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SPEED ZONE STUDY FOR CALDER DRIVE BETWEEN ERVIN STREET AND CROSS COLONY DRIVE

INTRODUCTION

The purpose of this study is to evaluate the existing speed limit on Calder Drive between Ervin Street and Cross Colony Drive and determine the appropriate speed limit for the given roadway conditions. This report presents the existing conditions, data collection, analysis, study findings and recommendations of the study.

EXISTING CONDITIONS

The study corridor on Calder Drive between Ervin Street and Cross Colony Drive, is located in League City, Texas. **Exhibit A** shows an aerial view of the study area.

CALDER DRIVE

Calder Drive between Ervin Street and Cross Colony Drive is a 37-foot wide, approximately 1.1 mile long concrete 3-lane roadway. The typical cross-section consists of one 12-foot lane in each direction separated by a center turn lane.

SPEED ZONES

The existing speed limit on Calder Drive between Ervin Street and Cross Colony Drive is 30 miles per hour (mph). The school zone speed limit for Calder Road Elementary School along Calder Drive is 20 mph during school arrival and dismissal period. The extents of the school speed zone are shown in **Exhibit A**. The speed limit on Calder Drive, just north of the study stretch between Ervin Street and Turner Street is 35 mph.

DATA COLLECTION

Data collection for the speed zone study included site investigation, traffic volume data, spot speed data and crash data on Calder Drive between Ervin Street and Cross Colony Drive.

SPOT SPEED DATA

24-hour traffic volume data and spot speed data were collected for seven days (between October 24, 2023, 3:00 PM to October 31, 2023, 3:59 PM) by the Public Works Department of City of League City. The traffic volume and spot speed data are provided in **Exhibit B**.

CRASH DATA

Crash data on Calder Drive between Ervin Street and Cross Colony Drive were obtained from the TxDOT Crash Records Information System (C.R.I.S.) for a study period between 2021 and 2022. All intersection related crashes were removed from the analysis to identify speed related safety issues along the study corridor. From the data extracted, a total of 2 crashes occurred during the study period. No speed related crashes were reported in the study stretch during the study period. A summary of the crash data is provided in **Exhibit C**.

ANALYSIS – 85th Percentile Speed

The 85th percentile speed is the speed at or below which 85% of drivers are traveling on a road segment. The American Association of State Highway and Transportation Officials (AASHTO) recommends using the 85th percentile speed as a starting point for setting speed limits. The use of the 85th percentile speed to determine the speed limit is supported for the following reasons:

- It is a good indicator of what drivers perceive to be a safe and reasonable speed. When the speed limit is set at or below the 85th percentile speed, most drivers are likely to comply.
- It promotes uniform traffic flow. When most drivers are traveling at or below the speed limit, there is less variation in speed between vehicles, which can lead to safer driving conditions.
- It can help to reduce the number and severity of crashes.

The 85th percentile speed for the northbound and southbound approach of the study stretch on Calder Drive was determined from the spot speed data collected. A summary of the 85th percentile data collected is provided in **Table 1**.

Table 1 Summary of Spot Speed Data

Study Location		Approach	Posted Speed Limit	85 th Percentile Speed
Calder Drive Between Ervin Street and Cross Colony Drive.		Northbound	30 mph	46 mph
*Data collection location was outside the School Speed Zone of Calder Road Elementary.		Southbound	30 mph	46 mph

STUDY FINDINGS AND RECOMMENDATIONS

The existing speed limit on Calder Drive between Ervin Street and Cross Colony Drive is 30 mph. The 85th percentile speed on the southbound approach and northbound approach of the study stretch was estimated to be 46 mph based on the spot speed data collected. Since the posted speed limit is lower than the 85th percentile speed, it is recommended to increase the speed limit to reduce the dispersion of driver speeds on the study stretch.

The school speed zone limit for Calder Road Elementary School on Calder Drive is 20 mph during school arrival and dismissal period. Revising the speed limit on the study stretch to 35 mph will not impact the school zone speed limit for Calder Road Elementary School. Increasing the speed limit above 35 mph may require raising the school zone speed limit above 20 mph.

City of League City Major Thoroughfare Plan (2018) designates Calder Drive as a collector street. Revising the speed limit to 35 mph will make the speed limit consistent with the default speed assigned to a collector based on the City Design Standards.

Based on engineering judgment, existing conditions, and findings of the speed zone study, it is recommended to increase the speed limit on Calder Drive, between Ervin Street and Cross Colony Drive from 30 mph to 35 mph.