina to take the questionnaire. This email was sent to representatives from each metropolitan planning organization (MPO) and rural planning organization (RPO) as well as representatives from bicycle shops, public health professionals, injury prevention specialists, law enforcement, local agency planners and engineers, and consultants. It was also sent to each NCDOT Division Engineer, Board of Transportation member, and NC Bicycle Committee member. Direct recipients of the announcement were encouraged to forward it on to others within North Carolina. The DBPT promoted the questionnaire on its website through an icon link on its main page, www.ncdot.gov/bikeped.

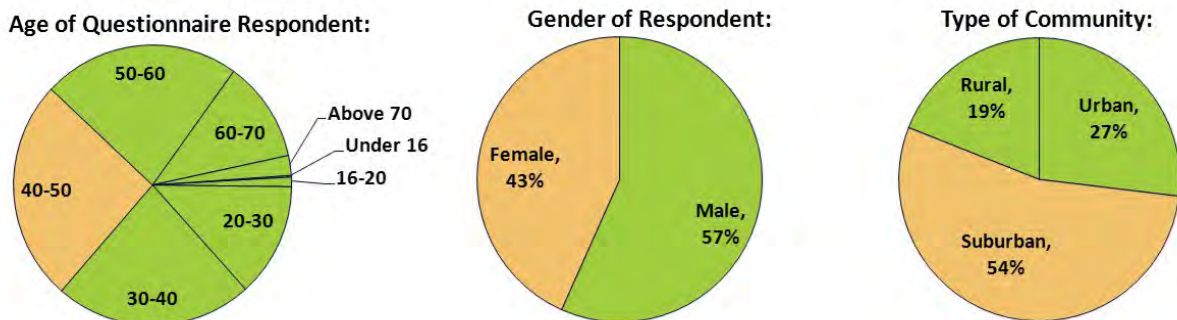
A news release was also distributed by NCDOT on January 12, 2011 to help promote the questionnaire (see **APPENDIX A**) by driving individuals to the website. The release was picked up by the Associated Press which assisted in widespread distribution to the general public. Distribution channels consisted of newspapers, television, on-line forums, social media websites, and e-mails. Known news coverage from

the release includes stories on WRAL and WTVD in the Triangle region; the News and Record, the Business Journal and Fox8 in the Triad region; and the Charlotte Observer. In addition, OPENnet (hosted by NC Agency for Public Telecommunications) ran an hour long call-in segment with panel members from NCDOT, and News 14 Carolina conducted an interview and aired a story for their coastal region related to the questionnaire. ITRE provided technical assistance to individuals with difficulty accessing the online questionnaire and received some additional feedback from respondents via phone or email who felt that their concerns would not fully be captured through the online survey tool.

QUESTIONNAIRE RESULTS

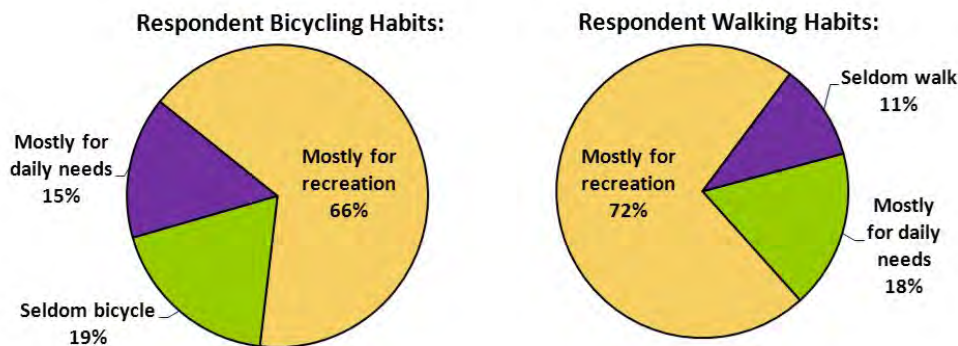
The survey received a very strong response with 16,389 participants taking part in the survey; a small percentage of those responses were incomplete (skipped questions). Over three-quarters of the respondents reported themselves as between 30 and 60 years old; over half described themselves as male and described the community they live in as suburban (**FIGURE 8**).

FIGURE 8: PUBLIC INPUT QUESTIONNAIRE RESPONDENT DEMOGRAPHICS



Over half of the respondents identified that they walk or bicycle mostly for recreation, with approximately one sixth reporting that they walk or bike mostly for daily needs (**FIGURE 9**). Less than one-fifth of respondents reported that they seldom bicycle and approximately one-tenth of respondents reported that they seldom walk. This shows that the responses in the questionnaire are largely representative of persons who walk and/or bike in North Carolina.

FIGURE 9: PUBLIC INPUT QUESTIONNAIRE RESPONDENT WALKING AND BICYCLING HABITS



Results of the questionnaire showed that the majority of the respondents felt the bicycle and pedestrian networks in their community are dangerous and agreed that having a safe network contributed to their quality of life. Several key results from the questionnaire including attitudes toward walking and bicycling, top issues identified, most needed facility improvements, and the best solutions identified by respondents are included in **FIGURE 10**. Most respondents reported that they would walk/bike more for recreation and daily needs if safety issues in their community are addressed.

Respondents were asked to identify emerging concerns that they feel are having an impact on bicycle and pedestrian safety. The majority of respondents cited distracted driving as the top emerging issue (68%), followed closely by expanding motor vehicle capacity without consideration for bicyclists and pedestrians (62%), and lack of adequate funding for bicycle and pedestrian facilities (58%).

In addition to identifying safety problems and emerging issues, respondents were also asked to select the underlying problems they felt contributed to the lack of safety for pedestrians and bicyclists. The most commonly cited underlying problem was inadequate infrastructure for bicycling and walking (75%). In addition, lack of bicycle and pedestrian connectivity between activity centers/commercial centers and residential neighborhoods (70%), and motorist behavior (65%) were selected as important underlying problems.

Clearly, there is more primary analysis that could be done to further distill data from the questionnaire by obtaining information by demographic subset or cross-tabulation. Differences in opinions and responses toward safety are likely to be found by region, gender, age, or size of community. In addition to this research, attitudes and viewpoints may also be obtained through a secondary analysis of the open-ended responses that were collected through the questionnaire by looking for patterns and trends. The number of responses from the open-ended questions in the questionnaire totaled nearly 10,000. To date, additional analyses on the questionnaire results have not been conducted and remain opportunities for future study.

FIGURE 10: QUESTIONNAIRE KEY RESULTS - PEDESTRIAN (LEFT) AND BICYCLE (RIGHT) SAFETY

| Attitudes toward Walking | Attitudes toward Bicycling |
|---|--|
| <ul style="list-style-type: none"> Walking for daily needs is somewhat or very dangerous (43%) Walking for recreation is somewhat or very dangerous (30%) Agree or strongly agree that having a safe pedestrian network contributes to their personal well-being or quality of life (94%). Would walk more if safety issues were addressed (at least 70%) | <ul style="list-style-type: none"> Bicycling for daily needs is somewhat or very dangerous (80%) Bicycling for recreation is somewhat or very dangerous (60%) Agree or strongly agree that having a safe bicycle network contributes to their personal well-being or quality of life (90%). Somewhat or very unsatisfied with the bicycle network in their community (71%) |
| Top Issues Identified | Top Issues Identified |
| <ul style="list-style-type: none"> Lack of pedestrian paths and sidewalks (63%) Motorists' failure to yield at pedestrian crossings (45%) Speeding in residential neighborhoods (40%) | <ul style="list-style-type: none"> Lack of on-roadway bicycle facilities (82%) Lack of alternatives to cycling on main arterials (55%) Lack of bicycle paths and greenways (53%) Motorists' or bicyclists' not sharing the road (50%) |
| Most Needed Facility Improvements | Most Needed Facility Improvements |
| <ul style="list-style-type: none"> Sidewalks on collector streets and in commercial corridors (64%) Sidewalks on local and neighborhood streets (63%) More recreational trails (47%) | <ul style="list-style-type: none"> Bike lanes on collectors and arterials (84%) Paths and greenways (63%) Bicycle accommodations at intersections (37%) |
| Best Solutions Identified by Respondents | Best Solutions Identified by Respondents |
| <ul style="list-style-type: none"> Improve roadway design to accommodate cyclists as regular users and include sidewalks as a standard feature (79%) Retrofit existing roads to add sidewalks (67%) Build more paths and greenways (61%) Adopt local complete streets policies-incorporate safe access and design for all road users (49%) | <ul style="list-style-type: none"> Improve roadway design to accommodate cyclists as regular users and include bike lanes as a standard feature (84%) Retrofit existing roads to add bike lanes (70%) Build more paths and greenways (54%) Educate motorists on rights and responsibilities (50%) |

REGIONAL ROUNDTABLES

The primary purpose of the regional roundtables was to help NCDOT inventory and prioritize specific solutions to the problems facing bicycle and pedestrian safety in North Carolina.

Results of the questionnaire were used to prime the roundtable discussions and get participants to deliberate on public concerns regarding bicycle and pedestrian safety, in addition to their own understanding of the issue. Roundtables were held across North Carolina (Durham, Greenville, Asheville, Winston-Salem, and Charlotte) from mid-February to early March. In order to gain a balance of perspectives, facilitated focus group discussions from the perspective of bicyclists, pedestrians, and motorists were conducted. The purpose of the discussions were to (1) identify problems and factors that affect the safety of bicyclists and pedestrians in North Carolina; (2) Generate and



prioritize specific solutions and key messages to address the problems identified. Roundtable participants were required to select top solutions to move forward into a final round of priority voting.

ROUNDTABLE APPROACH

Approximately 265 individuals were invited to attend a regional roundtable. Five locations geographically distributed across the state were selected to host the roundtables under advisement from NCDOT. A comprehensive list of invitees was compiled based on input for the Division of Bicycle and Pedestrian Transportation, Board of Transportation, and the NC Bicycle Committee Members to target individuals in a variety of professional fields and gain a balance of perspectives. The list of invitees included representatives from various organizations, agencies, and business to include: members of law enforcement, public health, engineers, planners, industry business owners, and advocates. The target attendance was 40 participants at each roundtable venue in order to support a maximum of 14 individuals per breakout session. Individuals were invited via email and asked to register online and indicate at which roundtable location they would attend. Registration was exclusive and only individuals invited were able to register to keep participation at a manageable level and maintain a balance of participants from a variety of professional backgrounds.



Attendants at each roundtable were broken up into three focus groups to look at the issue of bicycle and pedestrian safety from one of three perspectives: motorists, bicyclists, or pedestrians. Participants were pre-assigned to one of the three groups to ensure a good mix of representation within each group to the extent possible. Each focus group discussed and offered ideas on central problems/emerging concerns associated with bicycle and/or pedestrian safety in North Carolina and ultimately selected their top five problems. Subsequently, with the problems identified, groups brainstormed and ultimately selected the top strategies to address those problems. Facilitators distilled and captured the ideas under discussion and prompted groups toward focusing on solutions.

In order to accommodate mixed perspectives at a roundtable with a low turnout, an alternative approach was used with two focus groups: bicyclists and pedestrians. The alternative approach was utilized in one location where there was a low turnout of registered attendees. All three focus group perspectives were employed at the other four roundtables.



ROUNDTABLE RESULTS

A balance of 125 professionals in fields related to bicycle and pedestrian safety attended the roundtables. This figure includes the Summit facilitators and hosts. Throughout the roundtable discussions, major themes emerged for both problems and the solutions surrounding bicycle and



pedestrian safety in North Carolina. After each regional roundtable, ITRE refined the solutions from each focus group into clear viable statements. Summaries of outcomes (problems identified and solutions generated) from each of the five roundtables broken down by focus group can be found in **APPENDIX D**. These solutions centered around making improvements or creating a new approach to facilities, funding, policies, laws, enforcement, intergovernmental cooperation, design, education, and public outreach.

PRIORITY VOTING

The purpose of the priority voting was to gain a statewide consensus on the most important strategies that should be presented to NCDOT and ultimately to the Board of Transportation for consideration of further action. In order to gain a consensus of strategies to be carried forward from the 5 roundtables conducted around the state, roundtable attendees participated in online voting. Further narrowing of strategies was conducted to further prioritize the solutions that were selected across the regional roundtables through a final round of voting which was conducted online.

PRIORITY VOTING APPROACH

The 70 original solutions from all the roundtable focus groups (bicyclists, pedestrians and motorists) were narrowed to unique concepts by eliminating and condensing some of the categorical overlap within the strategies for each focus group. For example, the 25 solutions generated in sum from the five bicycle focus groups were compared and condensed or combined where appropriate to avoid redundancy. This resulted in a final total of 61 unique strategies on which participants would be polled. Within each focus group, these strategies were categorized by the themes that emerged via the roundtable discussion. Strategies were placed under a topic theme where it “best fit,” purely for organizational purposes, in order to give participants an easier time sorting through the solutions. Summit participants from all five roundtables held throughout the state, including facilitators and hosts, were allowed to cast five votes for solutions in each focus group for a total of 15 votes. They were asked, “choose the five strategies that you feel should be a statewide focus for bicyclist and pedestrian safety in the next decade.” **APPENDIX E** includes the full text of the online ballot. All 125 Summit participants received an invitation to cast their votes. Online voting was open for one week from March 10 – March 17, 2011.

PRIORITY VOTING RESULTS

A total of 98 Summit attendees (78%) took part in the priority voting, a mechanism to gain statewide consensus on solutions generated at the roundtables to be recommended as strategies to NCDOT. **APPENDIX F** includes a full text of the priority voting results. The results of the priority voting serve as the building blocks for the major action initiatives that were developed by ITRE and described in the following section.

MAJOR ACTION INITIATIVES OF THE 2011 SUMMIT

The statewide priorities presented in **TABLE 5** stem from the identification of top problems affecting bicyclist and pedestrian safety in North Carolina as a result of the statewide public involvement process from January to March 2011 that are outlined in this document. Solutions that received the highest number of votes and resonated across all three focus groups are considered to have the greatest consensus across the state and are the foundation for these seven major action initiatives. A full and robust implementation of the Complete Streets Policy received the highest ranking across the board and is therefore considered the highest statewide priority.

TABLE 5: STATEWIDE PRIORITIES

| <i>MAJOR ACTION INITIATIVES OF THE 2011 SUMMIT</i> |
|--|
| <ul style="list-style-type: none">• Fully Implement Complete Streets• Address Multi-Modal Funding• Retrofit Existing Facilities• Require More from All Road Users• Increase Public Awareness through Education• Connect Transportation and Land Use• Improve Laws and Strengthen Enforcement Process |

The text boxes that follow list the top strategies that correspond with and were used to develop each of the seven major action initiative. These solutions are informed by results of the statewide public input questionnaire and represent a consensus-based approach to determining strategies that NCDOT should consider moving forward and carrying out on a statewide level. The issues and concerns identified through the questionnaire are largely addressed by the action initiatives and corresponding strategies listed on the following pages, reinforcing a broad public support to the following approaches. Strategies receiving the most support in the voting process are listed first within each major action initiative, followed by strategies that received a lesser number of votes. Context and perspective surrounding the discussion which occurred at the Summit was used to determine the placement of strategies in the following categories.

FULLY IMPLEMENT COMPLETE STREETS

An overwhelming percentage (71%) of the roundtable participants voted to “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.” This strategy is supported by statewide questionnaire respondents, of whom 49% indicated that one of the best solutions to improve pedestrian safety is to adopt local complete streets policies. NCDOT should not only unreservedly apply its Complete Streets Policy; it should support local agencies in developing and adopting their own policies. In addition to local coordination, an educational program and a statewide vision are seen as important components to the overall implementation process.

FULLY IMPLEMENT COMPLETE STREETS

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

ADDRESS MULTI-MODAL FUNDING

A concern that resonated across all five roundtables is the apparent lack of funding for bicycle and pedestrian projects. While it seems logical to simply request more funds to improve bicycle and pedestrian safety, the reality is that local and state governments across the country are re-thinking their budgets to find ways to do more with less. The same is true in North Carolina. These economic constraints make it easy for decision makers to say that now is not the time to increase funding for alternative transportation modes. However, NCDOT has some legacy funding policies which are now inconsistent with the multi-modal direction that is embraced through the Complete Streets Policy. The first three strategies under the major action initiative to address multi-modal funding express a desire for NCDOT to ‘put its money where its mouth is’. The comprehensive public involvement process outlined in this document shows that many stakeholders and citizens are looking at the Complete Streets Policy as a seminal principle that will ultimately shift the transportation culture of this state through a more balanced approach that meets the needs of all users. That will only occur if NCDOT’s funding structures support the implementation of complete streets not just for new construction but also to improve the existing network.

ADDRESS MULTI-MODAL FUNDING

- 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.
- 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).
- Advocate for larger percent of transportation dollars and/or reallocate funding to provide more funding for bicycle/pedestrian projects; optimize delivery process.
- 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.
- 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.
- Demonstrate economic benefits of bicycling (including tourism) through a cost benefit analysis and use it to prioritize existing funding.

RETROFIT EXISTING FACILITIES

An overall lack of facilities is cited as the principal issue to bicycle and pedestrian safety by respondents of the statewide questionnaire. Accordingly, retrofitting existing facilities to include sidewalks, bike lanes, and wide shoulders was identified as a top solution by respondents of the questionnaire and has been identified as a major action initiative as a result of the Summit. This input stemmed from the need to take into account door-to-door trips and address the bicycle and pedestrian network from journeys beginning to end. As of 2010, NCDOT maintains more than 15,000 miles of primary highway, 65,000 miles of secondary highway, over 13,000 bridges and is the largest state-maintained system in the United States¹¹; therefore much of this task falls within a state jurisdiction. On the other hand, North Carolina currently lacks a complete inventory of bicycle and pedestrian facilities on state roadways making it challenging to locate needs and prioritize where to best supply those facilities. A push for better data to more better address non-motorized transportation needs is clearly aligned with the goals of retrofitting state roadways for bicycle and pedestrian facilities.

RETROFIT EXISTING FACILITIES

- Prioritize and fix main corridors first so pedestrians can safely walk along and across them. Consider cyclist needs in the planning/scoping process on primary and secondary roads.
- Build facilities for bicycling/walking including retrofitting/maintaining shoulders.
- Create infrastructure for door-to-door bicycling trips by designating routes, creating greenways, and installing bike lanes.
- Establish and implement safe routes to schools within municipalities.
- Improve existing infrastructure for bicycle and pedestrian facilities by adding wide shoulders.
- Include unincorporated areas in NCDOT construction and maintenance of sidewalks.

REQUIRE MORE FROM ALL ROAD USERS

The need for more education was a theme woven into several strategies identified across the regional roundtables. Motorist behavior and insufficient motorist education, particularly in relation to interactions with cyclists, are identified as underlying problems through the statewide questionnaire and reiterated through roundtable discussions. Two of the seven major action initiatives focus on educating target audiences through public awareness campaigns, integration of curricula into school systems, and the use of media in conjunction with enforcement programs to raise awareness. A third major action initiative, outlined below, offers a focused approach to specifically educate drivers. This is a three-pronged strategy that explains and reinforces bicycle and pedestrian safety messages through: 1) a bicycle training course, which could be a pre-requisite to earning a driver's license; 2) enhancing driver's education and license tests so that there are higher standards for new drivers; 3) expanding the criteria under which licenses are renewed. This third approach aimed at current drivers has the potential to not only increase bicycle and pedestrian safety, but roadway safety in general. Because our laws change as our society does, students in driver's education programs today learn rules of the road that may not have been applicable five to eight years ago, let alone 15 years or more. The current vision and traffic sign recognition tests are insufficient in determining whether current drivers are aware of and comply with newer laws.

REQUIRE MORE FROM ALL ROAD USERS

- 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.
- Include bicycling information on driver's licensing exam, distribute cycling laws with new bicycles at points of sale, and develop web resources which are easy to understand for cyclists/motorists.
- Incorporate bicycle and pedestrian skills into driver education and license renewal.
- Develop bicycle training course which helps a student earn points toward a driver's license.
- Include messages in drivers' education about the dangers of distracted driving and how to interact safely with bicyclists/pedestrians.

INCREASE PUBLIC AWARENESS THROUGH EDUCATION

The need for education programs that raise awareness of bicycle and pedestrian modes as well as provide new and current road users of how to interact appropriately with one another is an appeal that persists from the 2000 summit. Particular concerns from the summit tend to emphasize poor motorist behaviors, but there clearly is work to be done to improve bicyclist behaviors, as well. Results from the NCDOT sponsored “Share the Road” Attitude Survey conducted in 2008 suggest that major safety concerns by motorists include bicyclists riding unpredictably (83%), running lights or stop signs (80%), or failing to move over to allow other vehicles to pass (93%). Clearly, there are key messages that need to be targeted to different roadway users, including bicyclists and pedestrians to increase public awareness.

INCREASE PUBLIC AWARENESS THROUGH EDUCATION

- 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 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.
- 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.”
- 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 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.

CONNECT TRANSPORTATION AND LAND USE

An underlying problem, as expressed by survey respondents, is expanding motor vehicle capacity without consideration for bicyclists and pedestrians. Non-motorized modes are often supported by associated land uses and require consideration and inter-agency cooperation to establish suitable development of transportation corridors. *The Connection between Land Use and Transportation in Land Use Plans*, a report prepared for NCDOT in 2003, provided specific recommendations to NCDOT to coordinate integration between land use and transportation and foster connections with other agencies. The findings include working with the Division of Community Assistance to improve land use plans within municipalities through technical assistance and best practices reports, encouraging comprehensiveness in land use planning, and creating mechanisms to reach out to local land use planners to increase collaboration. There are many facets to increasing collaboration and an extensive list of partners. Especially important is working with schools on transportation and school siting, collaboration for greenway development, and building infrastructure that meets user requirements for a projects entire lifespan. The action initiatives below endorse the need for various types of interagency-cooperation with a focus on planning for bicycle and pedestrian transportation.

CONNECT TRANSPORTATION AND LAND USE

- 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.
- 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.
- 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.
- Create Memorandum of Understanding between NC agencies to foster collaboration between agencies for land use planning and streamlining bicycle/pedestrian project and greenway development.
- Change the policies relating to land use, density, transportation, and sustainability to address cultural clash between motorized and non-motorized transportation.

IMPROVE LAWS AND STRENGTHEN THE ENFORCEMENT PROCESS

The summit results also show a need to enhance or clarify laws. Evidence of the need to clarify laws occurred during the roundtable discussions where experts were often unclear of the rule of the law or application of a law in context. A thorough review and modifications to state law would help achieve clarity. Also, steps should be taken to ensure laws are fully enforced. Numerous incidents were reported during the Summit discussions on how violations relating to bicycles and pedestrians are often go un-ticketed, are lessened in a court of law, or are dismissed all together. Additionally, better data in the form of safety statistics and crash reporting could help inform this discussion.

IMPROVE LAWS AND STRENGTHEN ENFORCEMENT PROCESS

- 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.
- 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.
- 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.
- Use Governor's Highway Safety Program to fund local enforcement programs for bicyclists, pedestrians, and motorists.
- When laws are enforced, get courts to follow through with prosecution and application of penalties.

Having a comprehensive implementation at both the state and local level for the Complete Streets Policy adopted by NCDOT in July of 2009 is undoubtedly the highest priority identified. Implementation of the Complete Streets Policy is pertinent and synergistic to the other priority action items outlined in this section. Next in importance is a message for NCDOT to reallocate more funds toward multi-modal projects; focus on retrofitting existing facilities with bicycle and pedestrian accommodations; and require more from all users of the roadway through changes in licensing. Other priorities include a desire for NCDOT to increase public awareness of bicycle and pedestrian safety issues through education; strengthen the connection between transportation and land use through collaboration with local agencies; and work to improve existing laws and the enforcement process in North Carolina.

Ultimately, working to fulfill all seven major action initiatives recommended in this report will enhance the safety of all road users, improve the quality of life and health for the citizens and visitors, and ensure that North Carolina remains a desirable place in which to work, live, and play.

¹¹ NCDOT 2010 Annual Performance Report.