

BOARD OF ALDERMEN

ITEM NO. D(4)

AGENDA ITEM ABSTRACT

MEETING DATE: October 16, 2012

TITLE: Follow-up Information on the Oak-Poplar Neighborhood Traffic Circulation Study and West Main Street Road Diet

DEPARTMENT: Planning	PUBLIC HEARING: YES ___ NO <u>X</u> ___
ATTACHMENTS: A. Resolution	FOR INFORMATION CONTACT: Jeff Brubaker – 918-7329

PURPOSE

This item provides a follow-up report on Board directions from the March 27, 2012, public hearing regarding traffic circulation and nonmotorized transportation safety in the Oak-Poplar neighborhood.

INFORMATION

At the March 27 meeting, the Board received the Oak-Poplar Neighborhood Traffic Circulation Study and West Main Street Road Diet Study and public comments on the studies from residents of the neighborhood. The studies are combined as sections of a single report prepared by consultants Martin/Alexiou/Bryson. The Board directed staff to research eight options related to traffic circulation and safety for bicyclists and pedestrians.

1. Reducing the speed on Oak Ave.

The current speed limit on Oak Ave. is 20 MPH. Each intersection includes an all-way stop condition. The 85th percentile speed for the 100 block of Oak Ave. was measured between 24 and 26 MPH in 2007.

Federal Highway Administration (FHWA) guidance states:

The typical procedure is to set the speed limit at or near the 85th percentile speed of free-flow traffic. Adjustments to either increase or decrease the speed limits may be made depending on infrastructure and traffic conditions...

The 85th percentile speed method is also attractive because it reflects the collective judgment of the vast majority of drivers as to a reasonable speed for given traffic and roadway conditions. This is aligned with the general policy sentiment that laws (i.e., speed limits) should not make people acting reasonably into law-breakers. Setting a speed limit even 5 mph (8 km/h) below the 85th percentile speed can make almost half the drivers illegal; setting a speed limit 5 mph (8 km/h) above the 85th percentile speed will likely make few additional drivers legal.

Under the operating speed method of setting speed limits, the first approximation of the speed limit is to set the speed limit at the 85th percentile speed. The MUTCD [Manual on Uniform Traffic Control Devices] recommends that the speed limit be within 5 mph (8 km/h) of the 85th percentile speed of free-flowing traffic. The posted speed limit shall be in multiples of 5 mph...

...it is important to note that setting speed limits lower than 85th percentile speed does not encourage compliance with the posted speed limit [emphasis in original].¹

Reducing the speed limit below 20 MPH would be unlikely to change vehicle speeds by itself. A more effective method of reducing speeds is to change the design of a street. The Oak-Poplar study recommends a detailed engineering study to design traffic calming measures on Oak Ave. Section #5 further discusses traffic calming on Oak Ave.

2. Creating a striped sidewalk and exploring the combination of a one-way street with sidewalk on Oak Avenue

The current width of Oak Ave. is 20.6 feet. Installing a 5-ft. sidewalk behind the curb may impact properties. Installing a 5-ft. sidewalk in front of the curb would reduce the width of the street to 15.6, substantially below the 20-ft. minimum width for a fire apparatus access road stipulated in Sec. 503.2.1 of the 2009 N.C. Fire Code. In addition, no sidewalk is currently scheduled or funded.

A striped walkway would delineate an area for pedestrians to walk without lessening pavement width. Poplar Ave. has a striped walkway on the north side of the street, which is established in the Town Code. A downside of striped walkways is that they offer no physical separation between pedestrians and motor vehicles. With lower-speed local streets, the risks to pedestrian safety may be of a lower magnitude, but they are still present.

Comments on this topic have been sought from the Fire Dept. and will be provided at the meeting if available by then.

A one-way street would allow for adequate lane width given a striped walkway. The feasibility of a one-way street is discussed in the next section.

3. Oak Avenue becoming one-way with a north-only direction

On March 27, staff recommended a course of action, should the Board of Aldermen elect to consider making Oak Ave. one-way. A recommended next step would be to conduct a traffic impact assessment (TIA) to determine the effect that converting Oak Ave to one-way traffic would have on adjacent streets in the neighborhood. This would include traffic counts to determine existing volumes at intersections and street segments and an estimation of traffic volumes in a one-way scenario. The scoping part of the TIA process would determine what intersections and segments would be included in the analysis. Other considerations could include the effect of the one-way conversion on vehicle miles traveled (VMT), greenhouse gas emissions, and vehicle speeds. Input should also be sought from Chapel Hill-Carrboro City

¹ http://safety.fhwa.dot.gov/speedmgt/ref_mats/fhwasal2004/, footnotes removed.

Schools and Carrboro Elementary, as one-way conversion would impact school bus routes. It is also assumed the TIA would be reviewed by the Transportation Advisory Board.

If, after reviewing the TIA, the Board determines that the one-way conversion would be feasible, the street would need to be signed appropriately. This would include “Do Not Enter”, “One Way” arrow, and turning prohibition signage. Alterations at the Greensboro-Oak intersection may also be needed with the intention of preventing right turns onto Oak Ave.

The one-way conversion would also apply to bicycle traffic. If maintaining the option of two-way bicycle traffic is desired, southbound bicycle traffic would need to be accommodated in some way. Contraflow bike lanes have been used in other cities and towns; however, it would need to be confirmed whether there is enough space to accommodate both a contraflow bike lane and walking aisle. Contraflow shared lane markings – where bicyclists are permitted to travel in the opposite direction in the same lane as motorists (on narrower, lower-speed streets where potential conflicts can be negotiated in advance) – have been implemented in some European cities but have not been implemented in the U.S.

As stated in the March 27 agenda item abstract, a detailed traffic impact analysis would require collection of traffic data, analysis, recommendations, public outreach, and Board/advisory board presentations, and may require 200 or more staff hours to complete. If it is desired that the TIA be conducted by a registered engineer, a consultant would need to be procured. Assuming 200 hours and a billable (direct + overhead + fee) hourly rate of between \$80 and \$120, a rough cost estimate for procuring a consultant would range between \$16,000 and \$24,000.

4. A raised pedestrian island at the intersection of Oak Avenue and Greensboro

A raised pedestrian island is a recommendation of both the Safe Routes to School Action Plan and Oak-Poplar study. A refuge island would serve as a resting point for pedestrians crossing the widened approach of Oak Ave. and could have a traffic calming effect on right-turning vehicles. It is not recommended that a refuge island be pursued until the question of one-way conversion of Oak Ave. is resolved, since this could affect refuge island placement, or even whether a refuge island is needed.

5. A speed bump or table on Oak Avenue

The Residential Traffic Management Plan (RTMP) outlines the process for neighborhoods to request traffic calming measures. A speed table placed at the 100 block of Oak Ave. was found to have reduced 85th-percentile speeds within the 200 block by 3-7 MPH.

One option that could be considered is a trial traffic calming measure at one or more locations along Oak Ave. This has been used to test the effectiveness of a curb extension recommended in the Safe Routes to School Action Plan at the Hillsborough Rd. intersection. This requires staff time to set up and maintain the measure (e.g. orange cones or delineators outlining a curb extension, choker, or chicanes) and communicate with neighbors. While in general there has been positive feedback on the Hillsborough-James trial measure, some concerns have been expressed about the aesthetics of the cones.

6. The exploration of a painted pedestrian refuge island near East Poplar

This has been explored with NCDOT as part of the W. Main St. Road Diet. NCDOT believes a painted curb extension at the southeast corner of the intersection could function similarly to a painted refuge island and also serve as a visual cue for northbound right-turning vehicles.

7. The possibility of a crosswalk near East Poplar

The preliminary pavement marking plan submitted to NCDOT included a crosswalk across the southern approach to the intersection, connecting the gas station corner with the corner near the gym and chiropractic office.

A crosswalk across the northern approach has a challenge due to the skew of the intersection. This makes the crossing length 100 ft.

8. The studies should factor in, as best as possible, the traffic impact from Shelton Station

It is possible that future studies could factor in this traffic impact. The most recent version of the Shelton Station TIA estimates the following peak hour turning movements into the neighborhood from the proposed development.

Movement	AM peak trips	PM peak trips
Eastbound through (from Shelton St. into Shelton Station)	1	1
Westbound through (from Shelton Station onto Shelton St.)	1	2

West Main Street Road Diet

NCDOT believes that the resurfacing of the W. Main St. road diet segment could take place as early as next summer. Confirmation is being sought on this schedule.

This fall, NCDOT has painted dotted lines on the street to visualize the new lane configuration. Staff will continue to coordinate with NCDOT staff on the implementation schedule.

FISCAL AND STAFF IMPACT

No fiscal or staff impacts accrue from receiving the follow-up report.

As stated previously, the cost to conduct a TIA for a one-way conversion could be between \$16,000 to \$24,000 if done by a consultant. Funding is not currently available in this budget year to accommodate such a study.

RECOMMENDATION

Staff recommend that the Board of Aldermen consider the resolution in *Attachment A*.