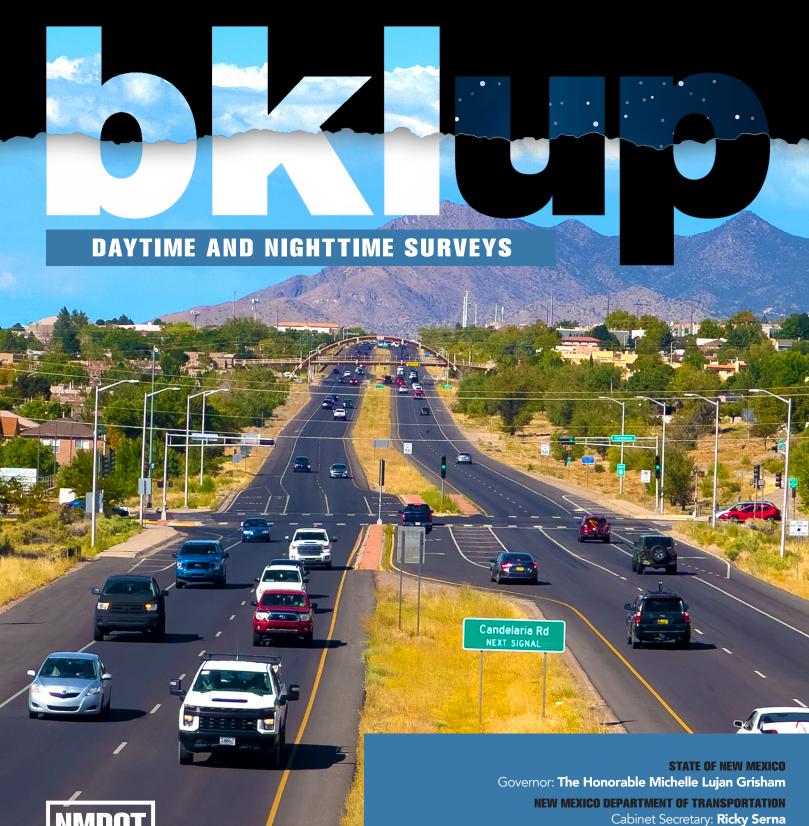


OCCUPANT SEAT BELT OBSERVATION STUDY



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OCCUPANT SEAT BELT

— **bklup** — OBSERVATION STUDY



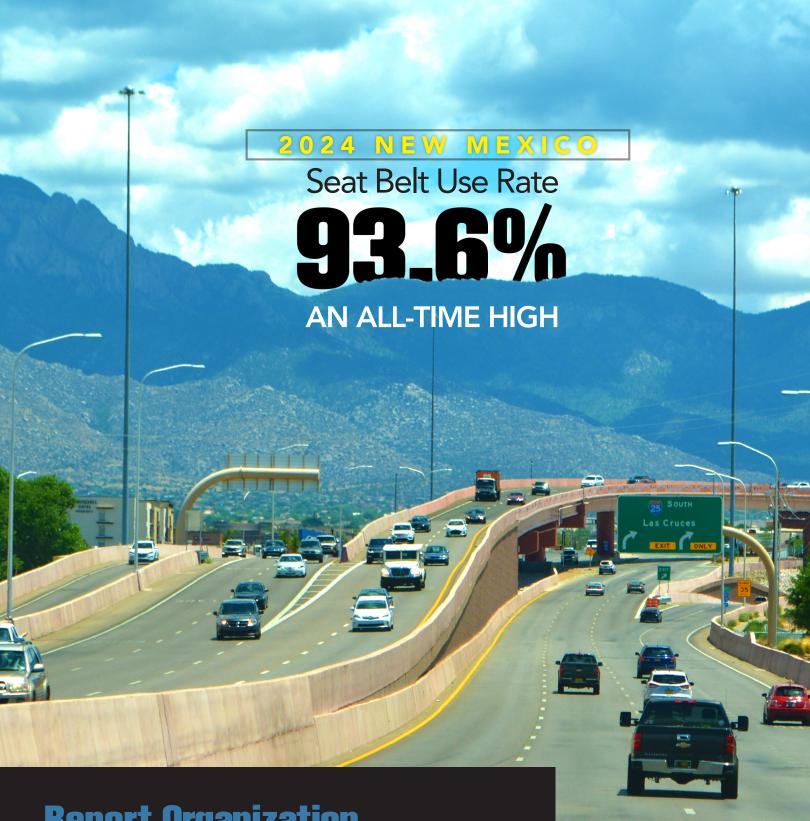


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Report Organization

This report summarizes the results of New Mexico's 2024 Occupant Seat Belt Observation Study providing daytime and nighttime seat belt results. Recommendations based on the findings are presented. Appendices are provided at the end of the report.

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2024 New Mexico Occupant Seat Belt Observation Study (Daytime)

The purpose of the study is to provide a statewide estimate of daytime seat belt use using a National Highway Traffic Safety Administration (NHTSA) approved sampling design. New Mexico's safety belt observation methodology has evolved considerably since the first surveys conducted in 1982. The current report will show seat belt results from 2005 to present.

Prior to the 2023 survey, the road segments used for New Mexico's statewide seat belt survey were resampled to be consistent with federal regulations, which require a resampling of sites every five years. The sites were selected in a manner identical to that described in the approved survey design (created in 2013) but using updated data. Thus, 2023 observations occurred at brand new sites which are different from the sites used for the 2018 through 2022 surveys. The 2023 sites were used again for 2024 observations.

Road segments from 19 of New Mexico's 33 counties (accounting for at least 85% of passenger vehicle crash-related fatalities) were sampled for inclusion in the survey. A total of 94 segments were observed with 28 on Primary highways and 33 each on Secondary and Local roads. All passenger vehicles (Cars, Pickups, Vans, and SUVs) with a gross vehicle weight up to 10,000 pounds were observed in the survey including small commercial vehicles. The target population was all drivers and right front seat passengers (excluding middle passengers and children harnessed in child safety seats) of vehicles traveling on public roads between the hours of 7 a.m. and 6 p.m. The observation period for each selected road segment was 20 minutes.

Quality control measures enacted during the study included: ensuring qualified individuals conducted the observations; assigning sites within relatively close geographic proximity as data collection clusters to increase efficiency and minimize travel costs; and ensuring quality control monitors made random, unannounced visits to at least five percent of the observation sites to evaluate the observer's performance from a distance (if possible), and then work alongside the observer.

Pre and post Click It or Ticket (CIOT) data collection dates and the number of vehicles, total occupants, drivers, and passengers observed are noted below.

IN OR M	2024	Vehicles	Occupants	Drivers	Passengers	
	PRE-Campaign	4,799	5,924	4,799	1,125	
SAL & MIGHT	POST-Campaign	4,968	6,090	4,968	1,122	

Daytime data collection efforts for the 2024 New Mexico Occupant Seat Belt Observation Survey included a pre-measure conducted in April 2024 and a post measure conducted between May 28th and June 23rd, 2024. Five observers gathered observation data for both waves.

The weighted seat belt use rate for June 2024 is 93.6%. Analyses were also conducted using weighted data to explore pre to post program changes in daytime belt use for 2024. New Mexico drivers and front outboard passengers had a seat belt use rate of 92.4% during the pre-measure and 93.6% for the post-campaign measure. Confidence intervals indicate the change from pre to post was not significant (at p=0.05). Unweighted data were used for all remaining analyses.

Driver belt use increased pre (92.3%) to post (93.2%), but the change is not considered statistically significant (at p=0.05). The passenger use rate decreased pre to post, but also in a statistically non-significant manner (94.0% to 93.6%). Pickup Truck seat belt use increased non-significantly from pre to post (90.1% and 90.4%, respectively). Car/Van/SUV seat belt use had a larger increase pre to post (93.6% to 94.3%, respectively), but that change was also non-significant. Road stratification analyses showed slight changes from pre to post CIOT. Primary road belt use decreased slightly from 95.0% to 94.8% (not significant); Secondary road belt use increased (90.1% and 92.0%, pre to post, not significant); and Local road belt use increased from 86.5% (pre) to 87.7% (post; not significant).

The difference between Car/Van/SUV Driver and Pickup Truck Driver seat belt use post measures (94.1% and 90.1%, respectively) is statistically significant. The difference between Car/Van/SUV Passenger belt use (95.2%) and Pickup Truck Passenger belt use (88.0%) was also significant.

For the June measure, 3,687 occupants were observed on Primary roads, 1,685 occupants were observed on Secondary roads, and 718 occupants were observed on Local roads. Primary roads had the highest seat belt usage rates (at 94.8%). Secondary roads (92.0%) and Local roads (87.7%) yielded lower use rates.

Daytime seat belt use in New Mexico increased from 91.5% in June 2023 to 93.6% in June 2024. This marks the third seat belt use rate increase in a row. Prior to the 2022 (initial) increase, the 2019 rate (91.8%) was the first annual increase in several years. The 2021 rate (89.6%) may have continued a downward trend that existed aside from the 2019 rate. That is, the increase in 2019 may have been a chance occurrence. It may also be the case that the global pandemic played a role in the recent decreases. This impact may have been due to the increase (at least anecdotally) of higher risk drivers making up a higher percentage of the total drivers or even by lower levels of law enforcement efforts (noting that this may be exacerbated by the events of 2020 condemning law enforcement).



2024 New Mexico Occupant Seat Belt Observation Study (Nighttime)

The ninth New Mexico Nighttime Occupant Seat Belt Observation Study occurred in 2024. This study provides a statewide estimate of seat belt use for night occupants using a 34-site subset of the 94 sites in the 2013 NHTSA-approved sample for daytime belt use. Sites did not change with subsequent daytime resamples, so the night sites have remained the same over the years, including the 2024 measure. This allows us to better gauge change over time at night.

Safer New Mexico Now and Preusser Research Group observers partnered to conduct the nighttime survey for adults in front seat outboard positions using night vision equipment when needed. The same vehicle and driver characteristics used to select vehicles for daytime observation were used in night observations, but a few changes were made to the protocol to facilitate nighttime data collection. Observations were made for vehicles traveling on public roads between the hours of 8:45 p.m. and 2 a.m. The observation period for each selected road segment was 45 minutes. The road segments remained the same, though the observer was permitted to adjust the location for vantage point in case of unsafe conditions and/or lighting conditions.

Observations at night were always conducted by a two-person team with one person acting as the observer and the other documenting the observation data as verbalized by the observer. Attempts were made to conduct night observations in locations with adequate overhead lighting when possible. Observers only used night vision equipment when roadway lighting was insufficient to make natural observations.

Data collection for the 2024 New Mexico Nighttime Occupant Seat Belt Observation Survey was conducted from July 26th to the 31st. Six observers gathered observation data over the 2024 study period with 1,217 vehicles observed, and belt use noted for 1,589 occupants.

Shoulder belt use status was observed and recorded on 1,589 front seat occupants, including 1,217 drivers and 372 passengers. New Mexico nighttime drivers and front outboard passengers had a combined unweighted seat belt use of 86.7%. Driver usage was recorded at 85.8% and front seat outboard passenger usage at 89.8%.

Shoulder belt use status in Cars/Van/SUV categories were observed and recorded on 1,244 front seat occupants, including 948 drivers and 296 passengers. Nighttime drivers and front outboard passengers in these vehicle categories had a combined seat belt use of 88.3%. Driver usage was recorded at 87.2% and front seat outboard passenger usage at 91.9%. Pickup Truck nighttime seat belt use for drivers and front outboard passengers combined was 80.9%. Pickup Truck Driver use was recorded at 80.7% and front passenger seat belt use was recorded at 81.6%.

During the 2024 nighttime surveying period, 1,050 occupants were observed on Primary roads, 261 occupants were observed on Secondary roads, and 278 occupants were observed on Local roads. Primary roads had the highest nighttime seat belt usage at 88.1%, followed by Secondary roads at 85.8%. The lowest percentage of seat belt usage was observed on Local roads at 82.8%.

Each year, nighttime seat belt observations took place one to two months following implementation of the CIOT high visibility enforcement campaign. A 2.2 percentage point reduction in use was observed from 2016 to 2017, and usage further decreased two percentage points in 2018 (86.0%). There was a use rate increase of 1.5 percentage points in 2019 (87.5%), however the 2021 rate decreased by the same 1.5 percentage points (86.0%), and for 2022, further decreased by 0.7 percentage points (to 85.3%). In 2023, the rate increased 0.6 percentage points to 85.9%, and again increased in 2024 (0.8%) to 86.7%. As with daytime belt use, Pickup Truck drivers demonstrate lower nighttime belt use. These should be considered important populations to target. The raw, unweighted nighttime rate was seven percentage points lower than the raw, unweighted daytime rate.





Recommendations

New Mexico's seat belt use rate has been increasing the past few years, reversing a several year decline (with the exception of 2019 when there was an anomalous increase). The rate for June 2024 (93.6%) surpasses the 90% benchmark for the second time since 2019 and represents the highest measure to date.

The increase in daytime use coupled with a slight rebound in nighttime use relative to prior years could indicate that the broader years-long decline in use rate could be reversing. It is possible that since 2023, the negative impacting elements of 2020 (civil unrest and global pandemic) have been left behind and usage rates are beginning to recover.

That said, the low usage groups remain low. As with prior recommendations timely and strong programming should be undertaken to, hopefully, increase the seat belt use rate in the state. There are many factors that can impact use rates like, type or intensity of media or seat belt enforcement. High visibility enforcement in particular is generally considered to be the best means for achieving increases in belt use. Enforcement rates were declining in much of the country headed into 2019 and the events of 2020 and beyond may have exacerbated that decline.

As with previous years, there are areas deserving of extra efforts to continue to make New Mexico roads safer. Particularly, drivers of pickup trucks and occupants travelling on Local roads have the lowest daytime seat belt use rates. In addition, findings from the nighttime study showed lower seat belt use for the same subgroups of vehicles and road types compared to their corresponding daytime seat belt use rates.



Report Organization

This report summarizes the results of the 2024 New Mexico Occupant Seat Belt Observation Survey conducted since 1982. It continues the presentation of nighttime observation data which began in 2015. Both the daytime and nighttime surveys have a section in the report with seven subsections:

1. STUDY PURPOSE

- 2. STUDY DESIGN OVERVIEW
- 3. SAMPLING
- 4. OBSERVER SELECTION, TRAINING, AND ON-SITE PROCEDURES
- **5.** DATA COLLECTION AND ANALYSIS
- **6.RESULTS**
- 7. DISCUSSION



OCCUPANT SEAT BELT OBSERVATION STUDY DAYTIME

Study Purpose

The purpose of this study is to use a NHTSA-approved sampling design to provide the state of New Mexico with a statewide estimate of seat belt use. In 2023, the road segments used for New Mexico's statewide seat belt survey were resampled to be consistent with federal regulations, which require a resampling of sites every five years. The sites were selected in a manner identical to that described in the approved survey design (created in 2013) but using updated data. Sites were selected based on weighted random probability assessment of road segments from 19 New Mexico counties. These counties contained 85% of all motor vehicle occupant fatalities over the past several years (at the time of survey design). Thus, observations for the 2023 survey occurred at brand new sites; different from those observed for the 2018 through 2022 surveys. The 2023 survey sites were also used for the 2024 survey.

Preusser Research Group was contracted by the New Mexico Department of Transportation Traffic Safety Division (NMDOT TSD) to conduct the 2024 New Mexico Occupant Seat Belt Observation Study. Observers from the local organization Safer New Mexico Now provided Preusser Research Group with experienced local personnel who surveyed seat belt use for adults in front seat outboard positions at 94 sites for both a pre- and post-CIOT campaign measure.

Study Design Overview

Several research designs for belt use rates have been implemented since law implementation in 1982. In 2011, the NHTSA introduced new Uniform Criteria for State Observational Surveys of Seat Belt Use. As a result, a new survey design has been used for seat belt observation surveys since 2013.

Sites selected in the 2023 resample were used for the 2024 survey as mandated by NHTSA following the same site selection criteria as the previous design. Road segments from 19 of New Mexico's 33 counties (accounting for 85.4% of passenger vehicle crash-related fatalities) were sampled for inclusion in the survey. The road segments were divided into Primary, Secondary, or Local road classifications for stratification and sampling selection.

The target population included all drivers and right front seat passengers (excluding middle passengers and children harnessed in child safety seats) of vehicles traveling on public roads between the hours of 7 a.m. and 6 p.m. All passenger vehicles (Cars, Pickup Trucks, Vans, and SUVs) with a gross vehicle weight up to 10,000 pounds were observed in the survey. Observations included small commercial vehicles. The observation period for each selected road segment was 20 minutes. The road segments vary in length, permitting the observer to adjust for vantage point in case of unsafe conditions at the usual observation location. Data collection was conducted by trained observers, all who participated in previous seat belt surveys. Data were entered and analyzed by Preusser Research Group.

Sampling

As new redesigns were implemented over the years, the sampling segments that were used varied for the annual rates calculated and reported in this document. There was a new design in 2012 which was revised in 2013, and the current survey sites were resampled (as required by federal regulation) using the design developed in 2013.

For the 2012 survey, a file of road segments was obtained from NHTSA containing 2010 TIGER data developed by the U.S. Census Bureau. These segments are classified by the U.S. Census Bureau using the MAF/TIGER Feature Class Code (MTFCC) with the three main classifications of Primary roads, Secondary roads, and Local roads. Road segment listings in the file included those designations along with specified segment lengths as determined by TIGER. This descriptive information allowed for stratification of road segments by MTFCC. A systematic Probability Proportional to Size (PPS) sampling (with no certainty sites) was employed to then select the road segments to be used as observation sites. These were used for the data collection years of 2012 to current.

The same 108 road segments had been used for seat belt observations from 1998 through 2012. This was reduced to 94 segments in 2013 with 28 on Primary highways and 33 each on Secondary and Local roads. These reductions were structured to manage resources most effectively while also meeting the NHTSA-required standard error rate of 2.5% or less. Additional data collection may be scheduled in instances where the standard error rates exceed required levels. Exclusion options were exercised to remove aberrant locations such as rural roads in non-MSA counties, non-public roads, unnamed roads, unpaved roads, vehicular trails, access ramps, cul-de-sacs, traffic circles, and service drives.

When any of these selected road segments become permanently unavailable, a reserve road segment is used. The reserve road segment sample consists of an additional 20% of road segments per MTFCC. More detailed information about the sampling methodology can be found in the Appendix of the 2014 report (Davis, Pearce & Logstead, 2014).

The same method described for the 2013 redesign was used to sample new sites for both the 2018 and 2023 surveys. The distribution of sites across roadway type remained consistent.

Observer Selection, Training, and On-site Procedures

Qualified individuals meeting New Mexico-established criteria conducted the observations. A three-hour refresher training was held. Practice surveys were completed and checks for inter-observer consistency were performed. Maps showing the location of all observation sites and Site Assignment Sheets were provided to the observers. These indicated the observed road name, the crossroad included within the road segment (or nearest crossroad), assigned date, assigned time, and assigned direction of travel. Sites within relatively close geographic proximity are assigned as data collection clusters to minimize travel costs.

DURING THE SURVEY, THE OBSERVER



OBSERVED AS MANY LANES OF TRAFFIC AS COULD BE COMFORTABLY MONITORED WHILE OBTAINING DATA ON 99% OF THE VEHICLES;





OBSERVED ONLY ONE PREDETERMINED DIRECTION OF TRAFFIC (THE OPPOSITE DIRECTION COULD BE USED AND NOTED IF SUNSHINE IN THE EYES OR OTHER FACTORS HAMPERED OBSERVATION);





OBSERVED ALL PASSENGER VEHICLES, INCLUDING COMMERCIAL VEHICLES WEIGHING LESS THAN 10,000 POUNDS;





RECORDED SEAT BELT USE BY BOTH DRIVERS AND RIGHT FRONT SEAT OCCUPANTS, INCLUDING CHILDREN RIDING IN BOOSTER SEATS (THE ONLY RIGHT FRONT SEAT OCCUPANTS EXCLUDED FROM THE STUDY WERE CHILD PASSENGERS TRAVELING IN CHILD CAR SEATS WITH HARNESS STRAPS).



All observers used audio recorders when observing high traffic volume segments and then transcribed them to the NMDOT Seat Belt Observation Form (Appendix II). Observers marked the forms directly during observation periods in low volume areas. Observers recorded belt use by marking the form appropriately for each person in each vehicle, with no marks made for absent passengers. The forms were then provided to PRG for data entry.

OCCUPANTS WERE RECORDED AS:



RELITED

IF THE SHOULDER BELT WAS IN FRONT OF THE PERSON'S SHOULDER;



UNBELTED

IF THE SHOULDER BELT WAS NOT IN FRONT OF THE PERSON'S SHOULDER:



UNKNOWN

IF IT COULD NOT REASONABLY BE DETERMINED WHETHER THE DRIVER OR RIGHT FRONT PASSENGER WAS BELTED.







Quality control monitors made random, unannounced visits to at least 5% of the observation sites. During these visits, the quality control monitor evaluated the observer's performance from a distance (if possible), and then worked alongside the observer. The quality control monitor ensured that the observer was following all survey protocols including arriving on time at assigned sites, completing the cover sheet and observation forms, and making accurate observations of seat belt use. The quality control monitor prepares site visit reports highlighting any problems with data collection site locations and observer performance. The quality control monitor also serves as a point of contact during the data collection should the observers have a question arising during this time.

Data Collection and Analysis

Daytime data collection efforts for the 2024 New Mexico Occupant Seat Belt Observation Survey included a pre-measure conducted in April 2024, and a post measure conducted between May 28th and June 23rd, 2024. Four observers gathered observation data. Completed observation data forms were sent to Preusser Research Group for data entry using Excel and/or SPSS. Data cleaning procedures were performed included 10% entry checks to assess entry accuracy across all data entry forms completed and variable frequency counts to identify ineligible entry values or outliers.

Results

During the pre-measure, shoulder belt use was observed and recorded on 5,924 front seat occupants including 4,799 drivers and 1,125 passengers. Drivers accounted for 81.0% of people observed with passengers accounting for 19.0%. For the post measure, shoulder belt use status was observed and recorded on 6,090 front seat occupants, including 4,968 drivers and 1,122 passengers. Drivers accounted for 81.6% of people observed with passengers accounting for 18.4%. These ratios are similar to the 2023 measure.

A total of 163 (74 in pre and 89 in post) occupants (1.3%) of the entire observation sample for both waves combined were marked as seat belt use "unknown." These cases were removed for weighting and analysis, but the overall numbers were well within allowable targeted observation limits therefore no sites needed to be re-observed.

The total number of vehicles and occupants observed for 2005 to 2024 post measures are presented in Table 1 (Reduced numbers of vehicles and occupants observed beginning in 2013 resulted from a study design change). Probabilities to judge significance were set to 0.05. That is, the probability of a difference being due to chance must be less than 5% to deem the difference significant.



VEHICLES AND OCCUPANTS OBSERVED IN OFFICIAL SEAT BELT SURVEYS, NEW MEXICO, 2005-2024

	2005	2006	2007	2008
Number of Observers	5	5	5	5
Total Vehicles Observed	15,540	15,362	15,085	15,153
Total Occupants Observed	18,378	17,836	17,593	17,525
	·			
	2009	2010	2011	2012
Number of Observers	4	4	4	4
Total Vehicles Observed	14,756	14,977	14,531	14,059
Total Occupants Observed	17,314	17,411	16,588	16,151
	2013	2014	2015	2016
Number of Observers	3	3	4	4
Total Vehicles Observed	5,215	3,870	6,540	6,660
Total Occupants Observed	6,874	5,013	8,449	8,530
	2017	2018	2019	2021
Number of Observers	4	4	4	4
Total Vehicles Observed	6,780	4,060	5,378	5,424
Total Occupants Observed	8,642	5,158	6,990	6,881
	,			
	2022	2023	2024	
Number of Observers	4	5	5	
Total Vehicles Observed	5,050	5,255	4,968	
Total Occupants Observed	6,410	6,579	6,090	

Overall and Pre to Post Weighted Daytime Seat Belt Use

The official June daytime use rate for New Mexico was 93.6%, compared to 91.5% in June 2023. The 2023 and 2024 confidence intervals overlap (2024's was 91.04% to 96.07%, and 2023's was 88.38% to 94.67%), thus indicating no significant change— even with the substantial (2.1 percentage point) usage increase. Analyses were also conducted to explore pre to post program changes in daytime belt use for 2024. New Mexico Drivers and front outboard Passengers had a seat belt use rate of 92.3% during the pre-measure; 1.3 percentage points lower than the June measurement, and this difference is also non-significant. All remaining analyses on belt use data are with unweighted data.

Categories of Daytime Seat Belt Use (Raw Data)

Pre to post analyses were conducted to identify changes in belt use during the campaign while examination of trends was used to explore belt use data going back to 2005. Tables 2A and 2B show the Driver, Passenger and combined occupant seat belt use rates gathered during the pre and post measures in 2024.

For the pre-measure, New Mexico Drivers had an unweighted seat belt use rate of 92.3%. The unweighted belt use rate for drivers increased to 93.2% for the post-measure, but the difference is not statistically significant. The unweighted percent of belted Passengers decreased pre to post, though not significantly, from 94.0% to 93.6%.



Type of Vehicle	Number of Occupants Observed (PRE)	Seat Belt Use Percent (PRE)
Car/Van/SUVs (all)	4,240	93.6%
Driver	3,418	93.2%
Passenger	822	95.3%
Pickup Trucks (all)	1,684	90.1%
Driver	1,381	89.9%
Passenger	303	90.8%
All Vehicles (all)	5,924	92.6%
Driver	4,799	92.3%
Passenger	1,125	94.0%



POST-ENFORCEMENT SEAT BELT USE 2024

Type of Vehicle	Number of Occupants Observed (POST)	Seat Belt Use Percent (POST)
Car/Van/SUVs (all)	4,421	94.3%
Driver	3,558	94.1%
Passenger	863	95.2%
Pickup Trucks (all)	1,669	90.4%
Driver	1,410	90.8%
Passenger	259	88.0%
All Vehicles (all)	6,090	93.2%
Driver	4,968	93.2%
Passenger	1,122	93.6%

Changes pre to post belt use by vehicle type (Car, Truck, Van, and SUV) and road type (Primary, Secondary, and Local roads) were also examined. Two vehicle categories were created, one which included Pickup Trucks only and one with Cars, SUVs, and Vans combined. The isolation of Pickup Trucks as its own category was due to the existence of previous analyses demonstrating that Pickup Trucks lag behind the other three vehicle types in seat belt use.

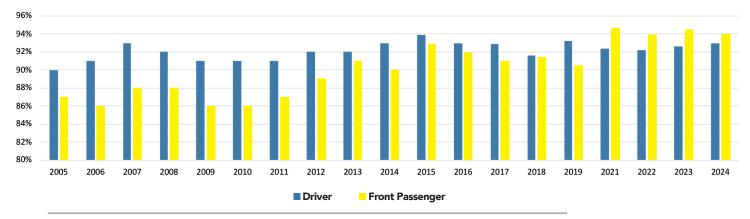
Pickup Truck seat belt use slightly increased from pre to post (90.1% to 90.4%), though not significantly. Car/Van/SUV seat belt use showed a larger increase in use pre to post (93.6% and 94.3%), but this was also non-significant.

The three road types were analyzed separately for pre-to-post changes in belt use. Primary road belt use decreased slightly (non-significantly) from 95.0% to 94.8%. Secondary road belt use increased from pre to post (90.1% to 92.0%, but also non-significant). Local road belt use also increased slightly from 86.5% to 87.7% (non-significant).

Trend assessments of daytime seat belt use post campaign showed that Driver and Passenger belt use rates by vehicle type have fluctuated only slightly in recent years. As shown by Figure 1, rounded to the nearest whole percentage, observed Car/Van/SUV Driver seat belt use rates reached a peak of 94% in 2015, decreased slightly to 93% in 2016 and 2017, and decreased further to 92% in 2018. Again in 2019 the rate increased to 93%. However, in 2021 the rate decreased to 92% where it remained in 2022 but rebounded to 93% in both 2023 and 2024. Passenger use showed a positive trend from 2010 to 2015 (peaking at 93%) and decreased slightly to 92% in 2016, and 91% in 2017, 2018, and 2019. Passenger seat belt use increased to 95% in 2021, but dropped slightly to 94% for 2022, and it has remained there for 2023 and 2024.

FIGURE 1

OBSERVED CAR/VAN/SUV SEAT BELT USE, NEW MEXICO, 2005-2024 (UNWEIGHTED)



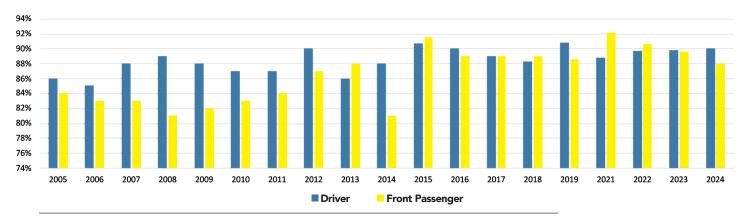
Source: 2024 Annual New Mexico Official Seat Belt Observation Survey; percentages rounded to the nearest whole number.



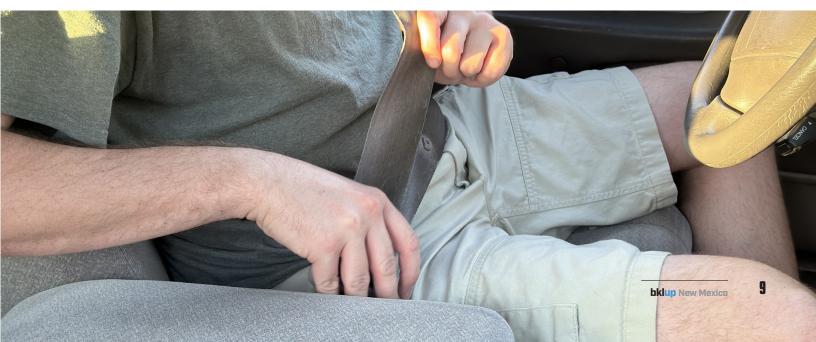
Pickup Driver seat belt use measured in 2024 was recorded at 90.1% compared to Car/SUV/Van Driver use of 94.1%, and this difference is statistically significant (at p=0.05). Pickup Truck Passenger use (88.0%) was also significantly different than non-Pickup Truck Passenger use (95.2%). Figure 2 shows fluctuations in Pickup Truck Driver belt use (with figures rounded to the nearest whole percent). Usage reached a high point of 91% in 2015 followed by a decreasing trend since (90% in 2016, 89% in 2017 and 88% in 2018), but went back up to 91% in 2019. However, it decreased in 2021 (89%), and had a slight increase to 90% in 2022, where it has remained since. Pickup Truck Passenger seat belt use shows a more continuous rising trend from 2008 through 2013, with a steep drop off in 2014 but a recovery and increase to 92% belt use for 2015. In the years following, Pickup Truck Passenger belt use remained stable at 89% until it peaked in 2021 (92%). The Passenger rate steadily fell back to 91% in 2022, 90% for 2023, and 88% for 2024.

FIGURE 2

OBSERVED PICKUP TRUCK SEAT BELT USE, NEW MEXICO, 2005-2024 (UNWEIGHTED)

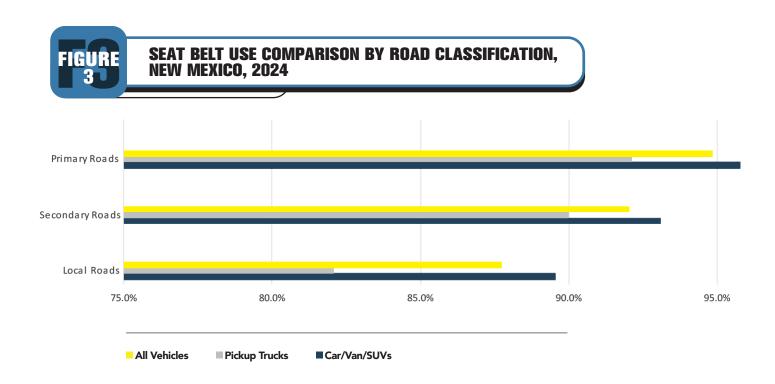


Source: 2024 Annual New Mexico Official Seat Belt Observation Survey; percentages rounded to the nearest whole number.



Road class differences in observed seat belt use were also explored. During the 2024 New Mexico Occupant Seat Belt Observation June measure, 3,687 occupants were observed on Primary roads, 1,685 occupants were observed on Secondary roads, and 748 occupants were observed on Local roads. Most occupants observed fell into the Car/Van/SUV categories (4,421) and 1,669 occupants in Pickup Trucks were observed.

Table 3 provides the occupant counts observed by road classification and vehicle type. Figure 3 illustrates observed seat belt use for Car/Van/SUV belt use and pickup truck belt use on the three road classifications.





SURVEYS BY ROAD CLASSIFICATION AND VEHICLE TYPE, NEW MEXICO. 2024

	Car/Va	n/SUVs	Pickup	Trucks	All Vehicles		
Road Classification			# People Observed	Belt Use	# People Observed	Belt Use	
Primary Roads	2,761	95.8%	926	92.1%	3,687	94.8%	
Secondary Roads	1,115	93.1%	570	90.0%	1,685	92.0%	
Local Roads	545	89.5%	173	82.1%	718	87.7%	
Statewide Total	4,421	94.3%	1,669	90.4%	6,090	93.2%	

Combining across vehicle types, the lowest percentage of seat belt usage (post) was observed on Local roads at 87.7% compared to 92.0% for Secondary roads and 94.8% for Primary roads. The difference in seat belt use between Primary and Local roads was significant, as was the case between Primary and Secondary roads, as well as the difference between Secondary and Local road use. The lowest belt use rate overall was in Pickup Truck occupants on Local roads, at 82.1%. Pickup Truck belt use peaked at 92.1% on Primary roads, followed by Secondary roads at 90.0%, indicating significant differences in Pickup Truck belt use between both Primary versus Local roads, and Secondary versus Local roads. Car/Van/SUV use followed a similar pattern with the highest use found on Primary roads (95.8%), followed by Secondary roads (93.1%), and was lowest on Local roads (89.5%). The difference in Car/Van/SUV belt use was significant between Primary and Local road types as well as Secondary and Local.



Discussion

Daytime seat belt use in New Mexico increased from the previous year to an all-time high usage rate (from 91.5% to 93.6%), but the difference is not significant (p > .05). As such, usage also increased pre to post (92.3% to 93.6%), but non-significantly. The increases observed in both in 2023 and 2024 in daytime use (pre and post) could indicate that some of the declines in usage observed during and after the negative impacting elements of 2020 (civil unrest and COVID-19) have been left behind and usage has returned to pre-pandemic levels.

Most categories showed small increases in raw belt use from the pre to post surveys. Primary road users have consistently high belt use rates but yielded a slight, non-significant decrease from pre (95.0%) to post (94.8%). Passengers saw a slight drop in usage pre to post (94.0% to 93.6%), and this was regardless of vehicle type. Occupants on Secondary and Local roads and drivers regardless of vehicle type all had increases pre-post. Some subgroups (i.e., Local roads, Pickup Truck occupants) with substantially lower use rates should still be targets for future programmatic and campaign efforts.

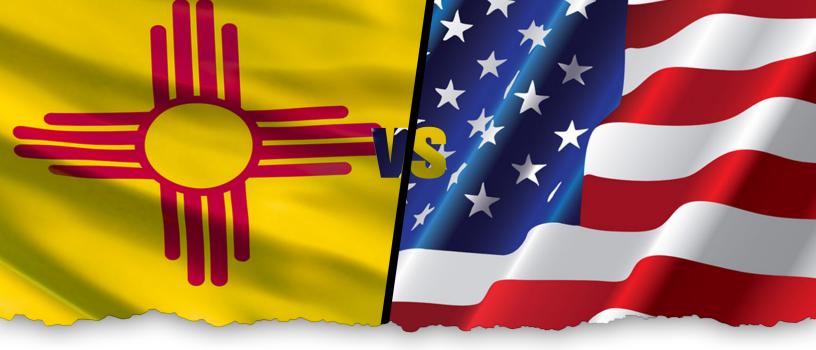
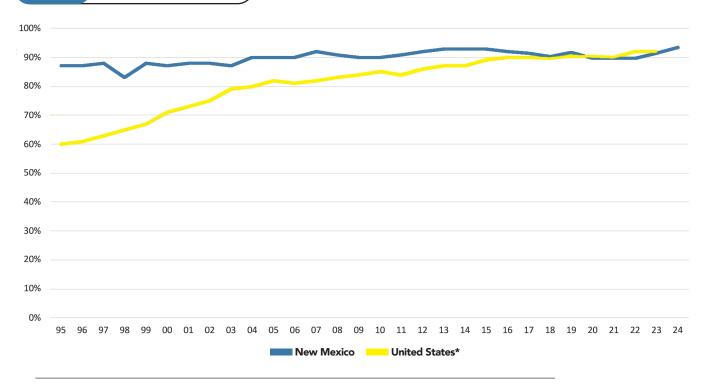
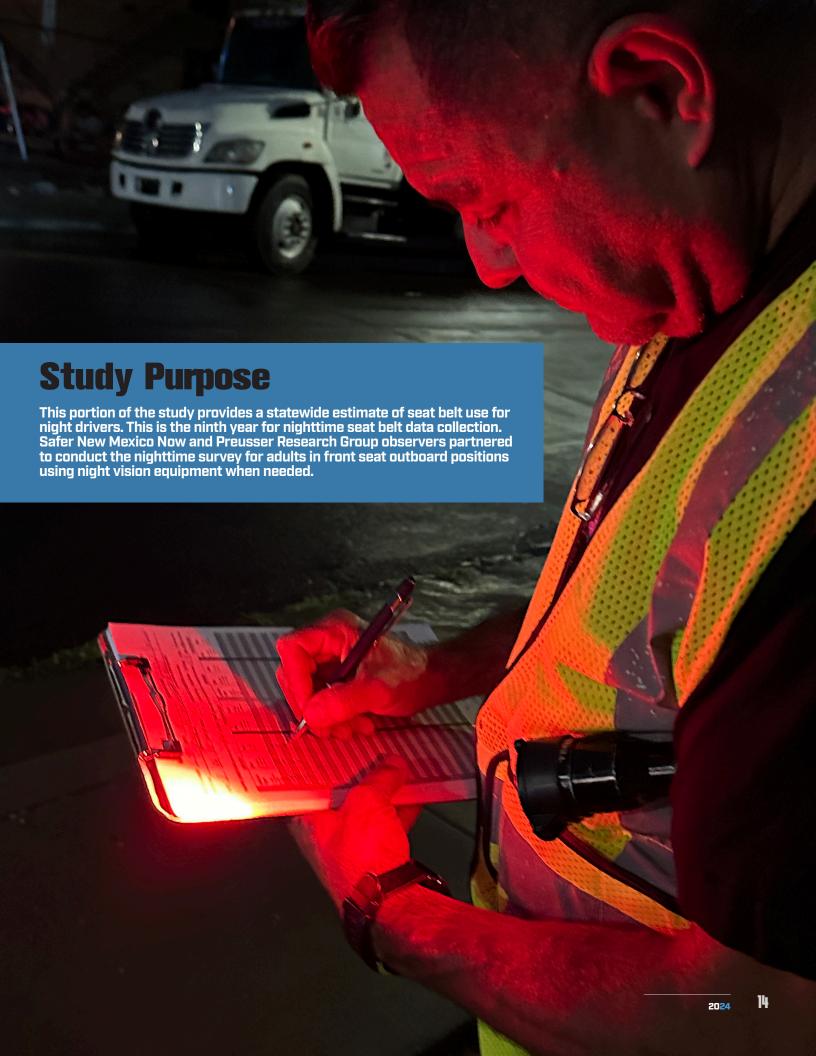


FIGURE 4

OFFICIAL OBSERVED SEAT BELT USE - NEW MEXICO VS. U.S. 1995-2024 (WEIGHTED)



^{*}Seat Belt Use in 2023 - Overall Results. Traffic Safety Facts. NHTSA. February 2024.





OCCUPANT SEAT BELT OBSERVATION STUDY NIGHTTIME

Study Design Overview

This study replicates the method used in the 2015-2023 studies. Data collection was conducted by trained Preusser Research Group nighttime observers partnering with trained Safer New Mexico Now daytime observers, who all had participated in previous seat belt surveys. Data were entered and analyzed by Preusser Research Group.

Just as with the daytime seat belt survey, all passenger vehicles (Cars, Pickups, Vans, and SUVs) with a gross vehicle weight up to 10,000 pounds were observed in the survey. This included small commercial vehicles. The target population was all drivers and right front seat passengers (excluding middle passengers and children harnessed in child safety seats) of vehicles traveling on public roads at night, with observers assessing belt use between the hours of 8:45 p.m. and 2 a.m. The observation period for each selected road segment was 45 minutes. The road segments vary in length permitting the observer to adjust for vantage point in case of unsafe conditions and/or lighting conditions at the usual observation location.

Sampling

The eighth New Mexico Nighttime Occupant Seat Belt Observation Study occurred in 2023. This study provides a statewide estimate of seat belt use for night drivers using the same 94 sites examined as part of the NHTSA-approved sampling design for daytime belt use in 2013. This allows us to better gauge change over time at night. Since the method of site selection was the same for the 2013 daytime sites, the 2018 daytime sites and the 2023 daytime sites, we can still reasonably compare day to night use even though the daytime sites changed in 2023.

To recap the sampling methodology used when the night sites were initially selected in 2013, seven counties were involved in the nighttime survey (Bernalillo, Doña Ana, McKinley, Otero, San Juan, Sandoval, and Santa Fe). From these counties, 34 sites were selected (on a prior basis) using the number of daytime observations to weight selection toward higher volume sites (a process fundamentally similar to that used to select daytime sites from the universe of roadways).

Observer Selection, Training, and On-Site Procedures

The on-site procedures used for nighttime observations were very similar to the daytime procedures with a few modifications. Observations at night were always conducted by a two-person team. Preusser Research Group personnel with previous night observation experience were paired with an accompanying team member from Safer New Mexico Now with primary experience in daytime observations and some nighttime experience. Attempts were made to conduct night observations in locations with adequate overhead lighting when possible. Observers only used night vision equipment when roadway lighting was insufficient to make observations. The near-military grade equipment (night vision goggles and infrared spotlights not visible to the naked eye) provided visibility in both dark and less dark conditions. This made vehicle occupants visible for belt observations even in total darkness. Local enforcement agencies were made aware of survey operations.

Data Collection and Analysis

Data collection for the 2024 nighttime survey was conducted from July 26 through 31, 2024. One person on the team served as the observer and would do the actual observation while the second team member served as a recorder who wrote down the information verbalized by the observer. Six observers gathered observation data over the 2024 study period with 1,217 vehicles observed, and belt use notated for 1,589 occupants (see Table 4). The data sheet used for nighttime observations is included in Appendix III.



VEHICLES AND OCCUPANTS OBSERVED IN OFFICIAL NIGHTTIME SEAT BELT SURVEYS, NEW MEXICO, 2015-2024

	2015	2016	2017
Number of Observers	7	6	5
Total Vehicles Observed	1,142	1,588	1,452
Total Occupants Observed	1,505	2,174	1,990
	2018	2019	2021
Number of Observers	6	6	6
Total Vehicles Observed	1,261	1,340	1,171
Total Occupants Observed	1,735	1,840	1,563
	2022	2023	2024
Number of Observers	5	7	6
Total Vehicles Observed	1,194	1,135	1,217
Total Occupants Observed	1,558	1,444	1,589

Data collected by the observers in the field were examined for completeness and checked for accuracy prior to submission. Completed observation data forms were sent to Preusser Research Group for data entry using Excel and/or SPSS. Data cleaning procedures were performed included 10% entry checks to assess entry accuracy across all data entry forms completed and variable frequency counts to identify ineligible entry values or outliers. Weighting procedures were not required for the nighttime observation data analysis.

Results

Table 5 shows the number of occupants and nighttime seat belt use by vehicle type.



Type of Vehicle	Number of Occupants Observed	Number of Seat Belt Users	Seat Belt Use (Percent)
Car/Van/SUVs (all)	1,244	1,099	88.3%
Driver	948	827	87.2%
Passenger	296	272	91.9%
Pickup Trucks (all)	345	279	80.9%
Driver	269	217	80.7%
Passenger	76	62	81.6%
All Vehicles (all)	1,589	1,378	86.7%
Driver	1,217	1,044	85.8%
Passenger	372	334	89.8%

Shoulder belt use status was observed and recorded on 1,589 front seat occupants, including 1,217 drivers and 372 passengers. Drivers accounted for 76.6% of occupants observed and passengers accounted for 23.4%. New Mexico nighttime drivers and front outboard passengers had a combined unweighted seat belt use of 86.7%, up 0.8 percentage points from the 2023 rate (85.9%). Driver usage in 2024 was recorded at 85.8% and front seat outboard passenger usage at 89.8%.

Shoulder belt use status in Cars/Van/SUV categories were observed and recorded on 1,244 front seat occupants, including 948 drivers and 296 passengers. Drivers accounted for 76.2% of occupants observed in those vehicle types. Nighttime drivers and front outboard passengers in these vehicle categories had a combined seat belt use of 88.3%. Driver usage was recorded at 87.2% and front seat outboard passenger usage at 91.9%.

Pickup driver nighttime seat belt use for Drivers and front outboard Passengers combined was 80.9%. Pickup truck Driver use was recorded at 80.7% and front passenger seat belt use was recorded at 81.6%. The difference between observed truck occupant seat belt use (88.3%) and Car/Van/SUV occupant seat belt use (80.9%) at night is statistically significant, and this was the case regardless of seating position.

During the 2024 nighttime survey period, 1,050 occupants were observed on Primary roads, 261 occupants were observed on Secondary roads, and 278 occupants were observed on Local roads. Table 6 illustrates observed seat belt use for Car/Van/SUV belt use and Pickup Truck belt use on the three road classifications. Local roads had the lowest percentage of observed seat belt usage, regardless of vehicle type with an overall use rate of 82.8%.



NIGHTTIME SURVEYS BY ROAD CLASSIFICATION AND VEHICLE TYPE, NEW MEXICO, 2024

	Car/Va	n/SUVs	Pickup	Trucks	All Vehicles		
Road Classification	# People Observed	Belt Use	# People Observed	Belt Use	# People Observed	Belt Use	
Primary Roads	829	89.7%	221	81.9%	1,050	88.1%	
Secondary Roads	191	82.2%	70	81.4%	261	85.8%	
Local Roads	224	83.9%	54	75.9%	278	82.4%	
Statewide Total	1,244	86.4%	345	84.3%	1,589	85.9%	

As illustrated in Table 6, in 2024, Primary roads had the highest nighttime seat belt usage at 88.1%, followed by Secondary roads at 85.8%. The lowest percentage of seat belt usage was observed on Local roads at 82.4%. The percentage difference in seat belt use between Primary and Secondary roads was not significant. Belt use on Local roads was significantly lower than usage on Primary roads. Belt use by Car/Van/SUV occupants showed the highest use rate among Primary roads (89.7%) followed by Local roads (83.9%) and Secondary roads (82.2%). Belt use in Pickup Trucks was highest on Primary roads (81.9%), followed by Secondary roads (81.4%), and lowest on Local roads (75.9%), but note that the sample size of Pickup Truck occupants at night was considerably low (345), so the differences are not significant.



Discussion

A 2-percentage point reduction in use from 2017-2018 was followed by a 1.5-point increase from 2018-2019. Despite that the 2019 rate was higher than in 2018, the rates were still below the highest recorded (89.4%) in 2016. The use rate further decreased in 2021 to 86.0%. In 2022, the rate fell further to 85.3%. For 2023, nighttime belt use rate rebounded somewhat (by 0.6 percentage points) to 85.9%, and it increased again (0.8 percentage points) to 86.7% in 2024. As with daytime belt use, occupants in Pickup Trucks and occupants travelling on Local roads demonstrate lower nighttime belt use. These should be considered important populations to target.

bklup MMDOT

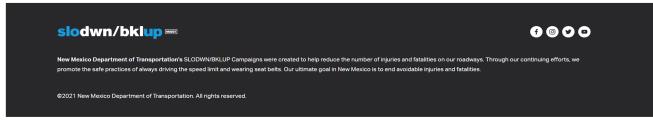
Awareness Campaigns













OCCUPANT SEAT BELT OBSERVATION STUDY Recommendations AND REFERENCES

Recommendations

Daytime seat belt use in New Mexico increased from 91.5% in June 2023 to 93.6% in June 2024. This marks the third rate increase in a row, this time to an all-time high usage rate. Prior to the 2022 increase, the 2019 rate (91.8%) was the first annual increase in several years. The 2021 rate (89.6%) may have continued a downward trend that existed aside from the 2019 rate. That is, the increase in 2019 may have been a chance occurrence. It may also be the case that the global pandemic played a role in the recent decreases. This impact may have been due to the increase (at least anecdotally) of higher risk drivers making up a higher percentage of the total drivers or even by lower levels of law enforcement efforts (noting that this may be exacerbated by the events of 2020 condemning law enforcement).

Even though the usage rate has reached its peak to date, there is still room for improvement. The low usage groups remain low, and given the prior downward trends, the state should expand focus on enforcement during CIOT in future years to further increase seat belt use.

There are many factors that can impact use rates like, type or intensity of media or seat belt enforcement. High visibility enforcement in particular is generally considered to be the best means for achieving increases in belt use. Enforcement rates were declining in much of the country headed into 2019 and the events of 2020 and 2021 may have strengthened that decline. Even though rates indicate usage is trending upward from recent years, the state should maintain focus on, and possibly increase enforcement at both daytime and nighttime to further increase belt usage, especially among the lower usage groups.

As with previous years, there are areas deserving of extra efforts to continue to make New Mexico roads safer. Occupants in Pickup Trucks and occupants travelling on Local roads continue to have the lowest daytime seat belt use rates. In addition, findings from the nighttime study also continue to show lower seat belt use for these same subgroups of vehicles and road types.

References

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OCCUPANT SEAT BELT OBSERVATION STUDY DAYTIME AND NIGHTTIME SURVEYS

Report Prepared by:

Preusser Research Group, Inc. for the New Mexico Department of Transportation Content design and edited by Safer New Mexico Now

Electronic version available at www.preussergroup.com and www.safernm.org

Photo Credits

Adobe Stock

Safer New Mexico Now Team Photos included herein are of actual Safer events.



The following were taken from the New Mexico report 2014 (CITE).

A.0 Imputation, Estimation and Variance Estimation

A.1 Imputation

No imputation will be done on missing data.

A.2 Sampling Weights

The following is a summary of the notation used in this section.

h – Subscript for road segment strata

i – Subscript for road segment

j – Subscript for time segment

k – Subscript for road direction

I – Subscript for lane

m – Subscript for vehicle

n – Subscript for front-seat occupant

Under this stratified multistage sample design, the inclusion probability for each observed vehicle is the product of selection probabilities at all stages: π hi for road segment, π j|hi for time segment, π k|hij for direction, π l|hij for lane, and π m|hijl for vehicle. So the overall vehicle inclusion probability is:

 π hijklm = π hi π j | hi π k | hij π l | hij π m | hijl

The sampling weight (design weight) for vehicle m is:

whijklm = π hijklm

A.3 Nonresponse Adjustment

Given the data collection protocol described in this plan, including the provision for the use of alternate observation sites, road segments with non-zero eligible volume, and yet zero observations conducted should be a rare event. Nevertheless, if eligible vehicles passed an eligible site or an alternate eligible site during the observation time but no usable data were collected for some reason, then this site will be considered as a "nonresponding site." The weight for a nonresponding site will be distributed over other sites in the same road type.

Let:

whi = π hi

be the road segment weight. The nonresponding site nonresponse adjustment factor:

 $fh = \sum responding i whi$

will be multiplied to all weights of non-missing road segments in the same road type of the same county and the missing road segments will be dropped from the analysis file. However, if there were no vehicles passing the site during the selected observation time (20 minutes) then this is simply an empty block at this site and this site will not be considered as a nonresponding site, and will not require nonresponse adjustment. In the event that the number of "unknown" seat belt use values exceeds ten percent of the total number of use data collected, observers will be sent to the sites with the largest proportions of unknown (i.e. nonresponse) values. Additional observations will be made, on the same day of the week and at the time of day as the original observations, until the total nonresponse rate is ten percent or less.

A.4 Estimators

Seat Belt Use Rate Estimators

Noting that all front-seat occupants were observed, let the driver/passenger seat belt use status be:

The seat belt use rate estimator is a ratio estimator:

$$\rho = \sum all \ hijklmn \ whijklm$$

This estimator captures traffic volume and vehicle miles traveled through design weights (which will include nonresponse adjustment factors as described in section 5.3, if any) at various stages and it does not require knowledge of VMT/DVMT.

A.5 Variance Estimation

The Survey means procedure available in SAS is well suited to provide the variance for this sample design. The procedure provides options to accommodate a clustered, PPS sample with different weights based on the proportion of road segments from the different MTFCC classes.



DAYTIME SEAT BELT SURVEY INSTRUMENT

Official Seatbelt Observation Form 2024

Date of Observation: / / 2024	Day of Week:
Time: Start End	Observer Name:
Site Number: City & Co	unty:
Roadway/Street Name	Speed Limit:
Roadway/Street Name Indicate the number of traffic lanes for each direction of traffic lanes.	ravel by placing an (X) or check mark (in the corresponding lane(s). vehicle travel. Write N, S, E, or W to indicate approximate compass heading. Mark Diagram Accordingly LANE 4 LANE 3 LANE 2 LANE 1 CENTER DIVIDER LANE 1 LANE 2 LANE 3 LANE 4

Sheet No. ___1___ of _____ for Observation Site Number: _____

INSTRUCTIONS: For each observed vehicle, start a new row. Place an X or ✓ in the appropriate column for driver and outboard front passenger (if applicable). Passenger children are to be counted under "YES" if restrained with seat belt, or "NO" if unrestrained.

#	nicle pe T	Driver Seatbelted Yes No Unk		Se	Passenger Seatbelted Yes No Unk		#	Vehicle Type C T				ed	Se	asseng atbelt No	ed	
1								36								
2								37								
3								38								
4								39								
5								40								
6								41								
7								42								
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Totals								Totals								

Year	Site Number:	Sheet No	_2	of



NIGHTTIME SEAT BELT SURVEY INSTRUMENT

New Mexico Nighttime Seat Belt Observation Data Collection Form

SITE ID NUMBER: CITY: OBSERVER NAME:											
LO	CATION: _										
			(Observed Street)			(Cross Street or other landmark)					
DATE:			DA		WEATHER CONDITION (circle one):						
						1) Cle	ear/Sunny	2) Light Rair	3) Cloudy	4) Fog 5)	Clear but wet
TR	AFFIC DIRE	CTION (circle	one): NSEW	START TIM	IE (Observati	on pe	riod will las	t exactly 45 n	ninutes):	AM or	PM (circle one)
		DRIVER	PASSENGER			DRIVER				PASSENGER	
	Vahiala		Han	11.00	Use		Vahiala		100000	200	
	Vehicle Type	Sex	Use	Sex			Vehicle Type	Sex	Use	Sex	Use
	C = Car T = Pick Up	M = Male F = Female U = Unsure	Y = Yes N = No	M = Male F = Female U = Unsure	Y = Yes N = No U = Unsure		C = Car T = Pick Up	M = Male F = Female U = Unsure	Y = Yes N = No	M = Male F = Female U = Unsure	Y = Yes N = No U = Unsure
	T = Pick Up S = SUV V = Van	0 - Onsure		o – onsure	0 - Offsure		T = Pick Up S = SUV V = Van	0 - Offsure		O - Offsure	0 - Onsure
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3						38					
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OCCUPANT SEAT BELT OBSERVATION STUDY

