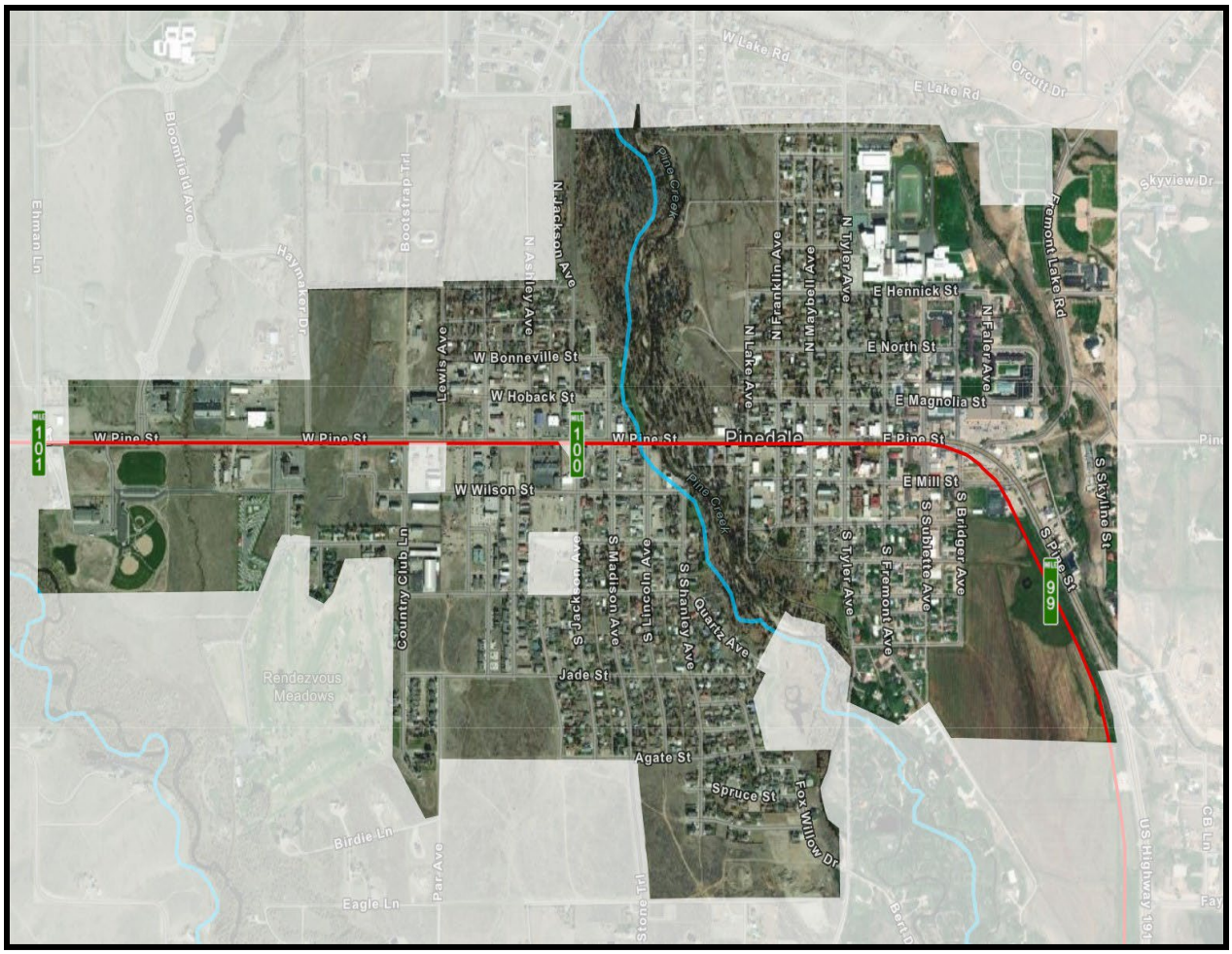
Appendix F.1
Pine Street Safety Audit

Town of Pinedale
Transportation Master Plan

U.S. 191 (WY-13/Pine Street) MP 98.75-101.10
Safety Assessment Report
Pinedale, Wyoming



This report is prepared solely for the purpose of identifying, evaluating and planning safety improvements on public roads. It is subject to the provisions of 23 U.S.C.A. 409, and therefore is not subject to discovery and is excluded from evidence. Applicable provisions of 23 U.S.C.A. 409 are cited below:

> *Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential accident sites, hazardous roadway conditions, or railway-highway crossings, pursuant to sections 130, 144, and 152 of this title or for the purpose of developing any highway safety construction improvement project which may be implemented utilizing Federal-aid highway funds shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists or data.*

Any intentional or inadvertent release of this report, or any data derived from its use shall not constitute a waiver of privilege pursuant to 23 U.S.C.A. 409.

STATEMENT OF PHILOSOPHY

The efficient and responsible investment of resources in addressing safety problems is a difficult task. Since crashes occur on all highways in use, it is inappropriate to say of any highway that it is safe. However, it is correct to say that highways can be built to be safer or less safe. Road safety is a matter of degree. When making decisions effecting road safety it is critical to understand that expenditure of limited available funds on improvements in places where it prevents few injuries and saves few lives can mean that injuries will occur and lives will be lost by not spending them in places where more crashes could have been prevented[1]. It is the Town of Pinedale's objective to maximize crash reduction within the limitations of available budgets by making road safety improvements at locations where it does the most good or prevents the most crashes.

INTRODUCTION

The primary intent of this study is to support the Pinedale Mobility Project by assessing the magnitude and nature of any safety problems using predictive and diagnostics tools.

The scope of this report is as follows:

- Assess the magnitude and nature of the safety problem within the project limits.
- Relate crash causality to roadway geometrics, roadside features, traffic control devices, traffic operations, roadway conditions, driver behavior, and vehicle type.

This report is based on the comprehensive analysis of 6 years of crash history and available imagery. No field visits were conducted by the DiExSys staff, Jorgensen (prime consultant on the project) is advised to verify through field survey the information included in this report regarding physical features and roadside characteristics in the study area.

[1] Hauer, E., (1999) Safety Review of Highway 407: Confronting Two Myths. TRB

SITE LOCATION

This study addresses U.S. Highway 191 (WY-13/Pine Street) between MP 98.75 and 101.10, in Sublette County. The included distance is approximately 2.35 miles.

SITE CONDITIONS

US 191 is classified as an urban 4-lane undivided highway through the study section with frequent intersections. US 191 is a 4-lane facility with 12' lanes in flat terrain on a primarily straight alignment in an urban environment, except for MP 98.75 to approximately MP 99.50, which is on a curved alignment. The Average Annual Daily Traffic (AADT) was about 5,975 between 2016 and 2021. The posted speed limit is 25 mph throughout the study section. The study section is characterized by frequent unsignalized intersections through downtown, at which pedestrian crossings are located, as well as frequent driveway business accesses. Furthermore, the segment is characterized by on street parking on both sides through downtown and by a central two-way-left-turn-lane (TWLTL) to the west of downtown from Garrison Drive to MP 101.10. While all intersections are unsignalized, at Lake Avenue and at Tyler Avenue there are pedestrian hybrid beacons for pedestrians crossing US 191, with the latter location also being a school crosswalk.

CRASH HISTORY AND PROBLEM ANALYSIS

The crash history of non-intersection and intersection or intersection-related crashes for the period of 1/1/2016 through 12/31/2021 was examined and summarized between MP 98.75 and MP 101.10 to locate crash clusters and identify crash causes. Sixty-four (64) crashes were reported in the 6-year period with 48 Property Damage Only (PDO), 14 Injury (19 injured), and 2 Unknown crash severities.

Table 1 summarizes the crash history for US 191 MP 98.75-101.10 over the 6-year period from 1/1/2016 to 12/31/2021.

Year	AADT[2]	PDO	Injury	Unknown	Total
2016	4,527	9	4	0	**13**
2017	6,044	7	5	1	**13**
2018	6,518	10	0	1	**11**
2019	5,548	11	3	0	**14**
2020	6,347	4	0	0	**4**
2021	6,863	7	2	0	**9**
Average	**5,974.5**	**8**	**2.33**	**0.33**	**10.66**

Table 1: Summary of Crash History US 191 MP 98.75-101.10, 2016-2021

[2] AADT averages are based on WYDOT 2021 Vehicle Miles Book, https://www.dot.state.wy.us/home/planning_projects/Traffic_Data.html

SAFETY PERFORMANCE FUNCTIONS and LEVEL OF SERVICE OF SAFETY

We have refined the assessment of the magnitude of safety problems on highway segments through the use of Safety Performance Functions (SPF). The SPF reflects the relationship between traffic exposure measured in AADT, and crash count for a unit of road section measured in crashes per mile per year. The SPF models provide an estimate of the normal or expected crash frequency and severity for a range of AADT among similar facilities. Two kinds of Safety Performance Functions were calibrated. The first one addresses the total number of crashes and the second one looks only at crashes involving an injury or fatality. Together they allow us to assess the magnitude of the safety problem from the frequency and severity standpoint.

Development of the SPF lends itself well to the conceptual formulation of the Level of Service of Safety (LOSS). The concept of level of service uses quantitative measures and qualitative description that characterize safety of a roadway segment in reference to its expected frequency and severity. If the level of safety predicted by the SPF will represent a normal or expected number of crashes at a specific level of ADT, then the degree of deviation from the norm can be stratified to represent specific levels of safety.

LOSS I - Indicates low potential for crash reduction
LOSS II - Indicates low to moderate potential for crash reduction
LOSS III - Indicates moderate to high potential for crash reduction
LOSS IV - Indicates high potential for crash reduction

LOSS boundaries are calibrated by computing the 20th and the 80th percentiles using the Gamma Distribution Probability Density Function[3]. Gradual change in the degree of deviation of the LOSS boundary line from the fitted model mean reflects the observed increase of variability in crashes/mile as AADT increases. This increase is consistent with a Gamma Distribution error structure and reflects dispersion around the mean typical of this highway environment. LOSS reflects how the roadway segment is performing in regard to its expected crash frequency and severity at a specific level of ADT. If the safety problem is present, LOSS will only describe its magnitude from the frequency and severity standpoint. The nature of the problem is determined through diagnostic analysis using direct diagnostics and pattern recognition techniques.

CORRECTING FOR REGRESSION TO THE MEAN BIAS USING THE EMPIRICAL BAYES METHOD

In road safety the average of several years of crash history of a roadway segment or of an intersection provides us with an estimate of what is likely to be observed in the future. The precision of this estimate, however, can be improved upon by correcting it for the Regression to the Mean (RTM) bias. RTM phenomenon reflects the tendency for random

[3] Kononov, J., Durso, K, Lyon, C and Allery, B. Level of Service of Safety Revisited, *In Transportation Research Record No 2514,* TRB, National Research Council, Washington, DC 2015, pp 10-21

events, such as vehicle crashes to move toward the average during the course of an experiment or over time. For instance, if a segment or an intersection exhibits unusually high or unusually low crash frequency in a particular year, because of RTM we need to be aware that over the long run its true average is closer to the mean representing safety performance of similar facilities. The existence of the RTM bias has been long recognized and is now effectively addressed by using the Empirical Bayes (EB) method[4]. The use of the EB method is particularly effective when it takes a long time for a few crashes to occur, as is often the case on Wyoming rural roads.

The EB method for the estimation of safety increases the precision of estimation and corrects for the regression to the mean bias. It is based on combining the information contained in crash counts (known crash history) with the information contained in knowing the safety of similar entities. The information about safety of similar entities is brought into the EB procedure by the SPF through use of expected mean value and over-dispersion parameter associated with the specific SPF. EB corrected values of frequency and severity of crashes will be used in the SPF analysis to assess the magnitude of the safety problem.

[4] Hauer et al. Estimating Safety by the Empirical Bayes Method. In *Transportation Research Record 1174,* TRB, National Research Council, Washington, D.C., 2002, pp 126-131.

SAFETY PERFORMANCE ANALYSIS WITHIN STUDY LIMITS:

NON-INTERSECTION CRASHES

Figure 1 shows a typical section of US 191 within the study limits.

Figure 1: Typical View US-191 Facing West

There were 33 non-intersection crashes recorded in the study period, including 28 Property Damage Only (PDO), 2 'Unknown' crash severity and 3 Injury crashes, with 3 people injured. The most frequent crash type being Wild Animal Collisions (WAC), followed by collisions with Parked Motor Vehicles (PMV).

Figure 2 and **Figure 3** represent EB corrected segment level safety performance of US-191 within the study limits. The SPF model is focused on multi-vehicle crashes primarily, as such we have removed all Wild Animal Collisions from the model to quantify the effect of alignment and typical section on safety performance. **Figure 2** shows that safety performance from the total crash frequency standpoint (excluding collisions with wild animals), is in LOSS-II, reflecting low to moderate potential for crash reduction for the segment. **Figure 3** represents safety performance from the standpoint of severity and considers injury and fatal crashes only (excluding 1 injury crash with a deer). It also shows that the segment performs at LOSS-II, reflecting low to moderate potential for crash reduction.

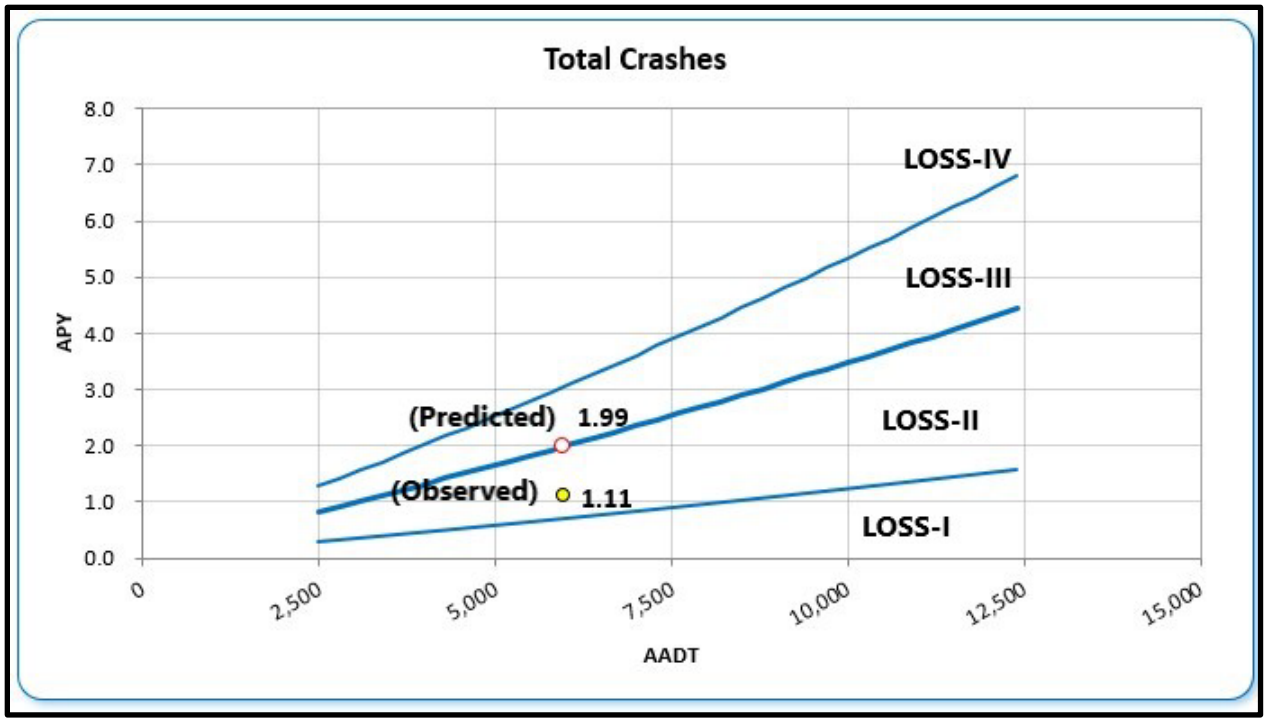


Figure 2: EB Corrected SPF Total US-191, MP 98.75-101.10 (Excluding Wild Animal Collisions)

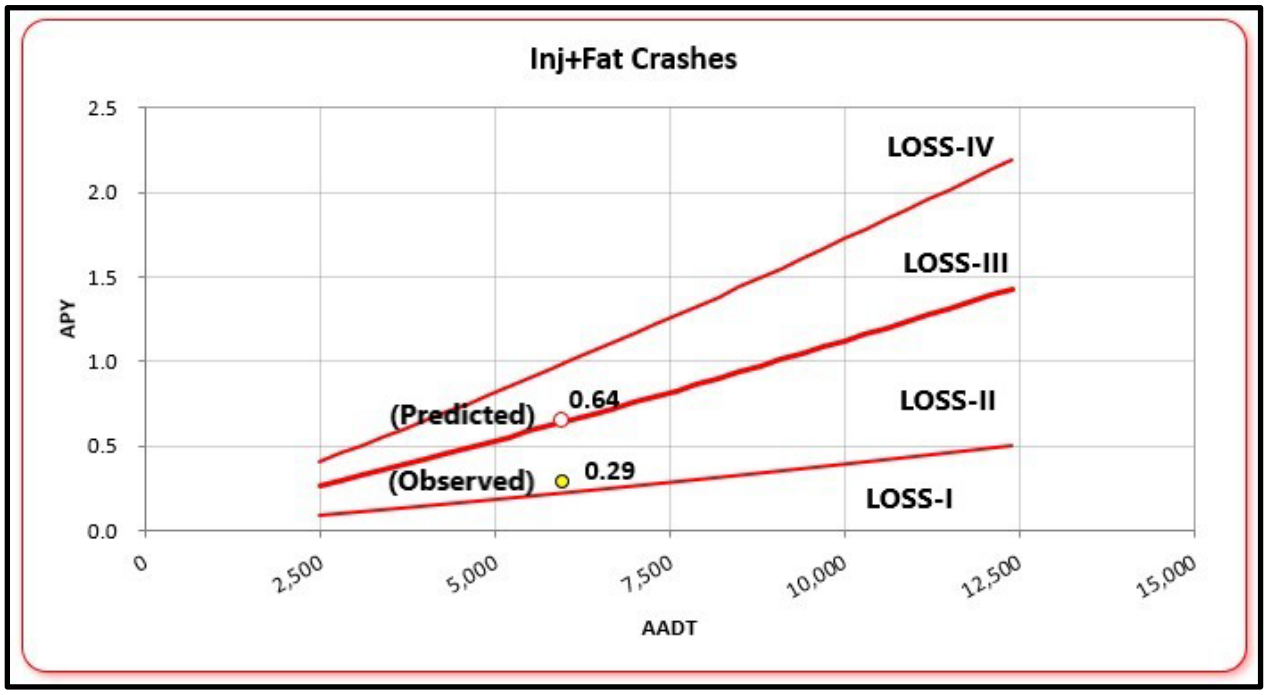


Figure 3: EB Corrected SPF INJ+FAT US-191, MP 98.75-101.10 (Excluding 1 Wild Animal Collision)

The segment will be examined for the presence of crash patterns.

PATTERN RECOGNITION and DIAGNOSTIC ANALYSIS: *NON-INTERSECTION CRASHES*

Distribution of crashes by type on the mainline of US-191 within the study limits is provided in **Figure 4**. The most frequent crash type is collisions with wild animals, followed by collisions with parked motor vehicles.

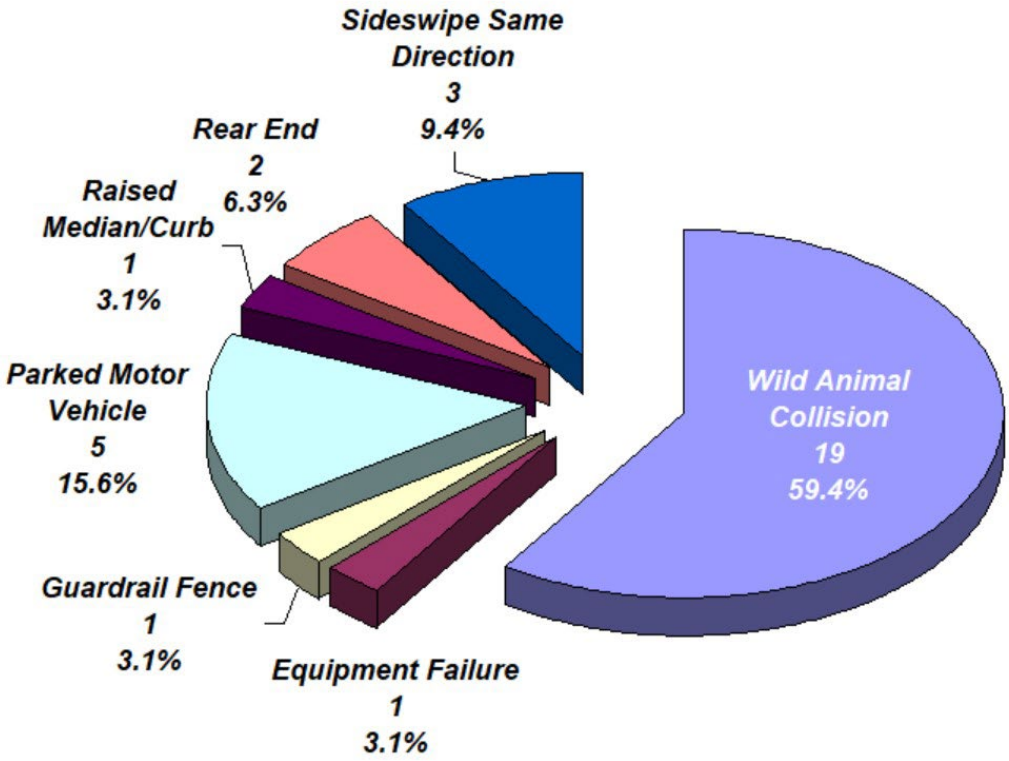


Figure 4: US-191 MP 98.75-101.10 Crash Distribution by Type

As outlined above, the SPF model for an Urban 4-lane Undivided Arterial is best adapted to multi-vehicle collisions, and furthermore at this time diagnostic tools for this facility type have not been developed. In this case, while we cannot use diagnostic tools, we can make observations based on crash history.

In the case of Wild Animal collisions, we can say that by observation they constitute a pattern since we do not expect more than half of crashes on an urban arterial to involve wild animals. Crash records show that WACs tend to be concentrated at the eastern and western side of downtown, with a cluster around MP 98.8 and a cluster around MP 100.75-101.00. **Figure 5** shows where WACs were recorded, identified by the blue markers. There is a creek to the west of MP 101.00, and a stream adjacent to Bloomfield Avenue near MP 100.75, both of which would provide a water source for wild animals. Similarly, there is a ditch associated with the cluster west of MP 100. Pine Creek is also associated with a cluster and Pine Ditch is nearly adjacent to the cluster at the east end of the study. Only 1 wild animal collision resulted in a reported injury (a collision with a deer at MP 98.78).

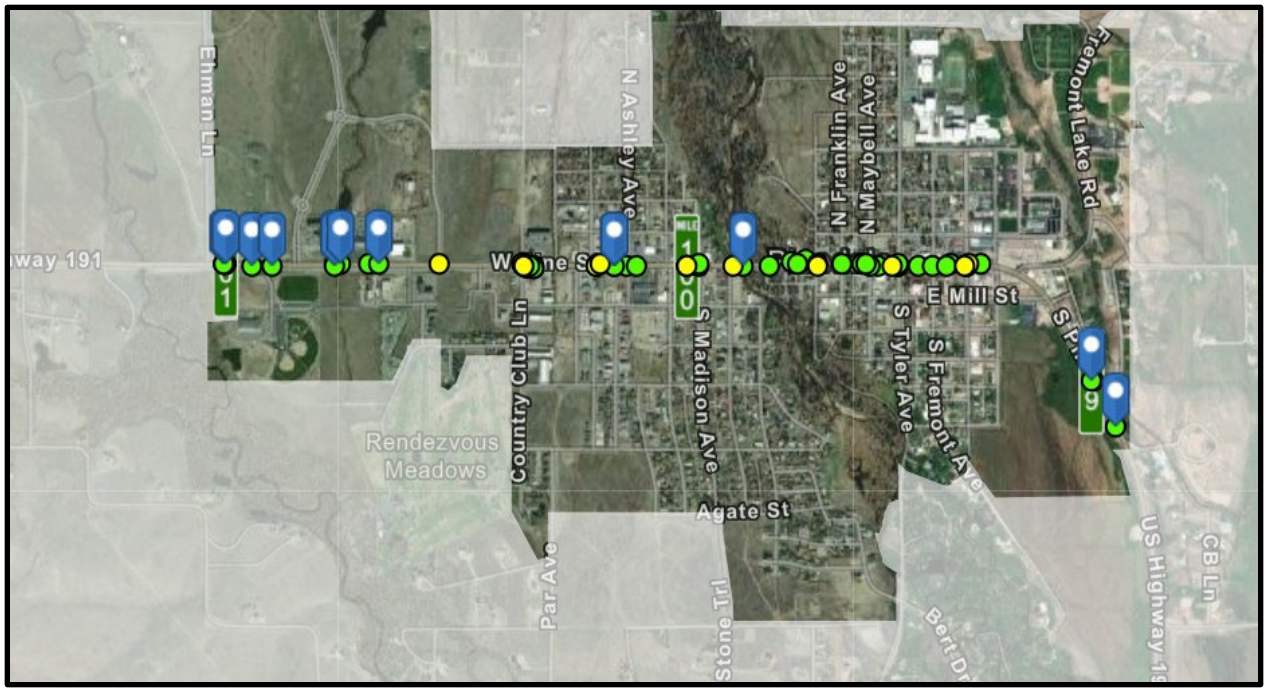


Figure 5: Wild Animal Collisions (BLUE) on US-191, 1/1/16-12/31/21

There were 5 Parked Motor Vehicle (PMV) crashes over the study period. These included 2 PDO crashes and 1 Injury (with 1 injured person) as well as 2 'Unknown' crash severities. In the case of the 'Unknown' severities, these have been conservatively assumed to be PDO crashes. Although diagnostic tools are not available, we can say that by observation Parked Motor Vehicle collisions meet the Minimum of 5 crashes of a specific type in 5 years, and it seems reasonable to conclude that 15.4% Parked Vehicle collisions is higher than the expected proportion. As such, PMV collisions are apparently a pattern here.

All PMV crashes occurred between MP 99.740 and MP 11.330, approximately between Elma Street and Country Club Lane on the western side of downtown. All but one crash occurred in daylight conditions. In two cases adverse road conditions were a factor with snow and ice. All crashes were recorded between late September and early February when adverse weather is more likely in the area.

DRIVEWAY ACCESS COLLISIONS

There were 11 crashes over the 6-year period which occurred at driveway accesses (business accesses). These included 8 PDO and 3 Injury (7 injuries) crashes. All crashes were angle type crashes. In two cases adverse weather (snow/ice) was a contributing factor, while in another case a visual obstruction by another vehicle was a contributing factor.

Almost all crashes (8 of 11) occurred in daylight hours and between Monday to Friday. Crashes unsurprisingly appear confined to the built-up downtown Pinedale district,

between Sublette Avenue and Haymaker Drive, MP 99.398 to MP 100. 540, approximately (**Figure 6**). There is mild clustering to driveway accesses crashes, with only 2 mid-block locations seeing 2 or more crashes: Sublette Avenue to Fremont Avenue, and Ashley Avenue to Colter Avenue.

Figure 6: General Locations of Driveway Access Crashes (BLUE), US-191, 1/1/16-12/31/21

Although diagnostic tools are not available, we can say by observation that Injury level Driveway Access crashes constitute a pattern here, with 7 injuries occurring over a 6 year period, meeting the basic definition of cumulative binomial probability, exceeding 95% and a minimum of 5 crashes of a given type or category in a 5 year period.

The area between Sublette Avenue and Fremont Avenue, while containing a small cluster of driveway access crashes also contained 1 of the Injury level driveway access crashes. There are no patterns to the other two injury level crashes, suggesting the problem might be more generalized.

SAFETY PERFORMANCE ANALYSIS AND DIAGNOSTIC ANALYSIS WITHIN STUDY LIMITS:

INTERSECTION CRASHES

There were 20 intersection crashes recorded in the study period between MP 98.75 and MP 101.10. These included 12 PDO crashes and 8 Injury (9 injuries) crashes.

All intersections within the study limits are unsignalized. In the downtown Pinedale area intersections are predominantly 4-leg with pedestrian crosswalks. Intersections west of Colter Avenue and east of Bridger Avenue do not have pedestrian facilities, while two intersections, Lake Avenue and Tyler Avenue, have Hybrid Pedestrian Beacons providing stop control.

In our analysis of intersection crashes within the study limits, we found that only three intersections, (Country Club Lane, Tyler Avenue and Sublette Avenue), had 3 or more recorded crashes, with all other locations having predominantly 1 recorded crash, except for Franklin Avenue and Lake Avenue which had 2 each.

Diagnostic norms for urban undivided unsignalized intersections are available, given the small town environment however, it is difficult to reach a threshold of a pattern (1 crash type/category per year). In some cases, diagnostic analysis may suggest that a pattern may be emerging, and a location should be monitored.

SUBLETTE AVENUE - SAFETY PERFORMANCE ANALYSIS

The intersection of Sublette Ave. and US 191 is a 4-leg, 4-lane Undivided Unsignalized Urban intersection. **Figure 7** shows an aerial view of the intersection of US 191 and Sublette Ave. and **Figure 8** shows a street level view. The AADT on US 191 was about 5,975 vpd, while the AADT on Sublette Ave was about 800 vpd.

There were 3 crashes at the intersection in the study period, including 1 PDO and 2 Injury (2 injuries). These included 2 Angle (Broadside) collisions and 1 Pedestrian collision.

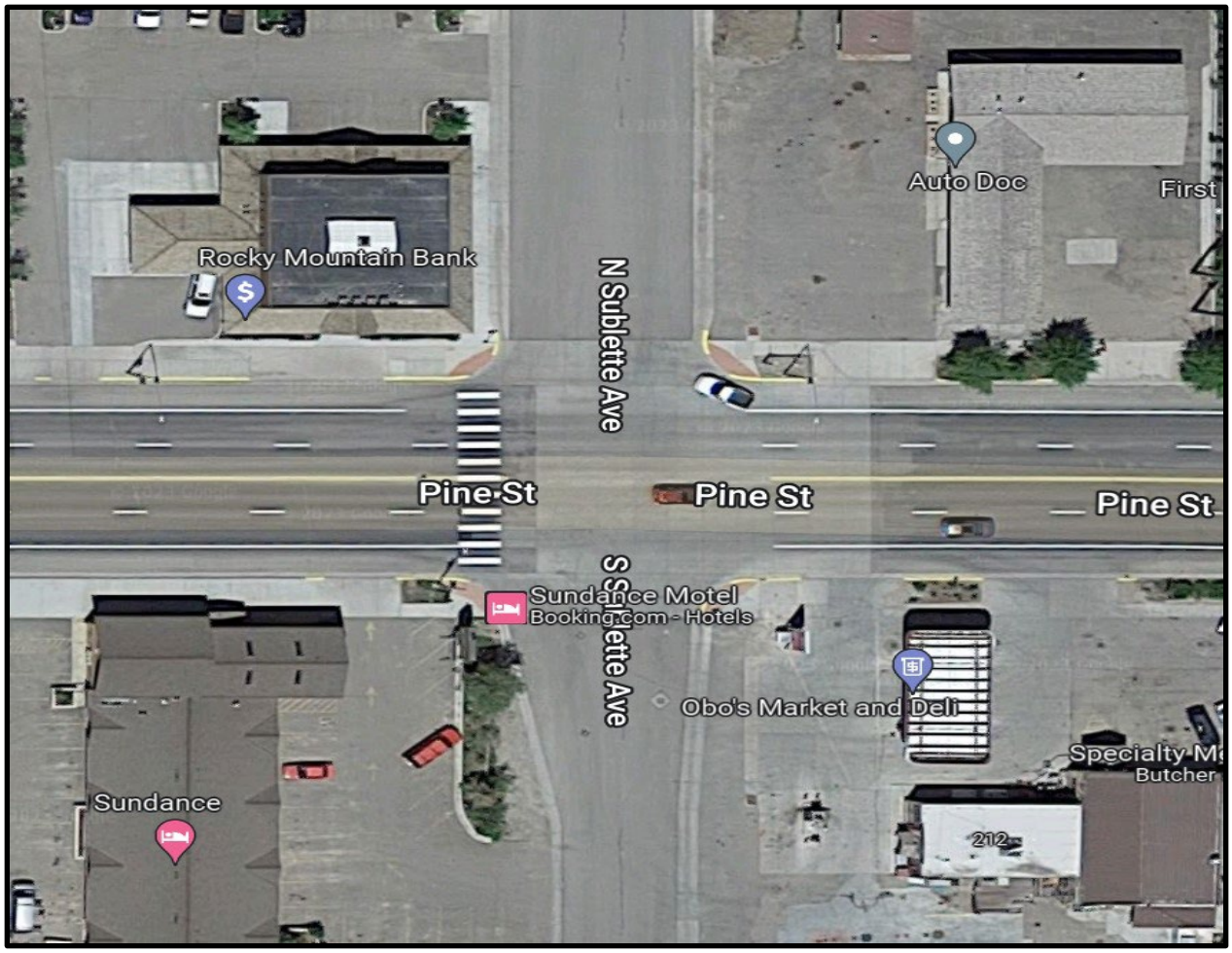


Figure 7: Sublette Avenue & US-191 (Pine St.)

Figure 8: Sublette Avenue & US-191, Facing East

Figure 9 and **Figure 10** represent EB corrected intersection level safety performance of the intersection of Sublette Ave and US 191. **Figure 9** shows safety performance from the total crash frequency standpoint, reflecting LOSS-II (low to moderate potential for crash reduction) for the intersection, with performance better than the expected mean for this facility type. **Figure 10** represents safety performance from the standpoint of severity and considers injury and fatal crashes only. It shows that the intersection performs at LOSS-III, reflecting moderate to high potential for crash reduction.

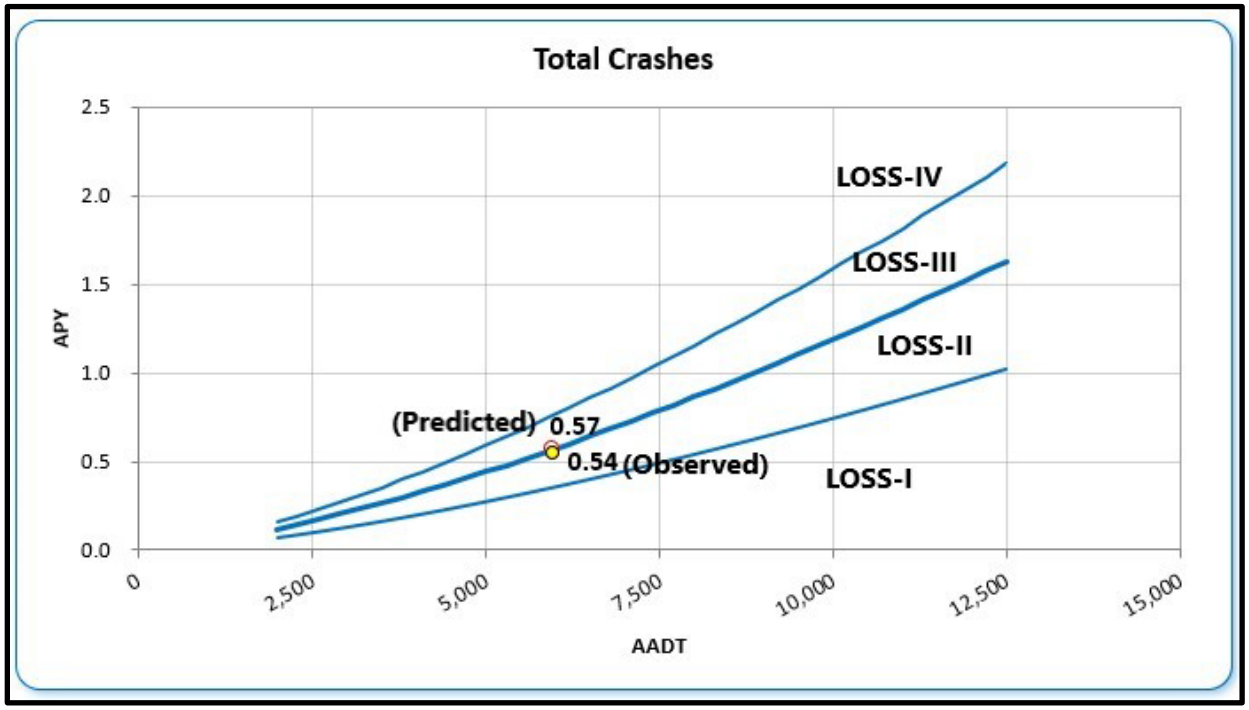


Figure 9: EB Corrected SPF Total US-191 & Sublette Avenue

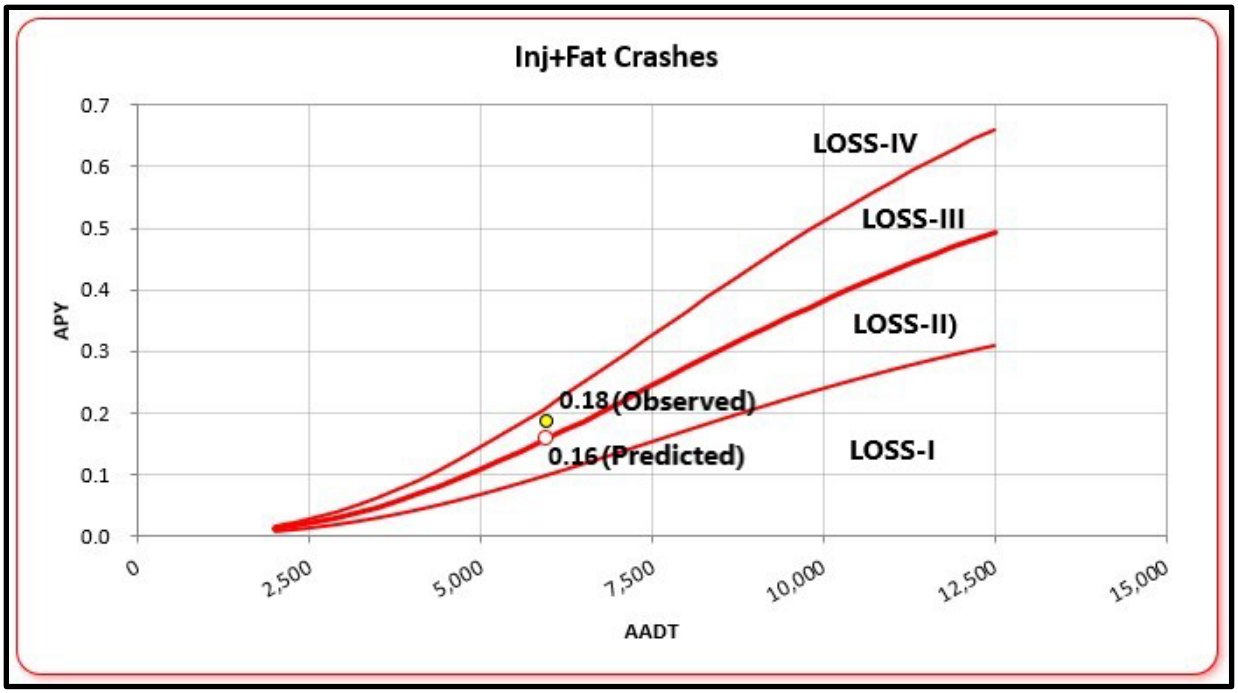


Figure 10: EB Corrected SPF INJ+FAT US 191 & Sublette Avenue

Distribution of crashes by type at the intersection of US-191 and Sublette Avenue is provided in **Figure 11**.

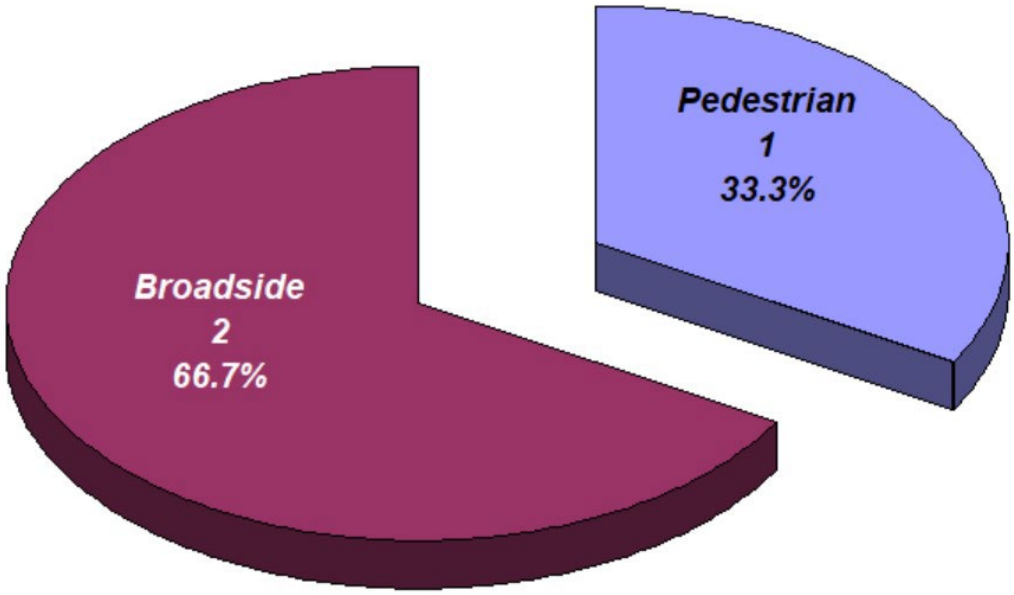


Figure 11: US 191 & Sublette Avenue Crash Distribution by Type

Crash records revealed that both Broadside crashes occurred in adverse weather with slush and snow on the road. All crashes, including the Pedestrian incident occurred in daylight conditions. There is a striped pedestrian crosswalk on the west side of the intersection, but this intersection does not have actuated beacons like Lake Avenue and

Tyler Avenue do. It is not clear from the available crash data whether the pedestrian was in the crosswalk.

Google Streetview imagery shows there is a gas station on the southeastern corner of the intersection with two driveway accesses near the intersection (**Figure 12**). It is possible that northbound vehicles on Sublette Avenue may encounter visual obstructions due to traffic entering and exiting the gas station. Driveways are similarly located on the northeast and southwest corners of the intersection. In addition to the potential for visual obstruction, driveways located immediately adjacent to intersections may lead to misinterpretations of the intentions of drivers who are signaling to turn into a driveway on the far side of the intersection – drivers waiting to cross may think the signaling driver intends to turn onto Sublette Avenue.

Figure 12: View East from NB Sublette Avenue

With 2 broadside crashes, both occurring in adverse weather conditions in the study period, these might be regarded as over-represented or emerging patterns for observation.

TYLER AVENUE - SAFETY PERFORMANCE ANALYSIS

The intersection of Tyler Ave. and US 191 is a 4-leg, 4-lane Undivided Unsignalized Urban intersection. The intersection accommodates a school crosswalk across US 191 on the east side, featuring Hybrid Pedestrian beacons. **Figure 13** shows an aerial view of the

intersection and **Figure 14** shows a street level view. The AADT on US 191 was about 5,975 vpd, while the AADT on Tyler Avenue was about 1,350 vpd.

There were 3 crashes at the intersection in the study period, including 2 PDO and 1 Injury (1 injured person) crashes. These included 2 Rear End collisions and 1 single vehicle collision precipitated by a “Thrown/Falling Object”.

Figure 13: Tyler Avenue & US 191 (Pine St.)

Figure 14: Tyler Avenue & US 191, Facing West

Figure 15 and **Figure 16** represent EB corrected intersection level safety performance of the intersection of Tyler Ave and US 191. **Figure 15** shows safety performance from the total crash frequency standpoint, while **Figure 16** represents safety performance from the standpoint of severity and considers injury and fatal crashes only. **Figure 15** shows that the intersection performs at LOSS-II from the total crash frequency standpoint, reflecting low to moderate potential for crash reduction. **Figure 16** shows the intersection performs near the mean from the crash severity standpoint, reflecting moderate potential for crash reduction.

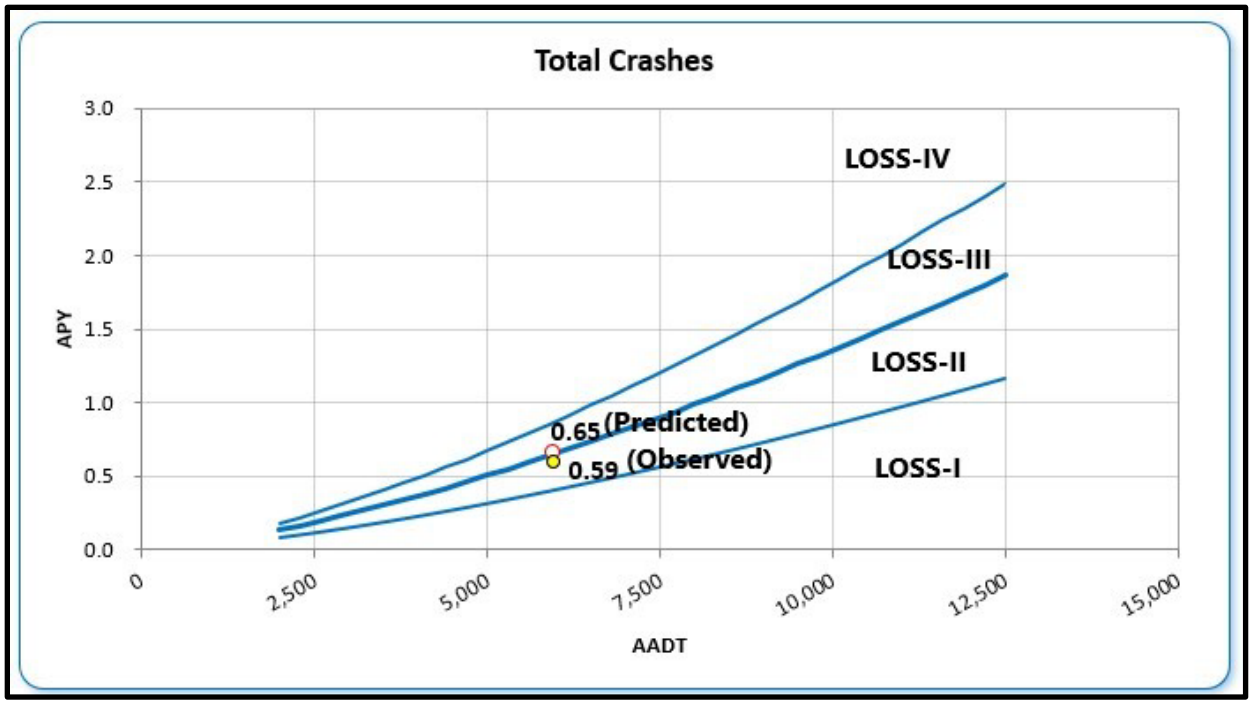


Figure 15: EB Corrected SPF Total US 191 & Tyler Avenue

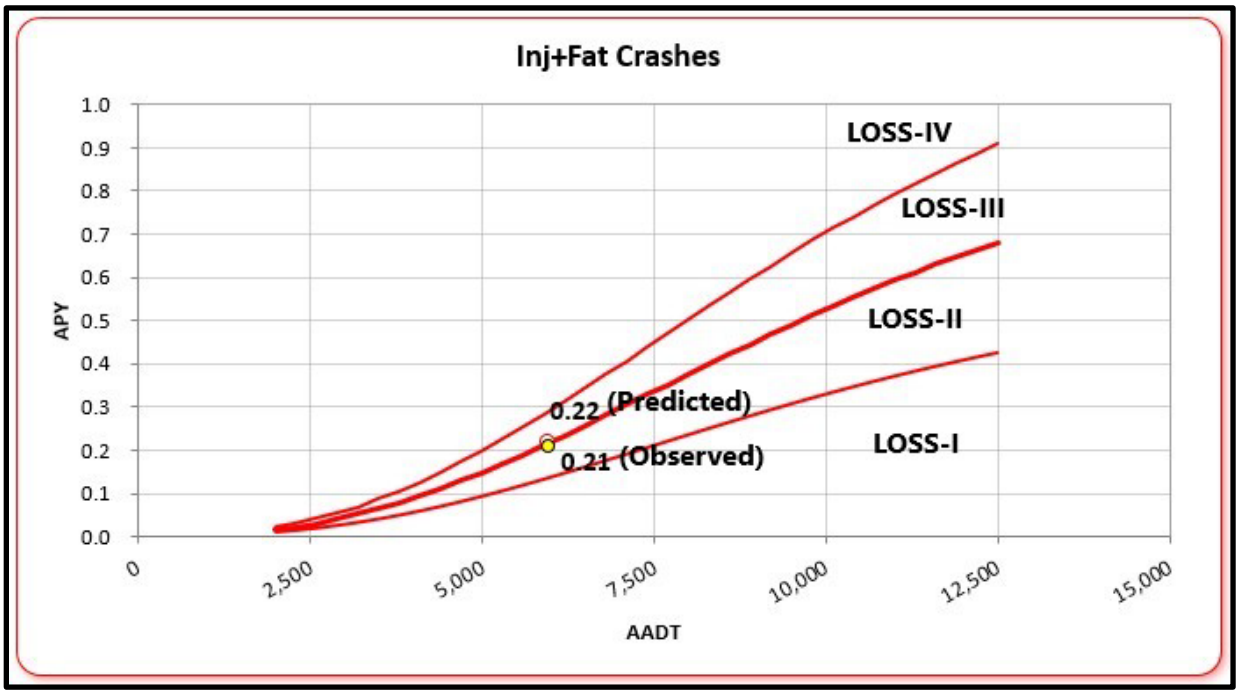


Figure 16: EB Corrected SPF INJ+FAT US 191 & Tyler Avenue

Distribution of crashes by type at the intersection of US 191 and Tyler Avenue is provided in **Figure 17**.

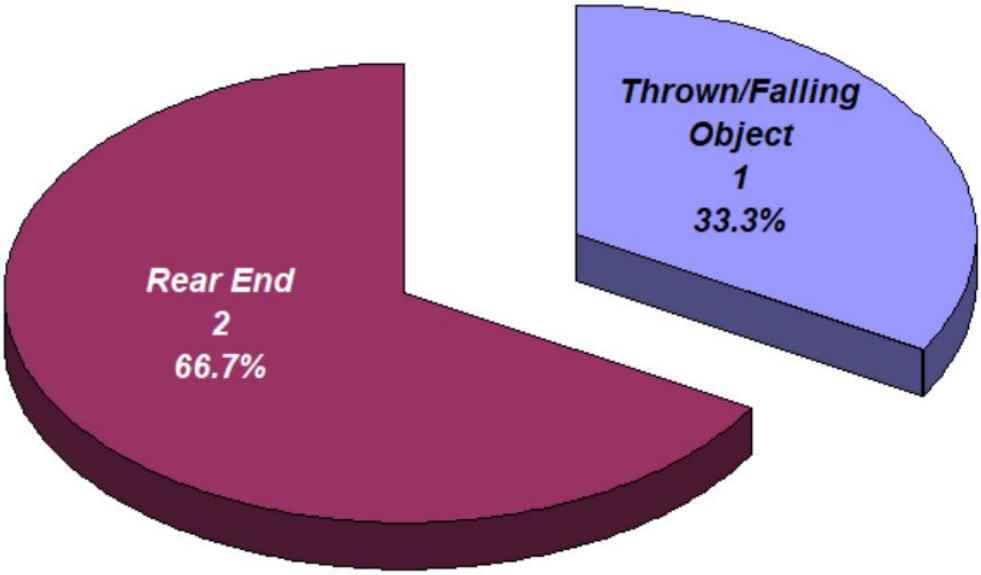


Figure 17: US 191 & Tyler Avenue Crash Distribution by Type

As outlined previously because no crash type or category met the definition of a pattern for cumulative binomial probability, there are no identified patterns which can be evaluated by direct diagnostics.

Crash records show that both Rear-end crashes occurred on Tuesday afternoons between Noon and 4 P.M. Because the rear-end collisions occurred in the afternoon hours and because the intersection is characterized by actuated STOP beacons on the eastern pedestrian crosswalk, it is possible that the rear-ends occurred when drivers stopping for crossing pedestrians were struck from behind.

The “Thrown/Falling Object” crash was a single vehicle incident and occurred on July 4th, such that it is potentially related to festivities. All crashes occurred in daylight conditions and without any adverse road or weather conditions.

COUNTRY CLUB LANE - SAFETY PERFORMANCE ANALYSIS

The intersection of Country Club Lane and US 191 (Pine St.) is a 4-leg, 4-lane Undivided Unsignalized Urban intersection. The intersection is on the western side of downtown Pinedale and does not have any pedestrian facilities. **Figure 18** shows an aerial view of the intersection and **Figure 19** shows a street level view. The AADT on US 191 was about 5,975 vpd, while the AADT on Country Club Lane about 350 vpd.

There were 4 crashes at the intersection in the study period, including 2 PDO and 2 Injury (3 injuries) crashes. These included 2 Rear End collisions, 1 Overturning crash and 1 Angle (Broadside) crash.

Figure 18: Country Club Lane & US 191 (Pine St.)

Figure 19: Country Club Lane & US 191, Facing East

Figure 20 and **Figure 21** represent EB corrected intersection level safety performance of the intersection of Country Club Lane and US 191. **Figure 20** shows safety performance from the total crash frequency standpoint, while **Figure 21** represents safety performance from the standpoint of severity and considers injury and fatal crashes only. The figures

show that the intersection performs at LOSS-III, from both the total crash frequency and the crash severity standpoints, reflecting moderate to high potential for crash reduction.

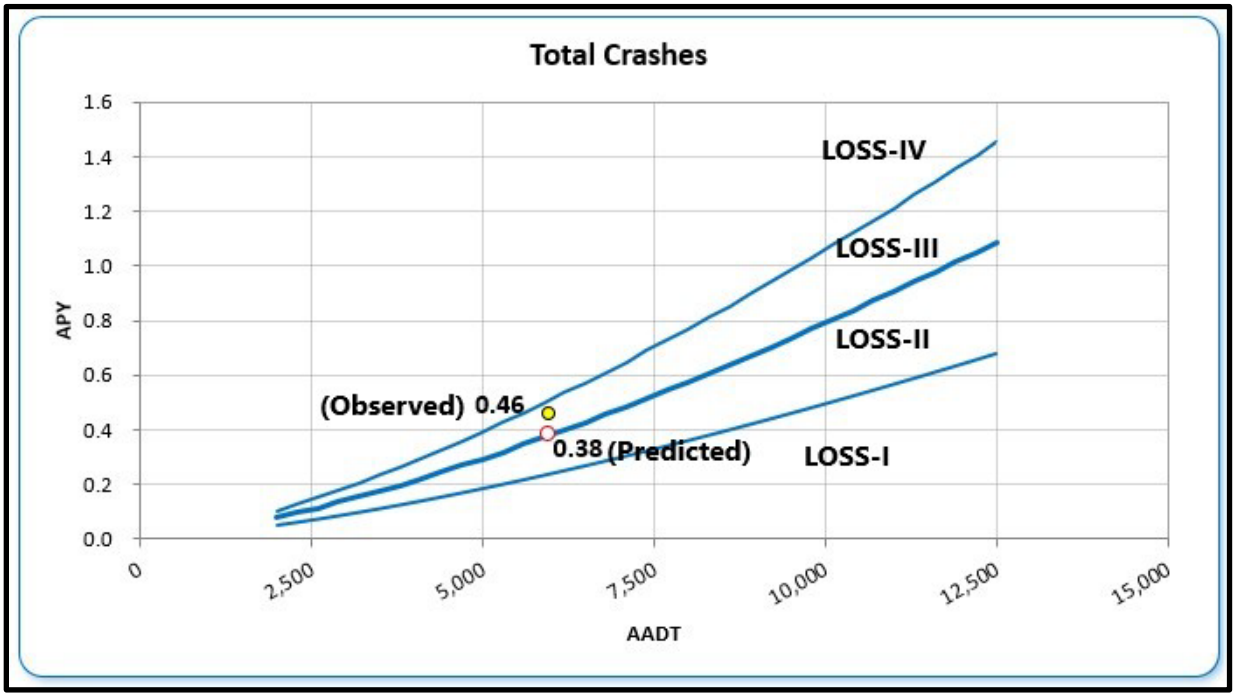


Figure 20: EB Corrected SPF Total US 191 & Country Club Lane

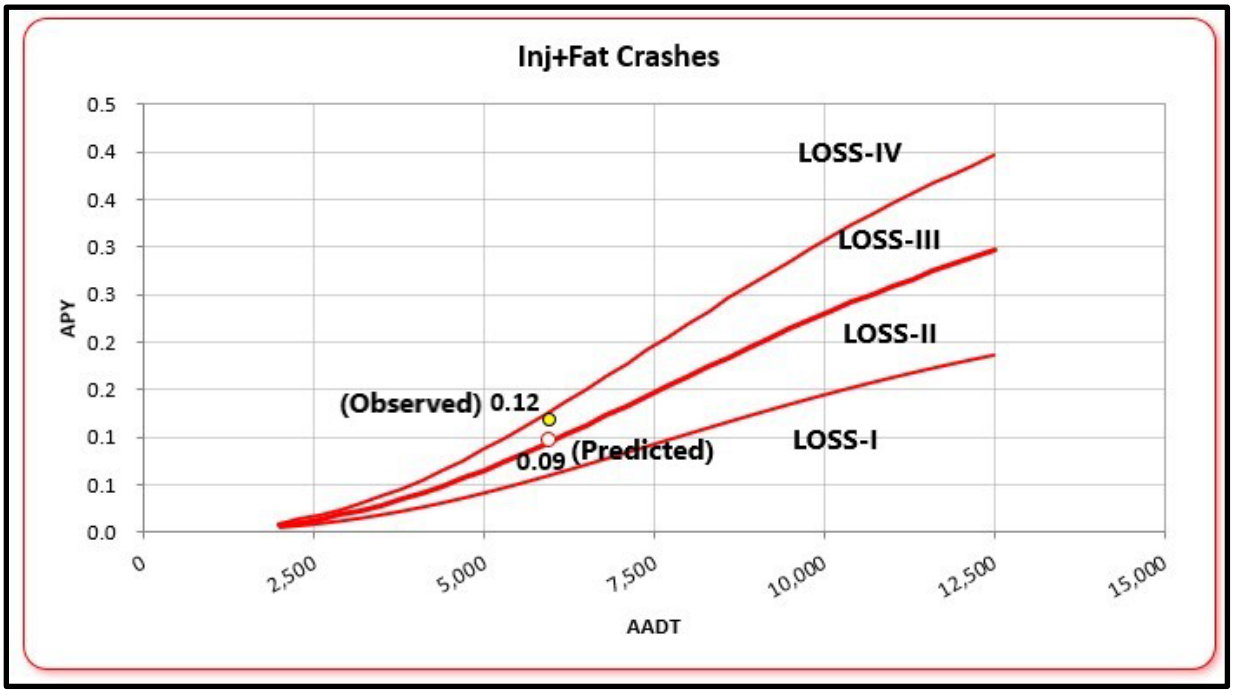


Figure 21: EB Corrected SPF INJ+FAT US 191 & Country Club Lane

Distribution of crashes by type at the intersection of US 191 and Country Club Lane is provided in **Figure 22**.

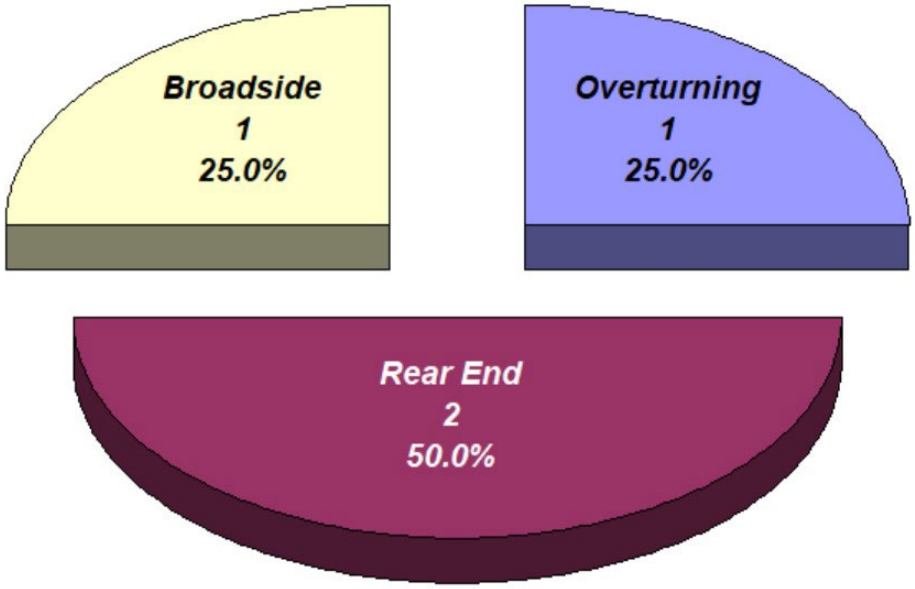


Figure 22: US 191 & Country Club Lane Crash Distribution by Type

As outlined previously because no crash type or category met the definition of a pattern for cumulative binomial probability, there are no identified patterns which can be evaluated by direct diagnostics. However, SPF analysis showed that injury crashes are elevated above expected norms at the intersection. There were 2 injury crashes at the intersection with 3 injuries, one crash was a Rear-End collision and the other was a Broadside collision. In addition, there was a PDO Rear-End collision and a PDO Overturning collision.

While crash records show there is nothing to indicate a trend for the injury collisions, when all crashes are considered, it is evident that in 3 out of the 4 cases adverse weather and road conditions were involved. In these 3 cases there was snow on the roadway, and in the case of the broadside collision it was also actively snowing at the time.

Furthermore, 2 of the 4 crashes occurred under dark conditions. Google Streetview imagery is available from 2015 and indicates that there is no streetlighting in the vicinity aside from one intersection luminaire in the southwest corner of the intersection (**Figure 23**).

Finally, there is a lane configuration change on the west side of the intersection, with US-191 dropping to a single lane from 2 lanes westbound and increasing to 2 lanes from a single lane eastbound, such that merging could be a potential factor. Rear ends may reflect vehicles stopping or slowing in the thru lanes to make left or right turns, since there are no auxiliary lanes.

Figure 23: Single Luminaire on SW Corner of US 191 & Country Club Ln

VULNERABLE USERS

Bicyclists and Pedestrians are a category of users which are particularly vulnerable to being injured when they interact with traffic. No collisions with bicycles were reported along US 191 in Pinedale during the study period. In addition to the one pedestrian collision previously covered in the Sublette Avenue intersection discussion, there was one pedestrian collision reported at the Lincoln Avenue intersection, the pedestrian was injured. Both pedestrian crashes occurred at intersections which have crosswalks crossing US 191.

SUMMARY AND CONCLUSIONS

Our findings are based on the comprehensive analysis of 6 years of crash history and available imagery. No field visits were conducted by the DiExSys staff, Jorgensen (prime consultant on the project) is advised to verify through field survey the information included in this report regarding physical features and roadside characteristics in the study area.

There were a total of 64 crashes recorded on US 191, MP 98.75 to MP 101.10 between 1/1/2016 and 12/31/2021. This comprised 33 non-intersection crashes, 20 intersection or intersection related crashes, and 11 driveway access crashes.

Mainline crashes included 28 Property Damage Only (PDO), 2 ‘Unknown’ crash severity and 3 Injury crashes, with 3 people injured. The most frequent crash type was Wild Animal

Collisions, followed by collisions with Parked Motor Vehicles, both of which represented patterns. Segment SPFs show that in terms of both total crash frequency and crash severity the mainline performs as LOSS-II indicating low to moderate potential for crash reduction.

The 11 driveway access crashes comprised 8 PDO crashes and 3 Injury crashes, with 7 people injured. Injury level driveway access crashes meet the criteria for a pattern. There is mild clustering of crashes between Sublette Avenue to Fremont Avenue, and Ashley Avenue to Colter Avenue.

The 20 intersection crashes comprised 12 PDO crashes and 8 Injury crashes with 9 people injured. The only intersections recording 3 or more crashes over the study period were at the intersections of US-191 with Sublette Avenue, Tyler Avenue and Country Club Lane.

Diagnostic norms for urban undivided unsignalized intersections are available, given the small-town environment however, it is difficult to reach a threshold of a pattern (1 crash type/category per year). In some cases, diagnostic analysis may suggest that a pattern may be emerging, and a location should be monitored.

Sublette Avenue performs at LOSS-II in terms of total crash frequency, representing low to moderate potential for crash reduction, and at LOSS-III in terms of crash severity, representing moderate to high potential for crash reduction. Sublette Avenue indicates potential for an emerging pattern of broadside collisions.

Tyler Avenue performs at LOSS-II in terms of total crash frequency, indicating low to moderate potential for crash reduction, and just below the mean for crash severity, indicating moderate potential for crash reduction.

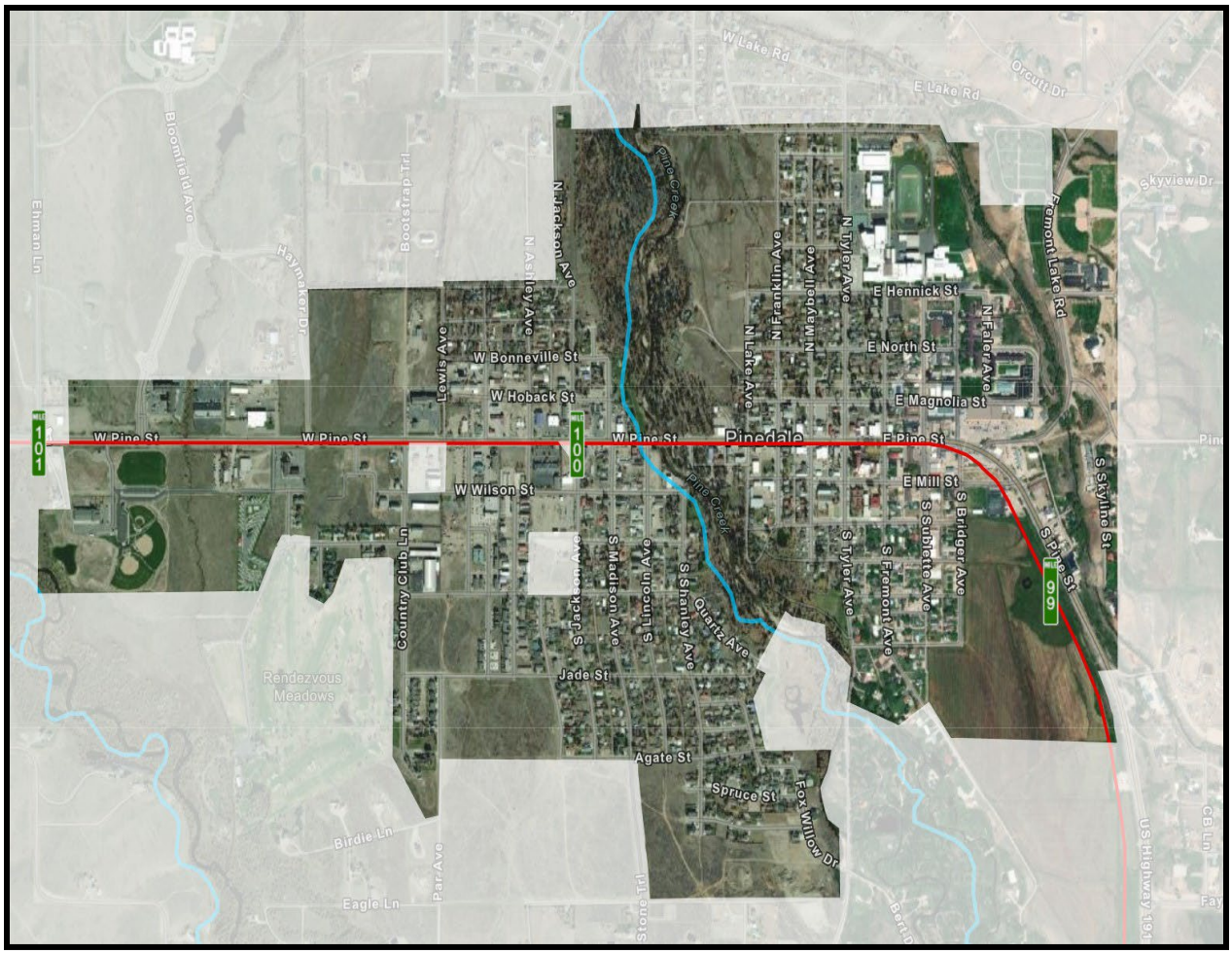
Country Club Lane performs at LOSS-III both in terms of total crash frequency and crash severity, indicating moderate to high potential for crash reduction. Adverse weather was a notable contributing factor to crashes at this intersection.

A total of 2 pedestrians were injured in reported crashes in the study period. Both were at intersections which have marked crosswalks across Pine.

Appendix F.2
WYDOT Speed Study on Pine Street

Town of Pinedale
Transportation Master Plan

U.S. 191 (WY-13/Pine Street) MP 98.75-101.10
Safety Assessment Report
Pinedale, Wyoming



This report is prepared solely for the purpose of identifying, evaluating and planning safety improvements on public roads. It is subject to the provisions of 23 U.S.C.A. 409, and therefore is not subject to discovery and is excluded from evidence. Applicable provisions of 23 U.S.C.A. 409 are cited below:

> *Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential accident sites, hazardous roadway conditions, or railway-highway crossings, pursuant to sections 130, 144, and 152 of this title or for the purpose of developing any highway safety construction improvement project which may be implemented utilizing Federal-aid highway funds shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists or data.*

Any intentional or inadvertent release of this report, or any data derived from its use shall not constitute a waiver of privilege pursuant to 23 U.S.C.A. 409.

STATEMENT OF PHILOSOPHY

The efficient and responsible investment of resources in addressing safety problems is a difficult task. Since crashes occur on all highways in use, it is inappropriate to say of any highway that it is safe. However, it is correct to say that highways can be built to be safer or less safe. Road safety is a matter of degree. When making decisions effecting road safety it is critical to understand that expenditure of limited available funds on improvements in places where it prevents few injuries and saves few lives can mean that injuries will occur and lives will be lost by not spending them in places where more crashes could have been prevented[1]. It is the Town of Pinedale's objective to maximize crash reduction within the limitations of available budgets by making road safety improvements at locations where it does the most good or prevents the most crashes.

INTRODUCTION

The primary intent of this study is to support the Pinedale Mobility Project by assessing the magnitude and nature of any safety problems using predictive and diagnostics tools.

The scope of this report is as follows:

- Assess the magnitude and nature of the safety problem within the project limits.
- Relate crash causality to roadway geometrics, roadside features, traffic control devices, traffic operations, roadway conditions, driver behavior, and vehicle type.

This report is based on the comprehensive analysis of 6 years of crash history and available imagery. No field visits were conducted by the DiExSys staff, Jorgensen (prime consultant on the project) is advised to verify through field survey the information included in this report regarding physical features and roadside characteristics in the study area.

[1] Hauer, E., (1999) Safety Review of Highway 407: Confronting Two Myths. TRB

SITE LOCATION

This study addresses U.S. Highway 191 (WY-13/Pine Street) between MP 98.75 and 101.10, in Sublette County. The included distance is approximately 2.35 miles.

SITE CONDITIONS

US 191 is classified as an urban 4-lane undivided highway through the study section with frequent intersections. US 191 is a 4-lane facility with 12' lanes in flat terrain on a primarily straight alignment in an urban environment, except for MP 98.75 to approximately MP 99.50, which is on a curved alignment. The Average Annual Daily Traffic (AADT) was about 5,975 between 2016 and 2021. The posted speed limit is 25 mph throughout the study section. The study section is characterized by frequent unsignalized intersections through downtown, at which pedestrian crossings are located, as well as frequent driveway business accesses. Furthermore, the segment is characterized by on street parking on both sides through downtown and by a central two-way-left-turn-lane (TWLTL) to the west of downtown from Garrison Drive to MP 101.10. While all intersections are unsignalized, at Lake Avenue and at Tyler Avenue there are pedestrian hybrid beacons for pedestrians crossing US 191, with the latter location also being a school crosswalk.

CRASH HISTORY AND PROBLEM ANALYSIS

The crash history of non-intersection and intersection or intersection-related crashes for the period of 1/1/2016 through 12/31/2021 was examined and summarized between MP 98.75 and MP 101.10 to locate crash clusters and identify crash causes. Sixty-four (64) crashes were reported in the 6-year period with 48 Property Damage Only (PDO), 14 Injury (19 injured), and 2 Unknown crash severities.

Table 1 summarizes the crash history for US 191 MP 98.75-101.10 over the 6-year period from 1/1/2016 to 12/31/2021.

Year	AADT[2]	PDO	Injury	Unknown	Total
2016	4,527	9	4	0	**13**
2017	6,044	7	5	1	**13**
2018	6,518	10	0	1	**11**
2019	5,548	11	3	0	**14**
2020	6,347	4	0	0	**4**
2021	6,863	7	2	0	**9**
Average	**5,974.5**	**8**	**2.33**	**0.33**	**10.66**

Table 1: Summary of Crash History US 191 MP 98.75-101.10, 2016-2021

[2] AADT averages are based on WYDOT 2021 Vehicle Miles Book, https://www.dot.state.wy.us/home/planning_projects/Traffic_Data.html

SAFETY PERFORMANCE FUNCTIONS and LEVEL OF SERVICE OF SAFETY

We have refined the assessment of the magnitude of safety problems on highway segments through the use of Safety Performance Functions (SPF). The SPF reflects the relationship between traffic exposure measured in AADT, and crash count for a unit of road section measured in crashes per mile per year. The SPF models provide an estimate of the normal or expected crash frequency and severity for a range of AADT among similar facilities. Two kinds of Safety Performance Functions were calibrated. The first one addresses the total number of crashes and the second one looks only at crashes involving an injury or fatality. Together they allow us to assess the magnitude of the safety problem from the frequency and severity standpoint.

Development of the SPF lends itself well to the conceptual formulation of the Level of Service of Safety (LOSS). The concept of level of service uses quantitative measures and qualitative description that characterize safety of a roadway segment in reference to its expected frequency and severity. If the level of safety predicted by the SPF will represent a normal or expected number of crashes at a specific level of ADT, then the degree of deviation from the norm can be stratified to represent specific levels of safety.

LOSS I - Indicates low potential for crash reduction
LOSS II - Indicates low to moderate potential for crash reduction
LOSS III - Indicates moderate to high potential for crash reduction
LOSS IV - Indicates high potential for crash reduction

LOSS boundaries are calibrated by computing the 20th and the 80th percentiles using the Gamma Distribution Probability Density Function[3]. Gradual change in the degree of deviation of the LOSS boundary line from the fitted model mean reflects the observed increase of variability in crashes/mile as AADT increases. This increase is consistent with a Gamma Distribution error structure and reflects dispersion around the mean typical of this highway environment. LOSS reflects how the roadway segment is performing in regard to its expected crash frequency and severity at a specific level of ADT. If the safety problem is present, LOSS will only describe its magnitude from the frequency and severity standpoint. The nature of the problem is determined through diagnostic analysis using direct diagnostics and pattern recognition techniques.

CORRECTING FOR REGRESSION TO THE MEAN BIAS USING THE EMPIRICAL BAYES METHOD

In road safety the average of several years of crash history of a roadway segment or of an intersection provides us with an estimate of what is likely to be observed in the future. The precision of this estimate, however, can be improved upon by correcting it for the Regression to the Mean (RTM) bias. RTM phenomenon reflects the tendency for random

[3] Kononov, J., Durso, K, Lyon, C and Allery, B. Level of Service of Safety Revisited, *In Transportation Research Record No 2514,* TRB, National Research Council, Washington, DC 2015, pp 10-21

events, such as vehicle crashes to move toward the average during the course of an experiment or over time. For instance, if a segment or an intersection exhibits unusually high or unusually low crash frequency in a particular year, because of RTM we need to be aware that over the long run its true average is closer to the mean representing safety performance of similar facilities. The existence of the RTM bias has been long recognized and is now effectively addressed by using the Empirical Bayes (EB) method[4]. The use of the EB method is particularly effective when it takes a long time for a few crashes to occur, as is often the case on Wyoming rural roads.

The EB method for the estimation of safety increases the precision of estimation and corrects for the regression to the mean bias. It is based on combining the information contained in crash counts (known crash history) with the information contained in knowing the safety of similar entities. The information about safety of similar entities is brought into the EB procedure by the SPF through use of expected mean value and over-dispersion parameter associated with the specific SPF. EB corrected values of frequency and severity of crashes will be used in the SPF analysis to assess the magnitude of the safety problem.

[4] Hauer et al. Estimating Safety by the Empirical Bayes Method. In *Transportation Research Record 1174,* TRB, National Research Council, Washington, D.C., 2002, pp 126-131.

SAFETY PERFORMANCE ANALYSIS WITHIN STUDY LIMITS:

NON-INTERSECTION CRASHES

Figure 1 shows a typical section of US 191 within the study limits.

Figure 1: Typical View US-191 Facing West

There were 33 non-intersection crashes recorded in the study period, including 28 Property Damage Only (PDO), 2 'Unknown' crash severity and 3 Injury crashes, with 3 people injured. The most frequent crash type being Wild Animal Collisions (WAC), followed by collisions with Parked Motor Vehicles (PMV).

Figure 2 and **Figure 3** represent EB corrected segment level safety performance of US-191 within the study limits. The SPF model is focused on multi-vehicle crashes primarily, as such we have removed all Wild Animal Collisions from the model to quantify the effect of alignment and typical section on safety performance. **Figure 2** shows that safety performance from the total crash frequency standpoint (excluding collisions with wild animals), is in LOSS-II, reflecting low to moderate potential for crash reduction for the segment. **Figure 3** represents safety performance from the standpoint of severity and considers injury and fatal crashes only (excluding 1 injury crash with a deer). It also shows that the segment performs at LOSS-II, reflecting low to moderate potential for crash reduction.

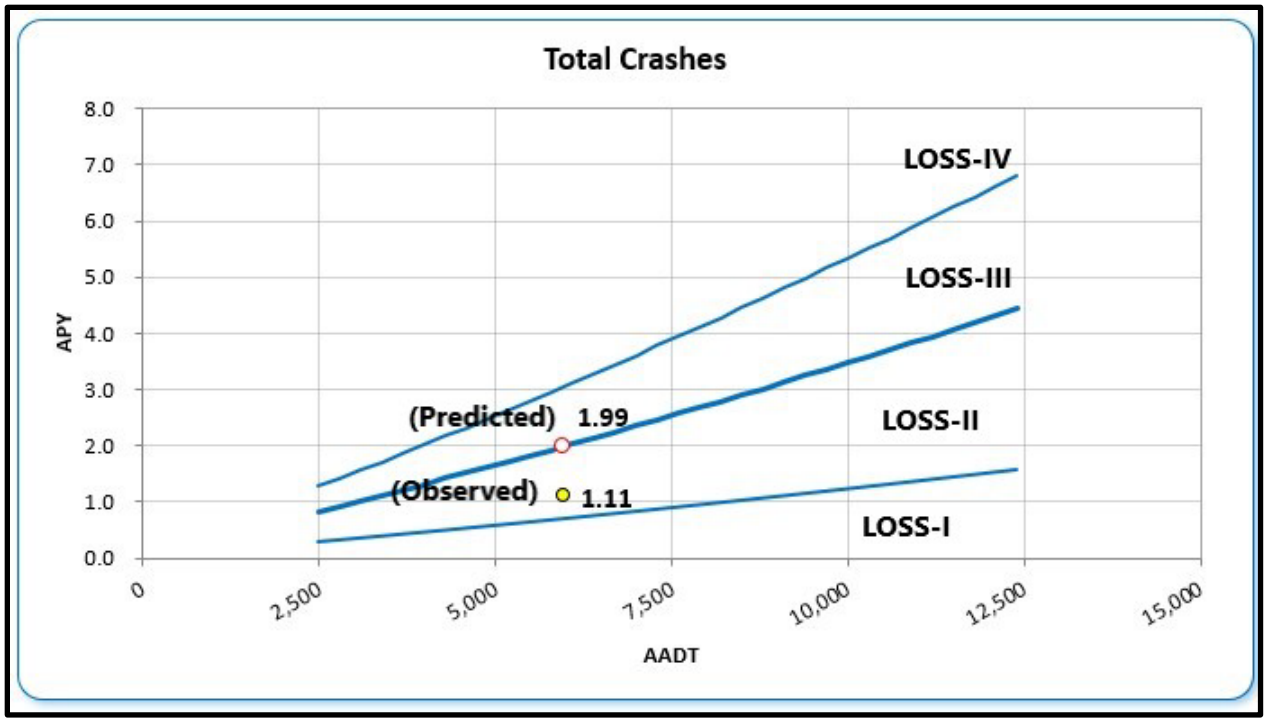


Figure 2: EB Corrected SPF Total US-191, MP 98.75-101.10 (Excluding Wild Animal Collisions)

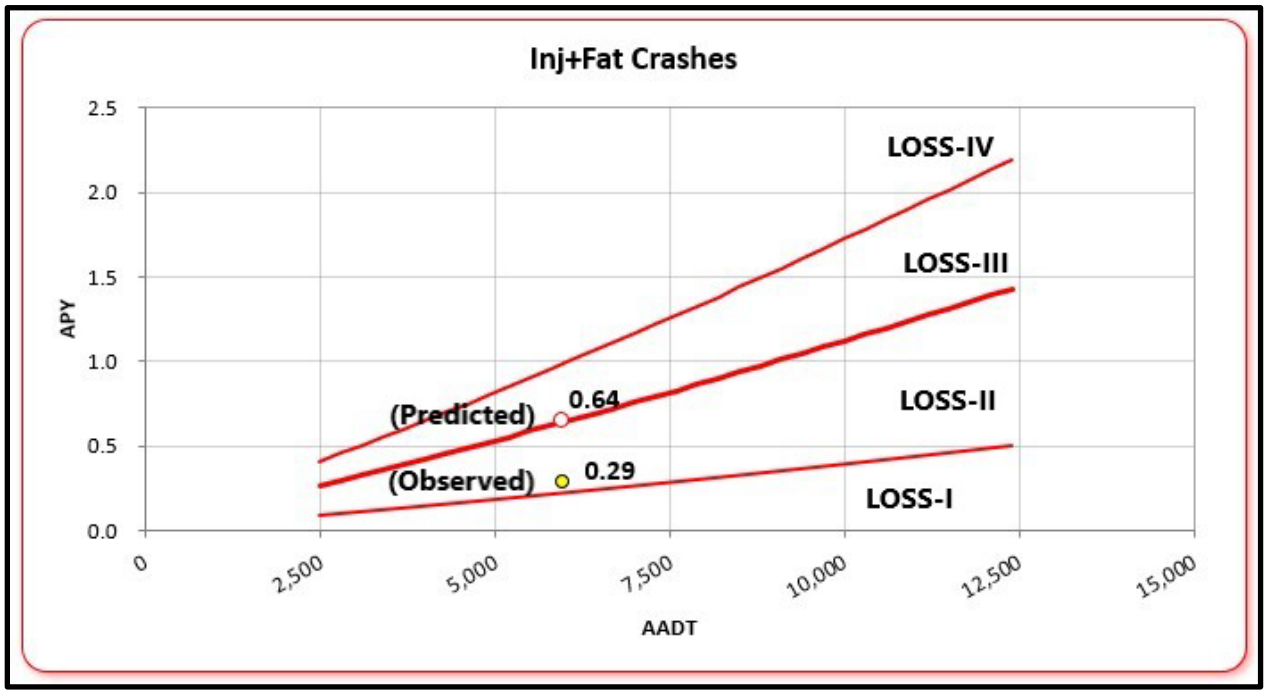


Figure 3: EB Corrected SPF INJ+FAT US-191, MP 98.75-101.10 (Excluding 1 Wild Animal Collision)

The segment will be examined for the presence of crash patterns.

PATTERN RECOGNITION and DIAGNOSTIC ANALYSIS: *NON-INTERSECTION CRASHES*

Distribution of crashes by type on the mainline of US-191 within the study limits is provided in **Figure 4**. The most frequent crash type is collisions with wild animals, followed by collisions with parked motor vehicles.

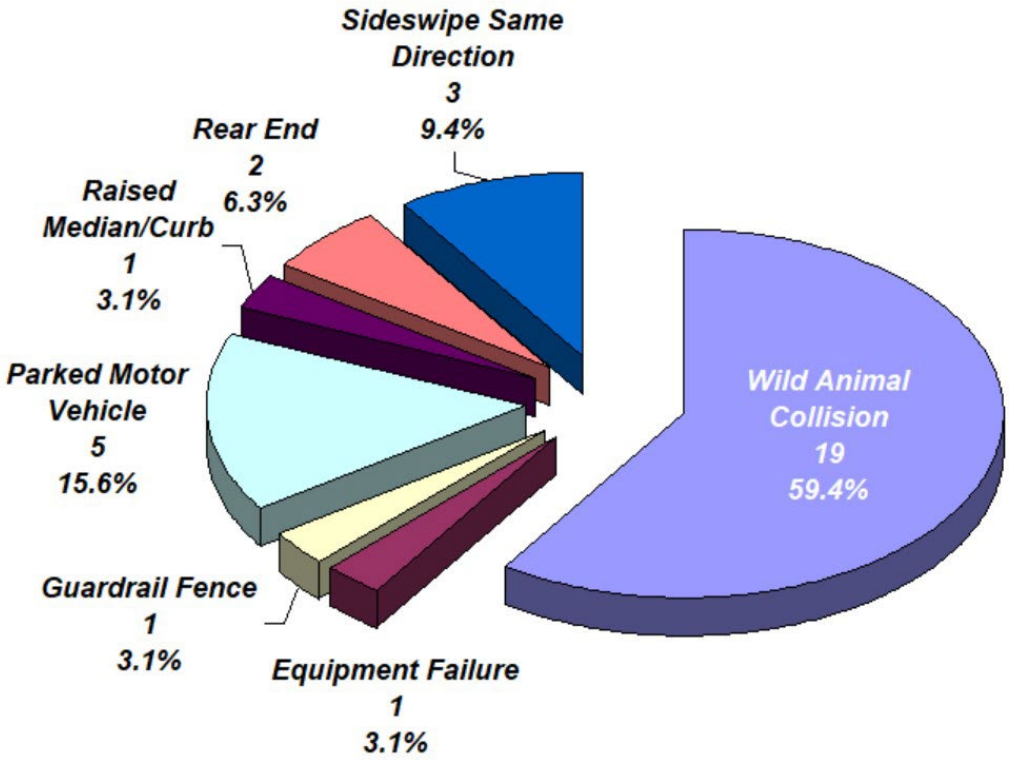


Figure 4: US-191 MP 98.75-101.10 Crash Distribution by Type

As outlined above, the SPF model for an Urban 4-lane Undivided Arterial is best adapted to multi-vehicle collisions, and furthermore at this time diagnostic tools for this facility type have not been developed. In this case, while we cannot use diagnostic tools, we can make observations based on crash history.

In the case of Wild Animal collisions, we can say that by observation they constitute a pattern since we do not expect more than half of crashes on an urban arterial to involve wild animals. Crash records show that WACs tend to be concentrated at the eastern and western side of downtown, with a cluster around MP 98.8 and a cluster around MP 100.75-101.00. **Figure 5** shows where WACs were recorded, identified by the blue markers. There is a creek to the west of MP 101.00, and a stream adjacent to Bloomfield Avenue near MP 100.75, both of which would provide a water source for wild animals. Similarly, there is a ditch associated with the cluster west of MP 100. Pine Creek is also associated with a cluster and Pine Ditch is nearly adjacent to the cluster at the east end of the study. Only 1 wild animal collision resulted in a reported injury (a collision with a deer at MP 98.78).

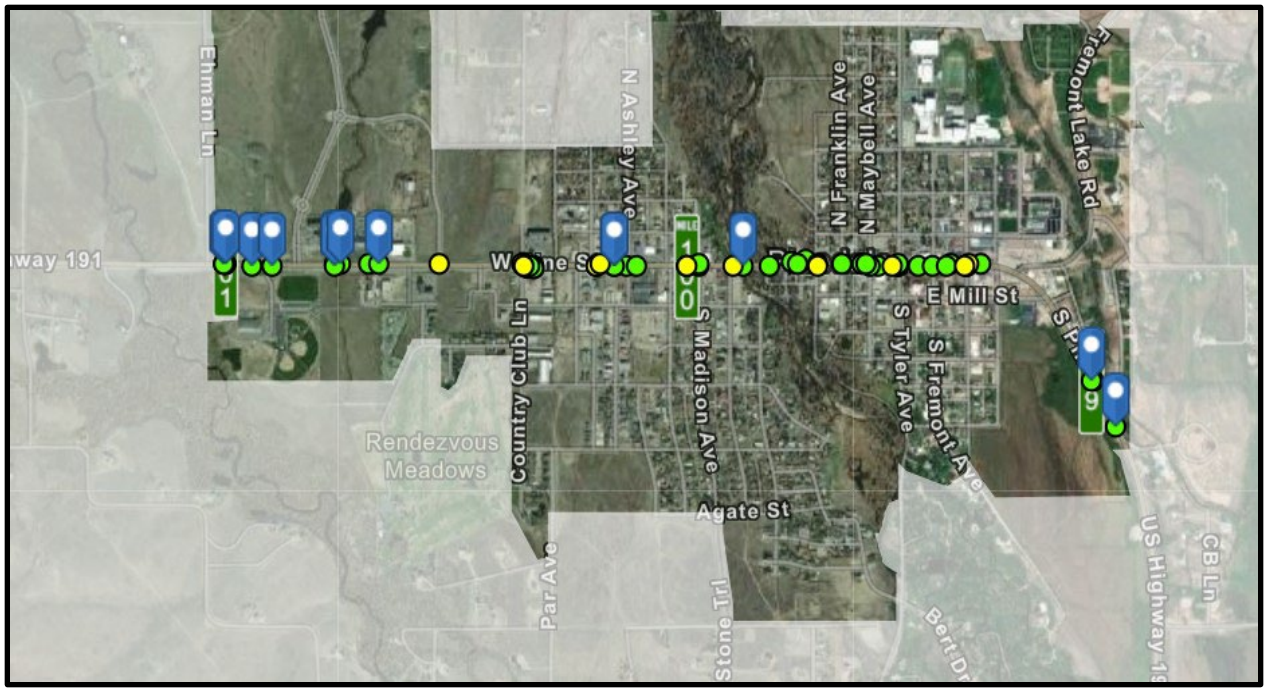


Figure 5: Wild Animal Collisions (BLUE) on US-191, 1/1/16-12/31/21

There were 5 Parked Motor Vehicle (PMV) crashes over the study period. These included 2 PDO crashes and 1 Injury (with 1 injured person) as well as 2 'Unknown' crash severities. In the case of the 'Unknown' severities, these have been conservatively assumed to be PDO crashes. Although diagnostic tools are not available, we can say that by observation Parked Motor Vehicle collisions meet the Minimum of 5 crashes of a specific type in 5 years, and it seems reasonable to conclude that 15.4% Parked Vehicle collisions is higher than the expected proportion. As such, PMV collisions are apparently a pattern here.

All PMV crashes occurred between MP 99.740 and MP 11.330, approximately between Elma Street and Country Club Lane on the western side of downtown. All but one crash occurred in daylight conditions. In two cases adverse road conditions were a factor with snow and ice. All crashes were recorded between late September and early February when adverse weather is more likely in the area.

DRIVEWAY ACCESS COLLISIONS

There were 11 crashes over the 6-year period which occurred at driveway accesses (business accesses). These included 8 PDO and 3 Injury (7 injuries) crashes. All crashes were angle type crashes. In two cases adverse weather (snow/ice) was a contributing factor, while in another case a visual obstruction by another vehicle was a contributing factor.

Almost all crashes (8 of 11) occurred in daylight hours and between Monday to Friday. Crashes unsurprisingly appear confined to the built-up downtown Pinedale district,

between Sublette Avenue and Haymaker Drive, MP 99.398 to MP 100. 540, approximately (**Figure 6**). There is mild clustering to driveway accesses crashes, with only 2 mid-block locations seeing 2 or more crashes: Sublette Avenue to Fremont Avenue, and Ashley Avenue to Colter Avenue.

Figure 6: General Locations of Driveway Access Crashes (BLUE), US-191, 1/1/16-12/31/21

Although diagnostic tools are not available, we can say by observation that Injury level Driveway Access crashes constitute a pattern here, with 7 injuries occurring over a 6 year period, meeting the basic definition of cumulative binomial probability, exceeding 95% and a minimum of 5 crashes of a given type or category in a 5 year period.

The area between Sublette Avenue and Fremont Avenue, while containing a small cluster of driveway access crashes also contained 1 of the Injury level driveway access crashes. There are no patterns to the other two injury level crashes, suggesting the problem might be more generalized.

SAFETY PERFORMANCE ANALYSIS AND DIAGNOSTIC ANALYSIS WITHIN STUDY LIMITS:

INTERSECTION CRASHES

There were 20 intersection crashes recorded in the study period between MP 98.75 and MP 101.10. These included 12 PDO crashes and 8 Injury (9 injuries) crashes.

All intersections within the study limits are unsignalized. In the downtown Pinedale area intersections are predominantly 4-leg with pedestrian crosswalks. Intersections west of Colter Avenue and east of Bridger Avenue do not have pedestrian facilities, while two intersections, Lake Avenue and Tyler Avenue, have Hybrid Pedestrian Beacons providing stop control.

In our analysis of intersection crashes within the study limits, we found that only three intersections, (Country Club Lane, Tyler Avenue and Sublette Avenue), had 3 or more recorded crashes, with all other locations having predominantly 1 recorded crash, except for Franklin Avenue and Lake Avenue which had 2 each.

Diagnostic norms for urban undivided unsignalized intersections are available, given the small town environment however, it is difficult to reach a threshold of a pattern (1 crash type/category per year). In some cases, diagnostic analysis may suggest that a pattern may be emerging, and a location should be monitored.

SUBLETTE AVENUE - SAFETY PERFORMANCE ANALYSIS

The intersection of Sublette Ave. and US 191 is a 4-leg, 4-lane Undivided Unsignalized Urban intersection. **Figure 7** shows an aerial view of the intersection of US 191 and Sublette Ave. and **Figure 8** shows a street level view. The AADT on US 191 was about 5,975 vpd, while the AADT on Sublette Ave was about 800 vpd.

There were 3 crashes at the intersection in the study period, including 1 PDO and 2 Injury (2 injuries). These included 2 Angle (Broadside) collisions and 1 Pedestrian collision.

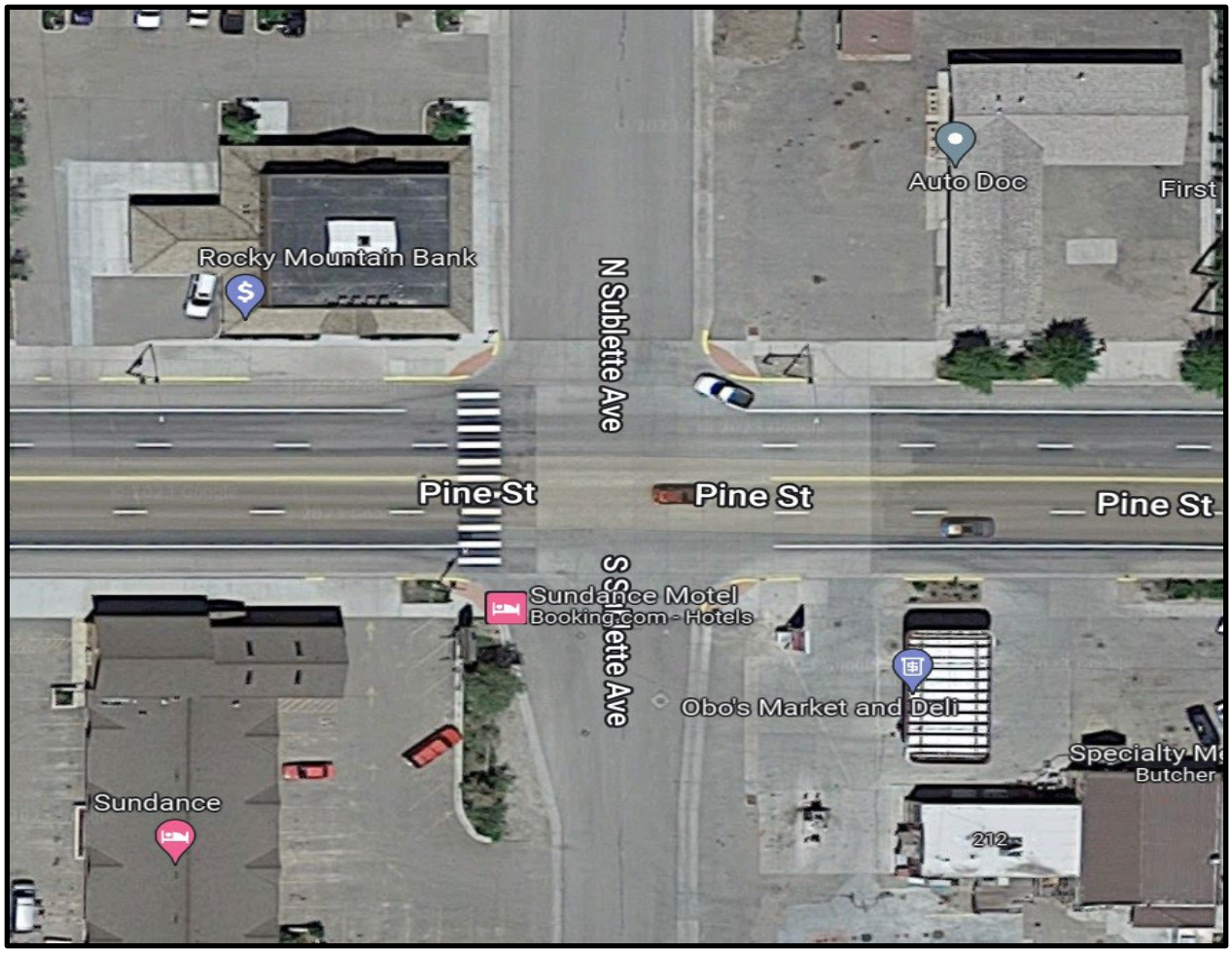


Figure 7: Sublette Avenue & US-191 (Pine St.)

Figure 8: Sublette Avenue & US-191, Facing East

Figure 9 and **Figure 10** represent EB corrected intersection level safety performance of the intersection of Sublette Ave and US 191. **Figure 9** shows safety performance from the total crash frequency standpoint, reflecting LOSS-II (low to moderate potential for crash reduction) for the intersection, with performance better than the expected mean for this facility type. **Figure 10** represents safety performance from the standpoint of severity and considers injury and fatal crashes only. It shows that the intersection performs at LOSS-III, reflecting moderate to high potential for crash reduction.

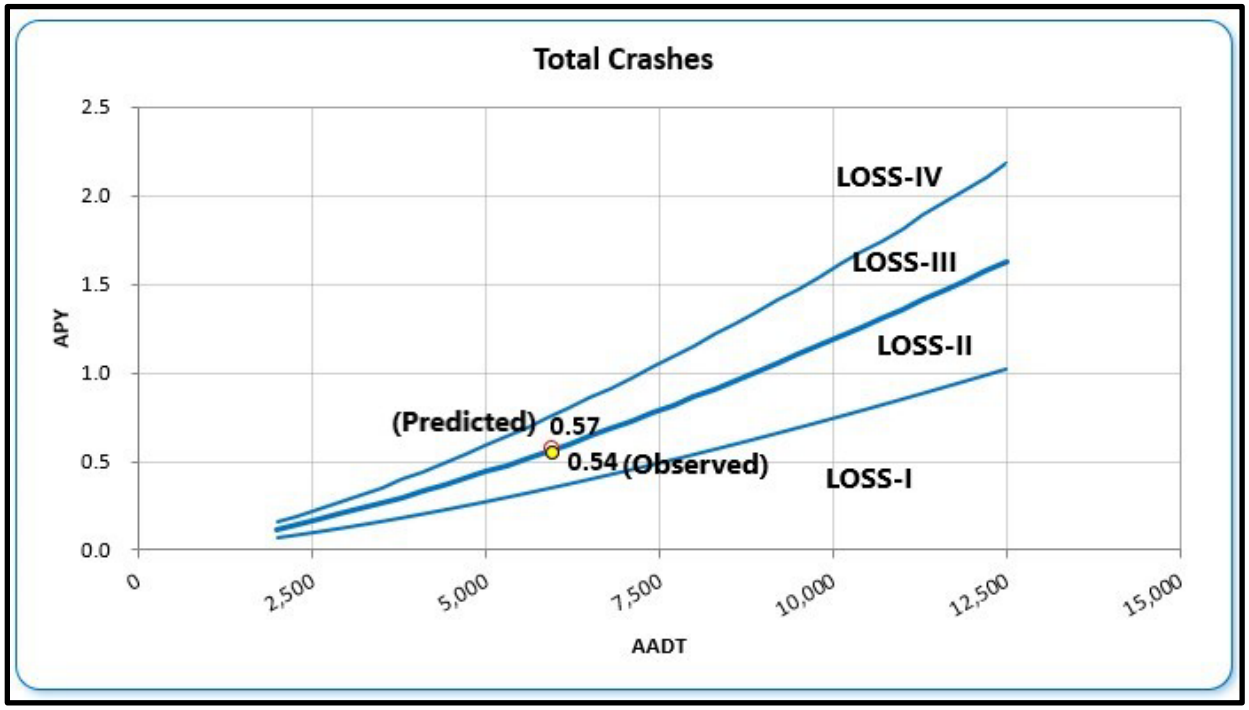


Figure 9: EB Corrected SPF Total US-191 & Sublette Avenue

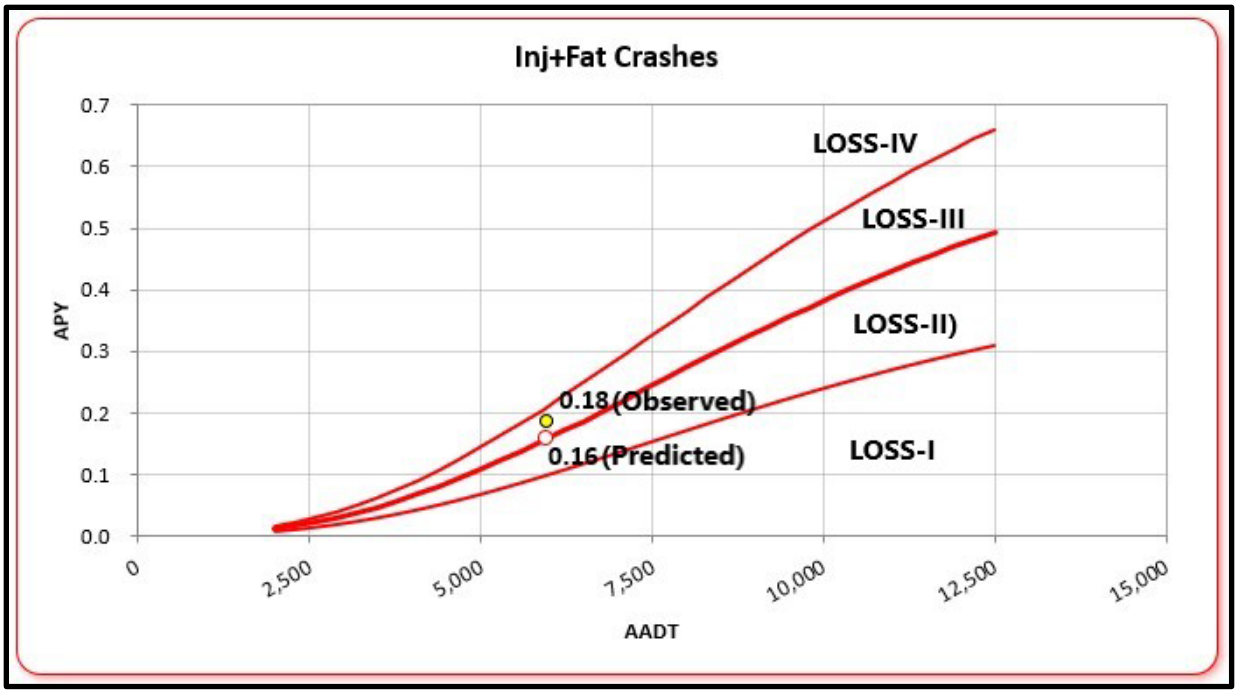


Figure 10: EB Corrected SPF INJ+FAT US 191 & Sublette Avenue

Distribution of crashes by type at the intersection of US-191 and Sublette Avenue is provided in **Figure 11**.

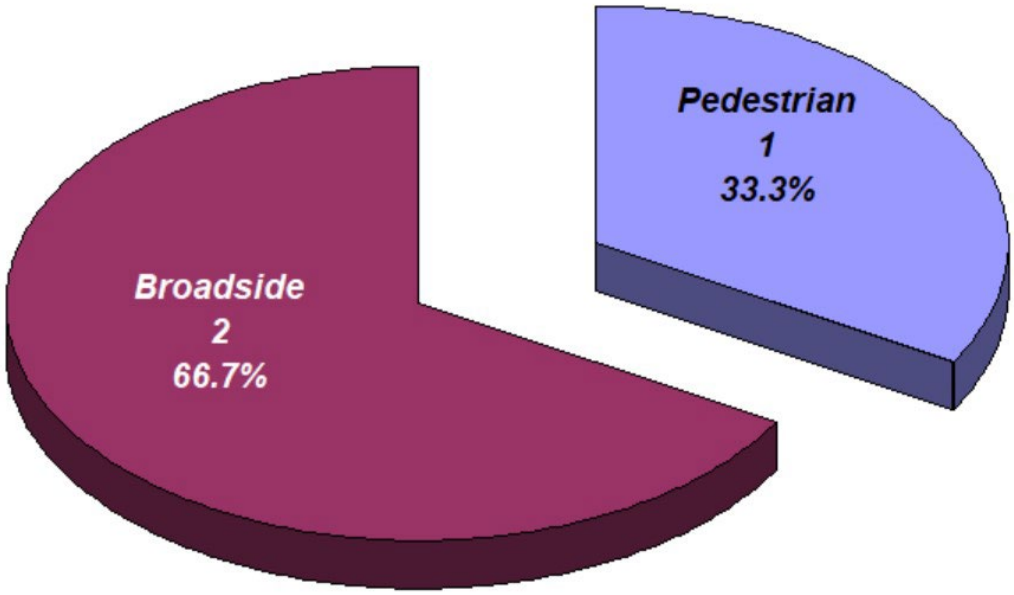


Figure 11: US 191 & Sublette Avenue Crash Distribution by Type

Crash records revealed that both Broadside crashes occurred in adverse weather with slush and snow on the road. All crashes, including the Pedestrian incident occurred in daylight conditions. There is a striped pedestrian crosswalk on the west side of the intersection, but this intersection does not have actuated beacons like Lake Avenue and

Tyler Avenue do. It is not clear from the available crash data whether the pedestrian was in the crosswalk.

Google Streetview imagery shows there is a gas station on the southeastern corner of the intersection with two driveway accesses near the intersection (**Figure 12**). It is possible that northbound vehicles on Sublette Avenue may encounter visual obstructions due to traffic entering and exiting the gas station. Driveways are similarly located on the northeast and southwest corners of the intersection. In addition to the potential for visual obstruction, driveways located immediately adjacent to intersections may lead to misinterpretations of the intentions of drivers who are signaling to turn into a driveway on the far side of the intersection – drivers waiting to cross may think the signaling driver intends to turn onto Sublette Avenue.

Figure 12: View East from NB Sublette Avenue

With 2 broadside crashes, both occurring in adverse weather conditions in the study period, these might be regarded as over-represented or emerging patterns for observation.

TYLER AVENUE - SAFETY PERFORMANCE ANALYSIS

The intersection of Tyler Ave. and US 191 is a 4-leg, 4-lane Undivided Unsignalized Urban intersection. The intersection accommodates a school crosswalk across US 191 on the east side, featuring Hybrid Pedestrian beacons. **Figure 13** shows an aerial view of the

intersection and **Figure 14** shows a street level view. The AADT on US 191 was about 5,975 vpd, while the AADT on Tyler Avenue was about 1,350 vpd.

There were 3 crashes at the intersection in the study period, including 2 PDO and 1 Injury (1 injured person) crashes. These included 2 Rear End collisions and 1 single vehicle collision precipitated by a “Thrown/Falling Object”.

Figure 13: Tyler Avenue & US 191 (Pine St.)

Figure 14: Tyler Avenue & US 191, Facing West

Figure 15 and **Figure 16** represent EB corrected intersection level safety performance of the intersection of Tyler Ave and US 191. **Figure 15** shows safety performance from the total crash frequency standpoint, while **Figure 16** represents safety performance from the standpoint of severity and considers injury and fatal crashes only. **Figure 15** shows that the intersection performs at LOSS-II from the total crash frequency standpoint, reflecting low to moderate potential for crash reduction. **Figure 16** shows the intersection performs near the mean from the crash severity standpoint, reflecting moderate potential for crash reduction.

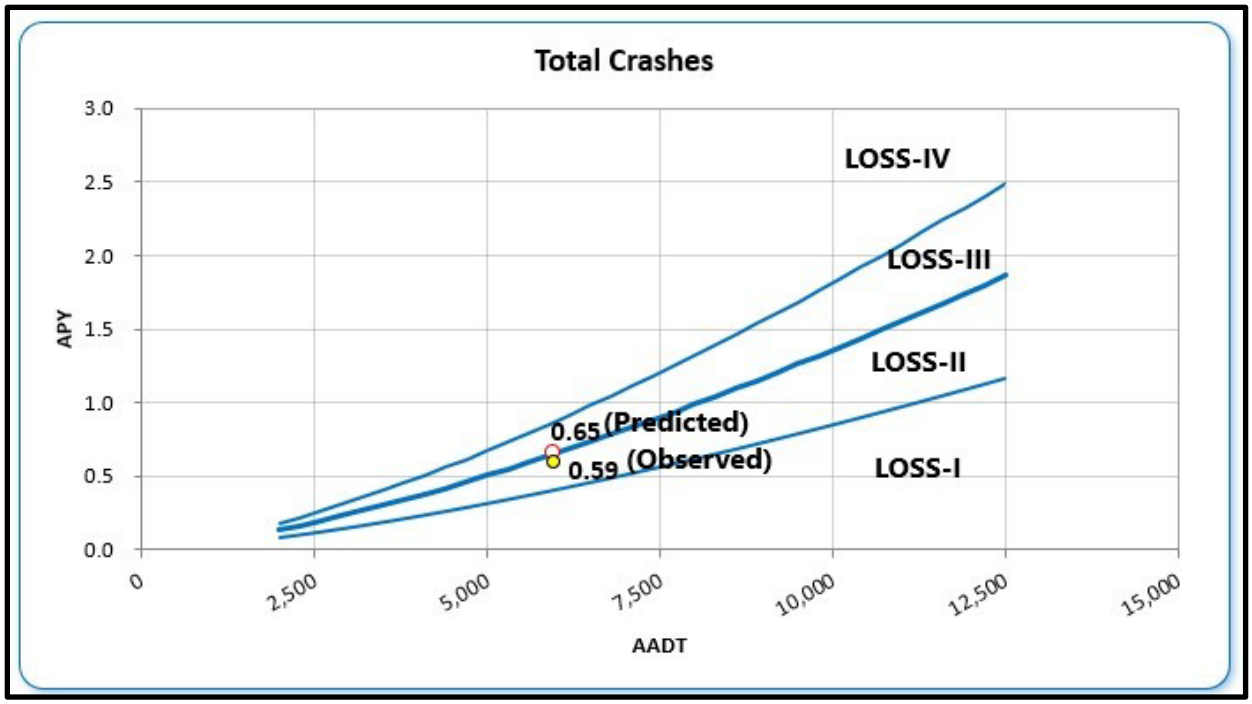


Figure 15: EB Corrected SPF Total US 191 & Tyler Avenue

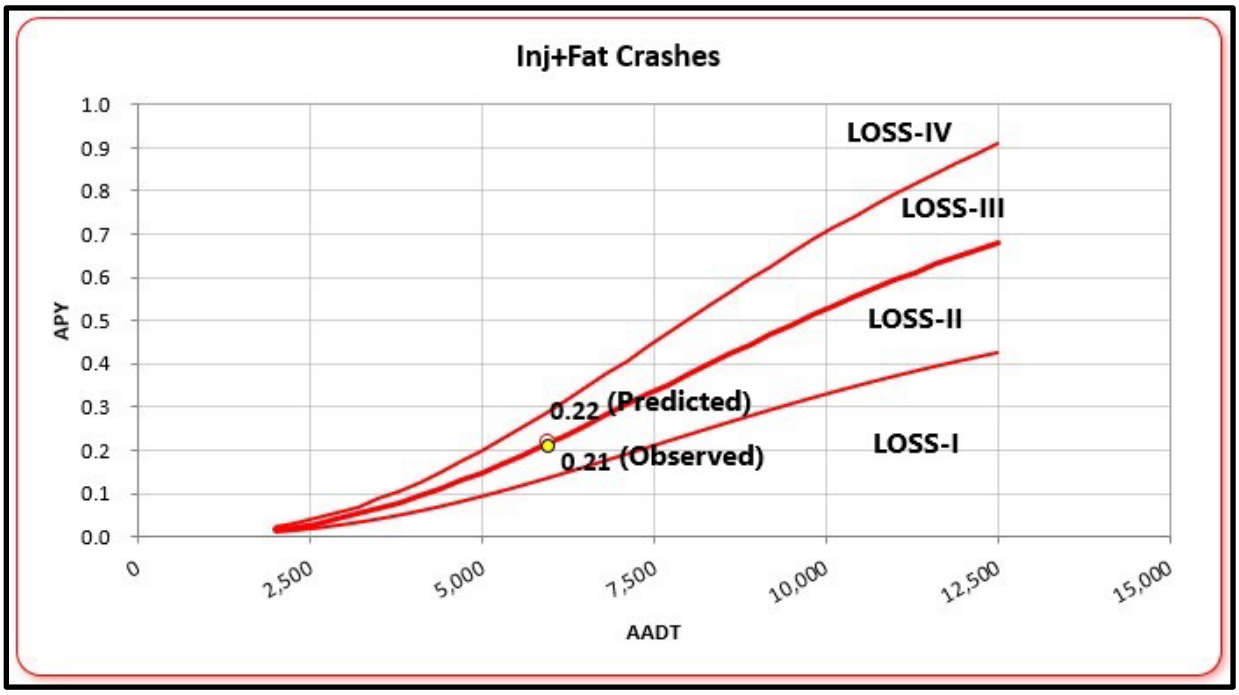


Figure 16: EB Corrected SPF INJ+FAT US 191 & Tyler Avenue

Distribution of crashes by type at the intersection of US 191 and Tyler Avenue is provided in **Figure 17**.

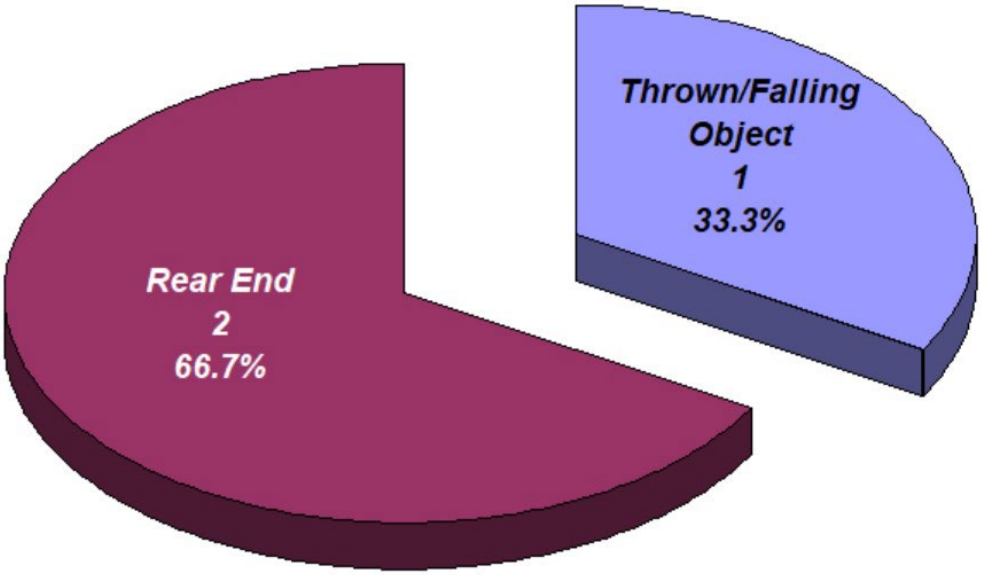


Figure 17: US 191 & Tyler Avenue Crash Distribution by Type

As outlined previously because no crash type or category met the definition of a pattern for cumulative binomial probability, there are no identified patterns which can be evaluated by direct diagnostics.

Crash records show that both Rear-end crashes occurred on Tuesday afternoons between Noon and 4 P.M. Because the rear-end collisions occurred in the afternoon hours and because the intersection is characterized by actuated STOP beacons on the eastern pedestrian crosswalk, it is possible that the rear-ends occurred when drivers stopping for crossing pedestrians were struck from behind.

The “Thrown/Falling Object” crash was a single vehicle incident and occurred on July 4th, such that it is potentially related to festivities. All crashes occurred in daylight conditions and without any adverse road or weather conditions.

COUNTRY CLUB LANE - SAFETY PERFORMANCE ANALYSIS

The intersection of Country Club Lane and US 191 (Pine St.) is a 4-leg, 4-lane Undivided Unsignalized Urban intersection. The intersection is on the western side of downtown Pinedale and does not have any pedestrian facilities. **Figure 18** shows an aerial view of the intersection and **Figure 19** shows a street level view. The AADT on US 191 was about 5,975 vpd, while the AADT on Country Club Lane about 350 vpd.

There were 4 crashes at the intersection in the study period, including 2 PDO and 2 Injury (3 injuries) crashes. These included 2 Rear End collisions, 1 Overturning crash and 1 Angle (Broadside) crash.

Figure 18: Country Club Lane & US 191 (Pine St.)

Figure 19: Country Club Lane & US 191, Facing East

Figure 20 and **Figure 21** represent EB corrected intersection level safety performance of the intersection of Country Club Lane and US 191. **Figure 20** shows safety performance from the total crash frequency standpoint, while **Figure 21** represents safety performance from the standpoint of severity and considers injury and fatal crashes only. The figures

show that the intersection performs at LOSS-III, from both the total crash frequency and the crash severity standpoints, reflecting moderate to high potential for crash reduction.

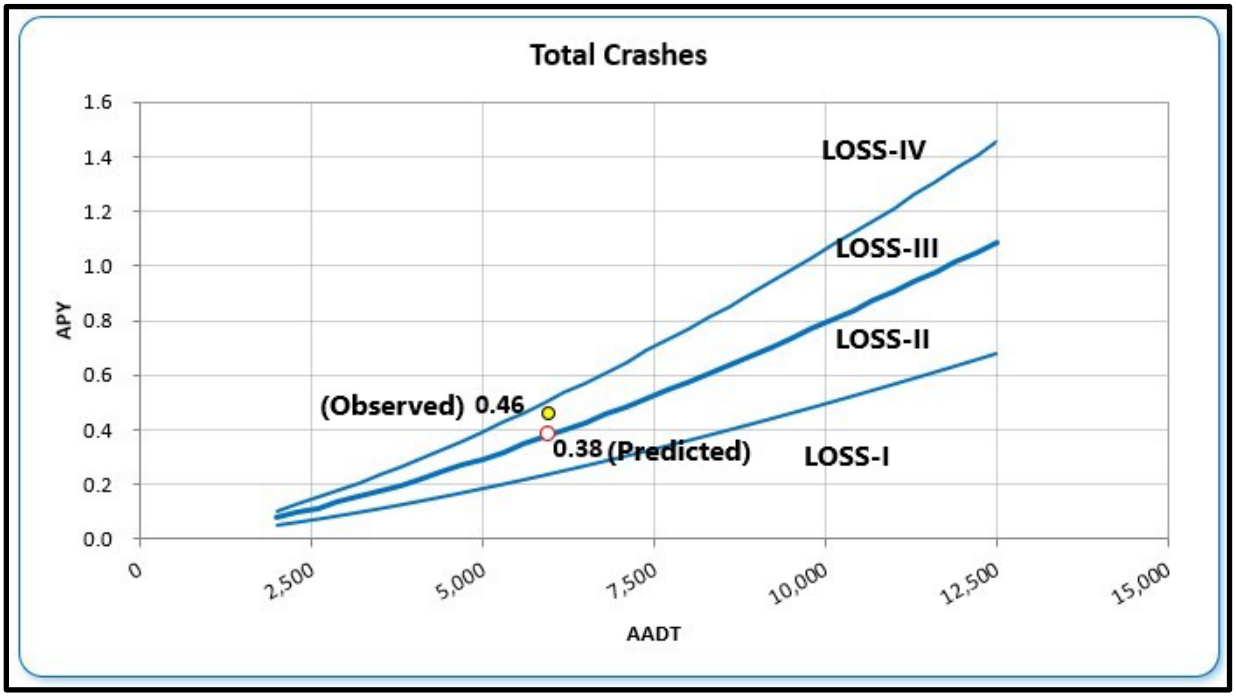


Figure 20: EB Corrected SPF Total US 191 & Country Club Lane

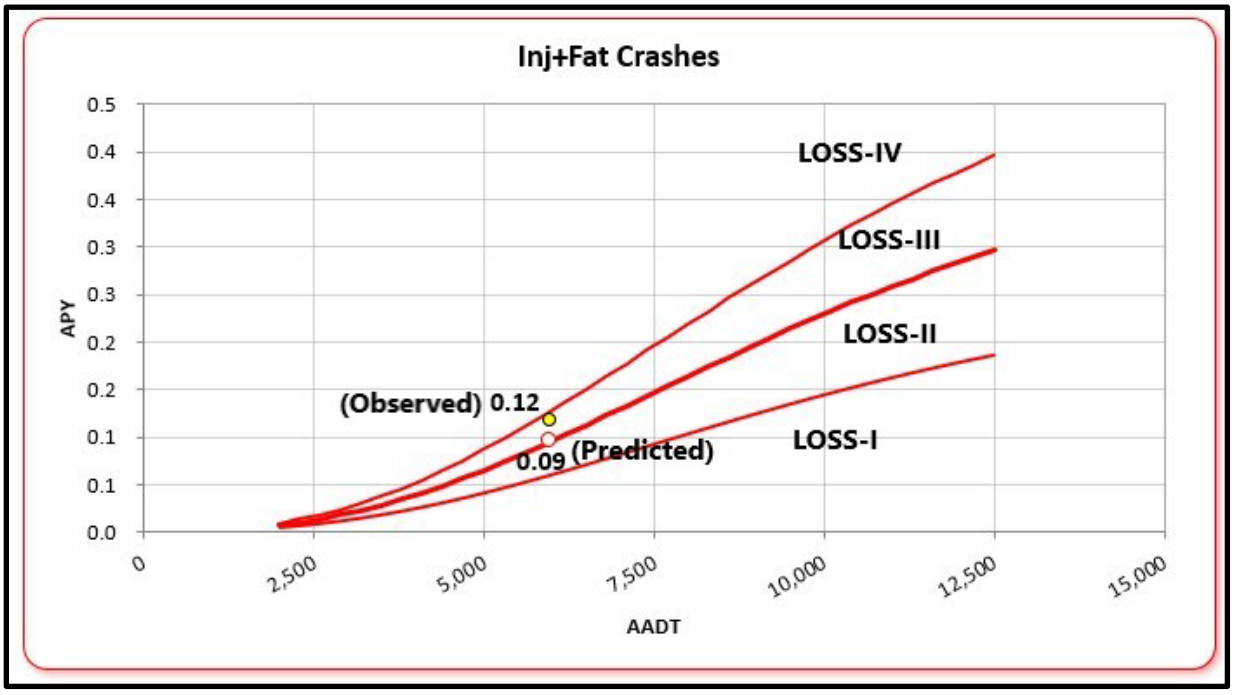


Figure 21: EB Corrected SPF INJ+FAT US 191 & Country Club Lane

Distribution of crashes by type at the intersection of US 191 and Country Club Lane is provided in **Figure 22**.

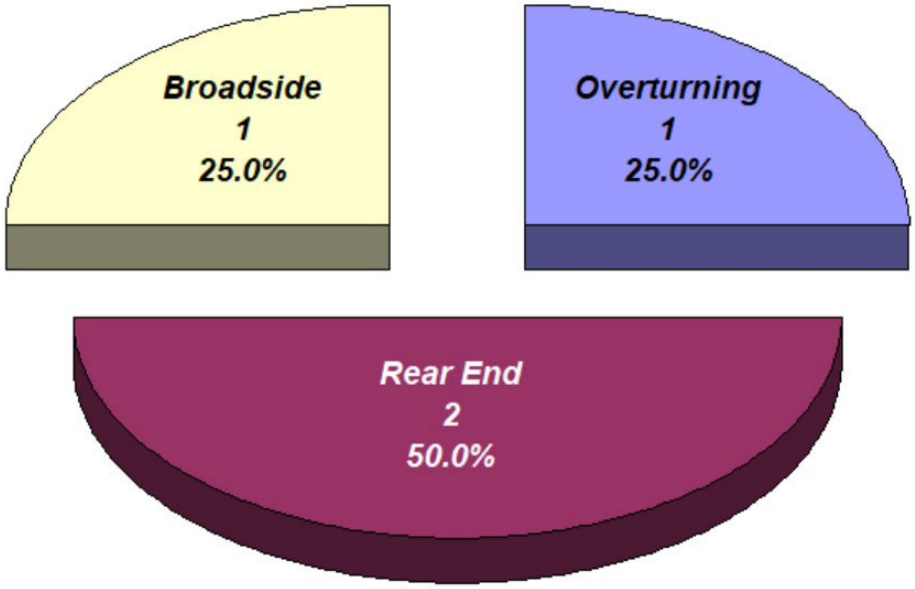


Figure 22: US 191 & Country Club Lane Crash Distribution by Type

As outlined previously because no crash type or category met the definition of a pattern for cumulative binomial probability, there are no identified patterns which can be evaluated by direct diagnostics. However, SPF analysis showed that injury crashes are elevated above expected norms at the intersection. There were 2 injury crashes at the intersection with 3 injuries, one crash was a Rear-End collision and the other was a Broadside collision. In addition, there was a PDO Rear-End collision and a PDO Overturning collision.

While crash records show there is nothing to indicate a trend for the injury collisions, when all crashes are considered, it is evident that in 3 out of the 4 cases adverse weather and road conditions were involved. In these 3 cases there was snow on the roadway, and in the case of the broadside collision it was also actively snowing at the time.

Furthermore, 2 of the 4 crashes occurred under dark conditions. Google Streetview imagery is available from 2015 and indicates that there is no streetlighting in the vicinity aside from one intersection luminaire in the southwest corner of the intersection (**Figure 23**).

Finally, there is a lane configuration change on the west side of the intersection, with US-191 dropping to a single lane from 2 lanes westbound and increasing to 2 lanes from a single lane eastbound, such that merging could be a potential factor. Rear ends may reflect vehicles stopping or slowing in the thru lanes to make left or right turns, since there are no auxiliary lanes.

Figure 23: Single Luminaire on SW Corner of US 191 & Country Club Ln

VULNERABLE USERS

Bicyclists and Pedestrians are a category of users which are particularly vulnerable to being injured when they interact with traffic. No collisions with bicycles were reported along US 191 in Pinedale during the study period. In addition to the one pedestrian collision previously covered in the Sublette Avenue intersection discussion, there was one pedestrian collision reported at the Lincoln Avenue intersection, the pedestrian was injured. Both pedestrian crashes occurred at intersections which have crosswalks crossing US 191.

SUMMARY AND CONCLUSIONS

Our findings are based on the comprehensive analysis of 6 years of crash history and available imagery. No field visits were conducted by the DiExSys staff, Jorgensen (prime consultant on the project) is advised to verify through field survey the information included in this report regarding physical features and roadside characteristics in the study area.

There were a total of 64 crashes recorded on US 191, MP 98.75 to MP 101.10 between 1/1/2016 and 12/31/2021. This comprised 33 non-intersection crashes, 20 intersection or intersection related crashes, and 11 driveway access crashes.

Mainline crashes included 28 Property Damage Only (PDO), 2 ‘Unknown’ crash severity and 3 Injury crashes, with 3 people injured. The most frequent crash type was Wild Animal

Collisions, followed by collisions with Parked Motor Vehicles, both of which represented patterns. Segment SPFs show that in terms of both total crash frequency and crash severity the mainline performs as LOSS-II indicating low to moderate potential for crash reduction.

The 11 driveway access crashes comprised 8 PDO crashes and 3 Injury crashes, with 7 people injured. Injury level driveway access crashes meet the criteria for a pattern. There is mild clustering of crashes between Sublette Avenue to Fremont Avenue, and Ashley Avenue to Colter Avenue.

The 20 intersection crashes comprised 12 PDO crashes and 8 Injury crashes with 9 people injured. The only intersections recording 3 or more crashes over the study period were at the intersections of US-191 with Sublette Avenue, Tyler Avenue and Country Club Lane.

Diagnostic norms for urban undivided unsignalized intersections are available, given the small-town environment however, it is difficult to reach a threshold of a pattern (1 crash type/category per year). In some cases, diagnostic analysis may suggest that a pattern may be emerging, and a location should be monitored.

Sublette Avenue performs at LOSS-II in terms of total crash frequency, representing low to moderate potential for crash reduction, and at LOSS-III in terms of crash severity, representing moderate to high potential for crash reduction. Sublette Avenue indicates potential for an emerging pattern of broadside collisions.

Tyler Avenue performs at LOSS-II in terms of total crash frequency, indicating low to moderate potential for crash reduction, and just below the mean for crash severity, indicating moderate potential for crash reduction.

Country Club Lane performs at LOSS-III both in terms of total crash frequency and crash severity, indicating moderate to high potential for crash reduction. Adverse weather was a notable contributing factor to crashes at this intersection.

A total of 2 pedestrians were injured in reported crashes in the study period. Both were at intersections which have marked crosswalks across Pine.

Appendix E

KEY

	STREETLIGHT ZONE/GATE	NUMBER ZONES
No.	Traffic Analysis Zones (TAZ) for all vehicle counts	28
No.	Intersection / gates / segments for all vehicle counts	44
	Total Essential Gates Utilized / Available	**72 / 3**
C No.	Gates / Segments for commercial vehicle counts	10
	Total Advance Analytic Gate Utilized / Available	**10 / 0**

(hold off on C5, C7, C9 analyses until checking results of C6 analysis.)

Town Limits

— PRELIMINARY —
SUBJECT TO CORRECTION AND APPROVAL

SCALE: 1 INCH = 3000 FEET
THIS SCALE VALID ONLY FOR 22x34 PRINTS

JORGENSEN
PINEDALE, WYOMING
307.367.6548
www.jorgeng.com

PROJECT TITLE:
PINEDALE TRANSPORTATION MATER PLAN

SHEET TITLE:
ZONE OVERVIEW

DRAFTED BY:	HR
REVIEWED BY:	

PLAN VERSION	DATE
TAZ V1	7/14/2022
TAZ V2	8/12/2022
TAZ V3	8/23/2022
TAZ V4	8/29/2022
TAZ V5	9/6/2022

PROJECT NUMBER
22647

SHEET
1

Plotted by Hulland on Sep 23, 2022 - 1:24pm
Ver. 18.0
I:\PNDJFILE1\Acts\Projects\2022\22647-TCP Transportation Master Plan\03-Transportation Network Analysis\Network TAZs\22647_Master Plan TAZ Map.dwg

KEY

	STREETLIGHT ZONE/GATE	NUMBER ZONES
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(hold off on C5, C7, C9 analyses until checking results of C6 analysis.)

Town Limits

Gate 72 (off page) located at the WYDOT ATR, north of Meadow Lark Road on HWY 191

– PRELIMINARY –
SUBJECT TO CORRECTION AND APPROVAL

SCALE: 1 INCH = 1000 FEET
THIS SCALE VALID ONLY FOR 22x34 PRINTS

JORGENSEN
PINEDALE, WYOMING
307.367.6548
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PROJECT TITLE:
PINEDALE TRANSPORTATION MATER PLAN

SHEET TITLE:
TOWN OF PINEDALE OVERVIEW

DRAFTED BY:	HR
REVIEWED BY:	

PLAN VERSION	DATE
TAZ V1	7/14/2022
TAZ V2	8/12/2022
TAZ V3	8/23/2022
TAZ V4	8/29/2022
TAZ V5	9/6/2022

PROJECT NUMBER
22647

SHEET
2

Appendix F

2022-2023 Town of Pinedale Snowplowing Policy

General Notes

- Pine Street will be plowed when snow reaches 1" deep
- Other streets will be plowed when snow reaches 2-3" deep (*see priority list below*)
- All intersections in Town shall be sanded on the braking or deceleration side after each storm or when the intersections are slick. Sanding will be prioritized: Pine Street and the intersections onto Pine Street will have priority; after the heavily traveled streets have been sanded and plowed all other intersections in Town will be sanded.
- The snow pile in the center of Pine Street shall be removed when it reaches a height of approximately 2½ feet.
- All overtime must be approved by the Mayor
- Snow removed from the streets will be transported to an approved disposal area

Disposal Area List

- Old Town Shop lot, old Town Hall, right-of-way on Mill St, right-of-way on South Bridger, parking lot on North Maybell, parking lot on North Madison, right-of-way on Hoback Street, and South Jackson Park.

Snowplowing Priority List

1. Pine St., Fremont Lake Rd. to the medical clinic, clear intersections in berm on Pine St. including the turn in to Sublette County Jail.
2. Hennick, Tyler, Fremont, Bridger, Lincoln, Madison, Jackson, Entertainment, Country Club and Bloomfield.
3. All four quadrants northeast, southeast, northwest, southwest.
4. Plow Wilson St. out to DKSC, and plow parking areas at the ballfields. North parking lot to rock retaining area and south parking to center of parking lot.
5. Plow sidewalks next to Town properties, old Town Hall, Town parks and pathways, all Town facilities. Plow bike path from west chemical feed to cemetery.
6. Alleyways and Town parking areas.
7. Scrape ice and remove berm from Pine St. when it reaches 2½ feet.
8. Clean out snow around fire hydrants.
9. Remove snow piles that are obstructing visibility and snow storage.
10. Smooth rough roadways with the grader as necessary.
11. Scrape slush as necessary.

MAP EXPLANATION

- Town Limits
- Ownership Boundaries (SC, 2022)
- Pathways (Jorgensen Inc., 2022)
- road_cl_segmented

N

0 50 100 150 200
FT FT

PROJECT NUMBER: 22647
FIGURE ID: MAP 2.0
DATE PRINTED: 2022.08.25

JORGENSEN
It's About People, Trust and Know How
PO Box 9550 · 1315 HWY 89 S., Suite 201
Jackson, WY 83002
PH: 307.733.5150
www.jorgeng.com

Dinosaur 510

All Buses use:
Ehman Ln
US 191
N Tyler Ave.
To pick up and Drop off of students

Frog 4

Horse 58

All Buses use:
Ehman Ln
US 191
N Tyler Ave.
To pick up and Drop off of students

Dog 56

Unknown Bus Stop area

1st Priority Snow Plowing

2nd Priority Snow Plowing

PINEDALE
WYOMING

TOWN OF PINEDALE,
CONNECTIVITY
SUBLETTE COUNTY,
WYOMING

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Jackson, WY 83002
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Pinedale

Pine St. - Fremont Lake Rd

Legend

MAGNOLIA ST.

BRIDGER AVE.

Ridley's Family Markets

FREMONT LK RD

PINE ST. / US 191

MILL ST.

BRIDGER AVE.

Jackalope Motor Lodge

Google Earth

N

300 ft

Internal Town Network - Transportation Alternative Matrix

NO.	ITEM / LOCATION	Is Town ROW In place	Length (ft)	Possible time for Road Development	Priority	Major Advantage	Major Disadvantage
T-1	Kathryn Hill (Ehman Ln to Jackson Ave)	Needed between Buckboard and Kathryn Hill	4,200	As North Connector or land development	When/if development occurs.	Likely connection as development occurs.	West side of Pine Creek / Town only.
T-2	Buckboard Completion (Ehman to Bloomfield Ave)	Yes	1,350	As North Connector or land development	Identified by SCSD as priority road.	Likely connection as development occurs.	No connection past Bloomfield
T-3	Garrison Drive Completion (Ehman to Bloomfield Ave)	Yes	1,500	As North Connector or land development	When/if development occurs.	Likely connection as development occurs.	No connection past Bloomfield
T-4	McCoy Drive to Kathry Hill Connection	No	1,750	As land development occurs	When/if development occurs.	Likely connection as development occurs.	Limited benefit outside development area.
T-5	Road connecting from Trails Creek to School	Yes, but may require relocation of pathway	2,040	As North Connector or land development	Existing pathway in place.	Town owned right of way	Relocation of pathway possibly required.
T-6A	W Clark (Garrison Dr to Lewis Ave)	No	1,000	As land development occurs	When/if development occurs.	Likely connection as development occurs.	Impact to existing Clark St residential area & roadway.
T-6B	W Bonneville (Garrison Dr to Lewis Ave)	No	1,330	As land development occurs	When/if development occurs.	Likely connection as development occurs.	Limited benefit beyond west portion of Town.
T-7	Bootstrap Trail	No	875	As land development occurs	Existing gravel road.	Improved roadway within Town boundary.	Limited connection & use.
T-8	Lewis Ave	Yes	660	As land development occurs or Town need	Existing gravel road.	Improved roadway within Town boundary.	Limited connection & use.
T-9	Wilson St (Mulligan Ln to Country Club Ln)	No	650	As land development occurs	When/if development occurs.	Likely connection as development occurs.	Requires waiting for development or future road adjustments.
T-10	Jade St Completion (Par Ave to S Colter Ave)	Yes	300	As land development occurs	Existing gravel road.	Improved roadway within Town boundary.	Requires waiting for development or future road adjust completionments.
T-11	South connectivity with possible anexation & subdivision(s)	No	TBD	As land development occurs	When/if development occurs.	Likely connection as development occurs.	Requires waiting for development or future road adjustments.
T-12	Slate Ln Completion (Par Ave to Tyler Ave)	Yes	3,950	As land development occurs	When/if development occurs.	Improved roadway within Town boundary.	Requires waiting for development or future road adjustments.
T-13	E Hennick St (Faler Ave to Fremont Lake Rd)	Partial	660	Town need/want.	Vertical grade challenges	Improved connection within Town & Fremont Lake Road.	Vertical grade / topography challenge.
T-14	E Charles St (S Bridger to S Pine St)	Yes	700	As land development occurs or Town need	Existing land is empty field or meadow.	Likely connection as development occurs.	Requires waiting for development or future road adjustments.
T-15	B St (S Bridger to Pine St)	No	1,280	As land development occurs	When/if development occurs.	Likely connection as development occurs.	Requires waiting for development or future road adjustments.
T-16	E Hill St (Canal St to S Skyline St)	Yes	540	Town need/want.	Vertical grade challenges	Town right of way exists.	Vertical grade / topography challenge.
T-17	Intersection improvements at Fremont Lake Road and Pine St., Fremont Lake Road relocation & realignment.	Partial - More needed	800	Town need/want.	Landowner involvement or acceptance needed.	Improved connection with US 191 and intersection adjustments (safety, function)	Requires adjustments to right-of-way and private properties.

North County Connectivity

Item		Information									Scores & Ranking											
Item	ITEM / LOCATION	Major Advantage	Major Disadvantage	Environmental / Agency Consultation	Possible ADT Withdrawal from Pine Street	Additional Connections Needed for full Network Benefit	New Road Length (est.)	Distance from Pine Street Blocks / Approximate Dist	Approximate Length of Floodplain (ft)	Approximate length of Creek Crossing(s)	ADT Withdraw (1=highest, 9=lowest)	Connectivity Potential (1 = high, 2 = med, 3 = low)	Length (shortest = 1, longest = 9)	Potential Land Owner Impact (ROW), number properties	Relocation and Uneconomical Reminent	Relocation / Reminant Ranking	Roadway Classification Impact (number properties along roadway)	Roadway Classification Ranking	NEPA (Environmental)	NEPA Score	Steering Committee Ranking (1 = high, 2 = med, 3 = low, 4 = bad)	Total (weighted) Score	Overall Ranking
NC-1	Broken Hills 23-229 (Alpine Hills to Willow Lk Rd)	No existing construction or buildings located in path.	Topography on east side of connector. Lose connectivity within Town.	USFWS, WGFD, USACE, DEQ	Nominal (North of Lee Ditch and only accessible via Fremont Lake Road)	T-4, T-1	3,000 ft	5,275 ft	1000 ft	80 ft	8	3	8	3	Med: no relocation, may result in Uneconomic remnant	2	28	2	Required	1	3	30	8
NC-2	BLM Subd. Rd 23-103 (Extend to Willow Lk Rd)	May be able to navigate difficult topography. BLM and state lands may be able to acquire easement.	Far removed from Pine Street.	BLM, USFWS, WGFD, USACE, DEQ	Nominal (North of Lee Ditch and only accessible via Fremont Lake Road)	T-4, T-1	3,400 ft	1.4 miles	300 ft	100	9	3	9	2	Low: no relocation	1	15	1	Required	1	2	28	6

North Local Connector

Item		Information									Scores & Ranking										
Item	ITEM / LOCATION	Major Advantage	Major Disadvantage	Environmental / Agency Consultation	Possible ADT Withdrawal from Pine Street	Additional Connections Needed for full Network Benefit	New Road Length (est.)	Distance from Pine Street Blocks / Approximate Dist	Approximate Length of Floodplain (ft)	Approximate length of Creek Crossing(s)	ADT Withdraw (1=highest, 9=lowest)	Connectivity Potential (1 = high, 2 = med, 3 = low)	Length (shortest = 1, longest = 9)	Potential Land Owner Impact (ROW), number properties	Relocation and Uneconomical Reminent	Relocation / Reminant Ranking	Roadway Classification Impact (number properties along roadway)	Roadway Classification Ranking	NEPA (Environmental)	NEPA Score	Steering Committee Ranking (1 = high, 2 = med, 3 = low, 4 = bad)	Total (weighted) Score	Overall Ranking
N-1	Connect Hoback Street to Magnolia St (Between N Madison and N Lake Ave)	Short road length required for extension	Connection close to Pine Street, through park	USFWS, WGFD, USACE, DEQ	3000-3500 (in 2045)	T-3,T-6B, T-13	1,350 ft	1 block / 340 ft	390 ft	70 ft	3	2	4	5	High: Residential relocations necessary	3	66	9	Required	1	3	30	7
N-2	Connect Bonneville St to W North St (Between N Madison and N Lake Ave)	Future connection with Garrision Drive	Connection through American Legion Park, would require relocation of memorial	USFWS, WGFD, USACE, DEQ	3500-4000 (in 2045)	T-3,T-6B, T-13	1,350 ft	2 blocks / 780 ft	390 ft	20ft , 70 ft	2	2	5	2	High:Structural relocation necessary and Uneconomic remnant	3	50	7	Required	1	3	25	4
N-3	Connect W Clark St. to W Hennick St (Between N Jackson Ave and N Lake Ave)	Advantageous location for extension of Hennick from Garrison to Fremont Lake Road, primarily along property lines	Require relocation of existing structures and property adjustments (212 N Lake and 428 W Buffalo)	USFWS, WGFD, USACE, DEQ	4000-5000 (in 2045)	T-3,T-6A, T-13	1,680 ft	3-4 blocks / 1270 ft	590 ft	70 ft	1	1	6	4	High: Structural relocation necessary and Uneconomic remnant	3	35	5	Required	1	1	22	1
N-4	Extend W Valley Rd to the West (Between N Jackson Ave and Quaker Lane)	Advantageous location to minimize reclassification of roadway network because of connection location	Existing pathway and Tranquility bridge may require relocation or modifications	USFWS, WGFD, USACE, DEQ	3000-3500 (in 2045)	T-1 or T-2 and T-5	1,850 ft	7 blocks / 2650 ft	350 ft	70 ft	3	2	7	3	Med: Possible structural relocation in county ROW, will need reseach, pathway relocation	2	32	3	Required	1	1	22	2
N-5	Connect Creekside Ave to Moose St (Between N Jackson Ave. and terminating point of Moose St)	Short length of connector road required	Require additional vehicle maneuvering within Shelter Park network. Numerous private property owners.	USFWS, WGFD, USACE, DEQ	2000-2500 (in 2045)	T-1 or T-2 and T-5	700 ft	8 block / 3100 ft	430 ft	230 ft	5	3	1	2	Low: no relocation	1	51	8	Required	1	4	25	5
N-6	W. Lake Rd 23-185 (Crear to Jackson) - Connect with Kathryn Hill	Short length of connector road required	Change of the classification of Lake Road.	USFWS, WGFD, USACE, DEQ	2500-3000 (in 2045)	T-1 or T-2 and T-5	1,050 ft	9 blocks / 3500 ft	400 ft	90 ft	6	1	2	6	High: Residential relocations necessary	3	33	4	Required	1	1	24	3
N-7	Orcutt 23-189 (Cee Dee Park to Willow Lk Rd)	Connect to Orcutt Drive and Crear Ln & Willow Lake Road.	Topography on east side of connector. Lose connectivity within Town.	USFWS, WGFD, USACE, DEQ	1000 +/-	T-4, T-1 or T-2 and T-5	1,230 ft	4,200 ft	590 ft	60 ft, 50 ft	7	3	3	4	High: Residential relocations may be necessary based on alighnment and turane	3	37	6	Required	1	4	31	9

South Local Connection

Item		Information										Scores & Ranking											
Item	ITEM / LOCATION	Major Advantage	Major Disadvantage	Environmental / Agency Consultation	Possible ADT Withdrawal from Pine Street	Additional Connectivity Beyond Pine Creek	New Road Length	Distance from Pine Street Blocks / Approximate Dist	Potential Number of Land Owners Impacted (Direct / Indirect)	Approximate Length of Floodplain (ft)	Approximate length of Creek Crossing	ADT Withdraw (1=highest, 5=lowest)	Connectivity Potential 1 = highest, 3 = lowest	Length (shortest = 1, longest = 5)	Potential Land Owner Impact (ROW), number properties	Relocation and Uneconomical Reminent	Relocation / Reminant Ranking	Roadway Classification Impact (number properties along roadway)	Roadway Classification Ranking	NEPA (Environmental)	NEPA Score	Steering Committee Ranking (1 = high, 2 = med, 3 = low, 4 = bad)	Total (weighted) Score	Overall Ranking
S-1	Wilson St connection to S Lake Ave (S Shanley Ave to S. Lake Ave)	Short connection length	Require Mill Street improvements to achieve full network benefits, no direct street to connect.	USFWS, WGFD, USACE, DEQ	1000 +/-	Indirect connection to the east, Mill Street narrow	600 ft	1 block / 450 ft	Direct - 1 town, 1 private	380 ft	70 ft	1	3	1	2	Low: no relocation necessary	1	67	5	Required	1	3	17	2
S-2	Adams St connection to Park Loop (S Shanley Ave to Park Loop)	All within Town property	Connection point within Boyd Skinner Park and would require W Charles St improvements for network improvement	USFWS, WGFD, USACE, DEQ	800-1000	Connection into Park, poor connectivity to the east (Charles Street One Way)	600 ft	2 blocks / 875 ft	Direct - Town	370 ft	70 ft	2	3	1	1	Low: No relocation necessary	1	42	2	Required	1	4	15	1
S-3	W Washington connection to E Mapfel St (S Shanley Ave to S Tyler Ave)	Provide full West/East longitudinal connectivity on south side of Town	Impacts to Boyd Skinner Park	USFWS, WGFD, USACE, DEQ	600-800	Connection of Washington Street	1,500 ft	3-4 blocks / 1300 ft	Direct - Town Indirect - 11, properties along connection and intersection	1,030 ft	90 ft	3	1	5	1	Low: No relocation necessary	1	63	4	Required	1	3	19	5
S-4	Quartz Ave extension to S Tyler Ave (Jade St. to S. Tyler)	mid distance between Pine Street and Fox Willow Connection	Environmental impacts	USFWS, WGFD, USACE, DEQ	400-600	None	900 ft	4-5 blocks / 1930 ft	Direct - Town Indirect - 5, properties along connection intersection	460 ft	40 ft, 60 ft	4	2	4	1	Low: No relocation necessary	1	59	3	Required	1	2	18	4
S-5	Agete St extension to S Tyler Ave (S Shanley to S Tyler)	High feasibility with location	Proximity to Fox Willow Connection to Tyler	USFWS, WGFD, USACE, DEQ	400 +/-	None	760 ft	6 blocks / 2600 ft	Direct - Town	150 ft	120 ft	5	2	3	1	Low: No relocation necessary	1	26	1	Required	1	3	17	2

Regional South / Bypass Connectivity

NO.	ITEM / LOCATION	Major Advantage	Major Disadvantage	Environmental / Agency Consultation	Possible ADT Withdrawal from Pine Street	Estimated Road Length	Potential Number of Land Owners Impacted (Direct / Indirect)	Degree of Landowner Openness	Overall Ranking	Notes / Feedback
R-1	Provide connection between Rembrance Ln and Goose Ln	Utilizes County gravel pit property.	Requires some backtracking if used as a by-pass.	USFWS, WGFD, USACE, DEQ	3,000-3,500 (in 2045)	3,600	County Property and 2 private property owner	Unknown or limited (outside of County)	Secondary Option	Potential pathway add for multimodal.
R-2	Provide connection between Hay Ln (approximate location) to Ultra Resources office/site road.	Option has been discussed with the county prior, good connection with Mesa Road.	Longer connection length	USFWS, WGFD, USACE, DEQ, Wyo State Lands	3,000-3,500 (in 2045)	6,400	State of Wyoming, 2 private property owners	Open - prior discussions have occurred.	Preferred Option	Potential pathway add for multimodal.

Multimodal Improvements

Item	ITEM / LOCATION	DESCRIPTION / OVERVIEW	Multimodal Benefit	Environmental Impacts (1 low, 5 high)	Right of Way
A	Pine Street/Bridger Pedestrian Crossing	Enhance the existing crossing with bulb-outs, flashing beacon, etc.; consider shifting to west leg	Dedicated crossing on east end of Pine Street	1 - improvements in a fully developed area	Minimal
B	Barber Creek Pedestrian Crossing	Add a grade-separated pedestrian crossing of Pine Street near the ball fields, aligned with Barber Creek	Dedicated crossing on west end of Pine Street; connection between school and ball fields	4 - Potential impacts to creek	Minimal
C	Pine Street/Jackson Pedestrian Crossing	Add a pedestrian crossing of Pine Street near Jackson Ave including a HAWK or RRFB	Dedicated crossing west of Pine Creek, where none currenlty exist	1 - improvements in a fully developed area	Minimal
D	Pine Creek Pathway Underpass (191)	Construct a pathway underpass adjacent to Pine Creek to connect existing pathway segments north and south of Pine Street	Grade-separated connection along the busiest pathway	4 - Potential impacts to creek	Minimal
E	Pine Street Intersection Bulbouts	Depending on recommended Pine Street cross-section, add curb bulbouts at intersection corners with pedestrian crossings	Reduced crossing distance for pedestrians and better visibility	1 - improvements in a fully developed area	Minimal
F	Hospital Pathway Improvements	Make spot ADA improvements to the pathway, including level resting areas	Accessibility improvement	4 - a lot of earthwork would be needed to substantially improve the existing pathway	Minimal
G	Bloomfield Pathway Connection	Add a pathway connection along Bloomfield Avenue between Pine Street and Ehman Lane	Provides a better bike/ped connection to the school	2 - connection through partially undeveloped area	Minimal
H	Colter/Hoback Pathway Connection	Add a pathway connection along Colter Avenue/Hoback Street between Pine Street and Veterans Memorial Park, with pathway improvements in the park	Provides better east-west connectivity to the west of Pine Street	2 - connection through partially undeveloped area	Minimal
I	Pine Street Pathway Connection	Add a pathway connection along Pine Street between Veterans Memorial Park and Lake Avenue by repurposing northside parking over the bridge and widening the existing sidewalk east of the bridge	Provides a better bike/ped connection over the Pine Street bridge	1 - improvements in a fully developed area	Minimal
J	Downtown Pathway Connection	Add a pathway connection along Tyler Avenue between Pine Street and B Street	Fills a missing gap along Tyler	1 - improvements in a fully developed area	Minimal
K	South Tyler Pathway Connection	Add pathway connections aligned with Agate Street and Fox Willow Drive, including a new Pine Creek crossing	Provides better connectivity to Tyler from southwest neighborhoods	4 - disruption of natural area; additional creek crossing	Moderate
L	Ehman Lane Pathway Connection	Add an east-west pathway connection to/from Ehman Lane north of the elementary school	Provides better east-west connectivity for residents north of the school	2 - connection through undeveloped area	Minimal
M	Southwest Pinedale Pathway Connection	Add a pathway/sidewalk connection along Washington between Pine Creek and Country Club Lane, and along Clubhouse Road	Provides dedicated space for pedestrians where none currently exists	2 - potential minor impacts	Minimal
N	East Pine Street/191 Pathway Extension	Add a pathway/sidewalk connection along Highway 191 between Canal Street	Fills a missing gap along 191	2 - potential minor impacts	Minimal

JORGENSEN

Town of Pinedale
Transportation Alternatives
Estimated Cost Summary
4/12/2023 DRAFT

Route Location	Cost per Foot	Total Estimated Cost of Route (Year of construction)						Right of Way Purchase
		2023	2025	2030	2035	2040	2045	
N-9	$ 1,535	$ 5,219,600	$ 5,538,000	$ 6,420,000	$ 7,442,000	$ 8,628,000	$ 10,002,000	Not Included
N-8	$ 970	$ 2,716,250	$ 2,882,000	$ 3,341,000	$ 3,873,000	$ 4,490,000	$ 5,205,000	Included
N-7	$ 1,942	$ 2,388,700	$ 2,535,000	$ 2,938,000	$ 3,406,000	$ 3,949,000	$ 4,577,000	Included
N-6	$ 1,890	$ 1,984,350	$ 2,106,000	$ 2,441,000	$ 2,830,000	$ 3,280,000	$ 3,803,000	Included
N-5	$ 5,574	$ 3,901,950	$ 4,140,000	$ 4,799,000	$ 5,564,000	$ 6,450,000	$ 7,477,000	Included
N-4	$ 937	$ 1,733,050	$ 1,839,000	$ 2,132,000	$ 2,471,000	$ 2,865,000	$ 3,321,000	Included
N-3	$ 1,192	$ 2,003,000	$ 2,125,000	$ 2,464,000	$ 2,856,000	$ 3,311,000	$ 3,838,000	Included
N-2	$ 1,561	$ 2,107,950	$ 2,237,000	$ 2,593,000	$ 3,006,000	$ 3,485,000	$ 4,040,000	Included
N-1	$ 1,350	$ 1,822,250	$ 1,934,000	$ 2,242,000	$ 2,599,000	$ 3,012,000	$ 3,492,000	Included
S-1	$ 2,391	$ 1,434,550	$ 1,522,000	$ 1,765,000	$ 2,046,000	$ 2,372,000	$ 2,749,000	Included
S-2	$ 2,391	$ 1,434,550	$ 1,522,000	$ 1,765,000	$ 2,046,000	$ 2,372,000	$ 2,749,000	Included
S-3	$ 1,498	$ 2,246,750	$ 2,384,000	$ 2,764,000	$ 3,204,000	$ 3,714,000	$ 4,306,000	Included
S-4	$ 2,296	$ 2,066,150	$ 2,192,000	$ 2,542,000	$ 2,946,000	$ 3,416,000	$ 3,959,000	Included
S-5	$ 2,982	$ 2,266,450	$ 2,405,000	$ 2,788,000	$ 3,232,000	$ 3,747,000	$ 4,343,000	Included
R-1	$ 756	$ 2,720,000	$ 2,886,000	$ 3,346,000	$ 3,879,000	$ 4,496,000	$ 5,212,000	Not Included
R-2	$ 811	$ 4,786,600	$ 5,079,000	$ 5,887,000	$ 6,825,000	$ 7,912,000	$ 9,172,000	Not Included

3% Inflation used for cost projections

Costs included in construction estimates include the following:

Contingency	20% of Construction
Right of Way Appraisal, Admin	20% of Acquisition
Design / Engineering Estimate	10% of Construction
Permitting & NEPA	7% of Construction
Legal / Attorney Fees	3% of Construction
Construction Administration	12% of Construction

Department of Transportation
State of Wyoming
3200 Elk Street Rock Springs, Wyoming 82902
(307) 352-3000 FAX (307) 352-3150

Matthew H. Mead
Governor

William T. Panos
Director

January 4, 2017

Mayor Bob Jones
Town of Pinedale
P.O. Box 709
Pinedale, WY 82941

Andy Nelson, Chairman
Sublette County Commissioners
PO Box 250
Pinedale, WY 82941

Re: Speed Limit Study Results
US 191/Pine Street west

Dear Mayor Jones and Chairman Nelson:

The attached engineering and traffic investigation was performed this fall in accordance with Wyoming State Statue 31-5-302 in response to a written request from the Town of Pinedale dated July 12, 2016. At this time the requested speed reduction can be partially met with a reduction in the existing 45-mph speed limit to 40-mph and the introduction of a 55-mph speed limit west of Ehman Lane. The requested 30-mph reduction would have been too restrictive for everyday motorists; put the majority of law-abiding users into the violator category and it would not meet the requirements of the Federal Manual on Uniform Traffic Devices (MUTCD).

Below you will find a brief summary description of the study's findings and recommendations. The investigation included a review of crash history, roadside environment, access density, and the free flow speed of traffic in both directions of travel through the entire Town of Pinedale.

The crash history was spread out along the study area and there was no identifiable crash trend.

The major factors in analyzing speeds are the 85th-percentile speed and the pace speed. The 85th-percentile speed is the speed at which 85 percent of all motorists are traveling at or below, at the time of the speed study. The pace speed is a 10-mph bandwidth with the highest number of motorists. It is preferred that the upper limit of the pace speed should correspond relatively close to the 85th-percentile speed. According to the MUTCD, speed limits should be posted within 5-mph of the 85th-percentile speed, and it is generally accepted that the majority of motorists travel in a safe and reasonable manner and adjust their speeds based on adjacent roadside environment. Based on the speed data, it was evident that motorists are adjusting their speeds with the transitioning roadside environment from urban to semi-urban to rural, through town.

It was also found that the existing posted speed limits of 55-mph and 40-mph south of town are not based on any engineering study, as required by state statutes, and therefore the current posted speed limits are not legally enforceable. However, the speed study was performed north and south of town and the recommended speed limits match the changing roadside development and the prevailing speeds of the everyday motorist.

We are seeking written support from local governing entities for the proposed speed limit changes reflected in the attached speed limit study. Please return your written comments to this office.

After all written comments have been received by the District Office, a recommendation will be sent in to the State Traffic Engineer for approval by the Director.

If there are any other questions or concerns, please contact me at 307-352-3000.

Sincerely,

Keith Compton, P.E.
District Engineer

Attachment: Speed Limit Study/Pinedale, WY

cc: File
Representative Albert Sommers, PO Box 1608, Pinedale, WY 82941
Todd Seeton, Wyoming Transportation Commissioner, PO Box 8075, Jackson, WY 83002
Caleb M. Hiner, Field Manager, BLM, Pinedale Field Office, P.O. Box 768. Pinedale, WY 82941
Captain James Thomas, WHP, Rock Springs
Mark Gillett, P.E. Assistant Chief Engineer – Operations, WYDOT, Cheyenne
Darin Kaufman, P.E., PTOE, District Traffic Engineer, WYDOT, Rock Springs
Dan McGillivray, P.E. Resident Engineer, WYDOT, Pinedale
Stephanie Harsha, Public Involvement Specialist, WYDOT, Rock Springs
Tara Finely, District Traffic Technician, WYDOT, Rock Springs

US 191_RM 98 to RM 102

Speed Limit Study

Pinedale, Sublette County, WY

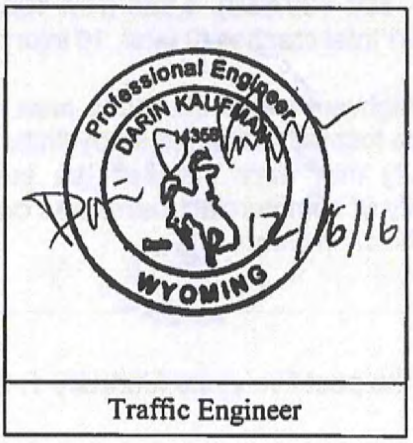
December 2016

Prepared By:

Darin D. Kaufman, P.E., PTOE
District Traffic Engineer

Wyoming Department of Transportation

District 3 Rock Springs



Traffic Engineer

US 191 (Pinedale) Speed Study

Introduction

This study is in response to written requests from the Bureau of Land Management (BLM) Field Office and the Town of Alpine (see **Appendix A**). Due to developmental growth over the last several years, the requests are interested in a reduction of the posted speed limits within the western limits of the Town of Pinedale. The area currently is within a 45 mph zone with a mixture of commercial, commuter, and school generated traffic. This analysis also was extended to include the town limits starting south and ending west of Pinedale.

Corridor Description

US 191 (ML-13B) is a north-south principal arterial highway through the community of Pinedale in Sublette County. Through Pinedale US 191 primarily runs east-west. This roadway primarily consists of a four lane undivided highway (two lanes in each direction with no center left-turn lane), with at least 6-foot shoulders and transitions to one lane in direction near the town limits. Vertical curb is currently located on both sides of the highway between RM 98.8 and RM 100.4. Pinedale town limits are between RM 98.83 and RM 100.65.

The posted speed limit is 55 mph from RM 98.22 to RM 98.88, 40 mph from RM 98.88 to RM 99.12, 25 mph from RM 99.12 to RM 99.90, 30 mph from RM 99.90 to RM 100.41, and 45 mph from RM 100.41 to RM 101.25. A school crossing with a posted speed limit of 20-mph (when flashing) from RM 99.49 to RM 99.56 is located within the study limits at the intersection with Tyler Avenue. According to WYDOT's records, the 25 mph and 45 mph limits were formally documented by an engineering and traffic investigation and established by a Declaration of Speed Limit in 2005. The 30 mph limit is a statutory speed limit as defined by W.S. 31-5-102. The 55 mph and 40 mph limits do not have documentation as ever being established as required by state statutes.

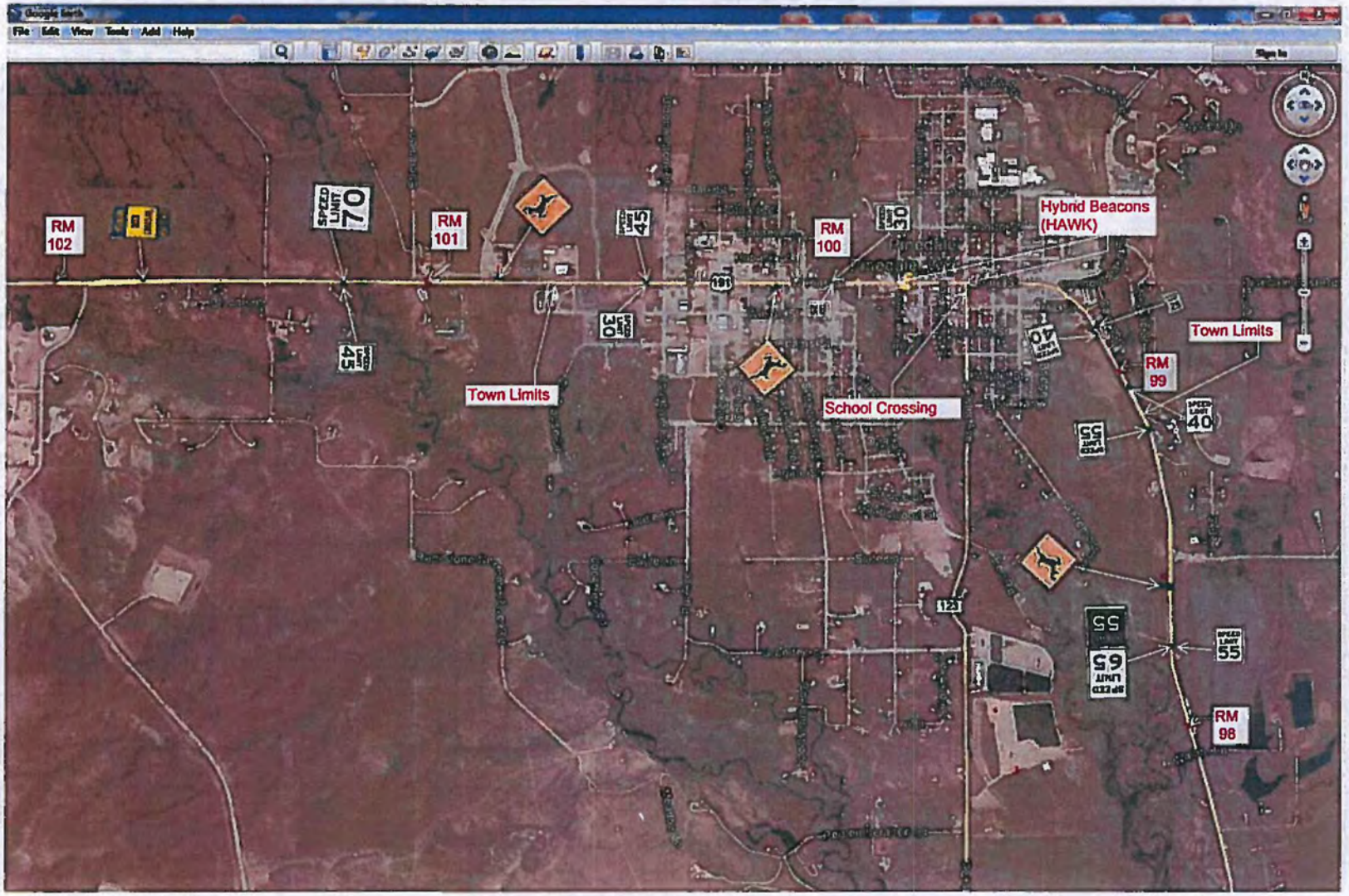
This area has a 2015 AADT of 4,612 (RM 98.502 – RM 98.828), 5,148 (RM 98.828 – RM 99.385), 8,055 (RM 99.385 – RM 100.650), 4,835 (RM 100.650 – RM 101.027) and a 2011 – 2015 crash history of 91 total crashes (0 fatal, 16 injury, 75 property damage only).

Parking is available on the highway within the study area, and two pedestrian hybrid (HAWK) beacon crossings are located within the study limits at Tyler Avenue (RM 99.5) and Lake Avenue (RM 99.7) that were installed the summer of 2011. Adjacent development consists primarily of commercial businesses on both sides of the highway. The existing conditions are shown in **Exhibit 1**.

Crash Analysis

Crash data was collected for the past five years (January 1, 2011 through December 31,

EXHIBIT 1 - Pinedale - Existing Conditions



2015) for the 4-mile section on US 191 (RM 98.0 to RM 102.0). A printout of the crash data is attached (see **Appendix B**).

Crash data was broken down into years, crash severity, manner of collision, and first harmful event. Of the total 91 crashes there were no fatal, 16 injury, and 75 property damage only crashes. The crashes were spread out along the study area and there was no identifiable crash trend. Wild animal crashes occur primarily outside the town limits and intersection related crashes within the urban area, which are not unexpected.

Year

2011	2012	2013	2014	2015	Total
17	20	21	16	17	91

Crash Severity

Fatal Injury	Incapacitating Injury	Nonincapacitating Injury	Possible Injury	No Injury	Unknown	Total
0	2	7	7	75	0	91

Manner of Collision

Null Value	Rear End	Head On	Angle	Sideswipe Same Dir	Sideswipe Opp Dir	Single Vehicle	Backing	Total
36	12	0	30	1	0	10	2	91

First Harmful Event

Overturn or Rollover	Motor Vehicle in Transport	Wild Animal	Domestic Animal	Parked Vehicle	Bicycle	Cargo Shift	Object Set in Motion by Another Vehicle	Fence or Sign Post	Total
2	42	37	1	4	1	1	1	2	91

From the crash data collected for this section of US 191, for the most recent 5 years (2011 – 2015) a safety index scoring, safety index compare, and safety index rating were calculated compared statewide to other similar facility types. As indicated in the chart below, the safety index compare and safety index rating, respectively for the (*) requested study area has fewer crashes and/or less severe crashes than the statewide average, and has somewhat more crashes and/or more severe crashes than average, for routes of similar facility type.

Safety Index Scoring

Route	From MP	To MP	Facility Type	Safety Index Score	Safety Index Compare	Safety Index Rating
US 191	98.000	98.828	Rural	0.31	4.69	4
US 191	98.829	100.940	Urban	0.21	0.74	3
*US 191	100.941	102.000	Rural	0.06	0.97	3

Speed Data Analysis

WYDOT staff collected free flow speed data the week of September 26, 2016 at 18 locations on US 191 through Pinedale for both directions of travel. See the attached map for exact locations (**Exhibit 2**). The locations selected represent areas in the different speed limit zones and roadway sections. The free flow speeds were taken with radar and a minimum 100-vehicle sample were collected for each of the 18 selected locations. A 100-vehicle sample data set is considered statistically adequate for a spot speed study.

The 85th-percentile speed is the speed at which 85 percent of all vehicles were traveling at or below, under the prevailing conditions at the time of the spot speed study. It is the most generally used and preferred criterion when determining the specific maximum speed limit for a roadway. According to the *Manual on Uniform Traffic Control Devices* (MUTCD), speed limits should be posted within 5 mph of the 85th-percentile speed of free-flowing traffic.

The pace shown in the spot speed study results tables are the 10-mph band where the greatest number of speed samples occurred. Preferably, the upper limit of the pace should reasonably correspond with the 85th-percentile speed and the posted speed limit. The lower limit of the pace is a number which the speed limit should never be at or below.

The existing speed zones and the results of the 18 spot speed studies, conducted at various locations on US 191, are shown in the tables below. In addition a description of the results of the spot speed analysis, prevailing speeds, and the recommended speed limit for each section is provided. The individual spot speed study forms are attached (see **Appendix C**).

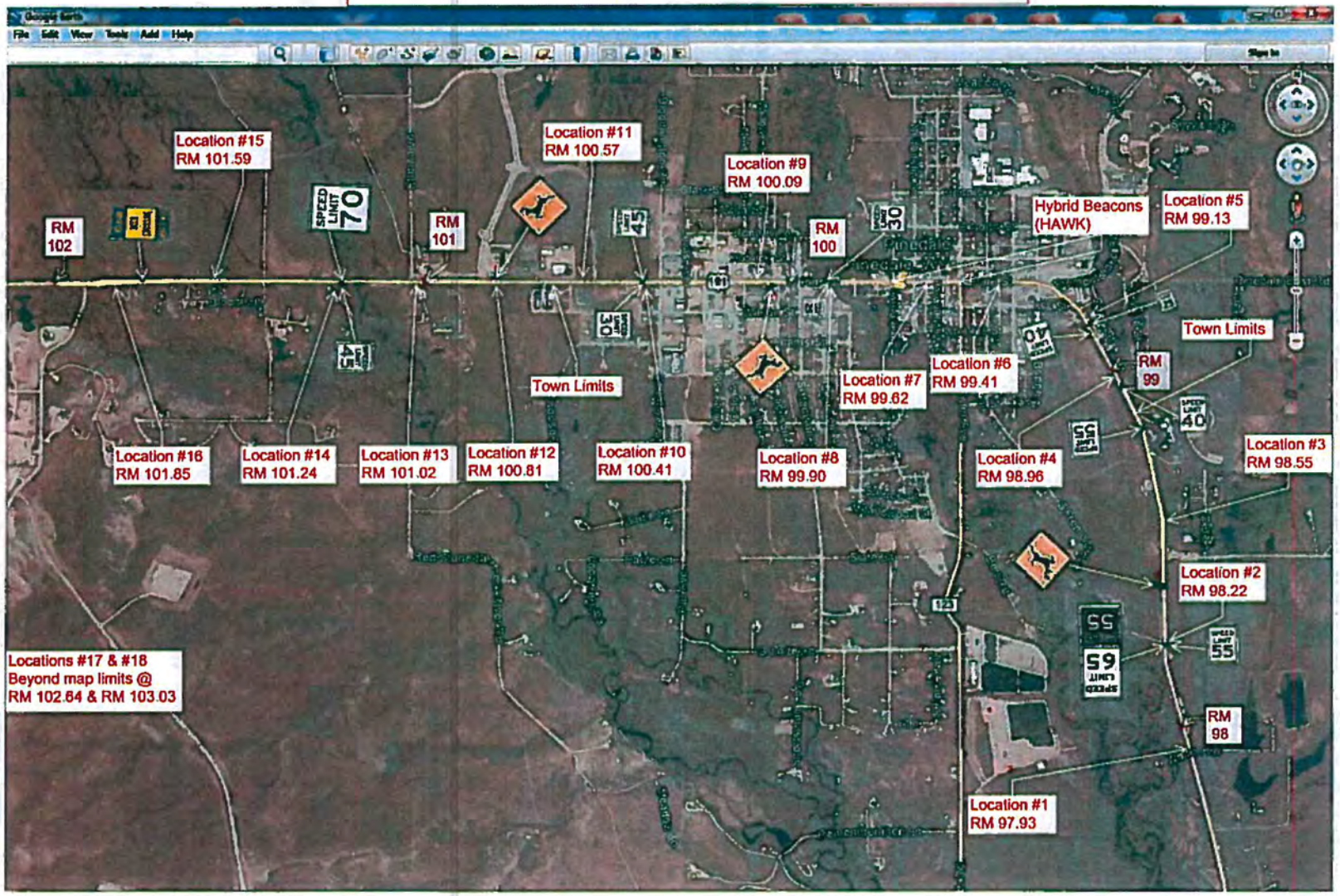
Spot Speed Study Results

Location 1:		Northbound	Southbound
RM 97.93 (south of Fayette Pole Ck Rd)	POSTED SPEED	70(65/55)*	70(65/55)*
	85th% SPEED	69	75
	50th% SPEED	63	69
	10 MPH PACE	59 – 68	64 – 73
	% COMPLIANCE	64	32

*The 65-mph day/55-mph night was posted on 10/20/2016.

For the section of roadway south of Pinedale and south of Fayette Pole Creek Road, as shown in the table for Location #1 above, the 85th-percentile speeds were 1 mph below to 5 mph above, and the upper limit of the pace were 2 mph below and 3 mph above the posted speed limit of 70-mph. (Data was collected 9/28/16 whereas the reduced nighttime speed limit was installed 10/20/16). The speed data collected in this area indicates that motorists consider this section of roadway as a completely rural highway, as indicated by the 85th-percentile speed being between 69 and 75 mph, and the pace being 59 – 68 mph and 64 – 73 mph, northbound and southbound respectively. Based on a review of the area, the roadway environment is completely rural just south of

EXHIBIT 2 - Speed Data Collection Locations



Fayette Pole Creek Road. Based on the speed data, speed profile, speed compliance, and roadway environment in the area, the recommended speed limit from the speed study worksheets would be 70-mph.

Location 2:		Northbound	Southbound
RM 98.22 (south of Fayette Pole Ck Rd)	POSTED SPEED	55	70(65/55)*
	85th% SPEED	62	67
	50th% SPEED	57	60
	10 MPH PACE	52 – 61	55 – 64
	% COMPLIANCE	39	79

For the section of roadway south of Pinedale and south of Fayette Pole Creek Road, as shown in the table for Location #2 above, the 85th-percentile speeds were 7 to 12 mph above, and the upper limit of the pace were 6 to 9 mph above the posted speed limit of 55-mph. The speed data collected south of Fayette Pole Creek Road indicates that motorists consider this section of roadway as a rural highway, as indicated by the 85th-percentile speed being between 62 and 67 mph, and the pace being 52 – 61 mph and 55 – 64 mph, northbound and southbound respectively. Based on a review of the area, the roadway environment is rural south of Fayette Pole Creek Road. Based on the speed data, speed profile, relatively low speed compliance, and roadway environment in the area, the posted speed limit should remain unchanged.

Location 3:		Northbound	Southbound
RM 98.55 (north of Fayette Pole Ck Rd)	POSTED SPEED	55	55
	85th% SPEED	59	58
	50th% SPEED	54	53
	10 MPH PACE	50 – 59	49 – 58
	% COMPLIANCE	61	69

For the section of roadway south of Pinedale and north of Fayette Pole Creek Road, as shown in the table for Location #3 above, the 85th-percentile speeds were 4 to 3 mph above, and the upper limit of the pace were 4 to 3 mph above the posted speed limit of 55-mph. The speed data collected north of Fayette Pole Creek Road indicates that motorists consider this section of roadway as a semi-rural highway, as indicated by the 85th-percentile speed being between 59 and 58 mph, and the pace being 50 – 59 mph and 49 – 58 mph, northbound and southbound respectively. Based on a review of the area, it appears that the roadway environment is transitioning from rural to semi-rural feel north of Fayette Pole Creek Road. Based on the speed data, speed profile, speed compliance, and roadway environment in the area, the speed limit should remain at the existing posted limit of 55-mph.

Location 4:		Northbound	Southbound
RM 98.96 (southern Town boundary limit)	POSTED SPEED	40	40
	85th% SPEED	42	56
	50th% SPEED	37	46
	10 MPH PACE	33 – 42	41 – 50
	% COMPLIANCE	77	21

For the section of roadway near the Town of Pinedale southern limits, as shown in the

table for Location #4 above, the 85th-percentile speeds were 2 to 16 mph above, and the upper limit of the pace were 2 to 10 mph above the posted speed limit of 40-mph. The speed data collected near the Town's southern boundary limit indicates that motorists consider this section of roadway as semi-urban highway, as indicated by the 85th-percentile speed being between 42 and 56 mph, and the pace being 33 – 42 mph and 41 – 50 mph, northbound and southbound respectively. Based on a review of the area, it appears that the roadway environment is transitioning from fringe-rural to semi-urban feel near the Town's southern boundary. Based on the speed data, speed profile, relatively low speed compliance, and roadway environment in the area, the speed limit should remain at the existing posted limit of 40-mph.

Location 5:		Northbound	Southbound
RM 99.13 (south of Fremont Lk Rd)	POSTED SPEED	25	40
	85th% SPEED	37	38
	50th% SPEED	33	33
	10 MPH PACE	28 – 37	31 – 40
	% COMPLIANCE	4	94

For the section roadway south of Fremont Lake Road, as shown in the table for Location #5 above, the 85th-percentile speeds were 12 to 13 mph above, and the upper limit of the pace are 12 to 15 mph above the posted speed limit of 25-mph. The speed data collected south of Fremont Lake Road indicates that motorists consider this section of roadway as completely urban, as indicated by the 85th-percentile speed being between 37 and 38 mph, and the pace being 28 – 37 mph and 31 – 40 mph, northbound and southbound respectively. Based on a review of the area, it appears that the roadway environment transitions from fringe-urban to completely urban feel. Based on the speed data, speed profile, relatively low speed compliance, and roadway environment in the area, the speed limit should remain at the existing posted limit of 25-mph northbound and 40-mph southbound.

Location 6:		Westbound	Eastbound
RM 99.41 (between Sublette Ave and Fremont Ave)	POSTED SPEED	25	25
	85th% SPEED	28	31
	50th% SPEED	25	28
	10 MPH PACE	20 – 29	23 – 32
	% COMPLIANCE	62	25

For the section roadway between Sublette Avenue and Fremont Avenue, as shown in the table for Location #6 above, the 85th-percentile speeds were 3 to 6 mph above, and the upper limit of the pace are 4 to 7 mph above the posted speed limit of 25-mph. The speed data collected between Sublette Avenue and Fremont Avenue indicates that motorists consider this section of roadway as completely urban, as indicated by the 85th-percentile speed being between 28 and 31 mph, and the pace being 20 – 29 mph and 23 – 32 mph, westbound and eastbound respectively. Based on a review of the area, the roadway environment is completely urban. Based on the speed data, speed profile, relatively low speed compliance, and roadway environment in the area, the speed limit should remain at the existing posted limit of 25-mph.

Location 7:		Westbound	Eastbound
RM 99.62 (between Maybell Ave and Franklin Ave)	POSTED SPEED	25	25
	85th% SPEED	27	30
	50th% SPEED	25	27
	10 MPH PACE	20 – 29	22 – 31
	% COMPLIANCE	65	38

For the section roadway between Maybell Avenue and Franklin Avenue, as shown in the table for Location #7 above, the 85th-percentile speeds were 2 to 5 mph above, and the upper limit of the pace are 4 to 6 mph above the posted speed limit of 25-mph. The speed data collected between Maybell Avenue and Franklin Avenue indicates that motorists consider this section of roadway as completely urban, as indicated by the 85th-percentile speed being between 27 and 30 mph, and the pace being 20 – 29 mph and 22 – 31 mph, westbound and eastbound respectively. Based on a review of the area, the roadway environment is completely urban. Based on the speed data, speed profile, relatively low speed compliance, and roadway environment in the area, the speed limit should remain at the existing posted limit of 25-mph.

Location 8:		Westbound	Eastbound
RM 99.90 (at Lincoln Ave)	POSTED SPEED	30	25
	85th% SPEED	31	37
	50th% SPEED	27	32
	10 MPH PACE	23 – 32	28 – 37
	% COMPLIANCE	85	8

For the section roadway at Lincoln Avenue, as shown in the table for Location #8 above, the 85th-percentile speeds were 1 to 7 mph above, and the upper limit of the pace are 2 to 7 mph above the posted speed limit of 30-mph. The speed data collected at Lincoln Avenue indicates that motorists consider this section of roadway as completely urban, as indicated by the 85th-percentile speed being between 31 and 37 mph, and the pace being 23 – 32 mph and 28 – 37 mph, westbound and eastbound respectively. Based on a review of the area, the roadway environment is completely urban. Based on the speed data, speed profile, speed compliance, and roadway environment in the area, the speed limit should remain at the existing posted limit of 30-mph westbound and 35-mph eastbound.

Location 9:		Westbound	Eastbound
RM 100.09 (between Jackson Ave and Ashley Ave)	POSTED SPEED	30	30
	85th% SPEED	30	35
	50th% SPEED	27	31
	10 MPH PACE	22 – 31	27 – 36
	% COMPLIANCE	91	39

For the section roadway between Jackson Avenue and Ashley Avenue, as shown in the table for Location #9 above, the 85th-percentile speeds were 0 to 5 mph above, and the upper limit of the pace are 1 to 6 mph above the posted speed limit of 30-mph. The

speed data collected between Jackson Avenue and Ashley Avenue indicates that motorists consider this section of roadway as completely urban, as indicated by the 85th-percentile speed being between 30 and 35 mph, and the pace being 22 – 31 mph and 27 – 36 mph, westbound and eastbound respectively. Based on a review of the area, the roadway environment is completely urban. Based on the speed data, speed profile, speed compliance, and roadway environment in the area, the speed limit should remain at the existing posted limit of 30-mph.

Location 10:		Westbound	Eastbound
RM 100.41 (west of Count Club Ln)	POSTED SPEED	45	30
	85th% SPEED	40	50
	50th% SPEED	35	45
	10 MPH PACE	31 – 40	43 – 52
	% COMPLIANCE	98	2

For the section roadway west of Count Club Lane, as shown in the table for Location #10 above, the 85th-percentile speeds were 5 mph below to 5 mph above, and the upper limit of the pace are 5 mph below to 7 mph above the posted speed limit of 45-mph. The speed data collected west of Count Club Lane indicates that motorists consider this section of roadway as semi-urban, as indicated by the 85th-percentile speed being between 40 and 50 mph, and the pace being 31 – 40 mph and 43 – 52 mph, westbound and eastbound respectively. Based on a review of the area, the roadway environment is transitioning from completely urban to a fringe urban feel. Based on the speed data, speed profile, relatively low speed compliance, and roadway environment in the area, the posted speed limit should remain unchanged.

Location 11:		Westbound	Eastbound
RM 100.57 (west of Haymaker Dr)	POSTED SPEED	45	45
	85th% SPEED	40	59
	50th% SPEED	36	50
	10 MPH PACE	32 – 41	46 – 55
	% COMPLIANCE	99	28

For the section roadway west of Haymaker Drive, as shown in the table for Location #11 above, the 85th-percentile speeds were 5 mph below to 14 mph above, and the upper limit of the pace are 4 mph below to 10 mph above the posted speed limit of 45-mph. The speed data collected west of Haymaker Drive indicates that motorists consider this section of roadway as semi-rural, as indicated by the 85th-percentile speed being between 40 and 59 mph, and the pace being 32 – 41 mph and 46 – 55 mph, westbound and eastbound respectively. Based on a review of the area, the roadway environment is transitioning from fringe urban to a fringe rural feel. Based on the speed data, speed profile, relatively low speed compliance, and roadway environment in the area, the speed limit should remain at the existing posted limit of 45-mph.

Location 12:		Westbound	Eastbound
RM 100.81 (east of Bloomfield Ave)	POSTED SPEED	45	45
	85th% SPEED	47	55
	50th% SPEED	43	49
	10 MPH PACE	39 – 48	45 – 54
	% COMPLIANCE	76	24

For the section roadway east of Bloomfield Avenue, as shown in the table for Location #12 above, the 85th-percentile speeds were 2 to 10 mph above, and the upper limit of the pace are 3 to 9 mph above the posted speed limit of 45-mph. The speed data collected east of Bloomfield Avenue indicates that motorists consider this section of roadway as semi-rural, as indicated by the 85th-percentile speed being between 47 and 55 mph, and the pace being 39 – 48 mph and 45 – 54 mph, westbound and eastbound respectively. Based on a review of the area, the roadway environment has a fringe rural character. Based on the speed data, speed profile, relatively low speed compliance, and roadway environment in the area, the speed limit should remain at the existing posted limit of 45-mph.

Location 13:		Westbound	Eastbound
RM 101.02 (east of Ehman Ln)	POSTED SPEED	45	45
	85th% SPEED	50	48
	50th% SPEED	44	43
	10 MPH PACE	39 – 48	40 – 49
	% COMPLIANCE	62	70

For the section roadway east of Ehman Lane, as shown in the table for Location #13 above, the 85th-percentile speeds were 5 to 3 mph above, and the upper limit of the pace are 3 to 4 mph above the posted speed limit of 45-mph. The speed data collected east of Ehman Lane indicates that motorists consider this section of roadway as semi-rural, as indicated by the 85th-percentile speed being between 50 and 48 mph, and the pace being 39 – 48 mph and 40 – 49 mph, westbound and eastbound respectively. Based on a review of the area, the roadway environment has a fringe rural character. Based on the speed data, speed profile, speed compliance, and roadway environment in the area, the speed limit should remain at the existing posted limit of 45-mph.

Location 14:		Westbound	Eastbound
RM 101.24 (west of New Fork River)	POSTED SPEED	70	45
	85th% SPEED	58	63
	50th% SPEED	51	56
	10 MPH PACE	46 – 55	52 – 61
	% COMPLIANCE	100	2

For the section roadway west of New Fork River, as shown in the table for Location #14 above, the 85th-percentile speeds were 12 to 7 mph below, and the upper limit of the pace are 15 to 9 mph below the posted speed limit of 70-mph. The speed data collected west of New Fork River indicates that motorists consider this section of roadway as rural, as indicated by the 85th-percentile speed being between 58 and 63 mph, and the pace being

46 – 55 mph and 52 – 61 mph, westbound and eastbound respectively. Based on a review of the area, the roadway environment has a completely rural feel. Based on the speed data, speed profile, relatively low speed compliance, and roadway environment in the area, the posted speed limit should remain unchanged.

Location 15:		Westbound	Eastbound
RM 101.59 (between Red Stone New Fork River Rd and Industrial Site Rd)	POSTED SPEED	70	70
	85th% SPEED	67	73
	50th% SPEED	59	65
	10 MPH PACE	56 – 65	56 – 65
	% COMPLIANCE	96	75

For the section roadway between Red Stone New Fork River Road and Industrial Site Road, as shown in the table for Location #15 above, the 85th-percentile speeds were 3 mph below to 3 mph above, and the upper limit of the pace are 5 mph below the posted speed limit of 70-mph. The speed data collected between Red Stone New Fork River Road and Industrial Site Road indicates that motorists consider this section of roadway as completely rural, as indicated by the 85th-percentile speed being between 67 and 73 mph, and the pace being 56 – 65 mph, westbound and eastbound respectively. Based on a review of the area, the roadway environment has a completely rural feel. Based on the speed data, speed profile, speed compliance, and roadway environment in the area, the speed limit should remain at the posted limit of 70-mph.

Location 16:		Westbound	Eastbound
RM 101.85 (east of Industrial Site Rd)	POSTED SPEED	70	70
	85th% SPEED	68	80
	50th% SPEED	62	71
	10 MPH PACE	58 – 67	66 – 75
	% COMPLIANCE	94	48

For the section roadway east of Industrial Site Road, as shown in the table for Location #16 above, the 85th-percentile speeds were 2 mph below to 10 mph above, and the upper limit of the pace are 3 mph below to 5 mph above the posted speed limit of 70-mph. The speed data collected east of Industrial Site Road indicates that motorists consider this section of roadway as completely rural, as indicated by the 85th-percentile speed being between 68 and 80 mph, and the pace being 58 – 67 mph and 66 – 75 mph, westbound and eastbound respectively. Based on a review of the area, the roadway environment has a completely rural feel. Based on the speed data, speed profile, speed compliance, and roadway environment in the area, the speed limit should remain at the posted limit of 70-mph.

Location 17:		Westbound	Eastbound
RM 102.64 (east of the landfill road)	POSTED SPEED	70	70
	85th% SPEED	69	80
	50th% SPEED	65	74
	10 MPH PACE	60 – 69	73 – 82
	% COMPLIANCE	93	31

For the section roadway east of the landfill road, as shown in the table for Location #17 above, the 85th-percentile speeds were 1 mph below to 10 mph above, and the upper limit of the pace are 1 mph below to 12 mph above the posted speed limit of 70-mph. The speed data collected east of the landfill road indicates that motorists consider this section of roadway as completely rural, as indicated by the 85th-percentile speed being between 69 and 80 mph, and the pace being 60 – 69 mph and 73 – 82 mph, westbound and eastbound respectively. Based on a review of the area, the roadway environment has a completely rural feel. Based on the speed data, speed profile, speed compliance, and roadway environment in the area, the speed limit should remain at the posted limit of 70-mph.

Location 18:		Westbound	Eastbound
RM 103.03 (west of the landfill road)	POSTED SPEED	70	70
	85th% SPEED	71	73
	50th% SPEED	67	70
	10 MPH PACE	63 – 72	66 – 75
	% COMPLIANCE	82	59

For the section roadway west of the landfill road, as shown in the table for Location #18 above, the 85th-percentile speeds were 1 to 3 mph above, and the upper limit of the pace are 2 to 5 mph above the posted speed limit of 70-mph. The speed data collected west of the landfill road indicates that motorists consider this section of roadway as completely rural, as indicated by the 85th-percentile speed being between 71 and 73 mph, and the pace being 63 – 72 mph and 66 – 75 mph, westbound and eastbound respectively. Based on a review of the area, the roadway environment has a completely rural feel. Based on the speed data, speed profile, speed compliance, and roadway environment in the area, the speed limit should remain at the posted limit of 70-mph.

The attached speed profile graph (**Exhibit 3**) plots the combined northbound and southbound 85th-percentile speed data with the posted limit through the Town of Pinedale.

Recommendations

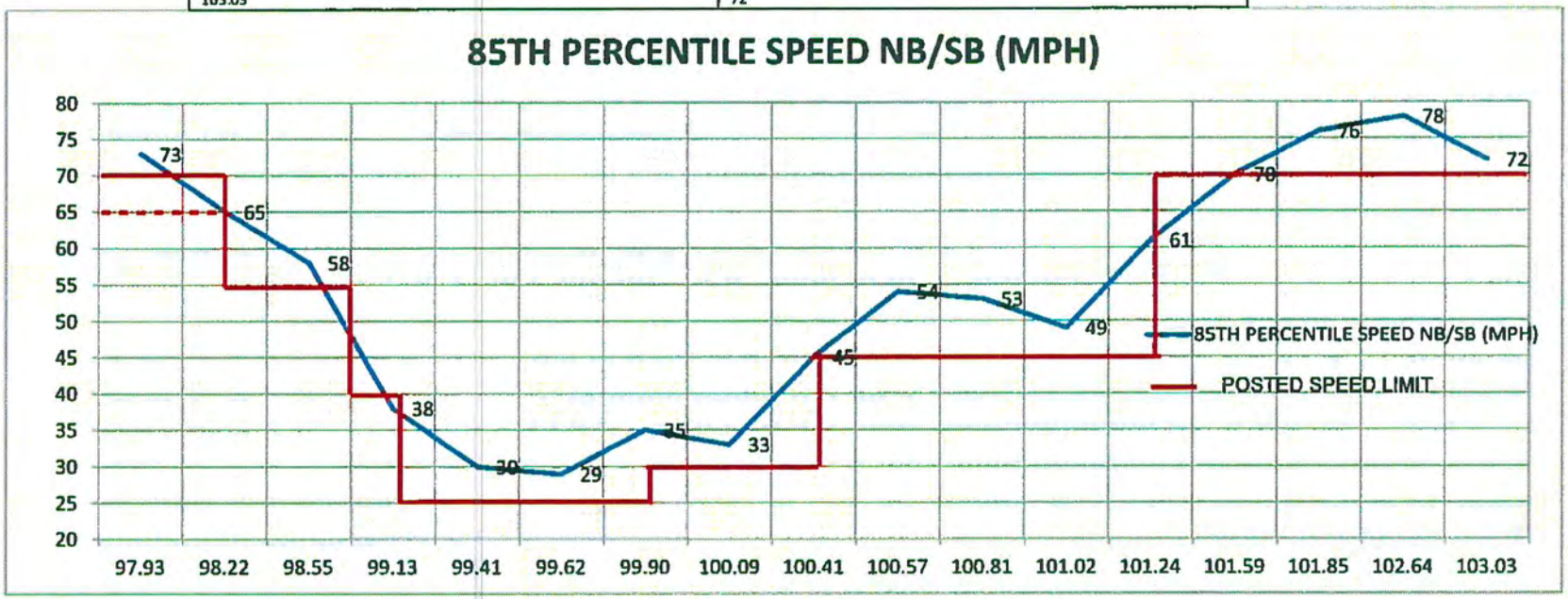
In response to the written request from the Town of Pinedale, based on speed data collected the existing posted speed limit of 45-mph should not be lowered. The requested reduction of the existing posted speed limit west of Town from 45-mph to 30-mph would be in violation of the MUTCD, would be too restrictive, and put the majority of law-abiding motorists into the violator category.

However, in review of the speed data and roadside environment, modifications to the existing posted limit are recommended as noted below:

55 mph, RM 98.00 to 98.55 (new)
40 mph, RM 98.55 to 99.13 (new)

EXHIBIT 3

LOCATION (MILE)	85TH PERCENTILE SPEED (MPH)
97.93	73
98.22	65
98.55	58
98.96	51
99.13	38
99.41	30
99.62	29
99.90	35
100.09	33
100.41	45
100.57	54
100.81	53
101.02	49
101.24	61
101.59	70
101.85	76
102.64	78
103.03	72

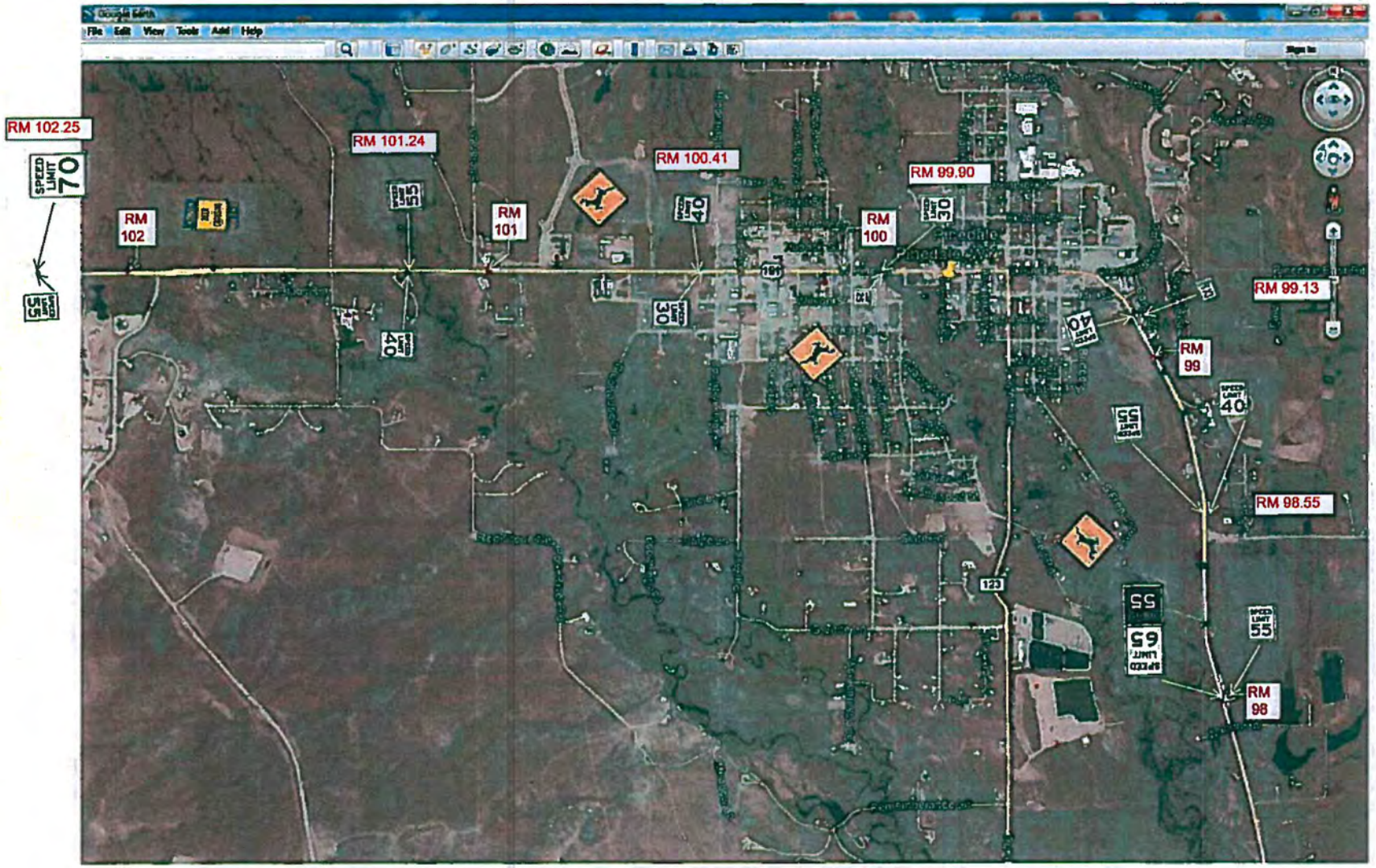


10/20/16

25 mph, RM 99.13 to 99.90 (remain as is)
30 mph, RM 99.90 to 100.41 (remain as is)
40 mph, RM 100.41 to 101.24 (new)
55 mph, RM 101.24 to 102.25 (new)

The proposed speed limits are shown in **Exhibit 4**.

EXHIBIT 4 - Pinedale - Proposed Speed Limit



APPENDIX A

REQUEST LETTER

Department of Transportation
State of Wyoming
3200 Elk Street, P.O. Box 1260 Rock Springs, Wyoming 82902
(307) 352-3000 FAX (307) 352-3150

Matthew H. Mead
Governor

William T. Pence
Director

August 2, 2016

Town of Pinedale
Mayor Bob Jones
P.O. Box 709
Pinedale, WY 82941

Bureau of Land Management
High Desert District
Pinedale Field Office
Caleb M. Hiner, Field Manager
P.O. Box 768
Pinedale, WY 82941

Re: Request to Reduce Speed Limit
US 191/Pine Street west

Thank you for your recent written requests to consider the reduction in speed limit on west Pine Street (US 191) in the vicinity between Country Club Lane and west of Ehman Lane.

Speed limit signs cannot be arbitrarily moved, as required by Wyoming State Statute 31-5-301 and the Federal Manual on Uniform Traffic Control Devices (MUTCD) a traffic and engineering investigation is required to determine if a reduction in speed is warranted. The WYDOT District Office will collect data and perform a study later this fall after school is in session.

The study will include the observation of the traffic flow of the traveling public during normal school drop-off/pick-up time periods, crash history, bike and pedestrian activity, access density, wildlife incidents, and an inventory of signing and pavement markings.

As part of the study, WYDOT may request a copy of the BLM Safety Audit and mitigation measures, and detailed explanation of safety issues noted in the request letter.

If you have any other questions or concerns, please contact me at 307-352-3000.

Sincerely,

Keith Compton, P.E.
District Engineer

cc: File
Darin Kaufman, P.E., PTOE, District Traffic Engineer, WYDOT, Rock Springs
Dan McGillivray, P.E. Resident Engineer, WYDOT, Pinedale
Stephanie Harsha, Public Involvement Specialist, WYDOT, Rock Springs

TOWN OF
PINEDALE
WYOMING

July 12, 2016

Keith Compton
District Engineer
Wyoming Department of Transportation
PO BOX 1260
Rock Springs, Wyoming, 82902

Keith,

The Town of Pinedale requests that the Wyoming Department of Transportation consider reducing the speed limit on Pine Street in one key location.

The Town Council has heard input from the public as well as the Bureau of Land Management that certain areas are potentially unsafe. Please consider the following request:

> Reduce the speed from 45 miles per hour (MPH) down to 30 MPH where it currently changes to 45 MPH at Country Club Lane until just west of Ehman Lane.

We believe that the combination of increased traffic from the school, the bottleneck down to one lane each way, and the speed limit increasing to 45 MPH at Country Club Lane are cause for concern in that area.

Thank you in advance for your consideration of this request.

Bob Jones
Mayor
Town of Pinedale

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
High Desert District
Pinedale Field Office
1625 West Pine, P.O. Box 768
Pinedale, Wyoming 82941
www.blm.gov/wy

In Reply Refer To:
1535 (WYD01)

JUL 27 2016

WYDOT
Rock Springs
JUL 29 2016

Wyoming Department of Transportation
Attn: Keith Compton, District Engineer
P.O. Box 1260
Rock Springs, Wyoming 82902

Dear Mr. Compton:

The Bureau of Land Management (BLM) Pinedale Field Office (PFO) requests that the Wyoming Department of Transportation (WYDOT) reduce the speed limit from 45 mph to 30 mph on west Pine Street in Pinedale. We recommend that the speed limit signs be moved as follows (see attached map):

- North side of Pine Street: move the 45 mph sign to at least beyond the Hampton Inn for westbound traffic, and,
- South side of Pine Street: move the 30 mph sign to the bridge over the New Fork River for eastbound traffic.

We believe lowering the speed limit to 30 mph entering and leaving Pinedale along west Pine Street would alleviate the following safety issues:

- The entryway to the Stromness Building, which has 75 employees (BLM, SCCD, and NRCS), was identified as a safety issue during an Annual Safety Audit. Because Highway 191/Pine Street changes from four lanes to one lane each way east of this area and because of the bike path, there is no room for a right turn lane. Accelerating westbound traffic often does not slow down for turning traffic. This is further complicated by the several commercial businesses in this area, including the local WYDOT office, two motels, a car repair shop, a school bus barn, and a Natural Gas (NG) pump station (used by NG school buses to obtain fuel). Mitigations to date have not solved the problems which worsened during winter.
- Egress onto and off of Pine Street from the three streets used to access Pinedale Elementary School creates safety issues especially for children, parents, teachers, and school staff. There are 500 students and 70 staff. Many children also ride their bikes to school along the bike paths.
- This area remains an important wildlife migration corridor creating additional safety issues for wildlife and drivers alike.

For the above reasons, BLM believes that reducing the speed limit from 45 mph to 30 mph along west Pine Street is the best option to alleviate safety issues in this area. The BLM presented this proposal at the Pinedale Town Council meeting on July 11, 2016. The town council members voted unanimously in favor of this request.

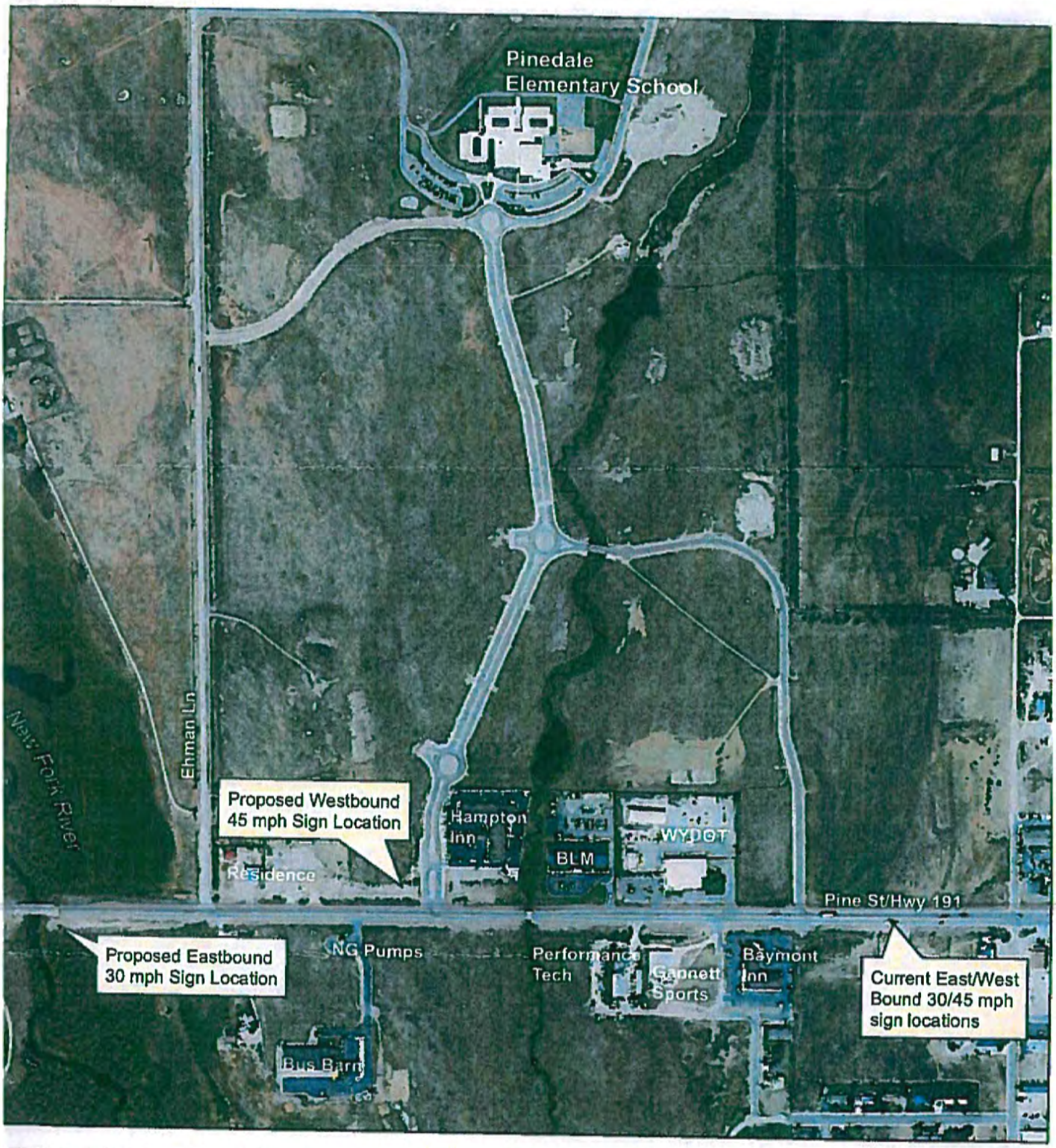
If you have any further questions, please feel free to contact me at (307) 367-5302.

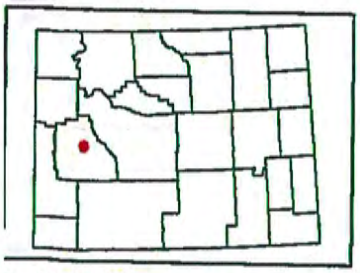
Sincerely,

Caleb M. Hiner

Caleb M. Hiner
Field Manager

Attachment





N

0 0.035 0.07 0.14 0.21 0.28
Miles

BLM - Proposed Speed Limit Sign Locations for Pine St/Hwy 191 through Pinedale WY

* No warranty is made by the Bureau of Land Management for use of map data for purposes otherwise intended by the BLM.

Map Produced
Janet Bellis, July 6, 2016

Wyoming

Darin Kaufman <darin.kaufman@wyo.gov>

Fwd: Town of Pinedale Speed Limits

Keith Compton <keith.compton@wyo.gov> Wed, Jul 13, 2016 at 9:00 AM
To: Darin Kaufman <darin.kaufman@wyo.gov>

---------- Forwarded message ----------
From: **Maureen Rudnick** <maureenrudnick@townofpinedale.us>
Date: Wed, Jul 13, 2016 at 8:34 AM
Subject: Town of Pinedale Speed Limits
To: Keith Compton <keith.compton@wyo.gov>
Cc: rlester@blm.gov, jbellis@blm.gov

Good Morning Keith,

Please find the attached letter from Mayor Jones. We have many citizens concerned with the traffic issues on the West side of Town.

There is a hard copy of the letter in the mail for your records.

Maureen Rudnick
Human Resources &
Pinedale Travel & Tourism Administrator
www.visitpinedale.org
307-367-4136

TOWN OF PINEDALE WYOMING

--
Keith L. Compton
District Engineer
WYDOT District 3
307-352-3031

Keith Compton.pdf
95K

July 12, 2016

Keith Compton
District Engineer
Wyoming Department of Transportation
PO BOX 1260
Rock Springs, Wyoming, 82902

Keith,

The Town of Pinedale requests that the Wyoming Department of Transportation consider reducing the speed limit on Pine Street in one key location.

The Town Council has heard input from the public as well as the Bureau of Land Management that certain areas are potentially unsafe. Please consider the following request:

> Reduce the speed from 45 miles per hour (MPH) down to 30 MPH where it currently changes to 45 MPH at Country Club Lane until just west of Ehman Lane.

We believe that the combination of increased traffic from the school, the bottleneck down to one lane each way, and the speed limit increasing to 45 MPH at Country Club Lane are cause for concern in that area.

Thank you in advance for your consideration of this request.

Bob Jones
Mayor
Town of Pinedale

APPENDIX B

CRASH DATA

STANDARD CRASH REPORT SUMMARY FOR HIGHWAY ROUTE US191 (ML13B)
BETWEEN REFERENCE MARKERS 98.000 to 102.000
FOR THE YEARS: 2011 - 2015
ALL REPORTED CRASHES

REPORT NUMBER	R.M.	DATE	CRASH SEVERITY	FIRST HARMFUL EVENT (F H E)	FHE LOCATION	LIGHT COND	COLLISION TYPE	JUNCTION RELATION	WEATHER	ROAD COND
2011										
18326	98.00	12/15/2011	NO INJURY	Deer	On Roadway	Darkness Unlighted			Clear	Dry
02424	98.30	02/05/2011	INCAPACITATING INJURY	Motor Vehicle in Transport on Roadway	On Roadway	Daylight	Angle (Front to Side), Opposing Direction	Non-Junction	Blowing Snow	Snow
10443	99.00	06/17/2011	POSSIBLE INJURY	Pedacycle	Shoulder	Dusk	Not a Collision w/2 Vehicles in Transport	Non-Junction	Clear	Dry
17347	99.00	08/22/2011	POSSIBLE INJURY	Deer	On Roadway	Daylight	Not a Collision w/2 Vehicles in Transport	Non-Junction	Clear	Dry
06224	99.33	04/09/2011	NO INJURY	Motor Vehicle in Transport on Roadway	On Roadway	Daylight	Angle Right (Front to Side, includes Broadside	Intersection Related	Cloudy, Overcast	Dry
06237	99.38	04/14/2011	NO INJURY	Motor Vehicle in Transport on Roadway	On Roadway	Daylight	Angle Right (Front to Side, includes Broadside	Intersection	Clear	Dry
10096	99.72	06/01/2011	NO INJURY	Motor Vehicle in Transport on Roadway	On Roadway	Daylight	Rear End (Front to Rear)	Intersection Related	Clear	Dry
04066	99.72	02/22/2011	NO INJURY	Motor Vehicle in Transport on Roadway	On Roadway	Darkness Lighted	Rear End (Front to Rear)	Intersection	Snowing	Snow
10440	100.00	08/04/2011	NO INJURY	Motor Vehicle in Transport on Roadway	On Roadway	Darkness Lighted	Angle Same Direction (Front to Side)	Intersection	Cloudy, Overcast	Dry
11563	100.00	08/28/2011	NO INJURY	Motor Vehicle in Transport on Roadway	On Roadway	Daylight	Angle Right (Front to Side, includes Broadside	Intersection	Clear	Dry
02511	100.00	02/05/2011	NO INJURY	Parked Motor Vehicle	In Parking Lane/Zone	Daylight	Sideswipe Same Direction (Passing)	Non-Junction	Clear	Ice/Frost
05491	100.23	04/14/2011	NON-INCAPACITATING INJURY	Motor Vehicle in Transport on Roadway	On Roadway	Daylight	Angle Right (Front to Side, includes Broadside	Intersection	Clear	Dry
16088	100.60	11/04/2011	NO INJURY	Other Domestic (Dog, Llama...)	Unknown	Daylight			Unknown	Unknown
06236	101.10	04/04/2011	NON-INCAPACITATING INJURY	Fence (Including Post)	Off Roadway	Darkness Unlighted	Not a Collision w/2 Vehicles in Transport	Intersection	Clear	Dry
08438	102.00	06/24/2011	POSSIBLE INJURY	Motor Vehicle in Transport on Roadway	On Roadway	Daylight	Angle Right (Front to Side, includes Broadside	Intersection	Clear	Dry
10098	102.00	07/05/2011	NO INJURY	Deer	On Roadway	Daylight			Clear	Dry
16640	102.00	12/05/2011	NO INJURY	Moose	On Roadway	Darkness Unlighted			Clear	Dry
2012										
15696	98.00	11/29/2012	NO INJURY	Deer	On Roadway	Darkness Unlighted			Clear	Dry
16240	98.00	12/02/2012	NO INJURY	Deer	On Roadway	Darkness Unlighted			Clear	Dry
16239	98.00	10/10/2012	NO INJURY	Deer	On Roadway	Darkness Unlighted			Clear	Dry
05371	98.00	03/24/2012	NO INJURY	Deer	On Roadway	Dusk			Unknown	Unknown
00896	98.25	01/13/2012	NO INJURY	Deer	On Roadway	Darkness Unlighted			Clear	Dry
15690	98.77	11/01/2012	NO INJURY	Deer	On Roadway	Darkness Unlighted			Clear	Dry
15813	99.54	11/10/2012	NO INJURY	Motor Vehicle in Transport on Roadway	On Roadway	Daylight	Rear End (Front to Rear)	Intersection Related	Clear	Wet
14878	99.60	11/02/2012	NO INJURY	Motor Vehicle in Transport on Roadway	On Roadway	Daylight	Angle Same Direction (Front to Side)	Intersection	Clear	Dry
12808	99.60	10/08/2012	NO INJURY	Motor Vehicle in Transport on Roadway	On Roadway	Daylight	Rear End (Front to Rear)	Intersection Related	Clear	Dry
12706	99.65	09/18/2012	NO INJURY	Parked Motor Vehicle	In Parking Lane/Zone	Daylight	Other	Non-Junction	Clear	Dry
00967	99.83	01/13/2012	NO INJURY	Motor Vehicle in Transport on Roadway	On Roadway	Darkness Lighted	Angle (Front to Side), Opposing Direction	Non-Junction	Clear	Dry
17352	101.00	12/13/2012	NO INJURY	Deer	On Roadway	Darkness Unlighted			Cloudy, Overcast	Dry
17350	101.00	12/07/2012	NO INJURY	Deer	On Roadway	Darkness Unlighted			Clear	Dry
05350	101.00	03/21/2012	NO INJURY	Moose	On Roadway	Dawn			Snowing	Wet

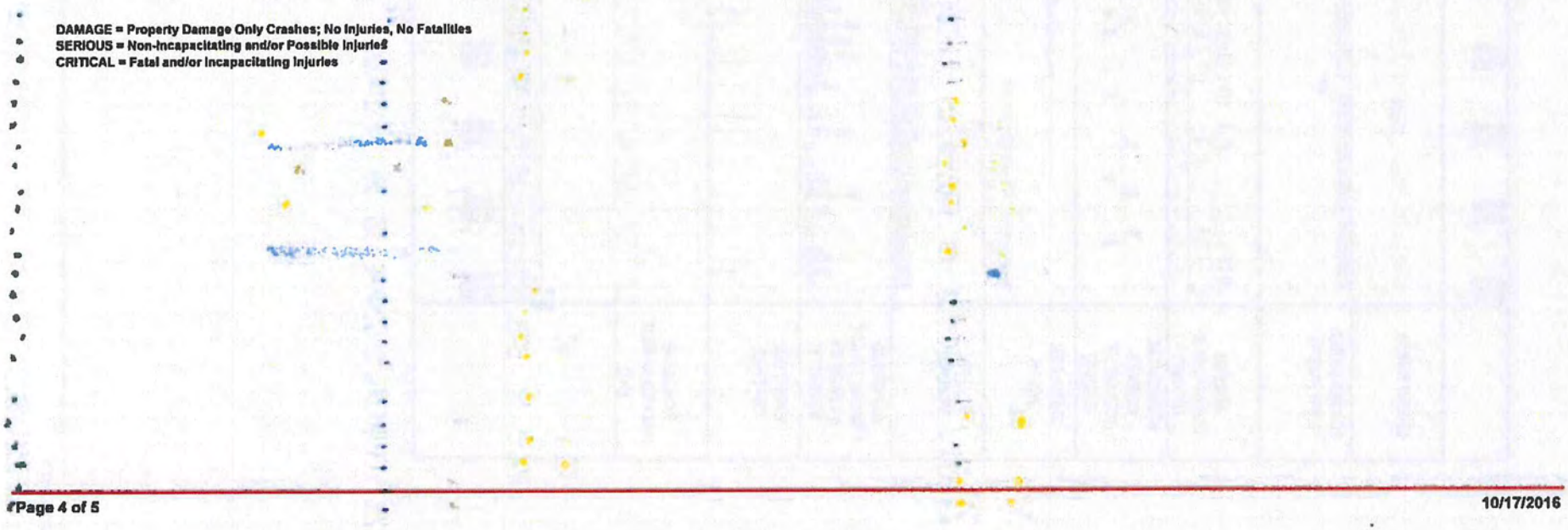
REPORT NUMBER	R.M.	DATE	CRASH SEVERITY	FIRST HARMFUL EVENT (F H E)	FHE LOCATION	LIGHT COND	COLLISION TYPE	JUNCTION RELATION	WEATHER	ROAD COND
01839	101.00	01/31/2012	NO INJURY	Deer	On Roadway	Darkness Unlighted			Clear	Ice/Frost
00519	101.00	01/18/2012	NO INJURY	Cargo/Equipment Loss of Shift	Off Roadway	Daylight	Not a Collision w/2 Vehicles in Transport	Non-Junction	Cloudy, Overcast	Snow
12248	101.51	09/15/2012	NO INJURY	Object Set in Motion by Another Vehicle	On Roadway	Daylight	Not a Collision w/2 Vehicles in Transport	Non-Junction	Clear	Dry
01767	101.72	02/05/2012	NON-INCAPACITATING INJURY	Overturn/Rollover	Shoulder	Darkness Unlighted	Not a Collision w/2 Vehicles in Transport	Non-Junction	Clear	Dry
03855	102.00	03/15/2012	POSSIBLE INJURY	Motor Vehicle in Transport on Roadway	On Roadway	Daylight	Rear End (Front to Rear)	Non-Junction	Clear	Dry
17733	102.00	12/31/2012	NO INJURY	Deer	On Roadway	Darkness Unlighted			Clear	Dry
2013										
18188	98.00	12/02/2013	NO INJURY	Deer	On Roadway	Darkness Unlighted			Snowing	Ice/Frost
06182	98.80	04/03/2013	NO INJURY	Moose	On Roadway	Daylight			Clear	Dry
01438	99.33	01/18/2013	NO INJURY	Motor Vehicle in Transport on Roadway	On Roadway	Daylight	Angle (Front to Side), Opposing Direction	Intersection	Clear	Wet
03997	99.46	02/26/2013	NO INJURY	Motor Vehicle in Transport on Roadway	On Roadway	Daylight	Angle Right (Front to Side, includes Broadside	Intersection	Clear	Dry
00065	99.46	01/03/2013	NO INJURY	Motor Vehicle in Transport on Roadway	On Roadway	Daylight	Angle Right (Front to Side, includes Broadside	Intersection	Clear	Wet
14445	99.54	10/07/2013	NO INJURY	Motor Vehicle in Transport on Roadway	On Roadway	Daylight	Rear End (Front to Rear)	Intersection Related	Clear	Dry
17598	99.54	12/24/2013	NO INJURY	Motor Vehicle in Transport on Roadway	On Roadway	Daylight	Angle (Front to Side), Opposing Direction	Intersection	Clear	Ice/Frost
13540	100.00	10/15/2013	NO INJURY	Motor Vehicle in Transport on Roadway	Shoulder	Daylight	Angle Right (Front to Side, includes Broadside	Business Entrance	Clear	Dry
14409	100.00	08/28/2013	NO INJURY	Motor Vehicle in Transport on Roadway	Off Roadway	Daylight	Rear to Front (Normally Backing)	Business Entrance	Clear	Dry
03399	100.00	01/06/2013	NO INJURY	Deer		Darkness Unlighted	Not a Collision w/2 Vehicles in Transport		Clear	Dry
14341	100.19	10/19/2013	POSSIBLE INJURY	Motor Vehicle in Transport on Roadway	On Roadway	Daylight	Angle Right (Front to Side, includes Broadside	Business Entrance	Clear	Dry
06975	100.25	07/16/2013	NON-INCAPACITATING INJURY	Motor Vehicle in Transport on Roadway	On Roadway	Daylight	Rear End (Front to Rear)	Non-Junction	Clear	Dry
09344	100.28	07/19/2013	NO INJURY	Motor Vehicle in Transport on Roadway	On Roadway	Daylight	Rear End (Front to Rear)	Non-Junction	Clear	Dry
13541	100.34	10/11/2013	NO INJURY	Motor Vehicle in Transport on Roadway	On Roadway	Daylight	Angle Right (Front to Side, includes Broadside	Intersection	Clear	Dry
05436	100.34	04/25/2013	NO INJURY	Motor Vehicle in Transport on Roadway	On Roadway	Daylight	Angle Right (Front to Side, includes Broadside	Intersection	Clear	Dry
06271	100.50	04/02/2013	NO INJURY	Moose		Darkness Unlighted	Not a Collision w/2 Vehicles in Transport		Clear	Dry
06225	100.50	04/02/2013	NO INJURY	Moose	Unknown	Darkness Lighted			Clear	Dry
06222	101.00	02/05/2013	NO INJURY	Moose	On Roadway	Darkness Unlighted			Cloudy, Overcast	Dry
01465	101.00	01/19/2013	NO INJURY	Overturn/Rollover	Off Roadway	Darkness Unlighted	Not a Collision w/2 Vehicles in Transport	Intersection	Clear	Dry
05051	101.00	04/21/2013	NO INJURY	Deer	On Roadway	Darkness Unlighted			Clear	Dry
14447	101.00	10/18/2013	NO INJURY	Moose	On Roadway	Dusk			Clear	Dry
2014										
17016	98.00	12/07/2014	NO INJURY	Moose	On Roadway	Darkness Lighted			Clear	Dry
14641	98.00	11/10/2014	NO INJURY	Motor Vehicle in Transport on Roadway	On Roadway	Daylight	Rear End (Front to Rear)	Intersection Related	Snowing	Ice/Frost
05866	98.50	05/03/2014	NO INJURY	Deer	On Roadway	Daylight			Clear	Dry
03356	99.00	02/26/2014	NO INJURY	Deer	On Roadway	Darkness Unlighted			Clear	Dry
14723	99.33	11/11/2014	NO INJURY	Traffic Sign Support	Off Roadway	Darkness Unlighted	Not a Collision w/2 Vehicles in Transport	Intersection Related	Snowing	Snow
16959	99.60	12/10/2014	POSSIBLE INJURY	Motor Vehicle in Transport on Roadway	On Roadway	Daylight	Rear End (Front to Rear)	Intersection Related	Clear	Dry
03903	99.72	03/13/2014	NO INJURY	Motor Vehicle in Transport on Roadway	On Roadway	Daylight	Angle Same Direction (Front to Side)	Intersection Related	Clear	Dry
11216	99.72	08/31/2014	NON-INCAPACITATING INJURY	Parked Motor Vehicle	In Parking Lane/Zone	Darkness Lighted	Rear End (Front to Rear)	Non-Junction	Raining	Wet
06822	99.76	05/21/2014	NO INJURY	Motor Vehicle in Transport on Roadway	On Roadway	Daylight	Angle Same Direction (Front to Side)	Non-Junction	Clear	Dry
11157	99.76	08/23/2014	NO INJURY	Parked Motor Vehicle	In Parking Lane/Zone	Daylight	Rear to Front (Normally Backing)	Non-Junction	Clear	Dry

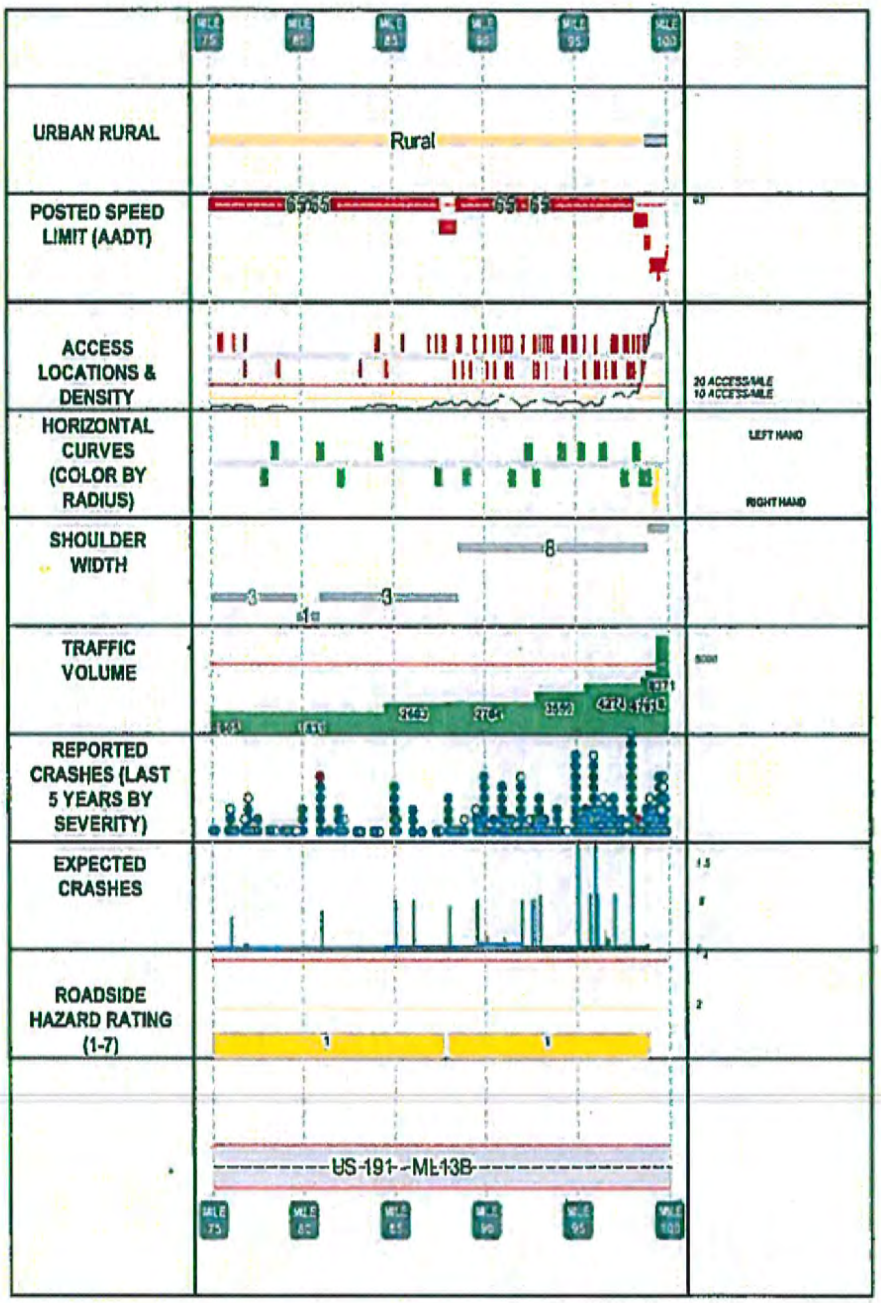
REPORT NUMBER	R.M.	DATE	CRASH SEVERITY	FIRST HARMFUL EVENT (F.H.E.)	FHE LOCATION	LIGHT COND	COLLISION TYPE	JUNCTION RELATION	WEATHER	ROAD COND
16346	100.24	12/01/2014	NO INJURY	Motor Vehicle in Transport on Roadway	On Roadway	Daylight	Angle Same Direction (Front to Side)	Business Entrance	Cloudy, Overcast	Snow
11148	100.30	08/07/2014	NO INJURY	Motor Vehicle in Transport on Roadway	Shoulder	Daylight	Angle Same Direction (Front to Side)	Intersection Related	Clear	Dry
09707	100.50	07/26/2014	NO INJURY	Moose	On Roadway	Darkness Unlighted			Clear	Dry
08033	101.00	06/16/2014	NO INJURY	Deer	On Roadway	Darkness Unlighted			Clear	Dry
11153	101.50	08/18/2014	NO INJURY	Motor Vehicle in Transport on Roadway	Shoulder	Daylight	Angle Same Direction (Front to Side)	Non-Junction	Clear	Dry
09385	102.00	07/11/2014	NO INJURY	Deer	On Roadway	Darkness Unlighted			Clear	Dry
2015										
01732	98.00	02/11/2015	NO INJURY	Moose	On Roadway	Darkness Unlighted			Clear	Dry
13424	98.00	10/23/2015	NO INJURY	Other Wild	Separator	Darkness Unlighted			Clear	Dry
04678	98.80	04/19/2015	NO INJURY	Moose	On Roadway	Darkness Unlighted			Clear	Dry
08763	99.00	07/28/2015	NO INJURY	Deer	On Roadway	Daylight			Clear	Dry
10277	99.54	08/14/2015	NO INJURY	Motor Vehicle in Transport on Roadway	On Roadway	Daylight	Rear End (Front to Rear)	Intersection Related	Clear	Dry
00788	99.66	01/10/2015	NON-INCAPACITATING INJURY	Motor Vehicle in Transport on Roadway	On Roadway	Daylight	Angle (Front to Side), Opposing Direction	Intersection	Clear	Dry
07265	99.84	06/24/2015	NO INJURY	Motor Vehicle in Transport on Roadway	On Roadway	Daylight	Angle Same Direction (Front to Side)	Intersection	Clear	Dry
08315	99.88	07/18/2015	INCAPACITATING INJURY	Motor Vehicle in Transport on Roadway	On Roadway	Daylight	Angle (Front to Side), Opposing Direction	Intersection	Cloudy, Overcast	Wet
14793	99.97	11/24/2015	NO INJURY	Motor Vehicle in Transport on Roadway	On Roadway	Daylight	Angle (Front to Side), Opposing Direction	Intersection	Clear	Ice/Frost
00929	99.98	01/21/2015	POSSIBLE INJURY	Motor Vehicle in Transport on Roadway	On Roadway	Daylight	Angle Right (Front to Side, Includes Broadside	Intersection	Clear	Dry
10803	100.00	08/27/2015	NON-INCAPACITATING INJURY	Motor Vehicle in Transport on Roadway	On Roadway	Daylight	Angle Same Direction (Front to Side)	Business Entrance	Clear	Dry
09454	100.02	07/20/2015	NO INJURY	Motor Vehicle in Transport on Roadway	On Roadway	Daylight	Angle (Front to Side), Opposing Direction	Business Entrance	Cloudy, Overcast	Dry
08395	100.34	07/16/2015	NO INJURY	Motor Vehicle in Transport on Roadway	On Roadway	Daylight	Angle (Front to Side), Opposing Direction	Business Entrance	Clear	Dry
11283	100.50	09/17/2015	NO INJURY	Antelope	On Roadway	Darkness Unlighted			Raining	Wet
15732	100.80	11/30/2015	NO INJURY	Deer	On Roadway	Daylight			Clear	Ice/Frost
03012	101.00	01/07/2015	NO INJURY	Moose	On Roadway	Darkness Unlighted			Fog	Wet
16392	101.50	12/05/2015	NO INJURY	Moose	On Roadway	Darkness Unlighted			Clear	Dry

TOTAL CRASHES IN THIS REPORT	91
DAMAGE CRASHES	75
SERIOUS CRASHES	14
CRITICAL CRASHES	2
TOTAL PERSONS INJURED	21
TOTAL PERSONS KILLED	0

Year	Injuries	Fatalities	Damage Crashes	Serious Crashes	Critical Crashes
2011	6	0	11	5	1
2012	4	0	18	2	0
2013	2	0	19	2	0
2014	3	0	14	2	0
2015	6	0	13	3	1

DAMAGE = Property Damage Only Crashes; No Injuries, No Fatalities
SERIOUS = Non-Incapacitating and/or Possible Injuries
CRITICAL = Fatal and/or Incapacitating Injuries




URBAN RURAL
Rural
POSTED SPEED LIMIT (AADT)
ACCESS LOCATIONS & DENSITY
20 ACCESS/MILE
10 ACCESS/MILE
HORIZONTAL CURVES (COLOR BY RADIUS)
LEFT HAND
RIGHT HAND
SHOULDER WIDTH
TRAFFIC VOLUME
REPORTED CRASHES (LAST 5 YEARS BY SEVERITY)
EXPECTED CRASHES
ROADSIDE HAZARD RATING (1-7)
US-191--ML13B

Highway Safety Segment Report

LRS Route: ML13B From RM 98.000 to RM 102.000

NOTE: This Report was created from data extracted from multiple sources, which are considered to be reliable and up-to-date. However, some of the data sets are known to have some issues (these are consistency and location concerns with the signs inventory, and some concerns regarding the completeness of the horizontal curve inventory). This information is provided to hel focus in the location and nature of safety issues along the study segment. It is expected that on-site validation would be performed before any investment decisions are made.

Safety Condition Information for Study Segment

Safety Index Scoring (based on the years 2011 to 2015)
For the different Facility Types of the specified route segment (ML13B from 98.000 to 102.000)

FROM RM	TO RM	FACILITY TYPE CD	SI SCORE	SI COMPARE	SI SCORE
98.000	98.828	RuFI2+	0.31	4.69	4
98.829	100.940	Ur	0.21	0.74	3
100.941	102.000	RuFI2+	0.06	0.97	3

CARE Hot Spots within Study Segment
(based on crashes not related to intersections)

Direction	From RM	To RM	Critical Count	SI Score
Both	97.900	98.400	1	2.07
Both	99.000	99.500	0	0.06
Both	99.500	100.000	0	0.10
Both	100.000	100.500	1	2.10
Both	101.000	101.500	0	0.04
Both	101.800	102.300	0	0.08

(End of CARE Segment Hot Spots)

CARE Intersection Hot Spots within Study Segment
(based on crashes related to intersections)

Direction	From RM	To RM	Critical Count	SI Score
Both	99.300	99.800	1	2.17
Both	99.800	100.300	1	2.14

(End of CARE Intersection Hot Spots)

Animal Crash / Carcass Concentrations
(From the on-system Animal Crash & Carcass study)

Direction	From RM	To RM	Crash Count	Carcass Count	Combined Count
Both	98.615	99.615	3	6	7.8
Both	98.828	99.828	2	5	6.2

(End of Animal Crash/Carcass Concentrations)

Highway Safety Segment Report

LRS Route: ML13B **From RM** 98.000 **to RM** 102.000

Curve Crash Concentrations
(From the on-system Curve Crash study)

Direction	From RM	To RM	Length (mi)	Radius (mi)	SI Compare
Both	98.106	98.267	0.161	0.543	0.06
Both	99.139	99.331	0.192	0.181	0.17
Both	101.061	101.123	0.063	1.330	0.29
Both	101.377	101.515	0.072	1.486	0.10

(End of Section)

Roadway Information for Study Segment

Traffic Volumes

Direction	From RM	To RM	AADT	TRUCK AADT
Both	95.50	98.50	4274	739
Both	98.50	98.83	4793	829
Both	98.83	99.39	5348	925
Both	99.39	100.65	8371	1447
Both	100.65	101.03	5025	869
Both	101.03	105.54	2829	489

(End of Traffic Volumes)

Construction History

Direction	From RM	To RM	Year	PeopleSoft Proj #	Treatment Description	STIP Status
Both	4.710	160.600	1997		RUMBLE STRIPS	No
Both	87.802	100.270	1990		CRACK SEAL	No
Both	88.590	98.990	2006	N132085	Restoration & Rehabilitation	No
Both	88.590	98.990	2008	B073018	Resurfacing	No
Both	92.900	98.926	1988		GRADE & BASE & SURFACE	No
Both	92.900	100.270	1990		SLOPE MODIFY	No
Both	97.410	98.990	2012	N132092	Environmentally Related	Yes
Both	98.000	128.800	2002		PATCH	No
Both	98.926	98.987	1988		CURB & GUTTER	No
Both	98.926	98.987	1984		GRADE & BASE & SURFACE	No
Both	98.930	100.290	2003		CURB & GUTTER & SIDEWALK	No
Both	98.930	100.290	2003	N132082	Miscellaneous Enhancements	No
Both	98.930	100.290	2003	N132084	Safety-Traffic Operations	No
Both	98.930	100.290	2001		ISO-OVERLAY	No
Both	98.930	100.290	2003		MICRO SURFACE	No
Both	98.987	100.270	1988		SIDEWALK & CURB & GUTTER	No
Both	98.987	100.284	1984		GRADE & BASE & SURFACE	No
Both	98.990	100.270	2008	N132096	Safety-Traffic Operations	No
Both	98.990	100.290	2001	N132080	Pavement Maintenance	No
Both	99.880	99.880	1998	0132074	Environmentally Related	No
Both	99.880	99.880	1997	0132070	Environmentally Related	No
Both	99.900	99.900	1994	0132066	Rest Areas	No
Both	100.270	102.200	2009	N132091	BkPths,Pdstrian,Bicycle Facits	No
Both	100.285	105.287	1993		RECONSTRUCTION	No
Both	100.300	105.700	1993	0132057	Reconstruction	No

Highway Safety Segment Report

LRS Route: ML13B From RM 98.000 to RM 102.000

Direction	From RM	To RM	Year	PeopleSoft Proj #	Treatment Description	STIP Status
Both	100.310	110.210	2009	N132093	Restoration & Rehabilitation	No
Both	100.819	101.104	2009	N132A01	Safety-Traffic Operations	No

(End of Construction HIstory)

Number of Lanes / Shoulder Widths

Direction	From RM	To RM	# Lanes	Shoulder (L)	Shoulder (R)
Both	96.827	98.524	2	8 ft	8 ft
Both	98.524	99.122	3	8 ft	8 ft
Both	99.122	100.914	4	10 ft	10 ft
Both	100.914	101.094	2	8 ft	8 ft
Both	101.094	101.213	3	8 ft	8 ft
Both	101.213	102.731	2	8 ft	8 ft

(End of Lanes/Shoulder Widths)

Pavement Conditions

Direction	From RM	To RM	PSI Index	PSR Index	Ride/IRI Index	Rut Index	Work Code	Pavement Age
Both	98.926	100.365	50.552	39.756	51.1893	68.200	1R Asphalt	6

(End of Pavement Conditions)

Horizontal Curves

Direction	From RM	To RM	PI RM	Delta	Length In	Length Out	Curve Length	Radius
Both	98.230	98.391	98.311	16.96	0 (ft)	0 (ft)	848 (ft)	0.54
Both	98.618	98.725	98.671	11.26	0 (ft)	0 (ft)	563 (ft)	0.54
Both	98.835	99.008	98.922	18.28	0 (ft)	0 (ft)	914 (ft)	0.54
Both	99.283	99.475	99.389	60.96	0 (ft)	0 (ft)	1016 (ft)	0.18
Both	101.204	101.267	101.235	2.70	0 (ft)	0 (ft)	331 (ft)	1.33
Both	101.586	101.725	101.589	2.79	175 (ft)	175 (ft)	382 (ft)	1.49

(End of Horizontal Curves)

Vertical Curves and Grades

Direction	From RM	To RM	Curve Len	PI RM	Back Tan	A Value	K Value	Ahead Tan	Curve Type
Both	98.126	98.202	400 (ft)	98.164	-0.3158	0.9030	442.968	0.5868	SAG
Both	98.836	98.912	400 (ft)	98.874	0.5868	-0.2530	-1,581.028	0.3341	CREST
Both	99.039	99.057	100 (ft)	99.048	0.3341	-0.1480	- 675.676	0.1861	CREST
Both	99.462	99.480	100 (ft)	99.471	0.1861	0.0360	2,777.778	0.2222	SAG
Both	99.803	99.821	100 (ft)	99.812	0.2222	-1.5010	- 66.622	-1.2788	CREST
Both	99.876	99.914	200 (ft)	99.895	-1.2788	1.6750	119.403	0.3962	SAG
Both	100.304	100.322	100 (ft)	100.313	0.3962	-0.2010	- 497.512	0.1948	CREST
Both	100.545	100.697	800 (ft)	100.621	0.1948	-0.3060	-2,614.379	-0.1110	CREST
Both	100.834	100.948	600 (ft)	100.891	-0.1110	0.2440	2,459.016	0.1334	SAG

Highway Safety Segment Report

LRS Route: ML13B From RM 98.000 to RM 102.000

Direction	From RM	To RM	Curve Len	PI RM	Back Tan	A Value	K Value	Ahead Tan	Curve Type
Both	101.101	101.177	400 (ft)	101.139	0.1334	0.0020	200,000.000	0.1352	SAG
Both	101.821	101.859	200 (ft)	101.840	0.1352	-0.0110	-18,181.818	0.1245	CREST
Both	101.954	102.030	400 (ft)	101.992	0.1245	-0.1250	-3,200.000	0.0000	CREST

(End of Vertical Curves and Grades)

Safety Asset Information for Study Segment

Rumble Strips Present

Direction	From RM	To RM
Both	100.270	110.400
Both	88.650	98.300

(End of Rumble Strips)

Guardrails

Direction	From RM	To RM	Guardrail Type	Side of Road	Up End Type	Down End Type
Both	99.883	99.889	C	L	CS	CS
Both	99.883	99.889	C	R	CS	CS
Both	100.711	100.750	B	R		
Both	100.720	100.750	B	L		
Both	100.765	100.796	B	R	I	I
Both	100.765	100.800	B	L	I	I
Both	101.114	101.154	B	R		
Both	101.128	101.154	B	L		
Both	101.219	101.249	B	R	I	I
Both	101.219	101.254	B	L	I	I

(End of Guardrails)

Highway Safety Segment Report

LRS Route: ML13B From RM 98.000 to RM 102.000

The Wyoming Safety Index - Explanations

Purpose of the Safety Index

- Support WYDOT in the effort to reduce the frequency and severity of crashes
- Help focus attention on the areas of the highway system that need the most attention with respect to safety
  - Put special emphasis on the more severe crashes (involving fatality or severe injury), which are more disruptive to society
- Allow meaningful comparisons
  - From year to year for the state
  - From year to year for specific areas (districts, and potentially counties or cities)
  - Comparing a stretch of roadway with the statewide average for the same kind of roadway

The Safety Index Scoring

- **Safety Index Score:** The Safety Index score for that segment of roadway
  - The score is given in Critical Crashes (equivalent) / Mile / Year
  - The score is an indication of the number and/or severity of the crashes that have occurred on that segment.
- **Safety Index Compare:** The ratio of the segment's score over the statewide average for the same Facility Type.
  - A ratio lower than 1 means that the segment has fewer and/or less severe crashes than the statewide average
  - A ratio greater than 1 means the segment has more and/or more severe
- **Safety Index Rating:** There are four rating levels that indicate how a segment's score compares to the statewide distribution for the same Facility Type.
  - 1 - The segment has much fewer crashes and/or less severe crashes than average
  - 2 - The segment has somewhat fewer crashes and/or less severe crashes than average
  - 3 - The segment has somewhat more crashes and/or more severe crashes than average
  - 4 - The segment has much more crashes and/or more severe crashes than average

Main Features of the Safety Index

- Defines similar roadway sections
  - Uses three main factors to define a section type
    - Flat / Rolling, or Mountainous Terrain
    - Urban or Rural
    - Interstate, 2-lane or more than two lanes
  - These three factors follow national guidelines (e.g. from the recently published Highway Safety Manual)
- Uses 5 years of history
  - Looking for those locations which consistently have the most(and most severe) crashes
- Uses three severity categories:
  - Critical - involving a fatality or incapacitating injury
  - Serious - involving an injury that is not incapacitating
  - Damage - not involving an injury

The following terms are associated with the Safety Index information:

- **LRS Route:** A particular roadway is identified by an LRS Route ID (a unique identifier for the roadway).
- **From Milepost and To Milepost:** A particular segment of roadway is defined by the beginning and ending mileposts (or reference markers) along the roadway.
- **Highway Names:** The highway designators that are used in the segment of roadway
- **Length:** The length of the segment in miles
- **District:** The district in which the segment resides
- **Facility Type:** Is a description of the roadway type

Points to Remember

- Crashes are weighted by the most severe injury that occurred in the crash
  - If more than one person was injured, only the most severe injury is counted
  - National trend is to move away from crash rates (using MVMT), which can be misleading
- Crashes are not readily predictable; causes vary, and are not always associated with specific causes
  - There is a large random component to their occurrence
  - A single crash - however horrific it may be - does not necessarily indicate a problem area.

Technical Details

- The Safety Index Score for a stretch of road is calculated as follows:
  - A segment of roadway is defined by the route, from milepost, and to-milepost
  - The five year crash history is obtained for that segment of roadway
  - The each crash is given a weight according to its most severe injury
  - Those weighted counts are totaled
  - The total is then divided by the length (in miles) of the segment
  - Then divided by the 5 years
  - Then divided by the weight of a Critical crash
  - The resulting score is an equivalent critical crashes per mile per year for that segment
- The Safety Index Rating compares a segment's Safety Index Score with all sections of the same Facility Type
  - All sections of a given Facility Type are divided into quartiles from their lowest to highest Safety Index Score
  - Determine into which quartile the Safety Index Score for a given segment falls.

APPENDIX C

SPOT SPEED DATA

#1

CITY	Pinedale
COUNTY	Sublette
ROUTE	US 191
LOCATION	RM 97.93
POSTED SPEED LIMIT	65
LOWEST SPEED RECORDED	33
HIGHEST SPEED RECORDED	85
COMMENTS	Jamar Radar

DIRECTION 1	Northbound	DIRECTION 2	Southbound
OBSERVER		OBSERVER	
DATE	9/26/16	DATE	9/28/16
START TIME	10:00 AM	START TIME	10:00 AM
END TIME	10:00 AM	END TIME	10:00 AM
WEATHER		WEATHER	

33
85

0
9/26/16 & 9/28/16
0.416667 0.416667 10:00 AM
0.416667 0.416667 10:00 AM

NUMBER OF OBSERVATIONS AT SPEED PER DIRECTION

SPEED	Northbound	Southbound	Combined
33	3	1	4
34	0	0	0
35	0	1	1
36	0	0	0
37	0	0	0
38	1	0	1
39	2	4	6
40	0	0	0
41	1	3	4
42	3	3	6
43	0	6	6
44	5	2	7
45	5	2	7
46	0	7	7
47	6	8	14
48	11	8	19
49	12	11	23
50	20	8	28
51	27	25	52
52	36	18	54
53	55	27	82
54	60	23	83
55	87	26	113
56	121	33	154
57	115	44	159
58	122	45	167
59	170	51	221
60	177	71	248
61	177	85	262
62	183	76	259
63	224	82	306
64	227	105	332
65	223	119	342
66	223	115	338
67	228	135	363
68	176	135	311
69	155	152	307
70	109	163	272
71	92	170	262
72	57	166	223
73	39	165	204
74	32	154	186
75	17	152	169
76	6	113	119
77	9	118	127
78	0	69	69
79	2	42	44
80	1	28	29
81	0	19	19
82	2	11	13
83	0	4	4
84	1	2	3
85		3	3
86			0
87			0
88			0

Form TR-11

SPEED STUDY

Revised 8/12/14

Wyoming Department of Transportation

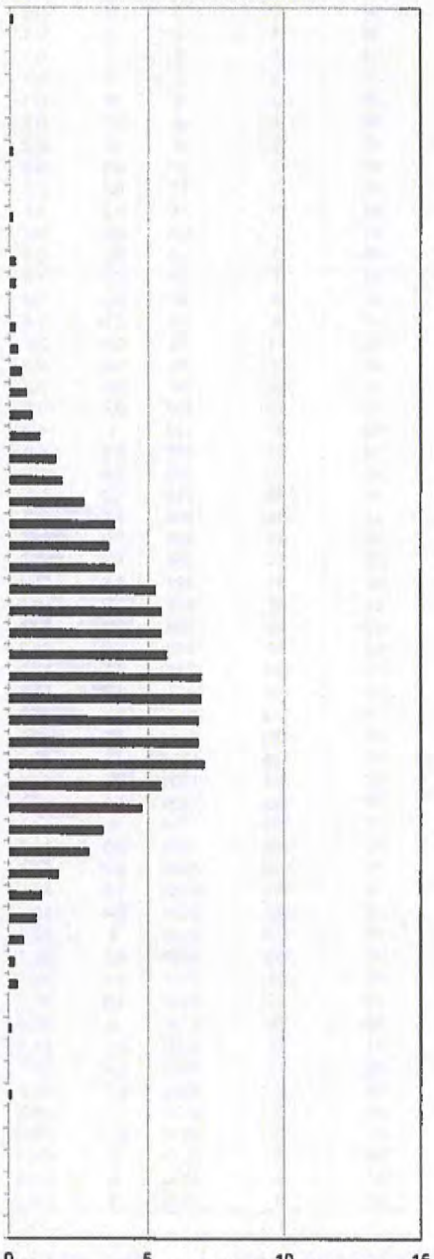
CITY: Pinedale
SPEED LIMIT: 65 MPH
OBSERVER:
DATE: 9/26/16

COUNTY: Sublette
DIRECTION: Northbound
START TIME: 10:00 AM
END TIME: 10:00 AM

ROUTE: US 191
LOCATION: RM 97.93
WEATHER:
COMMENTS: Jamar Radar

SPEED	FREQUENCY	ACUM TOTAL	% OF TOTAL	ACUM %
33	3	3	0.1	0.1
34	0	3	0	0.1
35	0	3	0	0.1
36	0	3	0	0.1
37	0	3	0	0.1
38	1	4	0	0.1
39	2	6	0.1	0.2
40	0	6	0	0.2
41	1	7	0	0.2
42	3	10	0.1	0.3
43	0	10	0	0.3
44	5	15	0.2	0.5
45	5	20	0.2	0.6
46	0	20	0	0.6
47	6	26	0.2	0.8
48	11	37	0.3	1.1
49	12	49	0.4	1.5
50	20	69	0.6	2.1
51	27	96	0.8	3.0
52	36	132	1.1	4.1
53	55	187	1.7	5.8
54	60	247	1.9	7.7
55	87	334	2.7	10.4
56	121	455	3.8	14.1
57	115	570	3.6	17.7
58	122	692	3.8	21.5
59	170	862	5.3	26.8
60	177	1039	5.5	32.2
61	177	1216	5.5	37.7
62	183	1399	5.7	43.4
63	224	1623	7	50.4
64	227	1850	7	57.4
65	223	2073	6.9	64.3
66	223	2296	6.9	71.3
67	228	2524	7.1	78.3
68	176	2700	5.5	83.8
69	155	2855	4.8	88.6
70	109	2964	3.4	92.0
71	92	3056	2.9	94.8
72	57	3113	1.8	96.6
73	39	3152	1.2	97.8
74	32	3184	1	98.8
75	17	3201	0.5	99.3
76	6	3207	0.2	99.5
77	9	3216	0.3	99.8
78	0	3216	0	99.8
79	2	3218	0.1	99.9
80	1	3219	0	99.9
81	0	3219	0	99.9
82	2	3221	0.1	100.0
83	0	3221	0	100.0
84	1	3222	0	100.0
85	0	3222	0	100.0
86	0	3222	0	100.0
87	0	3222	0	100.0
88	0	3222	0	100.0

PERCENTAGE BREAKDOWN



AVERAGE SPEED = 62.9
50th PERCENTILE = 63
67th PERCENTILE = 66
85th PERCENTILE = 69
95th PERCENTILE = 72

PACE SPEED = 59 to 68
VEHICLES IN PACE = 2008
% IN PACE = 62
% BELOW PACE = 21
% ABOVE PACE = 16

STANDARD DEVIATION = 5.83
% EXCEEDING POSTED LIMIT = 36

RECOMMENDED SPEED LIMIT = 70

Form TR-11 Revised 6/12/14

SPEED STUDY

Wyoming Department of Transportation

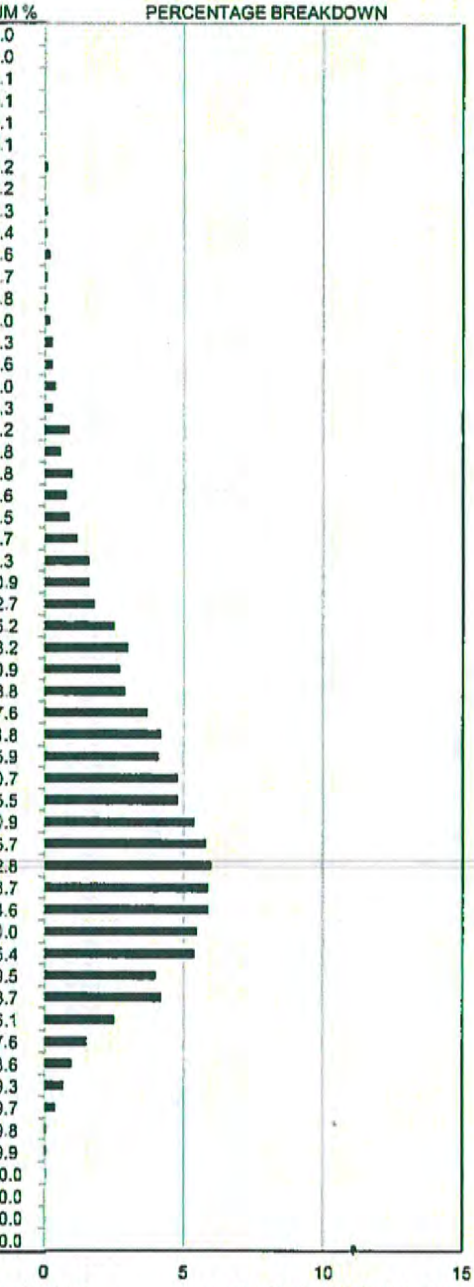
CITY: Pinedale
SPEED LIMIT: 65 MPH
OBSERVER:
DATE: 9/28/16

COUNTY: Sublette
DIRECTION: Southbound
START TIME: 10:00 AM
END TIME: 10:00 AM

ROUTE: US 191
LOCATION: RM 97.93
WEATHER:
COMMENTS: Jamar Radar

SPEED	FREQUENCY	ACUM TOTAL	% OF TOTAL	ACUM %
33	1	1	0	0.0
34	0	1	0	0.0
35	1	2	0	0.1
36	0	2	0	0.1
37	0	2	0	0.1
38	0	2	0	0.1
39	4	6	0.1	0.2
40	0	6	0	0.2
41	3	9	0.1	0.3
42	3	12	0.1	0.4
43	6	18	0.2	0.6
44	2	20	0.1	0.7
45	2	22	0.1	0.8
46	7	29	0.2	1.0
47	8	37	0.3	1.3
48	8	45	0.3	1.6
49	11	56	0.4	2.0
50	8	64	0.3	2.3
51	25	89	0.9	3.2
52	18	107	0.6	3.8
53	27	134	1	4.8
54	23	157	0.8	5.6
55	26	183	0.9	6.5
56	33	216	1.2	7.7
57	44	260	1.6	9.3
58	45	305	1.6	10.9
59	51	356	1.8	12.7
60	71	427	2.5	15.2
61	85	512	3	18.2
62	76	588	2.7	20.9
63	82	670	2.9	23.8
64	105	775	3.7	27.6
65	119	894	4.2	31.8
66	115	1009	4.1	35.9
67	135	1144	4.8	40.7
68	135	1279	4.8	45.5
69	152	1431	5.4	50.9
70	163	1594	5.8	56.7
71	170	1764	6	62.8
72	166	1930	5.9	68.7
73	165	2095	5.9	74.6
74	154	2249	5.5	80.0
75	152	2401	5.4	85.4
76	113	2514	4	89.5
77	118	2632	4.2	93.7
78	69	2701	2.5	96.1
79	42	2743	1.5	97.6
80	28	2771	1	98.6
81	19	2790	0.7	99.3
82	11	2801	0.4	99.7
83	4	2805	0.1	99.8
84	2	2807	0.1	99.9
85	3	2810	0.1	100.0
86	0	2810	0	100.0
87	0	2810	0	100.0
88	0	2810	0	100.0

PERCENTAGE BREAKDOWN



AVERAGE SPEED = 68.1
50th PERCENTILE = 69
67th PERCENTILE = 72
85th PERCENTILE = 75
95th PERCENTILE = 78

PACE SPEED = 64 to 73
VEHICLES IN PACE = 2140
% IN PACE = 76
% BELOW PACE = 24
% ABOVE PACE = 25

STANDARD DEVIATION = 7.49
% EXCEEDING POSTED LIMIT = 68

RECOMMENDED SPEED LIMIT = 75
POSTED SPEED IS TOO LOW

Form TR-11 Revised 6/12/14

SPEED STUDY

Wyoming Department of Transportation

CITY: PINEDALE
SPEED LIMIT: 45 MPH
OBSERVER:
DATE: 9/28/16

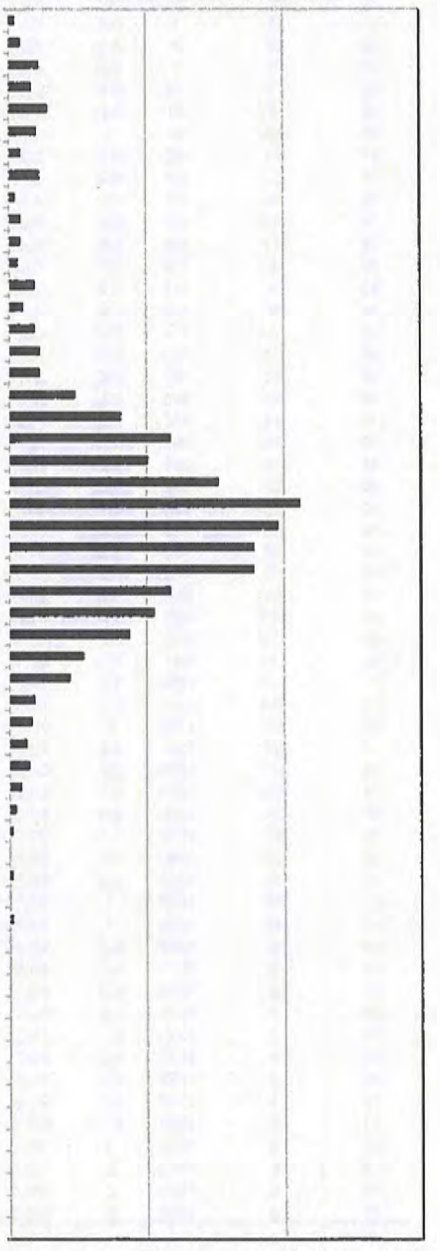
COUNTY: SUBLETTE
DIRECTION: Northbound
START TIME: 11:45 AM
END TIME: 10:00 AM

WB

ROUTE: US 191
LOCATION: RM
WEATHER:
COMMENTS: Jamar Radar

SPEED	FREQUENCY	ACUM TOTAL	% OF TOTAL	ACUM %
20	4	4	0.2	0.2
21	7	11	0.4	0.7
22	17	28	1.1	1.7
23	13	41	0.8	2.5
24	22	63	1.4	3.9
25	16	79	1	4.9
26	7	86	0.4	5.3
27	18	104	1.1	6.4
28	4	108	0.2	6.7
29	7	115	0.4	7.1
30	7	122	0.4	7.6
31	5	127	0.3	7.9
32	15	142	0.9	8.8
33	8	150	0.5	9.3
34	15	165	0.9	10.2
35	18	183	1.1	11.3
36	17	200	1.1	12.4
37	39	239	2.4	14.8
38	66	305	4.1	18.9
39	95	400	5.9	24.8
40	82	482	5.1	29.9
41	123	605	7.6	37.5
42	171	776	10.6	48.1
43	158	934	9.8	57.9
44	144	1078	8.9	66.8
45	144	1222	8.9	75.7
46	95	1317	5.9	81.6
47	86	1403	5.3	86.9
48	71	1474	4.4	91.3
49	44	1518	2.7	94.1
50	35	1553	2.2	96.2
51	15	1568	0.9	97.1
52	13	1581	0.8	98.0
53	9	1590	0.6	98.5
54	11	1601	0.7	99.2
55	6	1607	0.4	99.6
56	3	1610	0.2	99.8
57	2	1612	0.1	99.9
58	0	1612	0	99.9
59	1	1613	0.1	99.9
60	0	1613	0	99.9
61	1	1614	0.1	100.0
62	0	1614	0	100.0
63	0	1614	0	100.0
64	0	1614	0	100.0
65	0	1614	0	100.0
66	0	1614	0	100.0
67	0	1614	0	100.0
68	0	1614	0	100.0
69	0	1614	0	100.0
70	0	1614	0	100.0
71	0	1614	0	100.0
72	0	1614	0	100.0
73	0	1614	0	100.0
74	0	1614	0	100.0
75	0	1614	0	100.0

PERCENTAGE BREAKDOWN



AVERAGE SPEED = 41.8
50th PERCENTILE = 43
67th PERCENTILE = 45
85th PERCENTILE = 47
95th PERCENTILE = 50

PACE SPEED = 39 to 48
VEHICLES IN PACE = 1169
% IN PACE = 72
% BELOW PACE = 19
% ABOVE PACE = 9

STANDARD DEVIATION = 6.40
% EXCEEDING POSTED LIMIT = 24

RECOMMENDED SPEED LIMIT = 45

Form TR-11 Revised 6/12/14

SPEED STUDY

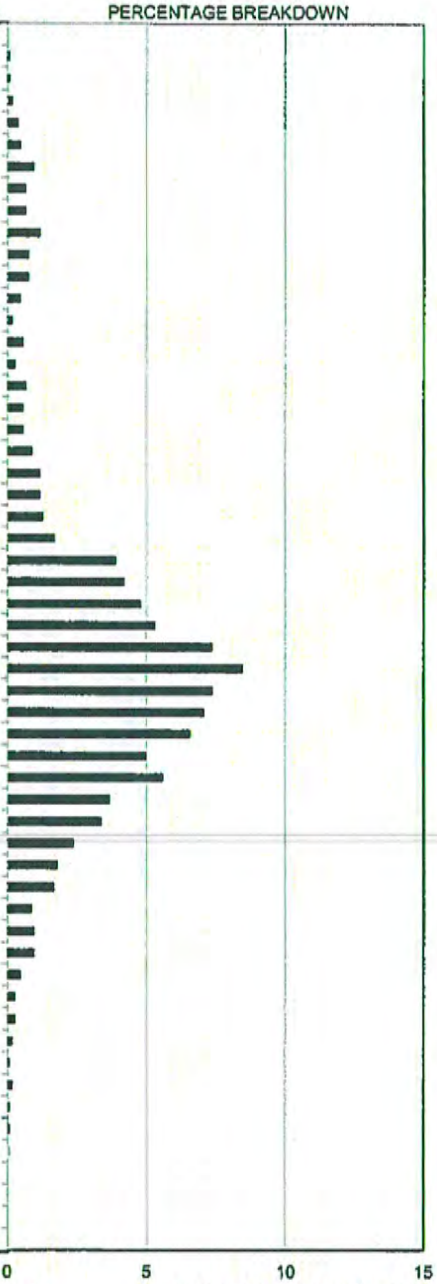
Wyoming Department of Transportation

CITY: PINEDALE
SPEED LIMIT: 45 MPH
OBSERVER:
DATE: 9/29/16

COUNTY: SUBLETTE
DIRECTION: Southbound EB
START TIME: 11:45 AM
END TIME: 10:00 AM

ROUTE: US 191
LOCATION: RM
WEATHER:
COMMENTS: Jamar Radar

SPEED	FREQUENCY	ACUM TOTAL	% OF TOTAL	ACUM %
20	0	0	0	0.0
21	1	1	0.1	0.1
22	2	3	0.1	0.2
23	3	6	0.2	0.4
24	7	13	0.4	0.8
25	8	21	0.5	1.3
26	16	37	1	2.3
27	11	48	0.7	2.9
28	12	60	0.7	3.7
29	19	79	1.2	4.8
30	13	92	0.8	5.6
31	13	105	0.8	6.4
32	8	113	0.5	6.9
33	4	117	0.2	7.2
34	9	126	0.6	7.7
35	5	131	0.3	8.0
36	12	143	0.7	8.8
37	10	153	0.6	9.4
38	10	163	0.6	10.0
39	14	177	0.9	10.9
40	19	196	1.2	12.0
41	19	215	1.2	13.2
42	22	237	1.3	14.5
43	28	265	1.7	16.3
44	63	328	3.9	20.1
45	68	396	4.2	24.3
46	78	474	4.8	29.1
47	86	560	5.3	34.4
48	121	681	7.4	41.8
49	139	820	8.5	50.3
50	121	941	7.4	57.7
51	115	1056	7.1	64.8
52	108	1164	6.6	71.4
53	81	1245	5	76.4
54	92	1337	5.6	82.0
55	61	1398	3.7	85.8
56	56	1454	3.4	89.2
57	39	1493	2.4	91.6
58	29	1522	1.8	93.4
59	28	1550	1.7	95.1
60	15	1565	0.9	96.0
61	17	1582	1	97.1
62	16	1598	1	98.0
63	8	1606	0.5	98.5
64	5	1611	0.3	98.8
65	5	1616	0.3	99.1
66	4	1620	0.2	99.4
67	2	1622	0.1	99.5
68	3	1625	0.2	99.7
69	2	1627	0.1	99.8
70	1	1628	0.1	99.9
71	2	1630	0.1	100.0
72	0	1630	0	100.0
73	0	1630	0	100.0
74	0	1630	0	100.0
75	0	1630	0	100.0



AVERAGE SPEED = 48.5
50th PERCENTILE = 49
67th PERCENTILE = 52
85th PERCENTILE = 55
95th PERCENTILE = 59

PACE SPEED = 45 to 54
VEHICLES IN PACE = 1009
% IN PACE = 62
% BELOW PACE = 20
% ABOVE PACE = 18

STANDARD DEVIATION = 7.96
% EXCEEDING POSTED LIMIT = 76

RECOMMENDED SPEED LIMIT = 55
POSTED SPEED IS TOO LOW

Form TR-11 Revised 6/12/14

SPEED STUDY

Wyoming Department of Transportation

CITY: PINEDALE
SPEED LIMIT: 45 MPH
OBSERVER: 0
DATE: 9/28/16 & 9/29/16

COUNTY: SUBLETTE ROUTE: US 191
COMBINED: Northbound/Sou LOCATION: RM
START TIME: 11:45 AM WEATHER:
END TIME: 10:00 AM COMMENTS: Jamar Radar

SPEED	FREQUENCY	ACUM TOTAL	% OF TOTAL	ACUM %
20	4	4		0.1
21	8	12		0.4
22	19	31		1.0
23	16	47		1.4
24	29	76		2.3
25	24	100		3.1
26	23	123		3.8
27	29	152		4.7
28	16	168		5.2
29	26	194		6.0
30	20	214		6.6
31	18	232		7.2
32	23	255		7.9
33	12	267		8.2
34	24	291		9.0
35	23	314		9.7
36	29	343		10.6
37	49	392		12.1
38	76	468		14.4
39	109	577		17.8
40	101	678		20.9
41	142	820		25.3
42	193	1013		31.2
43	186	1199		37.0
44	207	1406		43.3
45	212	1618		49.9
46	173	1791		55.2
47	172	1963		60.5
48	192	2155		66.4
49	183	2338		72.1
50	156	2494		76.9
51	130	2624		80.9
52	121	2745		84.6
53	90	2835		87.4
54	103	2938		90.6
55	67	3005		92.6
56	59	3064		94.5
57	41	3105		95.7
58	29	3134		96.6
59	29	3163		97.5
60	15	3178		98.0
61	18	3196		98.5
62	16	3212		99.0
63	8	3220		99.3
64	5	3225		99.4
65	5	3230		99.6
66	4	3234		99.7
67	2	3236		99.8
68	3	3239		99.8
69	2	3241		99.9
70	1	3242		99.9
71	2	3244		100.0
72	0	3244		100.0
73	0	3244		100.0
74	0	3244		100.0
75	0	3244		100.0

PERCENTAGE BREAKDOWN

AVERAGE SPEED = 45.2
50th PERCENTILE = 46
67th PERCENTILE = 49
85th PERCENTILE = 53
95th PERCENTILE = 57

PACE SPEED = 41 to 50
VEHICLES IN PACE = 1816
% IN PACE = 56
% BELOW PACE = 21
% ABOVE PACE = 23

STANDARD DEVIATION = 7.98
% EXCEEDING POSTED LIMIT = 50

RECOMMENDED SPEED LIMIT = 55

#13

CITY	PINEDALE
COUNTY	SUBLETTE
ROUTE	US 191
LOCATION	RM 101.02
POSTED SPEED LIMIT	45
LOWEST SPEED RECORDED	15
HIGHEST SPEED RECORDED	65
COMMENTS	Jamar Radar

DIRECTION 1	Northbound	DIRECTION 2	Southbound
OBSERVER		OBSERVER	
DATE	9/29/16	DATE	9/30/16
START TIME	10:15 AM	START TIME	10:15 AM
END TIME	9:30 AM	END TIME	9:30 AM
WEATHER	SUNNY	WEATHER	

15
70

0
9/29/16 & 9/30/16
0.427083 0.427083 10:15 AM
0.395833 0.395833 9:30 AM

NUMBER OF OBSERVATIONS AT SPEED PER DIRECTION

SPEED	Northbound	Southbound	Combined
15	2	4	6
16	0	7	7
17	2	24	26
18	0	29	29
19	0	43	43
20	1	49	50
21	0	50	50
22	3	21	24
23	3	10	13
24	4	14	18
25	2	1	3
26	6	2	8
27	4	4	8
28	5	5	10
29	7	7	14
30	5	13	18
31	9	8	17
32	15	14	29
33	3	14	17
34	12	18	30
35	15	16	31
36	24	17	41
37	33	38	71
38	47	42	89
39	65	48	113
40	92	78	170
41	97	93	190
42	112	105	217
43	121	118	239
44	125	119	244
45	119	122	241
46	104	83	187
47	86	87	173
48	86	76	162
49	55	61	116
50	45	39	84
51	44	36	80
52	43	19	62
53	24	16	40
54	21	15	36
55	17	11	28
56	14	13	27
57	14	6	20
58	12	8	20
59	4	1	5
60	4	3	7
61	5	3	8
62	0	2	2
63	2	0	2
64	1	0	1
65	2	4	6
66			0
67			0
68			0
69			0
70			0

Form TR-11 Revised 8/12/14

SPEED STUDY

Wyoming Department of Transportation

CITY: PINEDALE
SPEED LIMIT: 45 MPH
OBSERVER:
DATE: 9/29/16

COUNTY: SUBLETTE
DIRECTION: Northbound WB
START TIME: 10:15 AM
END TIME: 9:30 AM

ROUTE: US 191
LOCATION: RM 101.02
WEATHER: SUNNY
COMMENTS: Jamar Radar

SPEED	FREQUENCY	ACUM TOTAL	% OF TOTAL	ACUM %
15	2	2	0.1	0.1
16	0	2	0	0.1
17	2	4	0.1	0.3
18	0	4	0	0.3
19	0	4	0	0.3
20	1	5	0.1	0.3
21	0	5	0	0.3
22	3	8	0.2	0.5
23	3	11	0.2	0.7
24	4	15	0.3	1.0
25	2	17	0.1	1.1
26	6	23	0.4	1.5
27	4	27	0.3	1.8
28	5	32	0.3	2.1
29	7	39	0.5	2.6
30	5	44	0.3	2.9
31	9	53	0.6	3.5
32	15	68	1	4.5
33	3	71	0.2	4.7
34	12	83	0.8	5.5
35	15	98	1	6.5
36	24	122	1.6	8.0
37	33	155	2.2	10.2
38	47	202	3.1	13.3
39	65	267	4.3	17.6
40	92	359	6.1	23.7
41	97	456	6.4	30.1
42	112	568	7.4	37.5
43	121	689	8	45.4
44	125	814	8.2	53.7
45	119	933	7.8	61.5
46	104	1037	6.9	68.4
47	86	1123	5.7	74.1
48	86	1209	5.7	79.7
49	55	1264	3.6	83.4
50	45	1309	3	86.3
51	44	1353	2.9	89.2
52	43	1396	2.8	92.1
53	24	1420	1.6	93.7
54	21	1441	1.4	95.1
55	17	1458	1.1	96.2
56	14	1472	0.9	97.1
57	14	1486	0.9	98.0
58	12	1498	0.8	98.8
59	4	1502	0.3	99.1
60	4	1506	0.3	99.3
61	5	1511	0.3	99.7
62	0	1511	0	99.7
63	2	1513	0.1	99.8
64	1	1514	0.1	99.9
65	2	1516	0.1	100.0
66	0	1516	0	100.0
67	0	1516	0	100.0
68	0	1516	0	100.0
69	0	1516	0	100.0
70	0	1516	0	100.0

PERCENTAGE BREAKDOWN

AVERAGE SPEED = 44.1
50th PERCENTILE = 44
67th PERCENTILE = 46
85th PERCENTILE = 50
95th PERCENTILE = 54

PACE SPEED = 39 to 48
VEHICLES IN PACE = 1007
% IN PACE = 66
% BELOW PACE = 13
% ABOVE PACE = 20

STANDARD DEVIATION = 6.31
% EXCEEDING POSTED LIMIT = 38

RECOMMENDED SPEED LIMIT = 50

Form TR-11 Revised 8/12/14

SPEED STUDY

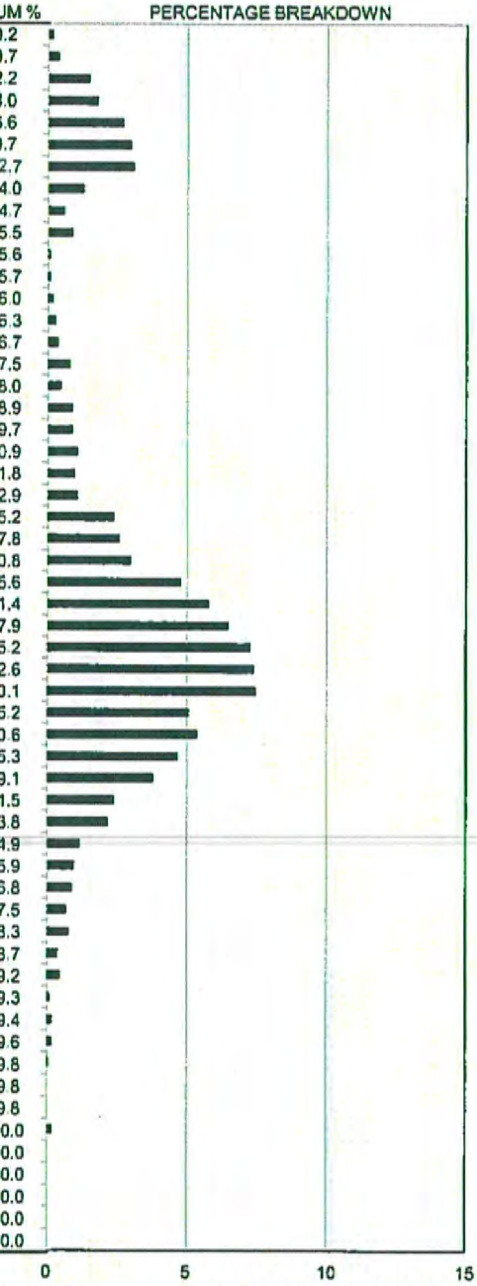
Wyoming Department of Transportation

CITY: PINEDALE
SPEED LIMIT: 45 MPH
OBSERVER:
DATE: 9/30/16

COUNTY: SUBLETTE
DIRECTION: Southbound EB
START TIME: 10:15 AM
END TIME: 9:30 AM

ROUTE: US 191
LOCATION: RM 101.02
WEATHER:
COMMENTS: Jamar Radar

SPEED	FREQUENCY	ACUM TOTAL	% OF TOTAL	ACUM %
15	4	4	0.2	0.2
16	7	11	0.4	0.7
17	24	35	1.5	2.2
18	29	64	1.8	4.0
19	43	107	2.7	6.6
20	49	156	3	9.7
21	50	206	3.1	12.7
22	21	227	1.3	14.0
23	10	237	0.6	14.7
24	14	251	0.9	15.5
25	1	252	0.1	15.6
26	2	254	0.1	15.7
27	4	258	0.2	16.0
28	5	263	0.3	16.3
29	7	270	0.4	16.7
30	13	283	0.8	17.5
31	8	291	0.5	18.0
32	14	305	0.9	18.9
33	14	319	0.9	19.7
34	18	337	1.1	20.9
35	16	353	1	21.8
36	17	370	1.1	22.9
37	38	408	2.4	25.2
38	42	450	2.6	27.8
39	48	498	3	30.8
40	78	576	4.8	35.6
41	93	669	5.8	41.4
42	105	774	6.5	47.9
43	118	892	7.3	55.2
44	119	1011	7.4	62.6
45	122	1133	7.5	70.1
46	83	1216	5.1	75.2
47	87	1303	5.4	80.6
48	76	1379	4.7	85.3
49	61	1440	3.8	89.1
50	39	1479	2.4	91.5
51	36	1515	2.2	93.8
52	19	1534	1.2	94.9
53	16	1550	1	95.9
54	15	1565	0.9	96.8
55	11	1576	0.7	97.5
56	13	1589	0.8	98.3
57	6	1595	0.4	98.7
58	8	1603	0.5	99.2
59	1	1604	0.1	99.3
60	3	1607	0.2	99.4
61	3	1610	0.2	99.6
62	2	1612	0.1	99.8
63	0	1612	0	99.8
64	0	1612	0	99.8
65	4	1616	0.2	100.0
66	0	1616	0	100.0
67	0	1616	0	100.0
68	0	1616	0	100.0
69	0	1616	0	100.0
70	0	1616	0	100.0



AVERAGE SPEED = 40.1
50th PERCENTILE = 43
67th PERCENTILE = 45
85th PERCENTILE = 48
95th PERCENTILE = 53

PACE SPEED = 40 to 49
VEHICLES IN PACE = 942
% IN PACE = 58
% BELOW PACE = 31
% ABOVE PACE = 11

STANDARD DEVIATION = 10.20
% EXCEEDING POSTED LIMIT = 30

RECOMMENDED SPEED LIMIT = 50

Form TR-11

SPEED STUDY

Wyoming Department of Transportation

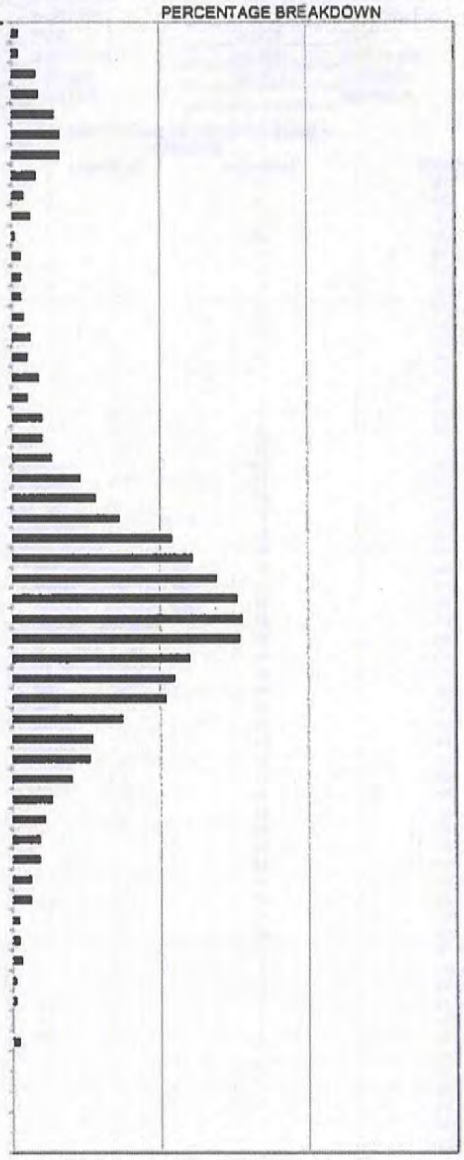
Revised 8/12/14

CITY: PINEDALE
SPEED LIMIT: 45 MPH
OBSERVER: 0
DATE: 9/29/16 & 9/30/16

COUNTY: SUBLETTE ROUTE: US 191
COMBINED: Northbound/Sou LOCATION: RM 101.02
START TIME: 10:15 AM WEATHER: Varying conditions
END TIME: 9:30 AM COMMENTS: Jamar Radar

SPEED	FREQUENCY	ACUM TOTAL	% OF TOTAL	ACUM %
15	6	6		0.2
16	7	13		0.4
17	26	39		1.2
18	29	68		2.2
19	43	111		3.5
20	50	161		5.1
21	50	211		6.7
22	24	235		7.5
23	13	248		7.9
24	18	266		8.5
25	3	269		8.6
26	8	277		8.8
27	8	285		9.1
28	10	295		9.4
29	14	309		9.9
30	18	327		10.4
31	17	344		11.0
32	29	373		11.9
33	17	390		12.5
34	30	420		13.4
35	31	451		14.4
36	41	492		15.7
37	71	563		18.0
38	89	652		20.8
39	113	765		24.4
40	170	935		29.9
41	190	1125		35.9
42	217	1342		42.8
43	239	1581		50.5
44	244	1825		58.3
45	241	2066		66.0
46	187	2253		71.9
47	173	2426		77.5
48	162	2588		82.6
49	116	2704		86.3
50	84	2788		89.0
51	80	2868		91.6
52	62	2930		93.6
53	40	2970		94.8
54	36	3006		96.0
55	28	3034		96.9
56	27	3061		97.7
57	20	3081		98.4
58	20	3101		99.0
59	5	3106		99.2
60	7	3113		99.4
61	8	3121		99.6
62	2	3123		99.7
63	2	3125		99.8
64	1	3126		99.8
65	6	3132		100.0
66	0	3132		100.0
67	0	3132		100.0
68	0	3132		100.0
69	0	3132		100.0
70	0	3132		100.0

PERCENTAGE BREAKDOWN



AVERAGE SPEED = 42.0
50th PERCENTILE = 43
67th PERCENTILE = 46
85th PERCENTILE = 49
95th PERCENTILE = 54

PACE SPEED = 40 to 49
VEHICLES IN PACE = 1939
% IN PACE = 62
% BELOW PACE = 24
% ABOVE PACE = 14

STANDARD DEVIATION = 8.77
% EXCEEDING POSTED LIMIT = 34

RECOMMENDED SPEED LIMIT = 50

#14

CITY	PINEDALE
COUNTY	SUBLETTE
ROUTE	US 191
LOCATION	RM 101.24
POSTED SPEED LIMIT	70
LOWEST SPEED RECORDED	26
HIGHEST SPEED RECORDED	77
COMMENTS	Jamar Radar

DIRECTION 1	Northbound	DIRECTION 2	Southbound
OBSERVER		OBSERVER	
DATE	9/28/16	DATE	9/29/16
START TIME	10:25 AM	START TIME	10:25 AM
END TIME	9:30 AM	END TIME	9:30 AM
WEATHER		WEATHER	

26
81

0
9/28/16 & 9/29/16
0.434028 0.434028 10:25 AM
0.395833 0.395833 9:30 AM

NUMBER OF OBSERVATIONS AT SPEED PER DIRECTION

SPEED	Northbound	Southbound	Combined
26	1		1
27	0		0
28	0		0
29	0		0
30	1		1
31	0		0
32	1		1
33	0		0
34	0		0
35	1		1
36	2		2
37	4		4
38	3		3
39	5		5
40	8		8
41	21		21
42	29		29
43	26		26
44	60		60
45	57		57
46	80		80
47	96		96
48	94		94
49	100		100
50	97		97
51	91		91
52	84		84
53	100		100
54	81		81
55	77		77
56	65		65
57	52		52
58	56		56
59	57		57
60	34		34
61	35		35
62	24		24
63	20		20
64	15		15
65	13		13
66	8		8
67	6		6
68	1		1
69	0		0
70	2		2
71	1		1
72	2		2
73	1		1
74	1		1
75	1		1
76			0
77			0
78			0
79			0
80			0
81			0

Form TR-11

SPEED STUDY

Revised 8/12/14

Wyoming Department of Transportation

CITY: PINEDALE
SPEED LIMIT: 70 MPH
OBSERVER:
DATE: 9/28/16

COUNTY: SUBLETTE
DIRECTION: Northbound WB
START TIME: 10:25 AM
END TIME: 9:30 AM

ROUTE: US 191
LOCATION: RM 101.24
WEATHER:
COMMENTS: Jamar Radar

SPEED	FREQUENCY	ACUM TOTAL	% OF TOTAL	ACUM %
26	1	1	0.1	0.1
27	0	1	0	0.1
28	0	1	0	0.1
29	0	1	0	0.1
30	1	2	0.1	0.1
31	0	2	0	0.1
32	1	3	0.1	0.2
33	0	3	0	0.2
34	0	3	0	0.2
35	1	4	0.1	0.3
36	2	6	0.1	0.4
37	4	10	0.3	0.7
38	3	13	0.2	0.9
39	5	18	0.3	1.2
40	8	26	0.5	1.7
41	21	47	1.4	3.1
42	29	76	1.9	5.0
43	26	102	1.7	6.7
44	60	162	4	10.7
45	57	219	3.8	14.5
46	80	299	5.3	19.8
47	96	395	6.3	26.1
48	94	489	6.2	32.3
49	100	589	6.6	38.9
50	97	686	6.4	45.3
51	91	777	6	51.4
52	84	861	5.6	56.9
53	100	961	6.6	63.5
54	81	1042	5.4	68.9
55	77	1119	5.1	74.0
56	65	1184	4.3	78.3
57	52	1236	3.4	81.7
58	56	1292	3.7	85.4
59	57	1349	3.8	89.2
60	34	1383	2.2	91.4
61	35	1418	2.3	93.7
62	24	1442	1.6	95.3
63	20	1462	1.3	96.6
64	15	1477	1	97.6
65	13	1490	0.9	98.5
66	8	1498	0.5	99.0
67	6	1504	0.4	99.4
68	1	1505	0.1	99.5
69	0	1505	0	99.5
70	2	1507	0.1	99.6
71	1	1508	0.1	99.7
72	2	1510	0.1	99.8
73	1	1511	0.1	99.9
74	1	1512	0.1	99.9
75	1	1513	0.1	100.0
76	0	1513	0	100.0
77	0	1513	0	100.0
78	0	1513	0	100.0
79	0	1513	0	100.0
80	0	1513	0	100.0
81	0	1513	0	100.0

PERCENTAGE BREAKDOWN

AVERAGE SPEED = 51.7
50th PERCENTILE = 51
67th PERCENTILE = 54
85th PERCENTILE = 58
95th PERCENTILE = 62

PACE SPEED = 46 to 55
VEHICLES IN PACE = 900
% IN PACE = 59
% BELOW PACE = 14
% ABOVE PACE = 26

STANDARD DEVIATION = 6.14
% EXCEEDING POSTED LIMIT = 0

RECOMMENDED SPEED LIMIT = 60

Form TR-11 Revised 6/12/14

SPEED STUDY

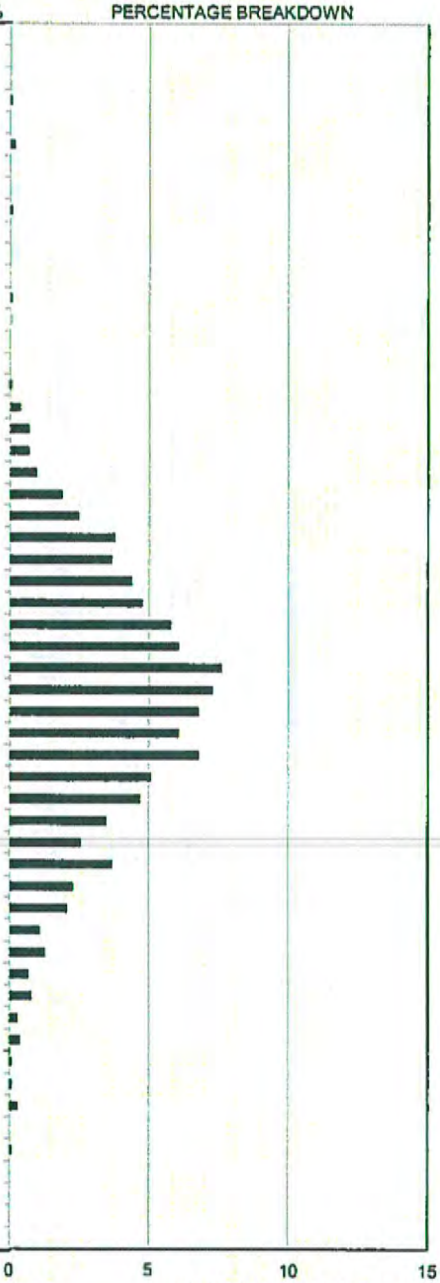
Wyoming Department of Transportation

CITY: PINEDALE
SPEED LIMIT: 45 MPH
OBSERVER:
DATE: 9/29/16

COUNTY: SUBLETTE
DIRECTION: Southbound & B
START TIME: 10:25 AM
END TIME: 9:30 AM

ROUTE: US 191
LOCATION: RM 101.24
WEATHER:
COMMENTS: Jamar Radar

SPEED	FREQUENCY	ACUM TOTAL	% OF TOTAL	ACUM %
26	0	0	0	0.0
27	0	0	0	0.0
28	0	0	0	0.0
29	1	1	0.1	0.1
30	0	1	0	0.1
31	3	4	0.2	0.3
32	0	4	0	0.3
33	0	4	0	0.3
34	1	5	0.1	0.3
35	0	5	0	0.3
36	0	5	0	0.3
37	0	5	0	0.3
38	1	6	0.1	0.4
39	1	7	0.1	0.4
40	0	7	0	0.4
41	0	7	0	0.4
42	2	9	0.1	0.6
43	7	16	0.4	1.0
44	11	27	0.7	1.7
45	11	38	0.7	2.4
46	16	54	1	3.4
47	30	84	1.9	5.3
48	40	124	2.5	7.8
49	61	185	3.8	11.6
50	59	244	3.7	15.3
51	71	315	4.4	19.7
52	76	391	4.8	24.5
53	92	483	5.8	30.2
54	98	581	6.1	36.3
55	122	703	7.6	44.0
56	117	820	7.3	51.3
57	109	929	6.8	58.1
58	97	1026	6.1	64.2
59	109	1135	6.8	71.0
60	81	1216	5.1	76.0
61	75	1291	4.7	80.7
62	56	1347	3.5	84.2
63	41	1388	2.6	86.8
64	59	1447	3.7	90.5
65	37	1484	2.3	92.8
66	34	1518	2.1	94.9
67	17	1535	1.1	96.0
68	21	1556	1.3	97.3
69	11	1567	0.7	98.0
70	12	1579	0.8	98.7
71	5	1584	0.3	99.1
72	6	1590	0.4	99.4
73	1	1591	0.1	99.5
74	1	1592	0.1	99.6
75	5	1597	0.3	99.9
76	0	1597	0	99.9
77	2	1599	0.1	100.0
78	0	1599	0	100.0
79	0	1599	0	100.0
80	0	1599	0	100.0
81	0	1599	0	100.0



AVERAGE SPEED = 56.5
50th PERCENTILE = 56
67th PERCENTILE = 59
85th PERCENTILE = 63
95th PERCENTILE = 67

PACE SPEED = 52 to 61
VEHICLES IN PACE = 976
% IN PACE = 61
% BELOW PACE = 20
% ABOVE PACE = 19

STANDARD DEVIATION = 6.02
% EXCEEDING POSTED LIMIT = 98

RECOMMENDED SPEED LIMIT = 65
POSTED SPEED IS TOO LOW

CITY	PINEDALE
COUNTY	SUBLETTE
ROUTE	US 191
LOCATION	RM 101.24
POSTED SPEED LIMIT	45
LOWEST SPEED RECORDED	26
HIGHEST SPEED RECORDED	77
COMMENTS	Jamar Radar

DIRECTION 1	Northbound	DIRECTION 2	Southbound
OBSERVER		OBSERVER	
DATE	9/28/16	DATE	9/29/16
START TIME	10:25 AM	START TIME	10:25 AM
END TIME	9:30 AM	END TIME	9:30 AM
WEATHER		WEATHER	

26
81

0
9/28/16 & 9/29/16
0.434028 0.434028 10:25 AM
0.395833 0.395833 9:30 AM

NUMBER OF OBSERVATIONS AT SPEED PER DIRECTION

SPEED	Northbound	Southbound	Combined
26			0
27			0
28			0
29		1	1
30		0	0
31		3	3
32		0	0
33		0	0
34		1	1
35		0	0
36		0	0
37		0	0
38		1	1
39		1	1
40		0	0
41		0	0
42		2	2
43		7	7
44		11	11
45		11	11
46		16	16
47		30	30
48		40	40
49		61	61
50		59	59
51		71	71
52		76	76
53		92	92
54		98	98
55		122	122
56		117	117
57		109	109
58		97	97
59		109	109
60		81	81
61		75	75
62		56	56
63		41	41
64		59	59
65		37	37
66		34	34
67		17	17
68		21	21
69		11	11
70		12	12
71		5	5
72		6	6
73		1	1
74		1	1
75		5	5
76		0	0
77		2	2
78			0
79			0
80			0
81			0

#15

CITY	PINEDALE
COUNTY	SUBLETTE
ROUTE	US 191
LOCATION	RM 101.59
POSTED SPEED LIMIT	70
LOWEST SPEED RECORDED	25
HIGHEST SPEED RECORDED	80
COMMENTS	Jamar Radar

DIRECTION 1	Northbound	DIRECTION 2	Southbound
OBSERVER		OBSERVER	
DATE	9/29/16	DATE	9/30/16
START TIME	10:40 AM	START TIME	10:40 AM
END TIME	9:35 AM	END TIME	9:35 AM
WEATHER	SUNNY	WEATHER	

25
80

0
9/29/16 & 9/30/16
0.444444 0.444444 10:40 AM
0.399306 0.399306 9:35 AM

NUMBER OF OBSERVATIONS AT SPEED PER DIRECTION

SPEED	Northbound	Southbound	Combined
25	3		3
26	1	1	2
27	0	1	1
28	0	1	1
29	1	0	1
30	0	0	0
31	0	0	0
32	3	1	4
33	1	3	4
34	0	3	3
35	0	2	2
36	1	4	5
37	2	2	4
38	4	3	7
39	6	2	8
40	4	8	12
41	5	9	14
42	9	4	13
43	14	4	18
44	18	8	26
45	25	1	26
46	21	11	32
47	33	14	47
48	23	13	36
49	31	15	46
50	30	13	43
51	40	8	48
52	51	14	65
53	45	30	75
54	59	27	86
55	49	33	82
56	67	42	109
57	73	38	111
58	64	49	113
59	87	51	138
60	73	59	132
61	72	48	120
62	62	66	128
63	78	62	140
64	56	65	121
65	83	69	152
66	60	62	122
67	49	77	126
68	58	71	129
69	36	79	115
70	25	68	93
71	15	55	70
72	16	50	66
73	6	50	56
74	9	53	62
75	6	49	55
76	2	50	52
77	2	27	29
78	0	22	22
79	1	15	16
80	2	10	12

Form TR-11 Revised 8/12/14

SPEED STUDY

Wyoming Department of Transportation

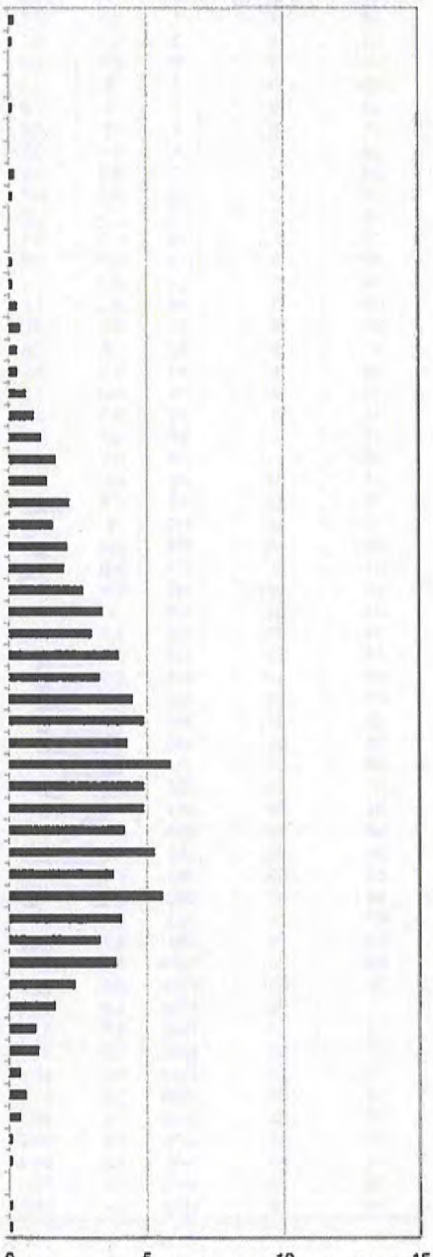
CITY: PINEDALE
SPEED LIMIT: 70 MPH
OBSERVER:
DATE: 9/29/16

COUNTY: SUBLETTE
DIRECTION: Northbound
START TIME: 10:40 AM
END TIME: 9:35 AM

ROUTE: US 191
LOCATION: RM 101.59
WEATHER: SUNNY
COMMENTS: Jamar Radar

SPEED	FREQUENCY	ACUM TOTAL	% OF TOTAL	ACUM %
25	3	3	0.2	0.2
26	1	4	0.1	0.3
27	0	4	0	0.3
28	0	4	0	0.3
29	1	5	0.1	0.3
30	0	5	0	0.3
31	0	5	0	0.3
32	3	8	0.2	0.5
33	1	9	0.1	0.6
34	0	9	0	0.6
35	0	9	0	0.6
36	1	10	0.1	0.7
37	2	12	0.1	0.8
38	4	16	0.3	1.1
39	6	22	0.4	1.5
40	4	26	0.3	1.8
41	5	31	0.3	2.1
42	9	40	0.6	2.7
43	14	54	0.9	3.6
44	18	72	1.2	4.9
45	25	97	1.7	6.5
46	21	118	1.4	8.0
47	33	151	2.2	10.2
48	23	174	1.6	11.7
49	31	205	2.1	13.8
50	30	235	2	15.9
51	40	275	2.7	18.6
52	51	326	3.4	22.0
53	45	371	3	25.1
54	59	430	4	29.0
55	49	479	3.3	32.3
56	67	546	4.5	36.9
57	73	619	4.9	41.8
58	64	683	4.3	46.1
59	87	770	5.9	52.0
60	73	843	4.9	56.9
61	72	915	4.9	61.8
62	62	977	4.2	66.0
63	78	1055	5.3	71.2
64	56	1111	3.8	75.0
65	83	1194	5.6	80.6
66	60	1254	4.1	84.7
67	49	1303	3.3	88.0
68	58	1361	3.9	91.9
69	36	1397	2.4	94.3
70	25	1422	1.7	96.0
71	15	1437	1	97.0
72	16	1453	1.1	98.1
73	6	1459	0.4	98.5
74	9	1468	0.6	99.1
75	6	1474	0.4	99.5
76	2	1476	0.1	99.7
77	2	1478	0.1	99.8
78	0	1478	0	99.8
79	1	1479	0.1	99.9
80	2	1481	0.1	100.0

PERCENTAGE BREAKDOWN



AVERAGE SPEED = 58.5
50th PERCENTILE = 59
67th PERCENTILE = 63
85th PERCENTILE = 67
95th PERCENTILE = 70

PACE SPEED = 56 to 65
VEHICLES IN PACE = 1002
% IN PACE = 68
% BELOW PACE = 32
% ABOVE PACE = 19

STANDARD DEVIATION = 7.98
% EXCEEDING POSTED LIMIT = 4

RECOMMENDED SPEED LIMIT = 65

Form TR-11

SPEED STUDY

Revised 8/12/14

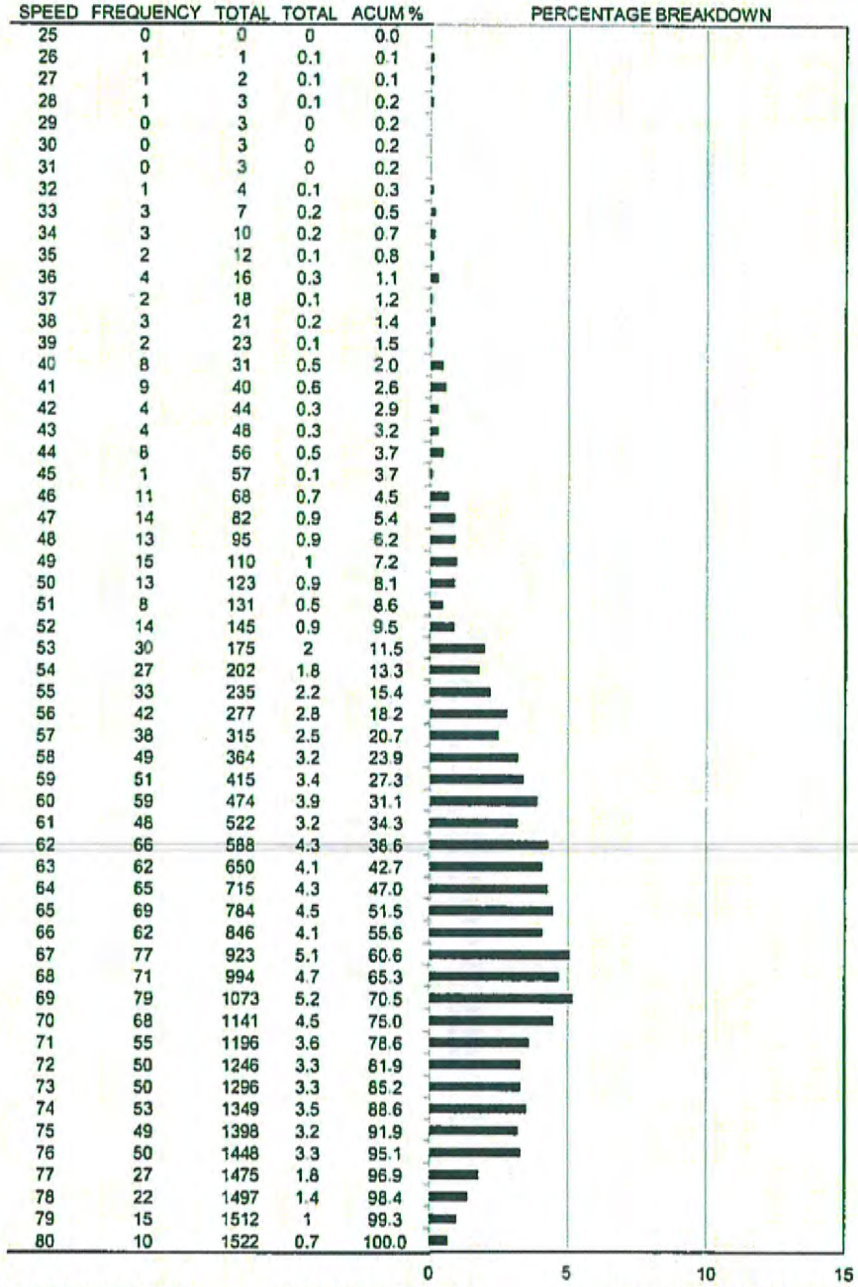
Wyoming Department of Transportation

CITY: PINEDALE
SPEED LIMIT: 70 MPH
OBSERVER:
DATE: 9/30/16

COUNTY: SUBLETTE
DIRECTION: Southbound EB
START TIME: 10:40 AM
END TIME: 9:35 AM

ROUTE: US 191
LOCATION: RM 101.59
WEATHER:
COMMENTS: Jamar Radar

SPEED	FREQUENCY	ACUM TOTAL	% OF TOTAL	ACUM %
25	0	0	0	0.0
26	1	1	0.1	0.1
27	1	2	0.1	0.1
28	1	3	0.1	0.2
29	0	3	0	0.2
30	0	3	0	0.2
31	0	3	0	0.2
32	1	4	0.1	0.3
33	3	7	0.2	0.5
34	3	10	0.2	0.7
35	2	12	0.1	0.8
36	4	16	0.3	1.1
37	2	18	0.1	1.2
38	3	21	0.2	1.4
39	2	23	0.1	1.5
40	8	31	0.5	2.0
41	9	40	0.6	2.6
42	4	44	0.3	2.9
43	4	48	0.3	3.2
44	8	56	0.5	3.7
45	1	57	0.1	3.7
46	11	68	0.7	4.5
47	14	82	0.9	5.4
48	13	95	0.9	6.2
49	15	110	1	7.2
50	13	123	0.9	8.1
51	8	131	0.5	8.6
52	14	145	0.9	9.5
53	30	175	2	11.5
54	27	202	1.8	13.3
55	33	235	2.2	15.4
56	42	277	2.8	18.2
57	38	315	2.5	20.7
58	49	364	3.2	23.9
59	51	415	3.4	27.3
60	59	474	3.9	31.1
61	48	522	3.2	34.3
62	66	588	4.3	38.6
63	62	650	4.1	42.7
64	65	715	4.3	47.0
65	69	784	4.5	51.5
66	62	846	4.1	55.6
67	77	923	5.1	60.6
68	71	994	4.7	65.3
69	79	1073	5.2	70.5
70	68	1141	4.5	75.0
71	55	1196	3.6	78.6
72	50	1246	3.3	81.9
73	50	1296	3.3	85.2
74	53	1349	3.5	88.6
75	49	1398	3.2	91.9
76	50	1448	3.3	95.1
77	27	1475	1.8	96.9
78	22	1497	1.4	98.4
79	15	1512	1	99.3
80	10	1522	0.7	100.0



AVERAGE SPEED = 64.1
50th PERCENTILE = 65
67th PERCENTILE = 69
85th PERCENTILE = 73
95th PERCENTILE = 76

PACE SPEED = 56 to 65
VEHICLES IN PACE = 1287
% IN PACE = 85
% BELOW PACE = 15
% ABOVE PACE = 48

STANDARD DEVIATION = 9.07
% EXCEEDING POSTED LIMIT = 25

RECOMMENDED SPEED LIMIT = 75

SPEED STUDY

Wyoming Department of Transportation

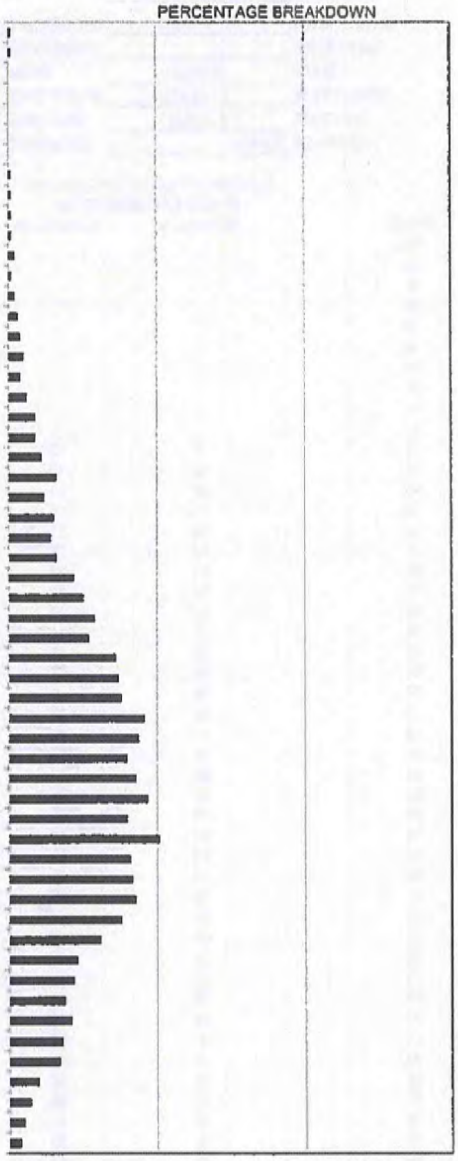
CITY: PINEDALE
SPEED LIMIT: 70 MPH
OBSERVER: 0
DATE: 9/29/16 & 9/30/16

COUNTY: SUBLETTE
COMBINED: Northbound/Sou
START TIME: 10:40 AM
END TIME: 9:35 AM

ROUTE: US 191
LOCATION: RM 101.59
WEATHER: Varying conditions
COMMENTS: Jamar Radar

SPEED	FREQUENCY	ACUM TOTAL	% OF TOTAL	ACUM %
25	3	3		0.1
26	2	5		0.2
27	1	6		0.2
28	1	7		0.2
29	1	8		0.3
30	0	8		0.3
31	0	8		0.3
32	4	12		0.4
33	4	16		0.5
34	3	19		0.6
35	2	21		0.7
36	5	26		0.9
37	4	30		1.0
38	7	37		1.2
39	8	45		1.5
40	12	57		1.9
41	14	71		2.4
42	13	84		2.8
43	18	102		3.4
44	26	128		4.3
45	26	154		5.1
46	32	186		6.2
47	47	233		7.8
48	36	269		9.0
49	46	315		10.5
50	43	358		11.9
51	48	406		13.5
52	65	471		15.7
53	75	546		18.2
54	86	632		21.0
55	82	714		23.8
56	109	823		27.4
57	111	934		31.1
58	113	1047		34.9
59	138	1185		39.5
60	132	1317		43.9
61	120	1437		47.9
62	128	1565		52.1
63	140	1705		56.8
64	121	1826		60.8
65	152	1978		65.9
66	122	2100		69.9
67	126	2226		74.1
68	129	2355		78.4
69	115	2470		82.3
70	93	2563		85.3
71	70	2633		87.7
72	66	2699		89.9
73	56	2755		91.7
74	62	2817		93.8
75	55	2872		95.6
76	52	2924		97.4
77	29	2953		98.3
78	22	2975		99.1
79	16	2991		99.6
80	12	3003		100.0

PERCENTAGE BREAKDOWN



AVERAGE SPEED = 61.3
50th PERCENTILE = 62
67th PERCENTILE = 66
85th PERCENTILE = 70
95th PERCENTILE = 75

PACE SPEED = 56 to 65
VEHICLES IN PACE = 2289
% IN PACE = 76
% BELOW PACE = 24
% ABOVE PACE = 34

STANDARD DEVIATION = 8.99
% EXCEEDING POSTED LIMIT = 15

RECOMMENDED SPEED LIMIT = 70

#16

CITY	PINEDALE
COUNTY	SUBLETTE
ROUTE	US 191
LOCATION	RM 101.85
POSTED SPEED LIMIT	70
LOWEST SPEED RECORDED	45
HIGHEST SPEED RECORDED	88
COMMENTS	Jamar Radar

DIRECTION 1	Northbound	DIRECTION 2	Southbound		
OBSERVER		OBSERVER		0	
DATE	9/29/16	DATE	9/30/16	9/29/16 & 9/30/16	
START TIME	11:20 AM	START TIME	11:20 AM	0.472222	0.472222 11:20 AM
END TIME	9:45 AM	END TIME	9:45 AM	0.40625	0.40625 9:45 AM
WEATHER	SUNNY	WEATHER			

SPEED	NUMBER OF OBSERVATIONS AT SPEED PER DIRECTION Northbound	Southbound	Combined
35			
36			
37			
38			
39			
40			
41			
42			
43			
44			
45	2	13	
46	12	19	
47	8	14	
48	14	18	
49	15	21	
50	12	20	
51	21	21	
52	22	22	
53	16	15	
54	31	14	
55	32	18	
56	38	20	
57	56	9	
58	61	27	
59	71	20	
60	64	18	
61	59	28	
62	66	29	
63	73	30	
64	84	30	
65	66	28	
66	70	48	
67	69	32	
68	58	44	
69	60	46	
70	37	41	
71	25	50	
72	15	61	
73	16	50	
74	7	52	
75	3	62	
76	2	59	
77	2	48	
78	0	40	
79	0	53	
80	2	54	
81		56	
82		43	
83		27	
84		19	
85		15	
86		14	
87			
88			
89			
90			

Form TR-11 Revised 6/12/14

SPEED STUDY

Wyoming Department of Transportation

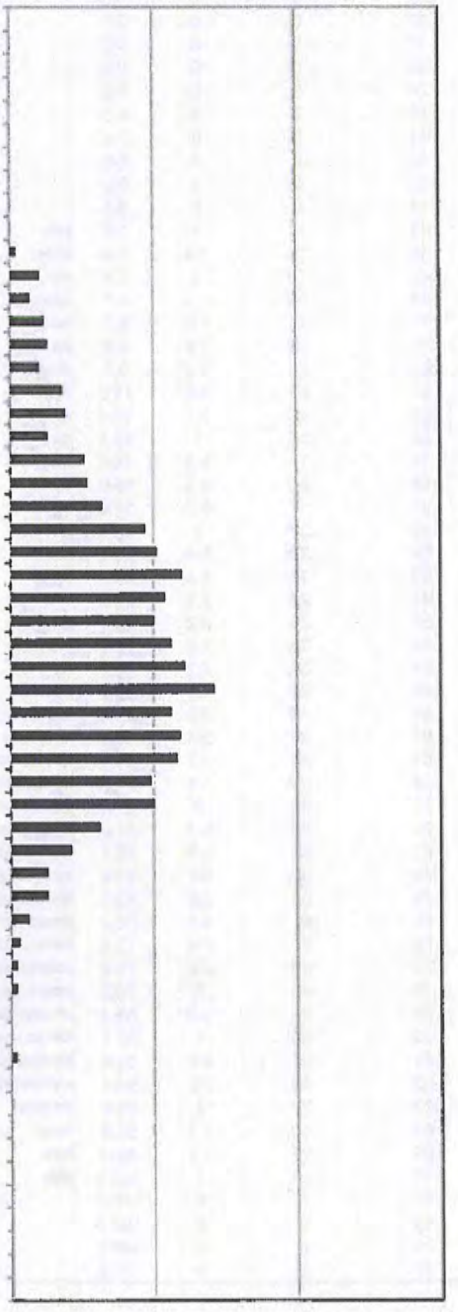
CITY: PINEDALE
SPEED LIMIT: 70 MPH
OBSERVER:
DATE: 9/29/16

COUNTY: SUBLETTE
DIRECTION: Northbound NB
START TIME: 11:20 AM
END TIME: 9:45 AM

ROUTE: US 191
LOCATION: RM 101.85
WEATHER: SUNNY
COMMENTS: Jamar Radar

SPEED	FREQUENCY	ACI % OF TOTAL	ACUM %
35	0	0	0.0
36	0	0	0.0
37	0	0	0.0
38	0	0	0.0
39	0	0	0.0
40	0	0	0.0
41	0	0	0.0
42	0	0	0.0
43	0	0	0.0
44	0	0	0.0
45	2	0.2	0.2
46	12	1	1.2
47	8	0.7	1.9
48	14	1.2	3.0
49	15	1.3	4.3
50	12	1	5.3
51	21	1.8	7.1
52	22	1.9	8.9
53	16	1.3	10.3
54	31	2.6	12.9
55	32	2.7	15.6
56	38	3.2	18.8
57	56	4.7	23.5
58	61	5.1	28.6
59	71	6	34.6
60	64	5.4	39.9
61	59	5	44.9
62	66	5.6	50.5
63	73	6.1	56.6
64	84	7.1	63.7
65	66	5.6	69.2
66	70	5.9	75.1
67	69	5.8	80.9
68	58	4.9	85.8
69	60	5	90.8
70	37	3.1	93.9
71	25	2.1	96.0
72	15	1.3	97.3
73	16	1.3	98.7
74	7	0.6	99.2
75	3	0.3	99.5
76	2	0.2	99.7
77	2	0.2	99.8
78	0	0	99.8
79	0	0	99.8
80	2	0.2	100.0
81	0	0	100.0
82	0	0	100.0
83	0	0	100.0
84	0	0	100.0
85	0	0	100.0
86	0	0	100.0
87	0	0	100.0
88	0	0	100.0
89	0	0	100.0
90	0	0	100.0

PERCENTAGE BREAKDOWN



AVERAGE SPEED = 61.8
50th PERCENTILE = 62
67th PERCENTILE = 65
85th PERCENTILE = 68
95th PERCENTILE = 71

PACE SPEED = 58 to 67
VEHICLES IN PACE = 683
% IN PACE = 57
% BELOW PACE = 23
% ABOVE PACE = 19

STANDARD DEVIATION = 6.25
% EXCEEDING POSTED LIMIT = 6

RECOMMENDED SPEED LIMIT = 70

Form TR-11 Revised 8/12/14

SPEED STUDY

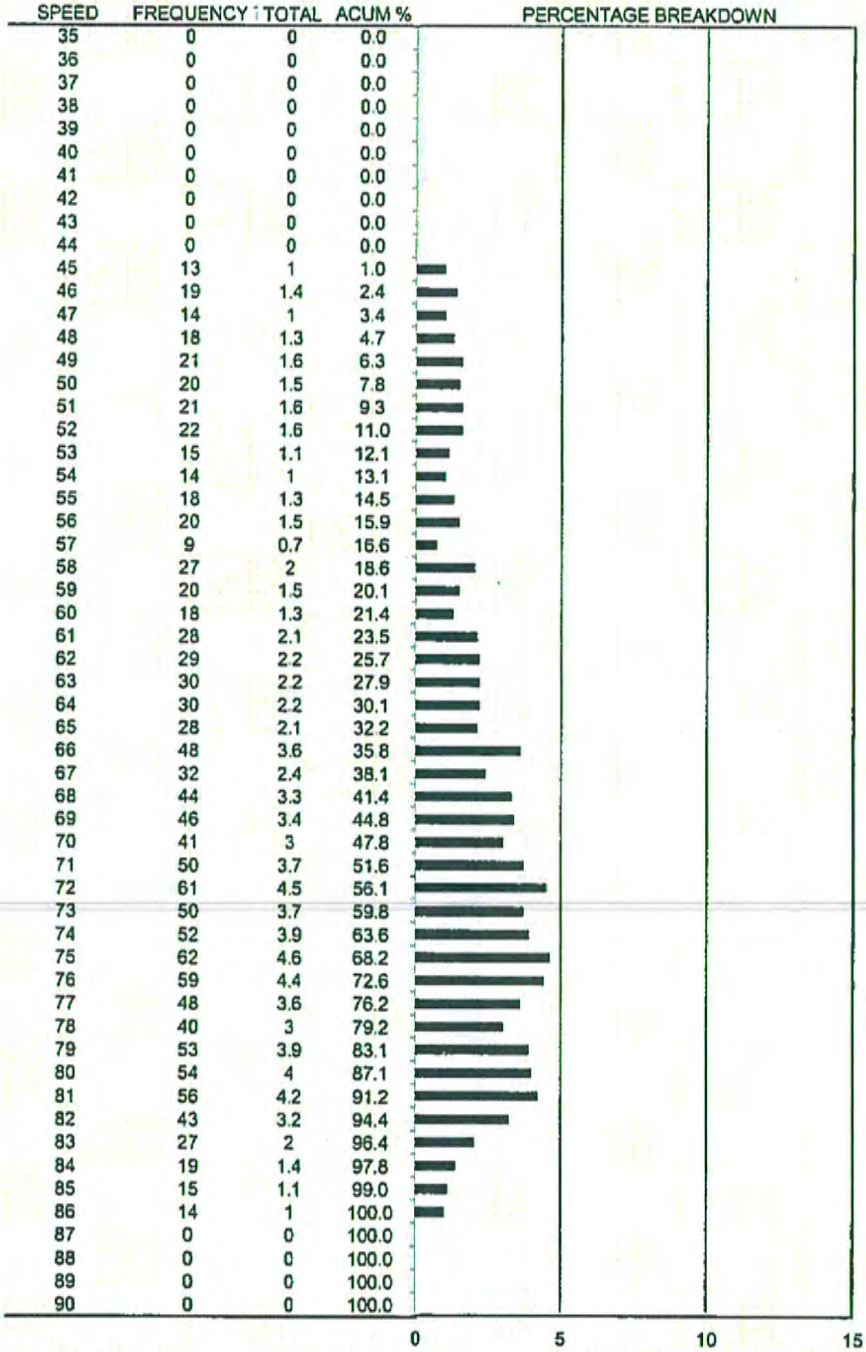
Wyoming Department of Transportation

CITY: PINEDALE
SPEED LIMIT: 70 MPH
OBSERVER:
DATE: 9/30/16

COUNTY: SUBLETTE
DIRECTION: Southbound EB
START TIME: 11:20 AM
END TIME: 9:45 AM

ROUTE: US 191
LOCATION: RM 101.85
WEATHER:
COMMENTS: Jamar Radar

SPEED	FREQUENCY	ACI % OF TOTAL	ACUM %
35	0	0	0.0
36	0	0	0.0
37	0	0	0.0
38	0	0	0.0
39	0	0	0.0
40	0	0	0.0
41	0	0	0.0
42	0	0	0.0
43	0	0	0.0
44	0	0	0.0
45	13	1	1.0
46	19	1.4	2.4
47	14	1	3.4
48	18	1.3	4.7
49	21	1.6	6.3
50	20	1.5	7.8
51	21	1.6	9.3
52	22	1.6	11.0
53	15	1.1	12.1
54	14	1	13.1
55	18	1.3	14.5
56	20	1.5	15.9
57	9	0.7	16.6
58	27	2	18.6
59	20	1.5	20.1
60	18	1.3	21.4
61	28	2.1	23.5
62	29	2.2	25.7
63	30	2.2	27.9
64	30	2.2	30.1
65	28	2.1	32.2
66	48	3.6	35.8
67	32	2.4	38.1
68	44	3.3	41.4
69	46	3.4	44.8
70	41	3	47.8
71	50	3.7	51.6
72	61	4.5	56.1
73	50	3.7	59.8
74	52	3.9	63.6
75	62	4.6	68.2
76	59	4.4	72.6
77	48	3.6	76.2
78	40	3	79.2
79	53	3.9	83.1
80	54	4	87.1
81	56	4.2	91.2
82	43	3.2	94.4
83	27	2	96.4
84	19	1.4	97.8
85	15	1.1	99.0
86	14	1	100.0
87	0	0	100.0
88	0	0	100.0
89	0	0	100.0
90	0	0	100.0



AVERAGE SPEED = 69.0
50th PERCENTILE = 71
67th PERCENTILE = 75
85th PERCENTILE = 80
95th PERCENTILE = 83

PACE SPEED = 66 to 75
VEHICLES IN PACE = 914
% IN PACE = 68
% BELOW PACE = 32
% ABOVE PACE = 32

STANDARD DEVIATION = 10.48
% EXCEEDING POSTED LIMIT = 52

RECOMMENDED SPEED LIMIT = 80

Form TR-11 Revised 6/12/14

SPEED STUDY

Wyoming Department of Transportation

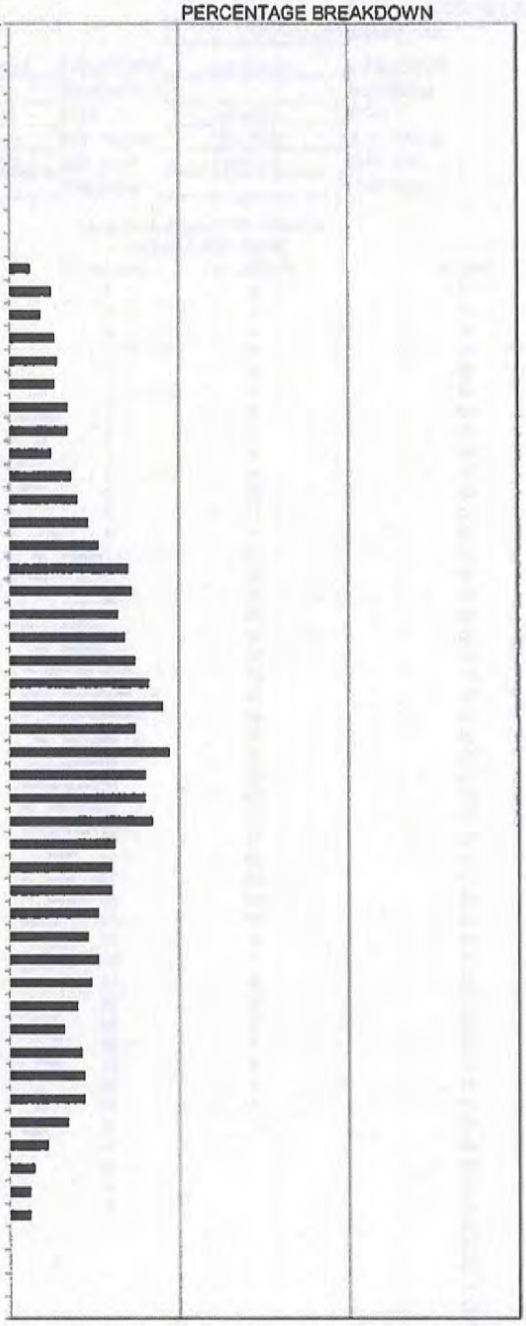
CITY: PINEDALE
SPEED LIMIT: 70 MPH
OBSERVER: 0
DATE: 9/29/16 & 9/30/16

COUNTY: SUBLETTE
COMBINED: Northbound/Sou
START TIME: 11:20 AM
END TIME: 9:45 AM

ROUTE: US 191
LOCATION: RM 101.85
WEATHER: Varying conditions
COMMENTS: Jamar Radar

SPEED	FREQUENCY	ACUM OF TOTAL	ACUM %
35	0	0	0.0
36	0	0	0.0
37	0	0	0.0
38	0	0	0.0
39	0	0	0.0
40	0	0	0.0
41	0	0	0.0
42	0	0	0.0
43	0	0	0.0
44	0	0	0.0
45	15	15	0.6
46	31	46	1.8
47	22	68	2.7
48	32	100	3.9
49	36	136	5.4
50	32	168	6.6
51	42	210	8.3
52	44	254	10.0
53	31	285	11.2
54	45	330	13.0
55	50	380	15.0
56	58	438	17.3
57	65	503	19.8
58	88	591	23.3
59	91	682	26.9
60	82	764	30.1
61	87	851	33.5
62	95	946	37.3
63	103	1049	41.3
64	114	1163	45.8
65	94	1257	49.5
66	118	1375	54.2
67	101	1476	58.2
68	102	1578	62.2
69	106	1684	66.4
70	78	1762	69.5
71	75	1837	72.4
72	76	1913	75.4
73	66	1979	78.0
74	59	2038	80.3
75	65	2103	82.9
76	61	2164	85.3
77	50	2214	87.3
78	40	2254	88.8
79	53	2307	90.9
80	56	2363	93.1
81	56	2419	95.3
82	43	2462	97.0
83	27	2489	98.1
84	19	2508	98.9
85	15	2523	99.4
86	14	2537	100.0
87	0	2537	100.0
88	0	2537	100.0
89	0	2537	100.0
90	0	2537	100.0

PERCENTAGE BREAKDOWN



AVERAGE SPEED = 65.6
50th PERCENTILE = 66
67th PERCENTILE = 70
85th PERCENTILE = 76
95th PERCENTILE = 81

PACE SPEED = 66 to 75
VEHICLES IN PACE = 1260
% IN PACE = 50
% BELOW PACE = 50
% ABOVE PACE = 17

STANDARD DEVIATION = 9.46
% EXCEEDING POSTED LIMIT = 31

RECOMMENDED SPEED LIMIT = 75

#17

CITY	PINEDALE
COUNTY	SUBLETTE
ROUTE	US 191
LOCATION	RM 102.64
POSTED SPEED LIMIT	70
LOWEST SPEED RECORDED	42
HIGHEST SPEED RECORDED	87
COMMENTS	Jamar Radar

DIRECTION 1	Northbound	DIRECTION 2	Southbound			
OBSERVER		OBSERVER		0		
DATE	9/29/16	DATE	9/30/16	9/29/16 & 9/30/16		
START TIME	11:15 AM	START TIME	11:15 AM	0.46875	0.46875	11:15 AM
END TIME	9:55 AM	END TIME	9:55 AM	0.413194	0.413194	9:55 AM
WEATHER		WEATHER				

SPEED	NUMBER OF OBSERVATIONS AT SPEED PER DIRECTION Northbound	Southbound	Combined
42	1	1	
43	1	4	
44	2	0	
45	2	3	
46	6	2	
47	4	2	
48	5	0	
49	6	5	
50	9	2	
51	10	2	
52	22	2	
53	17	3	
54	17	5	
55	20	3	
56	24	8	
57	30	5	
58	39	3	
59	50	14	
60	60	13	
61	58	28	
62	94	19	
63	89	22	
64	96	19	
65	97	26	
66	110	29	
67	162	33	
68	97	54	
69	77	56	
70	60	65	
71	29	65	
72	19	66	
73	15	79	
74	8	74	
75	7	104	
76	6	71	
77	5	79	
78	3	83	
79	1	82	
80	0	62	
81	0	40	
82	1	53	
83		38	
84		24	
85		16	
86		5	
87		7	
88			
89			
90			
91			
92			
93			
94			
95			
96			
97			

Form TR-11 Revised 8/12/14

SPEED STUDY

Wyoming Department of Transportation

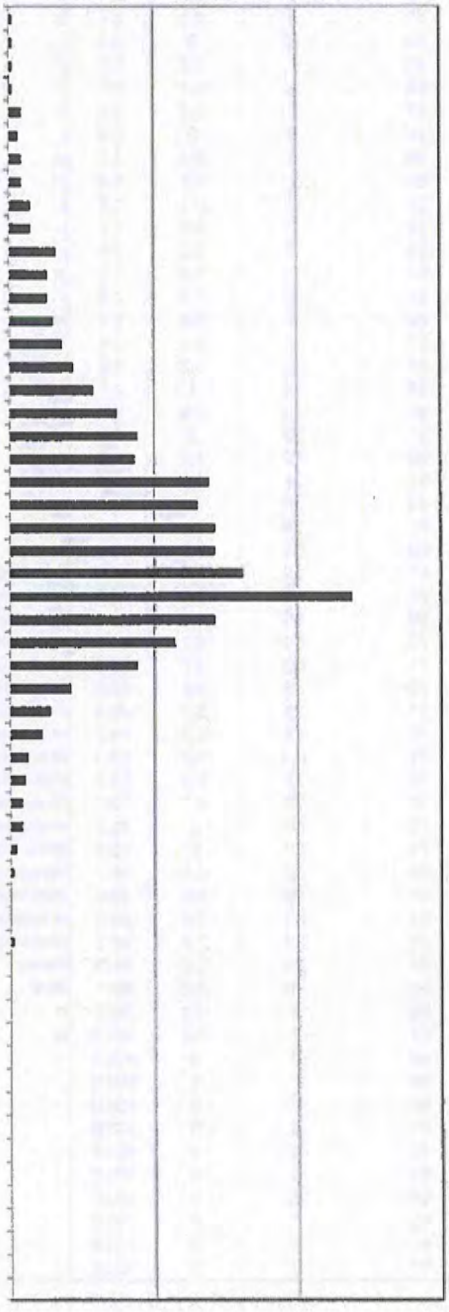
CITY: PINEDALE
SPEED LIMIT: 70 MPH
OBSERVER:
DATE: 9/29/16

COUNTY: SUBLETTE
DIRECTION: Northbound WB
START TIME: 11:15 AM
END TIME: 9:55 AM

ROUTE: US 191
LOCATION: RM 102.64
WEATHER:
COMMENTS: Jamar Radar

SPEED	FREQUENCY	ACU % OF TOTAL	ACUM %
42	1	0.1	0.1
43	1	0.1	0.1
44	2	0.1	0.3
45	2	0.1	0.4
46	6	0.4	0.9
47	4	0.3	1.2
48	5	0.4	1.5
49	6	0.4	2.0
50	9	0.7	2.6
51	10	0.7	3.4
52	22	1.6	5.0
53	17	1.3	6.3
54	17	1.3	7.5
55	20	1.5	9.0
56	24	1.8	10.7
57	30	2.2	13.0
58	39	2.9	15.8
59	50	3.7	19.5
60	60	4.4	23.9
61	58	4.3	28.2
62	94	6.9	35.1
63	89	6.5	41.6
64	96	7.1	48.7
65	97	7.1	55.8
66	110	8.1	63.9
67	162	11.9	75.9
68	97	7.1	83.0
69	77	5.7	88.7
70	60	4.4	93.1
71	29	2.1	95.2
72	19	1.4	96.6
73	15	1.1	97.7
74	8	0.6	98.3
75	7	0.5	98.8
76	6	0.4	99.3
77	5	0.4	99.6
78	3	0.2	99.9
79	1	0.1	99.9
80	0	0	99.9
81	0	0	99.9
82	1	0.1	100.0
83	0	0	100.0
84	0	0	100.0
85	0	0	100.0
86	0	0	100.0
87	0	0	100.0
88	0	0	100.0
89	0	0	100.0
90	0	0	100.0
91	0	0	100.0
92	0	0	100.0
93	0	0	100.0
94	0	0	100.0
95	0	0	100.0
96	0	0	100.0
97	0	0	100.0

PERCENTAGE BREAKDOWN



AVERAGE SPEED = 63.8
50th PERCENTILE = 65
67th PERCENTILE = 67
85th PERCENTILE = 69
95th PERCENTILE = 71

PACE SPEED = 60 to 69
VEHICLES IN PACE = 940
% IN PACE = 69
% BELOW PACE = 19
% ABOVE PACE = 11

STANDARD DEVIATION = 5.67
% EXCEEDING POSTED LIMIT = 7

RECOMMENDED SPEED LIMIT = 70

Form TR-11 Revised 9/12/14

SPEED STUDY

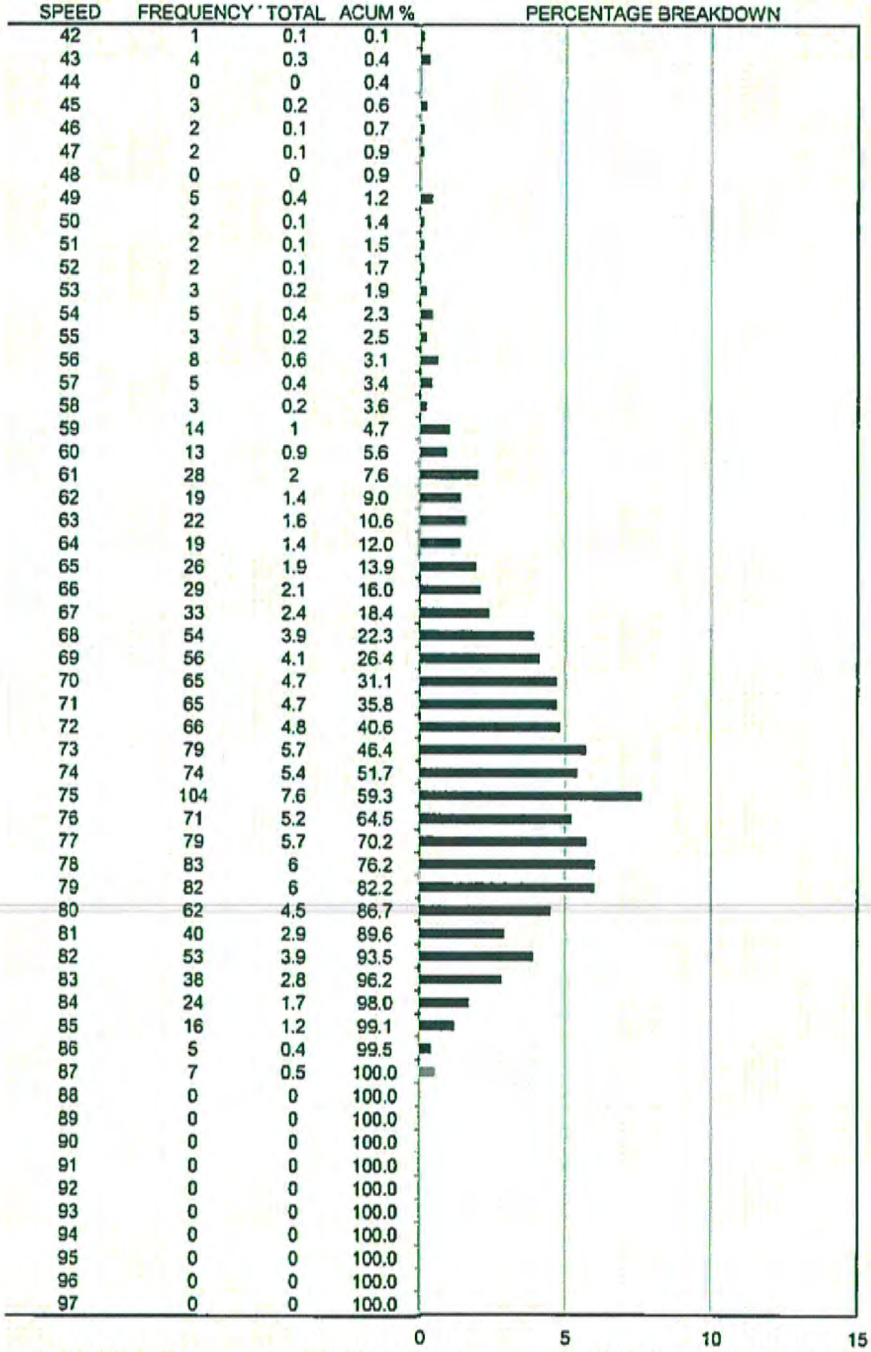
Wyoming Department of Transportation

CITY: PINEDALE
SPEED LIMIT: 70 MPH
OBSERVER:
DATE: 9/30/16

COUNTY: SUBLETTE
DIRECTION: Southbound EB
START TIME: 11:15 AM
END TIME: 9:55 AM

ROUTE: US 191
LOCATION: RM 102.64
WEATHER:
COMMENTS: Jamar Radar

SPEED	FREQUENCY	% OF TOTAL	ACUM %
42	1	0.1	0.1
43	4	0.3	0.4
44	0	0	0.4
45	3	0.2	0.6
46	2	0.1	0.7
47	2	0.1	0.9
48	0	0	0.9
49	5	0.4	1.2
50	2	0.1	1.4
51	2	0.1	1.5
52	2	0.1	1.7
53	3	0.2	1.9
54	5	0.4	2.3
55	3	0.2	2.5
56	8	0.6	3.1
57	5	0.4	3.4
58	3	0.2	3.6
59	14	1	4.7
60	13	0.9	5.6
61	28	2	7.6
62	19	1.4	9.0
63	22	1.6	10.6
64	19	1.4	12.0
65	26	1.9	13.9
66	29	2.1	16.0
67	33	2.4	18.4
68	54	3.9	22.3
69	56	4.1	26.4
70	65	4.7	31.1
71	65	4.7	35.8
72	66	4.8	40.6
73	79	5.7	46.4
74	74	5.4	51.7
75	104	7.6	59.3
76	71	5.2	64.5
77	79	5.7	70.2
78	83	6	76.2
79	82	6	82.2
80	62	4.5	86.7
81	40	2.9	89.6
82	53	3.9	93.5
83	38	2.8	96.2
84	24	1.7	98.0
85	16	1.2	99.1
86	5	0.4	99.5
87	7	0.5	100.0
88	0	0	100.0
89	0	0	100.0
90	0	0	100.0
91	0	0	100.0
92	0	0	100.0
93	0	0	100.0
94	0	0	100.0
95	0	0	100.0
96	0	0	100.0
97	0	0	100.0



AVERAGE SPEED = 73.1
50th PERCENTILE = 74
67th PERCENTILE = 77
85th PERCENTILE = 80
95th PERCENTILE = 83

PACE SPEED = 73 to 82
VEHICLES IN PACE = 817
% IN PACE = 59
% BELOW PACE = 41
% ABOVE PACE = 7

STANDARD DEVIATION = 7.37
% EXCEEDING POSTED LIMIT = 69

RECOMMENDED SPEED LIMIT = 80
POSTED SPEED IS TOO LOW

Form TR-11 Revised 6/12/14

SPEED STUDY

Wyoming Department of Transportation

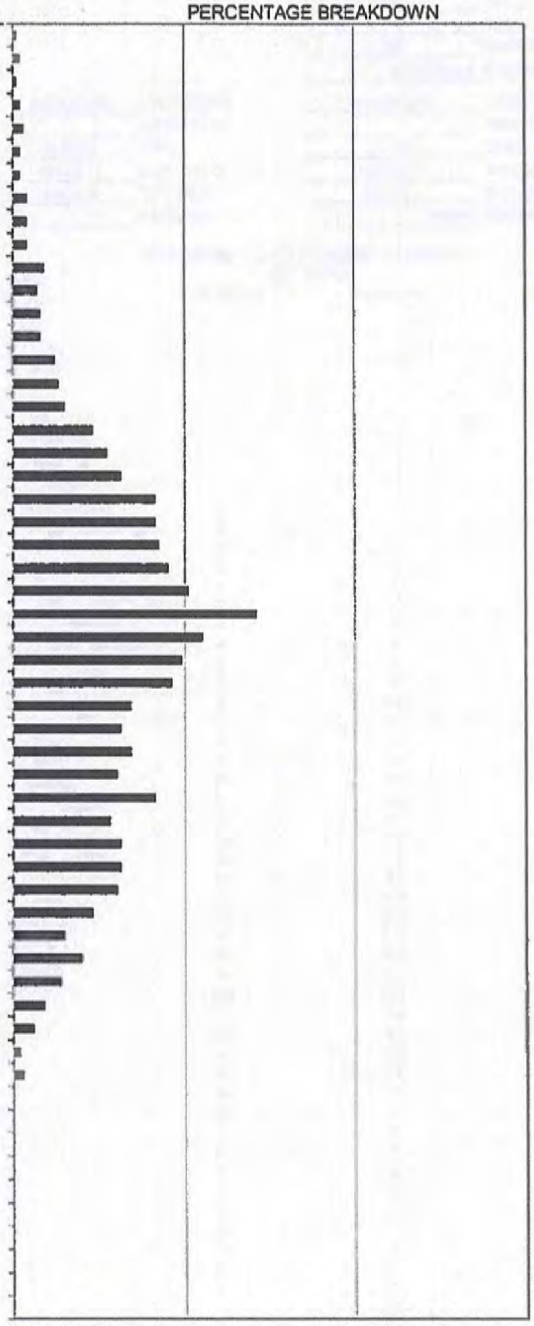
CITY: PINEDALE
SPEED LIMIT: 70 MPH
OBSERVER: 0
DATE: 9/29/16 & 9/30/16

COUNTY: SUBLETTE
COMBINED: Northbound/Sou
START TIME: 11:15 AM
END TIME: 9:55 AM

ROUTE: US 191
LOCATION: RM 102.64
WEATHER:
COMMENTS: Jamar Radar

SPEED	FREQUENCY	ACUM OF TOTAL	ACUM %
42	2	2	0.1
43	5	7	0.3
44	2	9	0.3
45	5	14	0.5
46	8	22	0.8
47	6	28	1.0
48	5	33	1.2
49	11	44	1.6
50	11	55	2.0
51	12	67	2.4
52	24	91	3.3
53	20	111	4.1
54	22	133	4.9
55	23	156	5.7
56	32	188	6.9
57	35	223	8.2
58	42	265	9.7
59	64	329	12.0
60	73	402	14.7
61	86	488	17.8
62	113	601	22.0
63	111	712	26.0
64	115	827	30.2
65	123	950	34.7
66	139	1089	39.8
67	195	1284	46.9
68	151	1435	52.5
69	133	1568	57.3
70	125	1693	61.9
71	94	1787	65.3
72	85	1872	68.4
73	94	1966	71.9
74	82	2048	74.9
75	111	2159	78.9
76	77	2236	81.8
77	84	2320	84.8
78	86	2406	88.0
79	83	2489	91.0
80	62	2551	93.3
81	40	2591	94.7
82	54	2645	96.7
83	38	2683	98.1
84	24	2707	99.0
85	16	2723	99.6
86	5	2728	99.7
87	7	2735	100.0
88	0	2735	100.0
89	0	2735	100.0
90	0	2735	100.0
91	0	2735	100.0
92	0	2735	100.0
93	0	2735	100.0
94	0	2735	100.0
95	0	2735	100.0
96	0	2735	100.0
97	0	2735	100.0

PERCENTAGE BREAKDOWN



AVERAGE SPEED = 68.4
50th PERCENTILE = 68
67th PERCENTILE = 72
85th PERCENTILE = 78
95th PERCENTILE = 82

PACE SPEED = 62 to 71
VEHICLES IN PACE = 1299
% IN PACE = 47
% BELOW PACE = 18
% ABOVE PACE = 35

STANDARD DEVIATION = 8.06
% EXCEEDING POSTED LIMIT = 38

RECOMMENDED SPEED LIMIT = 80

#18

CITY	PINEDALE
COUNTY	SUBLETTE
ROUTE	US 191
LOCATION	RM 103.03
POSTED SPEED LIMIT	70
LOWEST SPEED RECORDED	45
HIGHEST SPEED RECORDED	88
COMMENTS	Jamar Radar

DIRECTION 1	Northbound	DIRECTION 2	Southbound
OBSERVER		OBSERVER	
DATE	9/29/16	DATE	9/30/16
START TIME	11:20 AM	START TIME	11:20 AM
END TIME	9:45 AM	END TIME	9 45 AM
WEATHER	SUNNY	WEATHER	

35
90

0
9/29/16 & 9/30/16
0.472222 0.472222 11:20 AM
0.40625 0.40625 9:45 AM

NUMBER OF OBSERVATIONS AT SPEED PER DIRECTION

SPEED	Northbound	Southbound	Combined
35			0
36			0
37			0
38			0
39			0
40			0
41			0
42			0
43			0
44			0
45	1	1	2
46	1	4	5
47	0	0	0
48	1	0	1
49	1	1	2
50	1	2	3
51	1	1	2
52	4	4	8
53	2	2	4
54	7	3	10
55	10	8	18
56	10	12	22
57	12	14	26
58	16	22	38
59	25	15	40
60	39	21	60
61	33	27	60
62	51	37	88
63	71	57	128
64	74	48	122
65	105	75	180
66	106	67	173
67	139	78	217
68	156	80	236
69	151	97	248
70	127	137	264
71	98	151	249
72	55	127	182
73	32	102	134
74	19	68	87
75	7	49	56
76	8	23	31
77	7	24	31
78	7	14	21
79	3	3	6
80	3	3	6
81	1	0	1
82	1	4	5
83	1	0	1
84	1	2	3
85	0	1	1
86	0		0
87	0		0
88	1		1
89			0
90			0

Form TR-11 Revised 8/12/14

SPEED STUDY

Wyoming Department of Transportation

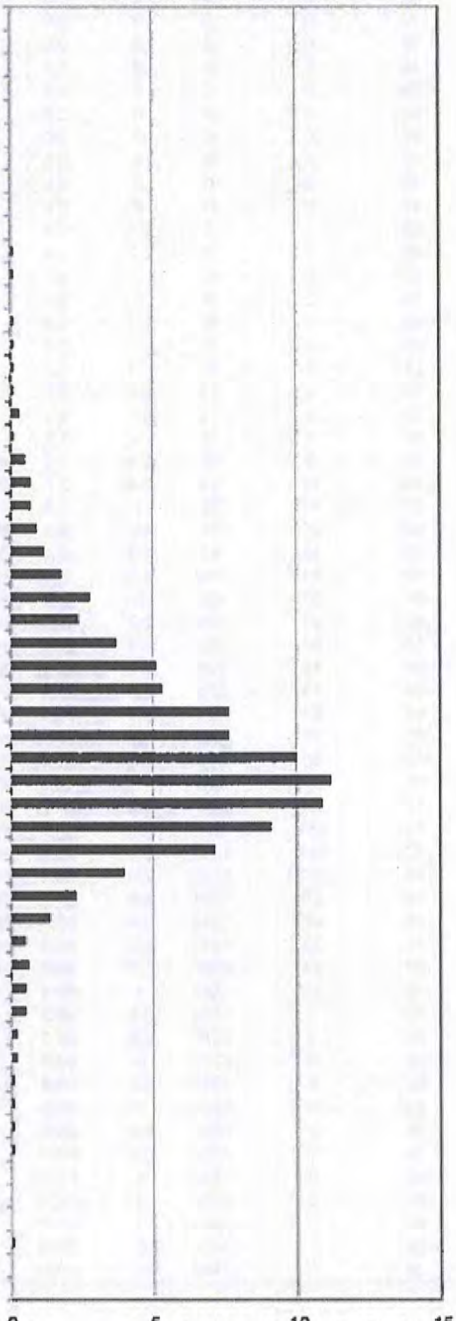
CITY: PINEDALE
SPEED LIMIT: 70 MPH
OBSERVER:
DATE: 9/29/16

COUNTY: SUBLETTE
DIRECTION: Northbound NB
START TIME: 11:20 AM
END TIME: 9:45 AM

ROUTE: US 191
LOCATION: RM 103.03
WEATHER: SUNNY
COMMENTS: Jamar Radar

SPEED	FREQUENCY	ACUM TOTAL	% OF TOTAL	ACUM %
35	0	0	0	0.0
36	0	0	0	0.0
37	0	0	0	0.0
38	0	0	0	0.0
39	0	0	0	0.0
40	0	0	0	0.0
41	0	0	0	0.0
42	0	0	0	0.0
43	0	0	0	0.0
44	0	0	0	0.0
45	1	1	0.1	0.1
46	1	2	0.1	0.1
47	0	2	0	0.1
48	1	3	0.1	0.2
49	1	4	0.1	0.3
50	1	5	0.1	0.4
51	1	6	0.1	0.4
52	4	10	0.3	0.7
53	2	12	0.1	0.9
54	7	19	0.5	1.4
55	10	29	0.7	2.1
56	10	39	0.7	2.8
57	12	51	0.9	3.7
58	16	67	1.2	4.8
59	25	92	1.8	6.6
60	39	131	2.8	9.4
61	33	164	2.4	11.8
62	51	215	3.7	15.5
63	71	286	5.1	20.6
64	74	360	5.3	25.9
65	105	465	7.6	33.5
66	106	571	7.6	41.1
67	139	710	10	51.2
68	156	866	11.2	62.4
69	151	1017	10.9	73.3
70	127	1144	9.1	82.4
71	98	1242	7.1	89.5
72	55	1297	4	93.4
73	32	1329	2.3	95.7
74	19	1348	1.4	97.1
75	7	1355	0.5	97.6
76	8	1363	0.6	98.2
77	7	1370	0.5	98.7
78	7	1377	0.5	99.2
79	3	1380	0.2	99.4
80	3	1383	0.2	99.6
81	1	1384	0.1	99.7
82	1	1385	0.1	99.8
83	1	1386	0.1	99.9
84	1	1387	0.1	99.9
85	0	1387	0	99.9
86	0	1387	0	99.9
87	0	1387	0	99.9
88	1	1388	0.1	100.0
89	0	1388	0	100.0
90	0	1388	0	100.0

PERCENTAGE BREAKDOWN



AVERAGE SPEED = 66.8
50th PERCENTILE = 67
67th PERCENTILE = 69
85th PERCENTILE = 71
95th PERCENTILE = 73

PACE SPEED = 63 to 72
VEHICLES IN PACE = 1082
% IN PACE = 78
% BELOW PACE = 15
% ABOVE PACE = 7

STANDARD DEVIATION = 4.65
% EXCEEDING POSTED LIMIT = 18

RECOMMENDED SPEED LIMIT = 70

Form TR-11 Revised 6/12/14

SPEED STUDY

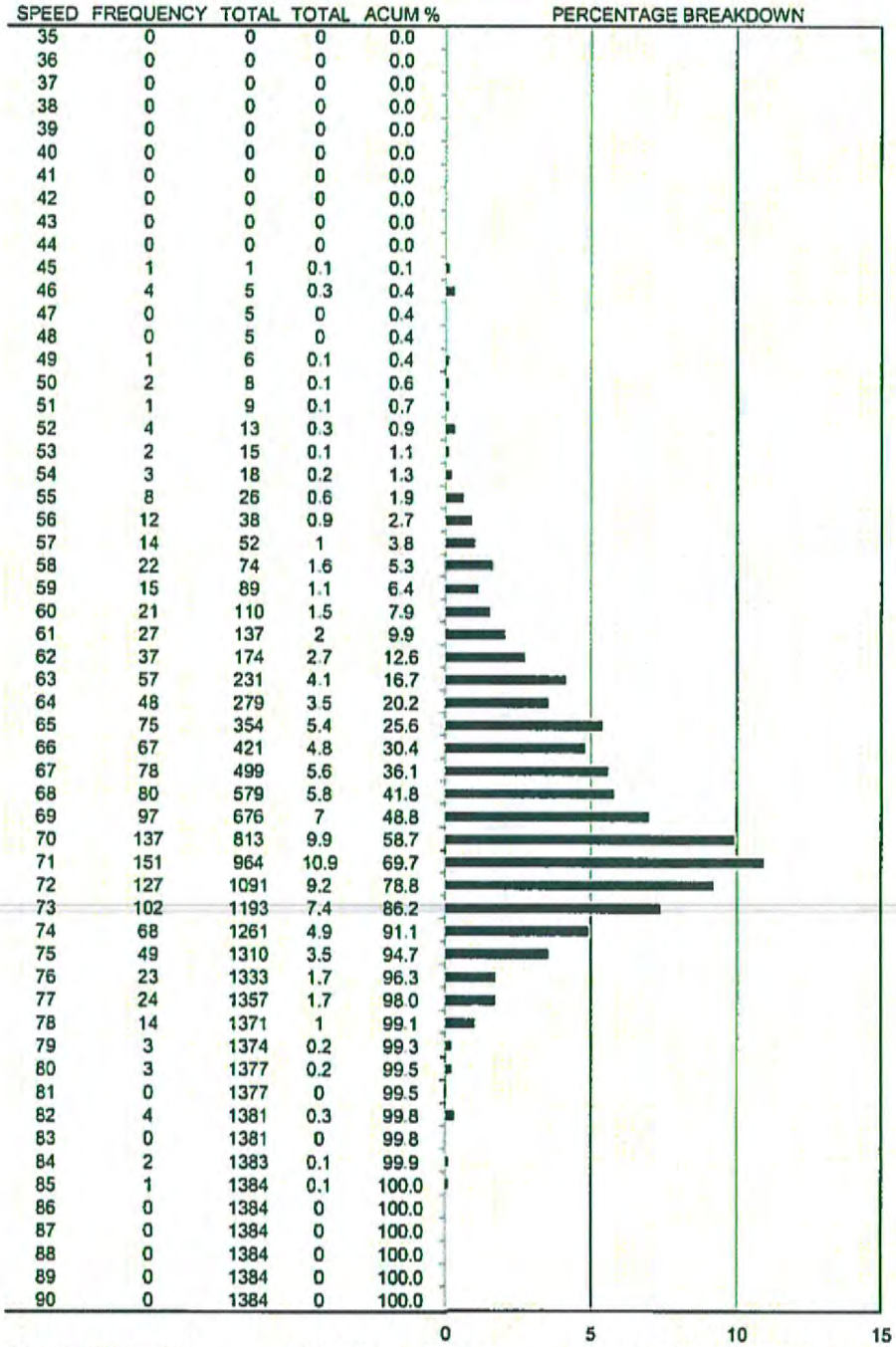
Wyoming Department of Transportation

CITY: PINEDALE
SPEED LIMIT: 70 MPH
OBSERVER:
DATE: 9/30/16

COUNTY: SUBLETTE
DIRECTION: Southbound EB
START TIME: 11:20 AM
END TIME: 9:45 AM

ROUTE: US 191
LOCATION: RM 103.03
WEATHER:
COMMENTS: Jamar Radar

SPEED	FREQUENCY	ACUM TOTAL	% OF TOTAL	ACUM %
35	0	0	0	0.0
36	0	0	0	0.0
37	0	0	0	0.0
38	0	0	0	0.0
39	0	0	0	0.0
40	0	0	0	0.0
41	0	0	0	0.0
42	0	0	0	0.0
43	0	0	0	0.0
44	0	0	0	0.0
45	1	1	0.1	0.1
46	4	5	0.3	0.4
47	0	5	0	0.4
48	0	5	0	0.4
49	1	6	0.1	0.4
50	2	8	0.1	0.6
51	1	9	0.1	0.7
52	4	13	0.3	0.9
53	2	15	0.1	1.1
54	3	18	0.2	1.3
55	8	26	0.6	1.9
56	12	38	0.9	2.7
57	14	52	1	3.8
58	22	74	1.6	5.3
59	15	89	1.1	6.4
60	21	110	1.5	7.9
61	27	137	2	9.9
62	37	174	2.7	12.6
63	57	231	4.1	16.7
64	48	279	3.5	20.2
65	75	354	5.4	25.6
66	67	421	4.8	30.4
67	78	499	5.6	36.1
68	80	579	5.8	41.8
69	97	676	7	48.8
70	137	813	9.9	58.7
71	151	964	10.9	69.7
72	127	1091	9.2	78.8
73	102	1193	7.4	86.2
74	68	1261	4.9	91.1
75	49	1310	3.5	94.7
76	23	1333	1.7	96.3
77	24	1357	1.7	98.0
78	14	1371	1	99.1
79	3	1374	0.2	99.3
80	3	1377	0.2	99.5
81	0	1377	0	99.5
82	4	1381	0.3	99.8
83	0	1381	0	99.8
84	2	1383	0.1	99.9
85	1	1384	0.1	100.0
86	0	1384	0	100.0
87	0	1384	0	100.0
88	0	1384	0	100.0
89	0	1384	0	100.0
90	0	1384	0	100.0



AVERAGE SPEED = 68.5
50th PERCENTILE = 70
67th PERCENTILE = 71
85th PERCENTILE = 73
95th PERCENTILE = 76

PACE SPEED = 66 to 75
VEHICLES IN PACE = 1030
% IN PACE = 74
% BELOW PACE = 26
% ABOVE PACE = 5

STANDARD DEVIATION = 5.34
% EXCEEDING POSTED LIMIT = 41

RECOMMENDED SPEED LIMIT = 75

Form TR-11 Revised 6/12/14

SPEED STUDY

Wyoming Department of Transportation

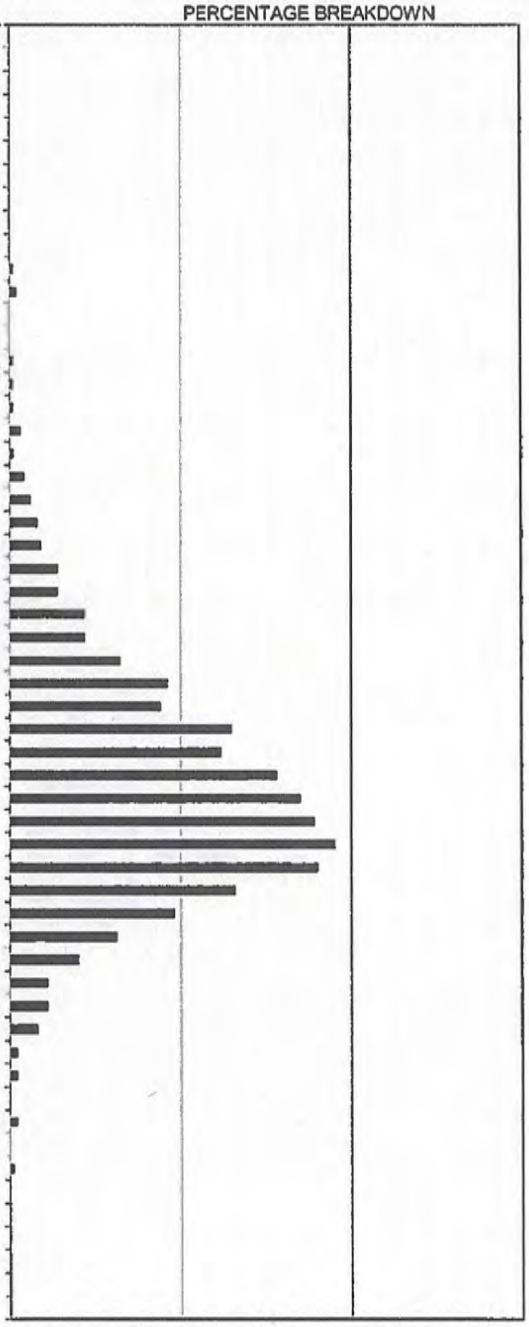
CITY: PINEDALE
SPEED LIMIT: 70 MPH
OBSERVER: 0
DATE: 9/29/16 & 9/30/16

COUNTY: SUBLETTE
COMBINED: Northbound/Sou
START TIME: 11:20 AM
END TIME: 9:45 AM

ROUTE: US 191
LOCATION: RM 103.03
WEATHER: Varying conditions
COMMENTS: Jamar Radar

SPEED	FREQUENCY	ACUM OF TOTAL	ACUM %
35	0	0	0.0
36	0	0	0.0
37	0	0	0.0
38	0	0	0.0
39	0	0	0.0
40	0	0	0.0
41	0	0	0.0
42	0	0	0.0
43	0	0	0.0
44	0	0	0.0
45	2	2	0.1
46	5	7	0.3
47	0	7	0.3
48	1	8	0.3
49	2	10	0.4
50	3	13	0.5
51	2	15	0.5
52	8	23	0.8
53	4	27	1.0
54	10	37	1.3
55	18	55	2.0
56	22	77	2.8
57	26	103	3.7
58	38	141	5.1
59	40	181	6.5
60	60	241	8.7
61	60	301	10.9
62	88	389	14.0
63	128	517	18.7
64	122	639	23.1
65	180	819	29.5
66	173	992	35.8
67	217	1209	43.6
68	236	1445	52.1
69	248	1693	61.1
70	264	1957	70.6
71	249	2206	79.6
72	182	2388	86.1
73	134	2522	91.0
74	87	2609	94.1
75	56	2665	96.1
76	31	2696	97.3
77	31	2727	98.4
78	21	2748	99.1
79	6	2754	99.4
80	6	2760	99.6
81	1	2761	99.6
82	5	2766	99.8
83	1	2767	99.8
84	3	2770	99.9
85	1	2771	100.0
86	0	2771	100.0
87	0	2771	100.0
88	1	2772	100.0
89	0	2772	100.0
90	0	2772	100.0

PERCENTAGE BREAKDOWN

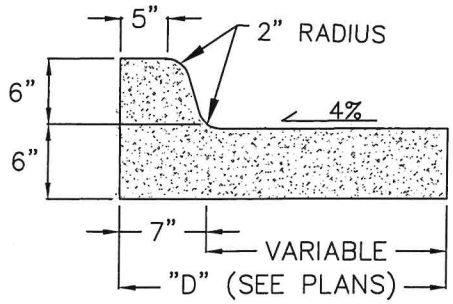


AVERAGE SPEED = 67.7
50th PERCENTILE = 68
67th PERCENTILE = 70
85th PERCENTILE = 72
95th PERCENTILE = 75

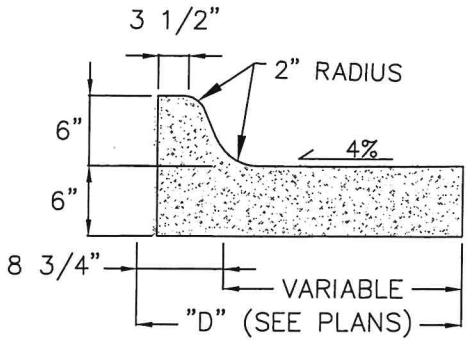
PACE SPEED = 64 to 73
VEHICLES IN PACE = 2005
% IN PACE = 72
% BELOW PACE = 19
% ABOVE PACE = 9

STANDARD DEVIATION = 5.08
% EXCEEDING POSTED LIMIT = 29

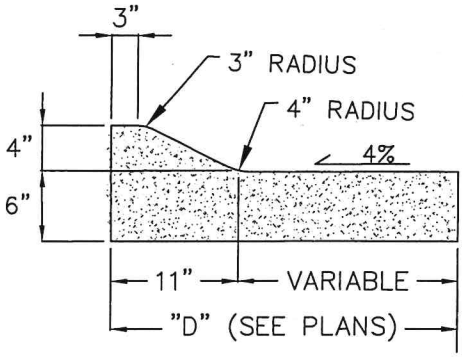
RECOMMENDED SPEED LIMIT = 70



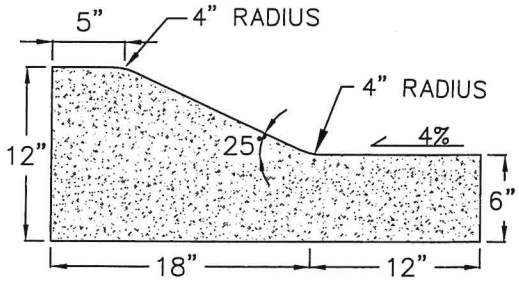
TYPE A



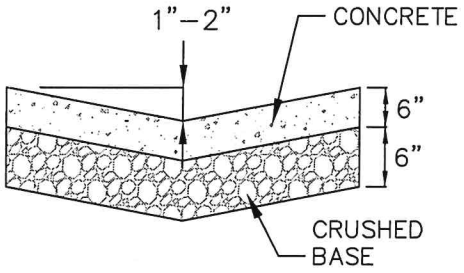
TYPE B



TYPE C



TYPE D



TYPICAL DOUBLE GUTTER (3' WIDE)

"D"= 2'–6" UNLESS OTHERWISE SPECIFIED IN THE PLANS

ALL CONCRETE CONTROL JOINTS SHALL BE TOOLED UNLESS OTHERWISE APPROVED BY ENGINEER.

CURB, GUTTER, AND SIDEWALK NOTES:

1. PROVIDE CLASS 4000 CONCRETE FOR ALL CURB, GUTTER AND SIDEWALK. PLACE AND CURE CONCRETE IN ACCORDANCE WITH SECTION 3310.
2. INSTALL ½" PREFORMED EXPANSION JOINT FILLER AGAINST ALL EXISTING CONCRETE EDGES AND IN CURB, GUTTER AND SIDEWALK AT A MAXIMUM OF 150' SPACING.
3. PROVIDE SIDEWALKS AND ADA ACCESSIBILITY AS SPECIFIED. IF LOCATIONS DO NOT FACILITATE THE PLANS PROVIDED, ALTERNATE SIDEWALK/RAMP LAYOUTS MAYBE UTILIZED PER WYOMING DEPARTMENT OF TRANSPORTATION (STANDARD PLANS 608), AS APPROVED BY THE ENGINEER.

TYPICAL CURB AND GUTTER TYPE

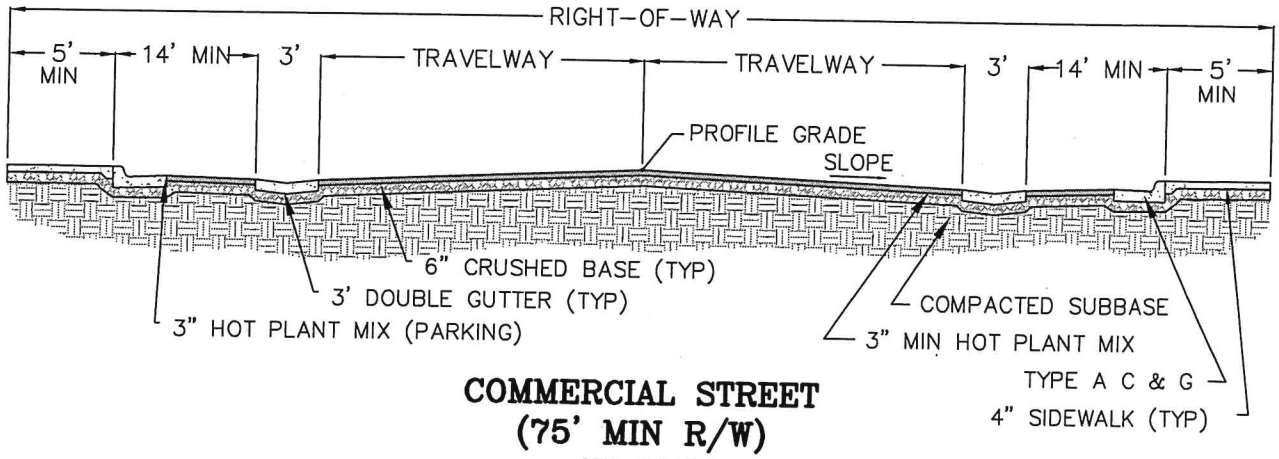
NO SCALE

TRAVEL WAY WIDTHS (MINIMUM)			
DESIGN SPEED	CROSS SLOPE	ROAD WIDTH	1/2 WIDTH
20 mph	3%	28'	15'
30 mph	3%	36'	18'
40 mph	2%	40'	20'

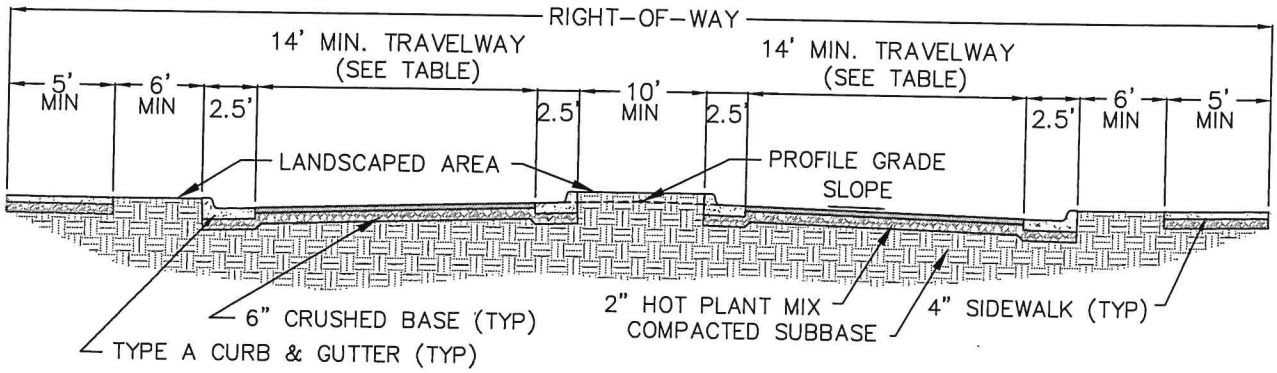
NOTES:

ALL STREET CONSTRUCTION SHALL PROVIDE FOR THE FOLLOWING:

1. ADA PEDESTRIAN ACCESS (AT LEAST ONE SIDE).
2. ADEQUATE STORAGE FOR SNOW REMOVAL.
3. STORMWATER DRAINAGE CONVEYANCE TO A DESIGNATED LOCATION.
4. ROADWAY PROFILE GRADE MINIMUM IS 0.5% UNLESS APPROVED BY TOWN ENGINEER.

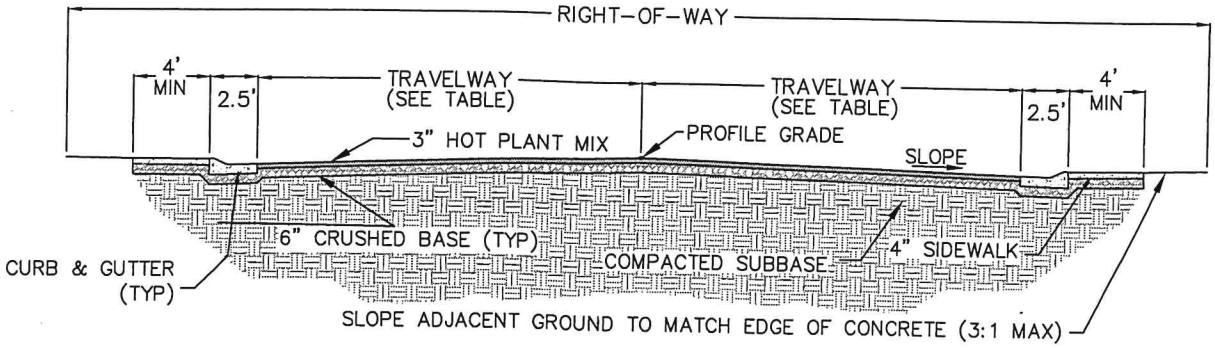


COMMERCIAL STREET
(75' MIN R/W)
NO SCALE



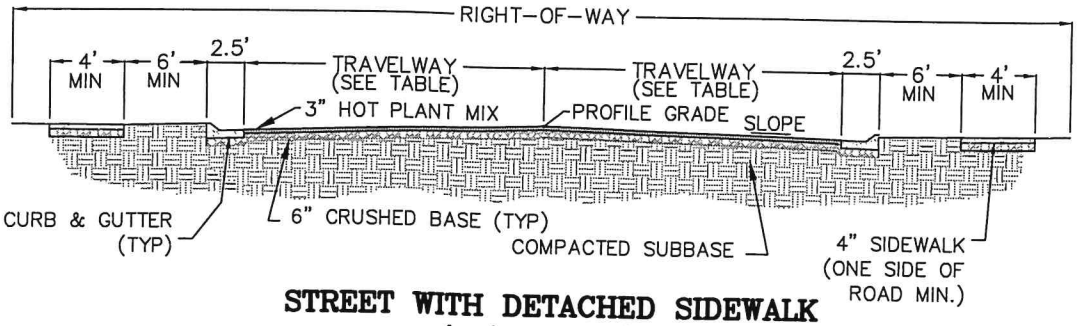
STREET WITH MEDIAN
(70' MIN R/W)
NO SCALE

ROADWAY STANDARDS



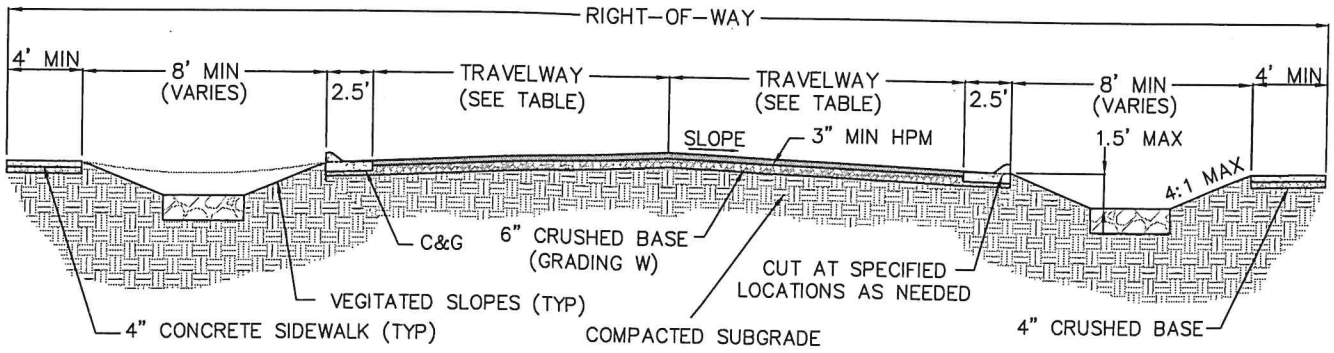
STREET WITH ATTACHED SIDEWALK (40' MIN R/W)

NO SCALE



STREET WITH DETACHED SIDEWALK (55' MIN R/W)

NO SCALE

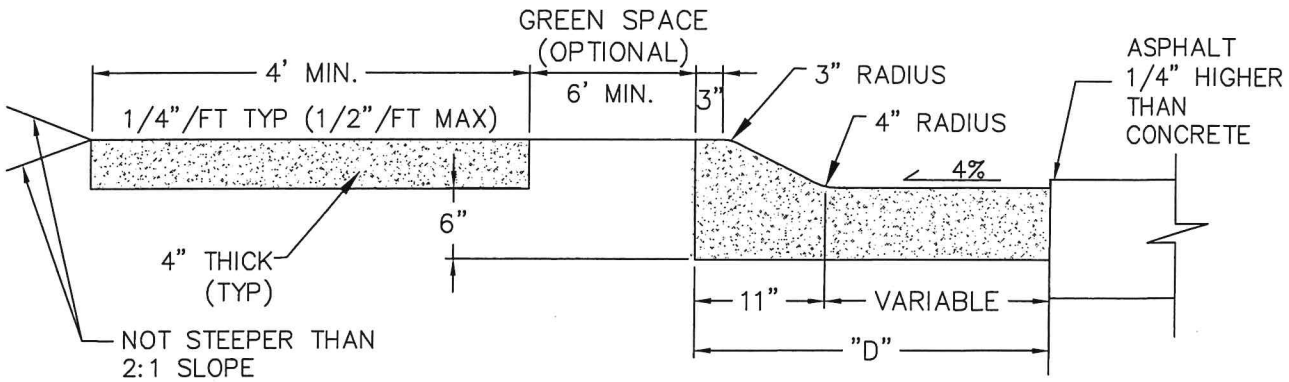


STREET SECTION WITH SWALES (60' MIN R/W)

NO SCALE

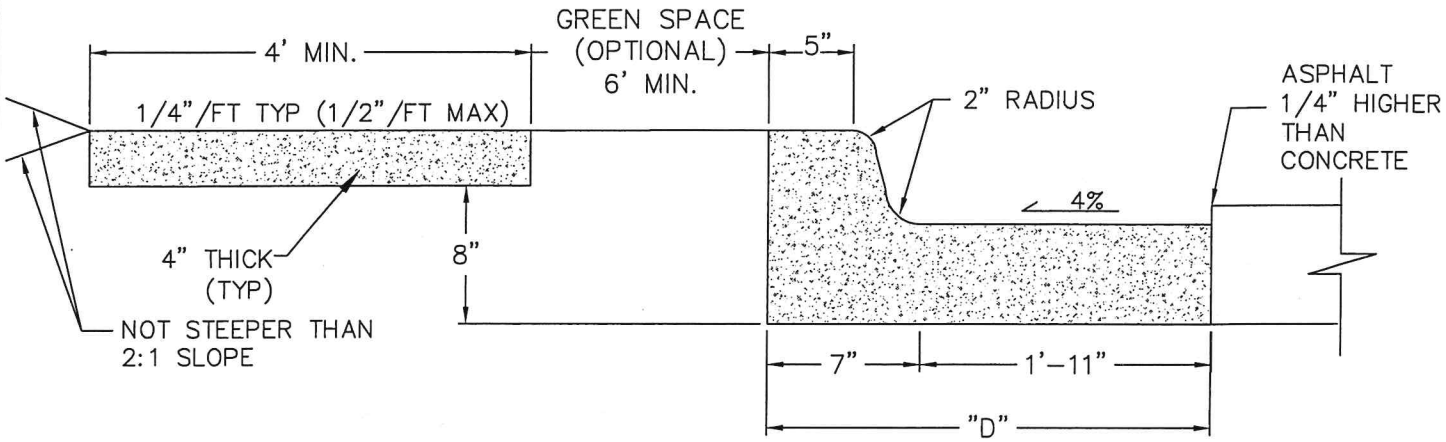
ROADWAY STANDARDS

"D"= 2'–6" UNLESS OTHERWISE SPECIFIED IN THE PLANS



TYPE "C" ROLLOVER CURB & GUTTER WITH SIDEWALK

NO SCALE



TYPE "A" HIGH BACK CURB & GUTTER WITH SIDEWALK

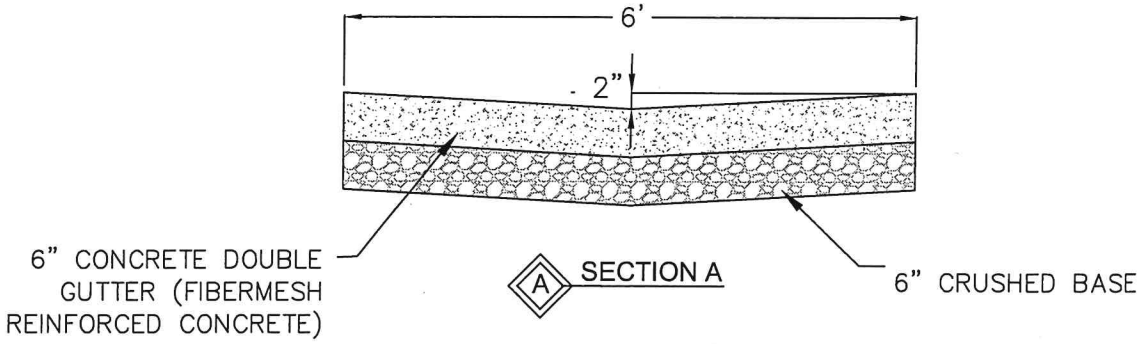
NO SCALE

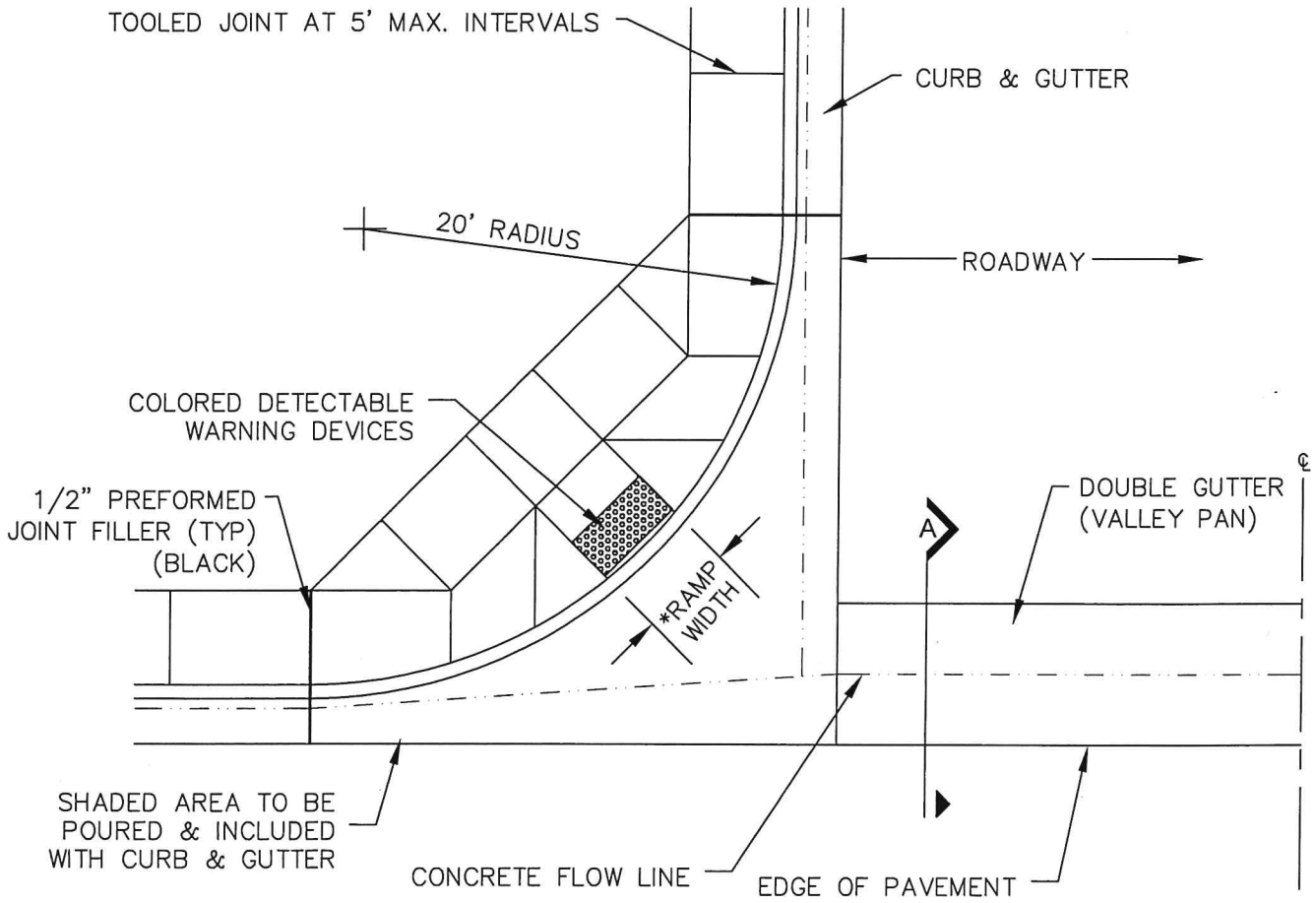
NOTES:

1. SUBGRADE COMPACTION SHALL CONFORM TO SECTION 2210.
2. 3/4" EXPANSION JOINT MATERIAL SHALL BE PLACED AT PC, PT, CURB RETURNS AND STRAIGHT RUNS EVERY 150' MAXIMUM.
3. JOINTING SHALL COMPLY WITH SECTIONS 2528 AND 3251.
4. NO CURB AND GUTTER SHALL BE PLACED WITHOUT A FINAL FORM INSPECTION BY THE ENGINEER.
5. CURB AND GUTTER SHALL BE CLASS 4000 CONCRETE UNLESS OTHERWISE SPECIFIED.
6. CONTRACTION JOINTS SHALL BE CONSTRUCTED BY SCORING. SCORING TOOL SHALL LEAVE ROUNDED CORNERS AND PENETRATE TO A DEPTH 0.12 x DEPTH OF CONCRETE.
7. DETACHED SIDEWALK MUST BE INSTALLED WITHIN 1' OF THE PROPERTY BOUNDARY.

TYPE A & TYPE C CURB AND GUTTER WITH SIDEWALK

NO SCALE



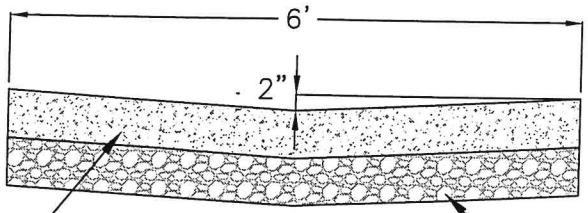


* RAMP WIDTH SHALL BE 5FT EXCEPT WHERE ENGINEER DETERMINES THAT IT IS NOT FEASIBLE, THEN A WIDTH OF 3' MIN. SHALL BE USED.

ALL SIDEWALKS SHALL BE ADA ACCESSIBLE

TYPICAL STREET INTERSECTION DETAIL ATTACHED SIDEWALK

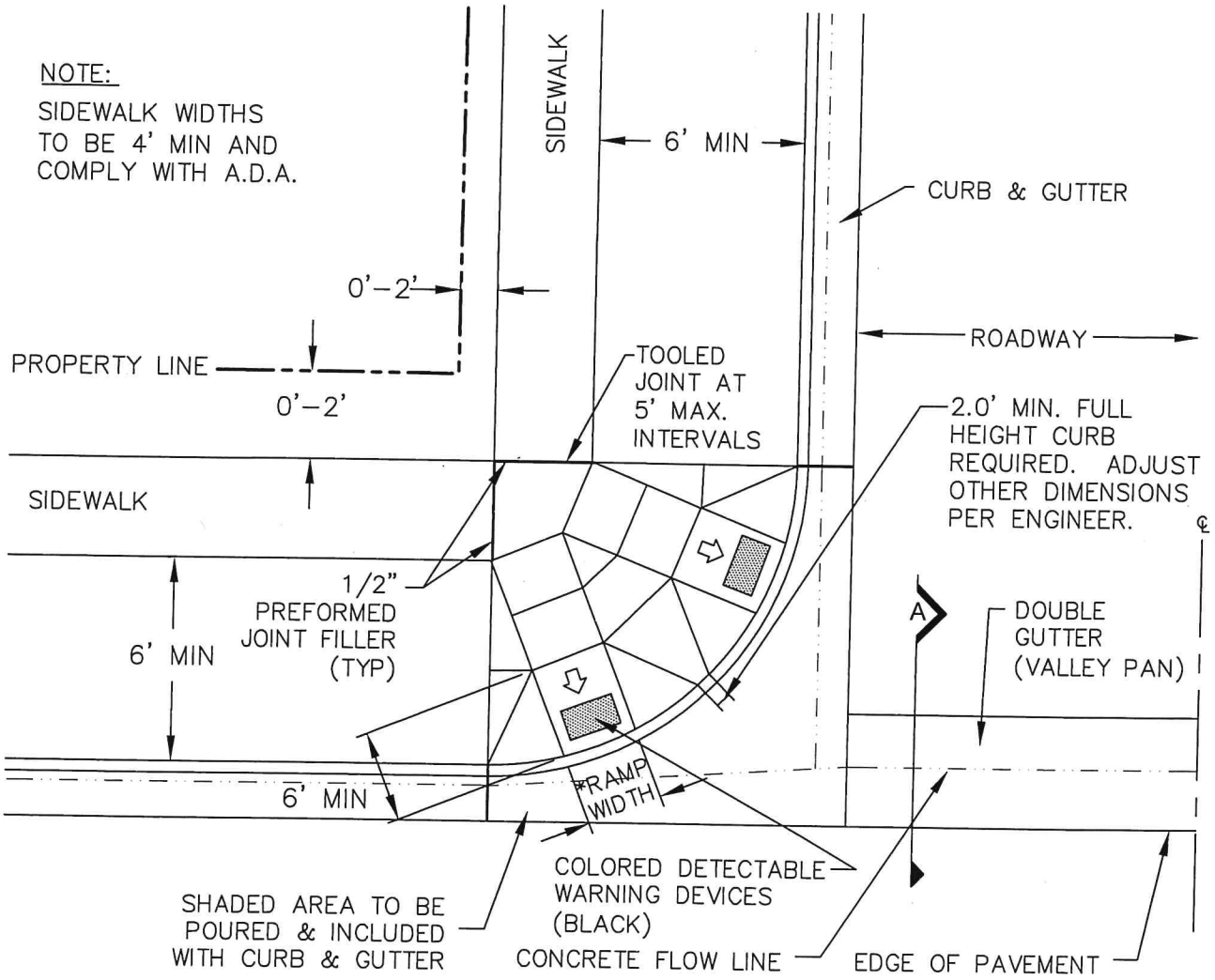
NO SCALE



6" CONCRETE DOUBLE GUTTER (FIBERMESH REINFORCED CONCRETE)

A SECTION A

6" CRUSHED BASE

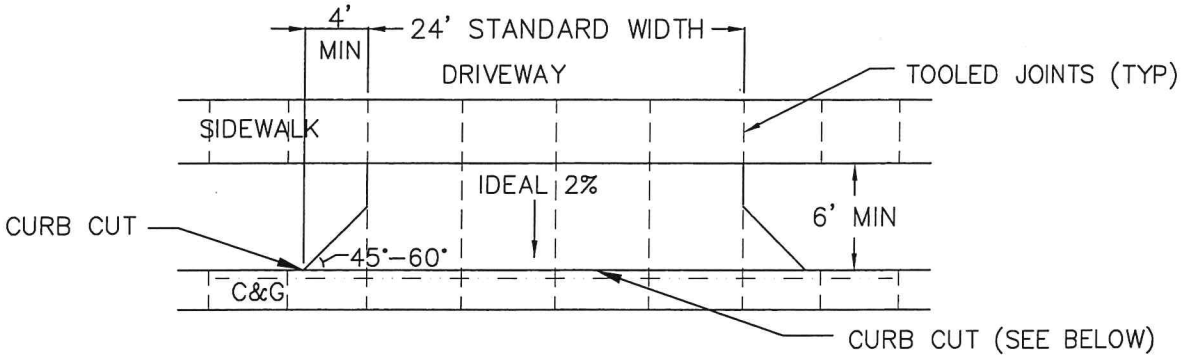


* RAMP WIDTH SHALL BE 5FT EXCEPT WHERE ENGINEER DETERMINES THAT IT IS NOT FEASIBLE, THEN A WIDTH OF 3' MIN. SHALL BE USED.

ALL SIDEWALKS SHALL BE ADA ACCESSIBLE

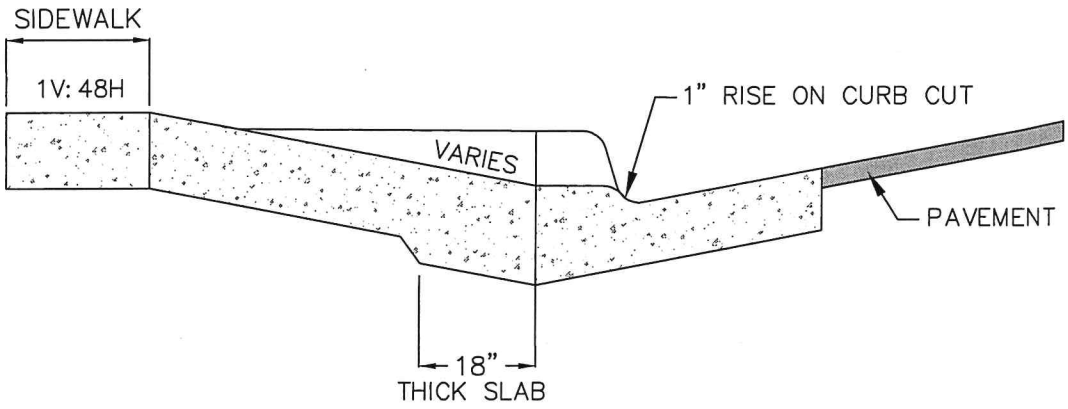
TYPICAL STREET INTERSECTION DETAIL DETACHED SIDEWALK

NO SCALE



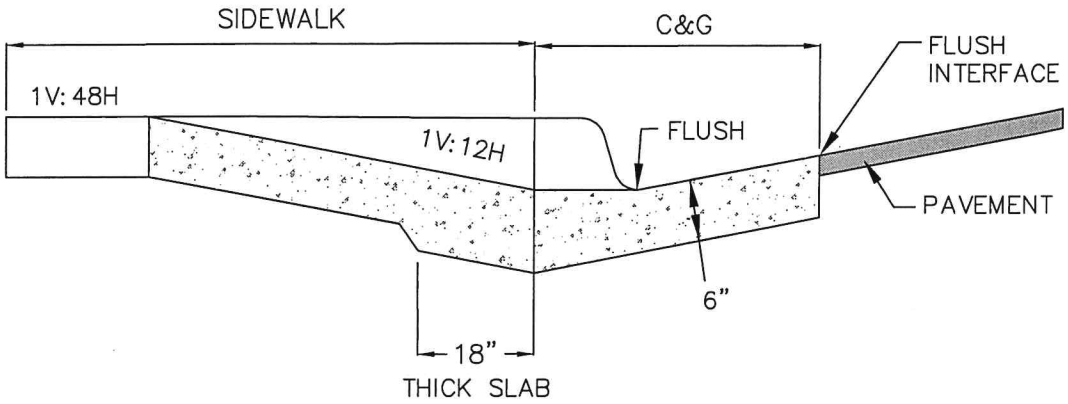
TYPICAL DRIVEWAY PLAN VIEW

NO SCALE



TYPICAL DRIVEWAY CURB-CUT

NO SCALE

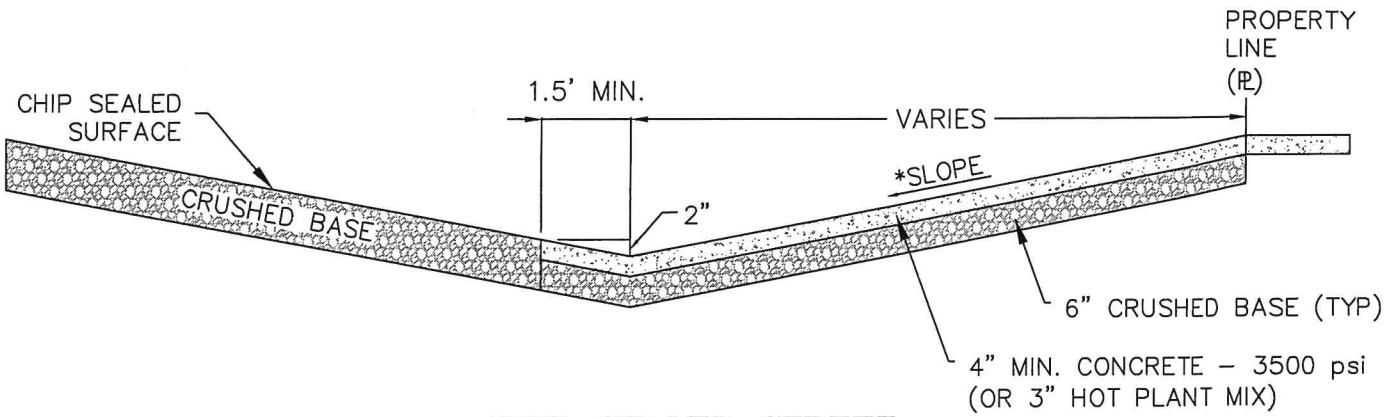


TYPICAL ADA RAMP CURB CUT

NO SCALE

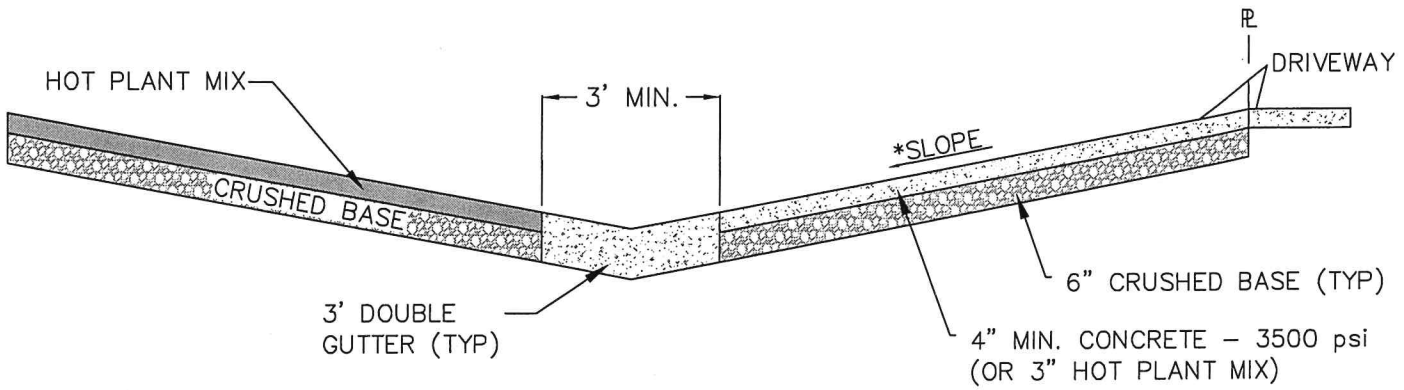
DRIVEWAY AND CURB CUT DETAILS

NO SCALE



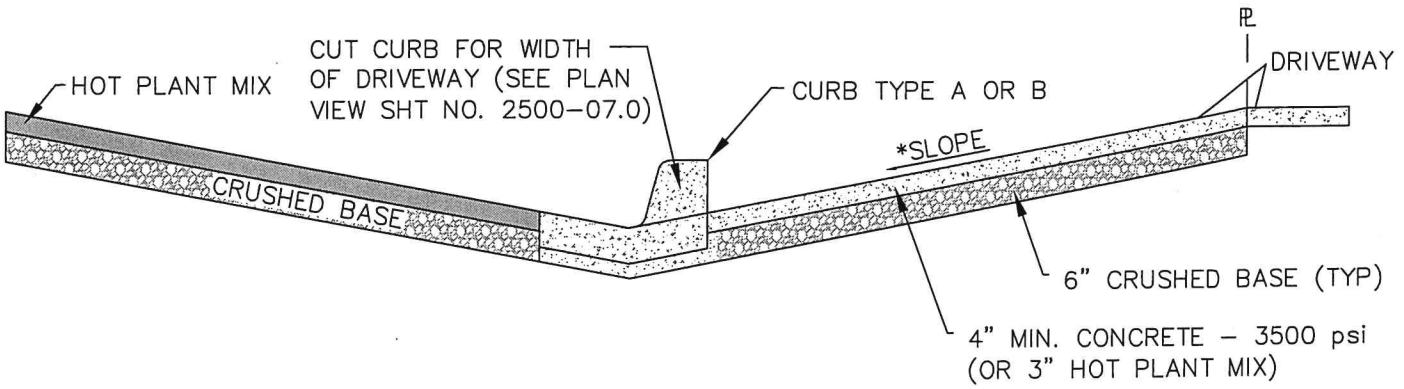
CHIP SEALED STREET

NO SCALE



PAVED STREET WITH DOUBLE GUTTER

NO SCALE



PAVED STREET WITH CURB & GUTTER

NO SCALE

*NOTES: DRIVEWAY SLOPES MUST BE BETWEEN 1%–4% UNLESS APPROVED BY ENGINEER

TYPICAL DRIVEWAY–STREET CONNECTIONS

NO SCALE