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To: Brian Kuhn, PE, Assistant Director

From: Adam Levy, PE, Senior Engineer

Date: 6/29/2026

RE: Stop Warrant study for E New Hope Dr & Mayfield Ranch Blvd

The City of Round Rock Public Works Department completed a stop warrant study for the intersection of E New Hope Drive and Mayfield Ranch Boulevard, located within the corporate limits of the City of Round Rock, Texas. The purpose of the study was to document existing conditions and evaluate whether all-way stop control is appropriate at this location. The following summarizes the study methodology, results, and recommendation.

EXISTING CONDITIONS

E New Hope Drive is classified as an arterial and currently consists of one travel lane in each direction. The roadway is planned to ultimately function as a four-lane arterial connection to IH-35 and Westinghouse Road. Mayfield Ranch Boulevard is a residential collector street serving areas north and south of E New Hope Drive. The posted speed limit within the study area is 30 mph. Stop control is currently provided on the Mayfield Ranch Boulevard approaches.

DATA COLLECTION

National Data & Surveying Services collected 48 hours of intersection turning-movement data. The data was reviewed and evaluated against the applicable all-way stop control guidance contained in the Texas Manual on Uniform Traffic Control Devices (TMUTCD). A location map and the study results are included in Appendix A.

The following summarizes the primary TMUTCD guidance used in evaluating all-way stop control at this intersection:

- The decision to install multi-way stop control should be based on an engineering study.
- Vehicular volume entering the intersection from the major-street approaches, total of both approaches, should average at least 300 vehicles per hour for each of any 8 hours of an average day.
- All-way stop control may also be installed where an engineering study indicates that it is needed due to other factors, including intersections of streets with similar design and operating characteristics where all-way stop control would improve traffic operations.

RESULTS AND RECOMMENDATIONS

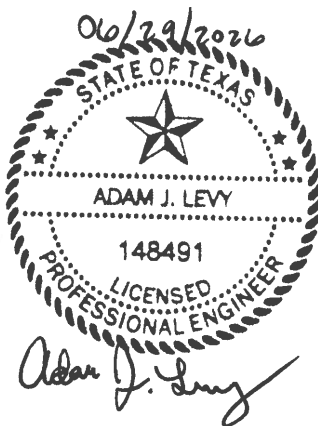
Based on the study results and engineering evaluation, all-way stop control is recommended at the intersection of E New Hope Drive and Mayfield Ranch Boulevard.

The 8-hour volume warrant was not independently satisfied because the major-street and minor-street volume thresholds were not both met for each of the same eight hours. However, the observed volumes were at or near the applicable thresholds during the study period and support further consideration of all-way stop control when evaluated with the current operating characteristics of the intersection.

E New Hope Drive is classified as an arterial and is planned to ultimately serve as a four-lane arterial connection to IH-35 and Westinghouse Road. Under existing conditions, however, E New Hope Drive operates more similarly to a lower-speed collector-type roadway in this area. Mayfield Ranch Boulevard also functions as a residential collector street, and the current intersection operation is more balanced than would typically be expected at a fully developed arterial-collector intersection.

Considering the near-threshold traffic volumes, existing roadway configuration, posted 30 mph speed limit, current operating characteristics, and interim condition prior to the full extension of E New Hope Drive, all-way stop control is recommended at this location.

The recommendation is to install all-way stop control at the intersection, as shown in Figure 1.



Appendix A



Figure 1 – Intersection Location

City of Round Rock
E New Hope Road and Mayfield Ranch Blvd
PC Warrant 2 Report

Study Name: New Hope & Mayfield Ranch

Study Date : 6/22/2026

Multiway Stop Warrants - Summary

Major Street Approaches

Northbound: Mayfield Ranch Blvd
 Number of Lanes : 1
 Total Approach Volume: 2,027

Southbound: Mayfield Ranch Blvd
 Number of Lanes : 1
 Total Approach Volume: 2,982

Minor Street Approaches

Eastbound: E New Hope Rd
 Number of Lanes : 1
 Total Approach Volume: 2,342

Westbound: E New Hope Rd
 Number of Lanes : 1
 Total Approach Volume: 379

Warrant Summary (Urban Values Apply)

Criteria A - Interim Measure	Not Evaluated
If traffic signals are justified, stop signs can be installed as an interim measure.	
Criteria B - Crash Experience	Not Satisfied
Number of crashes (0) is less than minimum required (5).	
Criteria C - Minimum Volumes and Delays	Not Satisfied
Average Delay Per Vehicle (01.0) is less than minimum required (30). Average of 8 highest hours meets or exceeds volume criteria Average delay field observed to be below 30 seconds.	
Criteria D - 80% of Volumes, Delays, and Crashes	Not Satisfied
Average Delay Per Vehicle (01.0) is less than minimum required (24). Number of crashes (0) is less than minimum required (4). Average of 8 highest hours meets or exceeds volume criteria	

Criteria C Volume Summary

Time	Major Total	Major Avg	Minor Total	Minor Avg	Major Crit	Minor Crit	Meets?
17:00 - 18:00	446	359.5	313	211.4	300	200	Yes
16:00 - 17:00	374		262				
18:00 - 19:00	358		257				
07:15 - 08:15	453		144				
15:00 - 16:00	333		227				
08:15 - 09:15	385		128				
19:00 - 20:00	258		193				
14:00 - 15:00	269		167				
13:00 - 14:00	294		136				
09:15 - 10:15	290		118				
11:15 - 12:15	267		129				
20:00 - 21:00	215		155				

Criteria D Volume Summary

Time	Major Total	Major Avg	Minor Total	Minor Avg	Major Crit	Minor Crit	Meets?
17:00 - 18:00	446	359.5	313	211.4	240	160	Yes
16:00 - 17:00	374		262				
18:00 - 19:00	358		257				
07:15 - 08:15	453		144				
15:00 - 16:00	333		227				
08:15 - 09:15	385		128				
19:00 - 20:00	258		193				
14:00 - 15:00	269		167				
13:00 - 14:00	294		136				
09:15 - 10:15	290		118				
11:15 - 12:15	267		129				
20:00 - 21:00	215		155				

PC-Warrants Report

Figure 2 – PC-Traffic 2 Program Output