

Old Stage Road Speed Study

Introduction

The Town of Williston requested the Chittenden County Regional Planning Commission (CCRPC) staff for a speed study on Old Stage Road north of Mountain View Road to determine a safe and appropriate speed limit. In order for a Legislative Body to determine a safe and reasonable speed on town highways, a traffic engineering investigation (speed study) is required by the Vermont Statutes Annotated Title 23, § 1007. This document provides supporting findings that were used to develop recommendations for setting a speed limit for Old Stage Road.

Existing Conditions

Old Stage Road is paved and classified by the state as a Class III Town Highway. The CCRPC installed an Automatic Traffic Recorder (ATR) on Old Stage Road at the location shown in Figure 1 to collect traffic volume and speed data. Speed and volume data were collected between August 21, 2017 and August 26, 2017. Figure 1 shows the study area and ATR location.



Figure 1: Study Area and ATR Location

Findings of Windshield Survey

A windshield reconnaissance survey was conducted in both travel directions on Old Stage Road to identify safety related issues, roadway characteristics, sight distance and roadside safety hazards. The following is a list of findings from the windshield survey:

1. The total length of study area along Old Stage Road is 0.70 miles. The roadway width of Old Stage Road varies between 18 ft and 22 ft from Mountain View Road to Amber Lane, and varies between 18 ft and 14 from Amber Lane to end of the road.
2. The posted speed limit is 35 mph for the study area.
3. Driveways, mailboxes and utility poles are located along the roadway section.
4. Travel lanes and shoulders are not marked.

Speed Data Analysis

The 85th percentile speed associated with the traffic counts for eastbound direction was observed as 24 mph and for westbound was observed as 23 mph, whereas the posted speed limit is 35 mph. This indicates that 85 percent of drivers are comfortable driving at an operating speed 24 mph or less along the study corridor.

A widely used metric in setting speed limits is the 85th percentile speed. This is defined as the speed in which 85% of motorists are traveling at or below. Based on the best available evidence and previous research, speed limits set using the 85th percentile speed data are not only acceptable by the majority of motorists, but also fall within the speed range where crash risk is lowest¹. The Manual on Uniform Traffic Control Devices (MUTCD), which is adopted as the standard for all traffic control devices in Vermont (Title 23 V.S.A. Section 1025), recommends setting speed limits within 5 mph of the 85th percentile speed while taking into consideration other factors such as roadway characteristics, shoulder condition, grade, the speed pace, land uses, development setbacks, parking, crash history, and bicycle/pedestrian activity.

Pedestrian Activity and Crash History Factor

As mentioned above, other factors should be considered in determining a safe and reasonable speed limit. No crashes were reported between 2012 and 2016 along Old Stage Road between Mountain View Road and end of the road. No pedestrian data are available to factor in the speed study analysis.

¹ Synthesis of Speed Zoning Practice, FHWA-RD-85-096, Technical Summary.

Table 1: Technical Summary

Municipality:	Town of Williston
Road Name:	Old Stage Road
Location:	North of Mountain View Road
Recommended Speed Limit:	25 mph
Evaluation By:	Sai Sarepalli, P.E. Transportation Planning Engineer
Final Report Document Date:	11/28/2017

85th Percentile Speed (mph):	ATR Location 24 MPH : Eastbound 23 MPH : Westbound
10 mph Pace Speed (mph) & Percentage in the range	ATR Location 16-25 MPH: Eastbound (76.0 %) 16-25 MPH: Westbound (75.5 %)
Average Test Car Speed (mph)	25 MPH
Safe Speed at Curves and/or Intersections:	25 MPH
Average Daily Traffic (Vehicles per Day)	ATR Location: 90 ADT (08/21/17 – 08/26/17)
Town Highway and Functional Classification	Class III Town Highway – Local Road
Road Surface	Paved
Road Width	Varies between 14 ft and 22 ft
Shoulder Surface	Shoulders are not marked
Shoulder Width	0 ft
Parking	No parking
Pedestrian/Bicycles	No marked bike lanes
Adjacent Land use	Residential and Agricultural

Conclusion and Recommendations

Old Stage Road is located in a residential and farming area. The roadway is a straight segment with a moderate grade. As per the observed bidirectional 85th percentile speed data, the majority of drivers are traveling at or below 24 mph. When considering the roadway characteristics, residential development and land use and crash history, **it is recommended to lower the speed limit to 25 mph for the study area.**