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MEMORANDUM

TO: Mayor and Town Council

FROM: W. Calvin Horton, Town Manager

SUBJECT: Traffic Signal at the Intersection of Stateside Drive and NC 86

DATE: April 23, 2001

The purpose of this memorandum is to update the Council on our work with the North Carolina Department of Transportation regarding the installation of traffic signals at the intersection of Stateside Drive and NC 86.

The attached ordinance would increase the speed limit on NC 86 north of Estes Drive from 35 mph to 45 mph at the request of the North Carolina Department of Transportation. Increasing the posted speed limit would enable the State to recommend installation of a traffic signal at the intersection of Stateside Drive and NC 86 for traffic control purposes.

The Manager does not recommend adoption of the attached ordinance.

BACKGROUND

For the past several years the Town Council has expressed interest in having a traffic signal installed at the intersection of Stateside Drive and NC 86. This interest increased with the widening of NC 86 to a four-lane median-divided roadway which includes a median break at the Stateside Drive intersection.

Starting in late 1996, during development of the NC 86 widening plans by the State, Town staff and the Council submitted correspondence and inquiries to the Department of Transportation requesting that traffic signals be installed at the Stateside Drive/NC 86 intersection.

The State agreed to evaluate the intersection to determine whether or not traffic signals were warranted. Studies were performed by the State, with assistance from Town staff, in early 1998, in early 1999, and in early 2000. These studies determined that traffic signals were not warranted at the intersection, based on data and conditions at the time of the studies.

In March 2000, the Council passed a resolution directing the Manager to have Town staff analyze the Stateside Drive/NC 86 intersection to determine whether or not the necessary standards for signalization existed. This spring, Town and State staff again collected and analyzed traffic signal warrant data relating to this intersection.

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DISCUSSION

The results of our recent analysis again determined that, based on existing conditions, the installation of traffic signals at the Stateside Drive/NC 86 intersection was not warranted. Our study included review of traffic volumes, vehicle types, speeds, accident records, pedestrian activity, and intersection characteristics.

The data and accident records do not suggest that unusual traffic conditions or safety problems exist at and around the intersection. We did note that traffic speeds on NC 86 are routinely in excess of the posted 35mph speed limit. The 85th percentile speed for truck traffic is 47mph and for automobile traffic is 49mph. (Note: The 85th percentile speed is the speed at or above which 85 percent of the vehicles are traveling during the data collection period.)

Because of the speed data, we asked the State to run another signal warrants analysis based on a posted speed of 45 mph rather than 35 mph. Under these conditions, the State determined that it could recommend installation of traffic signals at the Stateside Drive/NC 86 to control and manage traffic if NC 86 had a posted speed limit of 45 mph, that would more closely approximate the 85th percentile speed. Please refer to the attached letter from the State Traffic Engineer which provides the State's perspective.

CONCLUSION

We are reluctant to recommend an increase in the posted speed limit on NC 86 from 35 mph to 45 mph. Although we realize that the NC 86 roadway characteristics (based on a design speed of 50 mph) and driver comfort levels result in many drivers routinely traveling at speeds of nearly 50 mph, we are concerned that a similar trend in speed limit violations could occur even if the posted limit is increased. It is possible that 85th percentile running speeds could increase to 55-60 mph if the speed limit is increased without significantly more speed limit enforcement. We already routinely enforce the speed limit on NC 86, but we do not have Town resources available to provide significantly expanded or continuous speeding enforcement on NC 86.

We think that conditions should remain as they are, and that the Town and State should continue to periodically study the Stateside Drive/NC 86 intersection for traffic signal warrants, as we do at other locations around Town. As conditions change, it is possible that signalization will be warranted in the future with the posted 35 mph speed limit intact.

MANAGER'S RECOMMENDATION

That the Council take no action at this time regarding the installation of traffic signals at the intersection of Stateside Drive and NC 86.

If the Council desires to increase the posted speed limit on NC 86 from 35 mph to 45 mph as suggested by the North Carolina Department of Transportation, the attached ordinance would do so with an effective date to coincide with the installation of a traffic signal at the intersection of Stateside Drive and NC 86. The NCDOT Area Traffic Engineer has agreed to the effective date for the speed limit change being associated with the installation of the traffic signal.

ATTACHMENT

1. Letter from NCDOT dated March 23, 2001 (p. 4).

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AN ORDINANCE AMENDING CHAPTER 21 OF THE TOWN CODE OF ORDINANCES REGARDING SPEED LIMITS (2001-04-23/O-1)

BE IT ORDAINED by the Council of the Town of Chapel Hill as follows:

Section 1. Section 21-11 of the Town Code "Speed Regulations" is hereby amended by deleting the following:

"thirty-five miles per hour:

~~(d) Airport Road (NC 86) from a point 0.10 mile north of Estes Drive northward to the corporate limits of Chapel Hill."~~

Section 2. Section 21-11 of the Town Code "Speed Regulations" is hereby amended by inserting the following in appropriate alphabetical order:

"forty-five miles per hour:

(f) Airport Road (NC 86) from a point 0.10 mile north of Estes Drive northward to the corporate limits of Chapel Hill."

Section 3. This ordinance shall become effective concurrently with the full operation of traffic signals at the intersection of Stateside Drive and NC 86.

This the 23rd day of April, 2001.



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

March 23, 2001

LYNDO TIPPETT
SECRETARY

RECEIVED MAR 28
CHAPEL HILL ENGINEERING

In Reply Refer To
File No: 7-00-01

Mr. Kumar Neppalli
Traffic Engineer
Town of Chapel Hill
306 North Columbia Street
Chapel Hill, North Carolina 27516-2113

Dear Mr. Neppalli:

This is in response to a meeting with Area Traffic Engineer John Grant on March 6, 2001 concerning the request for a traffic signal at the intersection of NC 86 (Airport Road) and Stateside Drive in Chapel Hill, Orange County.

The Department of Transportation adheres to standards and guidelines found in the *Manual on Uniform Traffic Control Devices* (MUTCD). The MUTCD is recognized by the Federal Highway Administration (FHWA) and adopted by all fifty states in an effort to standardize the use and installation of traffic control devices such as signs, signals, and pavement markings. The MUTCD has signal warrants that we use as guidelines, in addition with good engineering judgement, when determining if an intersection needs a traffic signal. These warrants use previously established thresholds to assess traffic operations and traffic safety for the intersection being studied.

Traffic volumes that you provided were analyzed under traffic signal warranting guidelines found in the MUTCD. These warrants consider factors such as traffic volumes, pedestrian volumes, number of travel lanes, posted speed limit, and accident data. Analyzing the traffic volumes using the existing posted speed limit of 35 mph revealed that none of the warranting criteria was met to justify installation of a traffic signal. It should also be noted that a review of the accident history at this location did not show any accidents that would be correctable by installation of a traffic signal.

NC 86 was recently widened to a multi-lane facility from I-40 to SR 1777 (Homestead Road) under TIP Project U-2302. Speed limits are commonly established in roadway improvements by design speed, and the design speed incorporated into this project was 50 mph. Based on the nature of this roadway and the 50 mph design speed used in this project, a 45 mph speed limit is reasonable and meets motorist expectations for this type facility. Thus, the Department of Transportation recommends that the speed limit along NC 86 be increased to 45 mph from I-40 to SR 1750 (Estes Drive).

Subsequently, another traffic signal analysis was conducted using a speed of 45 mph. This analysis revealed that one traffic signal warrant is met based on 45 mph.

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Therefore, if the Town of Chapel Hill concurs with increasing the speed limit on NC 86 to 45 mph, the Department will recommend a traffic signal at this location. Improvements of this nature are usually funded through Spot Safety Program projects. If the Town of Chapel Hill desires to move forward with the speed limit increase, we will include this traffic signal project on our Spot Safety Program "On Hold" list. Unfortunately, the source of funds for safety improvements of this nature is limited, and this project will have to compete on a statewide basis with other similar projects.

Please let us know at your convenience if the Town of Chapel Hill wishes to increase the speed limit on NC 86 and proceed with adding this location to our list of projects awaiting funds.

If you have any questions or need additional information, please let me know.

Yours very truly,


J. M. Lynch, P.E.
State Traffic Engineer

JML:jhg

cc: J. Douglas Galyon, Board of Transportation Member
David King, Deputy Secretary
Daniel H. DeVane, Deputy Secretary
J. H. Grant, P.E., Area Traffic Engineer