

INTRODUCTORY STATEMENT

At the Mar. 18 meeting of the OUTBoard, the Staff (Abigaile Pittman) presented the Staff's plan to address the Board of County Commissioner's Petition of November 12, 2014, instructing Staff to address Bicycle and Pedestrian Safety in Orange County. The Petition outlined the following objectives:

- Review County authority and State law
- Provide copy of County-endorsed bicycle routes (map)
- Get updated on topic and recent activities
- Define current problem statement
- Create broad categories for addressing problems (education; law enforcement; NCDOT; etc.)
- Suggest/recommend policies, procedures, etc. for addressing problem
- Identify agencies, County departments, etc. for addressing problem

The OUTBoard was charged with preparing a report to the Board of County Commissioners, deliverable at the BOCC's first meeting in June 2015.

In order to come up with a report that could be discussed, revised, and approved by the OUTBoard at its May 20 meeting, a subcommittee of the OUTBoard and interested citizens was formed. The subcommittee included OUTBoard members Alex Castro, Heidi Perry, Tom Magnuson, and citizens John Rees, Jeff Charles, Gail Alberti, and Cliff Leath. The report attached is the final draft for the May OUTBoard meeting.

Orange United Transportation Board Report to the Orange County Board of County Commissioners on Bicycle and Pedestrian Safety in Orange County

Charge 1. Review County Authority and State Law.

In view of **NC House Bill 232** (*“An act to direct the Department of Transportation to study the bicycle safety laws in this state and make recommendations as to how the laws may be revised to better ensure the safety of bicyclists and motorists on the roadways.”*), which was passed by the House and is currently going through the state Senate, the OUTBoard recommends waiting to hear the outcome of that bill before putting a lot of time into reviewing the State laws. (NOTE: Because much of our report pertains to rural parts of the county, the focus is mainly on cycling, though through education efforts, the importance of walking on the correct side of the road and visibility at night can be done through posters and more.)

However, regardless of the outcome of HB 232, people who drive or cycle in Orange County could be better educated on the current laws, and methods of doing that should be put into place now. (See Charge 5, no 1)

Charge 2. Provide copy of County-endorsed bicycle routes (map).

Many if not most rural recreational cyclists find riding routes via online services such as Map My Ride,¹ or through cue sheets provided by clubs such as the Carolina Tarwheels. Even NC DOT is currently in the process of making the statewide bicycling maps available electronically at WalkBikeNC.² The website is currently under development, but will be an interactive site where cyclists will be able to find, create, or comment on routes around our state.

1. It would be useful to have an online map available for Orange County that pointed out potentially hazardous spots or areas of high traffic to cyclists. This information could be included in the print version of the Orange County cycling map when it is updated. The state laws for cyclists should be included both on an online map website and on the updated print map.
2. We recommend the county also look into providing an app version of the map (in addition to an online version of the map) for the use of cyclists who do not have easy access to a printed map and who are accessing routes through small mobile devices.

Charge 3. Give update on topic and recent activities.

The most recent and possibly most affecting recent activity is state House Bill 232 which was passed by the House in early April and described above. The Senate has referred the bill to the committee on rules and regulations. The OUTBoard would recommend waiting until the outcome of this bill is known before creating too many printed materials with the state laws on them. If the bill is passed by the Senate as currently proposed, the committee that will be formed will be asked to provide recommended legislation to the Senate and House by the end of 2015.

In a recent related activity, the OUTBoard was presented with a list of resurfacing projects at its April meeting, and it endorsed the DCHC MPO's requests for wide shoulders as a part of the resurfacing on the following roads: Old NC 86 from Farm House Drive to New Hope Church Road, Arthur Minnis Road from Old NC 86 to Rocky Ridge Road, New Hope Church Road from Old NC 86 to NC 86. In addition, the OUTBoard endorsed the Staff's request for wide shoulders on Walker Road from NC 57 to New Sharon Church Road, and on Lake Orange Road from NC 86 to the End of Maintenance on that road.

Charge 4. Current problem statement.

The problem is how to ensure the safety of all users of roads in our county. The majority of the cyclists and motorists are respectful of each other on our county roads. There are some in each of these categories, however, who allow feelings of entitlement to the road to overtake their good sense, and it is in those situations that conflicts between the two groups can occur.

The OUTBoard would like to see the county embrace, promote, and fund programs that could help mitigate these conflicts. First and foremost in these efforts would be a program to educate the public on the laws, and to humanize the potential conflict situations that occur in a way that fosters respect, understanding, and coexistence on the road.

Charge 5. Addressing the issues.

To improve the safety of bicycling and walking in Orange County, the OUTBoard recommends the following actions be adopted and implemented by the Board of County Commissioners:

1. Have current state laws posted at high-traffic rural spots. Two that were mentioned were Maple View and Honeysuckle Tea House. In addition, locations such as car dealerships, gas stations, schools, churches, and car repair shops should be approached. With permission from the establishment's owners, posters could be posted in several locations. These posters would include state laws for both cyclists and motorists. Include on the posters the importance of respect for all on the road.
2. Become a partner with NCDOT in their "Watch for Me NC" bicycle and pedestrian safety campaign. They provide a large amount of information including posters, bumper stickers, handouts with laws, reflective gear, and even bike lights. Combine this with an enforcement, education, and awareness program for cyclists and motorists.³
3. Provide law enforcement officers with education tools explaining road cycling and the state's laws – such a program has been developed by the statewide advocacy group BikeWalk NC. It could be shown in a classroom setting with or without assistance from local League of American Cyclists Certified Cycling instructors.⁴

4. Arrange for a bike ride or other type of “field trip” with Orange County Commissioners, law enforcement, Orange County staff, and local cycling advocates to allow all to see both the possibilities and the obstacles that exist for cycling on rural county roads.
5. Have a county-wide contest to produce PSA posters or videos as a way to bring in citizen participation. Prepare a series of PSAs to air on local radio and television stations and in the local newspapers, and as posters around Orange County, as have been promoted in other locations: See sample posters in Appendix A. Contact the Journalism school at UNC to see if they would be interested in helping create these spots and helping us determine the correct venues for placing them.
6. Meet with the regional director of Active Routes to School and with school PE instructors to be sure they are aware of the Bike and Pedestrian Safety program available on NCDOT’s website. ⁵
7. Support BikeWalk NC in its efforts to produce a statewide online education class⁶ that could be utilized in Driver’s Ed classes, and in classes for driving offenders that are seeking to reduce points on their insurance. A component for the younger age groups who are mainly pedestrians is also planned.
8. Utilize national resources such as the National Highway Traffic Safety Administration,⁷ People for Bikes,⁸ and the Alliance for Biking and Walking⁹ for materials that can be used locally.
9. Create and promote an interactive wiki map that cyclists and motorists can use to identify spots that need attention to improve safety. (The map could be referenced on all of the posters and other PSAs.)
10. Examine bicycling in Orange County as an economic development tool by sending a local staff person (or someone from Orange County Visitors Bureau) to the Bicycle Tourism conference in San Diego, CA, being held Nov. 4–7 in 2015.¹⁰
11. Pursue a tourism (or other) grant to fund bicycling safety and share the road public service announcements on popular local AM/FM radio stations.
12. Include a line item in the budget for county funding to use as grant-matching funding.
13. Improve bicycle infrastructure in the community. Instruct staff to review with the OUTBoard roads that are scheduled for resurfacing and recommend 4-foot shoulders on roads identified as rural bikeways.
14. Explore lowering speed limits on some rural county roads to 40 mph. Begin with a pilot on Dairyland Road. This reduction in speed was recently approved by NCDOT for a small section of Old 86 (from Calvander to the Carrboro Town Limit).

15. Discuss with the NC DOT (District Seven Engineer) the implementation of roadway safety shoulders (costing \$500,000 or less) at blind hills and curves on highly used bike routes. One of the following locations could be used as a pilot for this safety measure:
 - Sugar Ridge area of Orange Grove Road
 - “S” curve on Dairyland Road between Bethel Hickory Grove and Union Grove Church Roads
 - Dairyland Road segment between Green Rise Road and new gas line
 - Old Greensboro Highway segment between Niche Gardens and Collins Creek Roads
 - Old Greensboro Highway segment between Phil’s Creek and Jones Ferry Roads
16. Enhance the use of our bikeways by:
 - a. Supplementing the existing Orange County Bicycle Map with online-accessible “Cue Sheets” for specific preferred bicycling road. Assistance in the development of these sheets should be sought from the local bicycle organizations like the Carolina Tarwheels
 - b. Adding MUTCD-approved signage at “choke points” identified by area cyclists alerting drivers to the likelihood of cyclists, such as “watch for cyclist” or “bikes may use full lane”
 - c. Including multi-use paths in the vicinity of and within County Parks and along Cane Creek reservoir perimeter.
17. Hold a Community Event. To provide a safe cycling experience for novice to expert riders, a different selected segment of a rural road would be closed to all but local motorist traffic and converted to a dedicated bikeway on a weekend day once a month from April to October for a period of about two to four hours. To hold this event:
 - a. a one-weekend day pilot would be organized to prove and refine the concept.
 - b. Coordination between existing local bicycle clubs, rural residents, the State Department of Transportation, Sheriff’s Department and Orange County government would develop the specific parameters of the proposed bikeway. Cue Cards for the ride would be developed and made available on-line and as handouts. The event would need to be widely publicized, and local churches along the dedicated route could chose to stage events to introduce riders to their fund raising events offering items such as baked goods, refreshments etc. Significant historic sites could be signed and other points of interest highlighted. Experienced riders wishing to stage a race or time trial event would go first, and thereafter the segment would be open to all cyclists. Volunteers could be positioned along the route to coordinate assistance as needed.
18. Add links on the county’s website to resources for cyclists from BikeWalkNC.org and from NCDOT’s bike program. Include links to laws and to safety videos.¹¹¹²

Charge 6. Suggest/recommend policies, procedures for advancing bike and pedestrian safety in the county.

1. Create a Task Force to put together an action plan for implementing the list of actions suggested in Charge 5, and have the action plan reviewed by the OUTBoard and presented to the BOCC. Have one member of the BOCC serve as a member of the Task Force.
2. Charge the Task Force with providing a list of roadways or areas in Orange County that need improvements for the OUTBoard to review, and send to the BOCC or to staff for approval.
3. Have staff create a list of goals for improving the roadways identified by the Task Force, including desired timelines and approximate costs.
4. Instruct staff to review with the OUTBoard roads that are scheduled for resurfacing and recommend wide shoulders or other appropriate improvements on roads identified as rural bikeways.
5. Ask NCDOT to adhere to their Complete Streets manual and to their written policies concerning rumble strips when installing them on rural roads (see Appendix B)
6. Receive semi-annual updates and annual written reports from staff regarding progress of the above noted action items and goals for the past and the upcoming year.

Charge 7. Identify agencies, departments, groups that might work to move this forward.

All of the following, in addition to every Orange County resident, are stakeholders who should work together to make our roads safer.

1. Law enforcement agencies (Sheriff's Department, Highway Patrol)
2. School representatives
3. Orange County Visitor's Bureau
4. NCDOT staff
5. County and regional planning staff
6. Elected representatives
7. County businesses
8. Bicycle advocacy groups
9. Those who work with driver's education classes and traffic offenders

¹ Map My Ride: <http://www.mapmyride.com>

² WalkBikeNC statewide map program:
<https://apps.ncdot.gov/newsreleases/Image.ashx?id=2992&orig=1>

³ Watch For Me NC program: <https://apps.ncdot.gov/newsreleases/details.aspx?r=11035>

⁴ The powerpoint for the presentation can be seen here:
<http://www.bikewalknc.org/learn/education-resources-for-police/>.

⁵ The program guide for Let's Go NC is here:
<http://www.ncdot.gov/bikeped/safetyeducation/letsgonc/>

⁶ A similar model for a statewide online education class created for Illinois can be seen here: <http://www.bikesafetyquiz.com/>

⁷ National Highway Traffic Study: <http://www.nhtsa.gov/Bicycles>

⁸ People for Bikes: <http://www.peopleforbikes.org/>

⁹ Alliance for Biking and Walking: <http://www.bikewalkalliance.org/>

¹⁰ National Bicycle Tourism Conference: <http://www.bicycletournetwork.org/>

¹¹ Bike Laws: <http://www.bikewalknc.org/important-nc-traffic-laws-applicable-to-bicyclists/>, and <http://www.ncdot.gov/BIKEPED/>

¹² Sample safety videos (from other states):
<https://www.youtube.com/watch?v=A3QN5U567jE>
<https://www.youtube.com/watch?v=iXC2UFRJ5Y4>

Appendix A: Possible ideas for PSA posters



Sample video PSAs can be found here:

<http://bikepgh.org/care/>

<http://georgiabikes.org/index.php/resources/35-georgia-resources/180-psa>

Appendix B: NCDOT Documents pertaining to rumble strips and bicycle traffic

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- The beginning of a rumble strip/stripe pattern should be delineated in accordance with MUTCD criteria (Section 9C.06) on any facility that bicycles are legally allowed to operate.
- The NCDOT Division of Bicycle and Pedestrian Transportation will be provided an opportunity to comment on any project implementing rumble strips/stripes on facilities subject to this practice.
- Turn bay rumbles may continue to the beginning of the full width lane, if the paved shoulder width remains the same as the through-lane shoulder width.
- NCDOT recognizes and is sensitive to the fact that noise may be an issue. However, if there is a documented safety problem where no other reasonable cost effective solution is available then rumble strips should be installed. This approach has been supported through other Departmental actions.

CONSIDERATIONS FOR BICYCLE TRAFFIC

The following should be considered for all facilities where bicycles are legally allowed to operate:

- It is desirable to provide a nominal width of four (4) feet of useable shoulder between the outside edge of the shoulder rumble strip/stripe to the edge of pavement. However, even though a four foot nominal width is desired, it will not preclude the installation of a proven safety countermeasure where there is the presence of treatable lane departure events. Also, the condition of the shoulder itself should be considered in determining whether or not to provide the four foot nominal riding width for bicycle traffic.
- The width of shoulder rumble strips/stripes may vary between 8 and 16 inches. The engineer should determine design and placement.
- Gaps in milled patterns, varying between 6 and 12 feet, may be provided to allow bicyclists to move between the through lane and the right shoulder to avoid vehicles, debris, etc., but the pattern should be a minimum of a 5:1 rumble-to-gap ratio. The Engineer should determine design and placement.
- No gaps should be provided on the left (median) side of divided highways. Gaps should not be provided on interstate or freeway facilities.
- Consideration should be given to the alignment of the roadway in the direction of travel from the perspective of bicyclists.
- Consideration should be given to the grade and speed at which bicyclists may be traveling.

become sunken below the pavement surface, utility covers should be installed flush with the adjacent street surface and/or adjusted when streets are reconstructed or resurfaced.

Shoulder Rumble Strips

A shoulder rumble strip is a safety feature for motorists installed on a paved shoulder near the outside edge of the travel lane. It is made of a series of milled or raised elements intended to alert inattentive drivers (through vibration and sound) that their vehicles have left the travel lane. Rumble strips are placed as a countermeasure for driver error, rather than street deficiencies, and are typically used on high speed facilities in rural areas. They are less applicable on urban and suburban street types. Where they are used, rumble strips on shoulders should be designed to lessen impacts on other users (specifically bicyclists). Shoulder rumble strips with a narrow offset of 9 inches or less from the edge of the pavement marking (travel lane) have been shown to be the most effective, because the driver is alerted sooner and it provides a slightly larger recovery area after being alerted.

Characteristics of and concerns about rumble strips that limit their usefulness or application include low traffic speeds, noise for adjacent residences, limited pavement width, presence of curb and gutter, significant turning movements, and other conflicts for motorists, pedestrians and bicyclists.

Bicyclists are affected by rumble strips. As legal street and road users, bicyclists may be in the travel lane, but where paved shoulders are available and clear, bicyclists will often use them to avoid conflicts with faster moving vehicles in the travel lane. As described in Chapters 3 and 4, paved shoulders, if wide enough, can be an appropriate facility type for bicyclists on some higher speed roadways, such as parkways or rural roads. There are a number of measures that should be considered to accommodate bicyclists when installing rumble strips:

- Wide outside paved shoulders improve safety for all highway and road users. Where existing cross-section exists or is available, allow

at least four feet beyond the rumble strips to the edge of the paved shoulder. Where guardrail, curb or other continuous obstructions exist, additional width (2 feet extra width) may be needed to provide adequate clearance for bicyclists.

- Bicycle gaps (recurring short gaps) should be designed in the continuous rumble strip pattern to allow for ease of movement of bicyclists from one side of the rumble to the other. A typical pattern is gaps of 10 to 12 feet between groups of the milled-in elements at 60 feet intervals.
- Decreased width of rumble strip and/or decreased offset width to the edge line (travel lane) may provide additional space usable to bicyclists.

Rumble strips have typically been used in rural areas where run-off-road crash problems exist, and their use on urban freeways and possibly urban parkways should be determined on the merit of the street cross-section and context. Rumble strips are generally not necessary on other complete street types. Installation will be considered on rural roads where posted speed limits and/or statutory speeds are at 55 miles per hour and above. Installation will be considered along specific rural roads where significant numbers of run-off-road-crashes that include any form of motorist inattention has been identified.

