

MR. JOHN POELMA

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

SPEED STUDY



**IRON MOUNTAIN ROAD (CR 215)
BETWEEN POWDERHOUSE ROAD AND WHITNEY ROAD
LARAMIE COUNTY, WYOMING
JUNE 14, 2024**



INBERG-MILLER ENGINEERS

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



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June 14, 2024

23682-HE

PDF REPORT EMAILED: JOHN.POELMA@LARAMIECOUNTYWY.GOV

THIS CONSTITUTES THE ORIGINAL

Mr. John Poelma
Assistant Director
Laramie County Public Works
13797 Prairie Center Circle
Cheyenne, Wyoming 82009

RE: IRON MOUNTAIN ROAD (CR 215) BETWEEN POWDERHOUSE RD. AND WHITNEY RD. SPEED
LIMIT EVALUATION REPORT
LARAMIE COUNTY, WYOMING

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,

INBERG-MILLER ENGINEERS

Daniel J. Hayes, P.E.
Civil Engineer
dhayes@inberg-miller.com

REVIEWED BY

Gary L. Steele, P.E.
Senior Civil Engineer
gsteele@inberg-miller.com

DJH:GLS:bb\p:\23682-HE LARAMIE COUNTY PUBLIC WORKS County Road Speed Studies\Civil\Iron Mountain Rd\Report\East Section\Iron Mountain East Section Speed Study 2024.docx

Enclosures as stated



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1.0 INTRODUCTION

Iron Mountain Road (CR 215) between Powderhouse Road and Whitney Road is a paved county road from Mile Point (MP) 2.0 to MP 5.0 with a speed limit of 45 mph as shown in Figure 1. The main traffic generator is residential access with some oil field traffic. The roadway width is 39 feet edge to edge with 25 feet travel way feet with 17 major access points and 19 minor access points which translates to 12 access points per mile. The type of terrain is rolling, and the adjacent land use is characterized as residential. The rolling hills create some areas of limited visibility that could be hazardous with the oil field traffic.



Figure 1: 45 mph speed limit sign at MP 4.9.

2.0 TRAFFIC COUNT

The automated traffic counter was located at MP 3.64 and is shown on Appendix A. The traffic counter results are shown in Appendix B. The traffic count was recorded from June 4, 2024 to June 11, 2024 with a total of 8,228 vehicles. The Average Daily Traffic (ADT) was recorded at 1,029 vehicles a day and the Average Daily Truck Traffic (ADTT) was recorded at 77 trucks a day. The 85th percentile speed was calculated at 59 mph with the 50th percentile speed at 52 mph. The pace speed included 60.5% of vehicles recorded and was calculated from 47 mph to 56 mph. According to the standards, the upper bound of the recommended speed limit is the rounded 85th percentile speed that was determined at 60 mph. The lower bound is either the rounded 50th-percentile speed or lower limit of the 10-mph pace which was determined at 52 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 Iron Mountain Road (CR 215) between Powderhouse Rd. and Whitney Rd., a safety assessment was performed on November 13, 2023. This included a sign inventory, and crash analysis.

Table 1 shows the detailed 10-year crash history from 2013 to 2022. 11 crashes occurred with 2 crashes resulting in an injury. The first harmful event that shows the most predominant crash was an off-roadway collision with an object (delineator post, traffic sign support, or fence) with 5 instances. There were three instances of a collision with a motor vehicle in transport on roadway, and a single instance of both a collision with a other domesticated animal (dog, Llama) and an overturn/rollover. The time of day showed that 6 crashes occurred between 6:00 PM to 11:59 PM. The most crashes for a one-mile section of the road occurred between MP 4.0 to MP 5.0 where 6 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
2.004	2019	February	Friday	7 to 7:59 PM	Suspected Injury	Minor Delineator Post
2.120	2013	June	Friday	1 to 1:59 AM	Possible Injury	Overturn/Rollover
2.504	2021	September	Monday	6 to 6:59 PM	Property Only	Damage Motor Vehicle in Transport on Roadway
2.95	2014	December	Friday	9 to 9:59 PM	Property Only	Damage Other Domestic (Dog, Llama...)
3.0	2016	March	Wednesday	1:00 to 1:59 PM	Property Only	Damage Motor Vehicle in Transport on Roadway
4.76	2018	March	Tuesday	12 to 12:59 PM	Property Only	Damage Motor Vehicle in Transport on Roadway
5.010	2018	January	Sunday	10 to 10:59 PM	Property Only	Damage Sign Support Multiple Post
5.011	2021	March	Friday	11 to 11:59 PM	Property Only	Damage Traffic Sign Support
5.019	2021	June	Wednesday	10 to 10:59 PM	Property Only	Damage Fence (including Post)
5.020	2021	December	Thursday	6 to 6:59 PM	Property Only	Damage Fence (including Post)
5.020	2020	February	Monday	11 to 11:45 AM	Property Only	Damage Traffic Sign Support

Table 2 shows the sign inventory for Iron Mountain Road (CR 215) between Powderhouse Rd. and Whitney Rd. Every sign on the road was inventoried, 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 8 signs located between MP 2.0 to MP 5.0. The visual inspection identified 2 signs in poor condition and 7 signs had reflective sheeting. The locations of all 8 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 Direction	MUTCD	Reflectivity	Condition	Comment
2.0	Stop	West	R1-1	Y	Good	
2.0	4-way	West		Y	Poor	Faded
2.0	Buckle Up	East		N	Poor	Faded/Cracked
2.2	Stop Sign Ahead	West	W3-1	Y	Fair	Scratches
2.2	45 mph Speed Limit	East	R2-1	Y	Good	
4.9	Stop Sign Ahead	East	W3-1	Y	Fair	Bullet Holes
4.9	45 mph Speed Limit	West	R2-1	Y	Good	
5.0	Stop	East	R1-1	Y	Fair	Bird Shot

4.0 DECLARATION OF SPEED 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 Iron Mountain Road (CR 215) between Powderhouse Rd. and Whitney Rd. is between 50 and 60 mph.

It is recommended that the speed limit be posted at 60 mph due to:

- ❖ 85th Percentile Speed

Post a 60 mph by replacing the existing 45 mph speed limit sign at MP 2.2 for eastbound traffic and MP 4.9 for westbound traffic.

A USLimits 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 60-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 215, Iron Mountain Road, MP 2.0 to MP 5.0.

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:

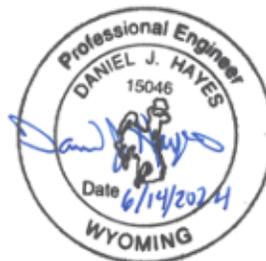
The existing speed limit is 45 mph. The 85th percentile speed was recorded at 59.0 mph and the 50th percentile speed at 52 mph. The 10-mph pace speed was recorded from 47 mph to 56 mph. The roadway width is 39 feet edge to edge with a 25 feet travel way the road has 36 access points along the section which translates into 12 access points per mile. There were 11 crashes in the last 10 years with 2 crashes resulting in injuries.

Recommendations:

It is recommended that the speed limit be set at 60 mph for this section of the road. Post a 60 mph speed limit by replacing the existing 45 mph speed limit sign at MP 2.2 for eastbound traffic and MP 4.9 for westbound traffic. **A Laramie County representative should consider safety measures at adverse curves such as signage, advisory speeds, delineation, shoulder widening, or guardrails.**

Data Collected by. Hayden Altenburg 11/13/2023
Printed Name Date

Data Summarized by. Daniel Hayes, P.E 6/13/2024
Printed Name Date



Approved. Daniel Hayes, P.E
Professional Engineer

P.E. Seal

6/13/2024
Date

ORDER TO ESTABLISH RESTRICTED SPEED ZONE

The County Commission approves changing the speed limit to 60 miles per hour on the paved roadway section described above.

Resolution number: _____

Date: _____

Iron Mountain Road (East) - Location Map



SPEED DATA ANALYSIS

Location



Latitude: 41.218036
Longitude: -104.759636



Analysis Time Period



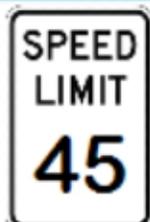
Start	End
5/17/2024 10:56 AM	5/24/2024 11:33 AM

Vehicles Analyzed



8,228

Speed Limit



45

Total Enforceable Violations



7,461

Average Speed



52

85th Percentile Speed



59

Fastest Speed



112

10 MPH Pace Speed



47-56

Slowest Speed



1

Default Report Title
 Use Preferences to Define Titles

Site Code: Iron Mountain (MP 3.64)
 Station ID: ~4320 feet east of Geronimo Rd.
 Start Date: 5/17/2024
 End Date: 5/24/2024

Comment 1:
 Serial Number: 41395
 Latitude: 41.218036
 Longitude: -104.759636
 GPS Accuracy: 18.33333 ft

Combined Lanes 5/17/2024 to 5/24/2024

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
5/17/2024	10:56 AM	95	10:56 AM	37	0.64	4:42 PM	136	5:04 PM	46	0.74
5/18/2024	10:56 AM	94	11:31 AM	28	0.84	12:56 PM	92	1:31 PM	33	0.70
5/19/2024	10:18 AM	80	10:47 AM	27	0.74	1:28 PM	98	1:28 PM	36	0.68
5/20/2024	6:48 AM	94	7:26 AM	35	0.67	4:07 PM	153	4:07 PM	46	0.83
5/21/2024	7:02 AM	113	7:02 AM	34	0.83	4:45 PM	117	5:13 PM	37	0.79
5/22/2024	6:56 AM	96	7:12 AM	29	0.83	4:47 PM	164	4:48 PM	49	0.84
5/23/2024	7:10 AM	115	7:35 AM	39	0.74	4:41 PM	141	5:06 PM	46	0.77
5/24/2024	7:26 AM	108	7:38 AM	36	0.75	No Volume				

Axle Statistics

# Axles	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Count	7611	230	267	100	11	3	6	0	0	0	0	0	0	0	0
Avg.	130.5	338.0	432.8	659.1	728.2	829.7	725.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WB															

Axles Per Vehicle: 2.1409

AADT

Date	Lane	Volume	x	User	x	Daily	=	ADT	x	Season	=
5/17/2024	A to B, None Specified	390		1.00		1.00		390		1.00	
5/17/2024	B to A, None Specified	510		1.00		1.00		510		1.00	
5/17/2024	Day Total	900						900			
5/18/2024	A to B, None Specified	561		1.00		1.00		561		1.00	
5/18/2024	B to A, None Specified	555		1.00		1.00		555		1.00	
5/18/2024	Day Total	1,116						1,116			
5/19/2024	A to B, None Specified	466		1.00		1.00		466		1.00	
5/19/2024	B to A, None Specified	496		1.00		1.00		496		1.00	
5/19/2024	Day Total	962						962			
5/20/2024	A to B, None Specified	567		1.00		1.00		567		1.00	
5/20/2024	B to A, None Specified	562		1.00		1.00		562		1.00	
5/20/2024	Day Total	1,129						1,129			
5/21/2024	A to B, None Specified	578		1.00		1.00		578		1.00	
5/21/2024	B to A, None Specified	621		1.00		1.00		621		1.00	
5/21/2024	Day Total	1,199						1,199			
5/22/2024	A to B, None Specified	612		1.00		1.00		612		1.00	
5/22/2024	B to A, None Specified	607		1.00		1.00		607		1.00	
5/22/2024	Day Total	1,219						1,219			
5/23/2024	A to B, None Specified	634		1.00		1.00		634		1.00	
5/23/2024	B to A, None Specified	647		1.00		1.00		647		1.00	
5/23/2024	Day Total	1,281						1,281			
5/24/2024	A to B, None Specified	270		1.00		1.00		270		1.00	
5/24/2024	B to A, None Specified	152		1.00		1.00		152		1.00	
5/24/2024	Day Total	422						422			
Total		8228						8228			
Average		1029						1029			

**SPEED STUDY DATA OVERVIEW (IRON MOUNTAIN ROAD BETWEEN POWDERHOUSE
RD. AND WHITNEY RD. CR 215 MP 2.0 – MP 5.0)**

GENERAL INFORMATION	
LOCAL JURISDICTION:	Laramie County
ROUTE:	Iron Mountain (CR215) MP 2.0 to MP 5.0
LOCATION:	Iron Mountain Between Powderhouse and Whitney
DATE:	6/14/2024

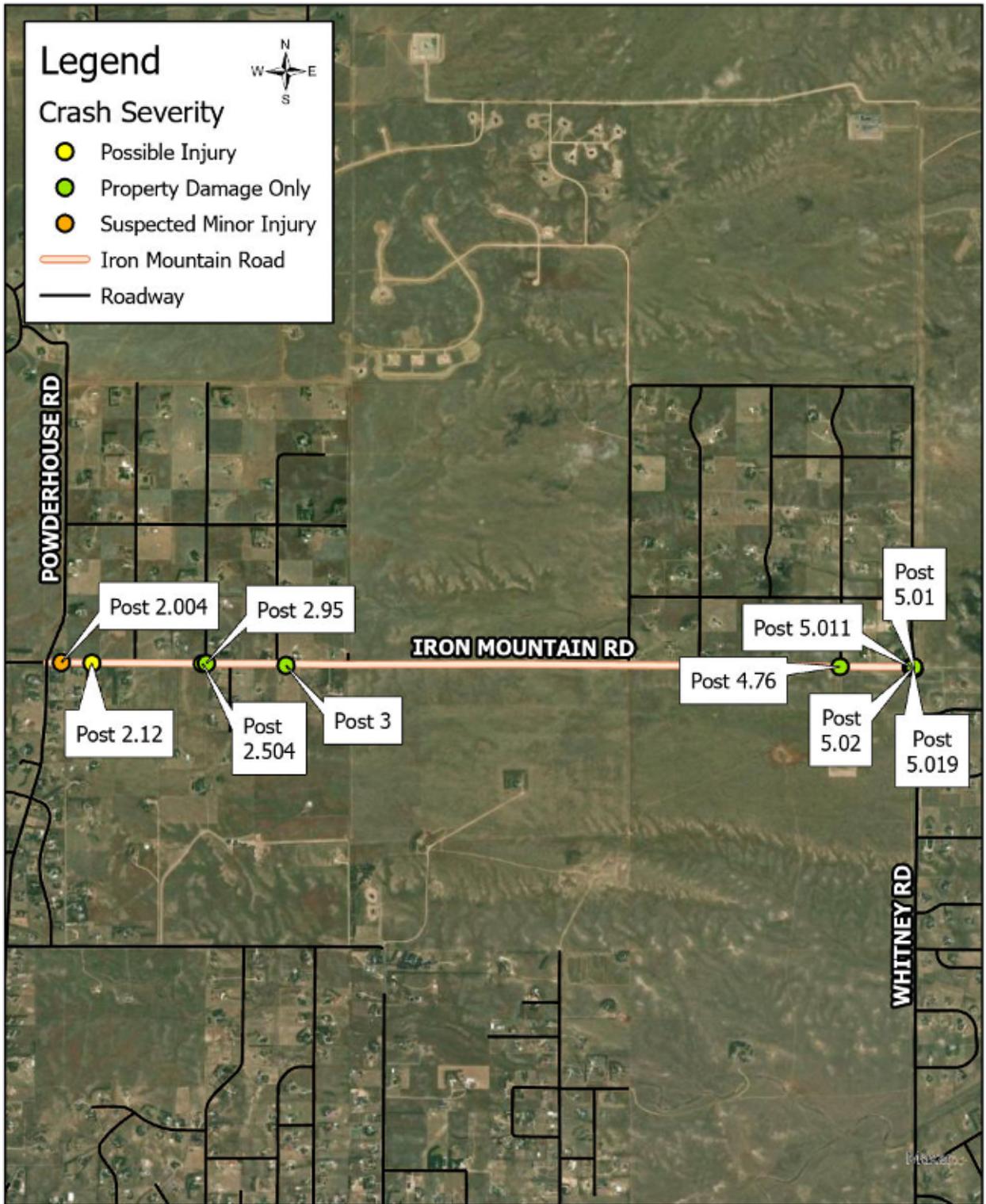
AUTOMATED TRAFFIC COUNT VALUES	
85th PERCENTILE:	59 mph
50th PERCENTILE:	52 mph
PACE SPEED:	47-56 mph
AVERAGE DAILY TRAFFIC:	1,029 vehicles a day
AVERAGE DAILY TRUCK TRAFFIC:	77 trucks a day

ROADWAY CHARACTERISTICS	
ROADWAY LENGTH:	3 miles
NUMBER OF ACCESS POINTS:	36 access points
ACCESS POINTS PER MILE:	12 access points per mile
ROADWAY WIDTH:	39 feet edge to edge (25 feet travel way)
ADJACENT LAND-USE:	Residential/Agricultural
TYPE OF TERRAIN:	Rolling

HISTORICAL CRASH DATA	
FATAL:	0
INJURY:	2
PDO:	9
EPDO:	16
EPDO PER MILE:	5.3

RANGE OF SPEED LIMIT (MAXIMUM = 65 MPH)	
PREFERRED SPEED LIMIT:	60 mph
LOWEST ACCEPTABLE SPEED LIMIT:	50 mph

Iron Mountain Road - Crash Location Map



SEGMENT CRASH HISTORY REPORT FOR IRON MOUNTAIN RD (ML6905B) FROM MILE POST 0 TO 5.02 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		
ML6905B	RON MOUNTAIN RD	0.000		02/22/2014	1530	PROPERTY DAMAGE ONLY	0	0	Motor Vehicle in Transport on Roadway	On Roadway	Angle (Front to Side), Opposing Direction	Non-Junction	1	North	Turning Right	1	Drove too Fast for Conditions	1	Driver	Shoulder and Lap Belt	No Apparent Injury	Daylight	Snowing	Ice/Frost	N	N	41.218340	-104.828190	14-2029
													2	West	Straight Ahead	1	Improper Parking	2	Driver	Shoulder and Lap Belt	No Apparent Injury								
ML6905B	RON MOUNTAIN RD CR 215-2	0.011		03/01/2022	655	PROPERTY DAMAGE ONLY	0	0	Motor Vehicle in Transport on Roadway	On Roadway	Rear End (Front to Rear)	Intersection Related	1	West	Straight Ahead	1	Disregarded Traffic Signs	1	Driver	Shoulder and Lap Belt	No Apparent Injury	Daylight	Clear	Dry	N	N	41.218393	-104.828071	22-3423
													2	West	Straight Ahead	2	No Improper Driving	2	Driver	Shoulder and Lap Belt	No Apparent Injury								
ML6905B	RON MOUNTAIN RD CR 215-2	0.316		08/21/2020	2045	PROPERTY DAMAGE ONLY	0	0	Deer	On Roadway			1		Straight Ahead	1	No Improper Driving	1	Driver	Shoulder and Lap Belt	No Apparent Injury	Darkness Unlighted	Clear	Dry			41.218355	-104.822268	20-15677
ML6905B	RON MOUNTAIN RD	1.260		05/11/2014	1824	PROPERTY DAMAGE ONLY	0	0	Motor Vehicle in Transport on Roadway	On Roadway	Angle Same Direction (Front to Side)	Driveway Related	1	West	Overtaking/Passing	1	Improper Passing	1	Driver	Shoulder and Lap Belt	No Apparent Injury	Daylight	Snowing	Snow	N	N	41.218330	-104.804180	14-5696
													2	West	Turning Left	2	Improper Turn or No Signal	2	Driver	Shoulder and Lap Belt	No Apparent Injury	Blowing Snow	Ice/Frost						
ML6905B	RON MOUNTAIN RD	1.580		05/12/2014	1234	PROPERTY DAMAGE ONLY	0	0	Motor Vehicle in Transport on Roadway	On Roadway	Sideswipe Same Direction (Passing)	Non-Junction	1	East	Straight Ahead	1	No Improper Driving	1	Driver	Shoulder and Lap Belt	No Apparent Injury	Daylight	Clear	Ice/Frost	N	N	41.218320	-104.798060	14-5728
													2	East	Driverless Motor Vehic														
ML6905B	RON MOUNTAIN RD CR 215-2	1.819		12/19/2020	1240	PROPERTY DAMAGE ONLY	0	0	Jackknife	On Roadway	Not a Collision w/2 Vehicles in Transport	Non-Junction	1	East	Straight Ahead	1	No Improper Driving	1	Driver	Shoulder and Lap Belt	No Apparent Injury	Daylight	Severe Wind Only	Ice/Frost	N	N	41.218339	-104.793330	2020-23194
																						Blowing Snow							
ML6905B	RON MOUNTAIN RD CR 215-2	2.004		02/08/2019	704	SUSPECTED MINOR INJURY	0	1	Delineator Post	Off Roadway	Not a Collision w/2 Vehicles in Transport	Non-Junction	1	West	Straight Ahead	1	Drove too Fast for Conditions	1	Driver	Shoulder and Lap Belt	Suspected Minor Injury	Daylight	Clear	Snow	N	N	41.218313	-104.789775	19-2748
													1									Ran Off Road							
ML6905B	RON MOUNTAIN RD	2.120		06/09/2013	1347	POSSIBLE INJURY	0	1	Overturn/Rollover	Shoulder	Not a Collision w/2 Vehicles in Transport	Non-Junction	1	East	Straight Ahead	1	Ran Off Road	1	Driver	Shoulder and Lap Belt	Possible Injury	Daylight	Clear	Dry	N	N	41.218280	-104.787700	13-8156
ML6905B	RON MOUNTAIN RD CR 215-2	2.504		09/27/2021	1839	PROPERTY DAMAGE ONLY	0	0	Motor Vehicle in Transport on Roadway	On Roadway	Rear End (Front to Rear)	Intersection Related	1	East	Straight Ahead	1	Other Improper Action	1	Driver	Shoulder and Lap Belt	No Apparent Injury	Daylight	Clear	Dry	N	N	41.218222	-104.780163	21-17780
													2	East	Straight Ahead	1	Disregarded Traffic Signs	2	Driver	Shoulder and Lap Belt	No Apparent Injury	2	No Improper Driving						
ML6905B	RON MOUNTAIN RD	2.950		12/12/2014	2123	PROPERTY DAMAGE ONLY	0	0	Other Domestic (Dog, Llama...)	On Roadway			1		Straight Ahead	1	No Improper Driving	1	Driver	Shoulder and Lap Belt	No Apparent Injury	Darkness Unlighted	Clear	Dry			41.218240	-104.779900	14-16291
													1	Passenger	Shoulder and Lap Belt	No Apparent Injury													
ML6905B	RON MOUNTAIN RD	3.000		03/30/2016	1333	PROPERTY DAMAGE ONLY	0	0	Motor Vehicle in Transport on Roadway	Shoulder	Angle (Front to Side), Opposing Direction	Non-Junction	1	West	Straight Ahead	1	Drove too Fast for Conditions	1	Driver	Shoulder and Lap Belt	No Apparent Injury	Daylight	Blizzard	Snow	N	N	41.218120	-104.774480	16-5819
													2	East	Straight Ahead	1	Swerve Due to Wind/Slippery Surface	2	Driver	Shoulder and Lap Belt	No Apparent Injury		Mud/Dirt/Gravel						
ML6905B	RON MOUNTAIN RD	4.760		03/20/2018	1255	PROPERTY DAMAGE ONLY	0	0	Motor Vehicle in Transport on Roadway	On Roadway	Angle Same Direction (Front to Side)	Non-Junction	1	East	Entering a Traffic Lan	1	Failed to Yield ROW	1	Driver	Shoulder and Lap Belt	No Apparent Injury	Daylight	Clear	Dry	N	N	41.217910	-104.736760	18-6170
													2	East	Straight Ahead	2	No Improper Driving	2	Driver	Shoulder and Lap Belt	No Apparent Injury								
ML6905B	RON MOUNTAIN RD	5.010	WHITNEY RD	01/28/2018	2202	PROPERTY DAMAGE ONLY	0	0	Sign Support Multiple Post	Off Roadway	Not a Collision w/2 Vehicles in Transport	Intersection Related	1	East	Straight Ahead	1	Evading Law Enforcement	1	Driver	None Used	No Apparent Injury	Darkness Unlighted	Clear	Dry	N	N	41.217800	-104.731700	P2018012882
													1									Erratic/Reckless/Careless/Aggressive Speeding		Mud/Dirt/Gravel					
1													1		Ran Off Road														

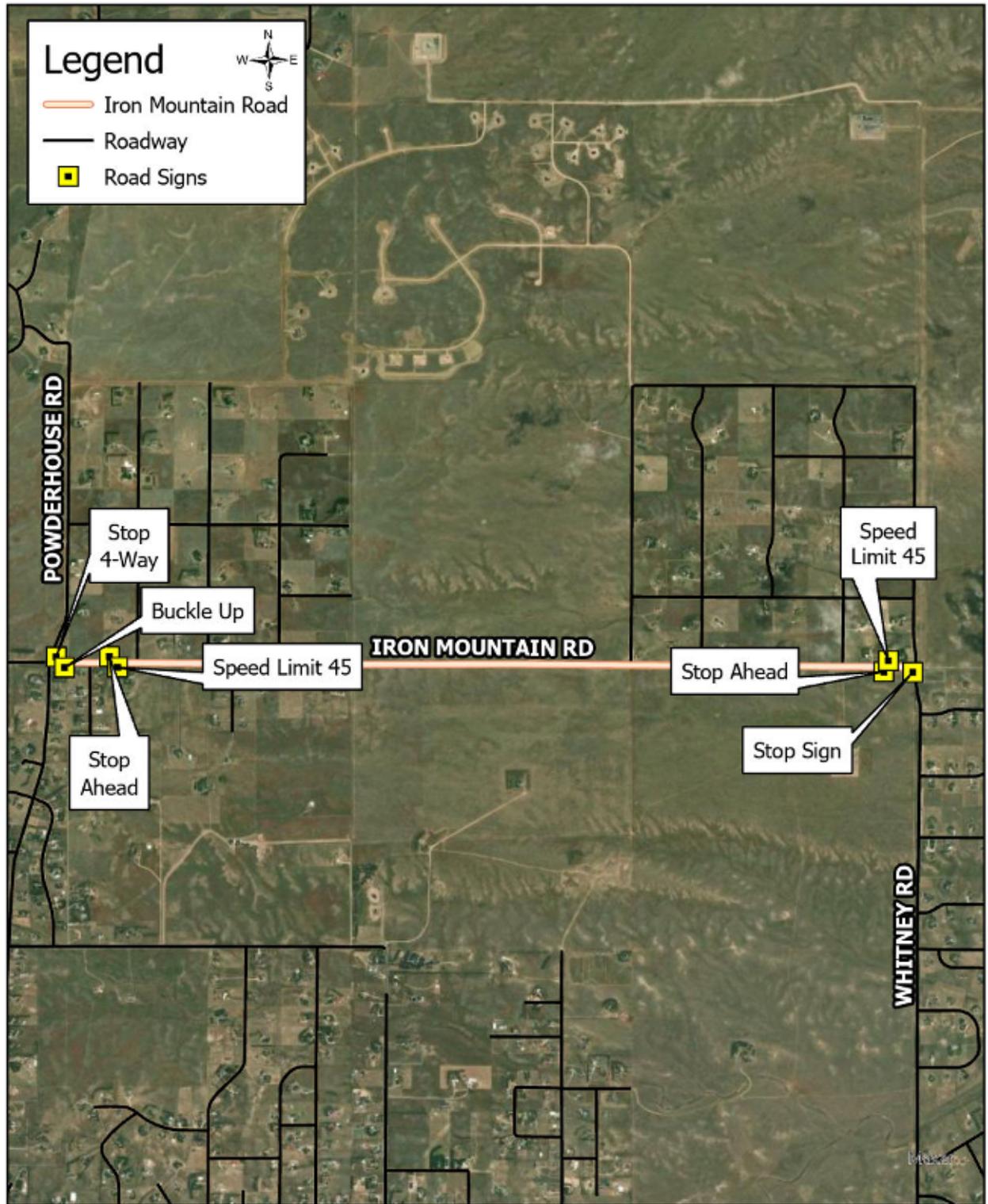
LRS ID	CRASH STREET	MILE POST	CROSS STREET	DATE	TIME	CRASH SEVERITY	FATAL	INJURY	FIRST HARMFUL EVENT (FHE)	FHE LOCATION	MANNER OF COLLISION	JUNCTION RELATION	#	DIRECTION	VEHICLE MANEUVER	DRIVER ACTION	PERSON TYPE	SAFETY EQUIPMENT USED	INJURY STATUS	LIGHTING	WEATHER CONDITION	ROAD CONDITION	ALCOHOL INVOLVED	DRUGS INVOLVED	LATITUDE	LONGITUDE	CRASH CASE #
ML6905B	RON MOUNTAIN RD CR 215-2	5.011		03/05/2021	2300	PROPERTY DAMAGE ONLY	0	0	Traffic Sign Support	Off Roadway	Not a Collision w/2 Vehicles in Transport	Intersection Related	1	East	Straight Ahead	1 Ran Off Road 1 Disregarded Other Road Marking	1 Driver	Shoulder and Lap Belt	No Apparent Injury	Darkness Unlighted	Clear	Dry	N	Y	41.217878	-104.731921	21-4450
ML6905B	RON MOUNTAIN RD CR 215-2	5.019	TONTO RD CR 417	06/09/2021	2208	PROPERTY DAMAGE ONLY	0	0	Fence (including Post)	Off Roadway	Not a Collision w/2 Vehicles in Transport	Intersection	1	East	Straight Ahead	1 Disregarded Traffic Signs	1 Driver	Shoulder and Lap Belt	No Apparent Injury	Darkness Unlighted	Clear	Dry	N	N	41.217847	-104.731766	21-10256
ML6905B	RON MOUNTAIN RD CR 215-2	5.020		12/02/2021	1815	PROPERTY DAMAGE ONLY	0	0	Fence (including Post)	Off Roadway	Not a Collision w/2 Vehicles in Transport	Intersection Related	1	East	Straight Ahead	1 Ran Off Road 1 Disregarded Traffic Signs 1 Speeding 1 Erratic/Reckless/Careless/Aggressive	1 Driver	Shoulder and Lap Belt	No Apparent Injury	Darkness Unlighted	Clear	Dry	N	N	41.217882	-104.731732	21-22459
ML6905B	RON MOUNTAIN RD CR 215-2	5.020	TONTO RD CR 417	02/03/2020	1145	PROPERTY DAMAGE ONLY	0	0	Traffic Sign Support	Off Roadway	Not a Collision w/2 Vehicles in Transport	Intersection	1	East	Slowing	1 Drove too Fast for Conditions	1 Driver 1 Passenger	Shoulder and Lap Belt Forward Facing Child	No Apparent Injury No Apparent Injury	Daylight	Snowing	Ice/Frost	N	N	41.217881	-104.731733	20-2360

REPORT SUMMARY	
TOTAL CRASHES:	17
FATAL CRASHES:	0
INJURY CRASHES:	2
PDO CRASHES:	15
TOTAL FATALITIES:	0
TOTAL INJURIES:	2

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	1	0	1	0	1	0	0	0	0	1	0
2014	0	0	4	4	0	0	4	0	0	0	0	7
2016	0	0	1	1	0	0	1	0	0	0	0	2
2018	0	0	2	2	0	0	2	0	0	0	0	3
2019	0	1	0	1	0	1	0	0	0	1	0	0
2020	0	0	3	3	0	0	3	0	0	0	0	4
2021	0	0	4	4	0	0	4	0	0	0	0	5
2022	0	0	1	1	0	0	1	0	0	0	0	2
	0	2	15	17	0	2	15	0	0	1	1	23

* 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

Iron Mountain Road (East) - Sign Location Map



USLIMITS2 Speed Zoning Report

Project Overview

Project Name: Laramie County Speed Studies

Analyst: Daniel Hayes

Date: 2024-06-14

Basic Project Information

Project Number: IME 23682-HE
Route Name: Iron Mountain CR215
From: MP 2.0 Powderhouse Rd.
To: MP 5.0 Whitney Rd.
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: 1029 veh/day
Total Number of Crashes: 11
Total Number of Injury Crashes: 2
Section Crash Rate: 98 per 100 MVM
Section Injury Crash Rate: 18 per 100 MVM
Crash Rate Average for Similar Roads: 118
Injury Rate Average for Similar Roads: 44

Roadway Information

Section Length: 3.0 mile(s)
Statutory Speed Limit: 65 mph
Existing Speed Limit: 45 mph
Adverse Alignment: No
Divided/Undivided: Undivided
Number of Lanes: 2
Roadside Hazard Rating: 3
Transition Zone: No

Traffic Information

85th Percentile Speed: 59 mph
50th Percentile Speed: 52 mph
AADT: 1029 veh/day

Recommended Speed Limit:



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)

$$M = (\text{Section AADT} * 365 * \text{Section Length} * \text{Duration of Crash Data}) / (100000000)$$
$$M = (1029 * 365 * 3.0 * 10.00) / (100000000)$$
$$M = 0.1127$$

Crash Rate (Rc)

$$Rc = (\text{Section Crash Average} * 100000000) / (\text{Section AADT} * 365 * \text{Section Length})$$
$$Rc = (1.10 * 100000000) / (1029 * 365 * 3.0)$$
$$Rc = 97.63 \text{ crashes per 100 MVM}$$

Injury Rate (Ri)

$$Ri = (\text{Section Injury Crash Average} * 100000000) / (\text{Section AADT} * 365 * \text{Section Length})$$
$$Ri = (0.20 * 100000000) / (1029 * 365 * 3.0)$$
$$Ri = 17.75 \text{ injuries per 100 MVM}$$

Critical Crash Rate (Cc)

$$Cc = \text{Crash Average of Similar Sections} + 1.645 * (\text{Crash Average of Similar Sections} / \text{Exposure}) ^ (1/2) + (1 / (2 * \text{Exposure}))$$
$$Cc = 117.88 + 1.645 * (117.88 / 0.1127) ^ (1/2) + (1 / (2 * 0.1127))$$
$$Cc = 175.53 \text{ crashes per 100 MVM}$$

Critical Injury Rate (Ic)

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

$$I_c = 43.99 + 1.645 * (43.99 / 0.1127) ^{(1/2)} + (1 / (2 * 0.1127))$$

$$I_c = 80.93 \text{ injuries per 100 MVM}$$

