USLIMITS2 Speed Zoning Report

Project Overview

Project Name: Meredith State Rd

Analyst: Brett   **Date:** 2024-01-17

Basic Project Information

Route Name: Meredith State Rd
From: .22
To: 1.93
State: Ohio
County: Delaware County
City: Rural
Route Type: Road Section in Undeveloped Area
Route Status: Existing

Crash Data Information

Crash Data Years: 3.00
Crash AADT: 928 veh/day
Total Number of Crashes: 3
Total Number of Injury Crashes: 2
Section Crash Rate: 173 per 100 MVM
Section Injury Crash Rate: 115 per 100 MVM
Crash Rate Average for Similar Roads: 118
Injury Rate Average for Similar Roads: 44

Roadway Information

Section Length: 1.71 mile(s)
Statutory Speed Limit: 55 mph
Existing Speed Limit: 55 mph
Adverse Alignment: No
Divided/Undivided: Undivided
Number of Lanes: 2
Roadside Hazard Rating: 3
Transition Zone: No

Traffic Information

85th Percentile Speed: 63 mph
50th Percentile Speed: 56 mph
AADT: 928 veh/day

Recommended Speed Limit:

SPEED LIMIT 60

Note: The final recommended speed limit is higher than the 55 mph statutory speed limit for this type of road. An engineering study such as the one carried out with USLIMITS is usually required to set a speed limit above the statutory limit.

Note: The section crash rate of 173 per 100 MVM is more than 30 percent above the average for similar roads (118) but below the critical rate (282). The injury crash rate for the section of 115 per 100 MVM is more than 30 percent above the average for similar roads (44) but below the critical rate (156). A comprehensive crash study should be undertaken to identify engineering and traffic control deficiencies and appropriate corrective actions. The speed limit should only be reduced as a last measure after all other treatments have either been tried or ruled out.

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Equations Used in the Crash Data Calculations

Exposure (M)
M = (Section AADT * 365 * Section Length * Duration of Crash Data) / (100000000)
M = (928 * 365 * 1.71 * 3.00) / (100000000)
M = 0.0174

Crash Rate (Rc)
Rc = (Section Crash Average * 100000000) / (Section AADT * 365 * Section Length)
Rc = (1.00 * 100000000) / (928 * 365 * 1.71)
Rc = 172.65 crashes per 100 MVM

Injury Rate (Ri)
Ri = (Section Injury Crash Average * 100000000) / (Section AADT * 365 * Section Length)
Ri = (0.67 * 100000000) / (928 * 365 * 1.71)
Ri = 115.10 injuries per 100 MVM

Critical Crash Rate (Cc)
Cc = Crash Average of Similar Sections + 1.645 * (Crash Average of Similar Sections / Exposure) ^ (1/2) + (1 / (2 * Exposure))
Cc = 117.88 + 1.645 * (117.88 / 0.0174) ^ (1/2) + (1 / (2 * 0.0174))
Cc = 282.15 crashes per 100 MVM

Critical Injury Rate (Ic)
Ic = Injury Crash Average of Similar Sections + 1.645 * (Injury Crash Average of Similar Sections / Exposure) ^ (1/2) + (1 / (2 * Exposure))
Ic = 43.99 + 1.645 * (43.99 / 0.0174) ^ (1/2) + (1 / (2 * 0.0174))
Ic = 155.54 injuries per 100 MVM