The current Town of Chapel Hill policy on bicycling is that Wide Outside Lanes (WOLs) should be provided as the default. WOLs are like Bike Lanes (BLs) without the restrictive stripe. Technically, any lane wider than the 12ft standard is a WOL, (many local lanes are less than 12 ft). Where WOLs are used, 14 ft have typically been prescribed and usually function well, but often 15 ft is ideal, and 16 ft can also be warranted in certain situations.

Examples of amply wide outside lanes include eastbound Franklin St in front of University Square, parts of Rosemary St, most of Cameron Ave, Estes Dr on the hill from the library to Estes Elementary, parts of Piney Mt road, and others. Airport Road has 13 ft lanes from Estes Dr. to Rosemary St., but these should be 15 ft instead.

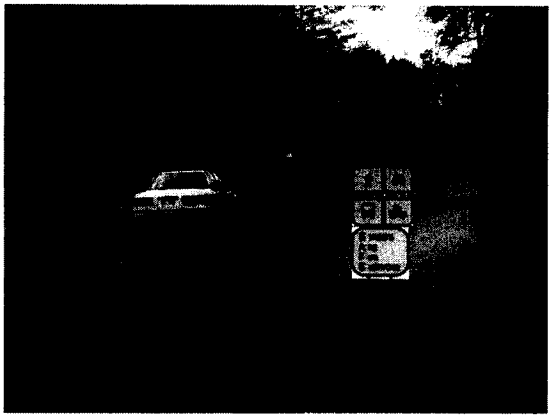

Figure 1. WOL treats users equally. Shown with proposed signs .

Figure 2. Same road with Bike Lane. Same space; more restriction.

Bike Lanes (BLs) may be used when all of the following extraordinary conditions are met:

- Roads with 35 mph and 45 mph speed limits
- Intersections are minimal, with limited cross traffic
- Few driveway cuts
- Limited turning movements
- Descents with high speeds (>25 mph) are not an issue

The current policy is being challenged by the Transportation Board which seeks to make BLs the default provision. There is strong rationale for adhering to the current policy and for providing the space without the stripe. WOLs do everything BLs do, but better, and have none of the down sides of BLs.

- It must be emphasized that the issue is not whether to provide additional space on roads or not. The issue is whether that space will be marked with a BL or left alone as a WOL.

- It is also critical to note that virtually all research or data that exists on BLs and its effects (such as alleged increases in riding or safety) do NOT make the comparison with equal WOLs equally promoted. Thus all research and data are flawed with respect to our case.

- **Segregation by Vehicle Type with BLs Discriminates Against Bicyclists.**

  - The design criteria for the safety of standard width or WOLs used by vehicles as a general class, including bicycles, are superior to much narrower BLs at the side of the road intended for bicycles as a specific class.

  - When a BL is placed, bicyclists suffer a net loss of freedom to use the remainder of the road. Bicyclists are held, either by discriminatory laws, implicitly, or through motorist coercion to stay in the narrow, inferior BL space unless there is justification to leave it. The stay-right mis-education that the stripe conveys to bicyclists and motorists alike makes using the adjacent defacto "motor vehicle lane(s)" less likely and less appealing.

  - Without the stripe, bicyclists usually ride on the right side of the lane, but can freely choose with impunity to use as much or as little of the lane as their speed and destination positioning requires.

  - Militant motorists and traffic averse bicyclists have the same aspiration; to get bicyclists out of the way of "real" traffic, behind a BL stripe or off the road entirely onto sidepaths and sidewalk "Bike Paths."

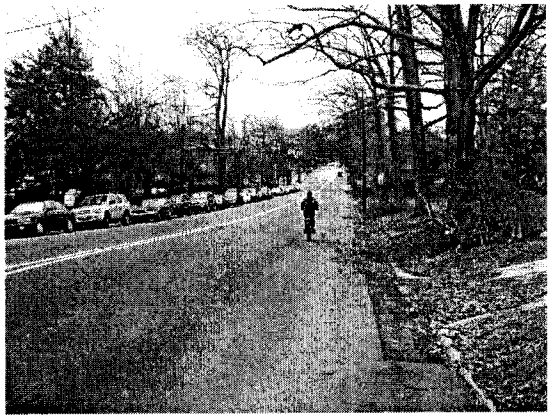

Figure 3. On Cameron Ave WOL bicyclists choose lateral position based on context, not on what a stripe tells them to do.

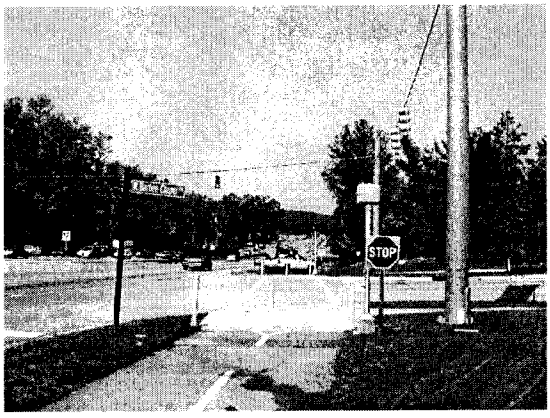

Figure 4. Bicyclists at Meadowmont sidepath are forced to stop even when road has a green light.

Figure 5. Raleigh Rd sidewalk Bike Path (The sign is still there!) teaches that bicyclists should not be in road.

- **Segregation by Vehicle Type is Inconsistent with Standard Roadway Design Practice and Traffic Theory.**

  - BLs segregate based on vehicle type using a substandard width lane at the right side of the road, a strategy incongruous with standard design practice and traffic operations in which the principles of uniformity, simplicity, and speed and destination positioning govern. The non-standard practice of BL construction creates exceptions to these principles, and thus operational problems.

  - A WOL, which is simply a widened normal lane, is consistent with standard roadway design practice and traffic theory, more readily enabling proper lateral destination and speed positioning than with a BL, and thus theoretical model user behavior for bicyclists and motorists.

  - The vast majority of roads have no BLs, are not feasible to have BLs, do not need BLs, and will never have BLs. Therefore, "training" bicyclists and motorists that BLs are needed by implementing sparse BLs does a disservice to both, and results in bicyclists who are capable of riding only on the few BL roads that may exist.

  - Providing WOLs, width without stripes, enables comfortable bicycling without sending any segregation message that can be misinterpreted. COEXIST with Safe Roads Are For Everyone (SAFE) and USE FULL LANE signs inform motorists and empower bicyclists.

Figure 6. Model behavior for turning left. BLs not only don't help, they hinder.

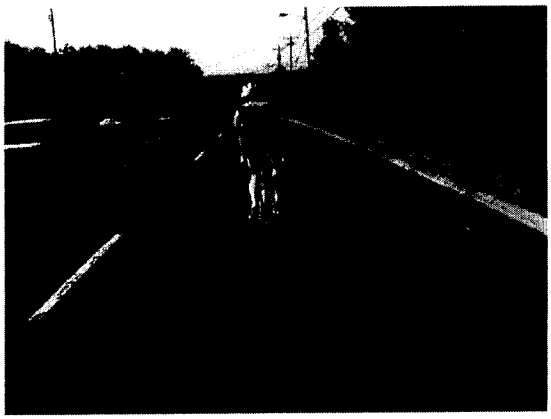

Figure 7. Model behavior in preparation for a high speed descent.

- **High Speed Bicycling in BLs is Dangerous.**

  - Because of Chapel Hill's steep topography which results in 35+ mph bicycling descents, and its urban character with numerous intersections, driveways, and turning movements, the conditions for a BL are met only on 15-501 Bypass. All other roads are better served by providing the space without the stripe.

  - At speeds of 20 mph or more, bicyclists require more room than BLs afford. Many less steep hills, (ie Cameron; West Franklin; Rosemary St) in Chapel Hill easily result in 20mph.

  - At high bicyclist speed, speed differential with motor vehicles is minimal so BLs offer no possible potential advantage, only disadvantages.

  - High speed descending in wet conditions in which bicyclist braking capability is far reduced (unlike motor vehicles on which drum and disc brakes are not greatly affected by water), further necessitates use of more space than BLs afford.

  - I have written an entire separate paper that describes the inherent dangers of riding at the side of the road, especially at high speed.

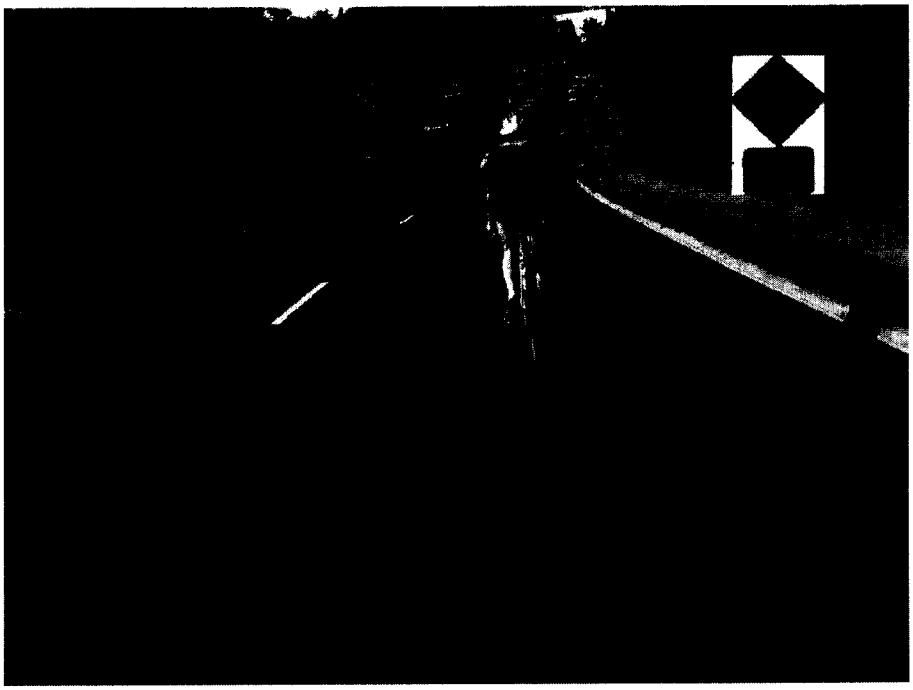

Figure 8. High speed descending requires considerable room.
The USE FULL LANE sign is valuable to bicyclists and motorists.

- **Bike Lanes Harbor Debris.**

  - The wind and tire blast of motor vehicles sweeps ubiquitous sand, gravel, vegetative, and trash debris across the BL stripe into the BL. This inherent debris in BLs is a nuisance and hazard, and would be a grave hazard on the high speed descents common in Chapel Hill, where braking is crucial and a flat tire potentially disastrous.

  - In a WOL, the lateral variability of motor vehicles and typically slightly narrower width (15 ft is ideal, as compared to a BL with standard lane which is a minimum of 16 ft) results in the debris being pushed further roadside and out of bicyclists traveled way.

  - Even if BLs are periodically swept at considerable cost, they are debris filled in the interim periods. WOLs are kept clear continuously at no cost.

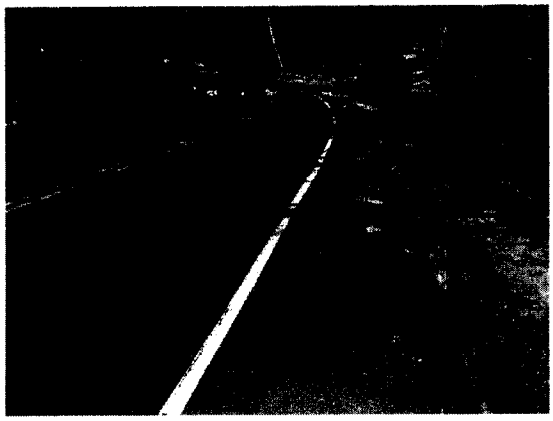

Figure 10. Country Club Rd. has typical debris in the BL.

Figure 9. Country Club Rd. WOL close to Raleigh Rd. is naturally kept clear.

- **Addressing False Claims of BL Supporters.**

  - BL supporters often claim advantages of BLs. However, these claims are not supported when carefully scrutinized. BL proponents often promulgate research and "advocacy data" that support their viewpoint even though the studies that produced the data are methodologically flawed or biased, the conclusions reached aren't justified by the data, and even if the data are demonstrably bogus. Some are unaware of these data failings, while others are well aware, and their continued declaration can only be described as malfeasance. Some people contend it's better to not tell the truth, the whole truth and nothing but the truth. It's called inducing "benefit of the doubt."

- **Claim: "BLs increase safety."**
  - No methodologically valid research has shown that BLs increase safety as compared to equal WOLs.
  - Analysis of actual accidents shows that riding near the side of the road is a precipitating condition, and BLs force bicyclists to ride near the side of the road.

Figure 11. Motorist encroachment from Estes Dr. WOL has no safety disadvantage.

- **Claim: "BLs increase bicycle riding."**
  - No methodologically valid research has shown that BLs increase riding as compared to equal WOLs equally promoted.
  - Space and the promotion of the space can increase riding.
  - Making it miserable or prohibitive to drive a car can increase riding, as has been done in places where there is high ridership.

- **Claim: "Experienced bicyclists don't care about beginners."**
  - All experienced bicyclists were at one time beginners, and so well know what that is like.
  - In some cases, educating oneself beyond the average of the constituency can lead one to make conclusions with which novices disagree. This may lead to accusations of elitism or special interest. However, if the educated decision provides for better overall performance for the novice user despite the novice's stated preference, this is not unreasonable representation. The representative has a responsibility to make educated decisions that protect the rights and needs of the constituency even when the approach may seem counterintuitive.
  - Knowledgeable bicyclists who are skeptical of BLs are *very* concerned about the safety of "less seasoned" bicyclists. They have studied the causes of car-bike collisions and the mis-education of the public that BL stripes create.
  - Those who promote BLs do so to try to encourage novice cyclists to ride on busy roads without any knowledge about safe bicycle driving practices. BLs give a false sense of security, and promoting such is unethical.

- **Claim: "Bike Lanes are Popular."**
  - Space is popular. Space is often associated with roads with shoulders and BLs.
  - Call a WOL a "Superior Bicycling Lane" and put in nice signs and it will be popular.
  - There has developed a self sustaining infrastructure of bureaucrats, consultants, activists etc. who gain employment, and thus have a vested interest, from the construction of BLs and other segregated facilities.
  - Popular things are not always the best.
  - If you tell bicyclists it is dangerous to ride in the streets and BLs are necessary, pleasant, and inherently safe, you create a BL dependent population.
  - People are unduly afraid of bicycle riding because the dangers of bicycling have been sensationalized by bicyclists themselves, health care professionals, and the media. BL proponents tap into this Culture of Fear.

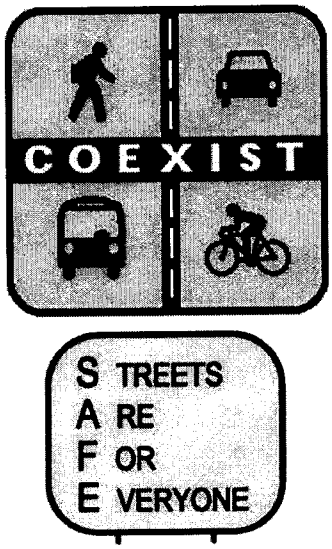

Figure 12. A message of integration and cooperation.

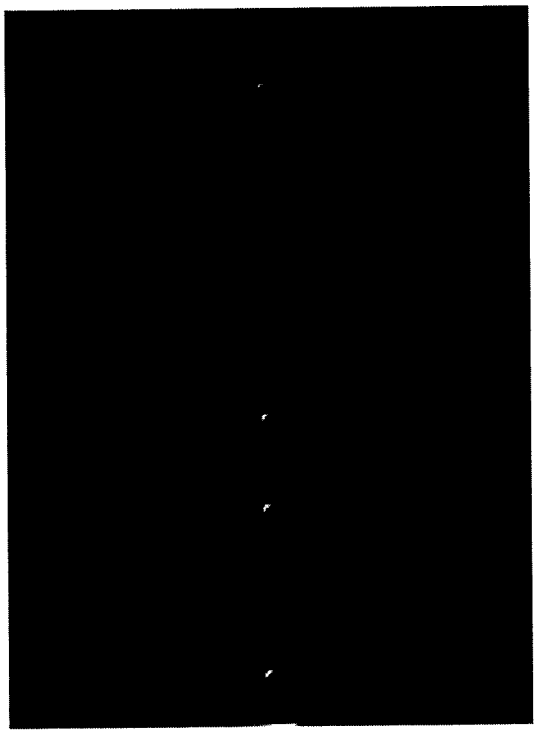

Figure 13. W7-5 sign with supplemental plaque.

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250 Indian Trail
Chapel Hill