



MEMORANDUM

To: Mayor and City Council

From: Kent Collins, P.E., Director of Public Works

Date: September 11, 2018

Reference: Update on traffic study at Winding Hollow and Sandy Lake

2030: Sustainable City Government, Goal 3
Excellent and Well-maintained City Infrastructure and Facilities

General Information:

- Staff recently commissioned a traffic study at the intersection of Winding Hollow and Sandy Lake to determine if additional traffic control is warranted.
- The traffic study included evaluation of traffic signal warrants and sight distance.
- This item will provide an update on that study.

Introduction:

This agenda item is being presented to provide an update on the results of a traffic study of the intersection of Sandy Lake and Winding Hollow.

History:

A review of crash data for the subject location reveals that three crashes have occurred at or near the intersection during the past three years. One of those crashes could have potentially been preventable by installation of a traffic signal. One of the crashes, which occurred in July, 2018, was a fatality but would not have been preventable by installation of a traffic signal.

Analysis:

The City has adopted the Texas Manual on Uniform Traffic Control Devices (TMUTCD) as its guide for the installation of traffic control on public streets. The TMUTCD sets the standard of practice for installation of traffic control and includes warrants for the installation of traffic signals. Further, the AASHTO "A Policy on Geometric Design of Highways and Streets" provides design criteria for streets and intersections that relates design controls to vehicular speed. Criteria contained in these two documents were referenced in the execution of this study.

The study that was performed by Lee Engineering evaluated the need to install a traffic signal at the intersection of Sandy Lake and Winding Hollow. The analysis considered the nine separate warrants to be considered when determining if a traffic signal is justified. If one or more warrants is met, a decision must then be made by the governing body whether installation of a traffic signal is the appropriate solution.

The warrants evaluated include:

- Warrant 1: Eight-hour vehicular volume;
- Warrant 2: Four-hour vehicular volume;
- Warrant 3: Peak hour;
- Warrant 4: Pedestrian volume;
- Warrant 5: School crossing;
- Warrant 6: Coordinated signal system;
- Warrant 7: Crash experience;
- Warrant 8: Roadway network;
- Warrant 9: Intersection near a Grade Crossing.

Based upon the results of the study, none of the warrants were met for this intersection. Based on this evaluation, a traffic signal is not recommended for this intersection.

The study further evaluated sight distance at the intersection to ensure safe operating conditions. AASHTO provides two separate criteria when evaluating streets and intersections. The first is stopping sight distance and is a measure of whether a motorist traveling along a road has adequate sight distance to see, react and stop when they see an object in the road ahead of them (in this case, another vehicle). Based on the study, the sight distance available for both eastbound and westbound traffic approaching Winding Hollow exceeds the recommended stopping sight distance. The second sight distance is intersection sight distance, which is the distance that a vehicle stopped on the side street needs to see an approaching vehicle, identify an acceptable gap, and merge smoothly into traffic. Based on the study, this location is deficient in intersection sight distance for three of the four approaches. As a result, staff has already installed intersection ahead warning signs to enhance the level of warning to approaching motorists.

Legal Review:

No legal review was necessary for this item.

Fiscal Impact:

There is no fiscal impact associated with this item.

Recommendation:

This item is an update and no action is recommended.