Agenda

H 232 – Bicycle Safety and Traffic Law Study
Committee Meeting #1
August 7, 2015
Traffic Engineering Conference Room 161
NCDOT Mobility and Safety Offices

10:00 a.m. –	Welcome Introductions
10:15 a.m. --	Review and discussion about H 232
10:45 a.m. --	Select committee chair Discuss and nominate persons for remaining committee positions
11:15 a.m. --	Review existing statutes related to H 232
12:00 noon --	Lunch break
12:30 p.m. --	Review of relevant model ordinances and NCDOT safety plans
1:00 p.m. --	Develop preliminary list of traffic safety topics to be considered Create draft work plan for committee
1:45 p.m. --	Consider potential future meeting dates
2:00 p.m. --	Adjourn

H 232 – Bicycle Safety and Traffic Law Study
Committee Meeting #1 Minutes
August 7, 2015
Traffic Engineering Conference Room 161
NCDOT Mobility and Safety Offices

Committee Members Present: Kevin Lacy, Lauren Blackburn, Wes Dickson, Chris O'Keefe, Jim Westmoreland, James Gallagher, and Master Trooper Chris Knox

Members not present: Fred Burt, Crystal Collins

Attendees: Garold Smith, Cathy Smith, Bryan Poole, Steven Goodridge, and Carl Sundstrom

Lauren Blackburn convened the meeting at 10:05am. Lauren noted that the representatives from the trucking industry (Crystal Collins) and the agriculture industry (Fred Burt) were not able to join the meeting. The members introduced themselves, with a note that Carl Sundstrom and James Gallagher will serve interchangeably on the committee as both are subject matter experts at the UNC Highway Safety Research Center.

Mrs. Blackburn asked the group to review the House Bill 232 legislation. They discussed the language in order to develop a common understanding of the committee's scope. The law directs the North Carolina Department of Transportation (NCDOT) to study the vehicle laws affecting motorist and bicycling safety and write a report including recommended statutory changes. The law also requires NCDOT to organize and meet with a committee, as described in the law, who will provide advice based on industry or stakeholder perspectives.

Mr. Westmoreland asked about the genesis of the bill or if related research/data inquiries had been made to NCDOT prior to the bill's introduction. Mrs. Blackburn explained that the genesis appeared to stem from increased conflicts between road cyclists and motorists in rural areas. The committee also discussed a bill that had been introduced earlier in the session regarding passing slower moving vehicles, but this bill did not progress due to concerns raised by the agriculture industry.

Mrs. Blackburn asked the committee to establish a committee chair. Mr. Gallagher nominated Jim Westmoreland and Kevin Lacy seconded the nomination. No objections were raised nor were other nominations received. Mrs. Blackburn turned the meeting over to Mr. Westmoreland.

Mr. Westmoreland asked the committee to identify possible members for the remaining three spots on the committee. Mr. Lacy suggested that the committee begin by identifying any stakeholder or interest groups missing before focusing on named individuals. Mr. Lacy suggested that the committee needed a representative of local law enforcement. MT Knox asks whether an attorney would be helpful to help in discussion of laws. Mr. Westmoreland asked if NCDOT would invite someone from the Attorney General's (AG) office to provide guidance. NCDOT staff said they would ask for AG representation at future meetings.

Chris O'Keefe asks whether committee diversity (such as gender or ethnicity) should be considered. Mr. Lacy asked about statewide or national advocacy organizations, such as a bicycling organizations or motorist groups like AAA. Mrs. Blackburn suggested that bicycle tour organizers or businesses may need to be represented as well.

The group discussed geographic areas not well represented on the committee. Mr. Gallagher suggested that the concerns of rural residents who have reported inhibited travel during large group bicycle rides or events be represented on the committee. Mr. O'Keefe asked if there was anyone on the committee who represents bicycle operation or safety, such as a course instructor or researcher. The committee acknowledged representation by UNC's HSRC as a research resource. Mr. Lacy noted that he has received comments from NCDOT Division Engineers, and he will convey their various perspectives during committee meetings.

Mr. Westmoreland asked whether someone from the medical community such as a trauma center or emergency management services would be a good candidate. Wes Dickson asks whether interests of children, or different types of cyclists, should be represented on the committee. The committee closed discussion on stakeholder interest representation. Mr. Westmoreland suggested that the draft report be made available to the public for various interest groups to review before finalization.

The committee reviewed the stakeholder gaps listed and agreed that local law enforcement was an important interest needing representation on the committee. Mrs. Blackburn provided two names of officers from the eastern part of the state (from Kitty Hawk and Greenville). The group decided that the Greenville officer would be a good representative of local law enforcement, and could also help represent more diverse communities and college towns. The committee also noted that Greenville has a regionally significant trauma center. Mrs. Blackburn recommended Sgt. Michael Montayne as Greenville's Traffic Safety unit lead officer. The committee agreed to add him to the committee.

The committee asked about statewide advocacy organizations. Mr. Sundstrom named Bike Walk NC as the state's most recognized bicycle organization. Mr. Westmoreland suggested that Bike Walk NC could represent cyclists on the committee, while also representing operator-safety instructors. The committee recognized Steven Goodridge who explained that he had been nominated by Bike Walk NC to represent the group if given the opportunity. The committee agreed to add Steven Goodridge with no objections.

Mrs. Blackburn suggested that bicycle tour groups and special events are an important concern. She recommended Chuck Hobgood, the Visit NC State Liaison for Sports. Mr. Hobgood also helps organize multiple large-scale bicycle events in the state. The committee agreed to add him to the committee with no objections. Mrs. Blackburn explained that she would contact each of the nominees to confirm their participation.

Mrs. Blackburn introduced a summary document on laws relevant to vehicle operation in North Carolina, with relevance to bicycling. Mr. Westmoreland recommended reviewing these in preparation for the next meeting.

Mrs. Blackburn recommends looking at the Uniform Vehicle Code (UVC) and a set of proposed amendments developed by a technical sub-committee of the National Committee on Uniform Traffic Control Devices (NCUTCD) specific to bicycling. She suggested the recommended language may help the committee identify statutory improvements. Mr. Lacy agreed that the proposed amendments are a good resource as the NCUTCD receives input from a variety of stakeholders and experts from across the country. Mr. Westmoreland added the proposed amendments as another resource to be reviewed by the committee prior to the next meeting.

The committee discussed issues related to the carry of identification by bicyclists. Mr. Lacy said that enforcement is difficult with no identification. MT Knox added that law enforcement needs identification to notify the family and have contact information for reporting before the media describes the event. The committee also discussed the variety in types of bicyclists, such as children, and how that diversity may affect an operator's ability to obtain identification.

The committee reviewed the proposed amendments, discussing their relevance to NC vehicle code. Mr. Lacy suggested that the committee's focus should be on traffic ordinances, and not on definitions. Mr. Goodrich asked to look specifically at "no passing zones" ordinances, with special focus on areas with limited sight distance. Mr. Westmoreland suggested looking at other states for model ordinances and trends in vehicle codes changes. He also asked about quantitative research or information to helps inform discussions about passing distance and safety-crash factors. Mr. O'Keefe asked if there was any modeling available to describe the behaviors of motorists and cyclists under different passing and operating conditions. The committee asked UNC HSRC or NCDOT staff to identify any research or data sources that help inform these issues.

After a brief lunch break, Mr. Westmoreland reconvened the meeting and asked the group to identify future meeting dates. Preliminary dates chosen include August 28th, September 25th, and October 30th, all from 10am-2pm. Meetings will be held at the Mobility and Safety offices in Raleigh, upon confirmed availability of a meeting space.

Mr. Westmoreland asked the committee to identify additional safety issues that should be considered for future discussion by the committee. Several members listed visibility and lighting as key concerns for cyclists travelling at dusk or in dark conditions. Mr. Gallagher asked if 2 foot, 3 foot, or "safe distance" laws for passing cyclists should be explored. Mr. Lacy identified vehicle codes requiring operators to be in the right-hand side of the lane as an issue, specifically related to exceptions for operator position. Mrs. Blackburn noted complaints received regarding group cyclists delaying ingress/egress of residents along roadways. She also mentioned the law's requirement that the committee discuss cyclists riding more than one abreast. The committee asked NCDOT staff to provide information on motorcycle operators (riding two abreast) before or during the next meeting. Mrs. Blackburn also listed certain turning (hand) signals as a source of confusion when cyclists are communicating with motorists.

Mr. Westmoreland asked to review charges levied against those who hit bicyclists, and the concern of distracted drivers. Mrs. Blackburn asks if there are laws against aggressive driving or harassment. Mr. O'Keefe brought up the issue of texting or talking on the phone while riding a bicycle, or using headphones/ear buds. Mr. Sundstrom suggested considering the development of a vulnerable road user law. Mr. Goodrich added that the contributory negligence law in North Carolina makes enforcement in support of vulnerable road users challenging.

Mrs. Blackburn shared concerns she had previously received from Mr. Burt, including the impact of organized group rides and event road closures on resident travel. Mr. Westmoreland said local governments regulate special event road closures in most cases, and asked if this issue is better directed toward local governments. The committee discussed how some large group rides (as opposed to those requiring special permits) appear to "repurpose" the normal function of the roadway. Mr. Gallagher also mentioned the limited amount of information received during driver's education on bicycle and pedestrian safety.

Mr. Smith noted the approximately twelve issues mentioned, and asks whether it is reasonable to address all of them. The twelve issues identified are described below:

- Passing cyclists in areas of limited sight distance (per H 232)
- Cycling single/two abreast (per H 232)
- Cyclist carry of identification (per H 232)
- Visibility (clothing or other reflective gear) and lighting requirements
- Operating position in roadway
- Informal group ride impacts on rural roadway use and driveway egress
- 2 foot or other passing distance requirements
- Options for hand signals for turning
- Aggressive driving, harassment, and distracted driving laws
- Use of headphones or texting while cycling
- Vulnerable road user protection
- Formal group event permitting and regulations

Mr. Westmoreland added that all are important, but some might not be state legislation issues. Mrs. Blackburn explained that NCDOT staff will produce meeting minutes and distribute to the committee for their review. Mr. Westmoreland asks that for the next meeting everyone read the materials referenced during the meeting, review the minutes, and asked the committee members to volunteer to research and present findings on one or more issues identified. Mr. Lacy notes that G.S. 20-171 is the main place to find laws related to bicycling in North Carolina. Mrs. Blackburn mentioned the recently completed NCDOT State Highway Strategic Plan and its specific emphasis on bicyclists and pedestrians. James Gallagher noted that the www.WatchformeNC.org website also has relevant data.

Jim Westmoreland called the meeting to an end at 1:52pm.

Summary of actions taken by the committee:

- Named Mr. Jim Westmoreland as committee chair
- Requested that a representative from the Attorney General's office attend committee meetings
- Added Sgt. Michael Montayne, Steven Goodridge, and Chuck Hobgood to committee
- Asked committee members to review a summary document on laws relevant to vehicle operation in North Carolina, with relevance to bicycling.
- Asked committee members to review a set of proposed amendments, specific to bicycling, to the national Uniform Vehicle Code (UVC) as developed by a technical sub-committee of the National Committee on Uniform Traffic Control Devices (NCUTCD)
- Asked UNC HSRC or NCDOT staff to identify relevant research or data sources regarding bicycle crashes
- Selected future tentative meeting dates: August 28th, September 25th, and October 30th, all from 10am-2pm to be held at the NCDOT Mobility and Safety offices.
- Asked NCDOT staff to provide information on motorcycle operators traffic laws (emphasis on laws permitting riding two abreast)
- Asked the committee members to volunteer to research and present findings on one or more issues identified

Agenda

H 232 – Bicycle Safety and Traffic Law Study
Committee Meeting #2
September 11, 2015
Traffic Engineering Conference Room 161
NCDOT Mobility and Safety Offices

10:00 a.m. –	Welcome Introductions Facilitation Overview
10:15 a.m. --	Committee Work Plan – Jim Westmoreland
10:45 a.m. --	Data & Informational Presentations NCDOT UNC HSRC NC Bike/Walk
12:00 noon --	Lunch break
12:30 p.m. --	Review 12 issues identified during August 7 meeting Prioritization/Consolidation of non-H 232 issues
12:50 p.m. --	Discuss direction for H-232 Priority Issues
1:50 p.m. --	Consider potential future meeting dates
2:00 p.m. --	Adjourn

H 232 – Bicycle Safety and Traffic Law Study
Committee Meeting #2 Minutes
September 11, 2015
Traffic Engineering Conference Room 161
NCDOT Mobility and Safety Offices

Committee Members Present: Kevin Lacy, Lauren Blackburn, Jim Westmoreland, James Gallagher, Master Trooper Chris Knox, Steven Goodridge, Fred Burt, Chris O'Keefe, Chuck Hobgood

Members not present: Wes Dickson, Crystal Collins, Mike Montanye

Attendees: Garold Smith, Cathy Smith, Bryan Poole, Robin Pugh

Jim Westmoreland convened the meeting at 10:05 am. Mr. Westmoreland reviewed that the purpose of the committee, as tasked by the General Assembly, is to look at core issues outlined in House Bill 232 and decide if, and how, laws should be revised to increase safety of bicyclists and motorists. He also noted that the focus of the meeting was to go through three presentations which are for the purpose of providing additional context for data and issues, and to compare North Carolina laws to those of other states. The goal of the next committee meeting is to have a framework for recommendations, including draft language that can be reviewed by state legal counsel. During the final meeting, the committee will provide draft recommendations for legislation.

Garold Smith gave a brief overview of the facilitation role and suggested that a more definite process for committee actions be adopted. He suggested a standard parliamentary procedure in which proposed actions are decided upon by a vote of the committee members with the majority vote carrying the action. Votes will be brought to the committee by a motion and a second, and the Committee Chair, Jim Westmoreland, will call for the vote by show of hands. This process will be used for all committee actions, including the approval of meeting minutes, considerations for additional time for presentations/discussion, and recommendations carried forward to the General Assembly.

Minutes for the August 7, 2015 meeting of the committee were unanimously approved following a motion for approval by Steven Goodridge and a second by James Gallagher.

Lauren Blackburn noted that meeting minutes, agendas and other supporting documentation will be posted to the NCDOT website. She asked that committee members refer peers and inquiries to the NCDOT website rather than post committee information on their groups' websites. This will create a centralized location for meeting materials and avoid confusion for those seeking additional information.

Garold Smith added that his role, as facilitator, is to keep the discussion moving forward and to keep the committee on-track with the work plan. The committee's key charge is to discuss and make recommendations on the three items specified in House Bill 232. The additional 12 items will be discussed as time allows.

Jim Westmoreland noted that the three presentations on the agenda were for the purpose of providing a data-driven basis for the recommendations rather than anecdotal or opinion-driven information.

Presentation by Lauren Blackburn on Bicycling in North Carolina
(The entire presentation will be posted on the NCDOT website.)

Discussion
Lauren Blackburn informed the committee that cycling events and group rides are growing in popularity in North Carolina. NCDOT has procedures to permit events requiring road closures, such as bicycle races. However, informal group rides do not require permit/approvals because the assumption is that these groups will obey traffic laws and will not be disrupting normal traffic flow.

Chris O'Keefe added that it would be helpful to know how municipalities handle permitting for informal versus formal rides – if they are required or not required. Jim Westmoreland replied by saying that Greensboro has a formal process for permitting formal rides, but does not have a permitting process for informal rides. Fred Burt noted that enforcing county-issued permits can be difficult since many rides are performed in more than one county or may cross jurisdictions.

Presentation by James Gallagher on North Carolina Bicycle Crash Facts and Trends.
(The entire presentation will be posted on the NCDOT website.)

Discussion
Kevin Lacy asked if the number of bicycle-related injuries might be under-reported since there are a variety of injuries that are not traffic-related, such as falls and various injuries suffered by children. MT Chris Knox responded that the incidences of unreported injuries are probably low since medical facilities are required to notify law enforcement whenever a bicycle-related injury is treated.

Presentation by James Gallagher on Bicycle Laws in North Carolina and the U.S.
(The entire presentation will be posted on the NCDOT website.)

Discussion
Jim Westmoreland asked if there is any data that shows a reduction in incidents as a result of changing the law and allowing vehicles to cross the center line in order to pass bicycles. James Gallagher replied that he was not able to locate such specific data.

Steven Goodridge asked if the committee has an attorney who can assist with the issue of requiring bicyclists to carry identification. Lauren Blackburn replied that she will work with the Attorney General's Office (AG) and will pass on specific ideas/language to the AG for assistance/research, interpretive assistance or case law review/research.

While discussing Vulnerable Road User Protections, Fred Burt noted that the phrase "directed at vulnerable road users" needs to be clarified. He believes the way the definition is currently written leaves the intent of the action – directed versus accidental – up to interpretation.

During the discussion on Formal Group Permitting Regulations, Fred Burt asked about these regulations and cited *N.C. Gen. Stat. § 20-141.* He noted that the term "reasonable" is subjective and up to interpretation. He said that group rides can block driveway access for hours.

James Gallagher noted that he will email to the committee his source reports that include his data.

Presentation by Steven Goodridge on Safe Passing and Operating Abreast.
(The entire presentation will be posted on the NCDOT website.)

Discussion
James Gallagher commented that a recent study shows riding two abreast takes 80% less time for a vehicle to pass than does riding single file. Fred Burt noted that there needs to be more education on riding abreast. Groups riding by his house aren't organized, but ride in a "mob." Jim Westmoreland discussed the value of educating cyclists. He feels that creative notification to cyclists would deter unsafe behavior and encourage self-policing. Mr. Burt added that people disregard the law and wondered how to best get information out to the cyclists. He suggested possibly requiring some type of registration for cyclists. Lauren Blackburn suggested that this information be given to the group at the origin of the ride, such as at the bike shop. Mr. Gallagher added that when he participates in group rides, he will often talk with non-participants and affected publics.

Jim Westmoreland called for a lunch break.

Following the lunch break, Jim Westmoreland reconvened the group to discuss the three topics outlined in House Bill 232. He noted that these discussions will allow the committee to decide if additional research into regulations will be needed. He added that, following the discussion of the three main items, the group could discuss the additional 12 items if time allowed.

(1) How faster-moving vehicles may safely overtake bicycles on roadways where sight distance may be inhibited.

Jim Westmoreland noted that this requirement of H 232 may have originated in the western part of North Carolina. He added that due to the geography of Western NC, there is nothing that can be done to fix sight distance issues. He noted that a subset of the issue may be a discussion about faster moving vehicles and how to address speed differentials. Lauren Blackburn added that lane widths may be limited and that cars can't always overtake bicycles within the same lane. Therefore, the discussion should be focused on passing as this is not necessarily a geographic issue. James Gallagher added that he does not know if relaxing laws regarding crossing a double yellow line will have an impact on safety. Chris O'Keefe questioned the exceptions to crossing the double yellow line. Steven Goodridge noted that the [state] government can't do education on the issue if it is not legal to cross the yellow line. Chris O'Keefe asked if the yellow line exception would be for bicycles only or if it also would apply to other slower-moving vehicles. Jim Westmoreland suggested that this discussion be included in those with the Attorney General's Office. Chris O'Keefe added that he is not a big fan of yellow line exemptions and is a little hesitant about unintended consequences. Kevin Lacy suggested that the committee not view the double yellow line issue in generalized terms, but only in terms of bicycles. He added that he could never vote to dissolve validity of the double yellow line. However, he does have less concern if the exemption is allowed only for the passing of bicycles. James Gallagher added that passing one cyclist is different than passing multiple cyclists. Kevin Lacy added that the burden of proof should not be on law enforcement. He noted that law enforcement officers probably are not pulling over cyclists just because they cross the yellow line – there are likely other factors involved. Jim Westmoreland noted that during the discussion of the issue he had not heard that the problem can be resolved by relaxing the center line law. He reminded the committee to consider other implications if the center line law is relaxed.

Fred Burt asked if the exemption would apply to passing one cyclist or a group. He noted that single cyclists are not generally the problem. Chris O'Keefe noted that he has a problem with relaxing rules.

Steve Goodridge added that the failure mode occurs when a driver who won't cross the center line gets too close to a cyclist. He also mentioned unintended consequences and suggested that the group look at Ohio for data on crashes due to cars crossing the center line. Kevin Lacy noted that Ohio data is not as good as NC data. He is not sure that data will support relaxing center line regulations, but he agrees with Steven Goodridge that the issue needs to be addressed. However, he recommends that the committee not label the issue "relaxing" the center line requirements. He also noted that the committee needs to address single, riding abreast, groups – should "convoys" be allowed? Consider disruption of traffic as an issue. Jim Westmorland wondered about the committee's ability to address the problem – certain, specific conditions should be outlined in framing the issue of crossing the center line. Kevin Lacy added that group rides are an aggravation issue while single riders are a bigger safety issue.

Jim Westmoreland suggested that the committee find out more about Ohio's regulations. He also suggested that Kevin Lacy and Steven Goodridge work together to develop a draft provision for allowing cyclists to cross the center line under certain situations.

A vote on this issue was not brought to the floor pending additional data from Ohio, and draft framework from Kevin Lacy and Steven Goodridge.

Jim Westmoreland opened up discussion on the safe passing distance issue. James Gallagher noted that giving a wider berth is better. If the committee is also talking about changing the center line rule then it would be appropriate to change the passing distance law to three feet. Steven Goodridge noted that it is more important to get cyclists to ride in the center of the lane and encourage vehicles to "change mode" – use adjacent lane to safely pass cyclists. This issue is more important than a two-foot or three-foot regulation. Kevin Lacy noted that it may be more important to exempt center line rule. Chris O'Keefe added that, in the real world, he doesn't know if the safe passing distance difference between the two-foot or three-foot regulations matter. James Gallagher added that the exemption would encourage drivers to give cyclists more room – he doesn't believe changing from two-feet to three-feet is what matters. Steven Goodridge expressed concern that suggesting a change from the existing two-foot rule to a three-foot rule would draw other questions from lawmakers about bicycling.

Jim Westmoreland suggested that the safe passing distance discussion be tabled for the remainder of the meeting.

(2) Whether bicyclists on a roadway should be required to ride single file or allowed to ride two or more abreast.

Steven Goodridge informed the committee that there is no existing law in place that restricts riding two or more abreast. Kevin Lacy noted that the law states only one vehicle is allowed in a lane at a time. Steven Goodridge questioned whether the law was specific to motor vehicles or vehicles. Fred Burt reminded the committee that their task is to make recommendations and not write laws. Steven Goodridge suggested that potential language could cite that cyclists may ride abreast in a way that is consistent with traffic laws. This wording would not limit the number of bicycles in a lane, but only require that they obey traffic laws. He also noted that limiting the number of cyclists riding abreast could cause misinterpretation by law enforcement due to pacelines/rotations. Chris O'Keefe added that problems come not from cyclists riding in pacelines/rotations, but from large, disorganized groups. Steven Goodridge added that it will be easier to enforce if restriction is on riding within a lane rather than on the number riding abreast. The width of the lane will dictate that number. It is difficult to make

a judgment about the number of cyclists riding abreast when pacing/rotation is occurring. Two abreast may become three abreast if the group is pacing/rotating. It is a matter of timing and perception that is difficult to nail down. Jim Westmoreland noted that the committee may need interpretation on the question – whether this is primarily a safety issue and does the law need to change? Lauren Blackburn also questioned whether riding abreast is a safety issue or an aggravation issue.

A vote on this issue was not brought to the floor due to outstanding questions regarding the number of vehicles legally allowed in a single lane.

(3) Whether bicyclists should be required to carry a form of identification.

James Gallagher noted that he could not find an example of other states that require cyclists to carry identification (ID). Fred Burt noted that for many reasons, including medical issues and general identification, it would be good to require cyclists to carry ID. Steven Goodridge added that there is no "Stop & Identify" law in North Carolina. Persons are required to give law enforcement factual information. Best practices suggest the cyclists carry ID, but a law requiring them to do so would have unintended consequences and could bring up civil liberties issues in court, if challenged. MT Chris Knox added that law enforcement has many different ways to obtain identification other than through driver licenses or IDs. The State now uses databases that can provide identification based upon many other factors such as tattoos, moles, scars, etc. These identity systems are linked to national databases. Jim Westmoreland noted that it would be difficult to create a system that would require all cyclists of all types to carry ID. This would include children and socially/economically disadvantaged cyclists. MT Chris O'Keefe noted that it would be difficult to enforce the law. He didn't feel that it is a major safety concern and believed it would be a difficult issue to carry forward.

Jim Westmoreland recommended that the committee not carry this recommendation into the final report.

A motion not to pursue the issue was put forth by James Gallagher and seconded by Chris O'Keefe. Jim Westmoreland called for discussion, which included the following:

- Lauren Blackburn suggested that the committee provide reasons explaining why this item may not be included as recommended legislation in the final report. These include best practices by the cycling community; the diverse nature of cyclists, including children; and civil liberties issues.
- The group discussed the fact that pedestrians are not required to carry ID, so it would be difficult to require cyclists to do so. There was not unanimous agreement on this issue.

Jim Westmoreland called the issue to vote: The vote carried with seven in favor, and two opposed. Kevin Lacy was opposed to the motion and stated that the issue should not be dismissed just because children do not have identification. He believes that if someone has identification they should carry it. Fred Burt was opposed to the motion because he feels that it should be common sense to carry identification.

Following discussion of the three items from House Bill 232, Jim Westmoreland suggested that the committee continue with the discussion of the remaining 12 items identified during the August 7, 2015 committee meeting.

The group revisited the list of 12 items and consolidated the issues into the following list of priorities for discussion:

1) Visibility/Lights
2) Hand signals
3) Group rides – informal versus formal
4) Operating position in roadway
5) Use of headphones/texting while cycling

The group chose to discuss hand signals first. James Gallagher explained how current North Carolina laws require hand signals to include the use of the left hand to signal a right turn. Mr. Gallagher suggested adding the language "or right hand" to existing laws to allow cyclists to signal a right turn with their right arm. Without further discussion, James Gallagher put forth that motion. Steven Goodridge seconded the motion. The vote carried unanimously.

The group discussed visibility and lighting. Steven Goodridge noted that BikeWalk NC recommends requiring rear lights that are visible at 1000 feet. For rear reflectors, reflective light drops at a shorter distance than light – factory reflectors are inadequate. Mr. Goodridge shared a video from the BikeWalk NC website which compares rear lights and reflectors in nighttime conditions. Kevin Lacy shared a concern that such a requirement would apply to children riding their bicycles through the neighborhood. Lauren Blackburn shared her concern that lights providing visibility at 1000 feet can be expensive – some lights costing over $100. She added that she recently purchased a new bicycle and the shop did not notify her of the inadequacy of factory reflectors. She believes bicycle stores could help educate cyclists about visibility needs.

Steven Goodridge noted that rear lights with 1000 foot visibility can be purchased for less than $10. Jim Westmoreland added that best practices suggest cyclists should have front and rear lights – cycle shops should be educated to this fact.

James Gallagher put forth the motion that the committee recommend that rear lights be required on bicycles for nighttime riding. Steven Goodridge seconded the motion. Jim Westmoreland opened the floor for discussion on the topic. Jim Westmoreland called for a vote. The vote carried unanimously.

Fred Burt put forth a second motion for the requirement of a full reflective vest in addition to a light. There was not a second and the motion died.

Kevin Lacy put forth a third motion that a vest be allowed in lieu of a rear light. Lauren Blackburn asked for clarification on the size of the vest and the reflective surface. She suggested that the language should define a sufficiently large reflective, double-sided material in lieu of a rear light.

Kevin Lacy amended his original motion to include language that specifies a requirement for either a rear light or clothing/vest that is sufficiently reflective. Fred Burt seconded the motion. Jim Westmoreland called for a vote. The vote carried with six in favor and three opposed. Steven Goodridge, James Gallagher and Chris O'Keefe were opposed to the motion due to issues that included the cost of a vest/reflective material and the sufficiency of a stand-alone rear light requirement.

Lauren Blackburn will contact the Attorney General's Office for assistance in creating language for the approved recommendations.

The next committee meeting will be held on either October 6 or October 8, 2015. Lauren Blackburn will coordinate schedules and send out a meeting notice.

Jim Westmoreland noted that all business on the agenda had been covered and suggested a motion for adjournment. Kevin Lacy put forth the motion to adjourn which was seconded by James Gallagher. There was not opposition to the motion.

Jim Westmoreland called the meeting to an end at 2:35 pm.

Summary of actions taken by the committee:

1) The committee approved meeting minutes from the August 7, 2015 committee meeting.
2) The committee tabled a vote regarding overtaking bicycles on roadways where sight distance is sufficient pending the following additional information: 1) Steven Goodridge will research the bicycle laws in Ohio, 2) Kevin Lacy and Steven Goodridge will prepare draft recommendations for permissible behavior as it relates to crossing the center line of a roadway.
3) The committee tabled a vote on riding two abreast pending information from Kevin Lacy who will look into current North Carolina traffic laws regarding limitations on the number of vehicles allowed in a single lane.
4) The committee tabled the issue of the 2-foot versus 3-foot safe passing distance pending resolution of the permissible behavior as it relates to crossing the center line.
5) The committee voted not to carry forward the requirement of cyclists carrying identification.
6) The committee approved carrying forward language adding “or right hand” to existing laws to allow cyclists to signal a right turn with their right arm.
7) The committee approved carrying forward language that specifies a requirement for either a rear light or clothing/vest that is sufficiently reflective.

Agenda

H 232 – Bicycle Safety and Traffic Law Study
Committee Meeting #3
October 6, 2015
NCDOT Transportation Building
Emergency Information Center (EIC) Conference Room

10:00 a.m. –	Welcome Re-Introductions Housekeeping (lunch order, agenda review)
10:15 a.m. --	Approval of minutes Review of previous votes and other priority issues
10:30 a.m. --	Develop draft statutory text for approved directions
11:30 a.m. --	Lunch break
12:00 p.m. --	Discuss and vote on priority issues
1:15 p.m. --	Develop draft statutory text for priority issues
1:50 p.m. --	Consider potential future meeting date(s) and schedule for report draft
2:00 p.m. --	Adjourn

H 232 – Bicycle Safety and Traffic Law Study
Committee Meeting #3 Minutes
October 6, 2015
EIC Conference Room
NCDOT

Committee Members Present: Kevin Lacy, Lauren Blackburn, Jim Westmoreland, James Gallagher, Master Trooper Chris Knox, Steven Goodridge, Fred Burt, Chris O'Keefe, Chuck Hobgood, Wes Dickson, Michael Montanye

Members not present: Crystal Collins

Attendees: Garold Smith; Bryan Poole; Robin Pugh; Beth McKay, NCDOT Special Deputy to the Attorney General

Public Present: Roger Henderson, President BikeWalk NC; George Hess; Ray Lovingood; Lisa Riegel, Executive Director BikeWalk NC

Jim Westmoreland convened the meeting at 10:06 am. Mr. Westmoreland reviewed that the purpose of the committee, as tasked by the General Assembly, is to look at core issues outlined in House Bill 232 and decide if and how laws should be revised to increase safety of bicyclists and motorists. Mr. Westmoreland suggested that the committee's remaining two meeting opportunities – this meeting and an additional meeting to be scheduled for November -- focus on safety initiatives and, if appropriate, look at changes to existing laws and regulations. Mr. Westmoreland added that a representative from the North Carolina Attorney General's Office would be attending the afternoon session of the meeting and to help provide assistance.

Mr. Westmoreland noted that the minutes of the September 11 meeting were circulated to the committee ahead of this meeting to allow committee members to review and prepare comments on the minutes. He added that the minutes of each meeting will become an element of the final committee report, so votes in favor of or against motions – including narrative on the dissenter's reasons – are recorded in the minutes. The meeting minutes were unanimously approved following a motion for approval by James Gallagher and a second by Steven Goodridge.

Mr. Westmoreland reviewed the pending issues from the September 11 meeting, which included:

1) The committee tabled a vote on riding two abreast pending information from Kevin Lacy who will look into current North Carolina traffic laws regarding limitations on the number of vehicles allowed in a single lane.
2) The committee tabled the issue of the 2-foot versus other safe passing distance pending resolution of the permissible behavior as it relates to crossing the center line.
3) The committee voted not to carry forward any recommendation requiring cyclists to carry identification.
4) The committee approved carrying forward language on the addition of the right-hand signal to existing laws.

5) The committee decided to carry forward approved language that would require cyclists to either wear reflective clothing or a vest at night, or to have a rear light on their bicycle.

Mr. Westmoreland added that the outstanding issues included:

1) Group rides – recommendations regarding formal or informal group rides
2) Cyclist operating position in the roadway
3) Use of headphones and texting while cycling
4) Vulnerable Road User protection
5) Aggressive driving, harassment and distracted driving

Formal Group Rides

Mr. Westmoreland noted that there are permitting processes in place for permitting large group rides. Chuck Hobgood notified the group that the NC Bike Tour/Bike Ride Directors Association – made up of approximately 30 ride directors in the state - reports that there are approximately 80 organized group rides across the state each year with most of these rides raising money for charities such as American Heart Association and American Cancer Society. About 15 of these rides have reported the funds raised for charities over the years amounts to over $65 million.

Mr. Hobgood noted that most of these rides are going through the NCDOT permitting process which requires approval from/notification of the NCDOT Divisions and local and state law enforcement. He noted that the NCDOT special event permit process is required only if the event will be closing roads. He noted that many of the large group rides don't require the road closures but local law enforcement may require traffic controls as part of these events. Mr. Hobgood noted that ride organizers were encouraged to coordinate with local law enforcement even before the permitting process as a measure against disruptions and surprises, such as road construction which may impact rides. As a result, the NC Bike Tour/Bike Ride Directors Association encourages smaller rides to go through these steps for the NCDOT special event permit in advance of the ride.

Lauren Blackburn added a clarification that the NCDOT permit is not required if a local government is sponsoring the activity. For a town that is having a Christmas parade or hosting a bike ride and is managing the traffic control, they are responsible for the event permitting.

Fred Burt asked to share his experiences with group rides. Mr. Burt stated that he has noticed volumes of bicycle traffic impeding access and travel on roadways, including instances where bicycle races have closed roads, driveway accesses and disrupted normal traffic. He stated that the motorist's expectation is to be able to drive the speed limit – especially on rural roads - but they are unable to do so because of the bicycle traffic. He also cited examples where sight distance and cyclist travel speeds have resulted in crashes with property damage. Mr. Burt explained that changes must be made or more severe restrictions will be imposed on bicycle riders, feeling that the majority of the public are against unrestricted bike riding.

Mr. Westmoreland asked if Mr. Burt had any specific recommendations he wanted to put on the table for the committee to discuss. Mr. Burt provided the Committee Chair, Jim Westmoreland, with a handout which outlined his issues (see attached.)

Mr. Burt noted that bicyclists have responsibility of working with motorists and the traveling public or else there may be more drastic measures – such as banning bicycles from state roads – that may result. Mr. Burt added that he had not seen cyclists travel in small groups, but are more likely to be strung out over a longer distance. Because of this, and the attributes of rural roadways, he explained that it is

difficult to pass long lines of bicycles. Mr. Burt added that spacing between groups would allow cars the ability to pass in a reasonable distance.

Chris O'Keefe commented that the issue of formal rides having permits may not be within the purview of this committee since processes, permits and procedures already exist. Jim Westmoreland noted that the committee can bring up areas/issues that can be examined, but rather than look at law changes in this instance, it may be better to have NCDOT produce an educational program about group rides for cyclists. Steven Goodridge noted that BikeWalk NC is in support of continuing educational programs for cyclists rather than passing laws that require certain cycling behaviors - must get a consensus within the bicycling community as to what are defined as the most effective best practices.

MT Chris Knox noted that the NCDOT permitting form includes the option of a "total closed course," allowing no vehicular traffic and wondered if the committee is interested in supporting a change to the NCDOT form to stipulate that local residents will not be prohibited from normal use of their roads and access points. Mr. Westmoreland suggested that NCDOT look at the existing permit and see if there are ways it can be improved to help accommodate access for local roadway users. Lauren Blackburn also suggested that this investigation could more clearly explain the allowances under the permit and how to clarify road closures and other local impacts.

Jim Westmoreland suggested part of the investigation into the permitting process should also include looking at what local areas are being traversed and ensuring that local law enforcement are involved and able to provide input into traffic control for events. Steven Goodridge made the motion the committee recommend that NCDOT review their permit and management process for road closures for events to reduce the impacts on local residents and businesses. Fred Burt seconded. Motion carried unanimously.

Informal Group Rides

Lauren Blackburn replied that Kevin Lacy and she had discussed how the final committee report can go beyond best practices, requesting a resolution from the Legislature. This resolution would state the background issues and concerns, noting the need for responsible cycling behaviors, robust public education program, and coordination with law enforcement and, the bicycle industry to help get information to the cycling community. Although not a law, Mr. Westmoreland explained that this resolution would be helpful in obtaining resources and send a strong message that the issue is important and needs to be addressed – by both the state and the cycling community. Lauren Blackburn put forth the motion that the report include a draft form resolution for the Legislature stating a directive to NCDOT to develop an educational and safety initiative, an outreach strategy around "these issues," and for the required resources, to be identified, for the program to be carried out. "These issues" would include group rides, and other issues as discussed. James Gallagher seconded the motion. The motion passed unanimously.

Headphones/Texting

MT Chris Knox and Greenville Police Officer Michael Montanye noted that they were not aware of any laws related to using headphones while cycling or driving. James Gallagher added that while five states do have laws pertaining to distracted cycling, North Carolina is not one of them. Jim Westmoreland suggested that the topic may not warrant creating a law prohibiting bicyclists from wearing headphones, but that it may be something that should be incorporated into NCDOT's best practices or other educational components for cyclists. Chris O'Keefe moved that distracted cyclists are a threat to all the vehicles on the road and recommended that the committee support efforts to address the issue. Fred

Burt seconded the motion. Mr. Burt suggested adding "when operating a bicycle on a state-owned roadway." Mr. Gallagher suggested that the motion also include municipal trails. The motion carried unanimously.

Vulnerable User Protections/Aggressive Driving/Distracted Driving

MT Chris Knox read the aggressive driving law (§20.141.6) which states that a person is in violation if they operate a motor vehicle on a public roadway, street or highway, where they are in the offense of reckless driving. The offense is a Class One misdemeanor and would apply to reckless driving around a bicycle. MT Chris Knox noted that NC does have two separate reckless driving offenses – reckless driving and a separate reckless driving charge with willful and wanton disregard. MT Chris Knox read the law: "a) Reckless driving is any person who drives any vehicle on a highway or public vehicular area carelessly and heedlessly in willful or wanton disregard, b) Any person who drives any vehicle on a highway or public vehicular area without due caution and circumspection and at a speed or manner as to endanger."

Mr. Westmoreland asked if the committee felt there were specific actions or recommendations that should be taken with regard to vulnerable user protections. Steven Goodridge replied that it is important to provide increased protection for all crash victims, not just cyclists, and that the penalty should be increased across the board for all users and victims. Mr. Lacy suggested that bicyclists and motorcyclists should be considered together and allow the General Assembly to decide if there is an action they want to take. Mr. Westmoreland suggested that the committee table this issue until the next meeting at which point the committee will decide if there should be any formal action.

Passing Over the Center Line

(This draft language was distributed to committee members.) Kevin Lacy briefed the group on the draft language and added that he does not advocate changing the meaning of the double yellow line, but rather taking the approach that if a cyclists is passed on a double yellow line and within the conditions stated in the draft language that would be a defense to a citation. This language keeps the purpose and meaning of the traffic control device (double yellow line), but provides reasonable situations were individuals or groups of bicyclists can be passed. Steven Goodridge commented he believes the draft language is the best wording he has seen on the topic and that the language also addresses the concern of commercial truck drivers who may be afraid of losing their Commercial Driver License due to being cited for safely passing bicyclists on the double yellow line.

MT Chris Knox asked if there had been any investigation into statistics dealing with this issue or if there is any similar legislation. Mr. Westmoreland replied that James Gallagher had done the research and found no statistics or data that specifically address this issue. He also added that the language would allow the state to communicate the message to the motoring public which will be positive for both the motoring public and cyclists. Also, the fact that other states have similar language in place and have not reported any adverse effects as a result, are good defenses for the committee's action in drafting and supporting this language and its outcome.

Mr. Westmoreland asked the committee if this language also addresses the issue of safe passing distance or if there is another citation of law that would need to be modified to four feet. Mr. Goodridge replied that he would like to treat the passing distance and the double line passing as separate issues

since each has unique characteristics. Mr. Lacy suggested that although there may be separate discussions about the two issues, he would prefer that there be consistency in the distances within the two issues. Lauren Blackburn noted that the distance (two feet) applies in the current context to all slower moving vehicles or to any time a vehicle is being overtaken – it is not explicit to bicycles.

Mr. Westmoreland called for a motion on what Mr. Lacy presented to the committee for inclusion in the report. James Gallagher made the motion. Steven Goodridge seconded the motion. Upon a call for vote, the motion passed with one dissention, MT Chris Knox, who stated that although he understood the point of the language and the point of not inconveniencing motorists, he is still concerned about safety.

Safe Passing Distance

MT Chris Knox notified the committee that the language on passing distance could be found under § 20-149. Mr. Lacy noted that § e(1), as proposed, only applies to a bicycle. §§ (1) and (4) clearly apply to bicycles and not to other vehicle types such as farm vehicles. Beth McKay suggested the committee could include language that specifies "except as what is provided in § 20-150A(e)1." James Gallagher shared his concern with this approach because the language does not require vehicles to give more than two feet if they want to pass in the same lane and not go out over the yellow line to pass at four feet. Steven Goodridge added that there is concern from BikeWalk NC about changing the passing distance law and that it is not a priority over educating bicyclists about crossing the center line.

Mr. Westmoreland suggested that given the discussion on this topic and sufficient items that the committee has already considered, action on this issue could be delayed or deferred. The report could state that it was something the committee looked at, but had no specific recommendations or action for changes. He added that committee members could do additional work on this issue if they desire. Kevin Lacy moved this action, Chris O'Keefe seconded. On a call for vote, the motion passed with one dissention, James Gallagher, who believed that there should be a wider berth for passing as it relates to safety.

Riding Two or More Abreast

James Gallagher shared that the laws as currently written are undefined and there are conflicting interpretations. Steven Goodridge commented that cyclists are satisfied with the way the law is currently written where cyclists are required to operate within a single lane. Jim Westmoreland noted that, according to committee discussions, it seems as though current regulations are adequately addressing the issue. He added that there may be the need to incorporate some of the elements from this discussion into the General Assembly resolution in order to assist in educating the public and cyclists about the issue.

Kevin Lacy commented that he has a concern with multiple vehicles in a lane. He feels that operating conditions, higher speed environments and number of bicycles abreast are all issues that should be taken into consideration. Steven Goodridge replied that higher speed environments are where there is the most benefit to riding abreast as it aids in visibility and increases safety. He feels there are fewer crashes involving groups in higher speed environments than single riders riding on the right edge of the

road. Mr. Goodridge noted that there is not data that shows crashes involving cyclists riding two abreast, but much data showing individual cyclists being hit while riding along the right edge.

Mr. Lacy stated that speed differential is a large issue and has an impact on the outcome of cyclists riding abreast. Mr. Goodridge added that if there isn't crash data that applies to cyclists riding two abreast being involved in incidences where they are being overtaken from a vehicle traveling behind them, there are no grounds – from a safety perspective – for taking action on this issue. MT Chris Knox noted that crash reports do not show cyclists and their positioning if they are not directly involved in the crash. There is no way to track data for crashes involving cyclists riding abreast because it is not recorded in the crash reports.

MT Chris Knox noted that the existing motorcycle law states that motorcycles have use of the full lane and they can ride two abreast (§20.146.1) James Gallagher stated that 39 states have laws that allow cyclists to ride two abreast and only three states limit to single file unless the bike lane is wide enough to accommodate two. North Carolina is among eight states who do not address the issue.

Mr. Goodridge asked if the committee can make a resolution stating that cyclists ought to be able to ride abreast within a single lane. Lauren Blackburn asked if Mr. Goodridge was suggesting the committee adopt something similar to the motorcycle law. Mr. Goodridge noted that the motorcycle law prohibits motorists from driving in the same lane as motorcycles and he is not sure that this is what should be pursued for bicyclists since there are some lanes that are wide enough to accommodate a motor vehicle and a bicycle. Mr. Lacy stated that he would not advocate using "two or more abreast" since passing is allowed; rather, he would like to see the language say "two abreast" under certain conditions and negotiate what those conditions should be. Mr. Lacy added that on roadways with speed limits of 35 mph and less there is a lot of interaction. On roadways above 35 mph, speed differentials are greater and he would be less reluctant to encourage cyclists to use more of the lane, either riding alone or riding in a group.

Mr. Westmoreland suggested that the committee table the issue and form a work group to further discuss the conditions under which cyclists may ride two abreast, and craft something that the committee would want to recommend to the Legislature. Jim Westmoreland, Kevin Lacy, Steven Goodridge, Lauren Blackburn and Fred Burt volunteered to participate in this work group prior to the next committee meeting.

Lauren Blackburn noted that she will circulate a draft resolution in advance of the next committee meeting.

Jim Westmoreland set the next committee meeting for Wednesday, November 18, 2015, from 10 am to 2 pm. Lauren Blackburn will check on room availability.

Jim Westmoreland wrapped up by stating that for the next meeting the committee will discuss the summary of recommended actions for this committee, draft language on riding two abreast and the

draft resolution. The only outstanding issue is the riding position, which may be incorporated into the riding two abreast language.

Fred Burt moved for adjournment, seconded by Chris O'Keefe.

The meeting was adjourned at 2:10 pm.

Summary of actions taken by the committee:

1) The committee approved meeting minutes from the September 11, 2015 committee meeting.
2) The committee passed a motion unanimously recommending NCDOT review their permit and management process for road closures for events to reduce the impacts on local residents and businesses.
3) The committee passed a motion unanimously that the report include a draft form resolution for the Legislature stating a directive to NCDOT to develop an educational and safety initiative and an outreach strategy around "these issues" and for the required resources, to be identified, for the program to be carried out. "These issues" would include group rides, and other issues to be determined.
4) The committee passed a motion unanimously recommending to the NCDOT, as part of their educational outreach strategies that they focus on efforts to inform all users of the transportation system about the elements of distracted driving, especially operating a vehicle when the user has on headphones including when operating a bicycle on a state-owned roadway or on municipal trails.
5) The committee tabled action on vulnerable user protections and aggressive driving/distracted driving/harassment until the next meeting at which point the committee will decide if there should be any formal action taken.
6) The committee passed a motion for carrying forward draft language, as presented by Kevin Lacy, regarding passing bicyclists over the double yellow center line. The motion carried with once dissention, MT Chris Knox.
7) The committee passed a motion that action on the issue of safe passing distance be delayed or deferred, noting in the report that safe passing distance was something the committee looked at, but had no specific recommendations or action for changes. The motion passed with one dissenter, James Gallagher.
8) The committee tabled the issue of riding two abreast, formed a work group to further discuss the conditions under which cyclists may ride two abreast, and will create draft language that the committee would want to recommend to the Legislature. Jim Westmoreland, Kevin Lacy, Steven Goodridge, Lauren Blackburn and Fred Burt volunteered to participate in this work group.
9) The next committee meeting will be held on Wednesday, November 18, 2015, from 10 am to 2 pm. Lauren Blackburn will check on room availability.

Agenda

H 232 – Bicycle Safety and Traffic Law Study
Committee Meeting #4
November 18, 2015
NCDOT Transportation Building
Emergency Information Center (EIC) Conference Room

10:00 a.m. – Welcome
Housekeeping (lunch order, agenda review)

10:15 a.m. -- Approval of minutes
Review of previous votes and other priority issues

10:30 a.m. -- Revisit tabled items for action
- **(2) Whether bicyclists on a roadway should be required to ride single file or allowed to ride two or more abreast.**
- **Operating position in roadway**

11:30 a.m. -- Lunch break

12:00 p.m. -- Revisit tabled items for action
- **Aggressive driving, harassment, and distracted driving laws**
- **Vulnerable road user protection**

1:15 p.m. -- Summary of Committee Actions

1:50 p.m. -- Discussion of Committee Report

2:00 p.m. -- Adjourn

H 232 – Bicycle Safety and Traffic Law Study
Committee Meeting #4 Minutes
November 18, 2015
EIC Conference Room
NCDOT

Committee Members Present: Lauren Blackburn, Jim Westmoreland, James Gallagher, Carl Sundstrom, Master Trooper Chris Knox, Steven Goodridge, Fred Burt, Chris O'Keefe, Chuck Hobgood, Wes Dickson, Michael Montanye

Members not present: Kevin Lacy (presenting at a deposition), Crystal Collins

Attendees: Garold Smith; Bryan Poole

Public Present: Lisa Riegel, Executive Director BikeWalk NC; Stanley Ray Hoffman, Carolina Tarwheels; Philip Culpepper, Cyclist; Mike Dayton, Cyclist; Rebecca Proudfoot, Cyclist/Oaks & Spoke/Bicycle Pedestrian Advisory Committee – City of Raleigh; Ann Groninger, Bike Law; Jeff Viscount, WeeklyRides.com; Ray Lovinggood, Cyclist; George Hess, NCSU

Jim Westmoreland convened the meeting at 10:04 am and asked committee members and guests to introduce themselves. Mr. Westmoreland noted that the committee has been productive over the course of the meetings and its technical and best practices finding will be recorded in the NCDOT report and forwarded to the General Assembly. Mr. Westmoreland then reviewed the actions taken by the committee to date, as described below per issue:

HB 232 Issues

1. **How faster-moving vehicles may safely overtake bicycles on roadways where sight distance may be inhibited**
    - ***Action:*** The committee passed a motion for carrying forward draft language regarding passing bicyclists over the double yellow center line. That language was proposed as an amendment to existing law. The motion carried with one dissention.

§ 20-150. Limitations on privilege of overtaking and passing.

(e1) Defense. - It shall be a defense to a violation of sub-section (e) of this section if the operator of a motor vehicle shows all of the following:

(1) Is overtaking and passing a bicycle or bicycles as defined by 20-171.1 proceeding in the same direction,
(2) Is in compliance with subsections (a), (b), (c), and (d) of this section.
(3) Provides a minimum of 4' or completely enters the left lane.
(4) And the operators of bicycles that will be passed has not provided signal of their intention to perform a left turn.
(5) And did not interfere with the bicycle(s) being passed

2. **Whether bicyclists on a roadway should be required to ride single file or allowed to ride two or more abreast.**
    - ***Action:*** The committee tabled the issue of riding two abreast, formed a work group to further discuss the conditions under which cyclists may ride two abreast in advance of the November committee meeting.

3. **Whether bicyclists should be required to carry a form of identification**
    - ***Action:*** The committee voted not to carry forward the requirement of cyclists carrying identification. The vote carried with seven in favor and two opposed.

Other Issues Identified by Committee

1. **Visibility (clothing or other reflective gear) and lighting requirements**
    - ***Action:*** The committee voted to carry forward language that specifies a requirement for either a rear light or clothing/vest that is sufficiently reflective. The vote carried with six in favor and three opposed.
2. **Options for hand signals for turning**
    - ***Action:*** The committee voted to carry forward language adding "or right hand" to existing laws to allow cyclists to signal a right turn with their right arm. The vote carried unanimously.
3. **2-foot or other passing distance requirements**
    - ***Action:*** The committee passed a motion that action on the issue of safe passing distance be delayed or deferred, noting in the report that safe passing distance was something the committee looked at, but had no specific recommendations or action for changes. The motion passed with one dissention.
4. **Operating position in roadway**
    - ***Action:*** The committee discussed this in context of other issues (such as riding abreast and informal group rides). The issue may be addressed as part of other issues tabled for the November discussion.
5. **Informal group ride impacts on rural roadway use and driveway egress**
    - ***Action:*** The committee passed a motion unanimously that the report include a draft form resolution for the Legislature stating a directive to NCDOT to develop an educational and outreach initiative around the multiple issues related to informal group riding. The resolution will also request the necessary resources be allocated as required for the educational initiative to be carried out.
6. **Use of headphones or texting while cycling**
    - ***Action:*** The committee passed a motion unanimously recommending to the NCDOT, as part of their educational and outreach initiative focus on efforts to inform all users of the transportation system about the elements of distracted driving, especially operating a vehicle when the user has on headphones. This includes the use of headphones while operating a bicycle on a state-owned roadway or on municipal trails.
7. **Aggressive driving, harassment, and distracted driving laws**
    - ***Action:*** The committee tabled this issue until the November meeting at which point the committee will decide if there should be any formal action.
8. **Vulnerable road user protection**
    - ***Action:*** During the October 6 meeting, the committee tabled action on vulnerable user protections and aggressive driving/distracted driving/harassment until the November meeting at which point the committee will decide if there should be any formal action taken.

9. **Formal group event permitting and regulations**
    - ***Action*:** The committee voted to recommend that NCDOT review their permit and management process for road closures for events to reduce the impacts on local residents and businesses. Motion carried unanimously.

Mr. Westmoreland noted that the minutes of the October 6 meeting were circulated to the committee ahead of this meeting to allow committee members to review and prepare comments on the minutes. The meeting minutes were unanimously approved following a motion for approval by James Gallagher and a second by Steven Goodridge.

Riding Two or More Abreast

Mr. Westmoreland then asked Lauren Blackburn to present information on the work group's recommendations related to HB 232 item # 2, "Whether bicyclists on a roadway should be required to ride single file or allowed to ride two or more abreast." Work group members included Lauren Blackburn, Fred Burt, James Gallagher, Steven Goodridge, and Kevin Lacy. Lauren Blackburn noted that multiple ideas were shared via email among the work group of the committee. The ideas differed and the work group did not arrive at consensus language. Ms. Blackburn suggested language allowing cyclists to ride up to two abreast. She noted additional conditions such as number of travel lanes, road width, or posted speed limit, and access control are complicated variables that are not easily incorporated into legislation.

Ms. Blackburn added that she did not recall action being taken with regard to minimum passing distance. Mr. Westmoreland and James Gallagher replied that with regard to overtaking bicycles, the decision was a four-foot minimum passing distance but for this topic. Ms. Blackburn added she believes the issues of riding abreast and the minimum passing distance are related. Ms. Blackburn also added that other statutory examples show riding abreast language should not be applicable to off-road facilities, such as greenways – she suggested this be added to the recommendations being discussed.

Mr. Westmoreland asked if it is currently legal in North Carolina to ride two abreast in a single lane. Mr. Gallagher replied that he found no law that prohibits cyclists from riding two abreast. MT Chris Knox added that he was not aware that there is a law in North Carolina. Steven Goodridge replied that some states do have laws, and some municipalities in North Carolina, that prohibit riding two abreast. He added there are laws which prohibit another motor vehicle riding abreast with a motor cycle within the same lane. The group discussed the issues of riding abreast and riding as far right as practicable within a travel lane.

Steven Goodridge presented BikeWalk NC's position is that no new restrictions be recommended by the committee because cyclists are currently not being ticketed for riding abreast and are being taught to exercise defensive bicycle riding practices. Mr. Goodridge added there are best practices for cyclists operating abreast and BikeWalk NC proposes working with NCDOT on an educational program to promote these best practices.

Mr. Goodridge stated that cyclists are being injured/killed as a result of same lane passing by motor vehicles. The best deterrent to this is allowing cyclists to control the lane which is best accomplished by riding abreast, and he restated his support for cyclists to control the lane by riding abreast. Mr. Goodridge then handed out proposed language (see attached) that aligns with best practices should NCDOT or the committee have a need to create regulations on specific language for riding abreast.

Mr. Goodridge briefly summarized the information in the handout and highlighted that nowhere within the information does it require cyclists to ride single file. He added that there are best practices for when and where to pull over to allow vehicles to pass, but this information is difficult to put into law. He asked to be included in future conversations should the provisions related to pulling over be considered for codifying.

Chuck Hobgood asked if there is data which shows single file riding is safer. Mr. Gallagher replied there is no data to support this information. Chris O'Keefe added his support for the ability of cyclists to ride two abreast. Mr. Goodridge added cyclists are more comfortable riding two abreast, are understanding the safety benefits of it and are beginning to practice the technique more frequently. Mr. Hobgood added that, in the course of the numerous events his organization hosts on an annual basis, he is not aware of crashes which involved cyclists riding two abreast – only crashes involving those riding single file.

Mr. Westmoreland then asked the committee if there were further discussion on the topic. He added that, through the committee discussions and presentations, he has not seen any need for changing existing laws related to riding abreast. Instead, the need for best practices, safety information and educational programs will likely be more valuable. He suggested the report capture the work that has been done related to the issue, note it is an important issue, but the committee does not have specific recommendations related to legislative changes. Mr. Goodridge asked for the meeting minutes to reflect the committee's belief that riding two abreast is a useful defensive bicycling technique.

Lauren Blackburn asked that each committee member provide perspectives on the issue so that it can be reflected in the report. Mr. Westmoreland asked the committee members to state their thoughts or beliefs on the issue.

> Chuck Hobgood noted that there are no statistics which show single file riding is safer and there are no "pros" to riding single file – all "pros" are with riding two or more abreast.
>
> Steven Goodridge said that because most lanes in North Carolina are too narrow for same lane passing to be safe, he wants to encourage motorists to move into the next lane to pass. Operating two abreast makes that requirement clear – especially from a longer distance – which is especially important on higher speed roads.
>
> Carl Sundstrom added his perspective that since there is no data showing otherwise, there is no reason why the law should be changed.
>
> James Gallagher noted that no data shows double or single file riding being safer than the other, but safety arguments show support for double file riding. Therefore, it leads that double file riding is safer. He added that 39 states have legislation allowing double file riding, so North Carolina would have supporting peers if the committee decided to recommend legislation.
>
> MT Chris Knox noted that this (requiring two abreast cycling) would help the motoring public.
>
> Mike Montanye added that Greenville does not have regulations related to this issue. He related that riding two abreast would help with passing.

Wes Dickson noted that riding two abreast is safer for passing and it encourages compact riding groups.

Fred Burt suggested that groups of cyclists should be smaller to allow motor vehicles to pass. He suggested that language be added that limits groups of cyclists to between 10 and 20, and provisions for cyclists to pull over and allow motorists to pass.

Chris O'Keefe added that riding two abreast allows cyclists to take the lane and increases safety for cyclists. With the way the law is written today, it does not restrict riding two abreast.

Jim Westmoreland noted that riding abreast increases safety and has not had personal experience suggesting otherwise.

Jim Westmoreland asked for a motion. Steven Goodridge made the motion that the committee report indicate support for the existing law which allows riding two abreast, and that NCDOT develop an educational program which promotes best practices for riding two abreast. Mr. O'Keefe asked for an amendment to the motion that includes measures to make motor vehicle operators aware of these best practices. Mr. Westmoreland added that NC Department of Motor Vehicles could be actively involved in this effort. Chuck Hobgood asked how this proposal would relate to pace lines or rotations within group rides. Steve Goodridge responded that BikeWalk NC is in support of the current law.

Mr. Burt asked for a restatement of the motion. Jim Westmoreland restated the motion that the committee is not proposing changes to the existing law that currently allows two abreast cycling and that the NCDOT include, in there resolution, best practices on riding abreast be included within their educational program to both cyclists and the motoring public.

Mr. Gallagher noted that the law is not entirely clear related to riding two abreast when it states cyclists must ride as far right as practicable. Mr. Goodridge noted the difference between marked and unmarked lanes and the applicability of the existing law within those conditions. Mr. Westmoreland added that these ambiguities could be addressed within the best practices in the educational campaign, including information for law enforcement agencies.

Lauren Blackburn made the motion that the committee has no recommended changes to legislation related to riding abreast, but that the committee is recommending that best practices related to riding abreast be included in the education program outlined in the proposed resolution. The motion carried unanimously.

<u>Operating Position in the Roadway</u>
Mr. Westmoreland reviewed the committee's earlier discussions and reiterated the conclusion that the committee take no formal action regarding operating position in the roadway. With no further discussion, Mr. Westmoreland entertained the motion that the committee does not find the need for any specific legislative changes with regard to operating position in the roadway. Steven Goodridge seconded the motion. Lauren Blackburn noted that the issue had been discussed as part of other issues, but that there was no need to take action as an independent issue. The motion carried unanimously.

<u>Aggressive Driving, Distracted Driving and Vulnerable Road User Protections</u>
Mr. Westmoreland reviewed the committee's earlier discussions and reiterated the conclusion that the committee take no formal action regarding aggressive driving, distracted driving and vulnerable road

user protections. Mr. Westmoreland suggested that the committee put forth a motion noting that the committee identified these issues, but did not have specific recommendations to the General Assembly about additional legislation or legislative changes. Mr. Westmoreland noted that there are existing laws which cover aggressive and distracted driving and that vulnerable user protections are not something the committee decided to take action upon.

Mr. Goodridge noted the difficulty in writing and enforcing legislation around these issues and suggested a statewide, uniform hotline for reporting aggressive, harassing or drunk driving. This hotline would be tied to a statewide database which would track offenders - this would also coordinate with anti-stalker laws. Mr. Burt noted his concern that the term "aggressive driving" is subjective and this hotline may have unintended consequences. MT Chris Knox replied that "*HP" and "911" are currently in-place and address this need. Mike Montanye agreed with MT Knox's comments.

Lauren Blackburn noted that these mechanisms are for immediate dangers and threats and not necessarily for aggressive or unsafe driving. She asked if there is another mechanism for submitting information which does not require immediate response but is more for information tracking. MT Knox replied that these tracking mechanisms are in place when any complaint is made – whether through calling the Highway Patrol or local law enforcement. Mr. Montanye added that 911 is an appropriate mechanism for reporting violations and that law enforcement will be dispatched. MT Knox added individuals can also file a complaint against an individual and take them to court for aggressive driving.

Mr. Westmoreland added that cell phones and phone cameras all have increased the ability of individuals to report incidences to local law enforcement. He also noted that information on reporting aggressive, distracted or unsafe driving can be included in the educational campaign. Fred Burt added that cyclists and drivers should cooperate to minimize conflict.

Mr. Westmoreland entertained the motion that the committee did not have specific recommendations about additional legislation or legislative changes to the General Assembly for consideration regarding aggressive driving, distracted driving and vulnerable road user protections. Fred Burt seconded the motion. The motion carried unanimously.

<u>Summary of Committee Actions</u>
Mr. Westmoreland reviewed the actions the committee will be taking as a result of its work – these include the final report and the resolution. The report will include all meeting minutes, presentations, agendas and committee activities. Mr. Westmoreland asked Lauren Blackburn to present information on the resolution for the General Assembly to consider. Ms. Blackburn noted that the (attached) draft resolution captures the discussions and action items of the committee.

Mr. Westmoreland noted that the draft resolution captured the issues that the committee has been working on and makes a recommendation to the General Assembly to improve the safety of cyclists and motorists. He asked that the sentence which reads, "…develop education and training programs promoting the following best practices," be amended to read, "…should develop education and training programs promoting *safe interaction between bicyclists and motorists with the focus on best practices, such as…*" in order to limit the best practices viewed by the NCDOT.

The group discussed adding "and reflective clothing" to the resolution under item #5. Chris O'Keefe added that the committee has the opportunity to consider facilities in the actions. Steven Goodridge replied that the motion is in relation to education activities. Mr. Westmoreland made the motion that

the committee consider the draft resolution for inclusion in its report. James Gallagher seconded the motion. The motion passed unanimously.

Jim Westmoreland revisited the issue of bicycle infrastructure and asked if the committee wanted to structure a second motion around these issues. Lauren Blackburn suggested that the committee include information about crash/fatalities of cyclists and the role that infrastructure improvements can play in improving this – even though the committee concentrated on other issues. Mr. Westmoreland added that all technical safety data from the presentations should be included in the committee report and that some reference could be made to the role that infrastructure plays in increasing safety. Steven Goodridge added that safety and mobility improvements should be addressed. Wes Dickson shared an example where the local municipality provided some funding for infrastructure improvements.

MT Chris Knox noted that the North Carolina Strategic Highway Safety Plan covers this and other items. Mention of it and its goals could be an important addition to the lead-in of the report. Mr. Westmoreland echoed MT Knox's assessment of the Highway Safety Plan and agreed that it does cover many of the issues related to bicycling and other modes.

Chris O'Keefe asked about the status of the safe passing distance issue. Steven Goodridge noted that in the best practices the committee recommended that drivers should change lanes to pass. Lauren Blackburn recommended referencing back to HB 232 item #1, noting that the language should include "moving into the left lane or providing four-feet, whichever is greater" to provide clarity on safe passing. Steven Goodridge noted his concern with tampering with existing language on the passing zone. Jim Westmoreland agreed, believing that the language drafted by the committee is comprehensive and avoids unintended consequences. Mr. Goodridge added that the education program could provide specific information about safe passing. Mr. O'Keefe replied that he clearly understands the issue and is satisfied with its current context.

Lauren Blackburn referenced the handout (attached) of the draft report outline and added that mention of the North Carolina Strategic Highway Safety Plan will be added. Lauren Blackburn added that the report will be completed within the coming weeks. The report then will be posted to the website for public comment. Ms. Blackburn will notify the committee when the report is posted on the website, and she encouraged committee members to share the report with their colleagues and stakeholders. Mr. Westmoreland noted that the Joint Legislative Transportation Oversight Committee will receive the report by the end of December and the timing of delivering the report will not allow for editorial input as much as comments on the substance of the report and the committee's recommendations. Garold Smith added that questions received by the public will be treated as comments included in appendices of the report.

Mr. Westmoreland thanked the committee for their work, the seriousness of how the topics were addressed, how data was used to support key safety issues and the discussions related to improving safety for bicyclists and motorists. He added that the committee has put forth good work for the General Assembly to consider and he is thankful to the committee for serving the State of North Carolina.

The meeting was adjourned at 12:01 pm.

Summary of actions taken by the committee:

1) The committee approved meeting minutes from the October 6, 2015 committee meeting.
2) The committee passed a motion unanimously stating the committee has no recommended changes to legislation related to riding abreast, but the committee is recommending best practices related to riding abreast be included in the education program outlined in the proposed resolution.
3) The committee passed a motion unanimously stating that the committee does not find the need for any specific legislative changes with regard to operating position in the roadway.
4) The committee passed a motion unanimously stating that the committee does not have specific recommendations about additional legislation or legislative changes for consideration regarding aggressive driving, distracted driving and vulnerable road user protections.
5) The committee passed a motion unanimously stating that the committee include the draft resolution in its report.

Vehicle and Bicycle-Traffic Laws in North Carolina (2015)

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21. Vehicles should not “tail-gate” follow other vehicles too closely. 9

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23. Vehicles may not attempt any maneuvers that would prevent a passing vehicle from completing the pass. 9

24. Bicycle racing requires special permits. 9

25. Cyclists are restricted from trespassing in railroad rights-of-way 9

26. Local authorities may be limited in their ability to tailor vehicle laws. 10

1. Bicycles are defined as "vehicles", and several relevant portions of the motor vehicle code apply.

a. *N.C. Gen. Stat. § 20-4.01(49) Vehicle*. **–** "Every device in, upon, or by which any person or property is or may be transported or drawn upon a highway, excepting devices moved by human power or used exclusively upon fixed rails or tracks; provided, that for the purposes of this Chapter bicycles shall be deemed vehicles and every rider of a bicycle upon a highway shall be subject to the provisions of this Chapter applicable to the driver of a vehicle except those which by their nature can have no application. This term shall not include a device which is designed for and intended to be used as a means of transportation for a person with a mobility impairment, or who uses the device for mobility enhancement, is suitable for use both inside and outside a building, including on sidewalks, and is limited by design to 15 miles per hour when the device is being operated by a person with a mobility impairment, or who uses the device for mobility enhancement. This term shall not include an electric personal assistive mobility device as defined in G.S. 20-4.01(7a)."

b. *N.C. Gen. Stat. § 20-4.01 (23) Definition of Motor Vehicle* **–** "Every vehicle which is self-propelled and every vehicle designed to run upon the highways which is pulled by a self-propelled vehicle. This shall not include mopeds as defined in G.S. 20-4.01(27)d1."

c. Case Law

i. BICYCLE AS VEHICLE. --A bicycle is a vehicle and its rider is a driver within the meaning of the motor vehicle law. *Low v. Futrell, 271 N.C. 550, 157 S.E.2d 92 (1967); Sadler v. Purser, 12 N.C. App. 206, 182 S.E.2d 850 (1971); Townsend v. Frye, 30 N.C. App. 634, 228 S.E.2d 56, cert. denied, 291 N.C. 178, 229 S.E.2d 689 (1976).*

ii. The operation of a bicycle upon a public highway is governed by the rules governing motor vehicles insofar as the nature of the vehicle permits. *Webb v. Felton, 266 N.C. 707, 147 S.E.2d 219 (1966).*

iii. A bicycle is deemed a vehicle, and the rider of a bicycle upon the highway is subject to the applicable provisions of the statutes relating to motor vehicles*. Van Dyke v. Atlantic Greyhound Corp., 218 N.C. 283, 10 S.E.2d 727 (1940).*

iv. A bicycle is a vehicle, and is subject to the provisions of Article 3 of this Chapter, except those which by their nature can have no application. *Tarrant v. Pepsi-Cola Bottling Co., 221 N.C. 390, 20 S.E.2d 565 (1942); Oxendine v. Lowry, 260 N.C. 709, 133 S.E.2d 687 (1963).*

d. For Insurance Purposes

i. In interpreting an underinsured motorist excess provision, a bicycle involved in an accident with a car was considered to be a vehicle pursuant to G.S. 20-4.01(49), since it was operated upon a highway. *Sitzman v. Gov't Emples. Ins. Co., 182 N.C. App. 259, 641 S.E.2d 838 (2007).*

2. Operating a vehicle while impaired is illegal.

a. *N.C. Gen. Stat § 20-138.1. Impaired driving* – "(a) Offense. **-** A person commits the offense of impaired driving if he drives any vehicle upon any highway, any street, or any public vehicular area within this State:

(1) While under the influence of an impairing substance; or

(2) After having consumed sufficient alcohol that he has, at any relevant time after the driving, an alcohol concentration of 0.08 or more. The results of a chemical analysis shall be deemed sufficient evidence to prove a person's alcohol concentration; or

(3) With any amount of a Schedule I controlled substance, as listed in G.S. 90-89, or its metabolites in his blood or urine."

b. **Applied to Bicycles in 2006--** Session Laws 2006-253, s. 9, effective December 1, 2006, and applicable to offenses committed on or after that date, in subdivision (a)(2), added the last sentence; added subdivision (a)(3) and subsections (a1) and (b1); substituted "shall" for "must" in subsection (d); and deleted "bicycle, or lawnmower" at the end of subsection (e)

3. Bicyclists under the age of 16 are required to wear helmets.

a. Parents are issued a "fix-it" ticket and the $10 fee is waived

b. Only applies to riding in public spaces

c. Text: N.C. Gen. Stat § 20-171.9. *Requirements for helmet and restraining seat use* – "With regard to any bicycle used on a public roadway, public bicycle path, or other public right-of-way:

(a) It shall be unlawful for any parent or legal guardian of a person below the age of 16 to knowingly permit that person to operate or be a passenger on a bicycle unless at all times when the person is so engaged he or she wears a protective bicycle helmet of good fit fastened securely upon the head with the straps of the helmet.

(b) It shall be unlawful for any parent or legal guardian of a person below the age of 16 to knowingly permit that person to be a passenger on a bicycle unless all of the following conditions are met:

(1) The person is able to maintain an erect, seated position on the bicycle.

(2) Except as provided in subdivision (3) of this subsection, the person is properly seated alone on a saddle seat (as on a tandem bicycle).

(3) With respect to any person who weighs less than 40 pounds, or is less than 40 inches in height, the person can be and is properly seated in and adequately secured to a restraining seat.

(c) No negligence or liability shall be assessed on or imputed to any party on account of a violation of subsection (a) or (b) of this section.

(d) Violation of this section shall be an infraction. Except as provided in subsection (e) of this section, any parent or guardian found responsible for violation of this section may be ordered to pay a civil fine of up to ten dollars ($ 10.00), inclusive of all penalty assessments and court costs.

(e) In the case of a first conviction of this section, the court may waive the fine upon receipt of satisfactory proof that the person responsible for the infraction has purchased or otherwise obtained, as appropriate, a protective bicycle helmet or a restraining seat, and uses and intends to use it whenever required under this section."

4. Bicycles must be equipped with a front headlamp and a rear reflector or lamp

a. *N.C. Gen. Stat. § 20-129(e) Lamps on Bicycles.* **–** "Every bicycle shall be equipped with a lighted lamp on the front thereof, visible under normal atmospheric conditions from a distance of at least 300 feet in front of such bicycle, and shall also be equipped with a reflex mirror or lamp on the rear, exhibiting a red light visible under like conditions from a distance of at least 200 feet to the rear of such bicycle, when used at night."

b. Case law

i. Riding a bicycle on the highway at night without a lamp of any kind on the front thereof is a violation of this section and is negligence per se. *Oxendine v. Lowry, 260 N.C. 709, 133 S.E.2d 687 (1963). See also Miller v. Enzor, 17 N.C. App. 510, 195 S.E.2d 86, cert. denied, 283 N.C. 393, 196 S.E.2d 276 (1973).*

ii. PURPOSE OF FRONT LAMP ON BICYCLE. --Subsection (e) of this section, relating to front lamps on bicycles, is designed for the benefit of those approaching a bicycle from the front and for the protection of the bicyclist. *Oxendine v. Lowry, 260 N.C. 709, 133 S.E.2d 687 (1963).*

iii. PURPOSE OF RED REFLECTOR ON BICYCLE. --The red reflector required under subsection (e) of this section is designed to protect the bicyclist from vehicles approaching from the rear and to give notice to such vehicles of the presence of the bicycle ahead. *Oxendine v. Lowry, 260 N.C. 709, 133 S.E.2d 687 (1963).*

iv. INTENSITY OF LIGHT UNDER SUBSECTION (E). --**Subsection (e) of this section in no way requires a light of such intensity as to render objects visible along the highway in front of the bicycle.** *Oxendine v. Lowry, 260 N.C. 709, 133 S.E.2d 687 (1963).*

v. BICYCLE BEING CARRIED BY PEDESTRIAN. --Where plaintiff's evidence was to the effect that at nighttime he was carrying a child's bicycle, too small for him to ride, across a street intersection to a repair shop, and that he was hit by a vehicle entering the intersection against the stoplight at a high

rate of speed, refusal to give defendant's requested instruction that failure to have a light on the bicycle was a violation of this section was not error, since under the circumstances plaintiff was a pedestrian rather than a cyclist. *Holmes v. Blue Bird Cab, Inc., 227 N.C. 581, 43 S.E.2d 71 (1947).*

vi. ABSENCE OF FRONT LAMP ON BICYCLE NOT PROXIMATE CAUSE OF REAR-END COLLISION. --Where plaintiff's evidence failed to show that his bicycle was equipped with a lighted lamp on the front thereof, but did show that he had a reflecting mirror on its rear, and that plaintiff's bicycle was hit from the rear by a car operated by defendant, and there was no evidence that if the bicycle had been equipped with a front lamp the lamp would have been visible to a person approaching in an automobile from the rear of the bicycle, the only legitimate inference was that the absence of a lighted lamp on the front of the bicycle was not a proximate or contributing proximate cause of the collision, and the court could properly charge the jury to this effect. *Oxendine v. Lowry, 260 N.C. 709, 133 S.E.2d 687 (1963).*

5. **Bicycles may not be ridden on interstates or controlled access highways.**
   a. *19A NCAC 02E.0409 Operating Non-Motorized Vehicles* – "It is unlawful for any person to ride any animal, or to operate a bicycle or horse drawn wagon or any non-motorized vehicle or moped on any interstate or other fully controlled access highway."

6. **Vehicles must operate on the right side of the road (with exceptions).**
   a. *N.C. Gen. Stat. § 20-146 Drive on right side of highway; exceptions – "*(a) Upon all highways of sufficient width a vehicle shall be driven upon the right half of the highway except as follows:
      (1) When overtaking and passing another vehicle proceeding in the same direction under the rules governing such movement.
      (2) When an obstruction exists making it necessary to drive to the left of the center of the highway; provided, any person so doing shall yield the right-of-way to all vehicles traveling in the proper direction upon the unobstructed portion of the highway within such distance as to constitute an immediate hazard;
      (3) Upon a highway divided into three marked lanes for traffic under the rules applicable thereon; or
      (4) Upon a highway designated and signposted for one-way traffic.

7. **Vehicles operating at less than the legal maximum speed limit shall operate as close as practicable to the right-hand edge of the roadway (with exceptions)**
   a. *N.C. Gen. Stat. § 20-146* – "(b) Upon all highways any vehicle proceeding at less than the legal maximum speed limit shall be driven in the right-hand lane then available for thru traffic, or as close as practicable to the right-hand curb or edge of the highway, except when overtaking and passing another vehicle proceeding in the same direction or when preparing for a left turn."

8. **Motor vehicles shall not impede traffic**
   N.C. Gen. Stat. § 20-141 – "(h) No person shall operate a motor vehicle on the highway at such a slow speed as to impede the normal and reasonable movement of traffic except when reduced speed is necessary for safe operation or in compliance with law; provided this provision shall not apply to farm tractors and other motor vehicles operating at reasonable speeds for the type and nature of such vehicles."

9. **Bicycling on sidewalk regulations vary by city.**
   a. Examples:
      i. Charlotte
         1. Sec. 14-251. *Riding on sidewalks* – "It shall be unlawful to operate a bicycle upon the public sidewalks located within the congested business district as defined in section 6-431.

However, police officers acting in the discharge of their official duties are permitted to operate bicycles upon all of the public sidewalks in the city, including those sidewalks located within the congested business district."

ii. Raleigh

1. Sec. 12-1006. *BICYCLES ON SIDEWALKS* – "No person shall ride bicycles on any of the following pedestrian ways or sidewalks: Fayetteville Street Mall, Moore Square Station Transit Mall, adjacent to designated bike lanes. This prohibition shall not apply to sworn law enforcement officers while on duty and to any private security force employed by a non-profit corporation and approved by the City Council. (Code 1959, §19-21(c); Ord. No. 1987-96, §1, 12-1-87; Ord. No. 2000-747, §1, 3-7-00)."

iii. Greensboro

1. Sec. 16-227. *Driving bicycle on sidewalk* – "It shall be unlawful to drive or ride a bicycle within a sidewalk area in the central business district unless it is at a permanent or temporary driveway. All other sidewalks shall be for the joint use of pedestrians and non-motorized bicycles requiring manual power. Bicyclists shall yield the right of way on sidewalks to pedestrians. (Code 1961, § 12-78; Ord. No. 00-230, § 8, 12-5-00)."

iv. Winston-Salem

1. Sec. 42-286. *Right-of-way of pedestrians; riding on sidewalk.* – "(a) Whenever any person is riding a bicycle upon a sidewalk, such person shall yield the right-of-way to any pedestrian and shall give audible signal before overtaking and passing such pedestrian. (b)With the exception of officers assigned to the police department downtown bike patrol while engaged in the performance of their duties, it shall be unlawful for any person to ride a bicycle upon a sidewalk in the following locations or on the following streets (1) Central business district. (2) Sunset Drive from First Street to Glade Street. (3) Liberty Street from 14th Street to 17th Street (Code 1975, § 13-143; Ord. No 4826, § 14, 8-18-14)."

10. Vehicles must obey traffic signals.

a. N.C. Gen Stat. § 20-158 Vehicle control and Signals – "(b) Control of Vehicles at Intersections.

(1) When a stop sign has been erected or installed at an intersection, it shall be unlawful for the driver of any vehicle to fail to stop in obedience thereto and yield the right-of-way to vehicles operating on the designated main-traveled or through highway. When stop signs have been erected at three or more entrances to an intersection, the driver, after stopping in obedience thereto, may proceed with caution.

(2) a. When a traffic signal is emitting a steady red circular light controlling traffic approaching an intersection, an approaching vehicle facing the red light shall come to a stop and shall not enter the intersection. After coming to a complete stop and unless prohibited by an appropriate sign, that approaching vehicle may make a right turn.

b. Any vehicle that turns right under this subdivision shall yield the right-of-way to:

1. Other traffic and pedestrians using the intersection; and
2. Pedestrians who are moving towards the intersection, who are in reasonably close proximity to the intersection, and who are preparing to cross in front of the traffic that is required to stop at the red light.

c. Failure to yield to a pedestrian under this subdivision shall be an infraction, and the court may assess a penalty of not more than five hundred dollars ($ 500.00) and not less than one hundred dollars ($ 100.00).

11. Vehicles are prohibited from riding through, around or under a railroad gate or barrier that is closed or is being opened.

a. N.C. Gen Stat. § 20-142.1 – "(b) No person shall drive any vehicle through, around, or under any crossing gate or barrier at a railroad crossing while the gate or barrier is closed or is being opened or closed, nor shall any pedestrian pass through, around, over, or under any crossing gate or barrier at a railroad crossing while the gate or barrier is closed or is being opened or closed."

b. One-Way Streets – Vehicles must ride in the indicated direction of traffic

i. *N.C. Gen Stat. § 20.165.1* – "In all cases where the Department of Transportation has heretofore, or may hereafter lawfully designate any highway or other separate roadway, under its jurisdiction for one-way traffic and shall erect appropriate signs giving notice thereof, it shall be unlawful for any person to willfully drive or operate any vehicle on said highway or roadway except in the direction so indicated by said signs."

12. Vehicles are bound by certain turning restrictions at intersections

a. N.C. Gen. Stat. § 20-153. Turning at intersections – "(a) Right Turns. - Both the approach for a right turn and a right turn shall be made as close as practicable to the right-hand curb or edge of the roadway.
(b) Left Turns. -- The driver of a vehicle intending to turn left at any intersection shall approach the intersection in the extreme left-hand lane lawfully available to traffic moving in the direction of travel of that vehicle, and, after entering the intersection, the left turn shall be made so as to leave the intersection in a lane lawfully available to traffic moving in the direction upon the roadway being entered.
(c) Local authorities and the Department of Transportation, in their respective jurisdictions, may modify the foregoing method of turning at intersections by clearly indicating by buttons, markers, or other direction signs within an intersection the course to be followed by vehicles turning thereat, and it shall be unlawful for any driver to fail to turn in a manner as so directed."

13. Vehicles must yield to other vehicles when moving laterally.

a. *N.C. Gen. Stat. § 20-146 (d) – "*Whenever any street has been divided into two or more clearly marked lanes for traffic, the following rules in addition to all others consistent herewith shall apply.
(1) – "A vehicle shall be driven as nearly as practicable entirely within a single lane and shall not be moved from such lane until the driver has first ascertained that such movement can be made with safety."

14. Vehicles must signal when starting, stopping or turning.

a. *N.C. Gen. Stat. § 20-154. Signals on starting, stopping or turning* – "(a) The driver of any vehicle upon a highway or public vehicular area before starting, stopping or turning from a direct line shall first see that such movement can be made in safety, and if any pedestrian may be affected by such movement shall give a clearly audible signal by sounding the horn, and whenever the operation of any other vehicle may be affected by such movement, shall give a signal as required in this section, plainly visible to the driver of such other vehicle, of the intention to make such movement. The driver of a vehicle shall not back the same unless such movement can be made with safety and without interfering with other traffic."
(b) The signal herein required shall be given by means of the hand and arm in the manner herein specified, or by any mechanical or electrical signal device approved by the Division, except that when a vehicle is so constructed or loaded as to prevent the hand and arm signal from being visible, both to the front and rear, the signal shall be given by a device of a type which has been approved by the Division.

Whenever the signal is given the driver shall indicate his intention to start, stop, or turn by extending the hand and arm from and beyond the left side of the vehicle as hereinafter set forth.

Left turn -- hand and arm horizontal, forefinger pointing.

Right turn -- hand and arm pointed upward.
Stop -- hand and arm pointed downward.
All hand and arm signals shall be given from the left side of the vehicle and all signals shall be maintained or given continuously for the last 100 feet traveled prior to stopping or making a turn."

b. *N.C. Gen. Stat. § 20-154 (d)* "A violation of this section shall not constitute negligence per se."

15. Vehicles must maintain at least two feet of distance when passing.

a. *N.C. Gen. Stat. § 20-149 Passing Distances* – "(a) The driver of any such vehicle overtaking another vehicle proceeding in the same direction shall pass at least two feet to the left thereof, and shall not again drive to the right side of the highway until safely clear of such overtaken vehicle. This subsection shall not apply when the overtaking and passing is done pursuant to the provisions of G.S. 20-150.1."

16. Vehicles are restricted to passing when oncoming traffic is free for a sufficient distance

a. *N.C. Gen. Stat. § 20-150 Limitations on privilege of overtaking and passing* – "(a) The driver of a vehicle shall not drive to the left side of the center of a highway, in overtaking and passing another vehicle proceeding in the same direction, unless such left side is clearly visible and is free of oncoming traffic for a sufficient distance ahead to permit such overtaking and passing to be made in safety.

(b) The driver of a vehicle shall not overtake and pass another vehicle proceeding in the same direction upon the crest of a grade or upon a curve in the highway where the driver's view along the highway is obstructed within a distance of 500 feet.

(c) The driver of a vehicle shall not overtake and pass any other vehicle proceeding in the same direction at any railway grade crossing nor at any intersection of highway unless permitted so to do by a traffic or police officer. For the purposes of this section the words "intersection of highway" shall be defined and limited to intersections designated and marked by the Department of Transportation by appropriate signs, and street intersections in cities and towns.

(d) The driver of a vehicle shall not drive to the left side of the centerline of a highway upon the crest of a grade or upon a curve in the highway where such centerline has been placed upon such highway by the Department of Transportation, and is visible.

(e) The driver of a vehicle shall not overtake and pass another on any portion of the highway which is marked by signs, markers or markings placed by the Department of Transportation stating or clearly indicating that passing should not be attempted.

(f) The foregoing limitations shall not apply upon a one-way street nor to the driver of a vehicle turning left in or from an alley, private road, or driveway."

17. Vehicles are permitted to pass on the right under certain conditions

NC. Gen Stat § 20-150.1 When passing on the right is permitted — "The driver of a vehicle may overtake and pass upon the right of another vehicle only under the following conditions:

(1) When the vehicle overtaken is in a lane designated for left turns;

(2) Upon a street or highway with unobstructed pavement of sufficient width which have been marked for two or more lanes of moving vehicles in each direction and are not occupied by parked vehicles;

(3) Upon a one-way street, or upon a highway on which traffic is restricted to one direction of movement when such street or highway is free from obstructions and is of sufficient width and is marked for two or more lanes of moving vehicles which are not occupied by parked vehicles;

(4) When driving in a lane designating a right turn on a red traffic signal light."

18. Vehicles may be found guilty of reckless driving.

a. *N.C. Gen. Stat. § 20-140 Reckless Driving* – "(a) Any person who drives any vehicle upon a highway or any public vehicular area carelessly and heedlessly in willful or wanton disregard of the rights or safety of others shall be guilty of reckless driving.

(b) Any person who drives any vehicle upon a highway or any public vehicular area without due caution and circumspection and at a speed or in a manner so as to endanger or be likely to endanger any person or property shall be guilty of reckless driving."

19. Vehicles must yield the right of way to vehicles in certain situations

a. *N.C. Gen. Stat. § 20-155 Right-of-way* "(a) When two vehicles approach or enter an intersection from different highways at approximately the same time, the driver of the vehicle on the left shall yield the right-of-way to the vehicle on the right.

(b) The driver of a vehicle intending to turn to the left within an intersection or into an alley, private road, or driveway shall yield the right-of-way to any vehicle approaching from the opposite direction which is within the intersection or so close as to constitute an immediate hazard."

b. *N.C. Gen. Stat. § 20-156 Exceptions to the right-of-way rule* – "(a) The driver of a vehicle about to enter or cross a highway from an alley, building entrance, private road, or driveway shall yield the right-of-way to all vehicles approaching on the highway to be entered."

(b) Vehicles must to emergency vehicles when sirens or lights are turned on.

20. Several statutes governing post-crash behavior to motorists also apply to cyclists.

a. N.C. Gen Stat. 20-166 (a); (a1) – The driver of any vehicle who knows or reasonably should know:

(1) That the vehicle which he or she is operating is involved in a crash; and

(2) That the crash has resulted in serious bodily injury, as defined in G.S. 14-32.4, or death to any person; shall immediately stop his or her vehicle at the scene of the crash. The driver shall remain with the vehicle at the scene of the crash until a law-enforcement officer completes the investigation of the crash or authorizes the driver to leave and the vehicle to be removed, unless remaining at the scene places the driver or others at significant risk of injury

(b) In addition to complying with the requirements of subsections (a) and (a1) of this section, the driver as set forth in subsections (a) and (a1) shall give his or her name, address, driver's license number and the license plate number of the vehicle to the person struck or the driver or occupants of any vehicle collided with, provided that the person or persons are physically and mentally capable of receiving such information, and shall render to any person injured in such crash reasonable assistance, including the calling for medical assistance if it is apparent that such assistance is necessary or is requested by the injured person. A violation of this subsection is a Class 1 misdemeanor.

(e) The Division of Motor Vehicles shall revoke the drivers license of a person convicted of violating subsection (a) or (a1) of this section for a period of one year, unless the court makes a finding that a longer period of revocation is appropriate under the circumstances of the case. If the court makes this finding, the Division of Motor Vehicles shall revoke that person's drivers license for two years. Upon a first conviction only for a violation of subsection (a1) of this section, a trial judge may allow limited driving privileges in the manner set forth in G.S. 20-179.3(b)(2) during any period of time during which the drivers license is revoked.

b. *N.C. Gen Stat. 20-4.01 33(b) Reportable Crash – "*A crash involving a motor vehicle that results in one or more of the following:

a) Death or injury of a human being.

b) Total property damage of one thousand dollars ($1,000) or more, or property damage of any amount to a vehicle seized pursuant to G.S. 20-28.3."

21. Vehicles should not "tail-gate" follow other vehicles too closely.

a. *N.C. Gen Stat. 20-152 Following too closely* – "(a) The driver of a motor vehicle shall not follow another vehicle more closely than is reasonable and prudent, having due regard for the speed of such vehicles and the traffic upon and the condition of the highway.

(b) The driver of any motor vehicle traveling upon a highway outside of a business or residential district and following another motor vehicle shall, whenever conditions permit, leave sufficient space so that an overtaking vehicle may enter and occupy such space without danger, except that this shall not prevent a motor vehicle from overtaking and passing another motor vehicle. This provision shall not apply to funeral processions."

22. Bicycle Operators should not park or leave any bicycles on the "paved or main-traveled portion" of a highway or bridge outside municipal corporate limits.

If a bicycle is left for more than 48 hours, it may be removed by a law enforcement officer, who will then be considered the legal possessor.

N.C. Gen. Stat § 20-161. Stopping on highway prohibited; warning signals; removal of vehicles from public highway – "(e) When any vehicle is parked or left standing upon the right-of-way of a public highway, including rest areas, for a period of 24 hours or more, the owner shall be deemed to have appointed any investigating law-enforcement officer his agent for the purpose of arranging for the transportation and safe storage of such vehicle and such investigating law-enforcement officer shall be deemed a legal possessor of the motor vehicle within the meaning of that term as it appears in G.S. 44A-2(d)."

23. Vehicles may not attempt any maneuvers that would prevent a passing vehicle from completing the pass.

a. *N.C. Gen. Stat. § 20-149 "(*b) Except when overtaking and passing on the right is permitted, the driver of an overtaken vehicle shall give way to the right in favor of the overtaking vehicle while being lawfully overtaken on audible signal and shall not increase the speed of his vehicle until completely passed by the overtaking vehicle."

24. Bicycle racing requires special permits

a. *N.C. Gen. Stat. § 20-171.2 Bicycle racing* – "(a) Bicycle racing on the highways is prohibited except as authorized in this section.

(b) Bicycle racing on a highway shall not be unlawful when a racing event has been approved by State or local authorities on any highway under their respective jurisdictions. Approval of bicycle highway racing events shall be granted only under conditions which assure reasonable safety for all race participants, spectators and other highway users, and which prevent unreasonable interference with traffic flow which would seriously inconvenience other highway users.

(c) By agreement with the approving authority, participants in an approved bicycle highway racing event may be exempted from compliance with any traffic laws otherwise applicable thereto, provided that traffic control is adequate to assure the safety of all highway users."

25. Cyclists are restricted from trespassing in railroad rights-of-way

a. *N.C. Gen Stat. § 14-280.1. Trespassing on railroad right-of-way – "*(a) Offense. - A person commits the offense of trespassing on railroad right-of-way if the person enters and remains on the railroad right-of-way without the consent of the railroad company or the person operating the railroad or without authority granted pursuant to State or federal law.

(b) Crossings. - Nothing in this section shall apply to a person crossing the railroad right-of-way at a public or private crossing.
(c) Legally Abandoned Rights-of-Way. - This section shall not apply to any right-of-way that has been legally abandoned pursuant to an order of a federal or State agency having jurisdiction over the right-of-way and is not being used for railroad services.
(d) Classification. - Trespassing on railroad right-of-way is a Class 3 misdemeanor (2000-146, s. 10.)."

26. Local authorities may be limited in their ability to tailor vehicle laws.

a. *N.C. Gen. Stat. § 20-169. Powers of local authorities* – "Local authorities, except as expressly authorized by G.S. 20-141 and 20-158, shall have no power or authority to alter any speed limitations declared in this Article or to enact or enforce any rules or regulations contrary to the provisions of this Article, except that local authorities shall have power to provide by ordinances for any of the following:
(1) Regulating traffic by means of traffic or semaphores or other signaling devices on any portion of the highway where traffic is heavy or continuous.
(2) Prohibiting other than one-way traffic upon certain highways.
(3) Regulating the use of the highways by processions or assemblages.
(4) Regulating the speed of vehicles on highways in public parks.
(5) Authorizing law enforcement or fire department vehicles, ambulances, and rescue squad emergency service vehicles, equipped with a siren to preempt any traffic signals upon city streets within local authority boundaries or, with the approval of the Department of Transportation, on State highways within the boundaries of local authorities. The Department of Transportation shall respond to requests for approval within 60 days of receipt of a request.
Signs shall be erected giving notices of the special limits and regulations under subdivisions (1) through (4) of this section."

Related laws: North Carolina is a "contributory negligence" state

The North Carolina Supreme court has summarized contributory negligence as follows:
"Every person having the capacity to exercise ordinary care for his own safety against injury is required by law to do so, and if he fails to exercise such care, and such failure, concurring and cooperating with the actionable negligence of defendant contributes to the injury complained of, he is guilty of contributory negligence. Ordinary care is such care as an ordinarily prudent person would exercise under the same or similar circumstances to avoid injury…. **Simply put, the existence of contributory negligence does not depend on plaintiff's subjective appreciation of danger; rather, contributory negligence consists of conduct which fails to conform to an objective standard of behavior -- "the care an ordinarily prudent person would exercise under the same or similar circumstances to avoid injury"** (emphasis in original.) Clark v. Roberts, 263 N.C. 336, 337, 139 S.E.2d 593, 593, (1965).

Other references to NC traffic laws pertaining to cyclists

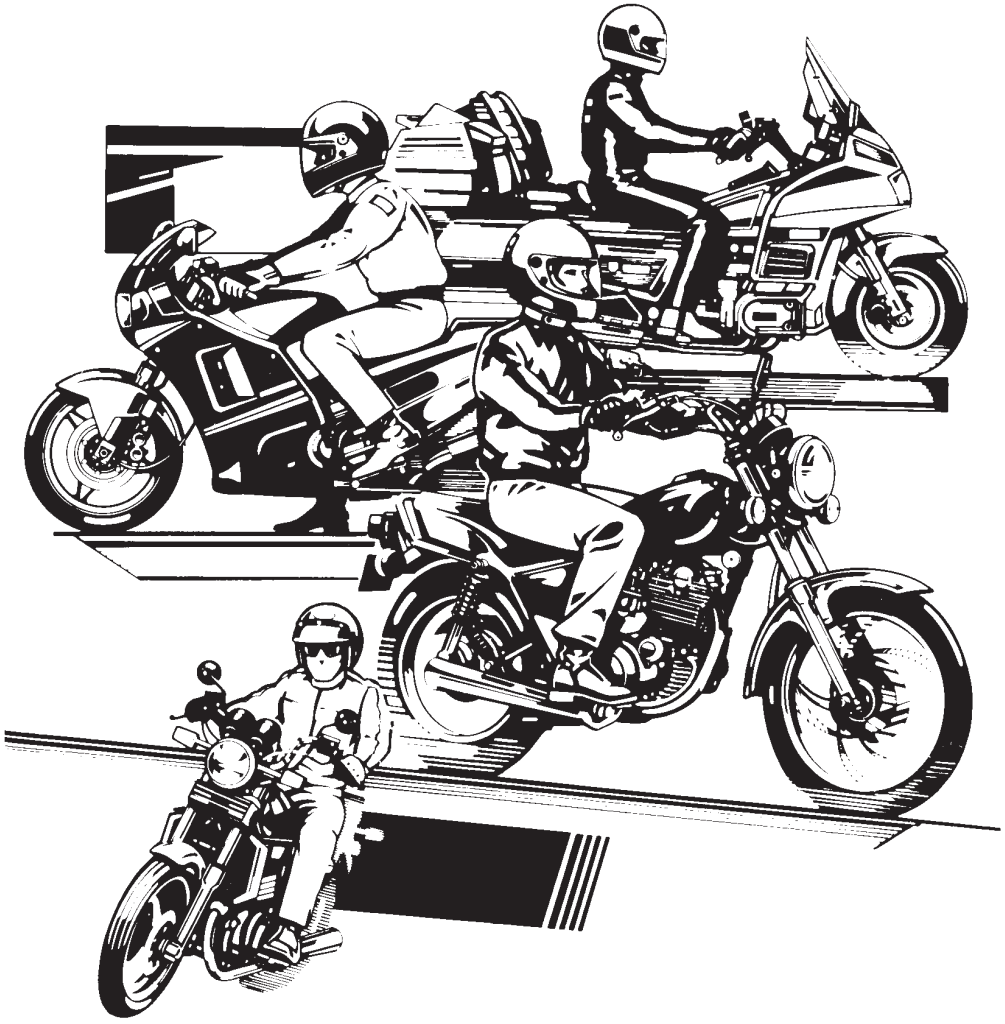
2008 – 2012 Bicycle Crash Facts Survey for the state of North Carolina
(http://www.ncdot.gov/bikeped/download/summary_bike_facts.pdf)

Bike Law USA Ride Guide, A Guide to North Carolina Bicycle and Pedestrian Laws, Annotated North Carolina General Statutes (accessed through Lexis Advance)

North Carolina Drivers Handbook, NCDOT, p.77 (2014).

A Guide to North Carolina Bicycle and Pedestrian Laws, NCDOT (2004)

MOTORCYCLISTS' HANDBOOK



NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
Division of Motor Vehicles

Thirteenth Edition, September 2007

- **Secure the Load** — Fasten the load securely with elastic cords (bungee cords or nets). Elastic cords with more than one attachment point per side are more secure. A tight load won't catch in the wheel or chain, causing it to lock up and skid. Rope tends to stretch and knots come loose, permitting the load to shift or fall.
- **Check the Load** — Stop and check the load every so often to make sure it has not worked loose or moved.

GROUP RIDING

If you ride with others, do it in a way that promotes safety and doesn't interfere with the flow of traffic.

KEEP THE GROUP SMALL

Small groups make it easier and safer for car drivers who need to get around them. A small number isn't separated as easily by traffic or red lights. Riders won't always be hurrying to catch up. If your group is larger than four or five riders, divide it up into two or more smaller groups.

KEEP THE GROUP TOGETHER

- **Plan** — The leader should look ahead for changes and signal early so "the word gets back" in plenty of time. Start lane changes early to permit everyone to complete the change.
- **Put Beginners Up Front** — Place inexperienced riders just behind the leader, that way the more experienced riders can watch them from the back.
- **Follow Those Behind** — Let the tailender set the pace. Use your mirrors to keep an eye on the person behind. If a rider falls behind, everyone should slow down a little to stay with the tailender.
- **Know the Route** — Make sure everyone knows the route. Then, if someone is separated they won't have to hurry to keep from getting lost or taking a wrong turn. Plan frequent stops on long rides.

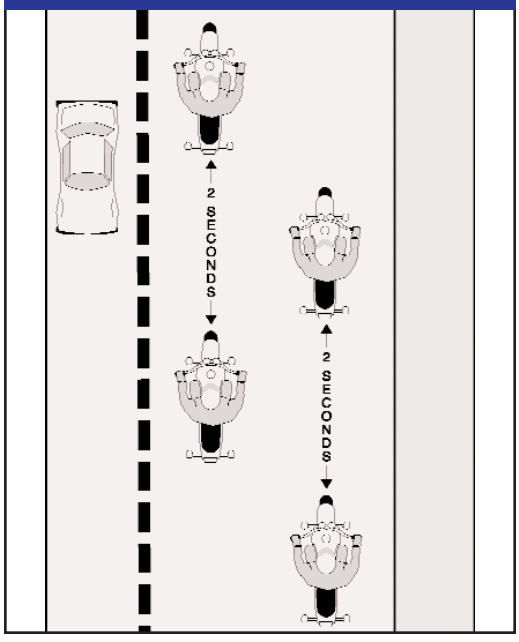
KEEP YOUR DISTANCE

Maintain close ranks but at the same time keep a safe distance to allow each rider in the group time and space to react to hazards. A close group takes up less space on the highway, is easier to see and is less likely to be separated. However, it must be done properly.

Don't Pair Up — Never operate directly alongside another rider. There is no place to go if you have to avoid a car or something on the road. To talk, wait until you are both stopped.

Staggered Formation — This is the best way to keep ranks close yet maintain an adequate space

STAGGERED FORMATION



cushion. The leader rides in the left side of the lane, while the second rider stays one second behind in the right side of the lane.

A third rider maintains in the left position, two seconds behind the first rider. The fourth rider would keep a two-second distance behind the second rider. This formation keeps the group close and permits each rider a safe distance from others ahead, behind and to the sides.

- **Passing in Formation** — Riders in a staggered formation should pass one at a time.
- **First, the lead rider should pull out** and pass when it is safe. After passing, the leader should return to the left position and continue riding at passing speed to open room for the next rider.
- **After the first rider passes safely,** the second rider should move up to the left position and watch for a safe chance to pass. After passing, this rider should return to the right position and open up room for the next rider.

Some people suggest that the leader should move to the right side after passing a vehicle. This is not a good idea. It encourages the second rider to pass and cut back in before there is a large enough space cushion in front of the passed vehicle. It's simpler and safer to wait until there is enough room ahead of the passed vehicle to allow each rider to move into the same position held before the pass.

Single-File Formation — It is best to move into a single-file formation when riding curves, turning, entering or leaving a highway.

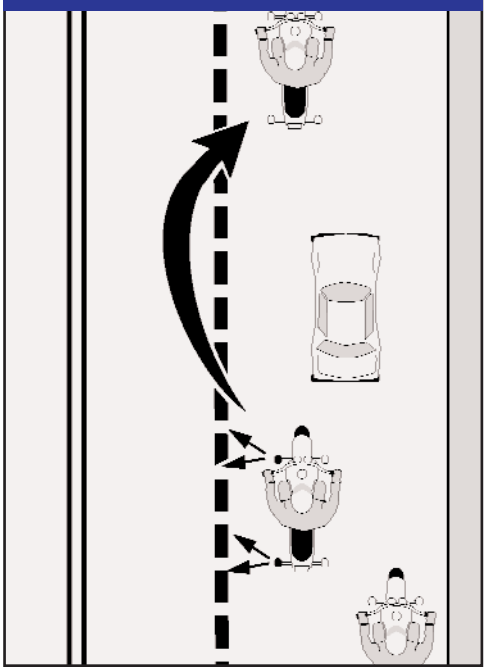
13 Test Yourself

When riding in a group, inexperienced riders should position themselves:

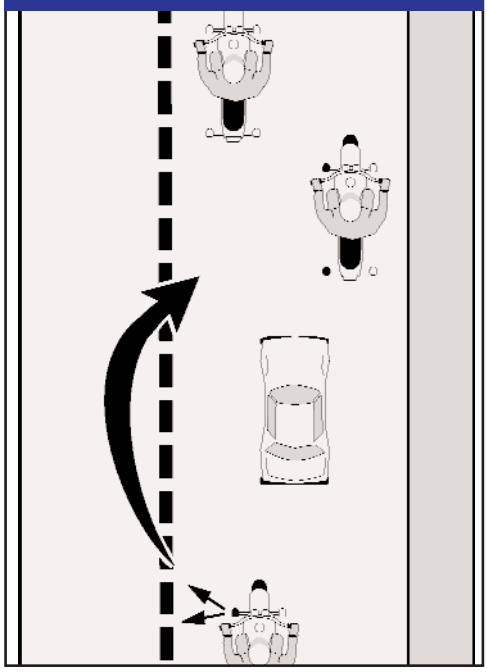
A. Just behind the leader.
B. In front of the group.
C. At the tail end of the group.
D. Beside the leader.

Answer - page 42

GROUP PASSING (STAGE 1)



GROUP PASSING (STAGE 2)



Evolution of Stay-Right Laws

BikeWalk NC

Abstract

This paper provides an overview of the developmental history of stay-right laws for slower traffic in the United States, including generic laws applicable to all vehicles and special laws applicable only to bicycles. Particular attention is focused on the Uniform Vehicle Code (UVC) and the state laws of California and North Carolina. The paper concludes with BikeWalk NC's reasons for recommending that North Carolina preserve its existing generic stay-right law.

A car stuck on an unpaved Johnston County Road in 1909. [Image: State Archives of NC]

The Generic Stay-Right Laws

The generic stay-right laws affecting all vehicles evolved over many decades as roadway surfaces improved, roads were widened, speeds increased, and lane markings became common. Modern traffic laws define the slower-traffic-stay-right rule separately from the drive-on-the-right-half-of-the-road rule, but they originated as a single rule.

In 1926, lane markings were rare, and poor surface conditions at the edge of narrow roads often resulted in drivers traveling down the middle of the road. Such drivers would move over to the right to accommodate opposite-direction traffic or passing traffic (faster drivers would usually honk the horn to alert the slower driver to move to the right half of the road). The 1926 UVC stay-right law combined the right-half and slow-vehicle rules into a single stay-right rule that accommodated operating left of center when surface conditions were poor.

In the 1930 UVC a separate stay-right rule was created for roadways with lane markings. This rule required drivers to use the right hand marked lane except when passing or preparing to turn left. The slower-vehicle stay-right rule for unmarked roadways remained combined with the right-half rule.

In the 1948 UVC, the right-half rule was placed in its own section with detailed exceptions. The slower-traffic-stay right rules for marked lanes and unmarked roads were consolidated into one section. Where marked travel lanes were provided, slower drivers would use the right hand marked lane; on roads without marked lanes, slower drivers would operate as far right as practicable. North Carolina's current slower-traffic-stay-right rule is virtually identical to this 1948 UVC rule.

UVC 1926 (Combined Right-Half, Stay-Right)

Section 10. Drive on Right Side of Highway.

…Upon all highways of sufficient width, except upon one way streets, the driver of a vehicle shall drive the same upon the ***right half of the highway and shall drive a slow moving vehicle as closely as possible to the right-hand edge or curb of such highway, unless it is impracticable to travel on such side of the highway*** *and except when overtaking and passing another vehicle subject to the limitations applicable in overtaking and passing set forth in Sections 13 and 14 of this act.*

UVC 1930 (Added Separate Section for Marked Lanes)

Section 26. Drive on Right Side of Highway

(a) Upon all highways of sufficient width other than one way highways except upon oneway streets the driver of a vehicle shall drive the same upon the ***right half of the highway [and shall drive a slow moving vehicle as closely as possible to the right hand edge or curb of such highway,] except when the right half is out of repair and for such reason impassable [unless it is impracticable to travel on such side of the highway]*** *or when overtaking and passing another vehicle subject to the limitations [applicable in overtaking and passing] set forth in Section 30 [Sections 13 and 14].*

(b) In driving upon the right half of the highway the driver shall drive as closely as practicable to the right hand edge or curb of the highway except when overtaking or passing another vehicle, or when placing a vehicle in position to make a left turn.

(d) In driving upon a one way highway the driver shall drive as closely as practicable to the right hand edge or curb of the highway except when overtaking or passing or traveling parallel with another vehicle or when placing a vehicle in position to make a left turn.

Section 27 ***Special Regulations Applicable on Streets and Highways Laned for Traffic.*** *Whenever any street or highway has been divided into clearly marked lanes for traffic drivers of vehicles shall obey the following regulations:*

(a) A vehicle shall normally be driven ***in the lane nearest the right hand edge or curb of the highway when said lane is available for travel*** *except when overtaking another vehicle or in preparation for a left turn….*

UVC 1948 (Separated Right-Half, Combined Stay-Right for Laned/Unlaned)

11-301 Drive on Right Side of Roadway - Exceptions

(a) Upon all roadways of sufficient width a vehicle shall be driven upon the ***right half of the roadway*** *except as follows …*

(b) Upon all roadways any vehicle proceeding at less the normal speed of traffic at the time and place and the conditions then existing shall be driven ***in the right lane then available for traffic, or as close as practicable the right hand curb or edge of the roadway****, except overtaking and passing another vehicle proceeding in the same direction or when preparing for a left turn at an intersection or into a private road or driveway.*

NC § 20-146. (b) (Current - 2015)

§ 20-146. (b) Upon all highways any vehicle proceeding at less than the legal maximum speed limit shall be driven in the right-hand lane then available for thru traffic, or as close as practicable to the right-hand curb or edge of the highway, except when overtaking and passing another vehicle proceeding in the same direction or when preparing for a left turn.

The Bicycle-Specific Stay-Right Rule

Ever since the original 1926 version, the UVC has defined bicyclists as having the rights and duties of drivers of vehicles. NC statute also defines a bicycle as a vehicle. All the normal rules of the road for drivers of vehicles, including the stay-right rules, applied equally to bicyclists until bicycle-specific rules were written to override them.

UVC 1926

"Vehicle." Every device in, upon or by which any person or property is or may be transported or drawn upon a public highway, excepting devices moved by human power or used exclusively upon stationary rails or tracks; provided, that for the purposes of (Title II of) this act, a bicycle or a ridden animal shall be deemed a vehicle.

NC § 20-4.01(49) (Current - 2015)

§ 20-4.01(49) Vehicle. – …for the purposes of this Chapter bicycles shall be deemed vehicles and every rider of a bicycle upon a highway shall be subject to the provisions of this Chapter applicable to the driver of a vehicle except those which by their nature can have no application.

In 1944, a new bicycle-specific rule was introduced into the UVC requiring bicyclists to operate differently from other drivers. It required bicyclists to stay far to the right regardless of lane markings, speed, destination, or traffic conditions. No evidence has been uncovered to suggest that any bicyclist organizations were consulted during the creation of this rule.

UVC 1944 – First Bicycle-Specific Stay-Right Rule

UVC 11-1205 – Riding on roadways and bicycle paths

(a) Any person operating a bicycle upon a roadway shall ride as near to the right-hand side of the roadway as practicable, exercising due care when passing a standing vehicle or one proceeding in the same direction.

In 1963 the California Highway Patrol sponsored Assembly Bill 1296 to incorporate the bicycle-specific stay-right law into California law. On May 9, 1963 the Office of the Commissioner of the CHP wrote: "This will enable the development of a more effective safety program when the youngsters can see the simple and clear cut rules they are to obey."[1] On May 15, 1963 Governor Pat Brown was advised that "The bill (1296) is sponsored by the Department of California Highway Patrol…There is no known opposition to the bill." However, there is no record of the CHP or legislature contacting adult bicyclist organizations regarding the new rule, nor any record of a study being made of the safety implications of such a rule at that time.

[1] https://docs.google.com/document/d/1t8Zpm5iqWpIG2YwhEbswjk4z-e6CCOqiFmeCewwSYts/

This bicycle-specific stay-right rule was never adopted into law by North Carolina, Massachusetts, Pennsylvania, Indiana, Iowa or Arkansas. Other states adopted some version of it. New York's version explicitly describes the intent of the law as preventing bicyclists from slowing motor traffic:

> ***New York § 1262 VAT Title 7 Article 34***
>
> *§ 1234. Riding on roadways, shoulders, bicycle or in-line skate lanes and bicycle or in-line skate paths. (a) Upon all roadways, any bicycle or in-line skate shall be driven either on a usable bicycle or in-line skate lane or, if a usable bicycle or in-line skate lane has not been provided, near the right-hand curb or edge of the roadway or upon a usable right-hand shoulder in such a manner as to prevent undue interference with the flow of traffic except when preparing for a left turn or when reasonably necessary to avoid conditions that would make it unsafe to continue along near the right-hand curb or edge.*

Opposition to the Bicycle Stay-Right Rule

As states began to enforce the bicycle-specific stay-right rule, experienced adult bicyclists found that it conflicted with safe and efficient bicycling practices. In 1975, the NCUTLO commissioned its Panel on Bicycle Laws to study bicycling issues. The Panel recommended repeal of UVC § 11-1205(a). It wrote[2]:

> *5. Position on Roadway*
>
> *Panel Recommendation: Delete UVC § 11-1205(a) and allow bicyclists to use the roadway under the same conditions as other drivers.*
>
> *Summary of Deliberations: UVC § 11-1205(a) requires bicyclists to ride as close as practicable to the right hand side of the roadway. This provision is very unpopular with bicyclists for a number of reasons. It treats the bicyclist as a second class road user who does not really have the same rights enjoyed by other drivers but who is tolerated as long as he uses a bare minimum of roadway space at the side of the road. The provision is also frequently misunderstood by bicyclists, motorists, policemen and even, unfortunately, judges. The provision requires the bicyclist to be as close to the side of the road as is practicable, which we all understand to mean possible, safe and reasonable. But many people apparently don't understand the significance of the word practicable, and read the law as requiring a constant position next to the curb. Even where the significance of the word practicable is recognized, the bicyclist is exposed to the danger of policemen and judges who may have a different idea about what is possible, safe and reasonable, and he is exposed to the very real danger of motorists who, because of their misconception of this law, will expect the bicyclist to stay next to the curb and will treat him with hostility if he moves away from that position.*
>
> *The side of the road is a very dangerous place to ride. The bicyclist is not nearly as visible here as he is out in the center of a lane. Also there is reason to believe that motorists don't respect a bicycle as a vehicle when it is hugging the side of the road. It is at the side of the road where all the dirt, broken glass, wire, hub caps, rusty mufflers, and other road debris collects, and it is hazardous to try to ride through this mess. Storm sewer grates are generally at the side of the road. The roadway is frequently less well maintained in this position. Also, in urban areas there is frequently a dangerous ridge where the roadway pavement meets the gutter, and the bicyclist must try to ride parallel with this ridge without hitting it. A bicyclist riding near the right edge of the roadway is also in substantially greater*

[2] Report of the Panel on Bicycle Laws: https://docs.google.com/file/d/0B8yYlSlJo3DfbnVRVUhxVExLaDQ/

danger from vehicles cutting in front of him to turn right than is the bicyclist who rides out in the middle of the right lane.

UVC § 11-301(b) requires all vehicles proceeding at less than the normal speed of traffic at the time and place and under the conditions then existing to stay in the right hand lane, or as close as practicable to the right-hand curb or edge of the roadway, except when passing or preparing for a left turn. This law will effectively require bicycles to stay in the right lane (although it will not require them to stay near the right edge of the roadway) when moving slower than other traffic. This is all that is needed.

The NCUTLO did not adopt the recommendation of its Panel on Bicycle Laws. Instead, it later attempted to patch § 11-1205(a) with a series of exceptions to try to address some of the operational issues that bicyclists had with the law. These exceptions are discussed in the next section.

After the NCUTLO went inactive, the NCUTCD took up the task of revising the UVC. In 2013 the NCUTCD Bicycle Technical Committee invited stakeholder feedback on proposed changes to § 11-1205. The California Association of Bicycling Organizations, one of the sponsored solicited for comments, replied as follows:

[W]e believe that removal of § 11-1205(a) is by far the most important change that can be taken to insure that bicyclists have the same rights of the road as other drivers. The deletion of § 11-1205(a) is long overdue, and was first proposed by the NCUTLO Panel on Bicycle Laws in 1975. That report provided a thorough and compelling rationale (with which CABO fully endorses) for the removal of § 11-1205(a) from the UVC.

Patching UVC § 11-1205(a)

Bicyclist organizations and knowledgeable advocates across the country have identified numerous situations where it is unsafe or disadvantageous for bicyclists to ride at the edge of a roadway[3]. In 1974 the California Statewide Bicycle Committee recommended a number of amendments to California's law to provide exceptions to the requirement that bicyclists stay at the road edge. These amendments became law in 1976. In 1979, the NCUTLO folded these amendments into the UVC, and added another exception in 2000. The most recent (2000) UVC section on bicyclists' position on the roadway now reads as follows:

[3] Reasons for cycling away from road edge include :
Cycling at prevailing or high speed
Queuing with other traffic
Destination positioning/avoiding right hook collisions
Narrow lanes/deter unsafe passing
Surface hazards near edge (risk of punctures or falls)
Door zone hazards
Improved conspicuity (esp. at junctions) and sight lines
Increased response time at junctions
Passing, group rotation
Communicating with another bicyclist

UVC 2000

11-1205 Position on roadway

(a) Any person operating a bicycle or a moped upon a roadway at less than the normal speed of traffic at the time and place and under the conditions then existing shall ride as close as practicable to the right-hand curb or edge of the roadway except under any of the following situations:

1. When overtaking and passing another bicycle or vehicle proceeding in the same direction.

2. When preparing for a left turn at an intersection or into a private road or driveway.

3. When reasonably necessary to avoid conditions including, but not limited to, fixed or moving objects, parked or moving vehicles, bicycles, pedestrians, animals, surface hazards, or substandard width lanes that make it unsafe to continue along the right-hand curb or edge. For purposes of this section, a "substandard width lane" is a lane that is too narrow for a bicycle and a vehicle to travel safely side by side within the lane.

4. When riding in the right turn only lane.

(b) Any person operating a bicycle or a moped upon a one-way highway with two or more marked traffic lanes may ride as near the left-hand curb or edge of such roadway as practicable.

Exception #3 is essentially a catch-all provision that the authors thought would allow bicyclists to judge for themselves when it is reasonably safe to ride at the roadway edge to facilitate same-lane passing versus occupying the right-hand lane like other traffic. And since most marked travel lanes are only 10-12 feet wide – too narrow for safe passing distance between a bicyclist and the average car or pickup truck – adult bicyclist safety education programs taught cyclists that this exception allowed them to ride near the center of most travel lanes for their own self-preservation.

Continued Enforcement Issues for Bicyclists

Police in states with bicyclists-stay-right laws continued to stop and cite bicyclists for riding away from the right edge of narrow lanes despite the explicit exceptions. Police do not generally receive detailed training on bicycle laws; many police officers in states with a bicycles-stay-right requirement are unaware of the legal exceptions. Like most other members of the public, most police are unaware of the safety benefits of operating a bicycle near the center of a marked lane. As a result, knowledgeable bicyclists who exercise defensive bicycling practices in narrow lanes have had to challenge unfair citations in court. Examples of such citations include recent cases in Florida[4] and California[5] [6].

In states that did not adopt a bicycle-specific stay-right law, including North Carolina, citations of bicyclists for failure to stay to the right are practically unheard of. Police in these states who are unfamiliar with the legal and safety issues will occasionally make improper stops of bicyclists, but after talking with the bicyclists and consulting the written law, let the bicyclists continue as they were. (This in fact happened to Study Committee member Steven Goodridge in Cary in 2010.) Exceptions exist in municipalities that have adopted their own local traffic ordinances that conflict with state law. In Chapel Hill, bicyclist Wayne Pein

[4] Florida Cyclists: Guy Hackett, Ryan Scofield: "Cyclist fights ticket for using full lane, and wins" http://www.news-press.com/story/news/local/2015/01/28/cyclist-fights-ticket-using-full-lane-wins/22494755/

[5] California: David Kramer (6/29/2014), Scott Golper (7/6/2014), Greg Liebert (11/10/2013)

[6] California: http://bikinginla.com/2014/07/07/la-sheriffs-deputies-ticket-pch-cyclists-in-clear-violation-of-the-law-lacbc-demands-fair-and-legal-treatment/

was stopped by CH Police while accelerating downhill in the center of the rightmost lane of a four lane road. The officer was unable to find a state law that Mr. Pein had violated, but did find a local ordinance, §21-42(c), enacted in 1981, that required bicyclists to stay to the right edge of the road, and cited him for that. Mr. Pein challenged the ticket in court, and lost. After the Chapel Hill Town Council received complaints about their local bicycle ordinance being in conflict with state law and best bicycling practices, the Council ultimately repealed the ordinance in 2015.

BikeWalk NC Recommendation on Bicycle-Specific Stay-Right Laws

There are three fundamental problems with bicycle-specific stay-right laws as they have been proposed, enacted, and revised in ways that assign bicyclists inferior rights to marked travel lanes:

1. Most marked lanes are too narrow for same-lane passing to be safe. The rule and its exceptions are presented backwards.
2. If a stay-right law does not make it clear that it is up to the bicyclist's judgement to decide when to operate away from the lane edge, then bicyclists who employ defensive bicycle driving techniques face constant threat of citation or harassment by less knowledgeable police officers who have different opinions of where bicyclists should ride.
3. If a bicycle-specific stay-right law truly allows a bicyclist discretion on where to operate in a marked lane, it is unenforceable and unnecessary.

By comparison, the generic stay-right law addresses all vehicle types and provides equitable treatment for users of marked travel lanes. This raises the question of what, if any, valid motivation exists for a bicycle-specific stay-right law. It is quite rare for bicyclists to use a full lane when the usable width of that lane is truly wide enough for safe same-lane passing and such passing would be advantageous and appropriate under the conditions present. Rather, motorist complaints about bicyclists using a full lane almost always involve narrow lanes where same-lane passing would be unsafe. Bicyclists using a full lane in daylight are rarely involved in car-bike collisions, while most motorist-overtaking collisions involve bicyclists riding at the right edge of narrow lanes. For these reasons, BikeWalk NC opposes enactment of a bicycle-specific stay-right law or modification of the state's existing stay-right law.

Safe Passing Principles and Laws

BikeWalk NC

Abstract

This paper provides an overview of existing passing laws in North Carolina and other states as related to safe passing of bicyclists. Operational, geometric and enforcement issues related to same-lane versus next-lane passing are discussed. Recommendations by BikeWalk NC are presented in the concluding remarks.

Current North Carolina Passing Laws

Existing state law identifies the conditions required for safe and legal passing based on traffic conditions, road features and sight distances. Passing of vehicles must be done on the left unless in a separate marked lane. Passing within the same marked lane is permitted only when it can be done safely and at no less than two feet of separation under NC law. Drivers who move into the adjacent lane to pass must yield to other drivers in that lane before doing so, and may not move back into the passed drivers' lane until safely clear. When the adjacent lane carries opposite-direction traffic, drivers must not pass where limited sight distance prevents sufficiently early detection of oncoming traffic that may be affected by the pass, or at an intersection. Passing may be prohibited by roadway markings, typically due to insufficient sight distance to safely pass a motor vehicle traveling just below the speed limit.

§ 20-146. Drive on right side of highway; exceptions

(a) Upon all highways of sufficient width a vehicle shall be driven upon the right half of the highway except as follows:

(1) When overtaking and passing another vehicle proceeding in the same direction under the rules governing such movement;

(2) When an obstruction exists making it necessary to drive to the left of the center of the highway; provided, any person so doing shall yield the right-of-way to all vehicles traveling in the proper direction upon the unobstructed portion of the highway within such distance as to constitute an immediate hazard;

[…]

(d) Whenever any street has been divided into two or more clearly marked lanes for traffic, the following rules in addition to all others consistent herewith shall apply.

(1) A vehicle shall be driven as nearly as practicable entirely within a single lane and shall not be moved from such lane until the driver has first ascertained that such movement can be made with safety.

§ 20-149. Overtaking a vehicle.

(a) The driver of any such vehicle overtaking another vehicle proceeding in the same direction shall pass at least two feet to the left thereof, and shall not again drive to the right side of the highway until safely clear of such overtaken vehicle. This subsection shall not apply when the overtaking and passing is done pursuant to the provisions of G.S. 20-150.1.

(b) Except when overtaking and passing on the right is permitted, the driver of an overtaken vehicle shall give way to the right in favor of the overtaking vehicle while being lawfully overtaken on audible signal and shall not increase the speed of his vehicle until completely passed by the overtaking vehicle.

Failure to comply with this subsection:

(1) Is a Class 1 misdemeanor when the failure is the proximate cause of a collision resulting in serious bodily injury.

(2) Is a Class 2 misdemeanor when the failure is the proximate cause of a collision resulting in bodily injury or property damage.

(3) Is, in all other cases, an infraction.

§ 20-150. Limitations on privilege of overtaking and passing.

(a) The driver of a vehicle shall not drive to the left side of the center of a highway, in overtaking and passing another vehicle proceeding in the same direction, unless such left side is clearly visible and is free of oncoming traffic for a sufficient distance ahead to permit such overtaking and passing to be made in safety.

(b) The driver of a vehicle shall not overtake and pass another vehicle proceeding in the same direction upon the crest of a grade or upon a curve in the highway where the driver's view along the highway is obstructed within a distance of 500 feet.

(c) The driver of a vehicle shall not overtake and pass any other vehicle proceeding in the same direction at any railway grade crossing nor at any intersection of highway unless permitted so to do by a traffic or police officer. For the purposes of this section the words "intersection of highway" shall be defined and limited to intersections designated and marked by the Department of Transportation by appropriate signs, and street intersections in cities and towns.

(d) The driver of a vehicle shall not drive to the left side of the centerline of a highway upon the crest of a grade or upon a curve in the highway where such centerline has been placed upon such highway by the Department of Transportation, and is visible.

(e) The driver of a vehicle shall not overtake and pass another on any portion of the highway which is marked by signs, markers or markings placed by the Department of Transportation stating or clearly indicating that passing should not be attempted.

(f) The foregoing limitations shall not apply upon a one-way street nor to the driver of a vehicle turning left in or from an alley, private road, or driveway.

§ 20-150.1. When passing on the right is permitted.

The driver of a vehicle may overtake and pass upon the right of another vehicle only under the following conditions:

(1) When the vehicle overtaken is in a lane designated for left turns;

(2) Upon a street or highway with unobstructed pavement of sufficient width which have been marked for two or more lanes of moving vehicles in each direction and are not occupied by parked vehicles;

(3) Upon a one-way street, or upon a highway on which traffic is restricted to one direction of movement when such street or highway is free from obstructions and is of sufficient width and is marked for two or more lanes of moving vehicles which are not occupied by parked vehicles;

(4) When driving in a lane designating a right turn on a red traffic signal light. (1953, c. 679.)

NC § 20-146. (b) (Current - 2015)

§ 20-146. (b) Upon all highways any vehicle proceeding at less than the legal maximum speed limit shall be driven in the right-hand lane then available for thru traffic, or as close as practicable to the right-hand curb or edge of the highway, except when overtaking and passing another vehicle proceeding in the same direction or when preparing for a left turn.

Bicyclist Operating Space and Passing Distance

Bicyclists must move laterally to maintain balance and to avoid surface hazards. They require a significant area of good pavement to both sides of their wheels to facilitate control and recovery. AASHTO defines the minimum operating space for a bicyclist to be 48 inches, and the preferred operating space to be at least 60 inches. Bicyclists can be destabilized by wind blasts from passing vehicles, and are not surrounded by a safety cage. For these reasons, greater minimum passing distance is recommended for passing bicyclists than for passing dual track vehicles. Three feet is commonly described as a minimum safe distance for passing bicyclists, but greater distance is recommended as speeds increase. Scale diagrams of different vehicles, pavement widths and remaining clearance distances for same-lane passing are shown below.

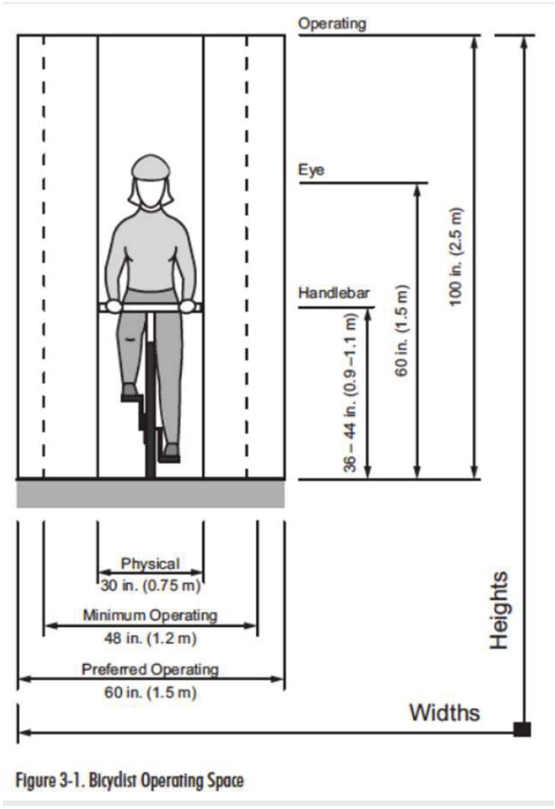
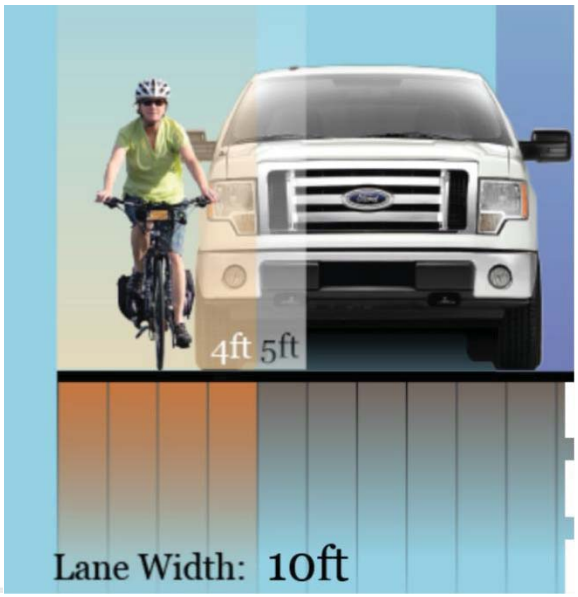
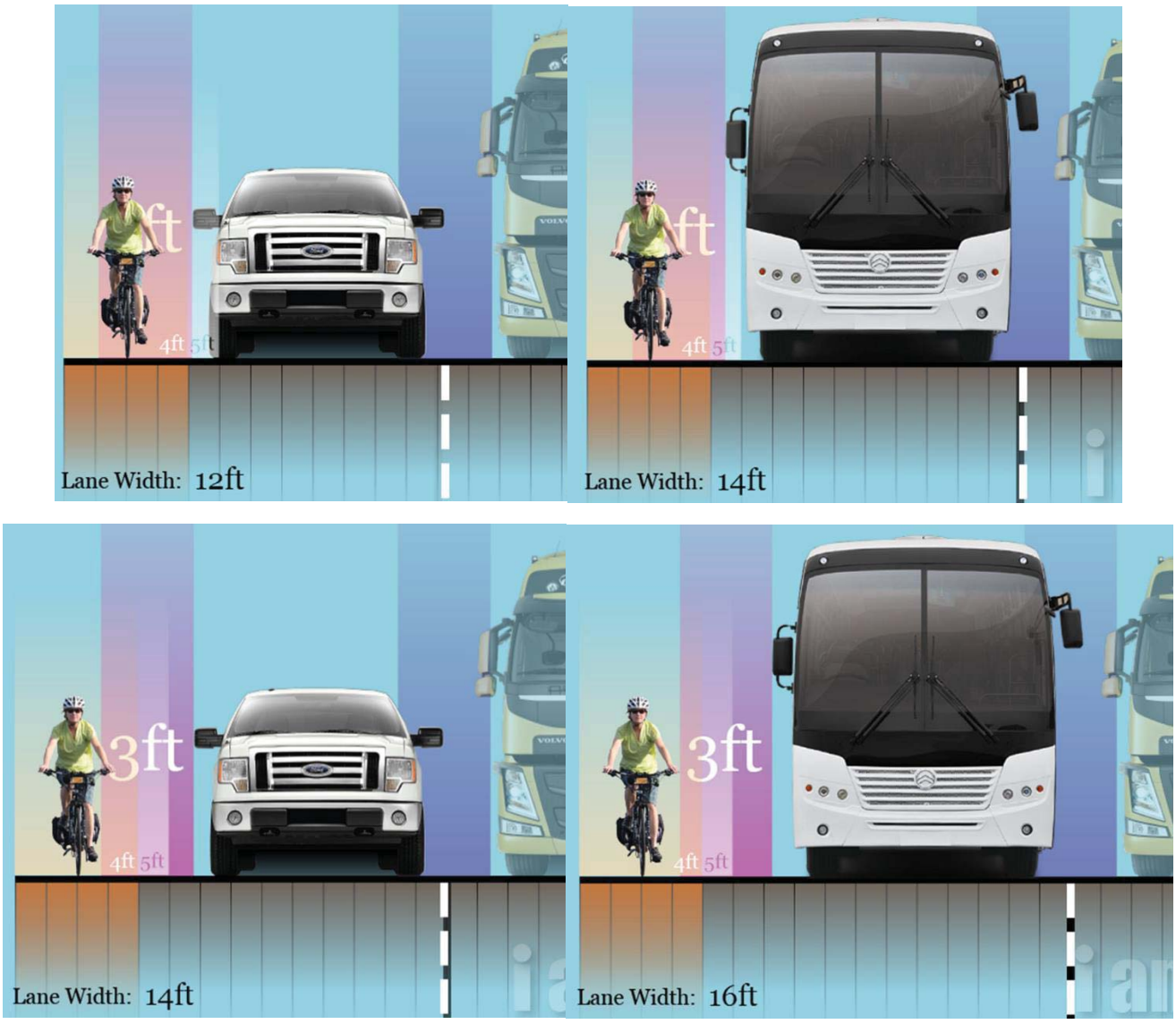


Figure 3-1. Bicyclist Operating Space



Left: AASHTO "Bike Guide" illustration of bicyclist operating space. Right: A pickup truck cannot pass an edge-riding bicyclist within the same 10 foot wide travel lane.



Above: The minimum pavement width for safe passing of a bicyclist by most cars, SUVs and pickup trucks is 14 feet. The minimum pavement width required for safe passing by a truck, landscaping trailer, or bus is 16 feet. Greater width is required as speeds increase. [Images: see http://iamtraffic.org/resources/interactive-graphics/]

Some urban streets feature lanes that are 14 feet or wider, sometimes to facilitate passing of parked vehicles or bicycle traffic. The minimum recommended combined width for a general purpose lane and adjacent bicycle lane is 16 feet to accommodate safe passing by wide vehicles such as trucks and buses. However, most important roads feature only general purpose marked travel lanes that are 10 to 12 feet wide. In North Carolina, 74% car-bike collisions occur on two-lane roads. Most of these occur in rural areas, and most involve roads with posted speed limits of 40 mph or greater.[1] BikeWalk NC's investigations of overtaking collisions indicate that most such collisions involve narrow travel lanes where the bicyclist was operating at the right edge of the lane.

[1] http://www.pedbikeinfo.org/pbcat_nc/_bikequery.cfm

Minimum Passing Distance Requirements in US States

About half of US states define three feet as the minimum lateral clearance distance for legal passing of bicyclists. A summary of state requirements for passing distance appears below.

Minimum Passing Distance	State
Function of Speed (5' at 50 mph)	New Hampshire
4 Feet	Pennsylvania
3 Feet	Arizona, Arkansas, California, Colorado, Connecticut, Delaware, District of Columbia, Florida, Georgia, Illinois, Kansas, Louisiana, Maine, Maryland, Minnesota, Mississippi, Nebraska, Nevada, Oklahoma, South Dakota, Tennessee, Utah, Wisconsin, Wyoming
2 Feet	North Carolina, Virginia
"Safe Distance"	Alabama, Alaska, Hawaii, Idaho, Indiana, Iowa, Massachusetts, Michigan, Missouri, New Jersey, New Mexico, New York, North Dakota, Ohio, Oregon, Rhode Island, South Carolina, Texas, Vermont, Washington, West Virginia
"Reasonably Clear"	Kentucky
"Safely without endangering"	Montana

Source: http://bikeleague.org/sites/default/files/safe_passing_laws.pdf

Solid Centerline/No Passing Zone Exceptions

The minimum operating space and passing distance required for safety means that motor vehicle drivers cannot pass bicyclists safely within most marked travel lanes (10-12 feet wide), and therefore must usually move into the next lane to pass safely. On many two-lane roads, solid centerlines are often marked indicating a prohibition on use of the adjacent lane to pass. Engineering policy for marking solid versus broken centerlines is based on the minimum sight distance required to pass a motor vehicle traveling just below the maximum posted speed limit.[2] The sight distance required to pass a slow moving bicyclist in the next lane is much shorter. For instance, safely passing a motorist traveling at 35 mph on a 45 mph road requires a sight distance 600 feet longer than passing a 15 mph bicyclist on the same road.[3] Most motorists recognize this, and will cross a solid centerline to pass a bicyclist when there is no risk of collision with oncoming traffic.

Practically no motorists will follow a bicyclist for miles at reduced speed (waiting until they reach a broken centerline), but some may be tempted to squeeze by within the bicyclist's lane at unsafe distance, or to pass without yielding to oncoming traffic. Most daytime overtaking car-bike collisions involve failed attempts at same-lane passing in narrow lanes. Many public safety officials, including many police, want to encourage

[2] NCHRP Report 605, Passing Sight Distance Criteria, Transportation Research Board, 2008. http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_605.pdf

[3] 2. Consider a driver planning a pass on a 45 mph road. Observation of real-world behavior shows that drivers take an average of seven seconds to pass a 15 mph bicyclist (with a speed differential of 10 mph), but an average of ten seconds to pass a 35 mph car. A seven second pass at 25 mph covers about 256 feet worst case (shorter with acceleration). By comparison, a ten second pass at 45 mph covers about 660 feet. An oncoming 45 mph driver travels 462 feet in seven seconds and 660 feet in 10 seconds. Calculation of the required minimum safe passing sight distance in the average bicyclist case includes the total traveled distance of 256+462 = 718 feet, 602 feet shorter than in the average motorist case (660+660=1320).

drivers to pass bicyclists more safely, but may feel hindered from giving useful advice by the solid centerline law[4].

Police in some states (such as Florida[5]) have turned to the "obstruction" exception as a rationale for allowing motorists to go left of center to pass slow moving bicyclists safely in a no passing zone. In NC the obstruction exception appears in § 20-146(a)(2):

> *When an obstruction exists making it necessary to drive to the left of the center of the highway; provided, any person so doing shall yield the right-of-way to all vehicles traveling in the proper direction upon the unobstructed portion of the highway within such distance as to constitute an immediate hazard;*

N.C. Highway Patrol 1st Sgt. Brian Gilreath provides the following explanation of how the exception could apply:

> "As long as you don't affect the movement of oncoming traffic — that's where common sense comes in — you're allowed to go left of center to avoid hazards and obstructions in the roadways," Gilreath said. "Take for example if a farmer drops a bale of hay in the roadway, and you need to go around it. Even though you're left of center, you have not violated the law. […] An officer would have a hard time convincing a judge that you're supposed to ride behind a bicyclist for 10-15 miles…. "
>
> - Citizen Times, 8/19/2014 http://www.citizen-times.com/story/news/local/2014/08/19/answer-man-legally-pass-cyclist/14312653/

A stationary obstruction such as a fallen tree limb could be found anywhere, including places where there is only enough sight distance for an oncoming driver to stop. If a driver proceeds left of center around an obstruction at *sufficiently slow speed* when no conflicting traffic is visible, oncoming drivers who arrive from beyond view should be able slow or stop in time to avoid collision and allow completion of the maneuver (because all drivers are required to limit their speed so that they can stop within their sight distance). The obstruction exception law does not prohibit the passing driver from requiring oncoming traffic to slow, it only requires that the passing driver not create an immediate hazard. It is the short distance required for passing a stationary obstruction that makes this maneuver safe in most places. But if the obstruction is actually a moving object, this increases the distance and time required to pass as a function of the object's speed. Drivers tend to be very good at estimating the time and distance required to pass stationary and slow moving vehicles, but less accurate as speeds increase. Grave mistakes made at high speeds are what motivated the installation of the solid centerlines that designate no passing zones.

Many bicyclists, police, and legislators recognize the inadequacy of treating bicyclists as "obstructions" under the law, while also recognizing that solid centerlines are unreasonably restrictive in the context of passing slow moving bicyclists. As a result, states are moving toward relaxing the solid centerline passing prohibition for passing of bicyclists under conditions where such passing is safe. At the time of this writing, eight states (Colorado, Maine, Mississippi, Montana, Ohio, Pennsylvania, Utah and Wisconsin) have provisions in their passing laws to allow crossing a solid centerline to pass a bicyclist when safe, as shown below.

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[4] http://www.slowtwitch.com/Interview/CHP_talks_to_Slowtwitch_4723.html
[5] See Florida Bicycle Law Enforcement Guide at http://www.floridabicycle.org/resources/pdfs/PEGLEG_2012.pdf

Colorado

42-4-1005. Limitations on overtaking on the left

(1) No vehicle shall be driven to the left side of the center of the roadway in overtaking and passing another vehicle proceeding in the same direction unless authorized by the provisions of this article and unless such left side is clearly visible and is free of oncoming traffic for a sufficient distance ahead to permit such overtaking and passing to be completed without interfering with the operation of any vehicle approaching from the opposite direction or any vehicle overtaken. In every event the overtaking vehicle must return to an authorized lane of travel as soon as practicable and, in the event the passing movement involves the use of a lane authorized for vehicles approaching from the opposite direction, before coming within two hundred feet of any approaching vehicle.

(2) No vehicle shall be driven on the left side of the roadway under the following conditions:

(a) When approaching or upon the crest of a grade or a curve in the highway where the driver's view is obstructed within such distance as to create a hazard in the event another vehicle might approach from the opposite direction;

(b) When approaching within one hundred feet of or traversing any intersection or railroad grade crossing; or

(c) When the view is obstructed upon approaching within one hundred feet of any bridge, viaduct, or tunnel.

(3) The department of transportation and local authorities are authorized to determine those portions of any highway under their respective jurisdictions where overtaking and passing or driving on the left side of the roadway would be especially hazardous and may by appropriate signs or markings on the roadway indicate the beginning and end of such zones. Where such signs or markings are in place to define a no-passing zone and such signs or markings are clearly visible to an ordinarily observant person, no driver shall drive on the left side of the roadway within such no-passing zone or on the left side of any pavement striping designed to mark such no-passing zone throughout its length.

(4) <u>The provisions of this section shall not apply:</u>

(a) Upon a one-way roadway;

(b) Under the conditions described in section 42-4-1001 (1) (b);

(c) To the driver of a vehicle turning left into or from an alley, private road, or driveway when such movement can be made in safety and without interfering with, impeding, or endangering other traffic lawfully using the highway; or

<u>(d) To the driver of a vehicle passing a bicyclist moving the same direction and in the same lane when such movement can be made in safety and without interfering with, impeding, or endangering other traffic lawfully using the highway.</u>

Maine

Title 29-A: MOTOR VEHICLES HEADING: PL 1993, C. 683, PT. A, §2 (NEW); PT. B, §5 (AFF)

Chapter 19: OPERATION HEADING: PL 1993, C. 683, PT. A, §2 (NEW); PT. B, §5 (AFF)

Subchapter 1: RULES OF THE ROAD HEADING: PL 1993, C. 683, PT. A, §2 (NEW); PT. B, §5 (AFF)

§2070. Passing another vehicle

1. Passing on left. An operator of a vehicle passing another vehicle proceeding in the same direction must pass to the left at a safe distance and may not return to the right until safely clear of the passed vehicle. An operator may not overtake another vehicle by driving off the pavement or main traveled portion of the way.

[1997, c. 653, §11 (AMD) .]

1-A. Passing bicycle or roller skier. An operator of a motor vehicle that is passing a bicycle or roller skier proceeding in the same direction shall exercise due care by leaving a distance between the motor vehicle and the bicycle or roller skier of not less than 3 feet while the motor vehicle is passing the bicycle or roller skier. A motor vehicle operator may pass a bicycle or roller skier traveling in the same direction in a no-passing zone only when it is safe to do so.

Mississippi

MS Code § 63-3-1309 (2013)

(1) While passing a bicyclist on a roadway, a motorist shall leave a safe distance of not less than three (3) feet between his vehicle and the bicyclist and shall maintain such clearance until safely past the bicycle.

(2) A motor vehicle operator may pass a bicycle traveling in the same direction in a nonpassing zone with the duty to execute the pass only when it is safe to do so.

(3) The operator of a vehicle that passes a bicyclist proceeding in the same direction may not make a right turn at any intersection or into any highway or driveway unless the turn can be made with reasonable safety.

Montana

61-8-326 (2) (a) Except as provided in subsection (b), where official traffic control devices are in place to define a no-passing zone as set forth in subsection (1) an operator of a vehicle may not drive on the left side of the center of the roadway within the no-passing zone or on the left side of a pavement striping designed to mark the no-passing zone throughout its length.

(b) Subsection (2)(a) does not apply to the operator of a faster vehicle passing a bicycle when:

(i) the bicycle is traveling at less than half the posted speed limit;

(ii) the faster vehicle is capable of overtaking and passing the bicycle without exceeding the posted speed limit; and

(iii) there is sufficient clear sight distance to the left side of the center of the roadway to meet the overtaking and passing requirements in 61-8-325.

Ohio

4511.31. Hazardous zones

(A) The department of transportation may determine those portions of any state highway where overtaking and passing other traffic or driving to the left of the center or center line of the roadway would be especially hazardous and may, by appropriate signs or markings on the highway, indicate the beginning and end of such zones. When such signs or markings are in place and clearly visible, every operator of a vehicle or trackless trolley shall obey the directions of the signs or markings, notwithstanding the distances set out in section 4511.30 of the Revised Code.

(B) Division (A) of this section does not apply when all of the following apply:

(1) The slower vehicle is proceeding at less than half the speed of the speed limit applicable to that location.

(2) The faster vehicle is capable of overtaking and passing the slower vehicle without exceeding the speed limit.

(3) There is sufficient clear sight distance to the left of the center or center line of the roadway to meet the overtaking and passing provisions of section 4511.29 of the Revised Code, considering the speed of the slower vehicle.

Pennsylvania

§ 3307. No-passing zones.

(a) Establishment and marking.–The department and local authorities may determine those portions of any highway under their respective jurisdictions where overtaking and passing or driving on the left side of the roadway would be especially hazardous and shall by appropriate signs or markings on the roadway indicate the beginning and end of such zones and when the signs or markings are in place and clearly visible to an ordinarily observant person every driver of a vehicle shall obey the directions of the signs or markings. Signs shall be placed to indicate the beginning and end of each no-passing zone.

(b) Compliance by drivers.–Where signs and markings are in place to define a no-passing zone as set forth in subsection (a), no driver shall at any time drive on the left side of the roadway within the no-passing zone or on the left side of any pavement striping designed to mark a no-passing zone throughout its length.

(b.1) Overtaking pedalcycles.–It is permissible to pass a pedalcycle, if done in accordance with sections 3303(a)(3) (relating to overtaking vehicle on the left) and 3305 (relating to limitations on overtaking on the left).

(c) Application of section.–This section does not apply under the conditions described in section 3301(a)(2) and (5) (relating to driving on right side of roadway).

Utah

41-6a-708. Signs and markings on roadway — No-passing zones — Exceptions.

(1) (a) A highway authority may designate no-passing zones on any portion of a highway under its jurisdiction if the highway authority determines passing is especially hazardous.

(b) A highway authority shall designate a no-passing zone under Subsection (1)(a) by placing appropriate traffic-control devices on the highway.

(2) A person operating a vehicle may not drive on the left side of:

(a) the roadway within the no-passing zone; or

(b) any pavement striping designed to mark the no-passing zone.

(3) Subsection (2) does not apply:

(a) under the conditions described under Subsections 41-6a-701(1)(b) and (c); or

(b) to a person operating a vehicle turning left onto or from an alley, private road, or driveway.

41-6a-701. Duty to operate vehicle on right side of roadway — Exceptions.

(1) On all roadways of sufficient width, a person operating a vehicle shall operate the vehicle on the right half of the roadway, except:

…

(c) when overtaking and passing a bicycle or moped proceeding in the same direction at a speed less than the reasonable speed of traffic that is present requires operating the vehicle to the left of the center of the roadway subject to the provisions of Subsection (2)

Wisconsin

346.09 Limitations on overtaking on left or driving on left side of roadway.

(3) (a) Except as provided in par. (b), the operator of a vehicle shall not drive on the left side of the center of a roadway on any portion thereof which has been designated a no-passing zone, either by signs or by a yellow unbroken line on the pavement on the right-hand side of and adjacent to the center line of the roadway, provided such signs or lines would be clearly visible to an ordinarily observant person.

(b) The operator of a vehicle may drive on the left side of the center of a roadway on any portion thereof which has been designated a no-passing zone, as described in par. (a), to overtake and pass, with care, any vehicle, except an implement of husbandry or agricultural commercial motor vehicle, traveling at a speed less than half of the applicable speed limit at the place of passing.

Confusion in California

Events in California reveal law enforcement problems arising from the lack of an exception to the state's solid centerline passing prohibition. In multiple instances, California Highway Patrol officers have told bicyclists that motorists are not allowed to move left of center to pass bicyclists, and therefore bicyclists have a duty to stay far enough right to allow motorists to pass within the same narrow lane, or else face citation.

One incident was reported in an online cycling forum on October 28, 2014:

"CHP, 3 foot law bicycles

"New california new law requiring 3 feet from car passing cyclist. On a two lane road with double yellow line [no passing], a SUV passed us, and went over double yellow. CHP officer wrote her a ticket [no on coming vehicle on this rural road]. After writing motorist ticket, CHP officer follow us. We pulled over and stopped, and he said he could not legally pass us. This was do to the width of

> our lane. He went on to say, we could receive a ticket for "Impeding traffic." Ok, there is the "Law," but to follow to the letter of the law and not to the practical purpose, defeats the intent of law. This law could result in more traffic accidents due to motorist afraid of CHP giving ticket for mildly going over double yellow."
>
> http://forum.slowtwitch.com/forum/Slowtwitch_Forums_C1/Triathlon_Forum_F1/CHP%2C_3_foot_law_bicycles_P5310553

Cycling writer Dan Empfield subsequently discussed this issue with bicycling attorney Bob Mionske in an interview published on the Slowtwitch.com blog:

> Dan Empfield: "With the advent of the 3-foot minimum buffer afforded bicyclists by a motorist when passing, a conflict created by the vehicle code can arise, and arose via a citation written in a rural part of San Diego County last week. When the Legislature passed the new 3-foot law there was no corresponding modification of Vehicle Code Section 21460, which restricts motorists from crossing a double yellow. My question: If, on a rural 2-lane road, an officer gives a motorist a citation for part of the vehicle crossing the double yellow in order to grant the cyclist room, assuming there was clearly sufficient room to do so without peril from an oncoming vehicle, what is the likeliest scenario in a courtroom if the motorist decides to contest this citation?"
>
> Bob Mionske: "Technically, it's against the law. However, two previous versions of this legislation explicitly allowed motorists to cross the double yellow line when safe to do so in order to pass a cyclist with at least 3 feet of safe passing distance. The first bill was vetoed by Governor Brown for an unrelated concern. The second bill was vetoed by Governor Brown over concerns that the State would be exposed to liability if a motorist made an unsafe pass across the double yellow line. This expressed concern was not realistic, because the state would only have allowed drivers to cross the double yellow line when it is safe to do so. A similar situation exists when the state allows drivers to make a right turn at a red light – it is only legal when the turn can be made safely. The failure of a driver to make a safe turn doesn't expose the state to liability."
>
> http://www.slowtwitch.com/Interview/CHP_talks_to_Slowtwitch_4723.html

Another incident with CHP was captured on video by bicyclist Ken Adams in July 2015:

> "… a CHP SUV passed us dangerously close – probably about 2 feet away. […]Approximately 13 miles from the previous incident, the same CHP SUV passed us again, this time much more closely. He was no more than 1 – 1.5 feet from us. At that point, the road was straight, there were clear sight lines for at least ½ mile, no oncoming traffic and we were riding single file on the white line."
>
> "The officer continued on for some time, then turned around and returned. We flagged him down and had a conversation with him. […] During our conversation, the officer claimed that he must drive on the right half of the road and that he "cannot violate a law to follow a law" when asked about California's 3-foot cycling law. He seemed completely unconcerned when I pointed out that he had just needlessly endangered my life. In the course of the rest of my ride and subsequently via social media, I learned that this same officer passed numerous other cyclists dangerously close during this same time period on the same stretch of road."
>
> http://bikinginla.com/2015/07/13/morning-links-glendora-cyclists-buzzed-by-chp-officer-la-times-maps-the-most-dangerous-intersection/

BikeWalk NC Recommendations on Passing Law

BikeWalk NC recommends that North Carolina's passing law be based on a geometrically sound and physically functional concept of operations for safe passing of bicyclists on existing roads. Given the narrow width of most existing travel lanes, most safe passing maneuvers will require use of space in the adjacent lane. This in turn requires that drivers look for, yield to, and potentially wait for other traffic (and ensure safe sight distance) before passing. Prudent drivers who take these steps before passing bicyclists don't collide with bicyclists or other vehicles. Bikewalk NC recommends that state law be brought into alignment with best practices for passing (via movement into the adjacent lane) by relaxing the solid centerline prohibition on passing, allowing drivers to cross it when safe to pass bicyclists. All of the other legal limitations on the privilege of overtaking and passing would remain in effect. BikeWalk NC believes this first step is essential to allowing police, NCDOT, and other members of the public to participate in meaningful conversations, education activities and enforcement campaigns related to safe passing of bicyclists.

Bikewalk NC does not recommend pursuit of "3 feet" or similar legislation at this time. Bikewalk NC believes that the current legislature will be unfriendly to a bill that places new constraints on motorists in order to benefit bicyclists, and will likely attempt to amend such a bill with new restrictions on bicyclists that will interfere with bicyclists' ability to exercise defensive bicycling techniques and/or reach their destinations, as has happened with legislation in other states (such as in Washington, where in 2011 legislators attempted to prohibit bicyclists' roadway use where a shoulder existed[6]). BikeWalk NC recommends that relaxation of the solid centerline law be followed by comprehensive education and enforcement activities to promote public understanding of bicyclists' roadway rights and best practices for safe passing and bicycle driving.[7]

[6] http://www.seattlebikeblog.com/2011/01/14/mutual-responsibility-bill-trades-rights-for-space/
[7] http://www.bikewalknc.org/2014/05/safer-passing/

Cycling Types

Cycling Trends

Cycling is a significant tourism industry in North Carolina

2013 Report on North Carolina Overnight Visitor Profile - % of Visitors by Trip Purpose

- Golf 3%
- Theme Park 2.7%
- **Biking 2.4%**
- Theater/Drama 2.1%
- Spa/Health Club 2%

Cycling events and group rides are growing in popularity

- State and local agencies regulate events that require closure or repurposing of roadways
- Informal group rides do not require events and cyclists must follow traffic laws

Traffic Laws and Cycling

- Traffic laws affect operations and safety of all types of cyclists
- Issues in H 232 may relate to a small subset of cycling types
- Do the issues require a change to traffic laws?
- Do the issues better suit targeted education or enforcement?

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Bicycle Laws in North Carolina and the U.S.

Passing Cyclists in No-Passing Zones

Several states, including Colorado, Maine, Mississippi, Ohio, Pennsylvania, Utah and Wisconsin have laws allowing motorists to cross a solid center line to pass a slow moving bicyclist or vehicle under safe conditions.

Several other states have laws allowing motorists to pass slow moving vehicles, but do not specifically name bicyclists. Slow moving vehicles are typically defined as traveling at less than half the applicable speed limit. These laws are often directed toward farm equipment.

Several states have laws allowing drivers to cross the double yellow line when an obstruction exists in the roadway. Some have argued a slow-moving bicyclist can be considered an obstruction.

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Riding Two Abreast

- 39 states have laws allowing bicyclist to ride two abreast.
  - 21 of those states stipulate bicyclists may not impeded traffic.
- Three states, Montana, Hawaii and Nebraska, prohibit riding two abreast unless a bike lane is wide enough to accommodate it.
- North Carolina is among 8 states where riding two abreast is neither explicitly prohibited or permitted.

Source: Bikelaw.com

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Carrying Identification

- No state that I can find specifically requires bicyclists to carry identification.
- Several states do have laws requiring road users to provide identification or identification information during a traffic stop.

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Lighting Requirements

- Most states, including North Carolina, require the use of a front lamp and a rear reflector or lamp.
- California recently proposed a law to require rear tail lights.
- Virginia requires a taillight on roads with speed limits of 35 mph or greater.

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Operating in Roadway Position

- North Carolina, along with 43 other states, requires bicyclists to ride as far to the right as practicable.
- Two states, Massachusetts and Arkansas, require bicyclists to ride in the right hand lane.
- Several states require bicyclists to use bicycle lanes if provided.
- Some states, such as Alabama, require bicyclists to use paths when they are adjacent to the roadway.
- Several states, including North Carolina, have provisions to allow bicyclist to take the full lane when needed.

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Informal Group Rides

- Beyond limiting bicyclists to riding no more than two abreast, I can find no regulations on informal group rides in any state in the U.S.
- Some states have laws banning bicyclists from impeding the flow of traffic, which can come into play with large informal groups.
- North Carolina's impeding traffic law applies specifically to motor vehicles.

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Passing Distance Requirements – Two Foot Rule

North Carolina

- Requires drivers provide a minimum of Two Feet.

United States

- 25 states require at least Three Feet.
- 23 states require “Safe Distance.”
- Pennsylvania requires Four Feet.
- Virginia also requires a minimum of Two Feet.

Source: League of American Bicyclists.

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Hand Signal Requirements

- Most states, including North Carolina, require bicyclists to use hand signals to indicate turns.
- Several states, such as Oklahoma, Massachusetts and Michigan, allow bicyclists to use their Right Hand to indicate a right turn.

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Aggressive Driving, Harassment and Distracted Driving

- 15 states, including North Carolina, have general laws addressing aggressive driving.
  - None specifically mention bicyclists.
- A handful of states, including California, Virginia and Oregon, have considered laws banning distracted cycling, but no such laws have passed at the state level, as of 2014.
- Some cities, such as Chicago, Philadelphia and Billings, Mont., have laws banning texting while bicycling.
- One study found that bicyclists observed texting and bicycling tended to slow down and swerve side to side.

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Headphone Use on Bicycle

- Five states regulate the use of headphones by cyclists.
  - Two prohibit all headphones. (Florida allows one headphone for cell phones, but not music.)
  - Three prohibit headphones in both ears.

Source: Bikelaw.com

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Vulnerable Road User Protections

Vulnerable Road User laws provide protections for bicyclists and pedestrians by increasing penalties for violating existing ped/bike laws and creating laws that prohibit certain actions directed at vulnerable road users.

- Five states – Delaware, Hawaii, Oregon, Vermont and Washington had VRU laws as of 2013.
- Several more, including Minnesota, Massachusetts and New York have been considering them.
- Several cities have passed VRU ordinances.

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Formal Group Permitting Regulations

- Most states, including North Carolina, have laws allowing competitive bicycling events on public roads with the approval of local law enforcement agencies or municipalities.
- Such rules usually apply to any organized event, such as a charity ride.

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North Carolina Bicycle Crash Facts and Trends

2008-2012

Data compiled by Libby Thomas and Daniel Levitt, HSRC

How many bicyclists are being hit in North Carolina?

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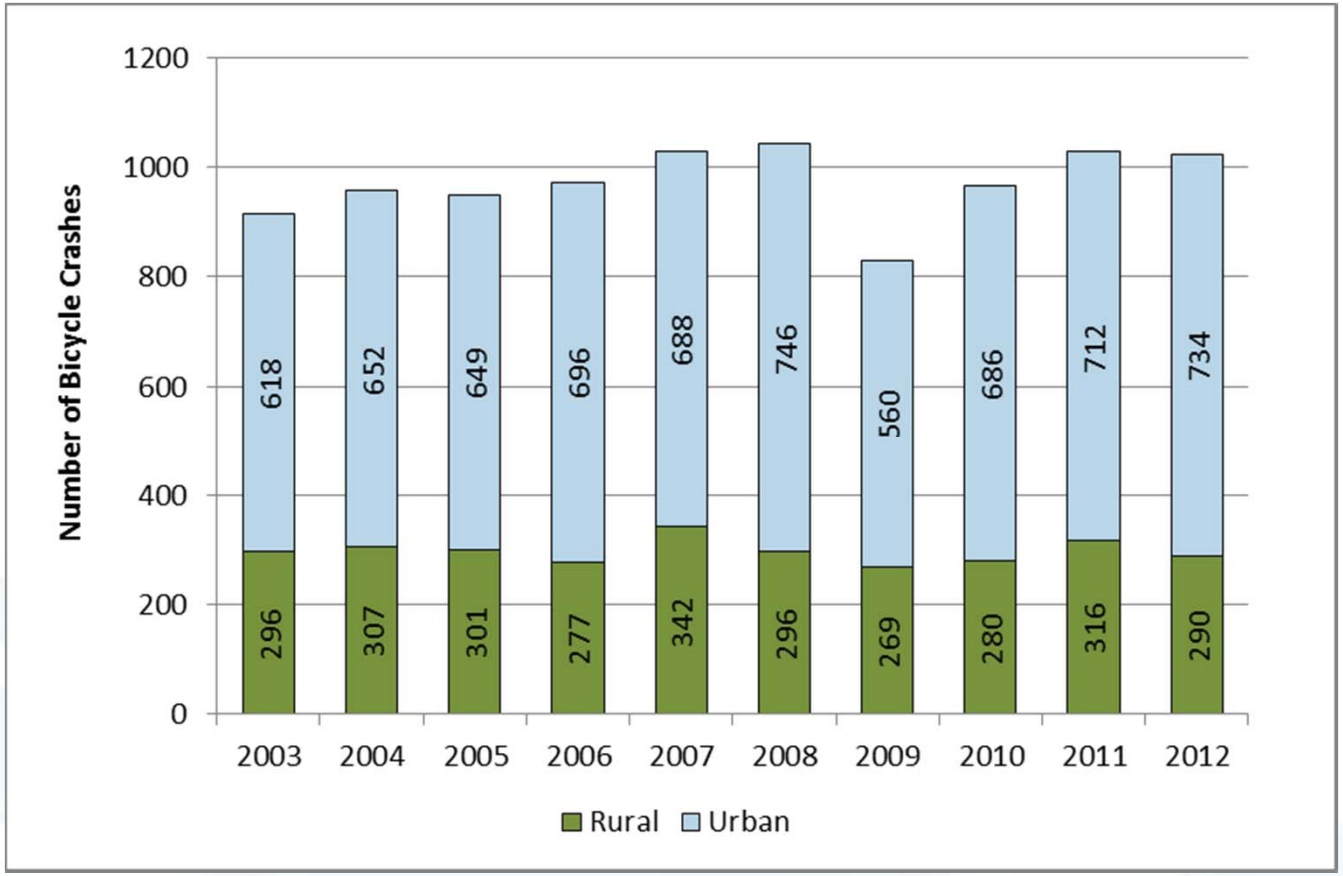
General Trends



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Fatal and Disabling Crashes

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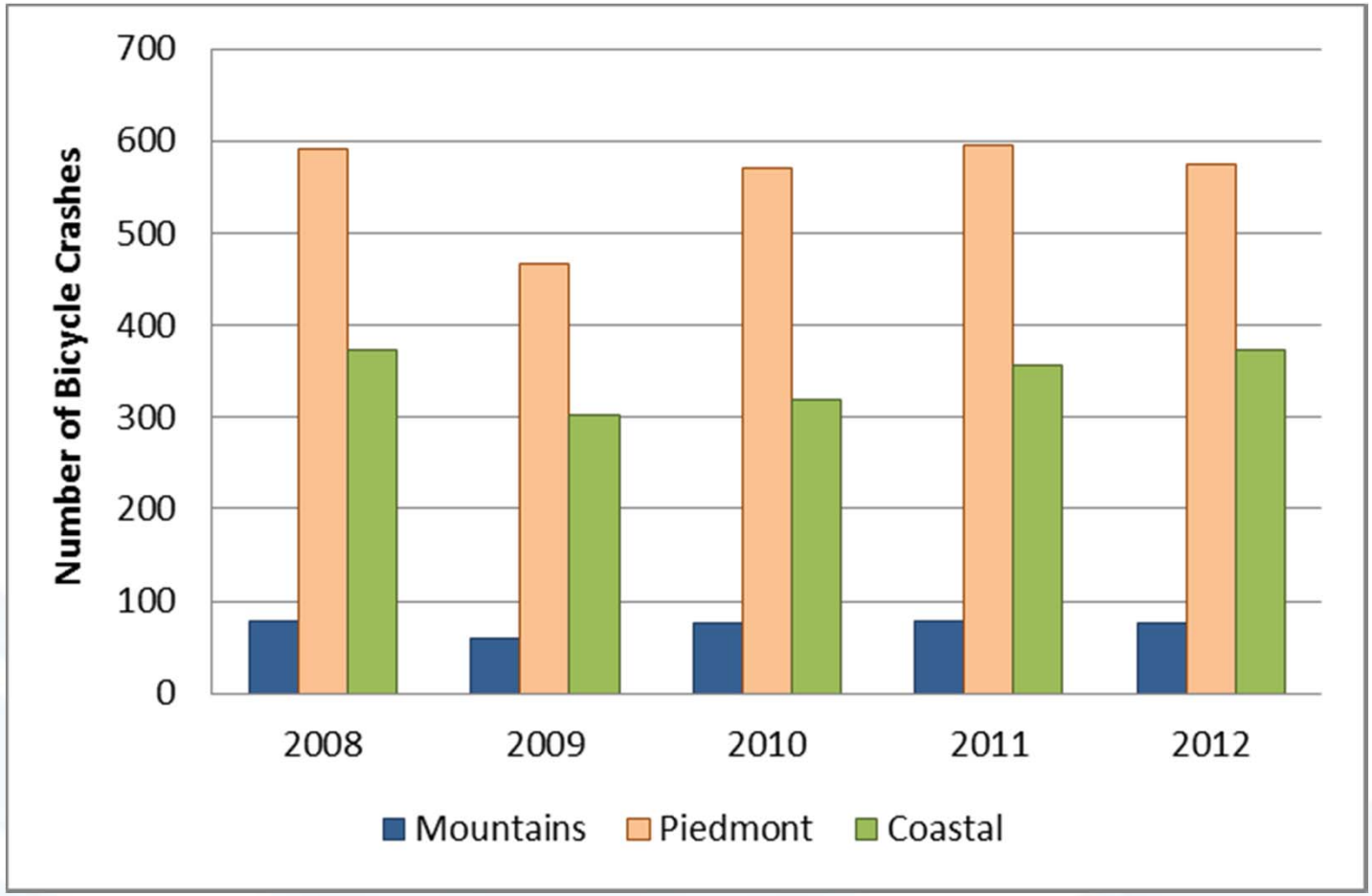
Crash Trends by Region



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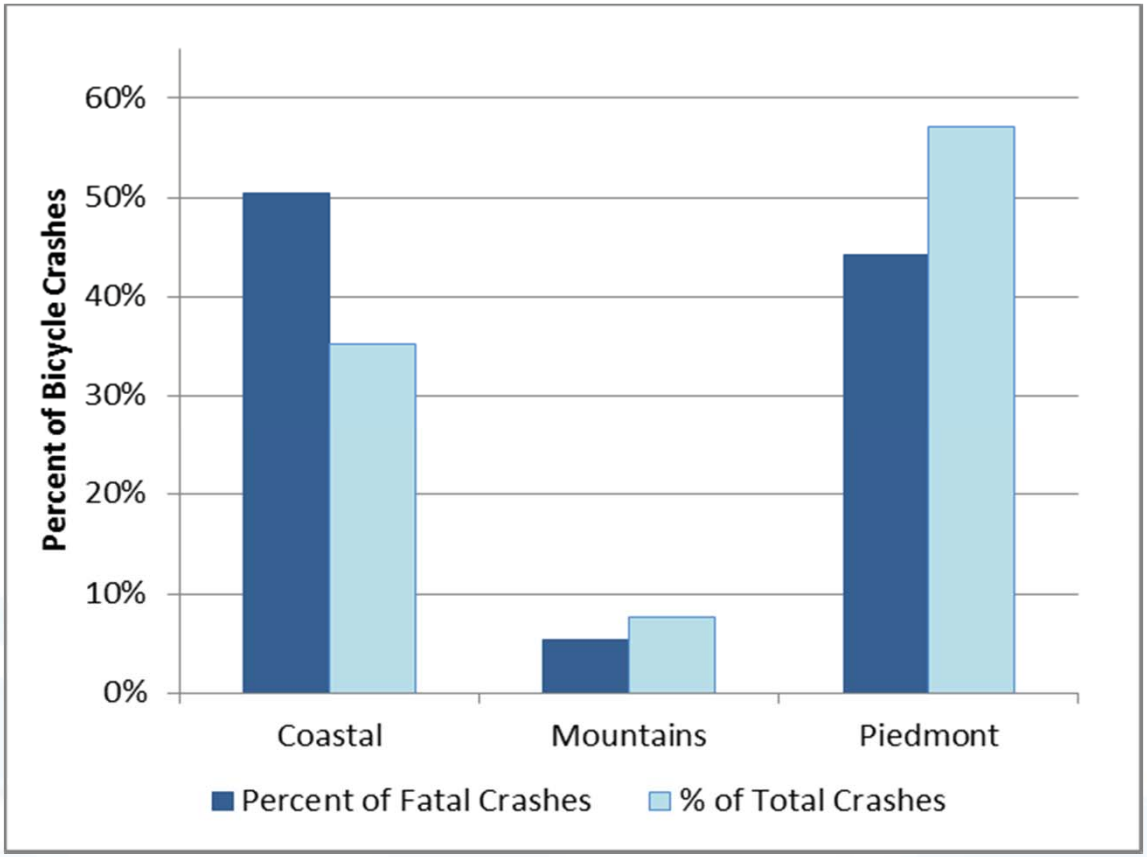
Fatal and Total Crashes by Region



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Crashes by Development Extent

Development extent	2008	2009	2010	2011	2012	Total
	158	144	171	166	148	787
Rural (<30% Developed)	15.2[1]	17.4	17.7	16.1	14.5	16.1 [2]
	161	131	111	143	130	676
Mixed (30% To 70% Developed)	15.5	15.8	11.5	13.9	12.7	13.8
	723	554	684	719	746	3,426
Urban (>70% Developed)	69.4	66.8	70.8	69.9	72.9	70
	1,042	829	966	1,028	1,024	4,889 [4]
Total	**21.3** [3]	**17**	**19.8**	**21**	**20.9**	

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Crashes by Development Type

Development type	2008	2009	2010	2011	2012	Total
Commercial	465	317	384	429	435	2,030
	44.6	38.2	39.8	41.7	42.5	41.5
Farms, Woods, Pastures	120	126	130	138	108	622
	11.5	15.2	13.5	13.4	10.5	12.7
Industrial	1	2	4	4	3	14
	0.1	0.2	0.4	0.4	0.3	0.3
Institutional	30	21	35	25	39	150
	2.9	2.5	3.6	2.4	3.8	3.1
Residential	426	363	413	432	439	2,073
	40.9	43.8	42.8	42.0	42.9	42.4
Total	1,042	829	966	1,028	1,024	4,889
	21.3	**17.0**	**19.8**	**21.0**	**20.9**	

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Counties with most crashes

County	5-yr. Crash Count	% of NC total (4,894)	Avg. 1-yr. Count	July 2010 Estimate	Avg. yearly crash rate / 10,000 residents	Prior Avg yrly rate (2006-2010)
Wake	651	13.3	130.2	906,908	1.4	1.4
Mecklenburg	580	11.9	116.0	923,390	1.3	1.4
Guilford	344	7	68.8	489,677	1.4	1.3
New Hanover	329	6.7	65.8	203,299	3.2	2.8
Durham	215	4.4	43.0	271,297	1.6	1.5
Cumberland	184	3.8	36.8	327,445	1.1	1.3
Orange	128	2.6	25.6	134,302	1.9	1.8
Buncombe	126	2.6	25.2	238,886	1.1	1.1
Forsyth	106	2.2	21.2	351,381	0.6	0.6
Gaston	93	1.9	18.6	206,139	0.9	1.0
Robeson	92	1.9	18.4	134,422	1.4	1.7
Pitt	91	1.9	18.2	168,787	1.1	1.1
Subtotal top 12 Counties	2,939	60.1%	587.8	4,355,933	1.3	1.4

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Key Takeaways on General Crash Figures

- On average, about 960 bicyclists are hit each year with 22 fatalities
- Crashes occur more frequently in the Piedmont area than the Coastal and Mountain areas of the state.
- Half of the fatal crashes occur in the Coastal areas.
- Most crashes (70 percent) occur in urban parts of the state, with more than 80 percent occurring in commercial and residential areas.

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Who is getting hit and when?

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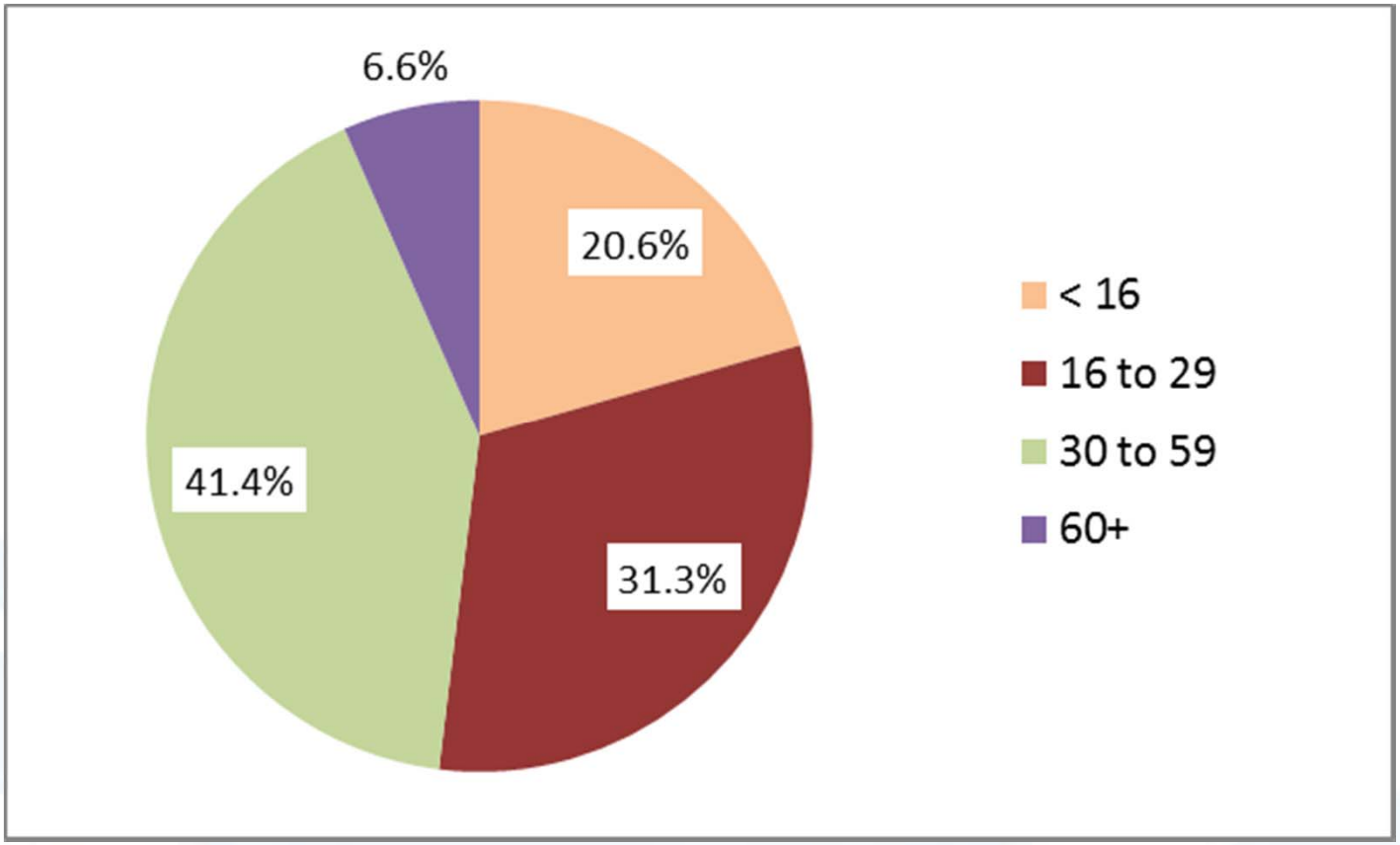
Percent of NC Crashes by Bicyclist Age



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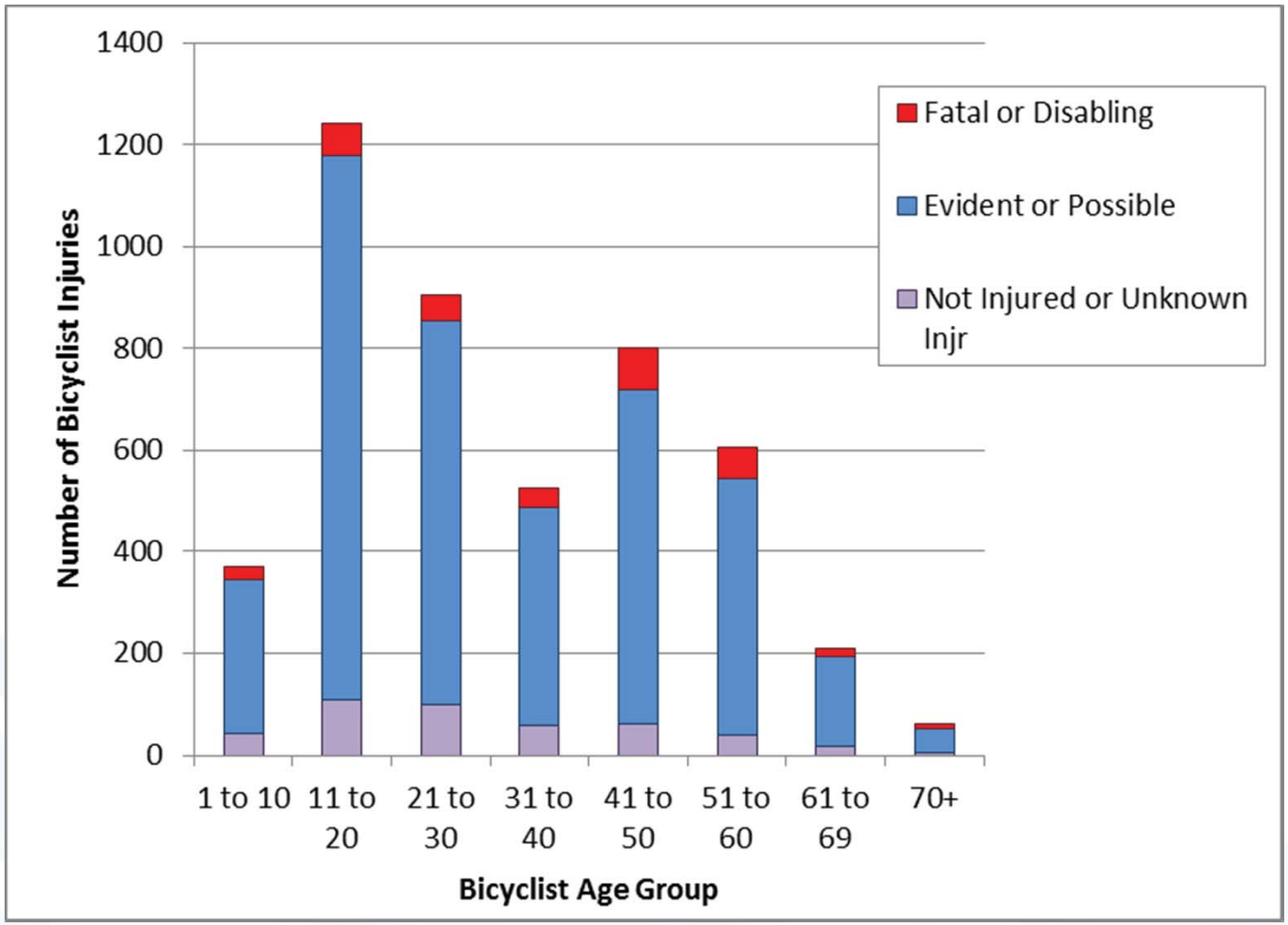
Injury Severity by Age Group



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Crashes by Gender

Gender	2008	2009	2010	2011	2012	Total
Female	157	116	130	155	163	721
	15.2	14.1	13.6	15.4	16.3	15
Male	878	708	831	850	835	4,092
	84.8	85.9	87.4	84.6	83.7	85
Total	1,035	824	951	1,005	998	4,813
	21.5	17.1	19.8	20.9	20.7	

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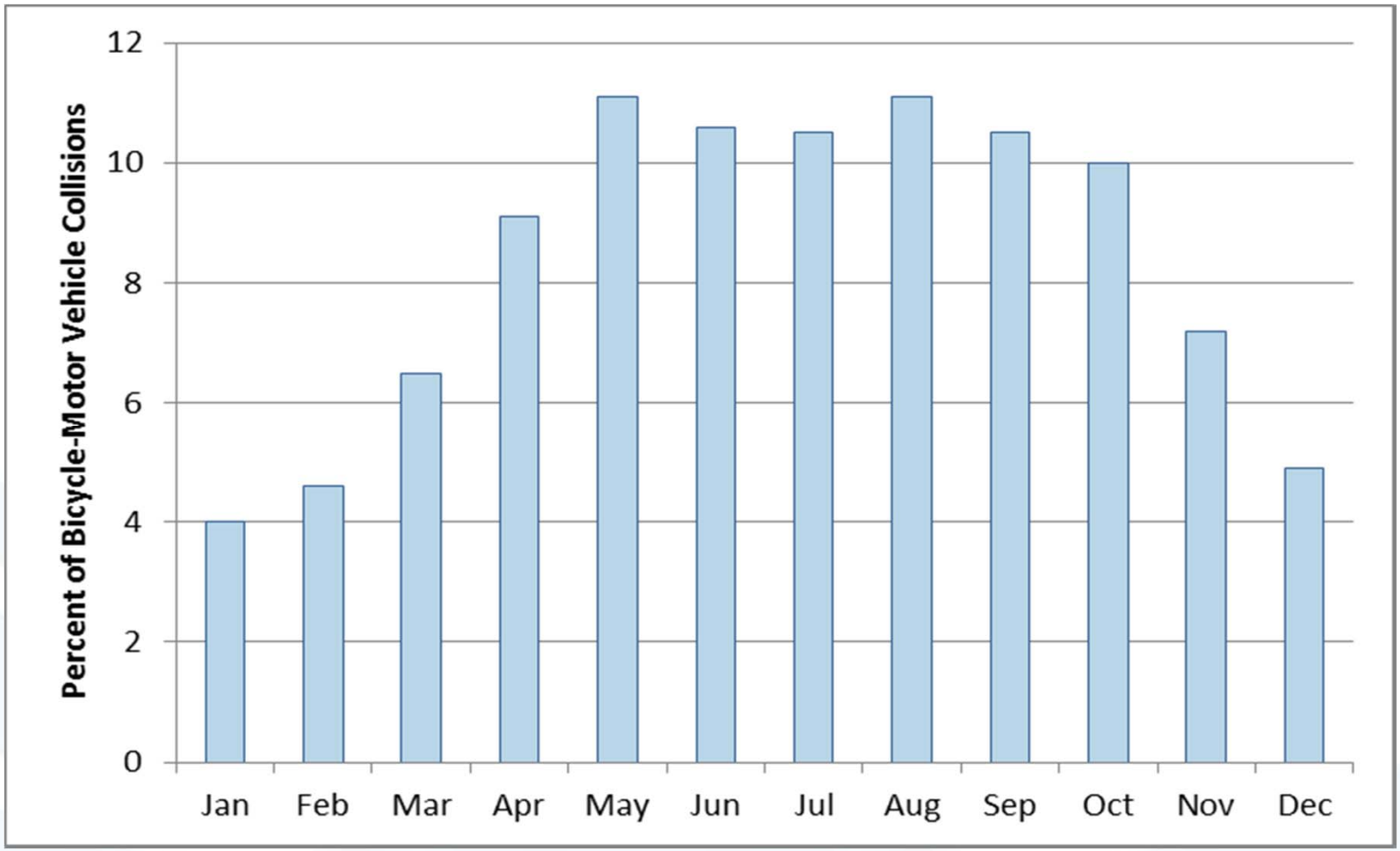
Crashes by Month



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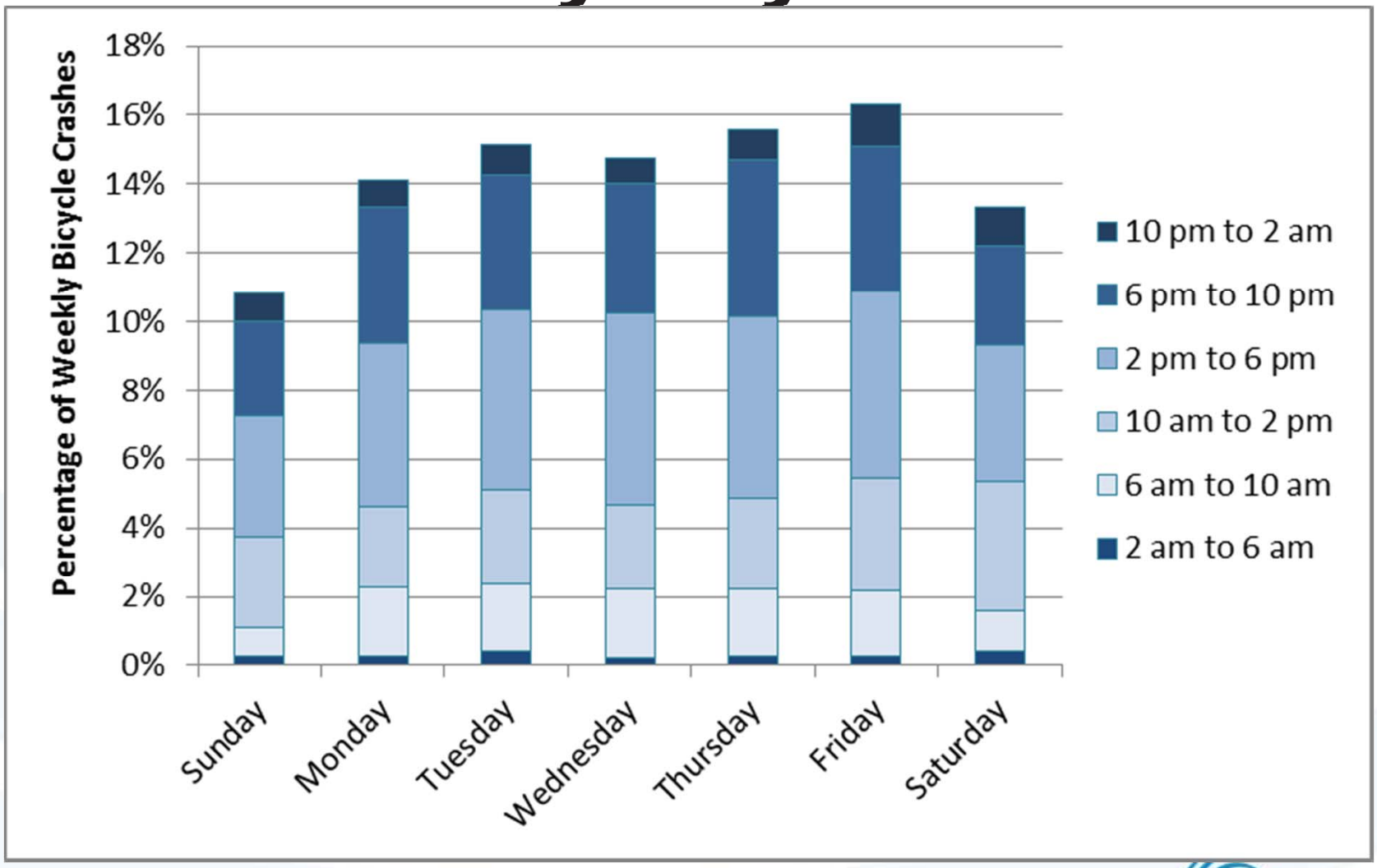
Crashes by Day and Time



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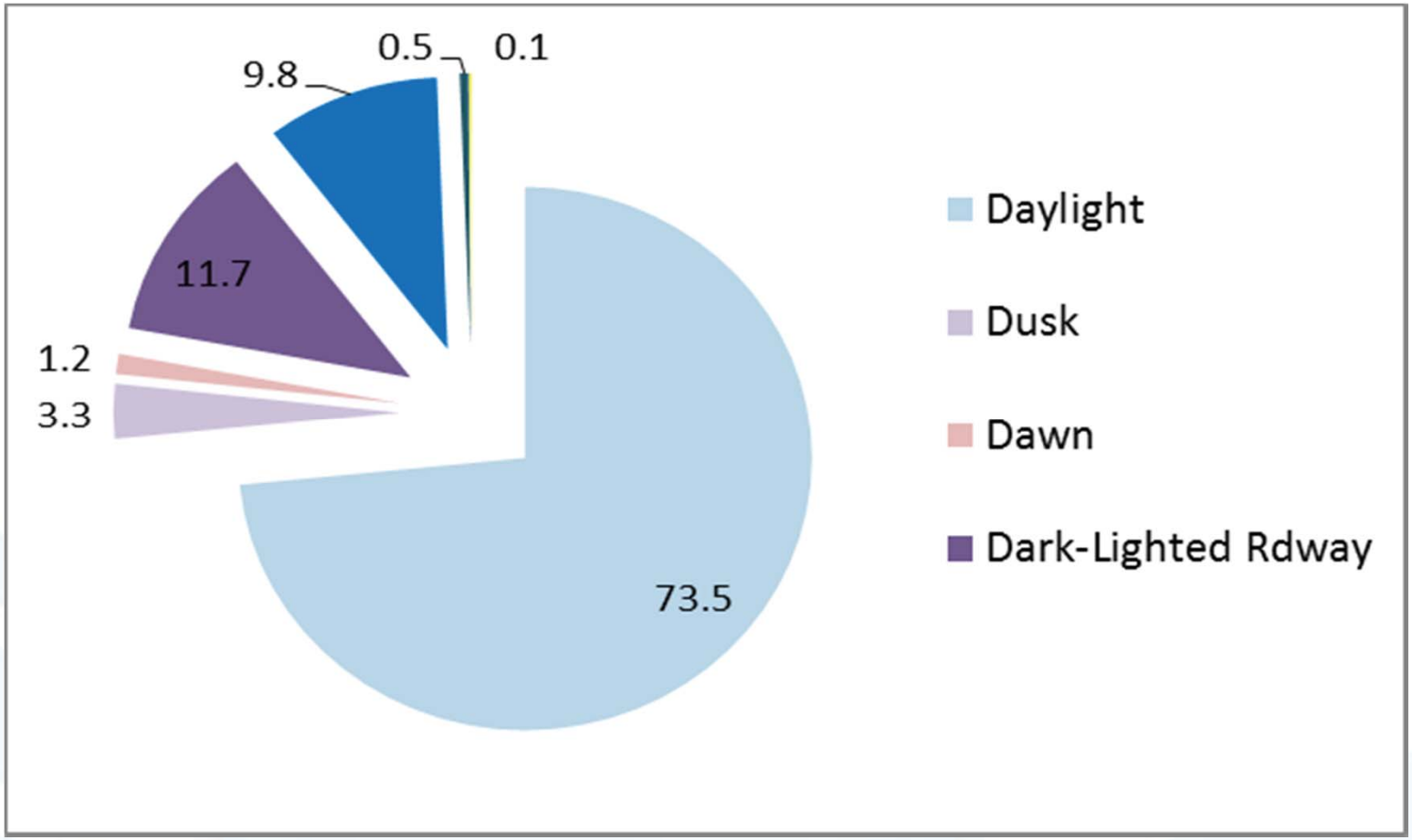
Crashes by Light Condition



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Key Takeaways on Who is Being Hit and When

- People aged 30-59 account for more than 40 percent of all crashes.
- Men are most likely to be struck, accounting for 85 percent of crashes.
- Crashes increase in warmer months.
- Most crashes – nearly three-quarters – occur during the day

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Crash Types, Road Conditions and Causes

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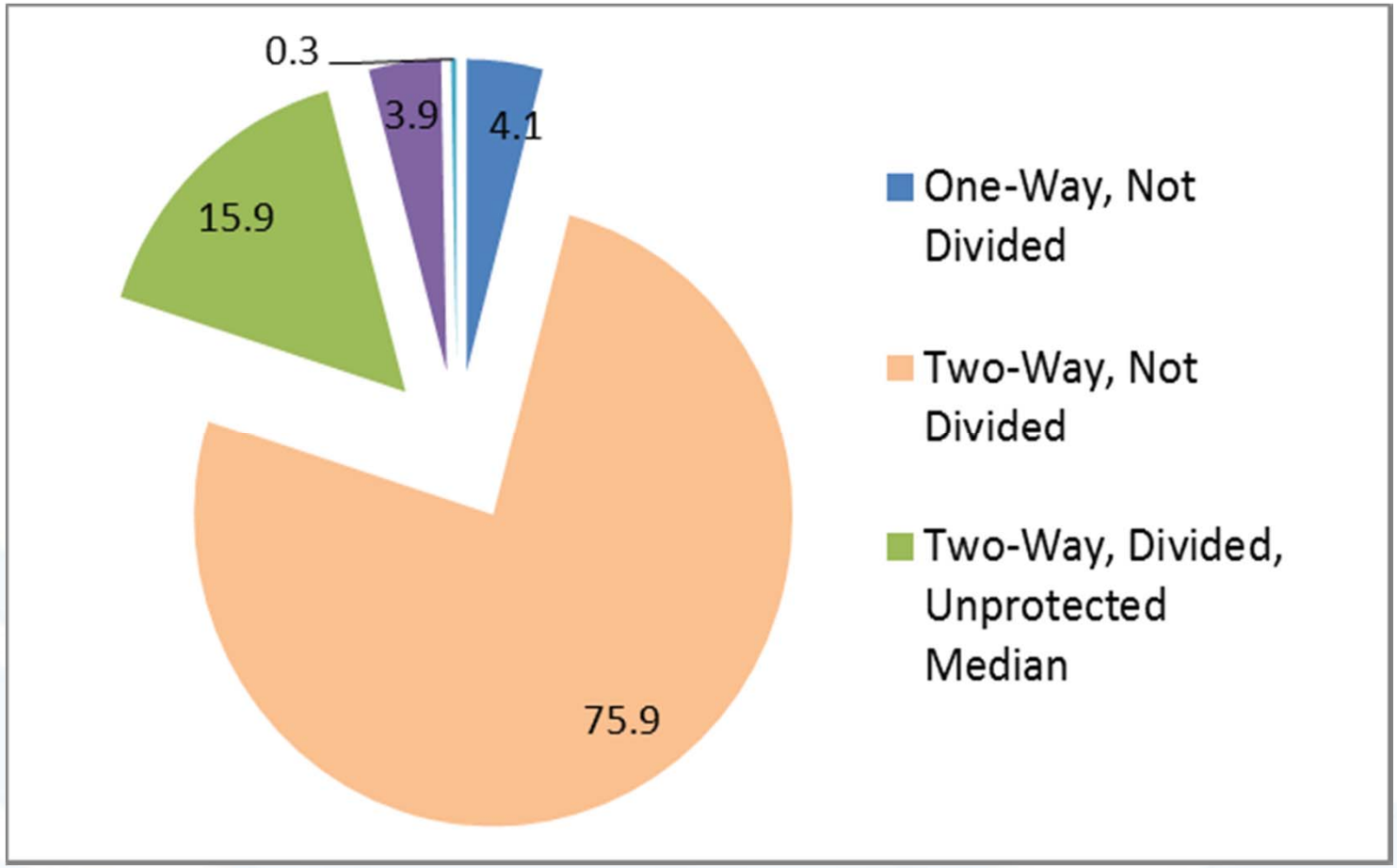
Roadway Characteristics



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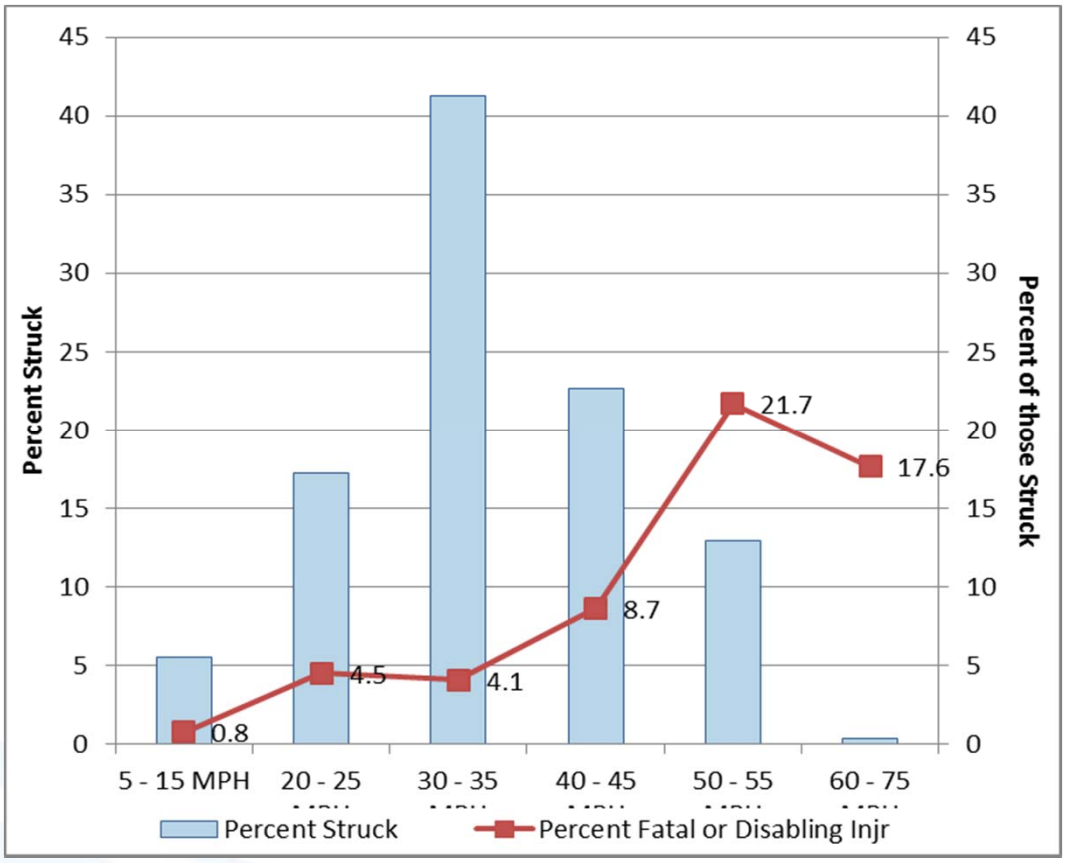
Road Speed Limits



The red line and markers indicate the percentage of crashes on the different speed limit roads with fatal or disabling injuries.

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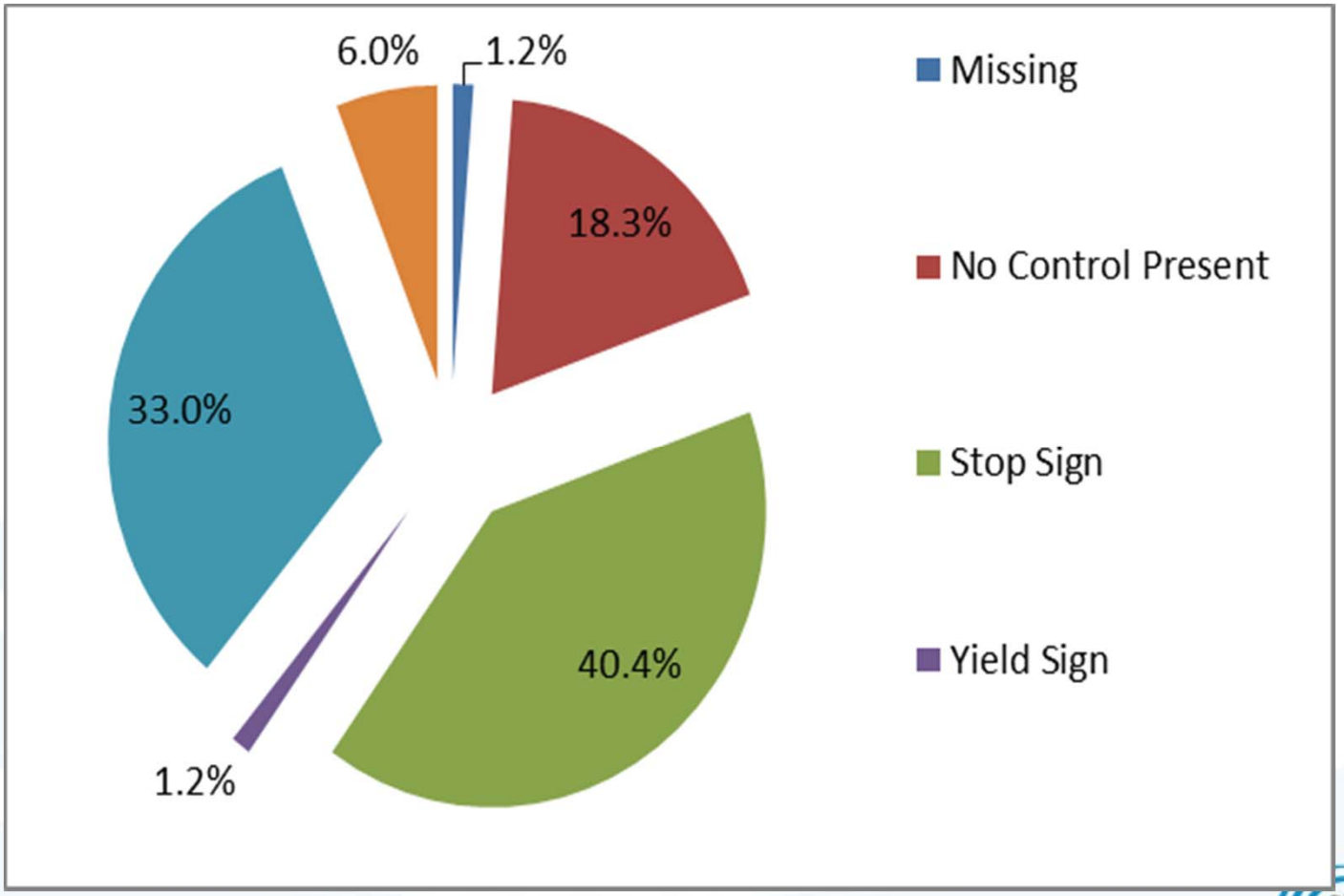
Traffic Control Devices Present?



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Location of Crashes on the Roadway

Crash Location	2008	2009	2010	2011	2012	Total
Intersection	461	350	411	448	466	2,136
	44.2[1]	42.2	42.5	43.6	45.5	43.7 [2]
Intersection-Related	28	32	55	65	89	269
	2.7	3.9	5.7	6.3	8.7	5.5
Non-Intersection	501	402	463	469	437	2,272
	48.1	48.5	47.9	45.6	42.7	46.5
Non-Roadway	47	42	37	46	31	203
	4.5	5.1	3.8	4.5	3	4.2
Unknown Location	5	3	0	0	1	9
	0.5	0.4	0	0	0.1	0.2
Total	1,042	829	966	1,028	1,024	4,889
	21.3[3]	17	19.8	21	20.9	

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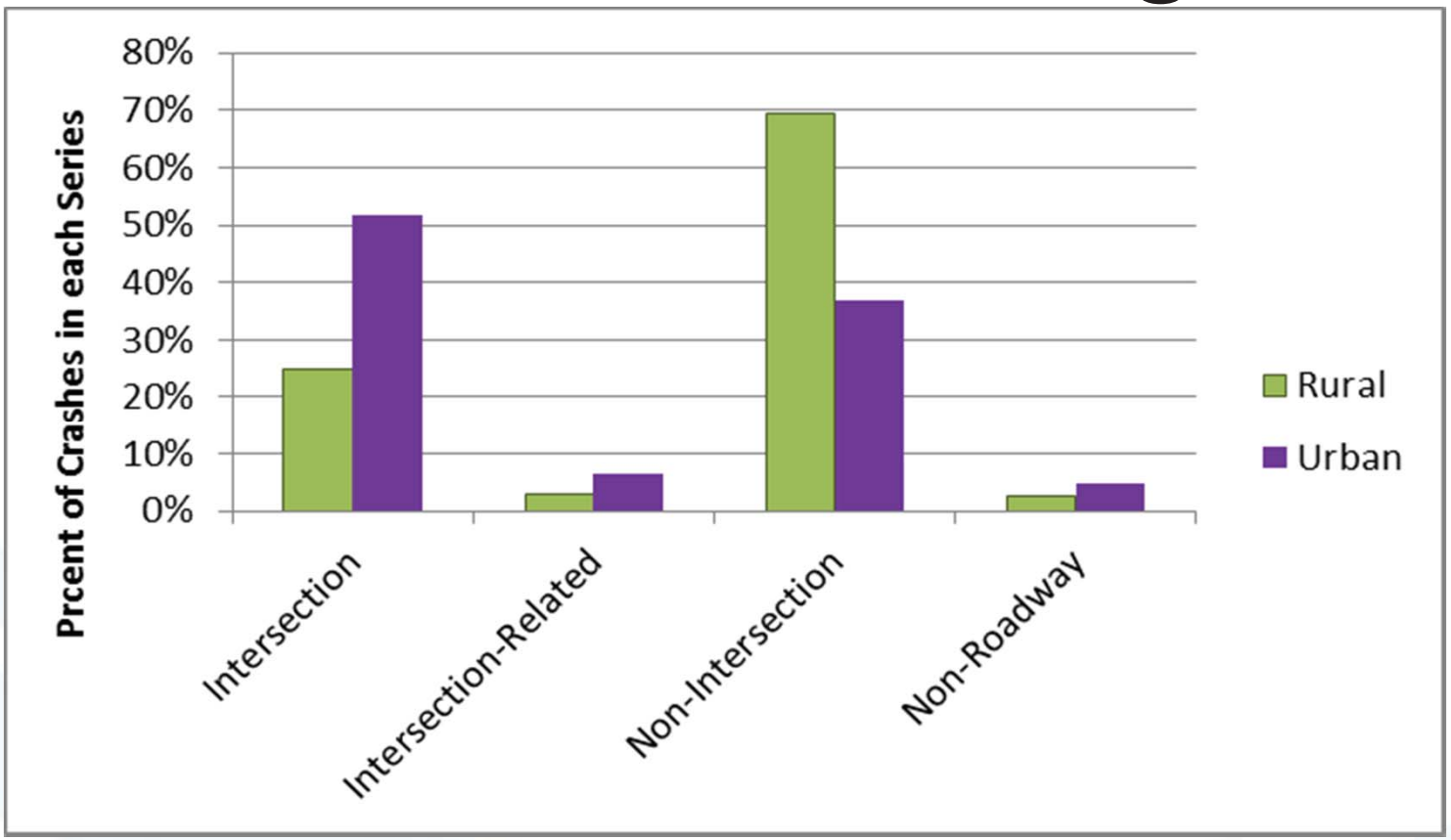
Location Differences in Rural vs. Urban Settings



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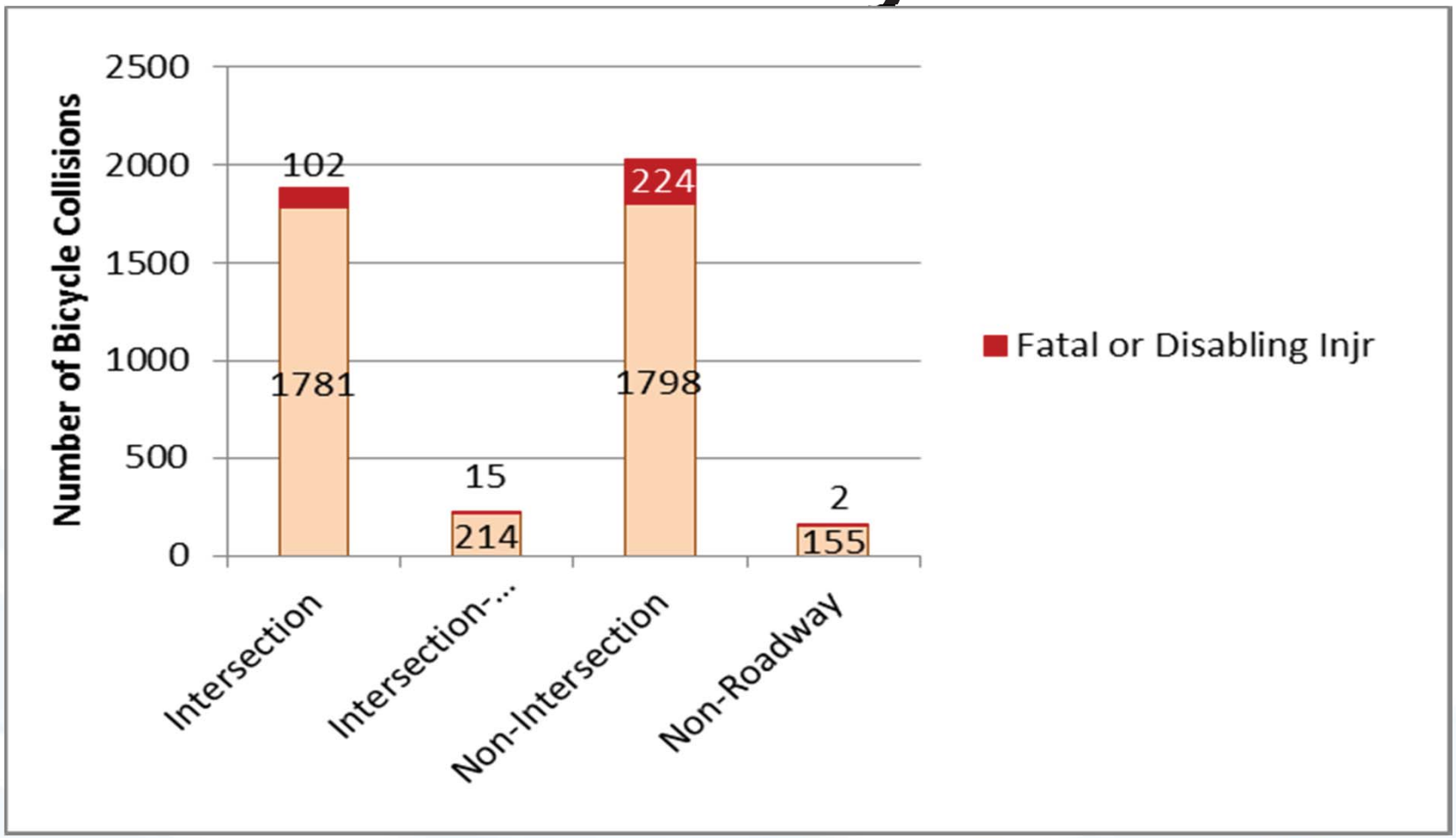
Crash Location and Injury Severity



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Bicyclist Position Before Crash

Bicyclist Position	2008	2009	2010	2011	2012	Total
Travel Lane	635	547	674	701	691	3,248
	60.9 [1]	66	69.8	68.2	67.5	66.4 [2]
Bike Lane / Paved Shoulder	71	37	58	47	51	264
	6.8	4.5	6	4.6	5	5.4
Sidewalk / Crosswalk / Driveway Crossing	179	124	148	173	170	794
	17.2	15	15.3	16.8	16.6	16.2
Multi-use Path	7	3	6	7	7	30
	0.7	0.4	0.6	0.7	0.7	0.6
Driveway / Alley	18	16	25	24	17	100
	1.7	1.9	2.6	2.3	1.7	2
Non-Roadway	63	50	37	57	54	261
	6	6	3.8	5.5	5.3	5.3
Other	8	5	5	5	3	26
	0.8	0.6	0.5	0.5	0.3	0.5
Unknown	61	47	13	14	31	166
	5.9	5.7	1.3	1.4	3	3.4
Total	1,042	829	966	1,028	1024	4,889
	21.3 [3]	17	19.8	21	20.9	

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Bicyclist Travel Direction

Bicyclist Direction	2008	2009	2010	2011	2012	Total
With Traffic	628	503	612	658	640	3041
	60.3 [1]	60.7	63.4	64	62.5	62.2 [2]
Facing Traffic	252	175	212	212	255	1106
	24.2	21.1	21.9	20.6	24.9	22.6
Not Applicable	118	123	111	138	95	585
	11.3	14.8	11.5	13.4	9.3	12
Unknown	44	28	31	20	34	157
	4.2	3.4	3.2	1.9	3.3	3.2
Total	1042	829	966	1028	1024	4,889
	21.3 [3]	17	19.8	21	20.9	

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Top Ten Crash Causes

Rank	Crash Type	Total	Percent of NC Total
1	Motorist Drive Out - Sign-Controlled Intersection	478	9.8%
2	Motorist Overtaking - Other / Unknown	438	9.0%
3	Motorist Left Turn - Opposite Direction	363	7.4%
4	Motorist Drive Out - Commercial Driveway / Alley	246	5.0%
5	Motorist Overtaking - Misjudged Space	235	4.8%
6	Bicyclist Left Turn - Same Direction	234	4.8%
7	Bicyclist Ride Through - Sign-Controlled Intersection	233	4.8%
8	Motorist Right Turn - Same Direction	211	4.3%
9	Non-Roadway	203	4.2%
10	Motorist Overtaking - Undetected Bicyclist	141	2.9%
Subtotal for top ten types for frequency		2782	56.9%

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Key Takeaways on Crash Types and Causes

- Most crashes happen on two-way undivided roads.
- Crashes are most prevalent on roads with 30-35 mph speed limits.
- 40 percent of crashes occur at intersections with a stop sign.
- Crashes occur equally at intersections and non-intersections.
- In urban areas, crashes occur more frequently at intersections. In rural areas, crashes occur more frequently at non-intersections.
- Non-Intersection crashes are more dangerous for bicyclists, accounting for more than half of all fatal and disabling injury crashes.

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Key Takeaways on Crash Types and Causes

- Crashes commonly occur when the bicyclist is traveling in the roadway.
- While most of the time the bicyclist was correctly traveling with traffic, nearly a quarter of crashes included a bicyclist riding against traffic.
- Motorists pulling out into traffic or making turns cause more than a quarter of all crashes.
- Motorists overtaking bicyclists cause more than 16.7 percent of crashes.
- Bicyclists turning cause nearly 10 percent of crashes.

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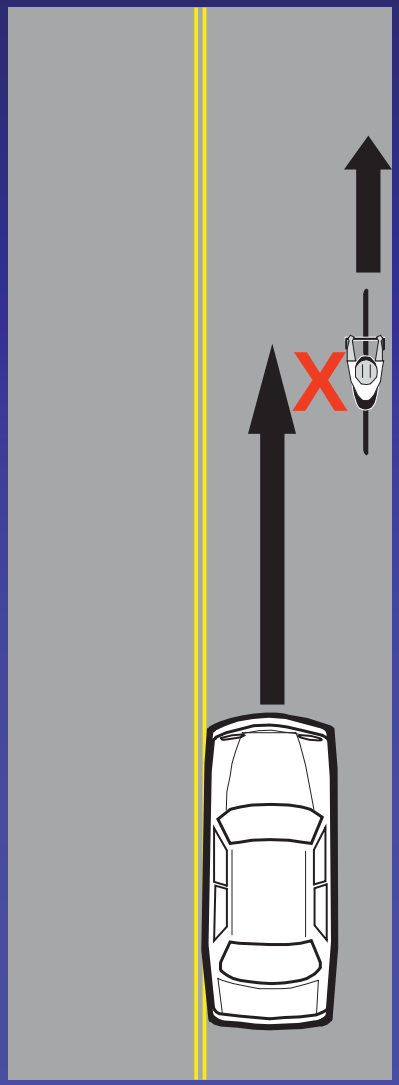
Safe Passing; Operating Abreast

BikeWalk NC

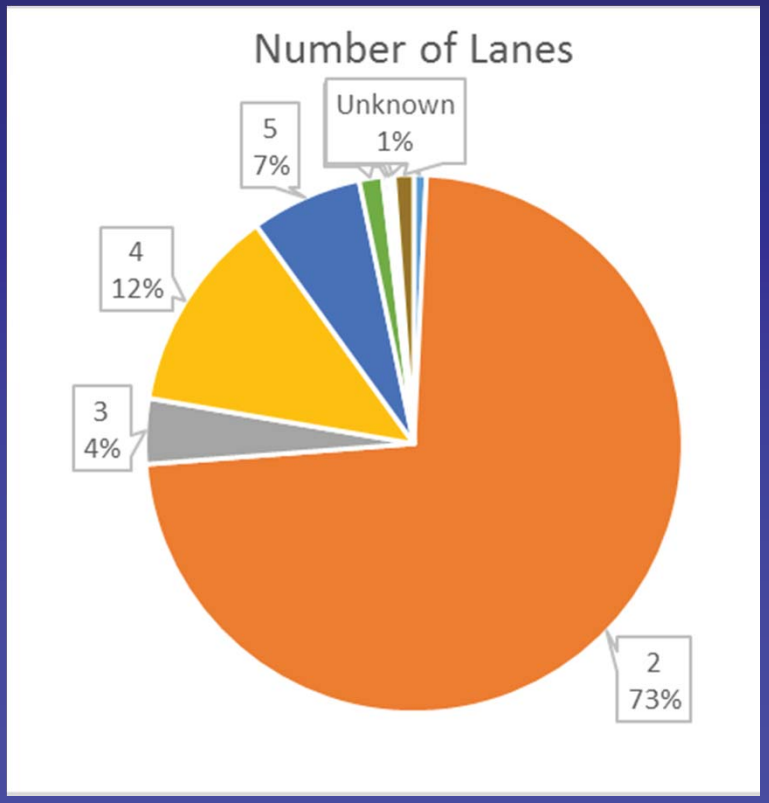
Safe Passing Principles and Law

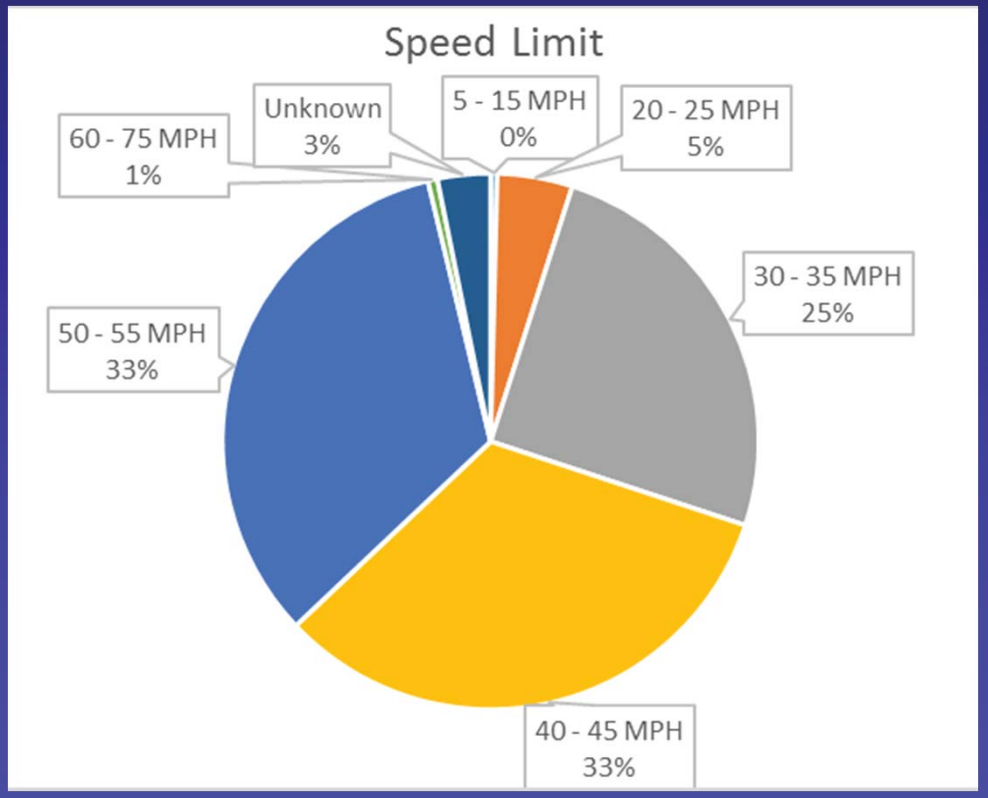
Motorist Overtaking Collisions

- 8% of urban car-bike crashes
- 29% of rural car-bike crashes
- 45% are in darkness
- Most daylight collisions are overtaking too closely
- Most involve a bicyclist on the right edge of a narrow lane



Bicycle Overtaking Crashes: Road Types





BikeWalk NC

Operating Space

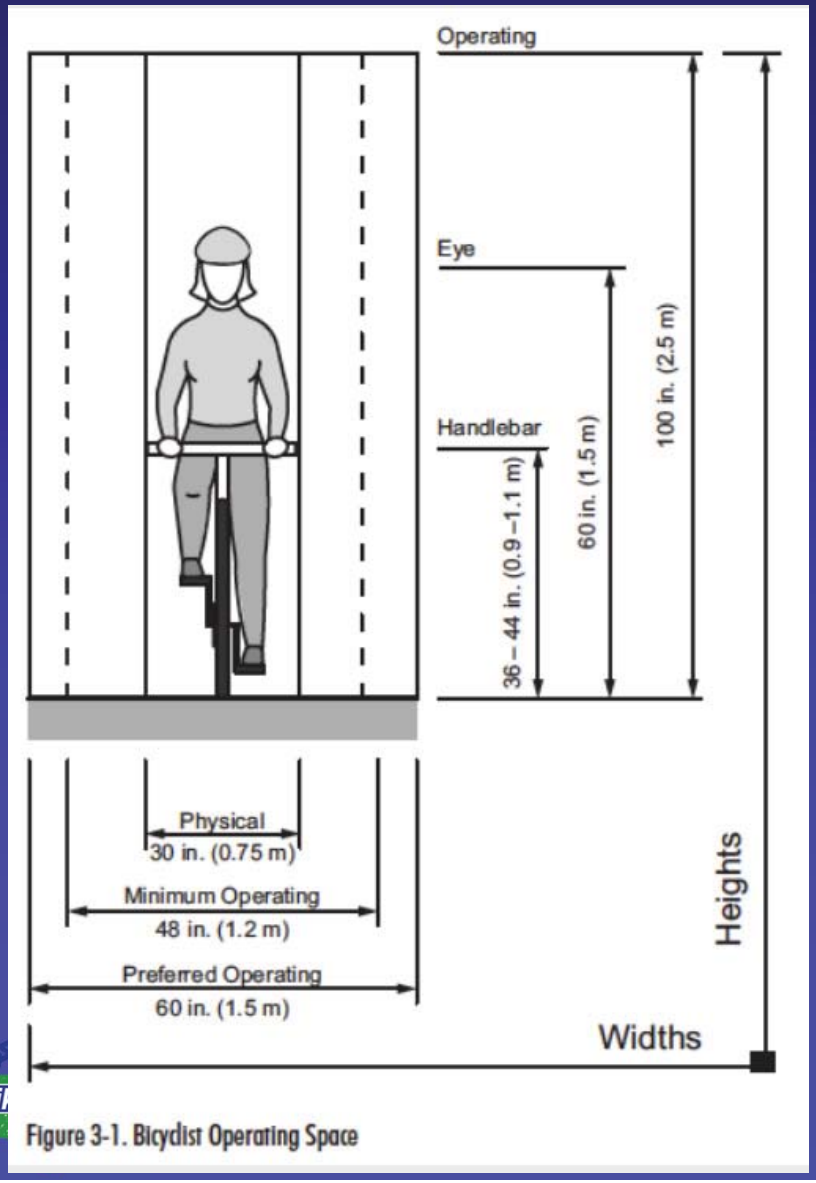


Figure 3-1. Bicydist Operating Space

Bicycle operating space
according to AASHTO Bike Guide

Using scanning drill
to measure swerving

Minimum Passing Distances

Minimum Passing Distance	State
Function of Speed (5’ at 50 mph)	New Hampshire
4 Feet	Pennsylvania
3 Feet	Arizona, Arkansas, California, Colorado, Connecticut, Delaware, District of Columbia, Florida, Georgia, Illinois, Kansas, Louisiana, Maine, Maryland, Minnesota, Mississippi, Nebraska, Nevada, Oklahoma, South Dakota, Tennessee, Utah, Wisconsin, Wyoming
2 Feet	North Carolina, Virginia
“Safe Distance”	Alabama, Alaska, Hawaii, Idaho, Indiana, Iowa, Massachusetts, Michigan, Missouri, New Jersey, New Mexico, New York, North Dakota, Ohio, Oregon, Rhode Island, South Carolina, Texas, Vermont, Washington, West Virginia
“Reasonably Clear”	Kentucky
“Safely without endangering”	Montana

10 Foot Lanes

To Scale:
Bicyclist and Ford F-150

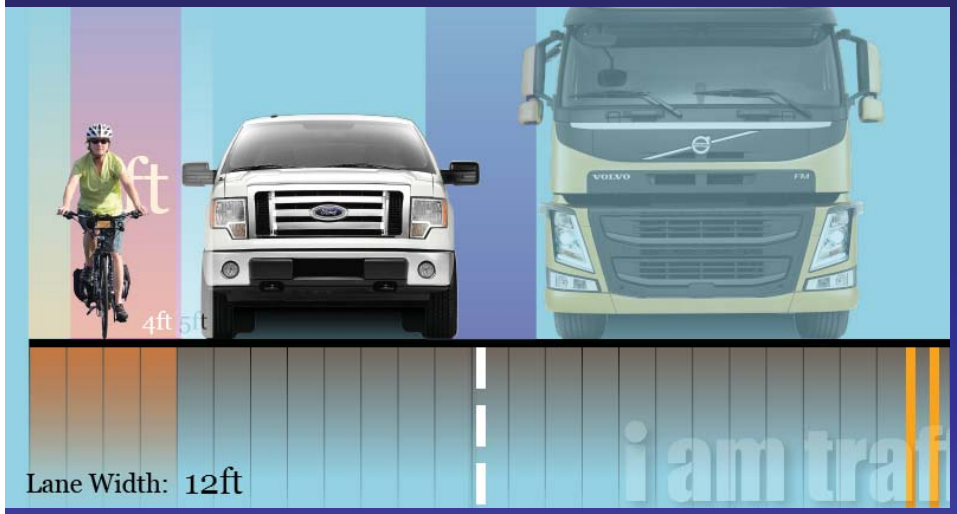
BikeWalk NC

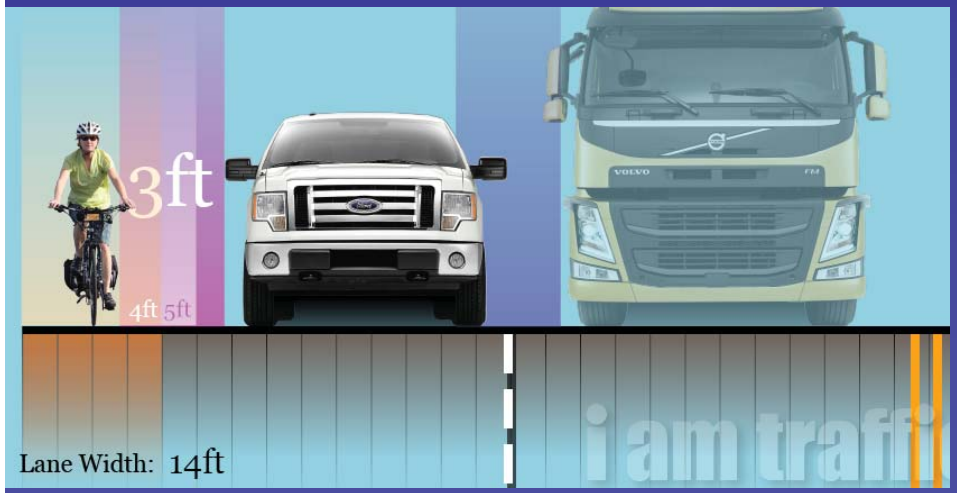
Wide Lanes

14 Feet

16+ Feet

Lane and Vehicle Widths





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http://iamtraffic.org/resources/interactive-graphics/

16 Feet = Rec. Minimum for Trucks

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http://iamtraffic.org/resources/interactive-graphics/

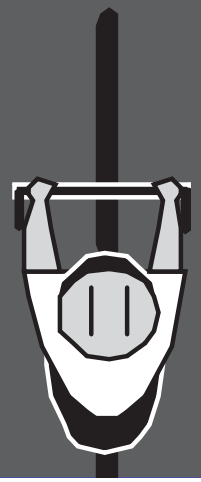
Passing Modes

Next Lane Pass

- Requires yielding to adjacent traffic

Same Lane Pass

- Does not involve yielding to adjacent traffic



How to encourage drivers to cross the lane line (safely)?

(a) Driver education and enforcement

(b) Bicyclist lane position

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How wide he thinks his car is

Where Savvy Cyclists ride to discourage that mistake.

How wide it really is

Most lanes are too narrow for a car to pass a bicyclist safely within the lane.

Savvy Cyclists make that clear by leaving less space to their left. This is defensive driving. And it is legal in all 50 states.

Regardless of where a bicyclist is, please don't risk a mistake.

Change lanes to pass.

i am traffic.org /iamtrafficorg

Graphic: i am traffic - iamtraffic.org

Lane Control = Defensive Cycling

- Riding near center of narrow lane greatly reduces unsafe passing, sideswipes

Two Lane Roads

- Two lane rural roads typically have narrow lanes
- Drivers must yield to oncoming traffic
- What about solid centerlines?

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No Passing Zone Exceptions

- Colorado, Maine, Mississippi, Montana, Ohio, Pennsylvania, Utah and Wisconsin allow passing bicyclists in a no passing zone when safe.
- Example: Pennsylvania

  § 3307. No-passing zones. (b.1) Overtaking pedalcycles.– It is permissible to pass a pedalcycle, if done in accordance with sections 3303(a)(3) (relating to overtaking vehicle on the left) and 3305 (relating to limitations on overtaking on the left).

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NC § 20-150. Limitations on privilege of overtaking and passing.

(a) The driver of a vehicle shall not drive to the left side of the center of a highway, in overtaking and passing another vehicle proceeding in the same direction, unless such left side is clearly visible and is free of oncoming traffic for a sufficient distance ahead to permit such overtaking and passing to be made in safety.

NC § 20-150 continued…

(b) The driver of a vehicle shall not overtake and pass another vehicle proceeding in the same direction upon the crest of a grade or upon a curve in the highway where the driver's view along the highway is obstructed within a distance of 500 feet.

(c) The driver of a vehicle shall not overtake and pass any other vehicle proceeding in the same direction at any railway grade crossing nor at any intersection of highway unless permitted so to do by a traffic or police officer. …

NC § 20-150 continued…

(d) The driver of a vehicle shall not drive to the left side of the centerline of a highway upon the crest of a grade or upon a curve in the highway where such centerline has been placed upon such highway by the Department of Transportation, and is visible.

(e) The driver of a vehicle shall not overtake and pass another on any portion of the highway which is marked by signs, markers or markings placed by the Department of Transportation stating or clearly indicating that passing should not be attempted.

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Confusion in California

- Governor vetoed centerline exception
- Enacted 3’ law without it
- CHP enforcement problems

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BikeWalk NC Recommendations

- Provide exception to § 20-150 (e) for passing bicyclists when safe
- Develop comprehensive education and enforcement campaign to promote safer passing
- Do not attempt 3’ passing legislation or other new motoring restrictions with current political climate/legislature

Operating Abreast

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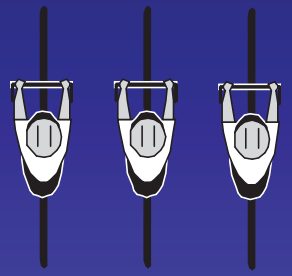
Definition of Operating Abreast

- Operating abreast: Sustained side-by-side travel at equal speed.



- Operating abreast does not include:
  - Passing/being passed by another operator
  - Using a different destination lane
  - Following at a different lateral position

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Applicable Statutes

- *§ 20-146. (b) Upon all highways any vehicle proceeding at less than the legal maximum speed limit shall be driven in the right-hand lane then available for thru traffic, or as close as practicable to the right-hand curb or edge of the highway, except when overtaking and passing another vehicle proceeding in the same direction or when preparing for a left turn.*

Applicable Statutes

- *§ 20-146. (d) Whenever any street has been divided into two or more clearly marked lanes for traffic,[…]*
- *(1) A vehicle shall be driven as nearly as practicable entirely within a single lane and shall not be moved from such lane until the driver has first ascertained that such movement can be made with safety.*

Why Cyclists Operate Abreast

1. Deter Unsafe Same-Lane Passing
2. Improve Conspicuity from Front/Behind
3. Shorten Length of Group
4. Communicate

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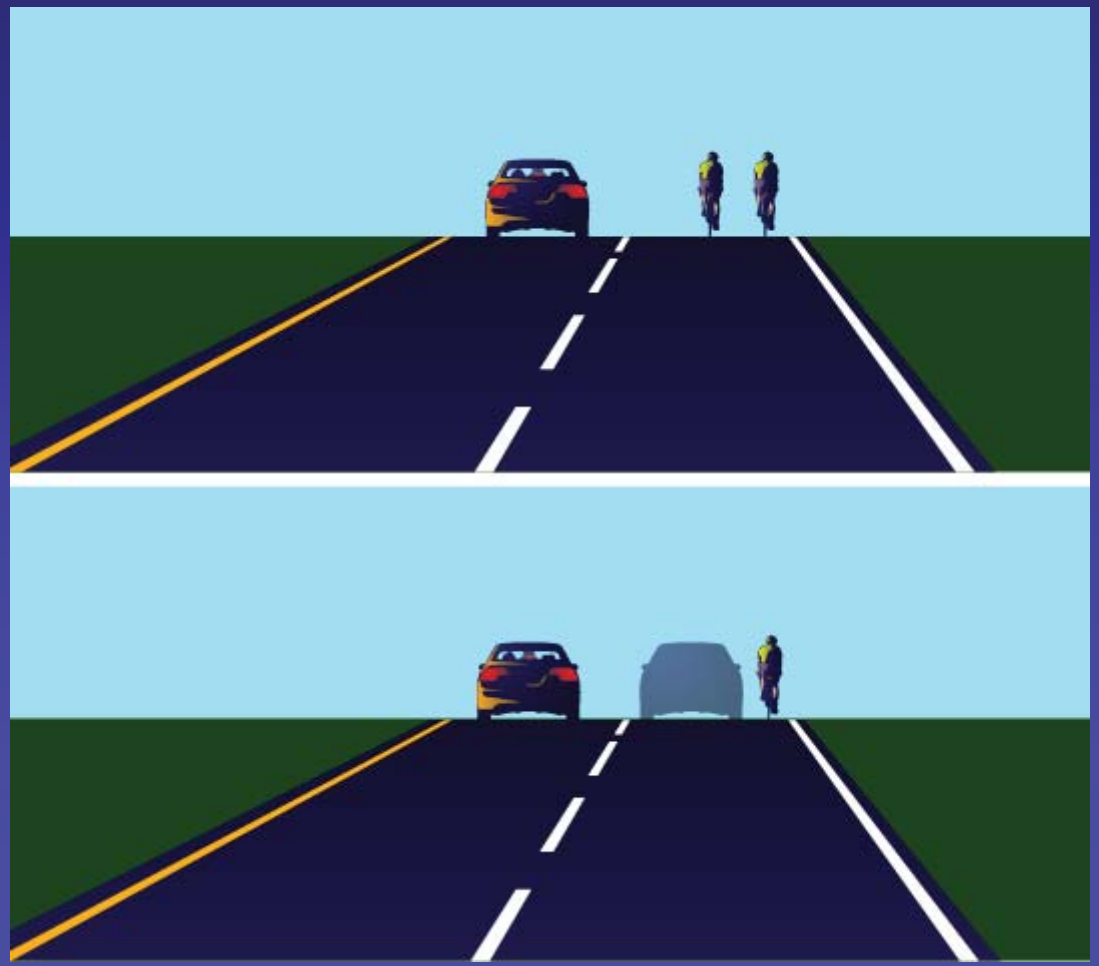
1. Deter Unsafe Close Passing



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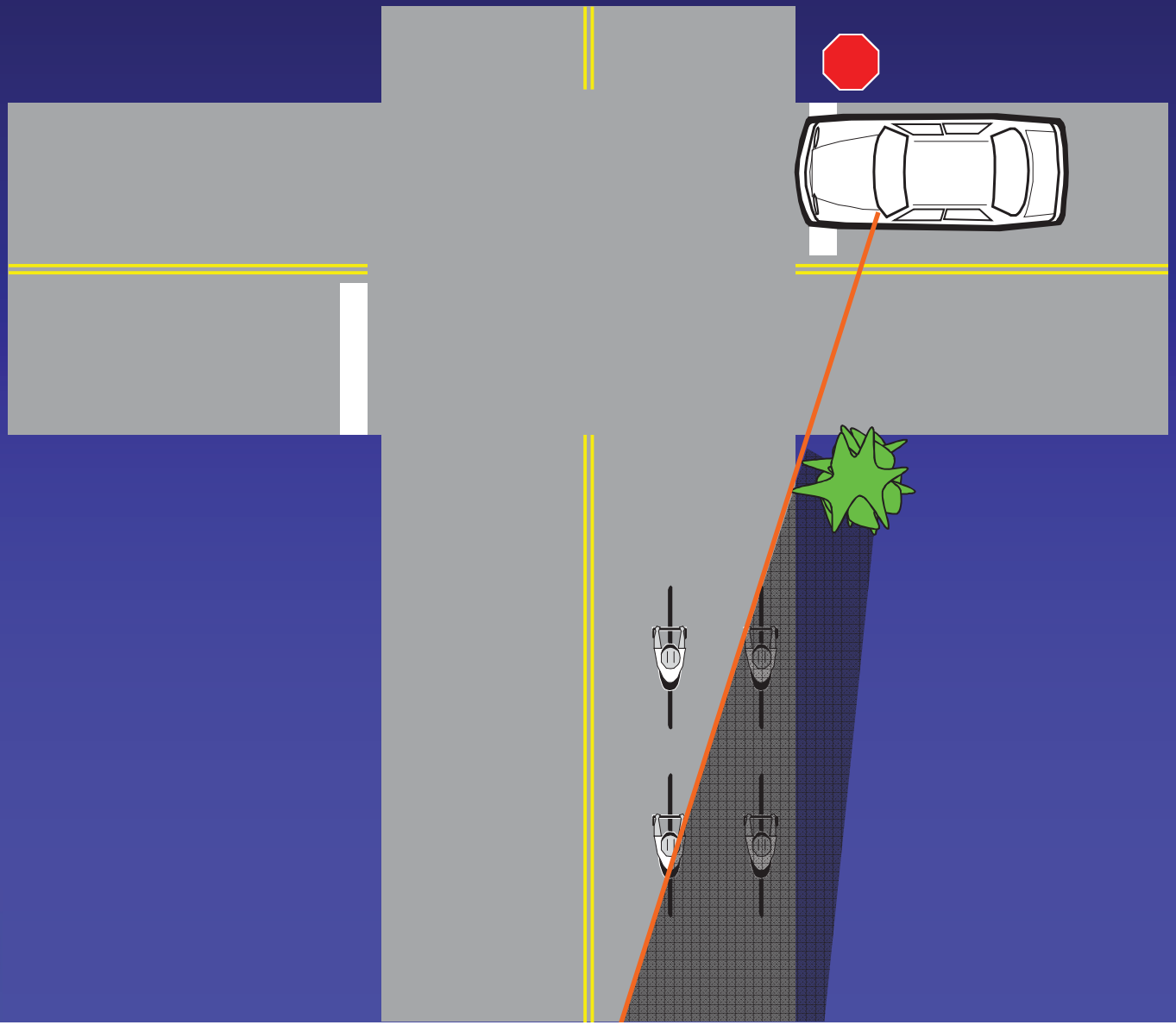
2. Improve Conspicuity



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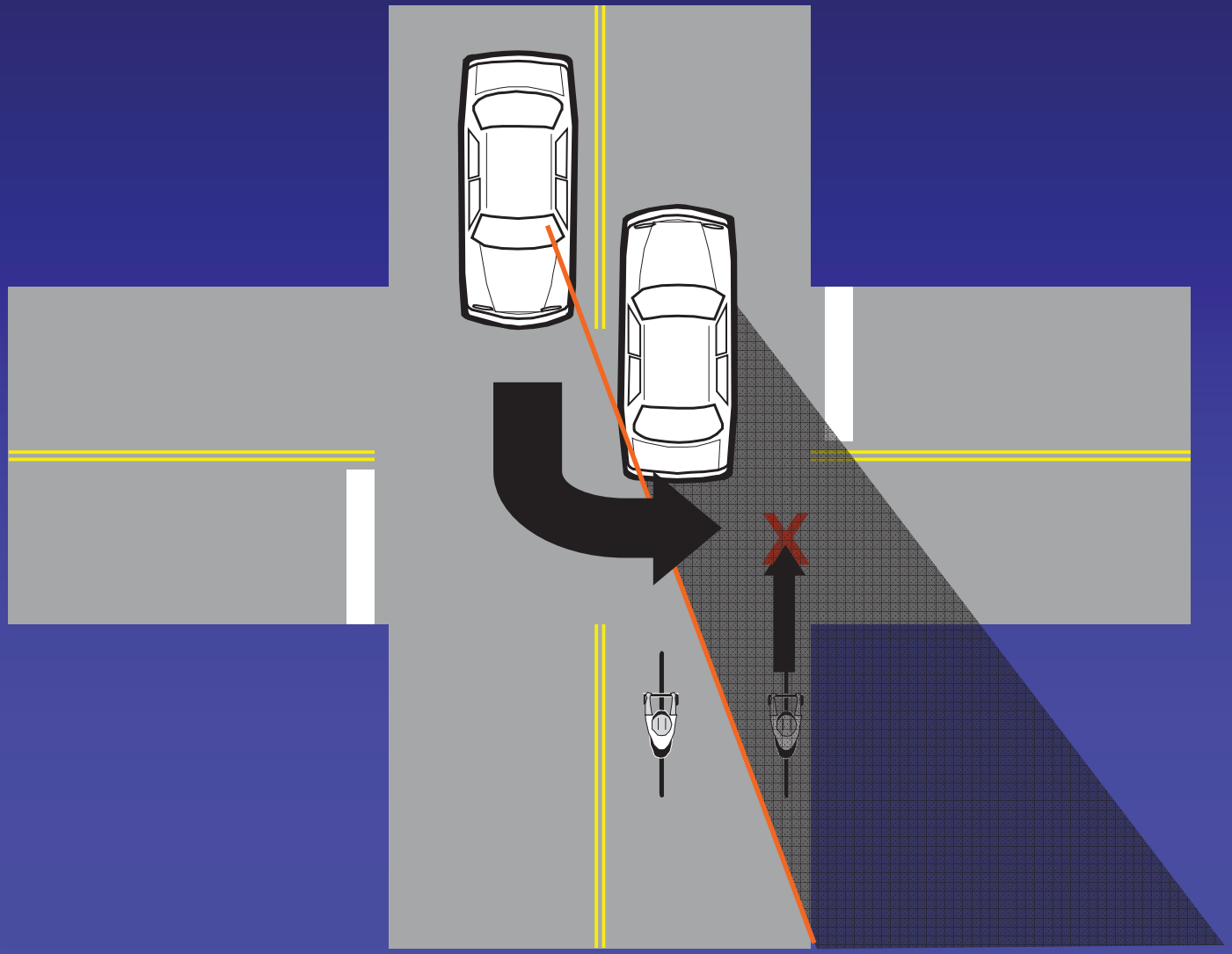

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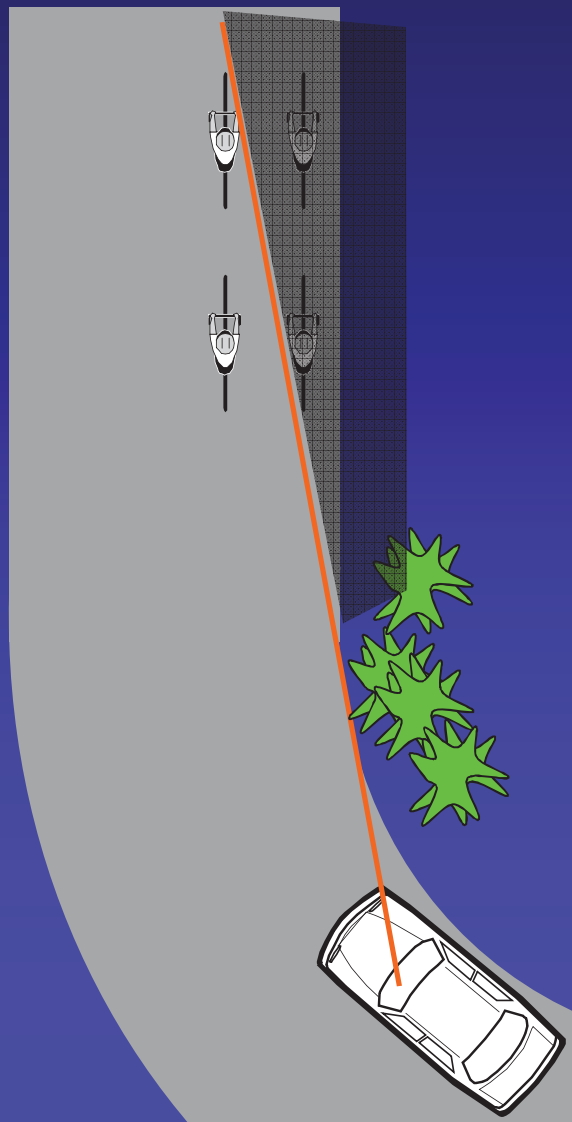

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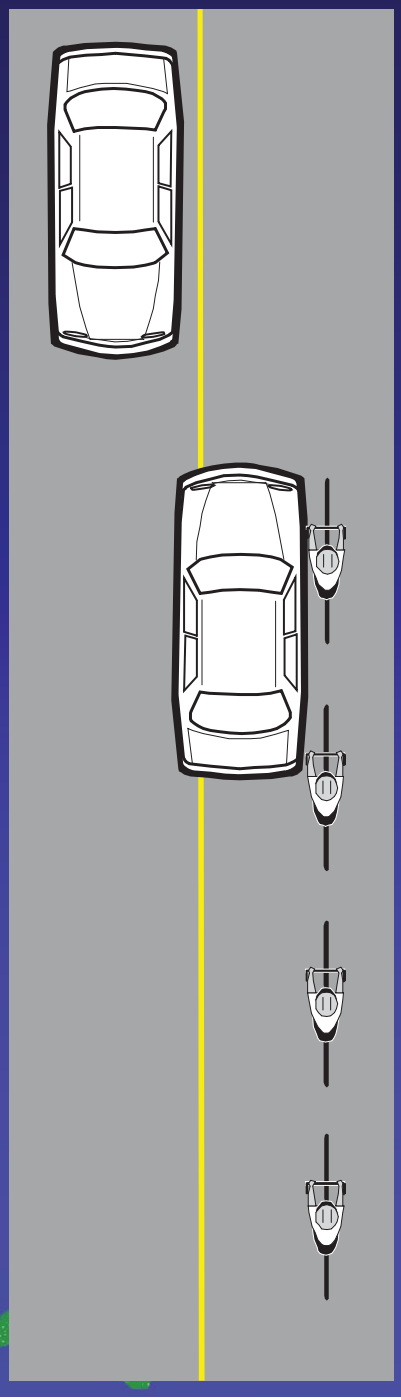
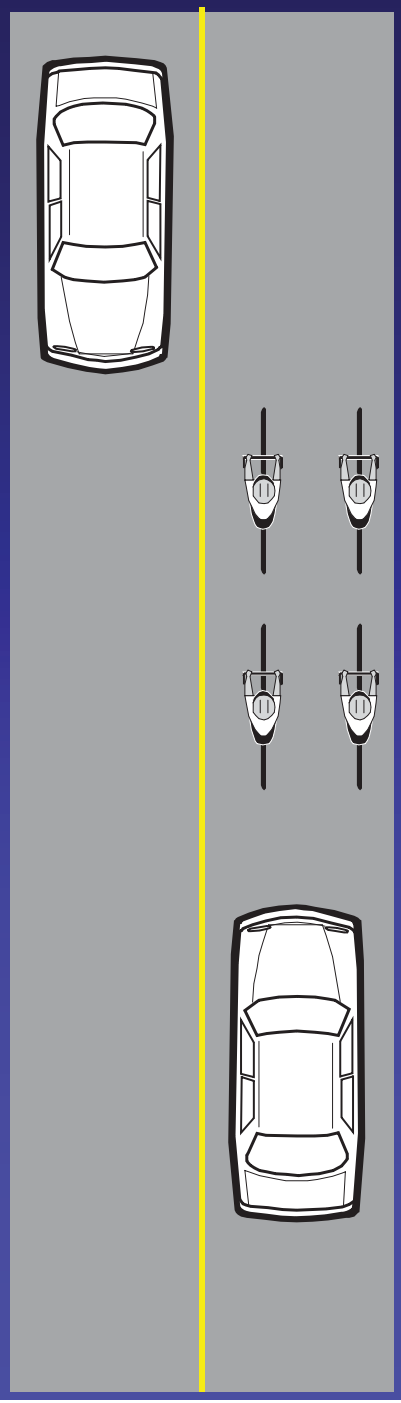
3. Shorten Length of Group



- Reduces passing time and distance
- Reduces risk of motorists swerving into group before clear



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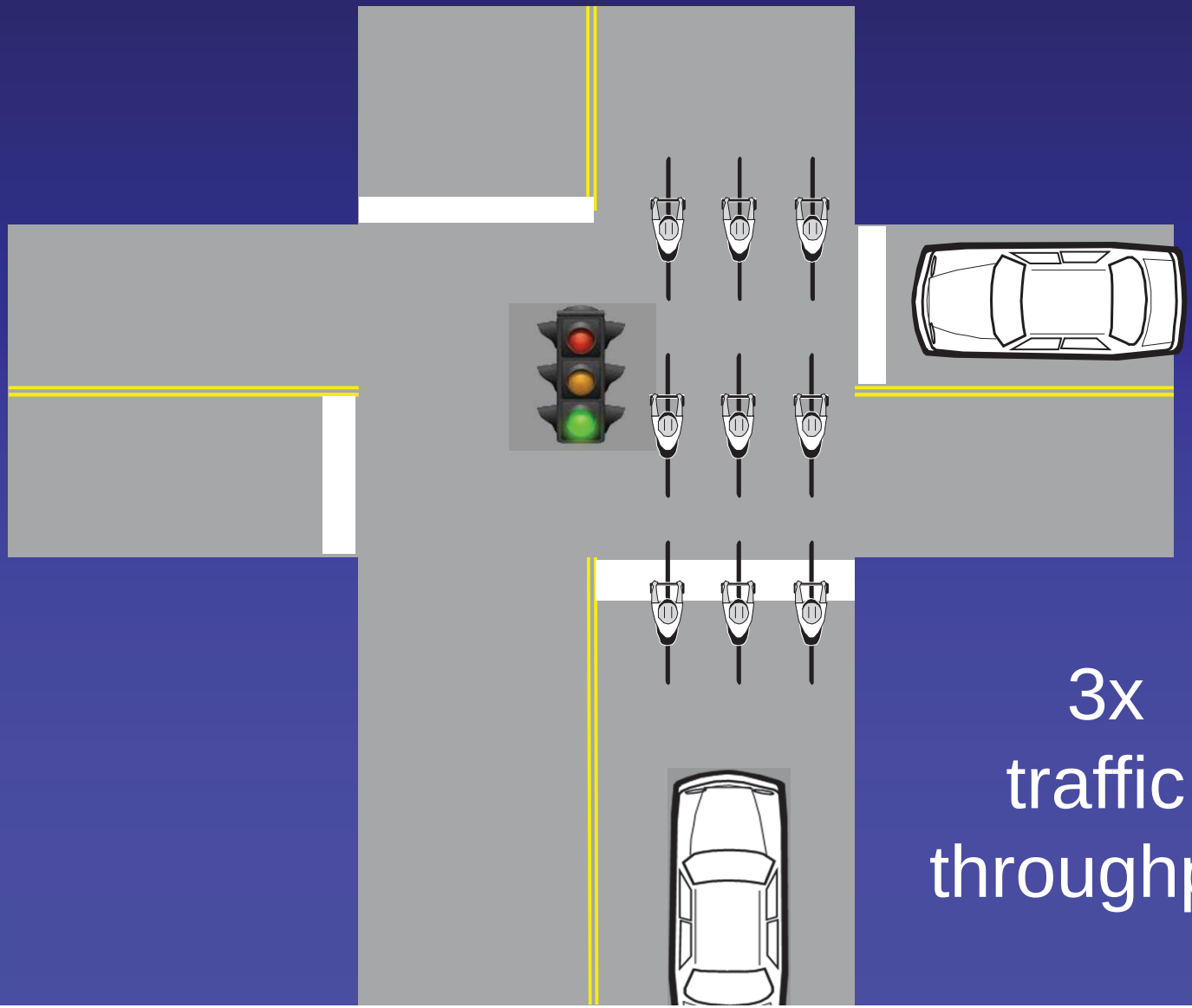

3x
traffic
throughput

4. Communicate

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4. Communicate

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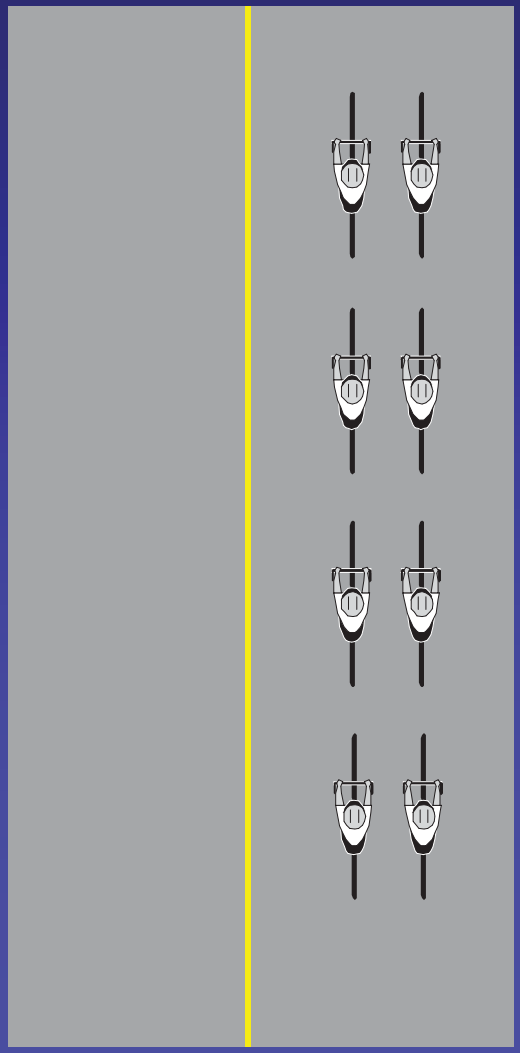
How Safe Is Cycling Abreast?

- Look at crash data
- What crash data?

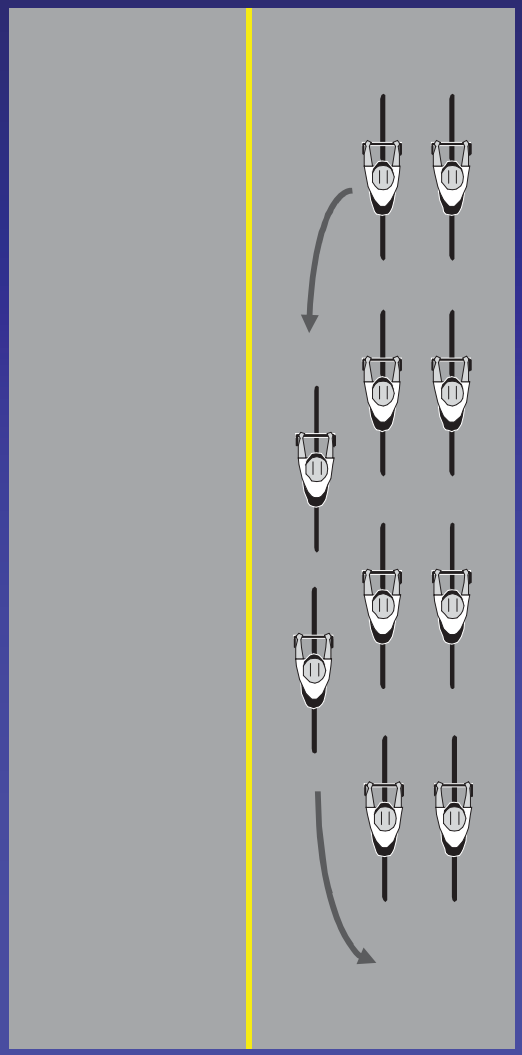
Pacelines

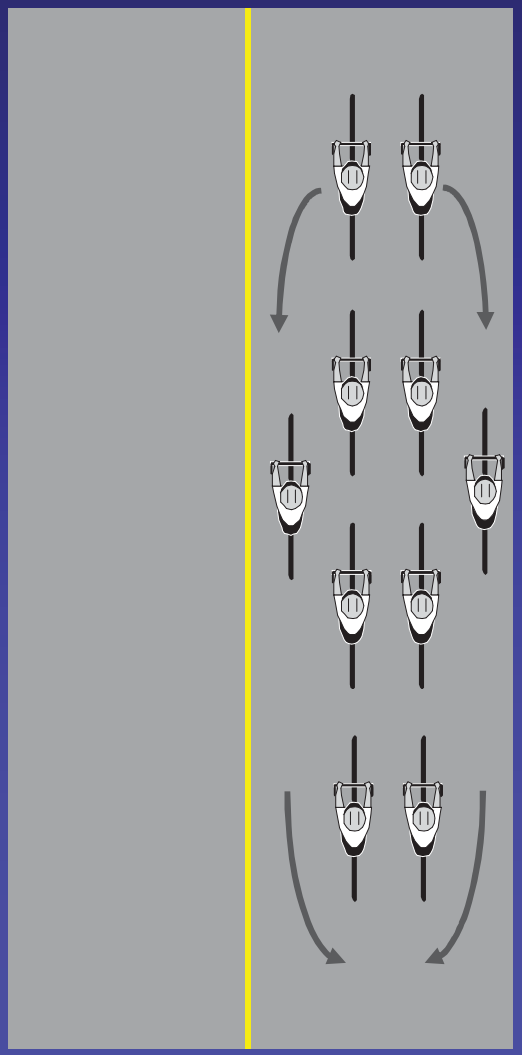
- Up to 40% energy savings
- Leaders get tired
- Must rotate regularly



Double File Paceline Rotation

- Group stays within single lane
- Lead cyclists look back before rotating





Lateral Spacing

Recreational cyclists often give one another extra space when not rotating or starting