



MR. JOHN POELMA

Laramie County Public Works
13797 Prairie Center Circle
Cheyenne, WY 82009

SPEED STUDY



REESE ROAD (CR 131) BETWEEN U.S. HIGHWAY 30 AND EAST FOUR MILE ROAD LARAMIE COUNTY, WY



INBERG-MILLER ENGINEERS

350 Parsley Blvd
Cheyenne, WY 82007
(307) 635-6827
www.inberg-miller.com

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June 14, 2024

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THIS CONSTITUTES THE ORIGINAL

John Poelma
Laramie County Public Works
13797 Prairie Center Circle
Cheyenne, WY 82009

RE: REESE ROAD (CR 131) BETWEEN U.S. HIGHWAY 30 AND EAST FOUR MILE ROAD
SPEED LIMIT EVALUATION REPORT
LARAMIE COUNTY, WY

Dear Mr. Poelma:

This letter transmits our speed limit evaluation report for the above-referenced project. The report outlines our findings for the recommendation of speed limit as requested by Laramie County Public Works.

It has been a pleasure participating in this project.

If you have any questions or comments, please contact us at (307) 635-6827.

Sincerely,

Sincerely,

INBERG-MILLER ENGINEERS

Daniel Hayes, P.E.
Cheyenne Office Manager/Civil Engineer

REVIEWED BY

Gary Steele, P.E.
Senior Civil Engineer

DJH:GLS:bbP:\23682-HE LARAMIE COUNTY PUBLIC WORKS County Road Speed Studies\Civil\Reese Rd\23682-HE Reese Rd Speed Study Report.docx

Enclosures as stated



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1.0 INTRODUCTION

Reese Road is a paved county road from U.S Highway 30 to East Fourmile Road (MP 0.5 to MP 2.5) and has a posted speed limit of 40 mph as shown in Figure 1. The main traffic generator for this portion of Reese Road is residential access. The roadway width is 31 feet with 7 major access points and 9 minor access points which translates to 8 access points per mile. The type of terrain is flat and the adjacent land use is characterized as residential.



Figure 1: 40 mph Speed Limit Sign at MP 0.6.

2.0 TRAFFIC COUNT

The automated traffic counter was located at MP 1.7 and is shown in Appendix A. The traffic counter results are shown in Appendix B. The traffic count was recorded from October 11, 2023, to October 25, 2023, with a total of 10,847 vehicles. The Average Daily Traffic (ADT) was recorded at 723 vehicles a day and the Average Daily Truck Traffic (ADTT) was recorded at 25 trucks a day. The 85th percentile speed was calculated at 66 mph with the 50th percentile speed at 50 mph. The pace speed included 36.2% of vehicles recorded and was calculated from 42 mph to 51 mph. According to the standards, the upper bound of the recommended speed limit is the rounded 85th percentile speed that was determined at 66 mph. The lower bound is either the rounded 50th-percentile speed or the lower limit of the 10-mph pace which was determined at 50 mph. Appendix C shows a table with general information, roadway characteristics, crash data, and the range of the speed limit.

3.0 ROADWAY SAFETY

Prior to conducting the speed study on Reese Road (CR 131) between U.S. Highway 30 and East Fourmile Road (MP 0.5 to MP 2.5), a safety assessment was performed on November 10, 2023. This included a sign inventory and crash analysis.

Table 1 shows the detailed 10-year crash history from 2013 to 2022. 8 crashes occurred with 3 crashes resulting in an injury. The first harmful event shows that the most predominant crash was a motor vehicle in transport on the roadway resulting in a collision between multiple vehicles with 4 instances. There were two instances of an off-roadway collision with a fence (including a post), one instance of

overturn/rollover, and one instance of collision with a sign support single post. The time of day showed that 5 crashes occurred between 5:00 PM to 11:59 PM. The most crashes for a one-mile section of the road occurred between MP 1.5 to MP 2.5 where 4 crashes occurred. The location of each crash is shown on a map in Appendix D.

Table 1: Detailed 10-Year Crash History

MP	Year	Month	Day of the Week	Time	Crash Severity	First Harmful Event
0.527	2021	October	Saturday	8 to 8:59 AM	Property Damage Only	Motor Vehicle in Transport on Roadway
0.528	2020	April	Wednesday	8 to 8:59 PM	Property Damage Only	Motor Vehicle in Transport on Roadway
0.667	2019	May	Friday	2 to 2:59 AM	Unknown	Sign Support Single Post
1.106	2017	January	Tuesday	5 to 5:59 PM	Possible Injury	Motor Vehicle in Transport on Roadway
2.097	2018	May	Thursday	5:00 to 5:59 PM	Property Damage Only	Motor Vehicle in Transport on Roadway
2.532	2018	August	Friday	11 to 11:59 PM	Suspected Minor Injury	Overturn/Rollover
2.535	2021	November	Tuesday	4 to 4:59 AM	Suspected Minor Injury	Fence (including Post)
2.540	2013	February	Wednesday	10 to 10:59 PM	Property Damage Only	Fence (including Post)

Table 2 shows the sign inventory for Reese Road (CR 131) road from U.S. Highway 30 to East Fourmile Road. Every sign on the road was inventoried, and given a GPS location and a picture. The condition of each sign was obtained visually with the wear and type of sheeting of the sign rated. There are a total of 6 signs located between MP 0.5 to MP 2.50. The visual inspection identified 1 sign in poor condition and all signs had reflective sheeting. The locations of all 6 signs are shown on a map in Appendix E. All the signs in poor condition should be replaced and all the signs with old sheeting should be updated with new ASTM sheeting when the sign is replaced in the future.

Table 2: Sign Inventory

MP	Sign	Travel			Condition	Comment
		Direction	MUTCD	Reflectivity		
0.50	Stop	South	R1-1	Y	Good	
0.60	Speed Limit 40 mph	North	R2-1	Y	Good	
2.20	Speed Limit 40 mph	South	R2-1	Y	Good	
2.30	Right Turn Ahead	North	W1-1	Y	Good	
2.30	Advisory Speed 15 mph	North	W13-1P	Y	Poor	Cracked
2.5	Right Arrow	North	W1-6	Y	Fair	Bullet Holes

4.0 DECLARATION OF SPEEDS LIMIT

Posted speed limits (other than statutory speed limits) on Wyoming local roads should be documented by a Declaration of Speed Limit form as shown in Figure 2. Any speed limit change from the statutory limits shall be verified and sealed by a professional engineer in Wyoming. The form, with appropriate background information, should be presented to the county commission where a resolution approving the proposed speed limit should be approved. The resolution number should be added to the declaration of speed limit form. The form is then returned to appropriate county officials so that the necessary signing changes can be made. Enforcement of the new speed limit cannot occur until the appropriate signs giving notice of the new speed limit have been erected.

According to the speed study data overview summarized in Appendix C, the acceptable range of speed limit on Reese Road (CR 131) between U.S Highway 30 to East Fourmile Road (MP 0.5 to MP 2.5) is between 55 and 65 mph.

It is recommended that the speed limit be posted at 65 mph due to:

- ❖ 85th Percentile Speed and Statutory Speed

Post a 65 mph by replacing the existing 40 mph speed limit sign at MP 0.6 for northbound traffic and MP 2.2 for southbound traffic.

A US Limits 2-speed zone report was completed through the Federal Highway Administration to verify our recommended speed limit. The USLimits 2 report came back at a 65-mph speed recommendation based on inputs from our speed study report. This report can be found in Appendix F. A Laramie County representative should consider safety measures at adverse curves such as signage, advisory speeds, delineation, shoulder widening, or guardrails.

Figure 2. Declaration of Speed Limit Form for Paved Roads

DECLARATION OF SPEED LIMIT ON PAVED ROADS

LOCATION: County Road 131, Reese Road, MP 0.5 to MP 2.5.

Method Used: Visual inspection and engineering judgment.
Free flow spot speeds to determine 85th percentile speed and pace.
Procedures for locally establishing speed limits were followed.

Summary of Results:

The existing speed limit is 40 mph. The 85th percentile speed was recorded at 66.0 mph and the 50th percentile speed at 50 mph. The 10-mph pace speed was recorded from 42.0 mph to 51 mph. The roadway width is 31 feet, and the road has 16 access points along the section which translates into 8 access points per mile. There were 8 reported crashes in the last 10 years.

Recommendations:

It is recommended that the speed limit be set at 65 mph for this section of the road. Replace the existing 40 mph speed limit sign at MP 0.6 for northbound traffic and MP 2.2 for southbound traffic with a new 65 mph speed limit sign.

Data Collected by. Hayden Altenburg 11/10/2023 Data Summarized by. Daniel Hayes, P.E. 6/12/2024
Printed Name Date Printed Name Date



Approved. Daniel Hayes, P.E. _____ 6/12/2024
Professional Engineer P.E. Seal Date

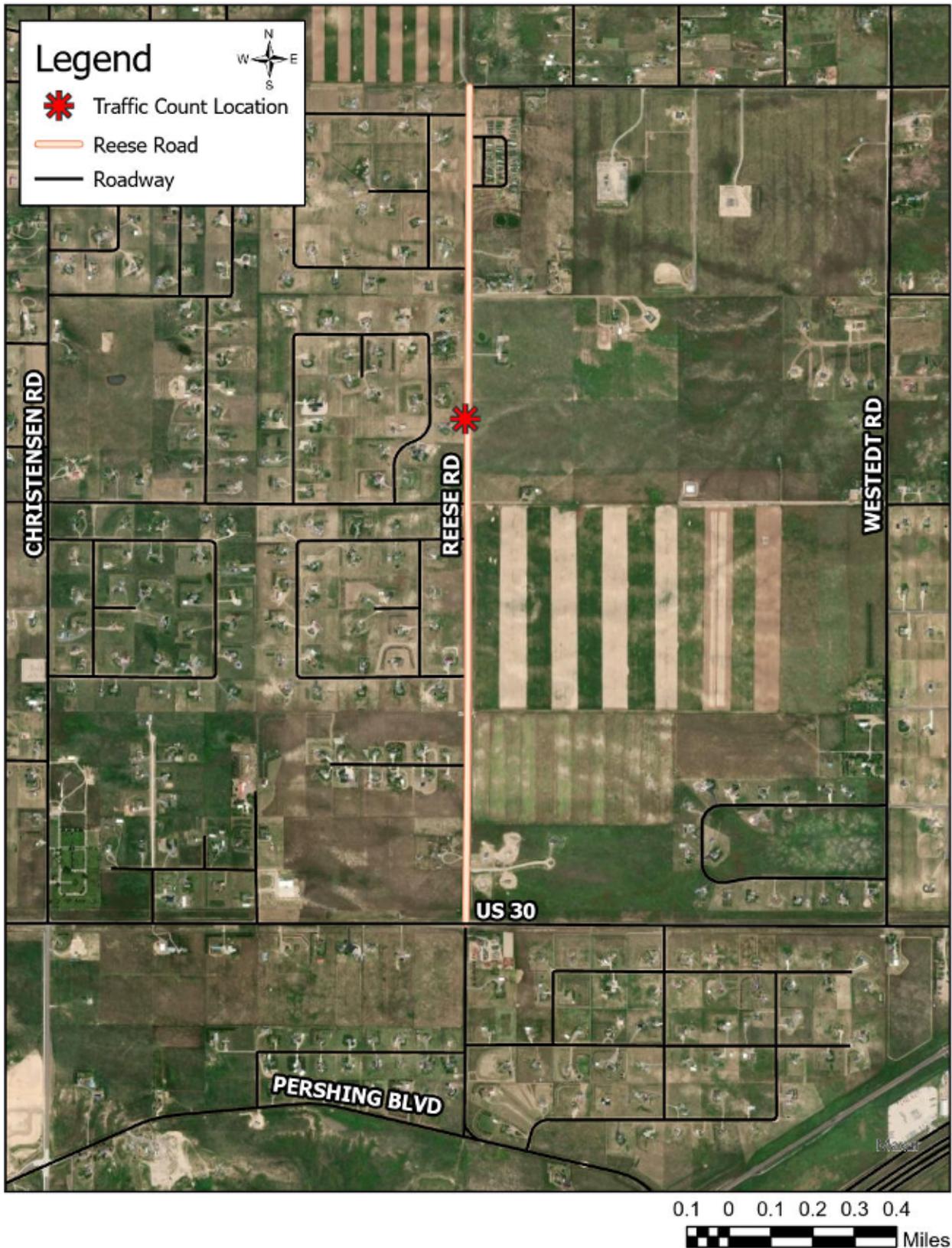
ORDER TO ESTABLISH RESTRICTED SPEED ZONE

The County Commission approves changing the speed limit to 65 miles per hour on the paved roadway section described above.

Resolution number: _____

Date: _____

Reese Road - Location Map

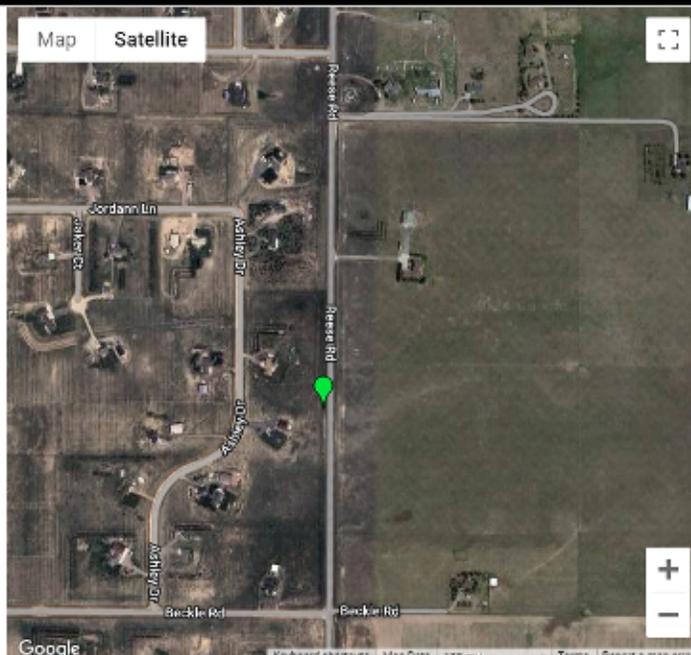


SPEED DATA ANALYSIS

Location



Latitude: 41.177010
Longitude: -104.694010



Analysis Time Period



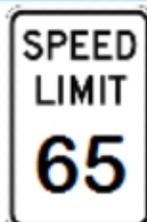
Start: 10/11/2023 10:16 AM
End: 10/25/2023 9:58 AM

Vehicles Analyzed



10,847

Speed Limit



65

Total Enforceable Violations



1,727

Average Speed



54

85th Percentile Speed



66

Fastest Speed



126

10 MPH Pace Speed



42-51

Slowest Speed



3

Default Report Title
 Use Preferences to Define Titles

Site Code: Reese Road
 Station ID: Between US Highway 30 and East
 Fourmile Rd
 Start Date: 10/11/2023
 End Date: 10/25/2023

Comment 1:
 Serial Number: 41396

Latitude: 41.177010
 Longitude: -104.694010
 GPS Accuracy: 34.16667 ft

Combined Lanes 10/11/2023 to 10/25/2023

Peak Analysis

Classes Excluded From Peaks: None

Date	AM Peak	Hour Volume	Highest Interval Time	Highest Interval Volume	Peak Hour Factor	Pm Peak	Hour Volume	Highest Interval Time	Highest Interval Volume	Peak Hour Factor
10/11/2023	10:59 AM	43	11:30 AM	16	0.67	4:49 PM	93	4:53 PM	29	0.80
10/12/2023	6:57 AM	74	7:34 AM	25	0.74	4:44 PM	89	5:26 PM	28	0.79
10/13/2023	7:19 AM	88	7:27 AM	33	0.67	5:00 PM	85	5:11 PM	24	0.89
10/14/2023	9:52 AM	51	9:58 AM	18	0.71	2:02 PM	72	2:15 PM	24	0.75
10/15/2023	10:40 AM	60	11:02 AM	20	0.75	12:24 PM	63	12:24 PM	20	0.79
10/16/2023	7:16 AM	69	7:25 AM	24	0.72	5:28 PM	93	5:31 PM	30	0.78
10/17/2023	7:03 AM	85	7:25 AM	28	0.76	3:48 PM	77	4:30 PM	24	0.80
10/18/2023	7:04 AM	79	7:26 AM	29	0.68	4:04 PM	74	4:07 PM	25	0.74
10/19/2023	7:07 AM	81	7:20 AM	28	0.72	3:51 PM	90	3:53 PM	26	0.87
10/20/2023	6:54 AM	70	7:26 AM	24	0.73	3:47 PM	87	4:01 PM	29	0.75
10/21/2023	11:00 AM	61	11:09 AM	22	0.69	1:14 PM	62	1:15 PM	18	0.86
10/22/2023	9:50 AM	58	10:13 AM	18	0.81	12:20 PM	59	12:36 PM	18	0.82
10/23/2023	7:04 AM	68	7:25 AM	22	0.77	4:35 PM	86	4:48 PM	27	0.80
10/24/2023	7:20 AM	83	7:27 AM	30	0.69	4:23 PM	93	4:50 PM	30	0.78
10/25/2023	6:55 AM	76	7:15 AM	25	0.76	No Volume				

Axle Statistics

# Axles	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Count	10458	199	162	25	1	2	0	0	0	0	0	0	0	0	0
Avg.	132.5	311.6	449.8	688.7	408.0	423.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WB
 Axles Per Vehicle: 2.0564

ADT

Date	Lane	Volume	x	User	x	Daily	=	ADT	x	Season	=
10/11/2023	A to B, None Specified	214		1.00		1.00		214		1.00	
10/11/2023	B to A, None Specified	351		1.00		1.00		351		1.00	
10/11/2023	Day Total	565						565			
10/12/2023	A to B, None Specified	403		1.00		1.00		403		1.00	
10/12/2023	B to A, None Specified	408		1.00		1.00		408		1.00	
10/12/2023	Day Total	811						811			
10/13/2023	A to B, None Specified	427		1.00		1.00		427		1.00	
10/13/2023	B to A, None Specified	424		1.00		1.00		424		1.00	
10/13/2023	Day Total	851						851			
10/14/2023	A to B, None Specified	382		1.00		1.00		382		1.00	
10/14/2023	B to A, None Specified	371		1.00		1.00		371		1.00	
10/14/2023	Day Total	753						753			
10/15/2023	A to B, None Specified	322		1.00		1.00		322		1.00	
10/15/2023	B to A, None Specified	328		1.00		1.00		328		1.00	
10/15/2023	Day Total	650						650			
10/16/2023	A to B, None Specified	403		1.00		1.00		403		1.00	
10/16/2023	B to A, None Specified	406		1.00		1.00		406		1.00	
10/16/2023	Day Total	809						809			
10/17/2023	A to B, None Specified	429		1.00		1.00		429		1.00	
10/17/2023	B to A, None Specified	414		1.00		1.00		414		1.00	

Default Report Title
 Use Preferences to Define Titles

Site Code: Reese Road
 Station ID: Between US Highway 30 and East
 Fourmile Rd
 Start Date: 10/11/2023
 End Date: 10/25/2023

Comment 1:
 Serial Number: 41396

Latitude: 41.177010
 Longitude: -104.694010
 GPS Accuracy: 34.16667 ft

Date	Lane	Volume	x	User	x	Daily	=	ADT	x	Season	=
10/17/2023	Day Total	843						843			
10/18/2023	A to B, None Specified	385		1.00		1.00		385		1.00	
10/18/2023	B to A, None Specified	386		1.00		1.00		386		1.00	
10/18/2023	Day Total	771						771			
10/19/2023	A to B, None Specified	419		1.00		1.00		419		1.00	
10/19/2023	B to A, None Specified	420		1.00		1.00		420		1.00	
10/19/2023	Day Total	839						839			
10/20/2023	A to B, None Specified	444		1.00		1.00		444		1.00	
10/20/2023	B to A, None Specified	434		1.00		1.00		434		1.00	
10/20/2023	Day Total	878						878			
10/21/2023	A to B, None Specified	349		1.00		1.00		349		1.00	
10/21/2023	B to A, None Specified	369		1.00		1.00		369		1.00	
10/21/2023	Day Total	718						718			
10/22/2023	A to B, None Specified	289		1.00		1.00		289		1.00	
10/22/2023	B to A, None Specified	292		1.00		1.00		292		1.00	
10/22/2023	Day Total	581						581			
10/23/2023	A to B, None Specified	384		1.00		1.00		384		1.00	
10/23/2023	B to A, None Specified	380		1.00		1.00		380		1.00	
10/23/2023	Day Total	764						764			
10/24/2023	A to B, None Specified	387		1.00		1.00		387		1.00	
10/24/2023	B to A, None Specified	391		1.00		1.00		391		1.00	
10/24/2023	Day Total	778						778			
10/25/2023	A to B, None Specified	181		1.00		1.00		181		1.00	
10/25/2023	B to A, None Specified	55		1.00		1.00		55		1.00	
10/25/2023	Day Total	236						236			
	Total	10847						10847			
	Average	723						723			

**SPEED STUDY DATA OVERVIEW (REESE ROAD BETWEEN U.S HIGHWAY 30 AND EAST
FOURMILE RD. CR 131)**

GENERAL INFORMATION	
LOCAL JURISDICTION:	Laramie County
ROUTE:	CR 131
LOCATION:	Reese Road (Between U.S. Highway 30 and East Fourmile Rd.)
DATE:	11/10/2023

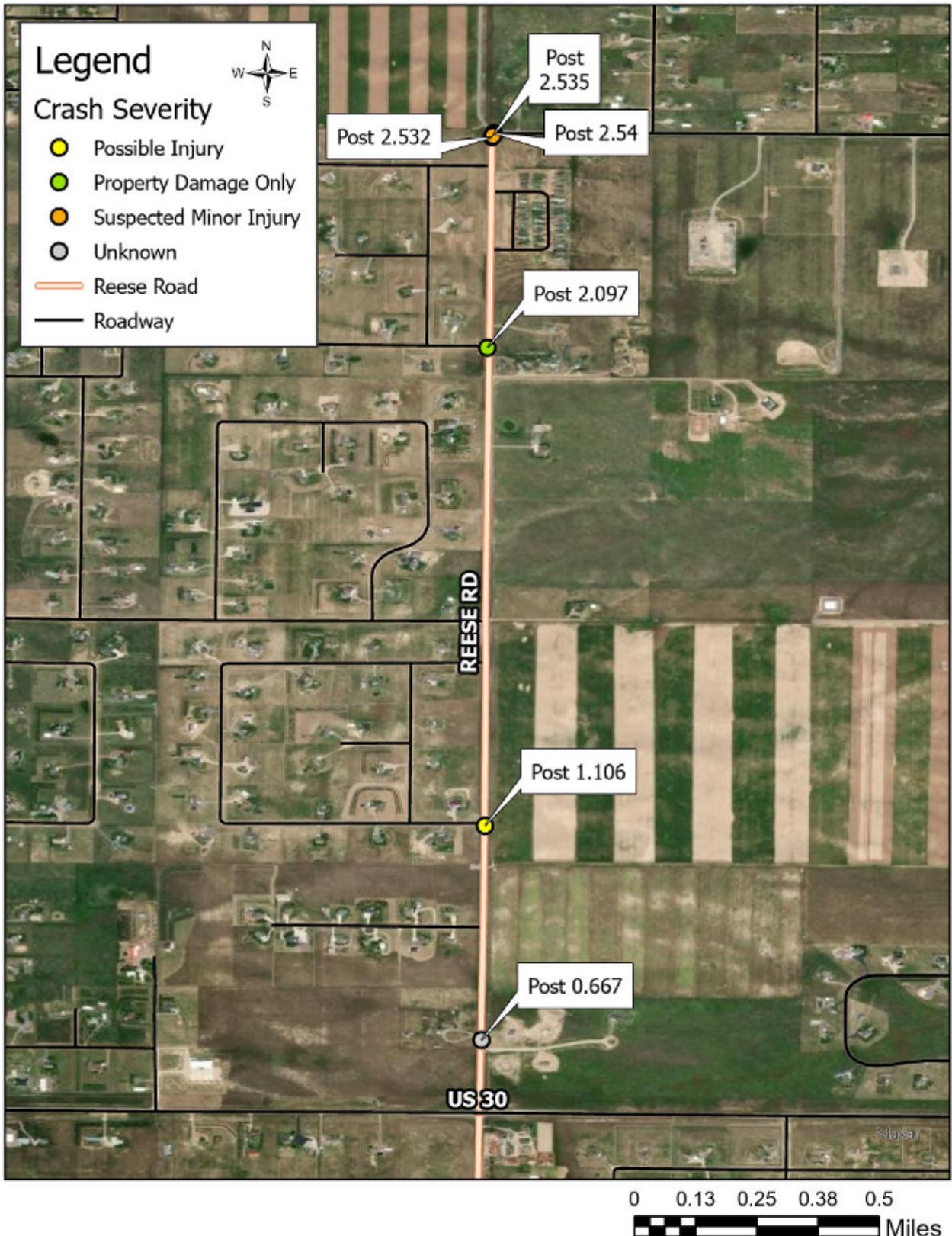
AUTOMATED TRAFFIC COUNT VALUES	
85th PERCENTILE:	66 mph
50th PERCENTILE:	50 mph
PACE SPEED:	42-51 mph
AVERAGE DAILY TRAFFIC:	723 vehicles a day
AVERAGE DAILY TRUCK TRAFFIC:	25 trucks a day

ROADWAY CHARACTERISTICS	
ROADWAY LENGTH:	2.0 miles
NUMBER OF ACCESS POINTS:	16 access points
ACCESS POINTS PER MILE:	8 access points per mile
ROADWAY WIDTH:	31 feet
ADJACENT LAND-USE:	Residential
TYPE OF TERRAIN:	Flat

HISTORICAL CRASH DATA	
FATAL:	0
INJURY:	3
PDO:	5
EPDO:	18
EPDO PER MILE:	9

RANGE OF SPEED LIMIT (MAXIMUM = 65 MPH)	
PREFERRED SPEED LIMIT:	65 mph
LOWEST ACCEPTABLE SPEED LIMIT:	55 mph

Reese Road - Crash Location Map



SEGMENT CRASH HISTORY REPORT FOR REESE RD (ML6751B) FROM MILE POST 0 TO 2.54 FOR THE YEARS 2013 - 2022

LRS ID	CRASH STREET	MILE POST	CROSS STREET	DATE	TIME	CRASH SEVERITY	FATAL	INJURY	FIRST HARMFUL EVENT (FHE)	FHE LOCATION	MANNER OF COLLISION	JUNCTION RELATION	VEHICLE		DRIVER ACTION	PERSON TYPE	SAFETY EQUIPMENT USED	INJURY STATUS	LIGHTING	WEATHER CONDITION	ROAD CONDITION	ALCOHOL INVOLVED	DRUGS INVOLVED	LATITUDE	LONGITUDE	CRASH CASE #			
													#	DIRECTION													MANEUVER		
ML6751B	REESE RD CR 131 1	0.527		10/16/2021	820	PROPERTY DAMAGE ONLY	0	0	Motor Vehicle in Transport on Roadway	On Roadway	Rear End (Front to Rear)	Intersection Related	1	South	Straight Ahead	1	Disregarded Traffic Signs	1	Driver	Shoulder and Lap Belt	No Apparent Injury	Daylight	Clear	Dry	N	N	41.159680	-104.694101	21-19266
													2	South	Stopped in Traffic	2	No Improper Driving	2	Driver	Shoulder and Lap Belt	No Apparent Injury								
ML6751B	REESE RD CR 131 1	0.528		04/15/2020	2002	PROPERTY DAMAGE ONLY	0	0	Motor Vehicle in Transport on Roadway	On Roadway	Rear End (Front to Rear)	Intersection Related	1	South	Turning Right	1	No Improper Driving	1	Driver	Shoulder and Lap Belt	No Apparent Injury	Darkness Unlighted	Clear	Dry	N	N	41.159694	-104.694093	20-6803
													2	South	Turning Left	2	Other Improper Action	1	Passenger	Shoulder and Lap Belt	No Apparent Injury								
																	1	Passenger	Forward Facing Child	No Apparent Injury									
																	1	Passenger	Forward Facing Child	No Apparent Injury									
ML6751B	REESE RD CR 131 1	0.667		05/17/2019	233	UNKNOWN	0	0	Sign Support Single Post	Off Roadway	Not a Collision w/2 Vehicles in Transport	Non-Junction	1	North	Unknown	1	Ran Off Road	1	Driver	Unknown	Unknown	Darkness Unlighted	Clear	Dry	N	N	41.161687	-104.694044	19-10090
																	1	Speeding											
																	1	Over Corrected/Over Steered											
ML6751B	REESE RD	1.106	CHINOOK DR	01/10/2017	1705	POSSIBLE INJURY	0	1	Motor Vehicle in Transport on Roadway	On Roadway	Rear End (Front to Rear)	Intersection Related	1	North	Slowing	1	No Improper Driving	1	Driver	Shoulder and Lap Belt	Possible Injury	Darkness Unlighted	Clear	Dry	N	N	41.168020	-104.693940	17-596
													2	North	Straight Ahead	2	Following too Close	1	Passenger	Shoulder and Lap Belt	No Apparent Injury								
																	1	Passenger	Shoulder and Lap Belt	No Apparent Injury									
																	1	Passenger	Shoulder and Lap Belt	No Apparent Injury									
ML6751B	REESE RD	2.097		05/17/2018	1712	PROPERTY DAMAGE ONLY	0	0	Motor Vehicle in Transport on Roadway	On Roadway	Angle Same Direction (Front to Side)	Private Road Junction	1	North	Overtaking/Passing	1	No Improper Driving	1	Driver	Unknown	No Apparent Injury	Daylight	Clear	Dry	N	N	41.182160	-104.693870	18-10941
													2	North	Turning Left	2	No Improper Driving	2	Driver	Unknown	No Apparent Injury								
ML6751B	REESE RD	2.532	E FOUR MILE RD	08/03/2018	2315	SUSPECTED MINOR INJURY	0	1	Overtum/Rollover	On Roadway	Not a Collision w/2 Vehicles in Transport	Intersection Related	1	West	Turning Left	1	Ran Off Road	1	Driver	Shoulder and Lap Belt	Suspected Minor Injury	Darkness Unlighted	Clear	Dry	Y	N	41.188388	-104.693730	18-16974
ML6751B	REESE RD CR 131 1	2.535		11/16/2021	407	SUSPECTED MINOR INJURY	0	1	Fence (including Post)	Off Roadway	Not a Collision w/2 Vehicles in Transport	Intersection Related	1	North	Negotiating a Curve	1	Ran Off Road	1	Driver	Shoulder and Lap Belt	Suspected Minor Injury	Darkness Unlighted	Clear	Dry	N	N	41.188423	-104.693708	21-21241
																	1	Passenger	Unknown	Unknown									
ML6751B	REESE RD	2.540	E FOUR MILE RD	02/20/2013	2239	PROPERTY DAMAGE ONLY	0	0	Fence (including Post)	Off Roadway	Not a Collision w/2 Vehicles in Transport	Intersection	1	North	Turning Right	1	Drove too Fast for Conditions	1	Driver	Shoulder and Lap Belt	No Apparent Injury	Darkness Unlighted	Snowing	Snow	N	N	41.188500	-104.693680	13-2407

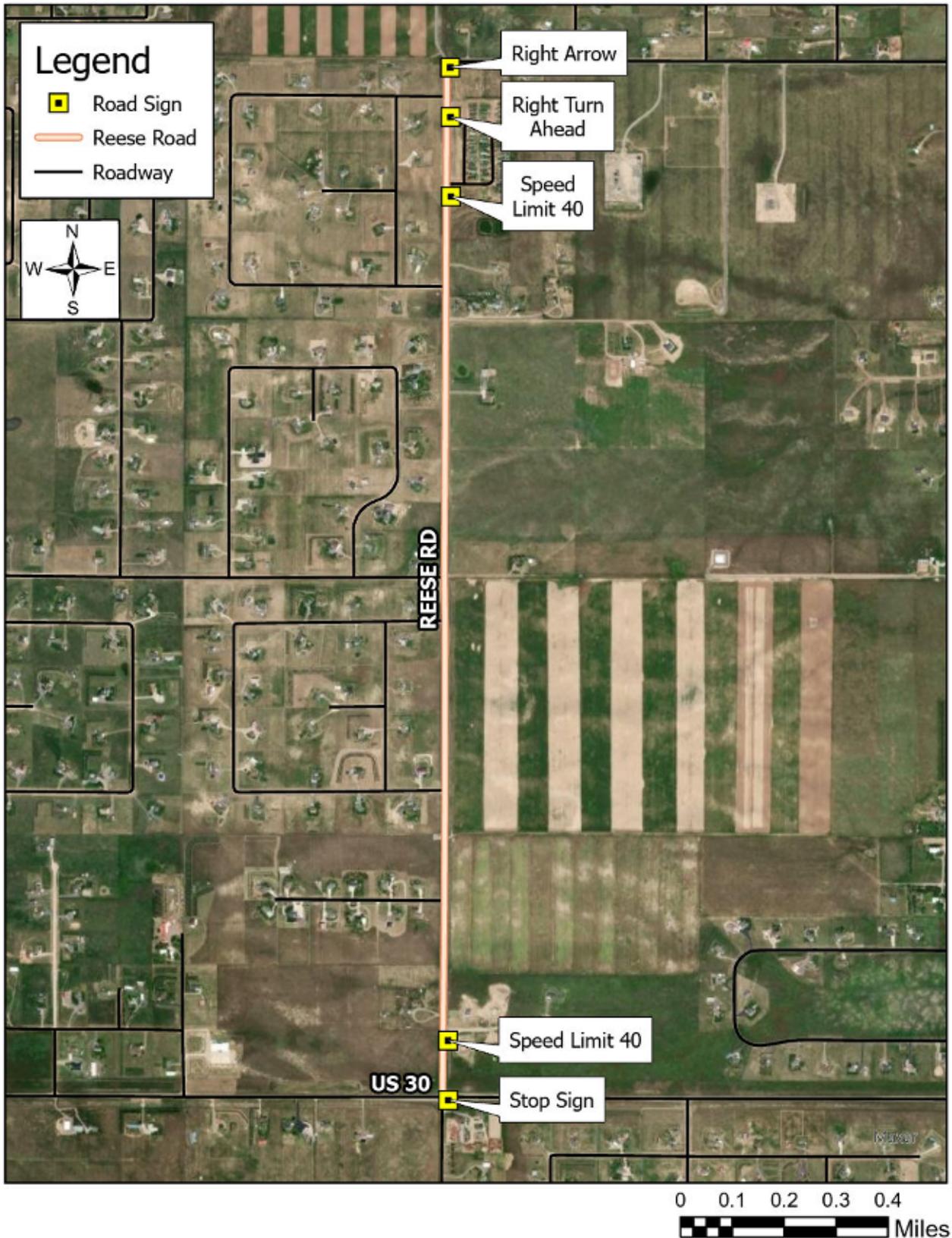
LRS ID	CRASH STREET	MILE POST	CROSS STREET	DATE	TIME	CRASH SEVERITY	FATAL	INJURY	FIRST HARMFUL EVENT (FHE)	FHE LOCATION	MANNER OF COLLISION	JUNCTION RELATION	#	DIRECTION	VEHICLE MANEUVER	DRIVER ACTION	PERSON TYPE	SAFETY EQUIPMENT USED	INJURY STATUS	LIGHTING	WEATHER CONDITION	ROAD CONDITION	ALCOHOL INVOLVED	DRUGS INVOLVED	LATITUDE	LONGITUDE	CRASH CASE #
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REPORT SUMMARY	
TOTAL CRASHES:	8
FATAL CRASHES:	0
INJURY CRASHES:	3
PDO CRASHES:	5
TOTAL FATALITIES:	0
TOTAL INJURIES:	3

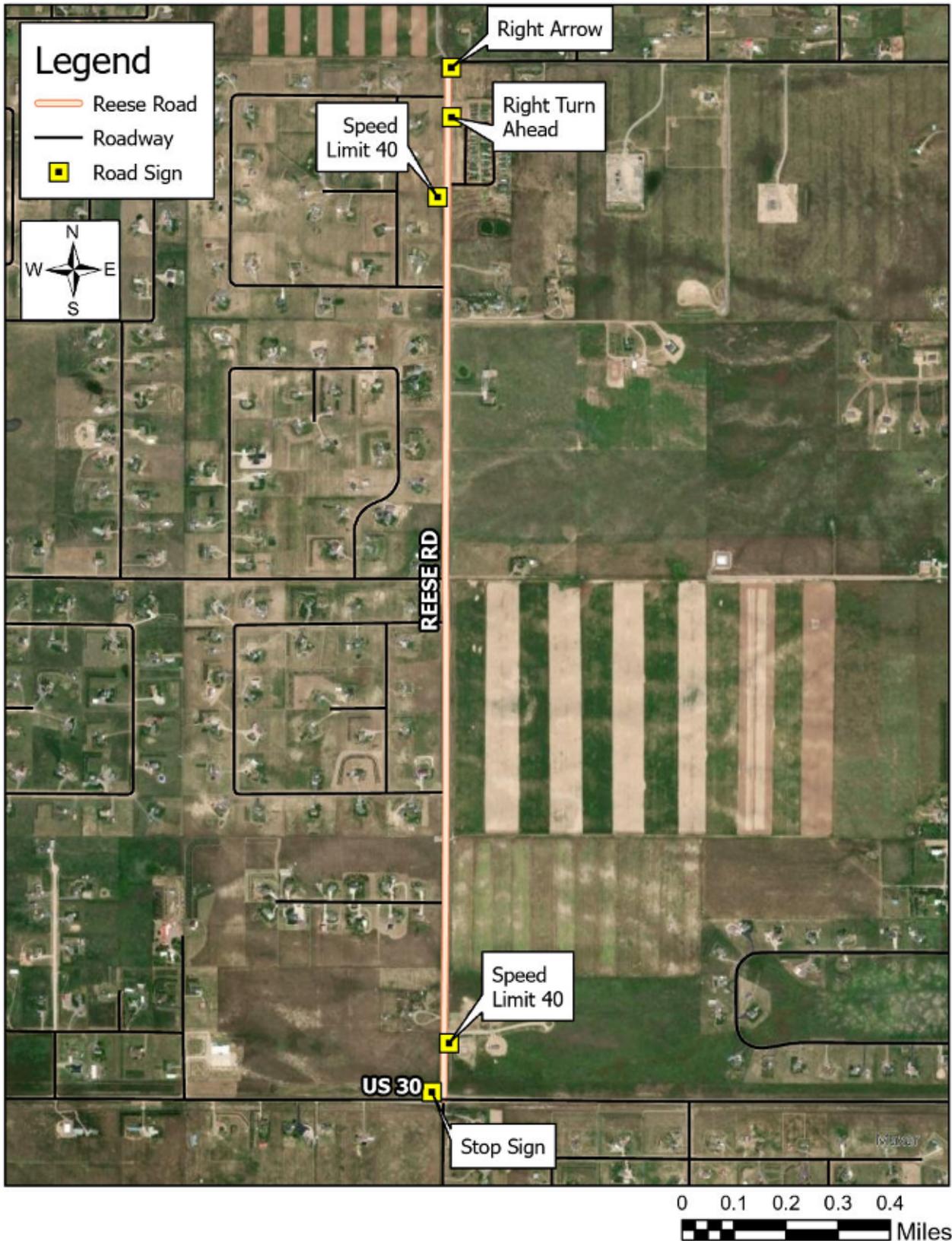
YEAR	CRASH COUNTS				SEVERITY COUNTS			INJURY COUNTS				
	FATAL CRASHES	INJURY CRASHES	PDO CRASHES	TOTAL CRASHES	CRITICAL CRASHES*	SERIOUS CRASHES*	DAMAGE CRASHES*	FATAL INJURIES	SERIOUS INJURIES	MINOR INJURIES	POSSIBLE INJURIES	NO INJURIES
2013	0	0	1	1	0	0	1	0	0	0	0	1
2017	0	1	0	1	0	1	0	0	0	0	1	4
2018	0	1	1	2	0	1	1	0	0	1	0	2
2019	0	0	1	1	0	0	1	0	0	0	0	1
2020	0	0	1	1	0	0	1	0	0	0	0	5
2021	0	1	1	2	0	1	1	0	0	1	0	3
	0	3	5	8	0	3	5	0	0	2	1	16

* PDO = Property Damage Only Crashes
 * Critical Crashes = Fatal & Suspected Serious Injury Crashes
 * Serious Crashes = Suspected Minor Injury & Possible Injury Crashes
 * Damage Crashes = No Apparent Injury & Unknown Injury Crashes

Reese Road - Sign Location Map



Reese Road - Sign Location Map



USLIMITS2 Speed Zoning Report

Project Overview

Project Name: Laramie County Speed Studies

Analyst: Daniel Hayes

Date: 2024-06-12

Basic Project Information

Project Number: IME 23682-HE
Route Name: Reese Road County Road 131
From: MP 0.5 U.S Highway 30
To: MP 2.0 East Fourmile Road
State: Wyoming
County: Laramie County
City: Rural
Route Type: Road Section in Undeveloped Area
Route Status: Existing

Crash Data Information

Crash Data Years: 10.00
Crash AADT: 723 veh/day
Total Number of Crashes: 8
Total Number of Injury Crashes: 4
Section Crash Rate: 152 per 100 MVM
Section Injury Crash Rate: 76 per 100 MVM
Crash Rate Average for Similar Roads: 118
Injury Rate Average for Similar Roads: 44

Roadway Information

Section Length: 2.0 mile(s)
Statutory Speed Limit: 65 mph
Existing Speed Limit: 40 mph
Adverse Alignment: No
Divided/Undivided: Undivided
Number of Lanes: 2
Roadside Hazard Rating: 3
Transition Zone: No

Traffic Information

85th Percentile Speed: 66 mph
50th Percentile Speed: 56 mph
AADT: 723 veh/day

Recommended Speed Limit:



Note: The injury crash rate for the section of 76 per 100 MVM is more than 30 percent above the average for similar roads (44) but below the critical rate (101). 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.

Note: A speed zone of 2.0 miles is generally too short for the recommended speed limit. Consider lengthening the speed zone (if that is possible) or using the speed limits from adjacent sections (if they are appropriate for this section). If the speed and other data you provided are representative of conditions for this short section, then the speed limit noted above may be considered.

Disclaimer: The U.S. Government assumes no liability for the use of the information contained in this report. This report does not constitute a standard, specification, or regulation.

Equations Used in the Crash Data Calculations

Exposure (M)

$$M = (\text{Section AADT} * 365 * \text{Section Length} * \text{Duration of Crash Data}) / (100000000)$$
$$M = (723 * 365 * 2.0 * 10.00) / (100000000)$$
$$M = 0.0528$$

Crash Rate (Rc)

$$Rc = (\text{Section Crash Average} * 100000000) / (\text{Section AADT} * 365 * \text{Section Length})$$
$$Rc = (0.80 * 100000000) / (723 * 365 * 2.0)$$
$$Rc = 151.58 \text{ crashes per 100 MVM}$$

Injury Rate (Ri)

$$Ri = (\text{Section Injury Crash Average} * 100000000) / (\text{Section AADT} * 365 * \text{Section Length})$$
$$Ri = (0.40 * 100000000) / (723 * 365 * 2.0)$$
$$Ri = 75.79 \text{ injuries per 100 MVM}$$

Critical Crash Rate (Cc)

$Cc = \text{Crash Average of Similar Sections} + 1.645 * (\text{Crash Average of Similar Sections} / \text{Exposure})^{(1/2)} + (1 / (2 * \text{Exposure}))$

$Cc = 117.88 + 1.645 * (117.88 / 0.0528)^{(1/2)} + (1 / (2 * 0.0528))$

$Cc = 205.10$ crashes per 100 MVM

Critical Injury Rate (Ic)

$Ic = \text{Injury Crash Average of Similar Sections} + 1.645 * (\text{Injury Crash Average of Similar Sections} / \text{Exposure})^{(1/2)} + (1 / (2 * \text{Exposure}))$

$Ic = 43.99 + 1.645 * (43.99 / 0.0528)^{(1/2)} + (1 / (2 * 0.0528))$

$Ic = 100.96$ injuries per 100 MVM

