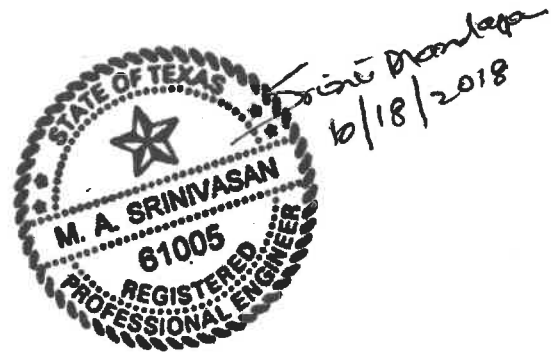


## MEMORANDUM

October 18, 2018



**TO:** Mathew Holzapfel, P.E.  
Director of Public Works

**FROM:** Srinu Mandayam, P.E.  
Manager of Traffic Engineering

**SUBJECT:** Speed Limit study on Motley Drive between Gus Thomasson Road and Town East Boulevard.

Traffic Engineering staff completed a speed limit study on Motley Drive between Gus Thomasson Road and Town East Boulevard. The request was initiated by the City Manager's office. The following are different components of the study:

### Roadway Description

Motley Drive is classified as a C2 collector street, in an 80' Right Of Way, in the Thoroughfare Plan. It was re-designed and constructed this year, as a divided concrete street, with curb & gutter, approximately 4500' in length, with a design speed of 45 MPH. Majority of the roadway section is constructed as a one lane in each direction through the residential section and the section of the roadway at the signalized intersections of Gus Thomasson Road and Town East Boulevard is built to accommodate right turn and left turn lanes.

### Traffic Control

Motley Drive intersects as a signalized intersection with Town East Boulevard at the north end, and also as a signalized intersection with Gus Thomasson Road, at the south end. Streets that are classified as Local in our Thoroughfare Plan - Whit Drive, Moreland Drive, Mark Drive, Northview Drive, Larchmont Drive, Greenhill Drive, Eastbrook Drive, Cumberland Drive and Bellhaven Drive, intersect Motley Drive as intersections, and are Stop sign controlled, at respective approaches.

Motley Drive is designated as a 20 MPH school zone between Mark Drive and Eastbrook Drive, and is activated by school zone flashers during the ingress and egress of Tosch Elementary School, located on Larchmont Drive approximately 200' east of Motley Drive. Approximately 300 elementary school age children cross Motley Drive at Larchmont Drive, with traffic control provided by a school crossing guard, during ingress and egress from school.

### Roadway Design Elements

Slight horizontal curve exists on the section of the roadway from Gus Thomasson Road to Whit Drive, as well as from Mark Drive to Greenhill Drive, otherwise straight and level through the majority of the roadway section. Motley Drive serves as a main feeder roadway, to Tosch Elementary School, located on Larchmont Drive, approximately 200' east of Motley Drive. Majority of the roadway section is striped for one travel lane in each direction, with the exception of the intersections with Town East Boulevard, Gus Thomasson Road, and Larchmont Drive, where exclusive turn lanes are provided.

### Traffic Volumes and 85<sup>th</sup> percentile speeds

Motley Drive carries approximately 4800 vehicles per day (approximately 2400 vehicles per day in either direction). The average 85<sup>th</sup> percentile speed for both directions is indicated at 42 MPH. The traffic counts taken in 2015 indicated a total of approximately 5000 vehicles per day, with an 85<sup>th</sup> percentile speed of 36 MPH.

### Accident History

A three-year accident history indicates a total of fourteen (14) accidents – seven (7) accidents at the intersection of Motley Drive and Town East Boulevard (6 Property Damage, 1 Injury), three (3) accidents at the intersection with Gus Thomasson Road, and four (4) mid-block accidents, in the referenced section of the roadway.

### Land Use

Calling Motley Drive as north-south roadway, commercial/retail zoning exists at approximately 300 feet south of Town East Boulevard, and at approximately 300 feet north of Gus Thomasson Road. On the south/east side of the roadway, school related zoning exists in approximately 1200 feet south of Town East Boulevard. All the rest of the zoning comprises of mostly residential use, with a combination of Church, and day care, with a dozen homes fronting the section of the roadway, just south of Larchmont Drive.

### Texas Department of Transportation (TxDOT) Speed Zone Guidelines

TxDOT has established guidelines in Procedures for establishing Speed Zones, which states that Speed Limits on all roadways should be based on spot speed studies and 85<sup>th</sup> percentile operating speed. If an existing roadway's speed limit is to be raised or lowered, the roadways roadside features need to be carefully examined to determine if modifications may be necessary to maintain roadside safety.

### Texas Manual on Uniform Traffic Control Devices (TMUTCD) Speed Zone guidance

The speed zone guidance in the TMUTCD Section 2B.13 states that speed zones shall only be established on the basis of an engineering study that has been performed in accordance with traffic engineering practices. The engineering study shall include an analysis of the current speed distribution of free flowing vehicles.

### City policy concerning setting speed limits

City Code Section 9-86 adopts the latest edition (2011) of the TMUTCD as the official traffic control manual for city, together with any revisions or amendments. City Code Section 9-144 authorizes the City Manager to submit a recommendation to the City Council, on the basis of engineering and traffic surveys on the reasonable and safe maximum safe speed limits on each street within the corporate limits of the City.

### Discussion

The previously posted speed limit on Motley Drive was 35 MPH, with a four lane divided configuration. The configuration of the newly constructed roadway, is one travel lane in each direction, with turn lanes established at Town East Boulevard, Gus Thomasson Road, and Larchmont Drive. Also, parallel parking has been allowed on the pavement in the section where residential development fronts the roadway. A school zone has been established approximately 300 feet north/south of Larchmont Drive, to serve the students attending Tosch Elementary School, located approximately 200 feet east of Motley Drive. A marked crosswalk has been established at the intersection of Larchmont Drive, with the deployment of two school crossing guards to facilitate the crossing of approximately 300 students during each school ingress and egress times.

### Recommendations

From our overall analysis of the roadway design, safety, intended use, existing land use and roadside features, we recommend posting a new Speed Limit of 30 MPH, in the referenced section of the roadway.