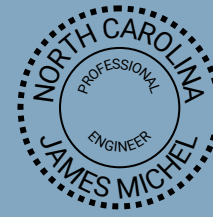


FROM THE DESK OF:

James Michel, P.E.
Town Engineer



THE ENGINEERING OF POSTED SPEEDS

Setting a speed limit for a roadway involves a combination of engineering principles and safety philosophies. The process is not arbitrary and is based on a systematic evaluation of various factors to strike a balance between efficient traffic flow and safety. The goal is to establish a speed limit that is both safe and reasonable, considering the road's characteristics, traffic conditions, and the behavior of drivers.

Design Speed: Roadways are initially designed to accommodate certain speeds taking into account road geometry, sight distance, and other factors. Roads with sharp curves, steep grades, or poor visibility often have lower speed limits so drivers have time to react to potential hazards. Posted speed limits are generally 5MPH less than the design speed. If a speed limit change is requested, an engineering and traffic investigation may occur to determine the appropriate speed limit based on several factors including the below:

85th Percentile Speed: This is the speed at or below which 85% of drivers travel under normal conditions. Using the 85th percentile helps avoid posting speed limits that are artificially low, which can become difficult to enforce. The 85th percentile speed helps to inform what the posted speed should be, as most people drive at the speed they are comfortable with, regardless of the speed limit (and unless speed enforcement is actively present).

Road Characteristics: Road surface and shoulder conditions, alignment, sight distances, and roadway curves could be reevaluated as conditions can change over time.

Nearby Activity: The types of development along the road are considered. Higher-density areas, school zones, or residential neighborhoods often require lower speed limits to protect pedestrians and cyclists. Similarly, roads with frequent intersecting streets or driveways may have lower speed limits to account for vehicles entering and exiting the road.

Traffic Volume & Flow: High traffic volumes or congestion may necessitate lower speed limits to maintain safe distances between vehicles.

Crash History: The history of accidents on the road is crucial. Roads with a high frequency of accidents may have reduced speed limits to improve safety.

North Carolina law sets speed limits within towns at 35 mph, unless otherwise posted. For state-maintained roads in Southern Pines, both NCDOT and the town must concur before changing the speed limit. Regular reviews and adjustments are made to speed limits to account for changes in road conditions and traffic patterns. Ultimately, the aim is to ensure the safety of all road users while maintaining efficient traffic flow.

FROM THE DESK OF:

Nick Polidori
Chief of Police



SPEED ENFORCEMENT

The town-wide speed limit in Southern Pines is 35 MPH, unless otherwise posted. Whether drivers actually follow speed limit signs depends on a complex interplay of factors, including enforcement, road conditions, social influences, and personal attitudes. Effective speed limit compliance often requires a combination of enforcement, education, and infrastructure improvements to create an environment where drivers are more likely to adhere to posted limits for the sake of safety.

85th Percentile Speed: SPPD deploys radar detection devices to gather data on local roads, including speed studies and traffic counts. This data includes the 85th percentile speed, which helps guide an informed decision on whether a posted speed should be changed. A posted speed that is below the 85th percentile is generally considered to be artificially low. As a result, it rarely changes driver behavior and makes it difficult for police to reasonably enforce.

Will lowering the posted speed limit reduce speeding? Many people believe that decreasing speed limits will reduce motorist speed. However, changing the speed limit is not always the best option. Speed limits are set at a limit that the roadway can safely accommodate by design and that the majority of drivers will obey.

Engineering studies and enforcement data have shown that there are often no significant changes in vehicle speeds if a speed limit is artificially reduced. This is because most motorists drive at the speed they consider to be comfortable and safe. Lowering the speed limit by itself will not guarantee that drivers will obey the new regulation.

What if I have a speeding problem in my neighborhood? Speeding on residential streets is a common complaint reported to SPPD. If you feel that drivers are regularly exceeding the speed limit along a particular road, please let us know. As a first step, we may deploy our radar devices to study the conditions.

Be aware that neighborhood traffic often contributes to the problem and the majority of speed offenders are residents of that neighborhood and not other drivers “cutting through.” Homeowners’ associations can often be an effective partner in public education to reach those drivers.

What about stop signs, traffic signals, and speed bumps? Stop signs and traffic signals are important traffic control devices to assign right of way at intersections. Their purpose is not to control vehicle speeds. Overusing them reduces both their effectiveness and driver compliance.

Speed bumps slow drivers at one particular point in the roadway. While multiple speed bumps may slow some drivers overall, others instead accelerate between them, having an opposite effect on the desire to slow drivers.

DOES KNOLL RD. WARRANT A LOWER SPEED LIMIT?

During a community meeting on August 29, 2023, Longleaf residents inquired about the possibility of lowering the speed limit on Knoll Road, between Airport Rd. and Midland Rd., from the current 40 MPH to 35 MPH. By applying these same engineering philosophies and looking to guidance published by NCDOT, we can assess whether 40 MPH is reasonable for Knoll Road or if a lower speed is warranted.

85th Percentile Speed: The Town conducted speed studies on Knoll Rd. in March 2023. The average speed was 37.7 MPH. The 85th percentile speed was 43.9 MPH, which would actually support a posted speed of 45 MPH for Knoll Road.

Design Speed: Knoll Road appears to fall within most normal engineering standards for horizontal curvature for a posted speed of 40 MPH. The access points off of Knoll Road also meet the recommended sight distance. Vertical curvature will be studied during the engineering work for the upcoming multi-modal project. Collector roads like Knoll typically have travel lanes that are 9-12 feet wide. Knoll Rd. has 11' travel lanes, plus a 1' shoulder. The existing center turn makes all travel lanes feel much wider, which generally make drivers feel comfortable traveling at a higher speed.

Nearby Activity: The posted speed limit is reasonable for the surrounding residential neighborhood. Per NCDOT guidance, the presence of 10 or more access points within a mile might warrant a reduction of 2.5 MPH. This stretch of Knoll Road has 12 driveways in just over 1.22 miles or 10.1 access points/mile. No change is recommended given the wide spacing between the driveways. The addition of the multi-modal facility may warrant a lower speed limit, as the volume of pedestrians and cyclists is expected to increase.

Traffic Volume & Flow: Knoll Road has an average daily trip count of 3,302 vehicles/day and does not experience significant congestion. Based on these factors, 40 MPH is reasonable.

Crash History: There is not a significant crash record that would support lowering the speed limit.

Based on all of these factors, a 40 MPH posted speed is reasonable for this section of Knoll Rd. Reducing the speed limit with the current road layout is not recommended. Speed limit signs have been shown to have very little effect on driver behavior. Most drivers will drive at the speed at which they feel safe. The current configuration of Knoll Road which gives the impression of a wide, open corridor actually lends itself to drivers feeling comfortable at a higher speed.

The best way to reduce speed on a road is through the use of appropriate engineered traffic calming techniques, like reduced corridor widths and the inclusion of multi-modal facilities. The addition of the multi-modal path to Knoll Rd. would warrant another review of the posted speed limit to determine if 35 MPH would be reasonable then.