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Risk Assessment of Hazardous Material Transportation for Small and Tribal Communities

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16. Abstract

Small communities (population <5,000) and Native American communities in Nebraska often lack the means to adequately deal with highway-based crashes involving hazardous materials (HazMat). This research focused on assessing the vulnerability of small and tribal communities in Nebraska to the impacts of highway HazMat crashes. This was achieved by estimating the expected number and type of HazMat crashes per population in each community. Reported HazMat crashes were statistically analyzed to determine if small and Native American communities experienced a higher crash rate per population and per HazMat VMT than large and other small communities respectively. Mean HazMat crash rate per population statistically significantly differed between small and large communities while the mean crash rate comparison between the Native American and other small communities was not statistically significant. For the mean HazMat crash rate per HazMat VMT, neither comparison was found statistically significant. In expected HazMat crashes, actual HazMat crashes per population, and actual HazMat crashes per HazMat VMT, small communities had higher mean values than their larger counterparts. Communities on Native American reservation land experienced a higher expected and lower actual HazMat crash rate per population than other small communities. For actual HazMat crashes per VMT, Native American communities had a higher rate than other small communities.

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Abstract

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Chapter 1 Introduction

1.1 Background

Transportation of hazardous materials (HazMat) across the US is increasing, with truck transportation being the most common method of transport (U.S. Census Bureau 2020). Although infrequent, transportation incidents involving trucks carrying HazMat produce dangerous scenarios. Not only are the members of the incident at a higher-than-normal risk for injury or death, but there are also risks for nearby communities (Chen and Chen 2011; Verter and Erkut 1995). Many smaller communities lack the economic and political influence to quantify the dangers such incidents present at incident sites and surrounding areas. Lack of information is an impediment to adequate preparedness in cases of HazMat incidents.

This research focused on assessing the vulnerability of small (population <5,000) and tribal communities in Nebraska to the impacts of highway HazMat incidents. For this research, incidents were limited to those reported on public highways; non-highway related HazMat incidents were excluded from consideration. Section 3.1.1 and 3.1.2 detail further requirements for events to be considered HazMat incidents. To disseminate this information, guidance was prepared for the relevant communities. Incident data was sourced from the Pipeline and Hazardous Materials Safety Administration (PHMSA) as well as from the Nebraska Department of Transportation (NDOT). Geographic information system (GIS) analysis was conducted using ArcGIS. GIS data was utilized from the Integrated Public Use Microdata Series (IPUMS) and the Federal Highway Administration (FHWA) Highway Performance Monitoring System (HPMS).

1.2 Problem Statement

Previous research has shown highway-based HazMat transportation poses increased risks to both those on the road and the surrounding communities in the case of an incident (Chen and Chen 2011; Verter and Erkut 1995). In addition, smaller communities often lack the resources to prepare for severe emergency events, such as a large HazMat spill (Cross 2001). This combination puts small and tribal communities in a vulnerable position. For many communities in Nebraska, the extent of this vulnerability is unknown. To plan for future events, this risk needs to be estimated and appropriate documentation prepared to aid Nebraska small and tribal communities to better deal with HazMat incidents.

1.3 Research Objectives

This research determined the mean/average risk levels present for small communities and tribal communities in Nebraska by conducting a risk assessment. The assessed mean risk was used alongside statistical hypothesis testing to determine if small communities in Nebraska experience a higher HazMat incident rate per person and per HazMat vehicle mile traveled (VMT) than their larger Nebraska counterparts. Also, mean incident rates for both small communities and tribal communities were statistically compared to each other to determine if tribal communities experience a higher risk than other small communities in Nebraska. The hypothesis testing utilized the student's t-test with a significance level of 5% (i.e., the threshold below which the null hypothesis will be rejected). Each of the 13 cities in Nebraska with land on federal Native American reservations are under the 5,000 people threshold to be considered a small community in this research.

The first null hypothesis (henceforth referred to as hypothesis one) was that there is no significant difference between small and large communities actual HazMat incident rates per

individual. The alternative hypothesis was that there is a statistical difference between the two groups. The second null hypothesis (henceforth referred to as hypothesis two) was that there is no significant difference in the actual HazMat incident rate per individual between communities on federal Native American reservation land and other communities under 5,000 population. The alternative hypothesis was that there is a statistical difference between the two categories of communities.

The third null hypothesis (henceforth referred to as hypothesis three) was that there is no significant difference between small and large communities actual HazMat incident rates per million HazMat VMT. The alternative hypothesis was that there is a statistical difference between the two groups. The fourth null hypothesis (henceforth referred to as hypothesis four) was that there is no significant difference in the actual HazMat incident rate per million HazMat VMT between communities on federal Native American reservation land and other communities under 5,000 population. The alternative hypothesis was that there is a statistical difference between the two categories of communities.

For all hypotheses, a two-tailed t-test was conducted. The null hypothesis H_0 and alternative hypothesis H_1 are shown below. The mean actual HazMat incident rate per individual of the communities in the test is shown by μ and μ_0 (Montgomery and Runger 2007).

$$H_0: \mu = \mu_0 \tag{1.1}$$

$$H_1: \mu \neq \mu_0 \tag{1.2}$$

These hypotheses were tested using the test statistic T_0 shown below. Where $\bar{X}$ is the sample mean, μ_0 is the population mean, S is the pooled standard deviation, and n is the sample population.

$$T_0 = \frac{\bar{X} - \mu_0}{S/\sqrt{n}} \quad (1.3)$$

To meet the rejection criteria, either of the following equations must be true (Montgomery and Runger 2007).

$$t_0 > t_{\alpha/2,n-1} \quad or \quad t_0 < -t_{\alpha/2,n-1} \quad (1.4)$$

Finally, guidance was developed to assist these Nebraska communities with better planning for future HazMat incidents in Nebraska. The following tasks were undertaken to achieve the research objectives.

1.4 Research Program

The research program consisted of four tasks briefly described below.

1.4.1 Task 1: Literature Review

Chapter 2 of this thesis presents a review of literature pertaining to highway HazMat transportation and how it relates to small and tribal communities. The topics covered include an overview of the primary methods for transporting HazMat, challenges HazMat crashes pose to small and tribal communities, safety of HazMat transportation (including rules for transportation, crash frequency, crash severity, and countermeasures to mitigate HazMat incidents), HazMat risk assessment, and HazMat emergency planning.

1.4.2 Task 2: Data Collection

Chapter 3 describes the data collection effort comprised of acquiring ten years of Nebraska highway HazMat incident data (2008-2018) from both the PHMSA HazMat Incident

Report Search Tool as well as from NDOT's highway crash database. Data for GIS analysis were sourced from IPUMS as well as from the FHWA. These data include but are not limited to shapefiles of Nebraska state, county, and city geographic boundaries, federal highways, and city population. The use of Google Earth allowed conversion of HazMat incident locations to geographic coordinates (latitude and longitude). This was accomplished by using the address field in the HazMat incident data; an approximate location was used when the incident address was a general area.

Originally short-term traffic counts were planned to estimate the proportion of HazMat carrying vehicles near select small communities in Nebraska. However, during the research those short-term traffic counts were not undertaken as they were unnecessary. The average annual daily traffic counts (AADT) of heavy trucks were used in conjunction with previous research on the percentage of heavy trucks that carry HazMat in Nebraska.

1.4.3 Task 3: Data Analysis

Chapter 4 describes the data analysis task, which determined the location and proximity of HazMat incidents to communities of interest. A buffer analysis was conducted using ArcGIS Pro 2.8.1. This analysis revealed the locations of HazMat incidents in relation to different communities in Nebraska. Collected traffic counts, percentage of trucks carrying HazMat, and total truck miles traveled were combined with collected incident statistics to determine the risk presented by HazMat transportation. The estimated HazMat risk was further classified by each class of HazMat, expected incidents, and expected incidents per individual in the community.

Statistical analysis was completed in Microsoft Excel using the T.TEST function. Additionally, values such as standard deviations of datasets were obtained in Excel. All hypotheses were tested in this manner.

1.4.4 Task 4: Guidance for Native American Communities

Chapter 5 presents results of the data analysis, research conclusions, and guidance for distribution amongst relevant communities. This document informs on HazMat risks from highway transportation. Knowing what risks exist and from what HazMat will help communities better prepare for a HazMat incident near their population.

Chapter 2 Literature Review

2.1 Major Modes of HazMat Transportation

Looking at all modes of transportation in the United States, HazMat was transported a total of 382,472 million ton-miles in 2017 (U.S. Census Bureau 2020). This is approximately 12% of the total ton-miles moved that year. In this same period, just under three billion tons of HazMat were transported in the United States. Of this, approximately 61% of the weight was moved via truck transportation. Pipeline transportation accounted for approximately 22% of the weight, and rail was responsible for approximately 3% (U.S. Census Bureau 2020).

From 2012 to 2017, there was roughly a 19% increase in the number of HazMat tons shipped by truck. For all modes of transport, there was a 15% increase in shipped tons over the same range. The total amount of HazMat shipping by weight is increasing, and trucks are becoming a more frequent carrying mode. This paper will focus on HazMat transport via truck.

2.2 HazMat Crashes in Small and Tribal Communities

Cross (2001) completed a review on the vulnerability of small towns compared to large cities. Although the author did not focus on HazMat incidents specifically, the general vulnerability shortcomings of small towns were highlighted. The author found that because small towns have less economic and political influence, they are often more susceptible to catastrophic events. It is important to look at vulnerability from the perspective of individuals as well as the whole community. Small towns are more likely to have a higher percentage of their population affected by a single catastrophic event. Additionally, they have less structural support, such as fewer warning systems and a lack of proximate hospitals.

Rural communities are often limited in the resources available to them to prepare for HazMat incidents (Thompson et al. 2016). Small towns often do not have enough funding or

expertise to conduct studies such as a HazMat Commodity Flow Study (HMCFS) for their community. This lack of specific knowledge about the region can increase the difficulty of applying for and receiving grants and funding for HazMat-related issues. Overall, the current research on the effect of HazMat on small and tribal communities is lacking, although we know they are generally less prepared.

2.3 Safety of HazMat

2.3.1 Rules for Transportation of HazMat

Within the United States, all modes of HazMat transportation, including via truck, are regulated and enforced by PHMSA (PHMSA 2020). PHMSA has developed standards for classifying, handling, and packaging HazMat shipments. More specifically, enforcement duties consist of field inspections, programmatic inspections, civil and criminal investigations, incident investigations, community outreach, and emergency responses (PHMSA 2020).

2.3.2 Crash Frequency

According to the U.S. Department of Transportation (USDOT) PHMSA's 10-year incident summary report, from 2011 to 2020 there were 176,104 HazMat vehicular accidents and derailments (U.S. Department of Transportation 2021). Of this, just under 90% of these vehicular accident incidents occurred on the highway system. From 2011 to 2015 there were 70,400 highway incidents, while from 2016 to 2020 there were 85,914; this corresponds to an increase of 15,514 HazMat incidents over five years.

Qiao et al. (2009) investigated route-independent and route-dependent factors and their effect on highway HazMat crash frequency. Multiple public HazMat and crash databases were combined to estimate the effect. They found that number of lanes, population density of the area surrounding the road, clear weather compared to rainy weather, complexity of vehicle

configuration, and container capacity were positively correlated with HazMat vehicle crash frequency. Notably, the effect caused by the number of lanes was greatly reduced in low population density areas, such as rural locations. Driver experience, on the other hand, reduced the frequency of crashes.

2.3.3 Crash Severity

From 2011 to 2020 there were 156,314 highway HazMat incidents; of these incidents, 93 fatalities and 1,340 injuries occurred, according to PHMSA (U.S. Department of Transportation 2021). As reported by Khattak et al. (2003), single-truck crashes that involved HazMat were more likely to lead to severe injuries when compared to non-HazMat carrying truck crashes. This could be due to the dangerous nature of the cargo, as well as the risks caused by post-crash fires. Additionally, the authors reported HazMat crashes were 16% more likely to produce an injury, and 20% more likely to produce an injury when there was a post-crash fire (Khattak and Schneider 2003).

A more recent study by Ma et al. (2020) found that highway incidents in China were over three times more likely to produce a fatality if HazMat was involved. In addition, they found that rainy and snowy weather increased the odds of fatal crashes compared to other weather types (Ma et al. 2020). Although HazMat transportation rules vary from country to country, there is still a clear increase in danger due to the presence of HazMat and severe weather. This trend also appears, although not as extreme, in the results found by Chen and Chen (2011) concerning injury severities of single and multi-vehicle accidents on rural highways in Illinois. For both single and multi-vehicle accidents, the likelihood of incapacitating injury or fatality increased significantly (48.1% for single-vehicle and 49.1% for multi-vehicle) if the truck was transporting HazMat. In addition, the authors found that single-vehicle HazMat crashes have a 16% chance to

produce a non-incapacitating injury and a 22% chance for an incapacitating injury or fatality. For multi-vehicle crashes, these statistics were 7% for non-incapacitating injury and 11% for incapacitating injury or fatality (Chen and Chen 2011).

Uddin and Huynh (2018) found crashes in rural locations were related to a higher probability of major injuries (303.3%) and a lower likelihood of no injuries (68.2%) when compared to urban settings. This is potentially due to longer response times for emergency vehicles.

2.3.4 Countermeasures

To mitigate the negative impacts of HazMat incidents, many countermeasures have been implemented. In 1993, the FHWA assembled a panel of experts from different states to develop and rank 11 catastrophic HazMat scenarios. The experts agreed communication, detection-type, and regulatory systems were among the better mitigation options—although the latter was not in the scope of the panel (Russell 1993). A common way to reduce the risk in HazMat transport is to use computer-assisted routing, as described in the following section.

2.3.4.1 Routing

Computer-assisted routing of HazMat has been used to choose the safest route for HazMat transportation. As demonstrated in Lassarre et al. (1993), a framework was built in a geographic information system to compute the least risky route for HazMat in a region of France. More recently, a rapid route evaluation for total risk was created for Indian state highways (Chakrabarti and Parikh 2011). In this study, the total risk on routes was calculated considering spillage probability and the population residing within a critical bandwidth of 3.5 km along the route. A group in Italy devised a model and algorithm for determining minimum risk routes (Carotenuto et al. 2007). In this case, they also looked to implement risk equity over the exposed

population. In all cases, routing can be used to reduce the number of crashes and limit the adverse effects in the scenario of a release.

2.3.4.2 Decision Making

Ma et al. (2020) showed the increase in fatality chance when HazMat vehicles are driving in rainy, snowy, or nighttime conditions. Measures aimed to reduce the number of HazMat vehicles during these conditions could prove valuable. The authors also found that 5.8% of HazMat crashes in China were due to fatigued driving. In 2012, the United States Congress passed the MAP-21 Act, which went into effect in 2016. This act required truck drivers who record their hours of service to install an electronic logging device (ELD) (Federal Motor Carrier Safety Administration 2015). The ELD automatically records driving statistics to better enforce hours-of-service laws. In part, this was passed to try to prevent drivers from overexerting themselves and driving while fatigued.

Choices about HazMat shipping are often left up to the shipping company. The decision must be made to comply with legal boundaries that have been set. When businesses are making this choice, it comes down to the economic benefit of a route versus safety. Since you can never guarantee 100 percent safety, routing systems can help quantify the tolerable safety tradeoffs (Verter and Erkut 1995).

2.4 Crash Risk Assessment

Shipment route is regularly considered when assessing the risk of a HazMat crash. Factors such as population density along the roadway are often used to determine the risk associated with a potential incident. Besides potential consequences, the probability of an event is another common factor examined. The combination of these can be used to assess the risk for individuals as well as the overall population.

A study by Saccomanno and Shortreed (1993) examined societal and individual risks posed by transportation of bulk liquefied chlorine gas by truck and rail along a 200 km corridor in Ontario, Canada. Chlorine was selected as it provided a worst-case scenario for both perspectives. The risk was calculated by combining probability and consequence estimates of different scenarios. They found in their analysis that societal and individual risks were less than 10^{-5} per year for all locations along their corridor. This is considered an acceptable risk level as other similar rate events have similar associated risks. Although both categories of risk are low, they found an annual expected number of fatalities of 0.51 for rail and 2.12 for truck transportation.

Another method for risk assessment evaluated cities as single points with all the population living at the point. This type of method works better for smaller cities as the entire population is more likely to be affected by an incident than compared to a larger city. Because of this limitation, Verter and Erkut (1995) extended the point approach to instead consider cities as polygons that have a constant density. HazMat incidents with varying impact areas can then be moved through the populated area in the study to determine the impact. This method was successfully applied to two case studies to calculate the societal and individual risks imposed by HazMat transport (Verter and Erkut 1995).

As discussed in the above routing section, risk assessment can be performed considering risk equity along the route (Carotenuto et al. 2007). By examining the total risk applied to each roadway link in their study region, the risk was shared more equally throughout the area.

To evaluate the risk to a region on a state level, Khattak et al. (2013) used a combination of total truck miles traveled and percent of trucks carrying HazMat to determine risks present in Nebraska. From incident reports, they were then able to determine the number of incidents and

injuries per million miles traveled by HazMat trucks for various HazMat classes. Additionally, Nebraska was broken up into eight geographic areas with corresponding risks listed.

2.5 Emergency Planning for HazMat Incidents

To prepare emergency services for responding to HazMat incidents, including highway incidents, the governments of the United States, Canada, and Mexico prepared an emergency response guidebook. This document gives instructions on how to approach the scene of a HazMat incident. Depending on the hazard placard(s) on the vehicle or shipment ID, corresponding instructions for the associated risks are given (U.S. Department of Transportation et al. 2020). By doing so, both the responders and the people affected by the incident are better protected.

Ren et al. (2012) created an emergency response framework for roadway HazMat incidents. This was done by determining possible scenarios, accident probabilities, accident consequences, potentially exposed population, and the death toll of the exposure. This allows the researchers to quantitatively rank events based on societal and individual risks. Using this rank, the proper emergency response can be taken to maximize the safety of responders and individuals in the accident.

Chapter 3 Data Collection and Analysis

Ten years of Nebraska highway HazMat incident data (2007-2016) were acquired from both the PHMSA HazMat Incident Report Search Tool and NDOT's crash database. Data for GIS analysis were sourced from IPUMS and the FHWA. These data included but were not limited to shapefiles of Nebraska state, county, and city geographic boundaries, federal highways, and city population. Additional data collection was done in Google Earth to convert HazMat incident locations to geographic coordinates (latitude and longitude). This was accomplished by using the address field in the HazMat incident data. An approximate location was used when the incident address was a general area.

3.1 HazMat Incident Data

3.1.1 PHMSA Incident Data

Nebraska HazMat incident data were obtained in the form of Microsoft Excel files from PHMSA and the NDOT. The original study period was from 2008-2017 however, this was changed to January 1, 2007, through December 31, 2016 due to availability of data. This date range will be referred to as 2007-2016 for the remainder of this document. PHMSA HazMat incident data are generated by written and electronic submission of Hazardous Material Report Form F 5800.1 (see Appendix A). This form is required by law to be completed within 30 days of the incident by the person in possession of the HazMat at the time of the incident as detailed in the scenarios in 49 CFR § 171.16. Situations in 49 CFR § 171.16 also include situations in 49 CFR § 171.15(b). These documents can be found in Appendix A. Materials considered to be HazMat for the purpose of transportation are detailed in CFR § 173.2, and include HazMat classes 1-9, forbidden materials as specified by CFR § 173.21, forbidden explosives specified by CFR § 173.54, and Other Regulated Materials-Domestic (ORM-D) materials defined in CFR §

173.144 (Office of the Federal Register Administration and National Archives and Records 2020).

3.1.2 NDOT Incident Data

Incidents in the NDOT crash database are submitted by local law enforcement agencies, as required by Nebraska statute 60-699. This statute can be found in Appendix A (Nebraska Lesgislature 2021). If local law enforcement responds to an incident involving a vehicle displaying a HazMat placard, the Investigator's Supplemental Truck and Bus Accident Report (DR Form 174) document must be completed (see Appendix A). If the vehicle is displaying a HazMat placard, it is a HazMat vehicle incident, and the HazMat class (1-9) is recorded.

3.1.3 Difference Between PHMSA and NDOT Data Reporting

PHMSA considers HazMat beyond classes 1-9, including forbidden materials, forbidden explosives, and ORM-D materials. PHMSA requires reporting of incidents that may escape local law enforcement response, such as the unintentional release of HazMat or the discovery of structural damage to a retention system of a tank with a capacity of 10,000 gallons or greater. Furthermore, PHMSA does not require reporting for all incidents that involve highway transportation of HazMat, only cases found in 49 CFR § 171.16. PHMSA incidents are generally reported if the HazMat caused additional consequences that would not otherwise occur without the HazMat present. Because of this, it is possible that a HazMat vehicle incident would not qualify for PHMSA reporting, but would be reported to NDOT.

In the scenario that a HazMat vehicle incident occurs during transportation, and the HazMat in the vehicle in question does not lead to any additional consequences as a direct result of the HazMat, it would not be reported to PHMSA. However, local law enforcement would likely respond to this incident and generate a report for NDOT. Additionally, PHMSA data is

self-reported, while the NDOT data is generated by local law enforcement upon responding to a highway crash.

3.2 Data Processing

3.2.1 Geoprocessing

For both sets of data, each incident location was geocoded from an address description to latitude and longitude using Google Earth. Geolocation was done by hand due to inconsistent address format. Examples of accident locations were “I-80 Weigh Scale 0.7 miles E of North Platte”, “CR 27 N of N79-SW of Morse Bluff”, and “DRV-325 W “O” ST”. Nebraska state, city, and county boundary GIS shapefiles, as well as city populations, were sourced from IPUMS (Steven Manson, et al. 2021). Road system data were acquired from the FHWA HPMS (Federal Highway Administration 2018). Within ArcGIS, these elements were combined to form a map of hazmat incidents in Nebraska. Figure 3.1 represents the mapped incidents for 2007-2016.

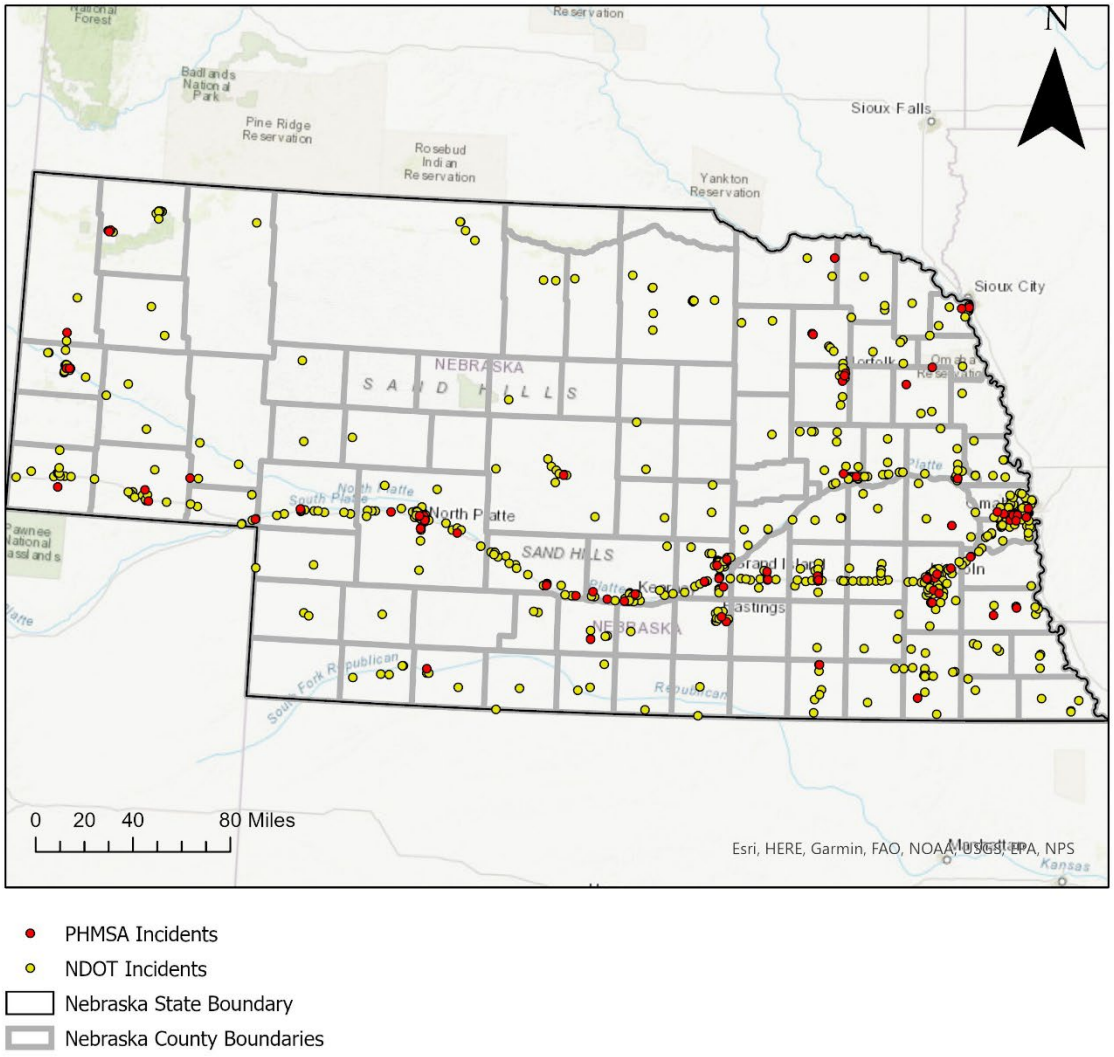

Figure 3.1 NDOT and PHMSA HazMat incidents (2007-2016)

3.2.2 Buffer Analysis

Using ArcGIS, city populations were joined to the appropriate city polygons using the GISJOIN field. The data were then filtered to only include cities with populations less than 5,000 people. A buffer analysis was conducted using ArcGIS around the perimeter of the remaining city boundaries. A buffer distance of seven miles was chosen as the worst-case scenario. This value was chosen due to the PHMSA 2020 Emergency Response Guidebook (ERG2020) listing

seven-plus miles as the largest protection distance (U.S. Department of Transportation et al. 2020). This distance determines the area that protective actions listed in the ERG2020 should be enacted within.

The buffer analysis captured 598 of the 724 NDOT incidents, and 98 of the 154 PHMSA incidents, i.e., these incidents were within the seven-mile buffer zones. Figure 3.2 below shows the map of Nebraska with the dissolved buffer and HazMat incidents. The dissolved buffer combines overlapping buffers into one feature. It can then be seen if an incident is within the protection distance of a small community. This shows that many incidents were reported within the designated protection distance from the ERG2020. Some incidents were captured by the seven-mile buffers of multiple cities and considered as posing risk to all cities. For example, if incident "*i*" was captured by the buffers of city "*x*" and city "*y*" then it was taken into consideration in the risk estimation of city "*x*" as well as in the risk estimation of city "*y*". Large numbers of incidents were reported in major cities such as Lincoln, Omaha, and North Platte. Additionally, many incidents were reported along the section of Interstate 80 passing through Nebraska.

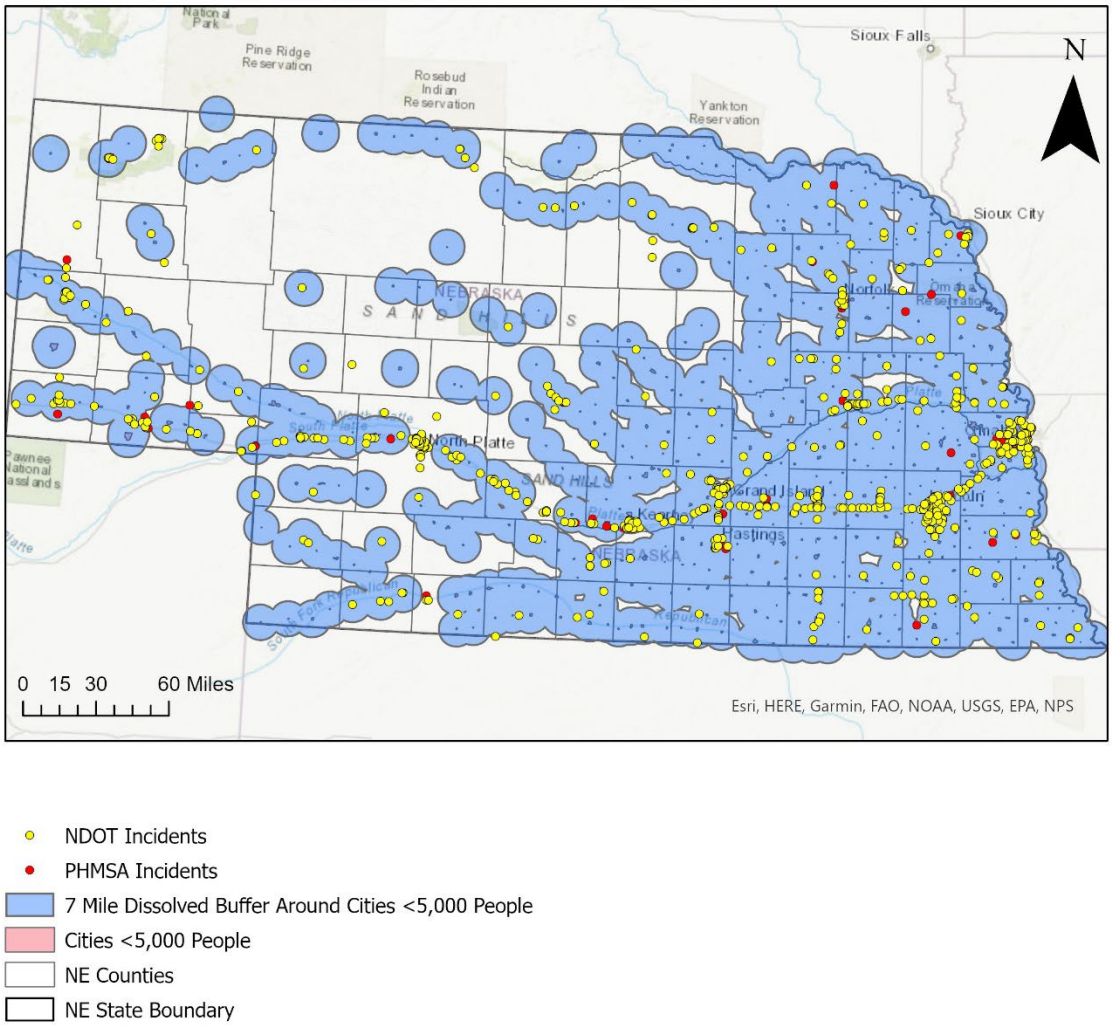

Figure 3.2 Nebraska HazMat incidents (2007-2016) and seven-mile buffer around communities with less than 5,000 population

The discrepancy between the number of PHMSA and NDOT incidents is likely due to differences in reporting guidelines and requirements discussed in Section 3.1. NDOT incidents were chosen for the research due to law enforcement capturing relevant incidents that did not meet PHMSA reporting requirements. Additionally, due to a lack of information, it was not possible to determine which PHMSA incidents were unique or identical to NDOT incidents.

3.3 Expected HazMat Incidents in Nebraskan Communities

3.3.1 Percent Truck Traffic from ATRs

Automatic Traffic Counter (ATR) point data for Nebraska from 2007 through 2017 were sourced from NebraskaMAP (State of Nebraska 2022). However, ATR data for the odd years (2007, 2009, …, 2017) were incomplete, therefore, only even year (2008, 2010, …, 2016) data were used in this research. ATR data were combined with the previous buffer analysis. ATRs within seven miles of a city's boundary were spatially joined to the corresponding city. When multiple ATRs were within the seven-mile buffer, all ATRs in this distance were joined to the city. Using the number of total vehicles and the number of total trucks from these joined ATRs, the percentage of truck traffic was estimated for each city. Percentage of traffic that is truck traffic is used in Section 3.3.2 along with city vehicle miles traveled (VMT) to determine city truck VMT.

An example of this process for Walthill, Nebraska is as follows. Figure 3.3 presents ATRs within the 7-mile buffer for Walthill. Summing the values for the total vehicles and the total number of trucks through these ATRs gave the percent of traffic comprised of trucks for Walthill. Table 3.1 shows the relevant calculations.

Table 3.1 Walthill, Nebraska percent truck AADT calculation

Walthill Sum of Truck AADT	**Walthill Sum of All AADT**	**Walthill Percent Truck AADT**
19,794	163,110	12.135

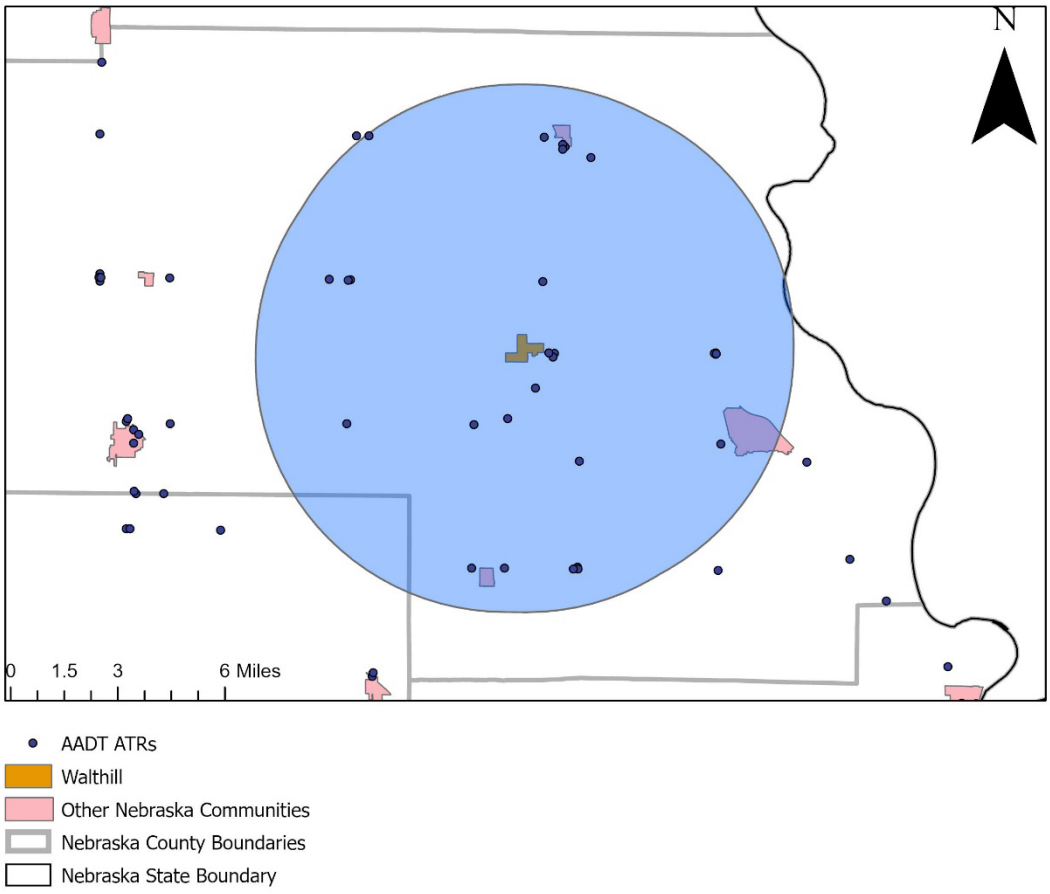

Figure 3.3 Walthill, Nebraska 7-mile buffer and ATRs

Segmental AADT data on state highways was also joined to corresponding cities in a similar manner. This was done using the midpoint of a given segment to determine the location relative to the city buffer. This is shown below in figure 3.4. Point and segment percent truck traffic was found to be similar. Segment data were only available for 2016 and 2018. Even year point AADT data were used in subsequent analyses.

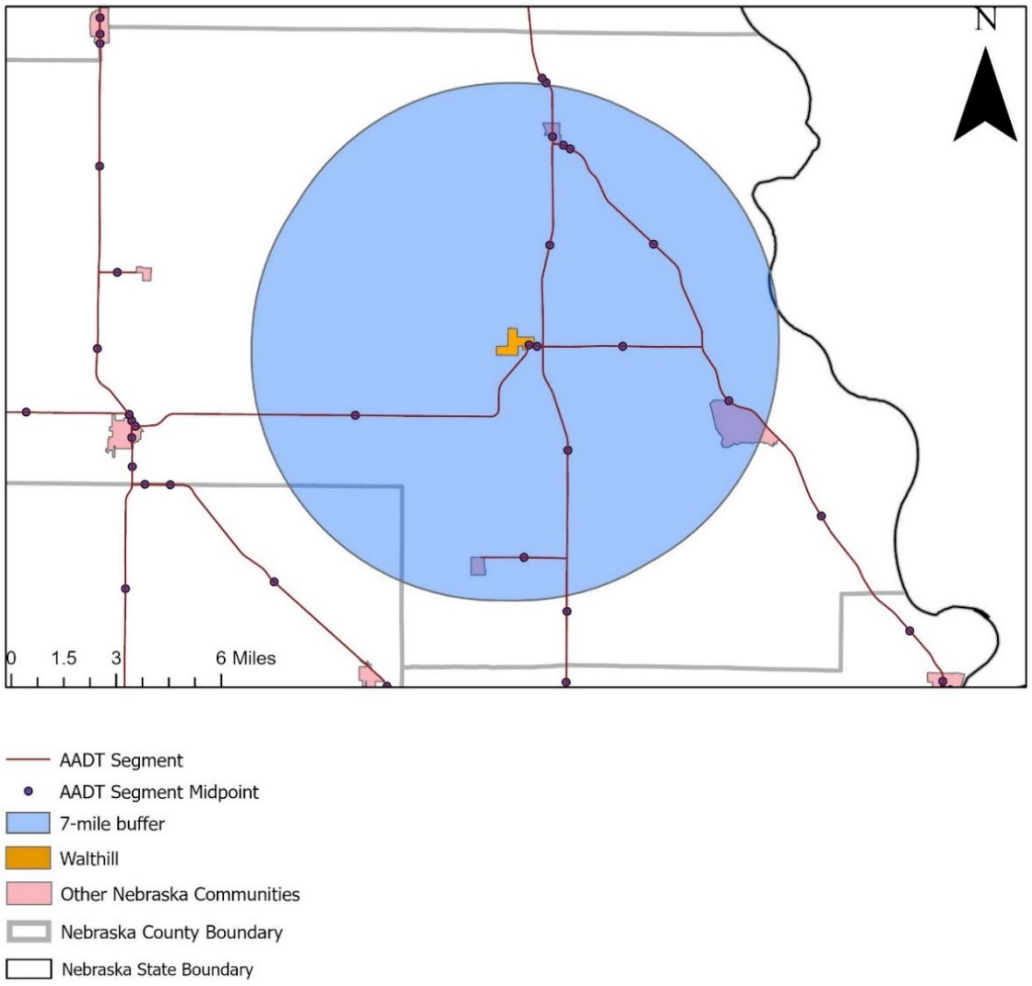

Figure 3.4 Walthill, Nebraska 7-mile buffer, AADT segments, and AADT segment midpoints

Two locations, Max and Parks in Nebraska, did not have ATRs within seven miles of their respective city boundaries. For these two cities, the ATRs used for obtaining truck traffic percentage were extended: 8-miles for Max and 10-miles for Parks. These values were chosen by increasing the buffer radius in 1-mile increments until ATRs were present within the buffer zone. Burton, Nebraska only had ATR data for 2014 and 2016. The average of these values was used

for even years from 2008 to 2016. Seven locations, Ames, Burton, Gross, Monowi, Raeville, Westerville, and White Clay do not have any population in the database. White Clay is the only community with no population on a Native American reservation out of the 13 Native American reservation communities.

3.3.2 City HazMat VMT

County-level annual VMT data were obtained for 2018 (NDOT 2022). Each county's annual VMT were distributed to each city within that county in proportion to the city's land area. Cities geographically located in multiple counties were considered to be wholly in the county that contained the city centroid. For example, Walthill is in Thurston County and constitutes 13.19 percent of the total county land area. In 2018 Thurston County registered a total of 81.761 million vehicle miles of travel. Allocating 13.19 percent of this value results in a VMT of 10.78 million for Walthill. Table 3.2 presents the detailed VMT calculations for Walthill.

Truck vehicle miles traveled were then estimated by multiplying the city vehicle miles traveled by the estimated city percent truck traffic, estimated earlier in Section 3.3.1. For Walthill, the percent truck traffic was 12.14 percent of the total traffic. Applying this value to the city VMT of 10.78 million miles gives 1.31 million truck miles traveled.

According to a field survey conducted in 2010 by Khattak et al. (2013), approximately 4.5 percent of trucks in Nebraska were determined to be carrying HazMat materials. Applying this to the truck vehicle miles traveled for each city gave an estimated number of HazMat vehicle miles traveled in each city. For Walthill, applying 4.5 percent of trucks being HazMat trucks results in 0.059 million HazMat vehicle miles traveled.

Table 3.2 Walthill, Nebraska HazMat VMT (million) calculation

City percent of total county city area	County VMT (millions)	City VMT (millions)	Percent of city VMT that is Truck VMT	City Truck VMT (millions)	City HazMat VMT (millions)
13.18	81.761	10.78	12.14	1.31	0.059

3.3.3 Expected Incident Rates and Incidents Per Individual in NEMA Regions

Nebraska was divided into the eight regions defined by the Nebraska Emergency Management Agency (NEMA) (2017) as shown in figure 3.5. This was done to give a localized analysis for the communities within each region.

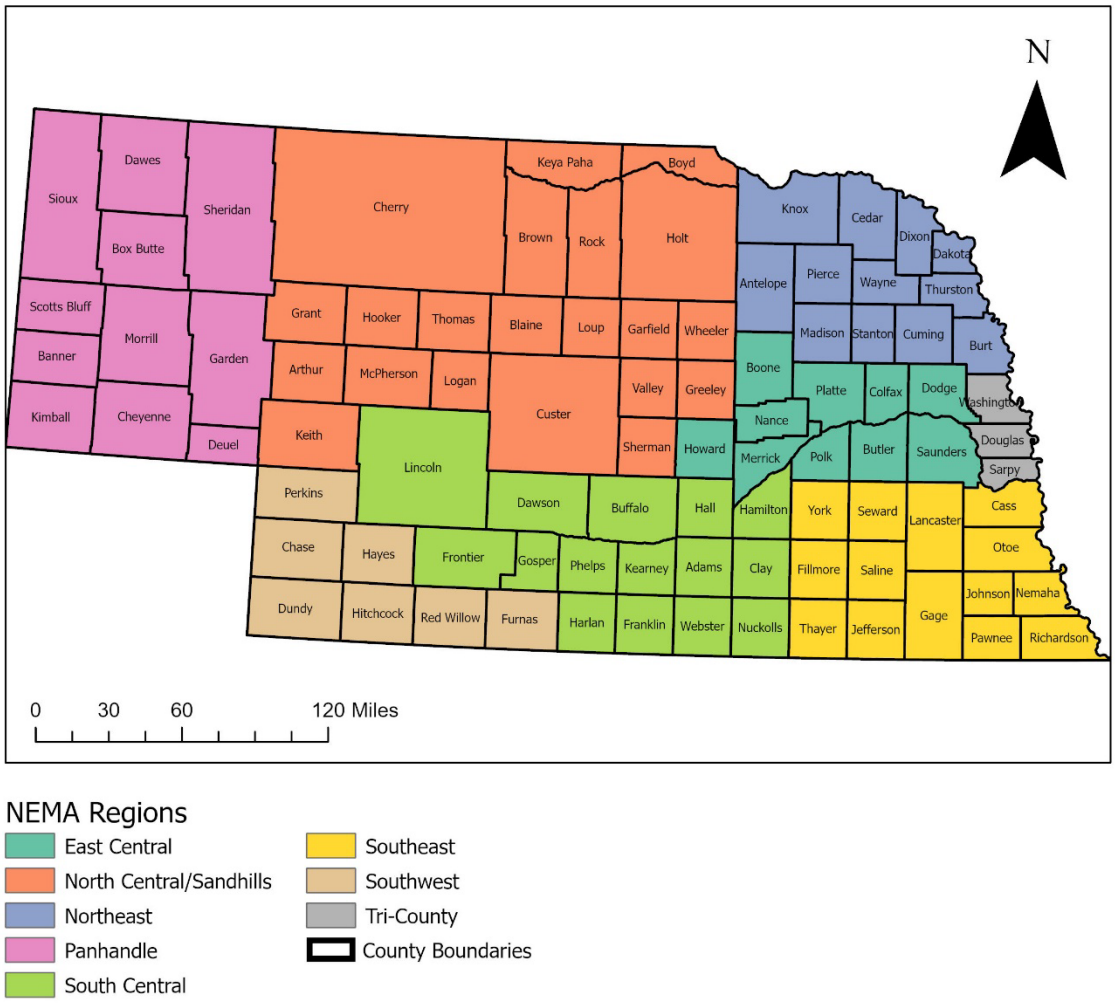

Figure 3.5 Nebraska Emergency Management regions

Within each of the eight regions, HazMat incident rates in terms of incidents per HazMat truck mile traveled were determined by dividing the reported HazMat incidents in the region by the number of HazMat vehicle miles traveled in that region. This information can be found in table 3.5. This regional HazMat incident rate was then applied to each city in the respective region to determine the expected number of HazMat incidents in ten years for each city. Each city's expected number of HazMat incidents was divided by the 2019 city population to give the expected ten-year incidents per individual.

Walthill is in the Northeast NEMA region, which has an expected incident rate of 0.573 per million hazmat truck miles traveled. In Walthill there are 0.0589 million HazMat vehicle miles traveled per year, or 0.589 million per 10-year period. Multiplying by the regional incident rate gives an estimated incident number of 0.337 in a 10-year period. Walthill has a population of 792 people in 2019, giving an estimated ten-year HazMat incident rate of 4.26 per 10,000 people. Table 3.3 presents the calculations for Walthill, Nebraska.

Table 3.3 Walthill, Nebraska incidents per person in 10-year period

Northeast NEMA incident rate per million HazMat VMT	Walthill 10-year HazMat VMT (millions)	Incidents in 10-year period	Walthill Population	Incidents per 10,000 people in 10-year period
0.573	0.589	0.337	792	4.26

The calculations explained above were completed for each city in Nebraska. The complete table can be found in table B.1. Table 3.4 presents an excerpt of from table B.1 showing a few select cities on Nebraska Native American reservations. Santee, Walthill, Winnebago, and Preston are on the Santee, Omaha, Winnebago, and Sac and Fox reservations, respectively.

Table 3.4 Select cities on Native American reservations in Nebraska

City	County	HazMat Truck VMT (millions) in 1 year	Expected incidents in 10-year period	Expected incidents in 10-year period per 10,000 people
Preston	Richardson	0.002	0.016	4.912
Santee	Knox	0.039	0.223	5.743
Walthill	Thurston	0.059	0.337	4.256
Winnebago	Thurston	0.029	0.165	2.173

3.3.4 HazMat Classification in NEMA Regions

Within each NEMA region, information on the class of HazMat present in incidents was collected. This can then be used to determine likely types of HazMat that may show up in the expected 10-year incidents. Table 3.5 presents HazMat classification information for the eight regions. Any HazMat incidents recorded as “0”, “N”, or left blank (i.e., no value) were recorded in a separate category.

Table 3.5 HazMat classification in NEMA regions

Region	Total HazMat VMT (millions) 1 year	HazMat VMT (millions) 10 year period	Incidents (10 year period)	Expected incidents per million HazMat VMT	Class 1	Class 2	Class 3
East Central	7.42	74.25	78	1.051	1	14	21
North Central/Sand hills	8.63	86.26	51	0.591	5	9	18
Northeast	9.26	92.57	53	0.573	2	13	28
Panhandle	10.84	108.35	69	0.637	6	8	29
South Central	19.61	196.06	194	0.989	8	28	46
Southeast	24.58	245.83	167	0.679	9	43	43
Southwest	2.42	24.25	15	0.619	NA	4	5
Tri-County	16.33	163.33	97	0.594	11	20	43
Region	**Class 4**	**Class 5**	**Class 6**	**Class 7**	**Class 8**	**Class 9**	**0/Blank /N**
East Central	1	NA	NA	NA	7	3	31
North Central/Sand hills	NA	1	NA	NA	2	14	2
Northeast	1	1	NA	NA	NA	7	1
Panhandle	1	1	NA	NA	8	10	6
South Central	5	1	4	NA	12	30	60
Southeast	2	5	1	1	13	24	26
Southwest	NA	1	NA	NA	2	3	NA
Tri-County	NA	1	1	NA	5	1	15

3.4 Hypothesis Testing

3.4.1 Actual HazMat Incidents per Individual

NDOT HazMat incidents were joined to communities that resided within seven miles of each incident. This was conducted using the same spatial join method shown above for ATRs

and AADT segments. For each community a count of the number of HazMat incidents in ten-years within seven miles was generated. Dividing this by the 2019 population produced actual HazMat incidents per individual in the community. Of the 580 communities in Nebraska, 234 (40.34 %) did not have an incident within seven miles during the ten-year time span. The actual HazMat incident rates for each community can be found in table C.1.

3.4.2 Actual HazMat Incidents per VMT

Actual HazMat incidents per VMT was obtained by first joining HazMat incidents to communities within seven miles of each incident. This was conducted using the same spatial join method shown above for ATRs and AADT segments. Dividing this by the city HazMat VMT found in Section 3.3.2 produced actual HazMat incidents per million HazMat VMT in each community.

Chapter 4 Results

4.1 Expected HazMat Incidents per 10,000 Persons

4.1.1 Expected Incidents Comparison Between Small, Large, and Native American Reservations

To determine relative risk levels between large, small, and tribal communities, expected HazMat incidents per 10,000 persons in each community were examined. Analyzing per 10,000 persons was done to normalize the incidents to allow comparisons between communities of different populations. Table 4.1 below compares the average expected incidents for small, large, and Native American reservation communities. Communities with no listed population were excluded from the calculations.

Table 4.1 Mean number of HazMat incidents in small, large, and Native American reservation communities

Community Category	**Average Expected Incidents in 10-year Period per 10,000 People in Community**
All Communities	53.81
Communities under 5000 Population	56.92
Communities Over 5000 Population	4.62
Communities On Native American Reservations	18.39

On average, a community in Nebraska can expect to see 53.81 HazMat incidents in 10 years per 10,000 2019 population. Within the 539 communities with 5,000 population or less, the average

is slightly higher at 56.92 expected incidents. For the 34 communities with more than 5,000 population, the average expected incidents in 10 years per 10,000 people is 4.62. The 12 communities on Native American reservation land average 18.39 expected incidents.

As seen in table 4.2, the top two communities have more expected incidents per 10,000 persons than other communities in the top ten by approximately a factor of 10. Looking at the average expected incidents without these communities give an overall average of 32.97 and 34.77 incidents per 10,000 people for all communities and small communities, respectively.

4.1.2 Top Ten Cities for Expected Incidents

Table 4.2 below shows the 10 highest expected incidents in 10 years per 10,000 persons. These communities have an average population of just under 44 persons.

Table 4.2 Top 10 small communities expected HazMat incident rates in 10-year period per 10,000 people

City	County	HazMat Truck VMT (millions) in 1 year	Expected incidents in 10 year period	Expected incidents in 10 year period per 10,000 people
Willow Island	Dawson	0.72	7.09	7876.16
Tamora	Seward	0.55	3.72	4132.10
Lorenzo	Cheyenne	0.28	1.75	761.82
Poole	Buffalo	0.32	3.18	636.68
Sunol	Cheyenne	0.51	3.26	509.47
Belmar	Keith	0.89	5.28	507.63
Nora	Nuckolls	0.03	0.26	429.09
Archer	Merrick	0.21	2.16	424.23
Overland	Hamilton	0.42	4.12	412.31
Richfield	Sarpy	0.14	0.83	393.04
Aten	Cedar	0.17	0.97	347.76

Most notably, Willow Island has expected incidents of 7,876.16 and Tamora has expected incidents of 4,132.10 in 10 years per 10,000 persons. This is approximately a factor of 10 greater than the other communities in the top 10. Both Willow Island and Tamora have a population of nine in addition to a relatively high number of HazMat vehicle miles traveled. The average number of HazMat vehicle miles for the 131 cities with 100 or less population is 0.059 million miles per year. A combination of relatively high HazMat truck VMT along with low population creates a high individual risk for members of these communities.

4.1.3 Native American Reservation Communities

Results for the 13 communities on Native American reservations in Nebraska can be found in table 4.3.

Table 4.3 Native American communities expected HazMat incident rates in 10-year period per 10,000 people

City	County	Reservation	HazMat Truck VMT (millions) in 1 year	Expected incidents in 10-year period	Expected incidents in 10-year period per 10,000 people
Bancroft	Cuming	Omaha	0.095	0.544	11.867
Decatur	Burt		0.129	0.740	19.626
Macy	Thurston		0.194	1.109	11.228
Pender	Thurston		0.100	0.571	4.743
Rosalie	Thurston		0.035	0.201	12.491
Walthill	Thurston		0.059	0.337	4.256
White Clay	Sheridan	Pine Ridge	0.012	0.079	
Preston	Richardson	Sac & Fox Nation	0.002	0.016	4.912
Santee	Knox	Santee Sioux	0.039	0.223	5.743
Lindy	Knox		0.047	0.268	133.846
Emerson	Dakota	Winnebago	0.050	0.284	3.148
Thurston	Thurston		0.014	0.083	6.641
Winnebago	Thurston		0.029	0.165	2.173

White Clay Nebraska does not have any population, and therefore no expected incidents per 10,000 people. Iowa reservation, while partially within Nebraska, does not have any

communities in Nebraska. Of the communities on Native American reservations, Lindy, Nebraska on the Santee Sioux reservation has the highest expected incidents per 10,000 persons at 133.85.

4.2 Hypothesis Testing

Hypothesis one was tested using a two-tailed t-test in Excel. Mean actual HazMat incident rates per population of small communities were compared to their larger counterparts. This was found statistically significant with a t-score of -61.29 and a corresponding p-value of 0.000036. Because this is below the 0.05 threshold, we reject the null hypothesis and conclude that small and large communities experience statistically different mean actual HazMat incident rates per population. The two populations had means of 0.00162 and 0.0221 actual HazMat incidents per individual for large and small communities, respectively, therefore, smaller communities experience the higher rate. In Nebraska, many small communities consist of people who make their livelihood in agriculture. To do this, various fertilizers, pesticides, and insecticides are needed. This increased demand for HazMat may explain part of the difference in HazMat incident rates per population between small and large communities.

Hypothesis two was tested in the same manner, comparing mean actual HazMat incident rates per population of communities with land on federal Native American reservations to other small communities. This was found to not be statistically significant with a t-score of -0.618 and a corresponding p-value of 0.585. Because of this we fail to reject the null hypothesis. In this case the means were much closer with 0.0223 and 0.0158 actual HazMat incidents per individual for small and tribal communities, respectively.

Hypothesis three compared actual HazMat incident rates per million HazMat VMT between small and large communities. This was not found statistically significant with a t-score

of -0.417 and a corresponding p-value of 0.700. Because of this we fail to reject the null hypothesis. Both groups had similar means of 6.02 and 5.12 actual 10-year incidents per million HazMat VMT for small and large communities respectively.

Hypothesis four compared actual Hazmat incident rates per million HazMat VMT between communities with land on federal Native American reservations to other small communities. This was not found to be statistically significant with a t-score of 0.662 and a corresponding p-value of 0.521 and therefore, we fail to reject the null hypothesis. In this case the means varied much more than hypothesis three with 14.29 and 5.82 actual 10-year HazMat incidents per million HazMat VMT for small and tribal communities, respectively. The mean values and standard deviations of these results can be found in table 4.4. P-values can be found in table 4.5.

Table 4.4 Nebraska communities means and standard deviations for 10-year incidents per person and HazMat VMT

Type of Nebraska Community	**Mean 10-year incidents per person (standard deviation)**	**Mean 10-year incidents per million HazMat truck miles traveled (standard deviation)**
Large (>5,000)	0.0016 (0.00195)	5.16 (11.99)
Small (>0 and <5,000)	0.0221 (0.1139)	6.02 (18.70)
Small Native American	0.0158 (0.0361)	14.29 (46.19)
Small Non-Native American	0.0223 (0.1151)	5.82 (17.57)

Table 4.5 Hypothesis testing p-values

Type of Nebraska Community	**10-year incidents per person p-value**	**10-year incidents per million HazMat truck miles traveled p-value**
Large (>5,000)	0.000036	0.7
Small (>0 and <5,000)		
Small Native American	0.585	0.521
Small Non-Native American		

Chapter 5 Conclusions

Highway transportation of HazMat is an unavoidable practice that goes together with modern industry and technological advancement. Highway HazMat transportation presents risks to members of communities in proximity to highways. Due to the vast network of highways and the numerous communities along them, this risk is often not quantified. This lack of knowledge is more common in small communities who often lack the resources to determine the risks their communities face. To be prepared for an incident, the first step is knowing the present risks.

This research was conducted to provide a widely applicable risk assessment for all communities in Nebraska. Analysis consisted of two main parts. First, an estimation of the HazMat VMT for each city in Nebraska was completed. This was achieved by first analyzing AADT values from ATRs to determine the percentage of traffic that is truck traffic around each community. Next, county annual vehicle miles were allocated to communities based on the relative proportion of land a community possessed in each county. Truck traffic percentage was applied to annual VMT of each community to get truck VMT. Finally, a percentage of HazMat vehicles was applied to truck VMT to determine the HazMat VMT in each community.

Second, a localized HazMat incident rate was determined for the eight NEMA regions using NDOT HazMat incidents in conjunction with HazMat VMT for each county. Each region's HazMat incident rate was applied to corresponding counties within the region, resulting in an expected number of HazMat incidents in each community. Normalizing the expected HazMat incidents based on population of community allowed comparison between categories of community.

On average, small communities (5,000 or less population) were found to have a higher expected HazMat incidents per individual than their larger counterparts. Additionally,

communities on Native American reservations had higher expected HazMat incidents per individual than communities over 5,000 in population, but less than the average for small communities.

In addition to the widely applicable risk assessment outlined above, statistical hypothesis testing was conducted using a count of HazMat incidents proximate to communities. This was done not by estimating the expected number of HazMat incidents, but by summing the actual incidents around communities. It was found there is a statistically significant difference in actual HazMat incidents per individual rates between large and small communities, and not a statistically significant difference between Native American communities and other small communities. Actual HazMat incident per million VMT was also statistically tested and found to not be statistically significant between large and small communities as well as not be significant between Native American communities and other small communities.

Although this application of risk analysis provides broad risk assessment for many communities, it does not provide detailed information for communities. To better understand the risks communities with high expected HazMat incidents per population face, further site-specific analysis is needed. Knowing which areas experience higher rates is the first step in this process.

The following presents guidance for Native American communities on their risks related to highway HazMat transportation.

- Omaha, Santee Sioux, and Winnebago: All three are in the Northeast NEMA region. Within this region the most common HazMat incident over the 10-year study span was Class 3 HazMat at 45 percent, followed by Class 2 HazMat at 25 percent.

- Pine Ridge: Pine Ridge is in the Panhandle NEMA region where the most common HazMat incident over the 10-year study span was Class 3 HazMat at 42 percent, followed by Class 9 HazMat at 14 percent.
- Sac and Fox Nation: Sac and Fox Nation resides in the Southeast NEMA region. Within this region the most common HazMat incident over the 10-year study span was a tie between Class 2 HazMat and Class 3 HazMat, both representing 26 percent of the incidents. Of the 11 Class 5 HazMat incidents in the study, five of them (45 percent) take place in this region. Of the NEMA regions with Native American reservations, the Southeast region has the highest expected incidents per HazMat VMT at 0.679 incidents per million HazMat VMT.

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on use as evidence; confidential information; violation; penalty.

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Appendix A Hazardous Materials Incident Report, Form F 5800.1, 49 CFR § 171.16, 49 CFR § 171.15,

State of Nebraska Investigator's Supplemental Truck and Bus Accident Report (DR Form 174)

60-699. Accidents; reports required of operators and owners; when; supplemental reports; reports of peace officers open to public inspection; limitation on use as evidence; confidential information; violation; penalty.

(1) The operator of any vehicle involved in an accident resulting in injuries or death to any person or damage to the property of any one person, including such operator, to an apparent extent that equals or exceeds one thousand five hundred dollars shall within ten days forward a report of such accident to the Department of Transportation. Such report shall not be required if the accident is investigated by a peace officer. If the operator is physically incapable of making the report, the owner of the motor vehicle involved in the accident shall, within ten days from the time he or she learns of the accident, report the matter in writing to the Department of Transportation. The Department of Transportation or Department of Motor Vehicles may require operators involved in accidents to file supplemental reports of accidents upon forms furnished by it whenever the original report is insufficient in the opinion of either department. The operator or the owner of the motor vehicle shall make such other and additional reports relating to the accident as either department requires. Such records shall be retained for the period of time specified by the State Records Administrator pursuant to the Records Management Act.

(2) The report of accident required by this section shall be in two parts. Part I shall be in such form as the Department of Transportation may prescribe and shall disclose full information concerning the accident. Part II shall be in such form as the Department of Motor Vehicles may prescribe and shall disclose sufficient information to disclose whether or not the financial responsibility requirements of the Motor Vehicle Safety Responsibility Act are met through the carrying of liability insurance.

(3) Upon receipt of a report of accident, the Department of Transportation shall determine the reportability and classification of the accident and enter all information into a computerized database. Upon completion, the Department of Transportation shall electronically send Part II of the report to the Department of Motor Vehicles for purposes of section 60-506.01.

(4) Such reports shall be without prejudice. Except as provided in section 84- 712.05, a report regarding an accident made by a peace officer, made to or filed with a peace officer in the peace officer's office or department, or filed with or made by or to any other law enforcement agency of the state shall be open to public inspection, but an accident report filed by the operator or owner of a motor vehicle pursuant to this section shall not be open to public inspection. Date

of birth and operator's license number information of an operator or owner included in any report required under this section shall be confidential and shall not be a public record under section 84-712.01. The fact that a report by an operator or owner has been so made shall be admissible in evidence solely to prove compliance with this section, but no such report or any part of or statement contained in the report shall be admissible in evidence for any other purpose in any trial, civil or criminal, arising out of such accidents nor shall the report be referred to in any way or be any evidence of the negligence or due care of either party at the trial of any action at law to recover damages.

(5) The failure by any person to report an accident as provided in this section or to correctly give the information required in connection with the report shall be a Class V misdemeanor.

Source: Laws 1931, c. 110, § 29, p. 315; C.S.Supp.,1941, § 39-1160; R.S.1943, § 39-764; Laws 1951, c. 120, § 1, p. 531; Laws 1953, c. 215, § 1, p. 761; Laws 1961, c. 189, § 2, p. 580; Laws 1961, c. 319, § 1, p. 1019; Laws 1973, LB 417, § 1; R.S.Supp.,1973, § 39-764; Laws 1985, LB 94, § 2; R.S.1943, (1988), § 39-6,104.04; Laws 1993, LB 370, § 195; Laws 1993, LB 575, § 24; Laws 2003, LB 185, § 4; Laws 2017, LB263, § 73; Laws 2017, LB339, § 186; Laws 2021, LB174, § 30.

Effective Date: August 28, 2021

Cross References

Motor Vehicle Safety Responsibility Act, see section 60-569.

Records Management Act, see section 84-1220.

Annotations

Report of accident was not admissible in evidence. Styskal v. Brickey, 158 Neb. 208, 62 N.W.2d 854 (1954).

U.S. Department of Transportation
Pipeline and Hazardous Materials
Safety Administration

Hazardous Materials Incident Report

Form Approval OMB No. 2137-0039

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 2137-0039. The filling out of this information is mandatory and will take 96 minutes to complete

NSTRUCTIONS Submit this report to the Information Systems Manager, U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration, Office of Hazardous Materials Safety, DHM-63, Washington, D.C. 20590-0001. If space provided for any item is inadequate, use a seperate sheet of paper, identifying the entry number being completed. Copies of this form and instructions can be obtained from the Office of Hazardous Materials Website at http://hazmat.dot.gov. If you have any questions, you can contact the Hazardous Materials Information Center at 1-800-HMR-4922 (1-800-467-4922) or online at http://hazmat.dot.gov

PART I - REPORT TYPE

. This is to report:
- ☐ **A)** A hazardous material incident
- ☐ **B)** An undeclared shipment with no release
- ☐ **C)** A specification cargo tank 1,000 gallons or greater containing any hazardous materials that (1) received structural damage to the lading retention system or damage that requires repair to a system intended to protect the lading retention system and (2) did not have a release.

2. ndicate whether this is: ☐ An initial report ☐ A supplemental (follow-up) report ☐ Additional Pages

PART II - GENERAL INCIDENT INFORMATION

3. Date of Incident:_____ **4.** Time of Incident (use 24-hour time): _____

5. Enter National Response Center Report Number (if applicable): _____

6. If you submitted a report to another Federal DOT agency, enter the agency and report number: _____

7. Location of Incident: City:_____ County:_____ State_____ ZIP Code (if known) _____

Street Address/Mile Marker/Yardname/Airport/Body of Water/River Mile _____

8. Mode of Transportation ☐ Air ☐ Highway ☐ Rai ☐ Water

9. Transportation Phase ☐ n Transit ☐ Loading ☐ Unloading ☐ In Transit Storage

10. Carrier/Reporter Name _____
Street_____
City_____ State_____ ZIP Code _____
Federal DOT ID Number_____ Hazmat Registration Number _____

1. Shipper/Offeror Name _____
Street_____
City_____ State_____ ZIP Code _____
Waybill/Shipping Paper_____ Hazmat Registration Number _____

2. Origin (if different from shipper address)
Street _____
City_____ State_____ ZIP Code _____

13. Destination
Street _____
City_____ State_____ ZIP Code _____

4. Proper Shipping Name of Hazardous Material: _____

5. Technical/Trade Name: _____

16. Hazardous Class/ Division_____

7. dentification Number:_____ (E.g. UN2764, NA 2020)

18. Packing Group:_____ (if applicable)

19. Quantity Released: _____ (Include Measurement Units)

20 Was the material shipped as a hazardous waste? ☐ Yes ☐ No If yes, provide the EPA Manifest Number: _____

21. Is this a Toxic by Inhalation (TIH) material? ☐ Yes ☐ No If yes, provide the Hazard Zone: _____

22. Was the material shipped under an Exemption, Approval, or Competent Authority Certificate? ☐ Yes ☐ No
If yes, provide the Exemption, Approval, or CA number: _____

23. Was this an undeclared hazardous materials shipment? ☐ Yes ☐ No

Form DOT F 5800.1 (01-2004) Page Reproduction of this form is permitted

PART III - PACKAGING INFORMATION

24. Check Packaging Type (check only one - if more than one, list type of packaging, copy Part III, and complete for each type:

☐ Non-bulk ☐ BC ☐ Cargo tank Motor Vehicle (CTMV) ☐ Tank Car

☐ Cylinder ☐ RAM ☐ Portable Tank ☐ Other _____

25. See instructions and enter the appropriate failure codes found at the end of the instructions. Be sure to enter the codes from the list that corresponds to the particular packaging type checked above. Enter the number of codes as appropriate to describe the incident. Enter the most important failure point in line 1. If there are more than two failure points, provide in this format in part VI.

. What Failed: ____ ____ ____ How Failed: ____ ____ ____ Causes of Failure: ____ ____ ____

2. What Failed: ____ ____ ____ How Failed: ____ ____ ____ Causes of Failure: ____ ____ ____

26a. Provide the packaging identification markings, if available.

Identification Markings: _____

(Examples: 1A1/Y1.4/150/92/USA/RB/93/RL, UN31H1/Y0493/USA/M9339/10800/1200, DOT - 105A - 100W (RAIL), DOT 406 (HIGHWAY), DOT 51, DOT 3-A)

26b. For Non-bulk, IBC, or non-specification packaging, if identification markings are incomplete or unavailable, see instructions and complete the following:

Single Package or Outer Packaging:

Packaging Type: _____

Material of Construction: _____

Head Type (Drums only): ☐ Removable ☐ Non - Removable

Single Package or Inner Packaging (if any):

Packaging Type: _____

Material of Construction: _____

27. Describe the package capacity and the quantity:

Single Package or Outer Packaging:

Package Capacity: _____

Amount in Package: _____

Number in Shipment: _____

Number Failed: _____

Single Package or Inner Packaging (if any):

Package Capacity: _____

Amount in Package: _____

Number in Shipment: _____

Number Failed: _____

28. Provide packaging construction and test information, as appropriate:

Manufacturer: _____ Manufacture Date: _____

Serial Number: _____ Last Test Date: _____

Material of Construction: _____ (if Tank Car, CTMV, Portable Tank, or Cylinder)

Design Pressure: _____ (if Tank Car, CTMV, Portable Tank)

Shell Thickness: _____ (if Tank Car, CTMV, Portable Tank)

Head Thickness: _____ (if Tank Car, CTMV)

Service Pressure: _____ (if Cylinder)

f valve or device failed:

Type: _____ Manufacturer _____ (if present and legible) Model _____ (if present and legible)

29. If the packaging is for Radioactive Materials, complete the following:

Packaging Category: ☐ Type A ☐ Type B ☐ Type C ☐ Excepted ☐ ndustrial

Packaging Certification: ☐ Self Certified ☐ U.S. Certification Certification Number _____

Nuclide(s) Present: _____ Transport Index: _____

Activity: _____ Critical Safety Index: ___

PART IV - CONSEQUENCES

30. Result of Incident (check all that apply): Spillage Fire Explosion Material Entered Waterway/Storm Sewer
Vapor (Gas) Dispersion Environmental Damage No Release

31. Emergency Response : The following entities responded to the incident: (Check all that apply)
Fire/EMS Report #_____ Police Report #_____ In-house cleanup Other Cleanup

32. Damages: Was the total damage cost more than $500? Yes No
If yes, enter the following information: If no, go to question 33.
Material Loss: Carrier Damage: Property Damage: Response Cost: Remediation/Cleanup Cost:
$_____ $_____ $_____ $_____ $_____
(See damage definitions in the instructions)

33a. Did the hazardous material cause or contribute to a human fatality? Yes No
If yes, enter the number of fatalities resulting from the hazardous material:
Fatalities: Employees_____ Responders_____ General Public _____

33b. Were there human fatalities that did not result from the hazardous material? Yes No If yes, how many? _____

34. Did the hazardous material cause or contribute to personal injury? Yes No
If yes, enter the number of injuries resulting from the hazardous material:
Hospitalized (Admitted Only): Employees_____ Responders_____ General Public _____
Non-Hospitalized: Employees_____ Responders_____ General Public _____
(e.g.: On site first aid or Emergency Room observation and release)

35. Did the hazardous material cause or contribute to an evacuation? Yes No
If yes, provide the following information:
Total number of general public evacuated_____ Total number of employees evacuated_____ Total Evacuated _____
Duration of the evacuation_____(hours)

36. Was a major transportation artery or facility closed? Yes No If yes, how many?_____(hours)

37. Was the material involved in a crash or derailment? Yes No
If yes, provide the following information: Estimated speed (mph):_____ Weather conditions: _____
Vehicle overturn? Yes No
Vehicle left roadway/track? Yes No

PART V - AIR INCIDENT INFORMATION (please refer to § 175.31 to report a discrepancy for air shipments)

38. Was the shipment on a passenger aircraft? Yes No
If yes, was it tendered as cargo, or as passenger baggage?
Cargo Passenger baggage

39. Where did the incident occur (if unknown, check the appropriate box for the location where the incident was discovered)?
Air carrier cargo facility Sort center Baggage area
By surface to/from airport During flight During loading/unloading of aircraft

40. What phase(s) had the shipment already undergone prior to the incident? (Check all that apply)
Shipment had not been transported Transported by air (first flight) Transport by air (subsequent flights)
Initial transport by highway to cargo facility Transfer at sort center/cargo facility

PART VI - DESCRIPTION OF EVENTS & PACKAGE FAILURE

Describe the sequence of events that led to the incident and the actions taken at the time it was discovered. Describe the package failure, including the size and location of holes, cracks, etc. Photographs and diagrams should be submitted if needed for clarification. Estimate the duration of the release, if possible. Describe what was done to mitigate the effects of the release. Continue on additional sheets if ecessary.

PART VII - RECOMMENDATIONS/ACTIONS TAKEN TO PREVENT RECURRENCE

Where you are able to do so, suggest or describe changes (such as additional training, use of better packaging, or improved operating procedures) to help prevent recurrence. Provide recommendations for improvement to hazardous materials transportation beyond the control of your individual company. Continue on additional sheets if necessary.

PART VIII- CONTACT INFORMATION

Contact's Name (Type or Print):_____ Telephone Number: ( )_____

Contact's Title:_____ Fax Number: ( )_____

Business Name and Address:_____ Hazmat Registration Number (if not already provided):

_____

E-mail Address:_____ Date _____

Preparer is: ☐ Carrier ☐ Shipper ☐ Facility ☐ Other _____

SUBMIT

§ 171.16 Detailed hazardous materials incident reports.

(a) *General.* Each person in physical possession of a hazardous material at the time that any of the following incidents occurs during transportation (including loading, unloading, and temporary storage) must submit a Hazardous Materials Incident Report on DOT Form F 5800.1 (01/2004) within 30 days of discovery of the incident:

(1) Any of the circumstances set forth in § 171.15(b);

(2) An unintentional release of a hazardous material or the discharge of any quantity of hazardous waste;

(3) A specification cargo tank with a capacity of 1,000 gallons or greater containing any hazardous material suffers structural damage to the lading retention system or damage that requires repair to a system intended to protect the lading retention system, even if there is no release of hazardous material;

(4) An undeclared hazardous material is discovered; or

(5) A fire, violent rupture, explosion or dangerous evolution of heat (*i.e.*, an amount of heat sufficient to be dangerous to packaging or personal safety to include charring of packaging, melting of packaging, scorching of packaging, or other evidence) occurs as a direct result of a battery or battery-powered device.

(b) *Providing and retaining copies of the report.* Each person reporting under this section must—

(1) Submit a written Hazardous Materials Incident Report to the Information Systems Manager, PHH–60, Pipeline and Hazardous Materials Safety Administration, Department of Transportation, East Building, 1200 New Jersey Ave., SE., Washington, DC 20590–0001, or an electronic Hazardous Material Incident Report to the Information System Manager, PHH–60, Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Washington, DC 20590–0001 at *http://hazmat.dot.gov*;

(2) For an incident involving transportation by aircraft, submit a written or electronic copy of the Hazardous Materials Incident Report to the FAA Security Field Office nearest the location of the incident; and

(3) Retain a written or electronic copy of the Hazardous Materials Incident Report for a period of two years at the reporting person's principal place of business. If the written or electronic Hazardous Materials Incident Report is maintained at other than the reporting person's principal place of business, the report must be made available at the reporting person's principal place of business within 24 hours of a request for the report by an authorized representative or special agent of the Department of Transportation.

(c) *Updating the incident report.* A Hazardous Materials Incident Report must be updated within one year of the date of occurrence of the incident whenever:

(1) A death results from injury caused by a hazardous material;

(2) There was a misidentification of the hazardous material or package information on a prior incident report;

(3) Damage, loss or related cost that was not known when the initial incident report was filed becomes known; or

(4) Damage, loss, or related cost changes by $25,000 or more, or 10% of the prior total estimate, whichever is greater.

(d) *Exceptions.* Unless a telephone report is required under the provisions of § 171.15 of this part, the requirements of paragraphs (a), (b), and (c) of this section do not apply to the following incidents:

(1) A release of a minimal amount of material from—

(i) A vent, for materials for which venting is authorized;

(ii) The routine operation of a seal, pump, compressor, or valve; or

(iii) Connection or disconnection of loading or unloading lines, provided that the release does not result in property damage.

(2) An unintentional release of a hazardous material when:

(i) The material is—

(A) A limited quantity material packaged under authorized exceptions in the § 172.101 Hazardous Materials Table of this subchapter excluding Class 7 (radioactive) material; or

(B) A Packing Group III material in Class or Division 3, 4, 5, 6.1, 8, or 9;

(i) The material is released from a package having a capacity of less than 20 liters (5.2 gallons) for liquids or less than 30 kg (66 pounds) for solids;

(ii) The total amount of material released is less than 20 liters (5.2 gallons) for liquids or less than 30 kg (66 pounds) for solids; and

(iii) The material is not—

(A) Offered for transportation or transported by aircraft;

(B) A hazardous waste; or

(C) An undeclared hazardous material;

(2) An undeclared hazardous material discovered in an air passenger'schecked or carry-on baggage during theairport screening process. (For discrep- ancy reporting by carriers, see § 175.31 of this subchapter.)

[68 FR 67759, Dec. 3, 2003; 69 FR 30119, May 26, 2004, as amended at 70 FR 56091, Sept. 23, 2005; 74 FR 2233, Jan. 14, 2009; 76 FR 56311, Sept. 13, 2011; 78 FR 1112, Jan. 7, 2013]

§§ 171.17–171.18 [Reserved]

§ 171.19 Approvals or authorizations issued by the Bureau of Explosives.

Effective December 31, 1998, approvals or authorizations issued by the Bureau of Explosives (BOE), other than those issued under part 179 of this subchapter, are no longer valid.

[63 FR 37459, July 10, 1998]

§ 171.20 Submission of Examination Reports.

(a) When it is required in this subchapter that the issuance of an approval by the Associate Administrator be based on an examination by the Bureau of Explosives (or any other test facility recognized by PHMSA), it is the responsibility of the applicant tosubmit the results of the examination to the Associate Administrator.

(b) Applications for approval submitted under paragraph (a) of this section, must be submitted to the Asso- ciate Administrator for Hazardous Ma- terials Safety, Pipeline and HazardousMaterials Safety Administration, Washington, DC 20590–0001.

(c) Any applicant for an approval aggrieved by an action taken by the Associate Administrator, under this subpart may file an appeal with the Administrator, PHMSA within 30 days of service of notification of a denial.

[Amdt. 171–54, 45 FR 32692, May 19, 1980, as amended by Amdt. 171–66, 47 FR 43064, Sept. 30, 1982; Amdt. 171–109, 55 FR 39978, Oct. 1, 1990; Amdt. 171–111, 56 FR 66162, Dec. 20, 1991; 66 FR 45378, Aug. 28, 2001]

§ 171.21 Assistance in investigationsand special studies.

(a) A shipper, carrier, package owner, package manufacturer or certifier, repair facility, or person reporting an incident under the provisions of § 171.16 must:

(1) Make all records and information pertaining to the incident available to an authorized representative or special agent of the Department of Transportation upon request; and

(2) Give an authorized representative or special agent of the Department of Transportation reasonable assistance in the investigation of the incident.

(b) If an authorized representative or special agent of the Department of Transportation makes an inquiry of a person required to complete an incident report in connection with a study of incidents, the person shall:

(1) Respond to the inquiry within 30 days after its receipt or within such other time as the inquiry may specify; and

(2) Provide true and complete answers to any questions included in the inquiry.

[68 FR 67760, Dec. 3, 2003]

Subpart C—Authorization and Requirements for the Use of International Transport Standards and Regulations

SOURCE: 72 FR 25172, May 3, 2007, unless otherwise noted.

§ 171.22 Authorization and conditions for the use of international standards and regulations.

(a) *Authorized international standards and regulations.* This subpart authorizes, with certain conditions and limitations, the offering for transportation and the transportation in commerce of hazardous materials in accordance with the International Civil Aviation Organization's Technical Instructions

container must be marked with identification numbers for the material, regardless of the total quantity contained in the transport vehicle orfreight container, in the manner speci- fied in § 172.313(c) of this subchapter and placarded as required by subpart Fof this subchapter.

[Amdt. 171–111, 55 FR 52472, Dec. 21, 1990]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 171.12, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.govinfo.gov*.

§ 171.12a [Reserved]

§ 171.14 [Reserved]

Subpart B—Incident Reporting, Notification, BOE Approvals and Authorization

§ 171.15 Immediate notice of certain hazardous materials incidents.

(a) *General.* As soon as practical butno later than 12 hours after the occur- rence of any incident described in para- graph (b) of this section, each person in physical possession of the hazardous material must provide notice by tele- phone to the National Response Center (NRC) on 800–424–8802 (toll free) or 202– 267–2675 (toll call) or online at *http://www.nrc.uscg.mil.* Each notice must include the following information:

(1) Name of reporter;

(2) Name and address of person represented by reporter;

(3) Phone number where reporter can be contacted;

(4) Date, time, and location of incident;

(5) The extent of injury, if any;

(6) Class or division, proper shipping name, and quantity of hazardous materials involved, if such information is available; and

(7) Type of incident and nature of hazardous material involvement and whether a continuing danger to life exists at the scene.

(b) *Reportable incident.* A telephone report is required whenever any of the following occurs during the course of transportation in commerce (including loading, unloading, and temporary storage):

(1) As a direct result of a hazardous material—

(i) A person is killed;

(ii) A person receives an injury requiring admittance to a hospital;

(iii) The general public is evacuated for one hour or more;

(iv) A major transportation artery or facility is closed or shut down for one hour or more; or

(v) The operational flight pattern or routine of an aircraft is altered;

(2) Fire, breakage, spillage, or suspected radioactive contamination occurs involving a radioactive material (see also § 176.48 of this subchapter);

(3) Fire, breakage, spillage, or suspected contamination occurs involving an infectious substance other than a regulated medical waste;

(4) A release of a marine pollutant occurs in a quantity exceeding 450 L (119 gallons) for a liquid or 400 kg (882 pounds) for a solid;

(5) A situation exists of such a nature (*e.g.*, a continuing danger to life exists at the scene of the incident) that, in the judgment of the person in possession of the hazardous material, itshould be reported to the NRC eventhough it does not meet the criteria of paragraphs (b)(1), (2), (3) or (4) of this section; or

(6) During transportation by aircraft, a fire, violent rupture, explosion or dangerous evolution of heat (*i.e.*, an amount of heat sufficient to be dangerous to packaging or personal safety to include charring of packaging, melting of packaging, scorching of packaging, or other evidence) occurs as a direct result of a battery or battery-powered device.

(c) *Written report.* Each person making a report under this section must also make the report required by § 171.16 of this subpart.

NOTE TO § 171.15: Under 40 CFR 302.6, EPA requires persons in charge of facilities (including transport vehicles, vessels, and aircraft) to report any release of a hazardous substance in a quantity equal to or greaterthan its reportable quantity, as soon as that person has knowledge of the release, to DOT's National Response Center at (toll free) 800–424–8802 or (toll) 202–267–2675.

[68 FR 67759, Dec. 3, 2003, as amended at 72 FR 55684, Oct. 1, 2007; 74 FR 2233, Jan. 14, 2009; 74 FR 53186, Oct. 16, 2009; 76 FR 43525, July 20, 2011]

State of Nebraska

Investigator's Supplemental Truck and Bus Accident Report

This form must be completed in **addition** to the DR Form 40, "Investigator's Motor Vehicle Accident Report," if any of the vehicles involved meet the criteria listed on the back of this form.

Sheet_____of _____

LOCAL NO./DISTRICT	DATE OF ACC DENT	COUNTY	CITY	STATE USE ONLY
AGENCY CASE NO.	OCCURRED ON HIGHWAY/ROAD/STREET			

TRUCK / BUS - 1

DRIVER *(Print or type full name)*

CARRIER NAME *(Print or type full name)*

CARRIER ADDRESS *(Street or R.F.D.)* CITY, STATE, ZIP

CARRIER IDENTIFICATION 1 U.S. DOT _____ 1 ICC MC _____

GROSS VEHICLE WEIGHT RATING (GVWR) or GROSS COMBINATION VEHICLE WEIGHT RATING (GCVWR)
(Combined rating for vehicles and trailers)

- ■ 10,000 Lbs. or Less *(Requires Haz Mat Placards)*
- ■ 10,001 Lbs. – 26,000 Lbs.
- ■ More than 26,000 Lbs.

TRAILER LICENSE PLATE No. _____ Year _____ State _____

COMMERCE CLASSIFICATION *(Check one)*
- 1 ■ Interstate Commerce
- 2 ■ Intrastate Commerce
- 3 ■ Not Applicable

TRUCK WIDTH *(Widest part of truck or trailer)*
- 1 ■ 96 inches
- 2 ■ 102 inches
- 3 ■ Other *(Specify)*

DRIVER'S LICENSE CLASS CODE
- A ■ M ■
- B ■ O ■
- C ■

HAZARDOUS MATERIAL INVOLVED

Did vehicle have a **Haz Mat Placard?**
- 1 ■ Yes
- 2 ■ No

Placard Information:
1-Digit Hazard Class Number from bottom of Diamond Placard.
1-Digit No. _____

Was **hazardous cargo** released? *(Do not count fuel from fuel tank)*
- 1 ■ Yes
- 2 ■ No

VEHICLE CONFIGURATION *(Check one)*
- 2 ■ Single-Unit Truck *(10,001–26,000 Lbs. GVWR)*
- 3 ■ Single-Unit Truck *(Greater than 26,000 Lbs. GVWR)*
- 4 ■ Truck Tractor *(bobtail)*
- 5 ■ Truck with Trailer
- 6 ■ Tractor with Semi-Trailer
- 7 ■ Tractor with Doubles
- 8 ■ Tractor with Triples
- 9 ■ Unknown Heavy Truck
- 37 ■ Bus *(seats 9-15, including driver)*
- 38 ■ Bus *(seats 15+, including driver)*
- 39 ■ Haz Mat Passenger Car
- 40 ■ Haz Mat Light Truck *(van, mini van, pickup, sport utility) (10,000 Lbs. or less GVWR)*

CARGO BODY TYPE *(Check one)*
- 1 ■ Bus *(seats 9-15, including driver)*
- 2 ■ Bus *(seats 15+, including driver)*
- 3 ■ Van/ Enclosed Box
- 4 ■ Grain/Chips/Gravel
- 5 ■ Pole
- 6 ■ Cargo Tank
- 7 ■ Flatbed
- 8 ■ Dump
- 9 ■ Concrete Mixer
- 10 ■ Auto Transporter
- 11 ■ Garbage/ Refuse
- 12 ■ Other *(Specify)* _____
- 13 ■ Unknown

BUS USE
- 1 ■ Not a Bus
- 2 ■ Transit Bus
- 3 ■ Charter Bus
- 4 ■ School Bus
- 5 ■ Intercity Bus
- 6 ■ Not Reported
- 7 ■ Other

TRUCK / BUS - 2

DRIVER *(Print or type full name)*

CARRIER NAME *(Print or type full name)*

CARRIER ADDRESS *(Street or R.F.D.)* CITY, STATE, ZIP

CARRIER IDENTIFICATION 1 U.S. DOT _____ 1 ICC MC _____

GROSS VEHICLE WEIGHT RATING (GVWR) or GROSS COMBINATION VEHICLE WEIGHT RATING (GCVWR)
(Combined rating for vehicles and trailers)

- ■ 10,000 Lbs. or Less *(Requires Haz Mat Placards)*
- ■ 10,001 Lbs. – 26,000 Lbs.
- ■ More than 26,000 Lbs.

TRAILER LICENSE PLATE No. _____ Year _____ State _____

COMMERCE CLASSIFICATION *(Check one)*
- 1 ■ Interstate Commerce
- 2 ■ Intrastate Commerce
- 3 ■ Not Applicable

TRUCK WIDTH *(Widest part of truck or trailer)*
- 1 ■ 96 inches
- 2 ■ 102 inches
- 3 ■ Other *(Specify)*

DRIVER'S LICENSE CLASS CODE
- A ■ M ■
- B ■ O ■
- C ■

HAZARDOUS MATERIAL INVOLVED

Did vehicle have a **Haz Mat Placard?**
- 1 ■ Yes
- 2 ■ No

Placard Information:
1-Digit Hazard Class Number from bottom of Diamond Placard.
1-Digit No. _____

Was **hazardous cargo** released? *(Do not count fuel from fuel tank)*
- 1 ■ Yes
- 2 ■ No

VEHICLE CONFIGURATION *(Check one)*
- 2 ■ Single-Unit Truck *(10,001–26,000 Lbs. GVWR)*
- 3 ■ Single-Unit Truck *(Greater than 26,000 Lbs. GVWR)*
- 4 ■ Truck Tractor *(bobtail)*
- 5 ■ Truck with Trailer
- 6 ■ Tractor with Semi-Trailer
- 7 ■ Tractor with Doubles
- 8 ■ Tractor with Triples
- 9 ■ Unknown Heavy Truck
- 37 ■ Bus *(seats 9-15, including driver)*
- 38 ■ Bus *(seats 15+, including driver)*
- 39 ■ Haz Mat Passenger Car
- 40 ■ Haz Mat Light Truck *(van, mini van, pickup, sport utility) (10,000 Lbs. or less GVWR)*

CARGO BODY TYPE *(Check one)*
- 1 ■ Bus *(seats 9-15, including driver)*
- 2 ■ Bus *(seats 15+, including driver)*
- 3 ■ Van/ Enclosed Box
- 4 ■ Grain/Chips/Gravel
- 5 ■ Pole
- 6 ■ Cargo Tank
- 7 ■ Flatbed
- 8 ■ Dump
- 9 ■ Concrete Mixer
- 10 ■ Auto Transporter
- 11 ■ Garbage/ Refuse
- 12 ■ Other *(Specify)* _____
- 13 ■ Unknown

BUS USE
- 1 ■ Not a Bus
- 2 ■ Transit Bus
- 3 ■ Charter Bus
- 4 ■ School Bus
- 5 ■ Intercity Bus
- 6 ■ Not Reported
- 7 ■ Other

INVESTIGATOR NAME *(Print or type)*	INVESTIGATOR SIGNATURE	DEPARTMENT	OFFICER NO.	DATE OF REPORT

General Instructions

This supplemental report must be completed in ***addition*** to the DR Form 40, "Investigator's Motor Vehicle Accident Report" for any:

1. Truck with a Gross Vehicle Weight Rating (GVWR) or Gross Combination Vehicle Weight Rating (GCVWR) of 10,001 pounds or more;
2. Vehicle displaying a hazardous materials placard; or
3. Bus designed to transport nine or more passengers, ***including*** the driver.

You will need to complete additional supplementary forms if more than two trucks/buses were involved in the accident.

Data Elements

1. **Date of Accident and Location Information:** Enter this information just as you did on the Investigator's Motor Vehicle Accident Report.
2. **Agency Case Number:** If your agency has assigned an internal case number to the accident, enter the number just as you did on the Investigator's Motor Vehicle Accident Report.
3. **Driver Name:** Copy the name of the truck or bus driver from the Investigator's Motor Vehicle Accident Report.
4. **Carrier Name and Address:** A motor carrier is defined as the person, company, or organization responsible for directing the transportation of the cargo or persons. The owner of the vehicle is often not the carrier. For further explanation, consult the "Instructions for Completing the Investigator's Motor Vehicle Accident Report Forms" booklet *(revised edition January 2009)*.
5. **Trailer License Plate:** If a truck has an attached trailer with a separate license plate, enter the following information in the boxes provided: the license plate number of the trailer, the state of issuance, and the year of registration as displayed.
6. **Commerce Classification:** Check the "Interstate Commerce" box if the commercial vehicle can legally trade, traffic, or transport property across state lines. Mark the "Intrastate Commerce" box when the commercial vehicle is restricted to commerce within one state.
7. **Truck Width:** Measure the widest part of the truck or trailer and then check the appropriate box. If "Other" is checked, specify the width in inches on the line provided.
8. **Driver's License Class Code:** Check the appropriate box.
   Class A, B, or C - Commercial License Class M - Motorcycle Class O - Operator
9. **Hazardous Material Involved:** Determine if the vehicle has a Hazardous Material Placard and then indicate the 1-digit Hazard Class Number located on the bottom of the Diamond Placard.
10. **Carrier Identification Number:** Vehicles engaged in intrastate/ interstate transport have either a six- or seven-digit US DOT or ICC MC number. Some trucks may not have an identifying number.
11. **Gross Vehicle Weight Rating (GVWR) and /or Gross Combination Vehicle Weight Rating (GCVWR):** The Gross Vehicle Weight Rating (GVWR) is the weight specified by the manufacturer. The Gross Combination Vehicle Weight Rating (GCVWR) for a vehicle towing a trailer or trailers is the sum of the ratings for each unit. Check the appropriate box.
12. **Vehicle Configuration:** Check the appropriate box. If box 37 or 38 is checked, check appropriate box in **"Bus Use"** element.
13. **Cargo Body Type:** Check the appropriate box.
14. **Bus Use:** Check the box indicating what the bus was being used for at the time of accident. *Note:* School bus means the use of a school bus to transport only school children and/or school personnel from home to school and from school to home.
15. **Investigating Officer Information:** Complete this section and be sure to ***sign*** the report.

Appendix B HazMat VMT and expected incidents in each city in Nebraska

Table B.1 HazMat VMT and expected incidents in each city in Nebraska

City	County	HazMat Truck VMT (millions) in 1 year	Expected incidents in 10-year period	Expected incidents in 10-year period per 10,000 people
Abie	Butler	0.017	0.182	30.833
Adams	Gage	0.052	0.351	6.910
Ainsworth	Brown	0.077	0.455	2.694
Albion	Boone	0.117	1.227	8.171
Alda	Hall	0.035	0.351	5.272
Alexandria	Thayer	0.036	0.246	17.099
Allen	Dixon	0.074	0.423	11.882
Alliance	Box Butte	0.338	2.150	2.611
Alma	Harlan	0.154	1.527	11.813
Alvo	Cass	0.023	0.155	11.929
Ames	Dodge	0.013	0.137	N/A
Amherst	Buffalo	0.012	0.121	8.893
Anoka	Boyd	0.033	0.198	76.056
Anselmo	Custer	0.048	0.286	17.463
Ansley	Custer	0.107	0.633	13.446
Arapahoe	Furnas	0.089	0.551	4.137
Arcadia	Valley	0.045	0.266	9.830
Archer	Merrick	0.206	2.164	424.231
Arlington	Washington	0.028	0.166	1.097
Arnold	Custer	0.071	0.418	5.207
Arthur	Arthur	0.042	0.242	17.774
Ashland	Saunders	0.187	1.963	7.779
Ashton	Sherman	0.072	0.423	22.275
Aten	Cedar	0.170	0.974	347.759
Atkinson	Holt	0.158	0.937	6.408
Atlanta	Phelps	0.015	0.147	20.986
Auburn	Nemaha	0.233	1.580	4.773
Aurora	Hamilton	1.574	15.578	34.640
Avoca	Cass	0.063	0.430	15.307
Axtell	Kearney	0.070	0.694	8.485
Ayr	Adams	0.019	0.192	20.853
Bancroft	Cuming	0.095	0.544	11.867
Barada	Richardson	0.005	0.036	11.013
Barneston	Gage	0.024	0.164	15.349
Bartlett	Wheeler	0.061	0.363	32.661

City	County	HazMat Truck VMT (millions) in 1 year	Expected incidents in 10-year period	Expected incidents in 10-year period per 10,000 people
Bartley	Red Willow	0.072	0.446	11.616
Bassett	Rock	0.122	0.719	9.879
Battle Creek	Madison	0.052	0.296	2.439
Bayard	Morrill	0.244	1.551	14.534
Bazile Mills	Knox	0.030	0.173	71.888
Beatrice	Gage	0.448	3.042	2.473
Beaver City	Furnas	0.116	0.717	14.663
Beaver Crossing	Seward	0.417	2.834	72.662
Bee	Seward	0.064	0.437	21.018
Beemer	Cuming	0.085	0.485	7.957
Belden	Cedar	0.021	0.118	9.319
Belgrade	Nance	0.021	0.220	13.521
Bellevue	Sarpy	1.154	6.852	1.285
Bellwood	Butler	0.036	0.373	8.966
Belmar	Keith	0.893	5.279	507.634
Belvidere	Thayer	0.083	0.566	125.714
Benedict	York	0.047	0.319	10.590
Benkelman	Dundy	0.128	0.794	8.115
Bennet	Lancaster	0.095	0.647	5.869
Bennington	Douglas	0.039	0.232	1.201
Berea	Box Butte	0.073	0.462	210.126
Bertrand	Phelps	0.063	0.624	7.931
Berwyn	Custer	0.037	0.219	23.547
Big Springs	Deuel	0.986	6.278	131.895
Bladen	Webster	0.024	0.241	13.768
Blair	Washington	0.653	3.880	4.987
Bloomfield	Knox	0.039	0.222	2.507
Bloomington	Franklin	0.039	0.382	31.604
Blue Hill	Webster	0.058	0.575	5.851
Blue Springs	Gage	0.064	0.435	15.882
Bow Valley	Cedar	0.013	0.073	9.438
Boys Town	Douglas	0.080	0.475	5.492
Bradshaw	York	0.148	1.005	30.354
Brady	Lincoln	0.225	2.227	54.981
Brainard	Butler	0.060	0.627	14.918
Brewster	Blaine	0.032	0.204	157.177
Bridgeport	Morrill	0.406	2.583	15.318
Bristow	Boyd	0.011	0.066	6.709

City	County	HazMat Truck VMT (millions) in 1 year	Expected incidents in 10-year period	Expected incidents in 10-year period per 10,000 people
Broadwater	Morrill	0.088	0.558	31.027
Brock	Nemaha	0.038	0.259	22.552
Broken Bow	Custer	0.206	1.216	3.457
Brownlee	Cherry	0.015	0.090	150.212
Brownville	Nemaha	0.077	0.521	41.032
Brule	Keith	0.136	0.803	25.827
Bruning	Thayer	0.050	0.343	11.905
Bruno	Butler	0.044	0.467	36.198
Brunswick	Antelope	0.146	0.835	37.970
Burchard	Pawnee	0.011	0.075	18.791
Burr	Otoe	0.020	0.134	41.815
Burton	Keya Paha	0.011	0.063	N/A
Burwell	Garfield	0.126	0.747	6.002
Bushnell	Kimball	0.282	1.795	92.035
Butte	Boyd	0.016	0.097	2.883
Byron	Thayer	0.013	0.089	9.467
Cairo	Hall	0.080	0.789	8.615
Callaway	Custer	0.077	0.457	7.072
Cambridge	Furnas	0.089	0.551	4.817
Campbell	Franklin	0.020	0.196	5.900
Carleton	Thayer	0.152	1.031	190.896
Carroll	Wayne	0.019	0.109	4.597
Cedar Bluffs	Saunders	0.017	0.184	2.911
Cedar Creek	Cass	0.245	1.663	39.981
Cedar Rapids	Boone	0.043	0.452	9.684
Center	Knox	0.006	0.032	3.944
Central City	Merrick	0.416	4.365	15.038
Ceresco	Saunders	0.066	0.699	5.642
Chadron	Dawes	0.150	0.955	1.708
Chalco	Sarpy	0.194	1.152	1.052
Chambers	Holt	0.140	0.825	23.719
Champion	Chase	0.016	0.097	23.040
Chapman	Merrick	0.104	1.089	42.888
Chappell	Deuel	1.448	9.219	105.843
Chester	Thayer	0.114	0.774	26.792
Clarks	Merrick	0.112	1.179	31.512
Clarkson	Colfax	0.168	1.767	28.008
Clatonia	Gage	0.021	0.143	3.099
Clay Center	Clay	0.081	0.802	10.007

City	County	HazMat Truck VMT (millions) in 1 year	Expected incidents in 10-year period	Expected incidents in 10-year period per 10,000 people
Clearwater	Antelope	0.053	0.305	8.461
Clinton	Sheridan	0.013	0.080	16.339
Cody	Cherry	0.140	0.827	40.326
Coleridge	Cedar	0.087	0.500	9.032
Colon	Saunders	0.018	0.185	14.376
Columbus	Platte	0.671	7.047	3.038
Comstock	Custer	0.046	0.274	26.135
Concord	Dixon	0.016	0.089	5.501
Cook	Johnson	0.031	0.214	5.210
Cordova	Seward	0.073	0.496	52.162
Cornlea	Platte	0.017	0.184	183.584
Cortland	Gage	0.021	0.140	2.818
Cotesfield	Howard	0.058	0.614	170.427
Cowles	Webster	0.032	0.320	290.468
Cozad	Dawson	0.690	6.823	18.017
Crab Orchard	Johnson	0.028	0.189	41.028
Craig	Burt	0.038	0.219	13.206
Crawford	Dawes	0.126	0.805	7.228
Creighton	Knox	0.075	0.431	3.516
Creston	Platte	0.040	0.420	20.381
Crete	Saline	0.259	1.762	2.501
Crofton	Knox	0.038	0.216	2.487
Crookston	Cherry	0.053	0.313	43.445
Culbertson	Hitchcock	0.102	0.632	10.775
Curtis	Frontier	0.125	1.239	15.277
Cushing	Howard	0.031	0.322	74.925
Dakota City	Dakota	0.092	0.524	2.581
Dalton	Cheyenne	0.029	0.182	5.501
Danbury	Red Willow	0.020	0.125	18.063
Dannebrog	Howard	0.042	0.446	14.952
Davenport	Thayer	0.078	0.531	13.374
Davey	Lancaster	0.022	0.149	9.324
David City	Butler	0.271	2.850	10.030
Dawson	Richardson	0.024	0.164	9.745
Daykin	Jefferson	0.022	0.151	8.130
De Witt	Saline	0.041	0.279	4.266
Decatur	Burt	0.129	0.740	19.626
Denton	Lancaster	0.021	0.144	7.316

City	County	HazMat Truck VMT (millions) in 1 year	Expected incidents in 10-year period	Expected incidents in 10-year period per 10,000 people
Deshler	Thayer	0.054	0.368	4.498
Deweese	Clay	0.008	0.078	13.295
Diller	Jefferson	0.038	0.258	9.191
Dix	Kimball	0.310	1.974	64.083
Dixon	Dixon	0.021	0.121	9.649
Dodge	Dodge	0.066	0.696	12.650
Doniphan	Hall	0.111	1.095	11.425
Dorchester	Saline	0.049	0.335	5.408
Douglas	Otoe	0.029	0.195	12.916
Du Bois	Pawnee	0.027	0.181	18.661
Dunbar	Otoe	0.072	0.490	27.814
Duncan	Platte	0.035	0.370	6.767
Dunning	Blaine	0.109	0.692	67.830
Dwight	Butler	0.042	0.439	21.318
Eagle	Cass	0.078	0.527	5.852
Eddyville	Dawson	0.034	0.338	36.303
Edgar	Clay	0.078	0.774	16.973
Edison	Furnas	0.023	0.143	9.191
Elba	Howard	0.040	0.417	12.497
Elgin	Antelope	0.108	0.619	8.598
Elk Creek	Johnson	0.019	0.128	15.951
Elm Creek	Buffalo	0.163	1.615	14.241
Elmwood	Cass	0.147	1.000	13.893
Elsie	Perkins	0.019	0.120	8.444
Elwood	Gosper	0.172	1.698	20.484
Elyria	Valley	0.017	0.103	16.038
Emerson	Dakota	0.050	0.284	3.148
Emmet	Holt	0.030	0.176	62.808
Enders	Chase	0.009	0.056	69.779
Endicott	Jefferson	0.042	0.283	17.575
Ericson	Wheeler	0.127	0.753	53.808
Eustis	Frontier	0.047	0.464	8.916
Ewing	Holt	0.063	0.372	9.421
Exeter	Fillmore	0.094	0.642	11.501
Fairbury	Jefferson	0.232	1.579	4.283
Fairfield	Clay	0.063	0.622	16.643
Fairmont	Fillmore	0.145	0.988	14.116
Falls City	Richardson	0.141	0.958	2.304
Farnam	Dawson	0.139	1.371	63.495

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Farwell	Howard	0.021	0.222	18.810
Filley	Gage	0.011	0.075	7.152
Firth	Lancaster	0.038	0.257	5.903
Fontanelle	Washington	0.013	0.080	27.587
Fordyce	Cedar	0.016	0.093	6.043
Fort Calhoun	Washington	0.068	0.405	4.588
Foster	Pierce	0.048	0.275	55.045
Franklin	Franklin	0.048	0.479	4.642
Fremont	Dodge	0.515	5.410	2.046
Friend	Saline	0.103	0.699	5.945
Fullerton	Nance	0.150	1.576	10.898
Funk	Phelps	0.016	0.157	8.194
Gandy	Logan	0.071	0.422	73.956
Garland	Seward	0.038	0.257	10.405
Garrison	Butler	0.018	0.193	39.378
Geneva	Fillmore	0.444	3.016	14.563
Genoa	Nance	0.082	0.863	8.107
Gering	Scotts Bluff	0.117	0.743	0.900
Gibbon	Buffalo	0.206	2.036	9.788
Gilead	Thayer	0.007	0.045	11.906
Giltner	Hamilton	0.296	2.932	99.380
Glenvil	Clay	0.008	0.084	2.239
Glenwood	Buffalo	0.112	1.111	20.242
Goehner	Seward	0.103	0.697	59.541
Gordon	Sheridan	0.120	0.761	4.392
Gothenburg	Dawson	0.825	8.164	23.400
Grafton	Fillmore	0.070	0.475	33.436
Grand Island	Hall	2.332	23.071	4.511
Grant	Perkins	0.073	0.452	3.358
Greeley Center	Greeley	0.074	0.440	12.462
Greenwood	Cass	0.132	0.894	16.909
Gresham	York	0.047	0.319	13.795
Gretna	Sarpy	0.356	2.117	4.203
Gross	Boyd	0.013	0.076	N/A
Guide Rock	Webster	0.032	0.314	15.368
Gurley	Cheyenne	0.015	0.099	4.673
Hadar	Pierce	0.047	0.270	10.070
Haigler	Dundy	0.043	0.265	14.539
Hallam	Lancaster	0.025	0.169	8.283

City	County	HazMat Truck VMT (millions) in 1 year	Expected incidents in 10-year period	Expected incidents in 10-year period per 10,000 people
Halsey	Thomas	0.049	0.291	45.496
Hamlet	Hayes	0.076	0.468	106.260
Hampton	Hamilton	0.179	1.768	37.547
Harbine	Jefferson	0.009	0.063	7.936
Hardy	Nuckolls	0.027	0.268	11.420
Harrisburg	Banner	0.221	1.407	159.909
Harrison	Sioux	0.227	1.443	48.578
Hartington	Cedar	0.085	0.488	2.965
Harvard	Clay	0.073	0.723	6.658
Hastings	Adams	0.452	4.469	1.794
Hay Springs	Sheridan	0.052	0.333	5.589
Hayes Center	Hayes	0.036	0.225	7.805
Hazard	Sherman	0.033	0.194	33.364
Heartwell	Kearney	0.014	0.137	16.495
Hebron	Thayer	0.221	1.500	9.202
Hemingford	Box Butte	0.045	0.288	3.169
Henderson	York	0.347	2.359	23.449
Hendley	Furnas	0.028	0.172	143.031
Henry	Scotts Bluff	0.024	0.155	17.072
Herman	Washington	0.015	0.086	2.664
Hershey	Lincoln	0.372	3.678	60.696
Hickman	Lancaster	0.085	0.580	2.370
Hildreth	Franklin	0.030	0.298	7.213
Holbrook	Furnas	0.013	0.083	3.267
Holdrege	Phelps	0.275	2.722	4.989
Holmesville	Gage	0.012	0.080	44.249
Holstein	Adams	0.020	0.193	7.356
Homer	Dakota	0.042	0.239	4.759
Hooper	Dodge	0.096	1.004	12.961
Hordville	Hamilton	0.081	0.804	92.372
Hoskins	Wayne	0.032	0.185	6.591
Howard City (Boelus)	Howard	0.070	0.737	43.349
Howells	Colfax	0.126	1.326	20.181
Hubbard	Dakota	0.024	0.140	7.722
Hubbell	Thayer	0.069	0.466	65.674
Humboldt	Richardson	0.131	0.887	10.279
Humphrey	Platte	0.096	1.012	11.290
Huntley	Harlan	0.041	0.409	73.077

City	County	HazMat Truck VMT (millions) in 1 year	Expected incidents in 10-year period	Expected incidents in 10-year period per 10,000 people
Hyannis	Grant	0.102	0.604	35.973
Imperial	Chase	0.199	1.229	6.119
Inavale	Webster	0.020	0.193	29.728
Indianola	Red Willow	0.110	0.679	12.145
Inglewood	Dodge	0.010	0.107	2.678
Inland	Clay	0.009	0.089	126.813
Inman	Holt	0.039	0.233	23.507
Ithaca	Saunders	0.031	0.327	26.826
Jackson	Dakota	0.048	0.278	19.826
Jansen	Jefferson	0.028	0.188	17.750
Johnson	Nemaha	0.022	0.146	5.381
Johnstown	Brown	0.077	0.456	99.125
Julian	Nemaha	0.011	0.078	13.845
Juniata	Adams	0.019	0.185	2.596
Kearney	Buffalo	0.842	8.327	2.488
Kenesaw	Adams	0.204	2.023	18.206
Kennard	Washington	0.039	0.230	6.312
Keystone	Keith	0.079	0.467	75.392
Kilgore	Cherry	0.057	0.339	59.525
Kimball	Kimball	1.866	11.885	46.102
King Lake	Douglas	0.085	0.504	63.783
La Platte	Sarpy	0.022	0.131	8.317
La Vista	Sarpy	2.187	12.989	7.606
Lakeview	Platte	0.025	0.262	7.080
Lamar	Chase	0.006	0.040	23.287
Laurel	Cedar	0.053	0.306	2.756
Lawrence	Nuckolls	0.027	0.269	6.883
Lebanon	Red Willow	0.011	0.070	9.140
Leigh	Colfax	0.104	1.097	27.705
Lemoyne	Keith	0.077	0.453	44.410
Leshara	Saunders	0.008	0.080	10.969
Lewellen	Garden	0.073	0.463	24.115
Lewiston	Pawnee	0.009	0.062	9.902
Lexington	Dawson	1.238	12.245	12.127
Liberty	Gage	0.023	0.156	23.277
Lincoln	Lancaster	7.971	54.150	1.908
Lindsay	Platte	0.063	0.665	24.106

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Lindy	Knox	0.047	0.268	133.846
Linwood	Butler	0.054	0.570	37.227
Lisco	Garden	0.149	0.946	315.418
Litchfield	Sherman	0.043	0.257	8.560
Lodgepole	Cheyenne	0.093	0.594	18.267
Long Pine	Brown	0.064	0.379	13.766
Loomis	Phelps	0.022	0.222	5.451
Lorenzo	Cheyenne	0.275	1.752	761.823
Loretto	Boone	0.031	0.321	29.418
Lorton	Otoe	0.013	0.089	37.125
Louisville	Cass	0.238	1.616	13.652
Loup City	Sherman	0.102	0.605	6.204
Lushton	York	0.042	0.284	202.931
Lyman	Scotts Bluff	0.033	0.209	5.526
Lynch	Boyd	0.021	0.122	5.926
Lyons	Burt	0.111	0.636	7.770
Macy	Thurston	0.194	1.109	11.228
Madison	Madison	0.252	1.441	5.627
Madrid	Perkins	0.099	0.611	30.997
Magnet	Cedar	0.023	0.134	24.821
Malcolm	Lancaster	0.019	0.126	2.612
Malmo	Saunders	0.023	0.239	14.727
Manley	Cass	0.027	0.181	11.101
Marquette	Hamilton	0.080	0.788	32.415
Martin	Keith	0.044	0.261	51.266
Martinsburg	Dixon	0.011	0.061	7.558
Maskell	Dixon	0.026	0.149	24.482
Mason City	Custer	0.071	0.421	21.287
Max	Dundy	0.026	0.160	19.021
Maxwell	Lincoln	0.079	0.782	33.987
Maywood	Frontier	0.048	0.473	13.506
McCook	Red Willow	0.489	3.028	3.991
McCool Junction	York	0.116	0.785	20.176
McGrew	Scotts Bluff	0.135	0.861	84.433
McLean	Pierce	0.019	0.111	44.499
Mead	Saunders	0.082	0.859	14.123
Meadow Grove	Madison	0.025	0.143	5.750
Melbeta	Scotts Bluff	0.008	0.051	3.550

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Memphis	Saunders	0.010	0.101	13.662
Merna	Custer	0.080	0.472	13.371
Merriman	Cherry	0.129	0.764	49.634
Milford	Seward	0.380	2.581	10.924
Miller	Buffalo	0.047	0.466	30.457
Milligan	Fillmore	0.028	0.192	6.903
Minatare	Scotts Bluff	0.030	0.189	2.105
Minden	Kearney	0.324	3.208	11.426
Mitchell	Scotts Bluff	0.049	0.313	1.742
Monowi	Boyd	0.008	0.048	N/A
Monroe	Platte	0.024	0.252	6.501
Moorefield	Frontier	0.019	0.185	97.111
Morrill	Scotts Bluff	0.042	0.270	3.561
Morse Bluff	Saunders	0.026	0.273	21.292
Mullen	Hooker	0.082	0.482	13.732
Murdock	Cass	0.050	0.342	18.509
Murray	Cass	0.053	0.362	7.166
Naper	Boyd	0.005	0.029	3.056
Naponee	Franklin	0.011	0.110	9.445
Nebraska City	Otoe	0.868	5.896	8.106
Nehawka	Cass	0.056	0.378	20.317
Neligh	Antelope	0.176	1.007	6.207
Nelson	Nuckolls	0.059	0.585	12.525
Nemaha	Nemaha	0.039	0.267	23.836
Nenzel	Cherry	0.040	0.237	78.859
Newcastle	Dixon	0.033	0.187	5.964
Newman Grove	Madison	0.078	0.449	6.216
Newport	Rock	0.106	0.628	98.047
Nickerson	Dodge	0.015	0.158	4.720
Niobrara	Knox	0.040	0.229	7.800
Nora	Nuckolls	0.026	0.257	429.086
Norfolk	Madison	0.868	4.969	2.034
Norman	Kearney	0.018	0.176	37.428
North Bend	Dodge	0.158	1.656	12.355
North Loup	Valley	0.035	0.205	7.308
North Platte	Lincoln	2.413	23.876	9.993
Oak	Nuckolls	0.011	0.109	34.102
Oakdale	Antelope	0.060	0.346	9.441
Oakland	Burt	0.167	0.956	6.142

City	County	HazMat Truck VMT (millions) in 1 year	Expected incidents in 10-year period	Expected incidents in 10-year period per 10,000 people
Obert	Cedar	0.007	0.042	23.258
Oconto	Custer	0.047	0.277	19.369
Octavia	Butler	0.021	0.219	14.475
Odell	Gage	0.020	0.135	3.404
Odessa	Buffalo	0.227	2.243	276.860
Offutt AFB	Sarpy	0.311	1.850	3.664
Ogallala	Keith	1.777	10.504	23.157
Ohiowa	Fillmore	0.052	0.350	25.735
Omaha	Douglas	9.373	55.665	1.170
O'Neill	Holt	0.186	1.102	3.048
Ong	Clay	0.029	0.286	40.282
Orchard	Antelope	0.102	0.581	11.096
Ord	Valley	0.144	0.850	3.679
Orleans	Harlan	0.078	0.773	17.500
Osceola	Polk	0.128	1.348	14.585
Oshkosh	Garden	0.120	0.762	8.852
Osmond	Pierce	0.207	1.184	13.559
Otoe	Otoe	0.043	0.294	10.197
Overland	Hamilton	0.417	4.123	412.307
Overton	Dawson	0.260	2.570	43.864
Oxford	Furnas	0.063	0.389	4.966
Page	Holt	0.035	0.209	11.213
Palisade	Hitchcock	0.079	0.490	14.931
Palmer	Merrick	0.118	1.239	23.653
Palmyra	Otoe	0.091	0.620	10.858
Panama	Lancaster	0.026	0.178	7.548
Papillion	Sarpy	0.743	4.415	2.162
Parks	Dundy	0.030	0.186	154.915
Pawnee City	Pawnee	0.070	0.474	4.401
Paxton	Keith	0.468	2.766	51.995
Pender	Thurston	0.100	0.571	4.743
Peru	Nemaha	0.067	0.454	4.997
Petersburg	Boone	0.056	0.588	14.417
Phillips	Hamilton	0.058	0.577	19.296
Pickrell	Gage	0.006	0.043	1.727
Pierce	Pierce	0.177	1.015	5.041
Pilger	Stanton	0.056	0.321	10.534
Plainview	Pierce	0.209	1.195	8.546
Platte Center	Platte	0.059	0.624	16.248

City	County	HazMat Truck VMT (millions) in 1 year	Expected incidents in 10-year period	Expected incidents in 10-year period per 10,000 people
Plattsmouth	Cass	0.369	2.506	3.886
Pleasant Dale	Seward	0.038	0.260	9.997
Pleasanton	Buffalo	0.023	0.229	5.859
Plymouth	Jefferson	0.029	0.196	4.343
Polk	Polk	0.067	0.700	22.662
Ponca	Dixon	0.101	0.578	6.315
Poole	Buffalo	0.322	3.183	636.678
Potter	Cheyenne	0.268	1.705	51.973
Prague	Saunders	0.049	0.513	14.871
Preston	Richardson	0.002	0.016	4.912
Primrose	Boone	0.036	0.383	56.343
Prosser	Adams	0.061	0.602	62.095
Raeville	Boone	0.007	0.078	N/A
Ragan	Harlan	0.031	0.310	147.680
Ralston	Douglas	0.104	0.615	0.840
Randolph	Cedar	0.151	0.865	8.562
Ravenna	Buffalo	0.202	1.994	13.856
Raymond	Lancaster	0.009	0.059	3.285
Red Cloud	Webster	0.061	0.604	5.518
Republican City	Harlan	0.031	0.306	18.879
Reynolds	Jefferson	0.035	0.236	37.518
Richfield	Sarpy	0.139	0.825	393.039
Richland	Colfax	0.010	0.107	7.974
Rising City	Butler	0.066	0.697	16.277
Riverdale	Buffalo	0.004	0.043	1.410
Riverton	Franklin	0.023	0.225	56.370
Roca	Lancaster	0.014	0.092	5.078
Rockville	Sherman	0.020	0.120	8.400
Rogers	Colfax	0.023	0.247	19.885
Rosalie	Thurston	0.035	0.201	12.491
Roscoe	Keith	0.052	0.308	28.232
Roseland	Adams	0.021	0.208	8.946
Royal	Antelope	0.038	0.220	30.963
Rulo	Richardson	0.048	0.328	27.331
Rushville	Sheridan	0.154	0.978	12.122
Ruskin	Nuckolls	0.021	0.205	20.542
Salem	Richardson	0.058	0.393	38.116
Santee	Knox	0.039	0.223	5.743
Sarben	Keith	0.014	0.085	8.058

City	County	HazMat Truck VMT (millions) in 1 year	Expected incidents in 10-year period	Expected incidents in 10-year period per 10,000 people
Sargent	Custer	0.119	0.703	14.027
Saronville	Clay	0.009	0.089	12.415
Schuyler	Colfax	0.236	2.475	3.939
Scotia	Greeley	0.104	0.617	18.746
Scottsbluff	Scotts Bluff	0.931	5.928	4.023
Scribner	Dodge	0.141	1.476	19.580
Seneca	Thomas	0.053	0.311	88.836
Seward	Seward	1.130	7.675	10.695
Shelby	Polk	0.016	0.171	2.270
Shelton	Buffalo	0.122	1.206	10.890
Shickley	Fillmore	0.058	0.392	15.070
Sholes	Wayne	0.031	0.175	56.577
Shubert	Richardson	0.017	0.113	6.392
Sidney	Cheyenne	0.747	4.757	7.238
Silver Creek	Merrick	0.088	0.921	22.514
Smithfield	Gosper	0.067	0.661	101.717
Snyder	Dodge	0.058	0.604	18.477
South Bend	Cass	0.034	0.230	24.496
South Sioux City	Dakota	1.416	8.105	6.285
Spalding	Greeley	0.034	0.200	4.063
Spencer	Boyd	0.031	0.186	5.056
Sprague	Lancaster	0.015	0.102	11.234
Springfield	Sarpy	0.064	0.379	2.587
Springview	Keya Paha	0.092	0.544	26.922
St. Edward	Boone	0.131	1.373	18.451
St. Helena	Cedar	0.036	0.209	26.770
St. Libory	Howard	0.032	0.340	20.479
St. Paul	Howard	0.206	2.166	9.172
Stamford	Harlan	0.048	0.477	22.603
Stanton	Stanton	0.301	1.724	10.563
Staplehurst	Seward	0.033	0.226	8.674
Stapleton	Logan	0.073	0.430	12.053
Steele City	Jefferson	0.028	0.193	25.358
Steinauer	Pawnee	0.009	0.058	5.774
Stella	Richardson	0.021	0.144	6.244
Sterling	Johnson	0.068	0.465	10.201
Stockham	Hamilton	0.068	0.673	336.614
Stockville	Frontier	0.023	0.223	171.735
Strang	Fillmore	0.030	0.201	64.924

City	County	HazMat Truck VMT (millions) in 1 year	Expected incidents in 10-year period	Expected incidents in 10-year period per 10,000 people
Stratton	Hitchcock	0.063	0.389	11.199
Stromsburg	Polk	0.146	1.535	14.182
Stuart	Holt	0.194	1.149	17.222
Sumner	Dawson	0.048	0.480	22.417
Sunol	Cheyenne	0.512	3.261	509.472
Superior	Nuckolls	0.098	0.968	4.890
Surprise	Butler	0.070	0.732	130.712
Sutherland	Lincoln	0.710	7.022	43.694
Sutton	Clay	0.211	2.088	13.890
Swanton	Saline	0.027	0.187	23.050
Syracuse	Otoe	0.322	2.189	10.546
Table Rock	Pawnee	0.033	0.226	6.186
Talmage	Otoe	0.024	0.163	6.595
Tamora	Seward	0.547	3.719	4132.099
Tarnov	Platte	0.006	0.066	43.684
Taylor	Loup	0.121	0.714	48.898
Tecumseh	Johnson	0.255	1.731	10.292
Tekamah	Burt	0.141	0.807	4.476
Terrytown	Scotts Bluff	0.013	0.083	0.696
Thayer	York	0.065	0.439	56.270
Thedford	Thomas	0.076	0.449	23.639
Thurston	Thurston	0.014	0.083	6.641
Tilden	Madison	0.068	0.389	3.520
Tobias	Saline	0.024	0.160	14.275
Trenton	Hitchcock	0.090	0.555	10.793
Trumbull	Clay	0.021	0.208	8.273
Tryon	McPherson	0.042	0.246	26.699
Uehling	Dodge	0.051	0.535	19.745
Ulysses	Butler	0.036	0.377	18.594
Unadilla	Otoe	0.083	0.563	19.468
Union	Cass	0.050	0.337	23.704
Upland	Franklin	0.022	0.214	10.925
Utica	Seward	0.268	1.823	19.767
Valentine	Cherry	0.197	1.162	4.211
Valley	Douglas	0.544	3.231	11.652
Valparaiso	Saunders	0.064	0.672	11.111
Venango	Perkins	0.093	0.576	30.955
Venice	Douglas	0.054	0.320	63.903
Verdel	Knox	0.010	0.060	23.030

City	County	HazMat Truck VMT (millions) in 1 year	Expected incidents in 10-year period	Expected incidents in 10-year period per 10,000 people
Verdigre	Knox	0.039	0.222	3.993
Verdon	Richardson	0.021	0.145	7.012
Virginia	Gage	0.010	0.068	9.614
Waco	York	0.092	0.628	23.095
Wahoo	Saunders	0.402	4.219	9.371
Wakefield	Dixon	0.132	0.758	4.906
Wallace	Lincoln	0.195	1.929	70.385
Walthill	Thurston	0.059	0.337	4.256
Walton	Lancaster	0.222	1.507	84.184
Wann	Saunders	0.181	1.898	184.235
Washington	Washington	0.027	0.161	18.988
Waterbury	Dixon	0.023	0.134	17.345
Waterloo	Douglas	0.040	0.239	2.475
Wauneta	Chase	0.091	0.565	7.703
Wausa	Knox	0.042	0.241	4.291
Waverly	Lancaster	0.192	1.305	3.370
Wayne	Wayne	0.312	1.787	3.216
Weeping Water	Cass	0.460	3.126	34.354
Wellfleet	Lincoln	0.089	0.880	169.288
West Point	Cuming	0.773	4.427	13.412
Western	Saline	0.049	0.331	13.140
Westerville	Custer	0.015	0.089	N/A
Weston	Saunders	0.035	0.364	12.851
White Clay	Sheridan	0.012	0.079	N/A
Whitney	Dawes	0.014	0.092	7.955
Wilber	Saline	0.072	0.489	2.602
Wilcox	Kearney	0.087	0.863	21.161
Willow Island	Dawson	0.716	7.089	7876.158
Wilsonville	Furnas	0.023	0.141	31.258
Winnebago	Thurston	0.029	0.165	2.173
Winnetoon	Knox	0.018	0.102	13.589
Winside	Wayne	0.033	0.191	3.335
Winslow	Dodge	0.020	0.207	24.965
Wisner	Cuming	0.251	1.435	11.416
Wolbach	Greeley	0.063	0.370	14.510
Wood Lake	Cherry	0.045	0.266	83.101
Wood River	Hall	0.119	1.181	8.317
Woodland Hills	Otoe	0.044	0.300	12.923
Woodland Park	Stanton	0.304	1.741	10.966

City	County	HazMat Truck VMT (millions) in 1 year	Expected incidents in 10-year period	Expected incidents in 10-year period per 10,000 people
Wymore	Gage	0.167	1.132	7.395
Wynot	Cedar	0.019	0.111	5.545
Yankee Hill	Lancaster	0.204	1.384	48.390
York	York	2.719	18.471	23.556
Yutan	Saunders	0.070	0.735	7.413

Appendix C Actual HazMat incidents for each city in Nebraska

Table C.1 Actual HazMat incidents for each city in Nebraska

City	Incident Count (10-years)	Population	Incidents in 10 years per individual
Abie	0	59	0.0000
Adams	2	508	0.0039
Ainsworth	2	1688	0.0012
Albion	1	1501	0.0007
Alda	24	665	0.0361
Alexandria	0	144	0.0000
Allen	1	356	0.0028
Alliance	1	8235	0.0001
Alma	2	1293	0.0015
Alvo	5	130	0.0385
Ames	6	0	
Amherst	0	136	0.0000
Anoka	0	26	0.0000
Anselmo	0	164	0.0000
Ansley	0	471	0.0000
Arapahoe	0	1333	0.0000
Arcadia	1	271	0.0037
Archer	1	51	0.0196
Arlington	8	1513	0.0053
Arnold	1	802	0.0012
Arthur	1	136	0.0074
Ashland	8	2523	0.0032
Ashton	1	190	0.0053
Aten	0	28	0.0000
Atkinson	2	1462	0.0014
Atlanta	1	70	0.0143

City	Incident Count (10-years)	Population	Incidents in 10 years per individual
Auburn	3	3311	0.0009
Aurora	10	4497	0.0022
Avoca	0	281	0.0000
Axtell	3	818	0.0037
Ayr	0	92	0.0000
Bancroft	0	458	0.0000
Barada	1	33	0.0303
Barneston	1	107	0.0093
Bartlett	0	111	0.0000
Bartley	0	384	0.0000
Bassett	1	728	0.0014
Battle Creek	0	1215	0.0000
Bayard	1	1067	0.0009
Bazile Mills	0	24	0.0000
Beatrice	12	12300	0.0010
Beaver City	1	489	0.0020
Beaver Crossing	7	390	0.0179
Bee	1	208	0.0048
Beemer	0	610	0.0000
Belden	2	127	0.0157
Belgrade	0	163	0.0000
Bellevue	66	53324	0.0012
Bellwood	15	416	0.0361
Belmar	0	104	0.0000
Belvidere	6	45	0.1333
Benedict	1	301	0.0033
Benkelman	0	978	0.0000
Bennet	4	1103	0.0036
Bennington	8	1931	0.0041
Berea	1	22	0.0455
Bertrand	0	787	0.0000
Berwyn	1	93	0.0108
Big Springs	3	476	0.0063
Bladen	0	175	0.0000
Blair	5	7781	0.0006
Bloomfield	1	885	0.0011
Bloomington	1	121	0.0083
Blue Hill	0	983	0.0000
Blue Springs	2	274	0.0073
Bow Valley	1	77	0.0130

City	Incident Count (10-years)	Population	Incidents in 10 years per individual
Boys Town	37	864	0.0428
Bradshaw	6	331	0.0181
Brady	5	405	0.0123
Brainard	0	420	0.0000
Brewster	0	13	0.0000
Bridgeport	0	1686	0.0000
Bristow	0	99	0.0000
Broadwater	0	180	0.0000
Brock	0	115	0.0000
Broken Bow	6	3517	0.0017
Brownlee	0	6	0.0000
Brownville	0	127	0.0000
Brule	2	311	0.0064
Bruning	4	288	0.0139
Bruno	0	129	0.0000
Brunswick	1	220	0.0045
Burchard	1	40	0.0250
Burr	3	32	0.0938
Burton	0	0	
Burwell	1	1244	0.0008
Bushnell	2	195	0.0103
Butte	0	337	0.0000
Byron	0	94	0.0000
Cairo	2	916	0.0022
Callaway	0	646	0.0000
Cambridge	0	1143	0.0000
Campbell	0	332	0.0000
Carleton	3	54	0.0556
Carroll	1	237	0.0042
Cedar Bluffs	4	631	0.0063
Cedar Creek	3	416	0.0072
Cedar Rapids	0	467	0.0000
Center	0	82	0.0000
Central City	2	2903	0.0007
Ceresco	0	1238	0.0000
Chadron	7	5591	0.0013
Chalco	43	10952	0.0039
Chambers	0	348	0.0000
Champion	1	42	0.0238
Chapman	2	254	0.0079

City	Incident Count (10-years)	Population	Incidents in 10 years per individual
Chappell	2	871	0.0023
Chester	2	289	0.0069
Clarks	1	374	0.0027
Clarkson	1	631	0.0016
Clatonia	3	462	0.0065
Clay Center	0	801	0.0000
Clearwater	0	361	0.0000
Clinton	0	49	0.0000
Cody	0	205	0.0000
Coleridge	1	554	0.0018
Colon	0	129	0.0000
Columbus	36	23195	0.0016
Comstock	0	105	0.0000
Concord	2	162	0.0123
Cook	2	410	0.0049
Cordova	0	95	0.0000
Cornlea	5	10	0.5000
Cortland	1	497	0.0020
Cotesfield	0	36	0.0000
Cowles	1	11	0.0909
Cozad	6	3787	0.0016
Crab Orchard	3	46	0.0652
Craig	0	166	0.0000
Crawford	3	1114	0.0027
Creighton	0	1225	0.0000
Creston	3	206	0.0146
Crete	1	7043	0.0001
Crofton	0	868	0.0000
Crookston	0	72	0.0000
Culbertson	3	587	0.0051
Curtis	0	811	0.0000
Cushing	2	43	0.0465
Dakota City	7	2032	0.0034
Dalton	0	330	0.0000
Danbury	1	69	0.0145
Dannebrog	0	298	0.0000
Davenport	0	397	0.0000
Davey	6	160	0.0375
David City	1	2841	0.0004
Dawson	1	168	0.0060

City	Incident Count (10-years)	Population	Incidents in 10 years per individual
Daykin	0	186	0.0000
De Witt	5	653	0.0077
Decatur	0	377	0.0000
Denton	9	197	0.0457
Deshler	1	817	0.0012
Deweese	0	59	0.0000
Diller	0	281	0.0000
Dix	3	308	0.0097
Dixon	3	125	0.0240
Dodge	0	550	0.0000
Doniphan	16	958	0.0167
Dorchester	0	620	0.0000
Douglas	0	151	0.0000
Du Bois	0	97	0.0000
Dunbar	1	176	0.0057
Duncan	10	547	0.0183
Dunning	2	102	0.0196
Dwight	0	206	0.0000
Eagle	1	900	0.0011
Eddyville	0	93	0.0000
Edgar	0	456	0.0000
Edison	0	156	0.0000
Elba	0	334	0.0000
Elgin	0	720	0.0000
Elk Creek	0	80	0.0000
Elm Creek	2	1134	0.0018
Elmwood	0	720	0.0000
Elsie	0	142	0.0000
Elwood	2	829	0.0024
Elyria	1	64	0.0156
Emerson	2	902	0.0022
Emmet	0	28	0.0000
Enders	2	8	0.2500
Endicott	1	161	0.0062
Ericson	0	140	0.0000
Eustis	0	520	0.0000
Ewing	1	395	0.0025
Exeter	0	558	0.0000
Fairbury	1	3686	0.0003
Fairfield	0	374	0.0000

City	Incident Count (10-years)	Population	Incidents in 10 years per individual
Fairmont	0	700	0.0000
Falls City	4	4156	0.0010
Farnam	0	216	0.0000
Farwell	0	118	0.0000
Filley	3	105	0.0286
Firth	1	435	0.0023
Fontanelle	8	29	0.2759
Fordyce	1	154	0.0065
Fort Calhoun	1	882	0.0011
Foster	1	50	0.0200
Franklin	1	1031	0.0010
Fremont	11	26437	0.0004
Friend	0	1176	0.0000
Fullerton	0	1446	0.0000
Funk	4	192	0.0208
Gandy	0	57	0.0000
Garland	4	247	0.0162
Garrison	1	49	0.0204
Geneva	1	2071	0.0005
Genoa	0	1065	0.0000
Gering	13	8254	0.0016
Gibbon	4	2080	0.0019
Gilead	0	38	0.0000
Giltner	6	295	0.0203
Glenvil	3	374	0.0080
Glenwood	18	549	0.0328
Goehner	8	117	0.0684
Gordon	1	1733	0.0006
Gothenburg	14	3489	0.0040
Grafton	0	142	0.0000
Grand Island	36	51147	0.0007
Grant	0	1345	0.0000
Greeley Center	0	353	0.0000
Greenwood	6	529	0.0113
Gresham	0	231	0.0000
Gretna	20	5037	0.0040
Gross	0	0	
Guide Rock	0	204	0.0000
Gurley	1	211	0.0047
Hadar	20	268	0.0746

City	Incident Count (10-years)	Population	Incidents in 10 years per individual
Haigler	0	182	0.0000
Hallam	1	204	0.0049
Halsey	0	64	0.0000
Hamlet	0	44	0.0000
Hampton	5	471	0.0106
Harbine	0	79	0.0000
Hardy	0	235	0.0000
Harrisburg	0	88	0.0000
Harrison	0	297	0.0000
Hartington	1	1645	0.0006
Harvard	0	1086	0.0000
Hastings	13	24906	0.0005
Hay Springs	0	596	0.0000
Hayes Center	1	288	0.0035
Hazard	0	58	0.0000
Heartwell	0	83	0.0000
Hebron	4	1630	0.0025
Hemingford	1	909	0.0011
Henderson	4	1006	0.0040
Hendley	1	12	0.0833
Henry	0	91	0.0000
Herman	0	324	0.0000
Hershey	2	606	0.0033
Hickman	7	2447	0.0029
Hildreth	0	413	0.0000
Holbrook	0	255	0.0000
Holdrege	4	5455	0.0007
Holmesville	8	18	0.4444
Holstein	0	263	0.0000
Homer	1	502	0.0020
Hooper	2	775	0.0026
Hordville	2	87	0.0230
Hoskins	7	281	0.0249
Howard City (Boelus)	2	170	0.0118
Howells	1	657	0.0015
Hubbard	2	181	0.0110
Hubbell	1	71	0.0141
Humboldt	1	863	0.0012
Humphrey	3	896	0.0033

City	Incident Count (10-years)	Population	Incidents in 10 years per individual
Huntley	2	56	0.0357
Hyannis	1	168	0.0060
Imperial	2	2008	0.0010
Inavale	0	65	0.0000
Indianola	0	559	0.0000
Inglewood	9	401	0.0224
Inland	4	7	0.5714
Inman	1	99	0.0101
Ithaca	0	122	0.0000
Jackson	3	140	0.0214
Jansen	0	106	0.0000
Johnson	0	272	0.0000
Johnstown	0	46	0.0000
Julian	0	56	0.0000
Juniata	7	714	0.0098
Kearney	20	33464	0.0006
Kenesaw	0	1111	0.0000
Kennard	5	364	0.0137
Keystone	2	62	0.0323
Kilgore	0	57	0.0000
Kimball	9	2578	0.0035
King Lake	1	79	0.0127
La Platte	6	158	0.0380
La Vista	69	17078	0.0040
Lakeview	28	370	0.0757
Lamar	0	17	0.0000
Laurel	2	1111	0.0018
Lawrence	0	391	0.0000
Lebanon	0	77	0.0000
Leigh	0	396	0.0000
Lemoyne	0	102	0.0000
Leshara	0	73	0.0000
Lewellen	1	192	0.0052
Lewiston	4	63	0.0635
Lexington	7	10097	0.0007
Liberty	0	67	0.0000
Lincoln	66	283839	0.0002
Lindsay	4	276	0.0145
Lindy	1	20	0.0500
Linwood	5	153	0.0327

City	Incident Count (10-years)	Population	Incidents in 10 years per individual
Lisco	1	30	0.0333
Litchfield	0	300	0.0000
Lodgepole	2	325	0.0062
Long Pine	2	275	0.0073
Loomis	2	408	0.0049
Lorenzo	9	23	0.3913
Loretto	0	109	0.0000
Lorton	1	24	0.0417
Louisville	1	1184	0.0008
Loup City	0	975	0.0000
Lushton	4	14	0.2857
Lyman	0	379	0.0000
Lynch	0	206	0.0000
Lyons	1	818	0.0012
Macy	1	988	0.0010
Madison	2	2561	0.0008
Madrid	1	197	0.0051
Magnet	0	54	0.0000
Malcolm	2	483	0.0041
Malmo	1	162	0.0062
Manley	0	163	0.0000
Marquette	0	243	0.0000
Martin	0	51	0.0000
Martinsburg	1	81	0.0123
Maskell	0	61	0.0000
Mason City	1	198	0.0051
Max	0	84	0.0000
Maxwell	5	230	0.0217
Maywood	0	350	0.0000
McCook	2	7587	0.0003
McCool Junction	16	389	0.0411
McGrew	2	102	0.0196
McLean	1	25	0.0400
Mead	1	608	0.0016
Meadow Grove	0	249	0.0000
Melbeta	1	144	0.0069
Memphis	1	74	0.0135
Merna	4	353	0.0113
Merriman	0	154	0.0000
Milford	5	2363	0.0021

City	Incident Count (10-years)	Population	Incidents in 10 years per individual
Miller	0	153	0.0000
Milligan	0	278	0.0000
Minatare	3	896	0.0033
Minden	1	2808	0.0004
Mitchell	4	1795	0.0022
Monowi	0	0	
Monroe	1	388	0.0026
Moorefield	0	19	0.0000
Morrill	3	758	0.0040
Morse Bluff	2	128	0.0156
Mullen	0	351	0.0000
Murdock	3	185	0.0162
Murray	0	505	0.0000
Naper	0	94	0.0000
Naponee	0	116	0.0000
Nebraska City	5	7273	0.0007
Nehawka	1	186	0.0054
Neligh	0	1622	0.0000
Nelson	0	467	0.0000
Nemaha	0	112	0.0000
Nenzel	0	30	0.0000
Newcastle	0	314	0.0000
Newman Grove	4	723	0.0055
Newport	0	64	0.0000
Nickerson	9	334	0.0269
Niobrara	0	293	0.0000
Nora	0	6	0.0000
Norfolk	20	24424	0.0008
Norman	0	47	0.0000
North Bend	3	1340	0.0022
North Loup	0	281	0.0000
North Platte	52	23892	0.0022
Oak	0	32	0.0000
Oakdale	0	366	0.0000
Oakland	1	1556	0.0006
Obert	0	18	0.0000
Oconto	0	143	0.0000
Octavia	1	151	0.0066
Odell	0	396	0.0000
Odessa	5	81	0.0617

City	Incident Count (10-years)	Population	Incidents in 10 years per individual
Offutt AFB	28	5048	0.0055
Ogallala	10	4536	0.0022
Ohiowa	0	136	0.0000
Omaha	86	475862	0.0002
O'Neill	7	3615	0.0019
Ong	0	71	0.0000
Orchard	1	524	0.0019
Ord	0	2310	0.0000
Orleans	2	442	0.0045
Osceola	3	924	0.0032
Oshkosh	1	861	0.0012
Osmond	1	873	0.0011
Otoe	2	288	0.0069
Overland	2	100	0.0200
Overton	5	586	0.0085
Oxford	0	783	0.0000
Page	1	186	0.0054
Palisade	0	328	0.0000
Palmer	0	524	0.0000
Palmyra	1	571	0.0018
Panama	0	236	0.0000
Papillion	62	20423	0.0030
Parks	0	12	0.0000
Pawnee City	0	1077	0.0000
Paxton	2	532	0.0038
Pender	0	1204	0.0000
Peru	0	908	0.0000
Petersburg	0	408	0.0000
Phillips	13	299	0.0435
Pickrell	3	247	0.0121
Pierce	3	2013	0.0015
Pilger	0	305	0.0000
Plainview	1	1398	0.0007
Platte Center	3	384	0.0078
Plattsmouth	2	6448	0.0003
Pleasant Dale	3	260	0.0115
Pleasanton	0	391	0.0000
Plymouth	2	452	0.0044
Polk	1	309	0.0032
Ponca	0	915	0.0000

City	Incident Count (10-years)	Population	Incidents in 10 years per individual
Poole	0	50	0.0000
Potter	6	328	0.0183
Prague	1	345	0.0029
Preston	4	33	0.1212
Primrose	0	68	0.0000
Prosser	3	97	0.0309
Raeville	0	0	
Ragan	1	21	0.0476
Ralston	71	7321	0.0097
Randolph	1	1010	0.0010
Ravenna	1	1439	0.0007
Raymond	2	181	0.0110
Red Cloud	2	1095	0.0018
Republican City	0	162	0.0000
Reynolds	0	63	0.0000
Richfield	23	21	1.0952
Richland	27	134	0.2015
Rising City	2	428	0.0047
Riverdale	5	302	0.0166
Riverton	0	40	0.0000
Roca	12	181	0.0663
Rockville	1	143	0.0070
Rogers	4	124	0.0323
Rosalie	1	161	0.0062
Roscoe	10	109	0.0917
Roseland	0	233	0.0000
Royal	2	71	0.0282
Rulo	1	120	0.0083
Rushville	0	807	0.0000
Ruskin	0	100	0.0000
Salem	4	103	0.0388
Santee	0	389	0.0000
Sarben	5	105	0.0476
Sargent	0	501	0.0000
Saronville	0	72	0.0000
Schuyler	7	6284	0.0011
Scotia	0	329	0.0000
Scottsbluff	13	14737	0.0009
Scribner	1	754	0.0013
Seneca	0	35	0.0000

City	Incident Count (10-years)	Population	Incidents in 10 years per individual
Seward	10	7176	0.0014
Shelby	2	752	0.0027
Shelton	5	1107	0.0045
Shickley	1	260	0.0038
Sholes	1	31	0.0323
Shubert	0	176	0.0000
Sidney	10	6572	0.0015
Silver Creek	0	409	0.0000
Smithfield	2	65	0.0308
Snyder	0	327	0.0000
South Bend	5	94	0.0532
South Sioux City	8	12896	0.0006
Spalding	0	492	0.0000
Spencer	0	368	0.0000
Sprague	6	91	0.0659
Springfield	17	1466	0.0116
Springview	0	202	0.0000
St. Edward	0	744	0.0000
St. Helena	0	78	0.0000
St. Libory	0	166	0.0000
St. Paul	1	2362	0.0004
Stamford	1	211	0.0047
Stanton	0	1632	0.0000
Staplehurst	4	260	0.0154
Stapleton	0	357	0.0000
Steele City	0	76	0.0000
Steinauer	1	100	0.0100
Stella	1	230	0.0043
Sterling	3	456	0.0066
Stockham	0	20	0.0000
Stockville	0	13	0.0000
Strang	3	31	0.0968
Stratton	1	347	0.0029
Stromsburg	1	1082	0.0009
Stuart	1	667	0.0015
Sumner	0	214	0.0000
Sunol	1	64	0.0156
Superior	0	1979	0.0000
Surprise	0	56	0.0000
Sutherland	5	1607	0.0031

City	Incident Count (10-years)	Population	Incidents in 10 years per individual
Sutton	0	1503	0.0000
Swanton	1	81	0.0123
Syracuse	1	2076	0.0005
Table Rock	0	366	0.0000
Talmage	0	247	0.0000
Tamora	12	9	1.3333
Tarnov	3	15	0.2000
Taylor	0	146	0.0000
Tecumseh	2	1682	0.0012
Tekamah	0	1802	0.0000
Terrytown	12	1195	0.0100
Thayer	1	78	0.0128
Thedford	0	190	0.0000
Thurston	1	125	0.0080
Tilden	0	1105	0.0000
Tobias	1	112	0.0089
Trenton	2	514	0.0039
Trumbull	10	251	0.0398
Tryon	0	92	0.0000
Uehling	1	271	0.0037
Ulysses	0	203	0.0000
Unadilla	1	289	0.0035
Union	1	142	0.0070
Upland	0	196	0.0000
Utica	6	922	0.0065
Valentine	3	2760	0.0011
Valley	1	2773	0.0004
Valparaiso	0	605	0.0000
Venango	1	186	0.0054
Venice	1	50	0.0200
Verdel	0	26	0.0000
Verdigre	0	555	0.0000
Verdon	1	207	0.0048
Virginia	3	71	0.0423
Waco	7	272	0.0257
Wahoo	1	4502	0.0002
Wakefield	4	1545	0.0026
Wallace	0	274	0.0000
Walthill	1	792	0.0013
Walton	38	179	0.2123

City	Incident Count (10-years)	Population	Incidents in 10 years per individual
Wann	6	103	0.0583
Washington	2	85	0.0235
Waterbury	1	77	0.0130
Waterloo	3	966	0.0031
Wauneta	0	733	0.0000
Wausa	0	562	0.0000
Waverly	24	3873	0.0062
Wayne	3	5557	0.0005
Weeping Water	0	910	0.0000
Wellfleet	1	52	0.0192
West Point	2	3301	0.0006
Western	1	252	0.0040
Westerville	0	0	
Weston	1	283	0.0035
White Clay	0	0	
Whitney	0	116	0.0000
Wilber	2	1880	0.0011
Wilcox	1	408	0.0025
Willow Island	15	9	1.6667
Wilsonville	0	45	0.0000
Winnebago	0	759	0.0000
Winnetoon	0	75	0.0000
Winside	1	574	0.0017
Winslow	2	83	0.0241
Wisner	0	1257	0.0000
Wolbach	1	255	0.0039
Wood Lake	0	32	0.0000
Wood River	6	1420	0.0042
Woodland Hills	1	232	0.0043
Woodland Park	19	1588	0.0120
Wymore	2	1531	0.0013
Wynot	0	200	0.0000
Yankee Hill	51	286	0.1783
York	22	7841	0.0028
Yutan	1	992	0.0010