


Lexington-Fayette Urban County Government
DEPARTMENT OF ENVIRONMENTAL QUALITY & PUBLIC WORKS

Jim Gray
Mayor

David L. Holmes
Commissioner

**DIVISION OF TRAFFIC ENGINEERING
MEMORANDUM**

TO: Ms. Jennifer Scutchfield, 7th District Councilmember
FROM: 
Roger T. Mulvaney, P.E., Traffic Engineer
DATE: August 29, 2014
SUBJECT: Multi-way Stop Analysis at Blazer Parkway & North Eagle Creek Drive

Based on an internal Division of Traffic Engineering request, a warrant study was completed at the intersection of Blazer Parkway & N. Eagle Creek Drive to determine the feasibility of installing a multi-way stop at this intersection. The *Manual on Uniform Traffic Control Devices (MUTCD) – 2009 Edition* criteria was used in the analysis of the intersection to determine if a multi-way stop is warranted at this location. The following is the warrant criteria used in the analysis:

Guidance:

The decision to install multiway stop control should be based on an engineering study.

The following criteria should be considered in the engineering study for a multiway STOP sign installation:

- A. Where traffic control signals are justified, the multiway stop is an interim measure that can be installed quickly to control traffic while arrangements are being made for the installation of the traffic control signal.
- B. A crash problem, as indicated by 5 or more reported crashes in a 12-month period that are susceptible to correction by a multiway stop installation. Such crashes include right- and left-turn collisions as well as right-angle collisions.
- C. Minimum volumes:
 1. The vehicular volume entering the intersection from the major street approaches (total of both approaches) averages at least 300 vehicles per hour for any 8 hours of an average day, and
 2. The combined vehicular, pedestrian, and bicycle volume entering the intersection from the minor street approaches (total of both approaches) averages at least 200 units per hour for the same 8 hours, with an average delay to minor-street vehicular traffic of at least 30 seconds per vehicle during the highest hour, but
 3. If the 85th percentile approach speed of the major-street traffic exceeds 40 mph, the minimum vehicular volume warrants are 70 percent of the above values.
- D. Where no single criterion is satisfied, but where Criteria B, C.1., and C.2 are all satisfied to 80 percent of the minimum values. Criterion C3 is excluded from this condition.

Option:

Other criteria that may be considered in an engineering study include:

- A. The need to control left-turn conflicts.
- B. The need to control vehicle/pedestrian conflicts near locations that generate high pedestrian volumes.
- C. Locations where a road user, after stopping, cannot see conflicting traffic and is not able to reasonably safely negotiate the intersection unless conflicting cross traffic is also required to stop; and
- D. An intersection of two residential neighborhood collector (through) streets of similar design and operating characteristics where multiway stop control would improve traffic operational characteristics of the intersection.

Multi-way stop signs comprise a form of intersectional control that may enhance or diminish traffic safety. The *Manual on Uniform Traffic Control Devices (MUTCD)* defines warrant criteria to determine whether multi-way stop signs would have a greater potential for a positive or a negative impact on traffic conditions. The *MUTCD's* warrants for multi-way stop controls focus on two areas of concern: (1) traffic volumes and congestion and (2) a collision history that would be susceptible to correction with the installment of multi-way stop signs.

Speed data was collected on Blazer Parkway at the intersection with N. Eagle Creek Drive. Data revealed that the 85th percentile speeds were 41.30 mph on eastbound Blazer Parkway and 44.10 mph on westbound Blazer Parkway. Based on this speed data, there will be a reduction in the volume requirements as allowed in the *MUTCD* warrant criteria. The average 8-hour traffic volume which was collected on the major approaches of Blazer Parkway revealed 286 vehicles per hour or 136% of the volume required. The average 8-hour traffic volume which was collected on the minor approach of N. Eagle Creek Drive revealed a total of 169 vehicles per hour or 121% of the volume required. **The major and minor street approach volumes meet the warrant criteria.**

A review of the collision history at this intersection revealed three (3) collisions in the 3 years prior to this analysis. Based on the warrant criteria, that is, a collision history of five (5) or more collisions in a 12-month period that are susceptible to correction by installation of a multiway stop, **the collision warrant is not met at the intersection of Blazer Parkway & N. Eagle Creek Drive.**

As part of this study, the Division of Traffic Engineering conducted a field and geometric review of the intersection of Blazer Parkway & N. Eagle Creek Drive. Blazer Parkway is 60 feet wide from curb to curb west of N. Eagle Creek Drive and is 40 feet wide east of N. Eagle Creek Drive. A double yellow centerline is present on both Blazer Parkway approaches to the N. Eagle Creek Drive intersection. North Eagle Creek Drive is 40 feet wide from curb to curb but does not have a double yellow centerline. Both streets are classified as collector streets with 35 mph speed limits. Street lighting is provided on both Blazer Parkway and N. Eagle Creek Drive. Parking is not permitted on N. Eagle Creek Drive, but is allowed on Blazer Parkway in the vicinity of this intersection.



Figure 1: Aerial of Blazer Parkway & N. Eagle Creek Drive

Based on the volume of traffic at the intersection, **the Division of Traffic Engineering recommends the installation of multiway stop controls at the intersection of Blazer Parkway & N. Eagle Creek Drive.**

If you have any questions, please contact me anytime at rmulvaney@lexingtonky.gov or via Lexcall 311.

RTM

cc: David L. Holmes, Commissioner of Environmental Quality & Public Works
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