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Rowan County, Kentucky Hazardous Materials Commodity Flow Analysis

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ROWAN COUNTY, KENTUCKY HAZARDOUS MATERIALS COMMODITY FLOW ANALYSIS

FINAL REPORT

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http://www.phmsa.dot.gov/pv_obj_cache/pv_obj_id_7E43AB2E947371BE7E682BAC4B1A3F1BDAB50E00/filename/Chart%2014.pdf

Prepared by:

This project was completed by

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Chapter 1: Introduction

The results of a Commodity Flow Analysis of Hazardous Materials for Interstate 64 (I-64) conducted by Western Kentucky University in partnership with the Rowan County Local Emergency Planning Committee (LEPC) are presented within this report. This report specifically focuses on the portion of the I-64 corridor located in Rowan County, Kentucky. Figure 1.1 shows the location of Rowan County in relationship to the state of Kentucky.

The purpose of this report is to present information regarding the patterns of hazardous materials transportation observed along I-64 in Rowan County from June 16, 2014 through July 11, 2014. Finally, the report presents and assesses survey information that was collected from fixed facilities within Rowan County that ship and receive hazardous materials.

The commodity flow analysis was necessary in order to provide the Rowan County LEPC with information about hazardous materials transport patterns so that they can better prepare for potential incidents and releases of hazardous materials along I-64. The data collected will assist in the emergency planning process by providing valuable information about frequently observed hazardous materials within the duration of the study.

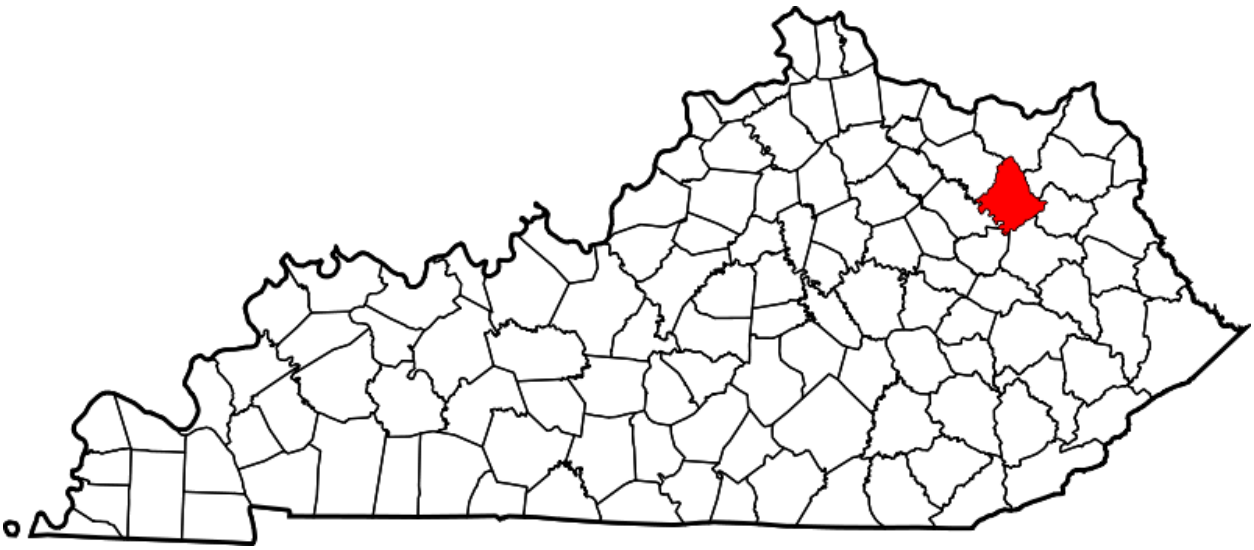
1.1 Background

The purpose of commodity flow studies is to identify the transport of specific goods through the transportation system of a specified area (Taylor et al., 2010). The EPA defines a commodity as any good being moved or transported (U.S. EPA, 2010). The commodities of interest within this study are hazardous materials and Rowan County is the specified area. Hazardous materials are defined in the following ways:

- US Department of Transportation: “Any substance or material in any form or quantity which poses an unreasonable risk to safety and health and to property when transported in commerce,” (US DOT, 1991).
- US EPA: “Any material, which when discharged into the environment, may be harmful to the public health or welfare of the United States,” (U.S. EPA, 2010).

In addition, according to the EPA, a material is considered hazardous if it displays one or more of the following characteristics (U.S. EPA, 2010):

- Ignitability: Can create fires under certain conditions. e.g. fuels which catch fire, and friction-sensitive substances.
- Corrosivitiy: Is acidic and capable of corroding metal.
- Reactivity: Can create explosions or toxic fumes, gases, or vapors when exposed or mixed with water.
- Toxicity: Is harmful or fatal when ingested, breathed or absorbed by the skin.



https://familysearch.org/learn/wiki/en/File:Ky-rowan.png

Figure 1.1 Location of Rowan County, Kentucky

Hazardous material categories include (Transportation):

- Explosive Substances: will release pressure, gas, and heat when exposed to sudden shock, heat, or high pressure. e.g. Explosives, fuel, ammonium nitrate.
- Flammable and Combustible Substances: either liquid or solid that can be easily ignited. e.g. petroleum substances.
- Toxic Materials (Poisons): can cause injury or death when they enter the bodies of living organisms. Can be classified by chemical nature or toxic action. e.g. heavy metals, cyanides, irritants.
- Oxidizers: supply oxygen to support normally non-flammable materials. e.g. plutonium cobalt.
- Etiological Materials: cause disease or infection. e.g. germs that causes rabies, botulism, and tetanus.

1.2 I-64 Corridor in Kentucky

I-64 is a portion of the Interstate Highway System that runs through the state of Kentucky from east to west for approximately 185 miles (DOT, 2002). I-64 travels through several major cities in Kentucky, including Lexington, Louisville and Frankfort with this route being outlined in Figure 1.2. Specifically marked within Figure 1.2 is Morehead, Kentucky, which is the city that I-64 passes through within Rowan County. The section of I-64 in Rowan County is approximately 20 miles long beginning at mile marker 128 and ending at mile marker 148 (KYTC, 2013). The speed limit along I-64 in Kentucky is 70 miles per hours (MPH).

As a whole I-64 travels through 6 states, including Missouri, Illinois, Indiana, Kentucky, West Virginia and Virginia, for a total of 938 miles (DOT, 2002). The United States Department of Transportation (DOT) (2002) also notes major cities impacted by I-64 include St. Louis, Mo, Evansville, IN, Lexington, KY, Louisville, KY, Huntington, WV, Charleston, WV, Richmond, VA, and Norfolk, VA, just to name a few. I-64 intersects with several major interstates along its traverse of six states, including the following intersections in Kentucky with I-264, I-65, I-71, and I-265 near Louisville, KY and I-75 near Lexington, KY.

https://www.google.com/maps/place/Morehead,+KY/@36.C9544296,-83.3820674,7z/data=!4m2!3m1!1s0x88440d7468c48f21:0xf4773daaf82990e0

Figure 1.2. I-64 Corridor from Louisville, KY thru Ashland, KY and continuing into West Virginia (Google Maps 2014)

Dr. Vijay Golla and Dr. Ritchie Taylor of WKU have previously conducted similar hazardous materials commodity flow studies. Examples include studies in Madison County, Kentucky Hazardous Materials Commodity Flow Analysis (Golla et al., 2011) and Warren County, Kentucky Hazardous Materials Commodity Flow Analysis (Taylor et al., 2010). These studies, and others conducted throughout Kentucky by WKU, were the basis on which this study was developed. Data collection sources for this study included placard surveys and a fixed facility survey. Data were used to evaluate the hazardous materials being transported by trucks via I-64, both East and West bound lanes. Each of these primary sources of data collection is summarized below.

1.3 Data Collection Methods

ROADWAY PLACARD SURVEY

WKU Faculty selected a monitoring station with the assistance of Rowan County Local Emergency Planning Committee (LEPC) near I-64 East and West bound lanes passing through Rowan County. This monitoring location was established just west of Exit 137 in Rowan County, on the northern side of I-64, and allowed observation of both east and west bound lanes.

With all necessary safety precautions in place, a team of two observers monitored the site for a total of fourteen days, with one observer being responsible for East bound lanes and one responsible for West bound lanes. A monitoring day consisted of an 8-hour observation period lasting from 7:00 AM to 3:00 PM (7:00 – 15:00). This created a total of 208 hours of observation for I-75 with 104 hours for each lane (East-West bound).

FIXED FACILITY SURVEY

The fixed facility survey consisted of 35 response items designed to collect data from facilities that ship and receive hazardous materials. General information on the facility, trends in the hazardous materials shipped and received by the facility, and the frequency of the specific hazardous materials shipped through the facility is the specific data of interest. Rowan County LEPC requested the data from the fixed facilities. The years 2009-2013 were covered in this survey.

1.4 Organization of the Report

The first section of the report provides an introduction to the study, a description of the methods used, and other important information. The second section of the report provides information regarding the analysis of the placard survey for the I-64 corridor in Rowan County. The third section of the report provides information and analysis for the fixed facility survey. The fourth, and final, section of the report summarizes the results and gives recommendations based on these results. In the appendices a list of placard IDs observed during the placard survey has been provided.

Chapter 2: Analysis of I-64 Placard Survey

The placard survey consisted of 208 monitoring hours within the I-64 corridor, with 104 hours occurring for the East bound side and 104 hours for the West bound side. This monitoring took place in 8-hour increments between June 16, 2014 and July 11, 2014 with all of the monitoring occurring on weekdays (Monday-Friday). This monitoring schedule was set up in order to ensure that daily and temporal differences could be recorded in hazardous material transport. Observers, located at the monitoring site, were students from Western Kentucky University's Environmental Health Science program. Each observer recorded information that included: date, time, type of truck, and all placard identification information.

2.1 Aggregate Truck Frequencies in the I-64 Corridor

In order to ensure that the focus of the study remained on hazardous material transport, students were asked to only collect data on placarded trucks. This allowed students to focus more thoroughly on the placarded data and helped to ensure that all placarded trucks were properly recorded. Information about total traffic frequency in the I-64 corridor was collected from the Kentucky Transportation Cabinet (KYTC). In 2013, the annual average daily traffic (AADT) flow at mile marker 137 in Rowan County was 19,282 vehicles with 17.30% of this traffic being the single and combination truck volume as a percentage of AADT (KYTC, 2013). This translates to roughly 3,336 trucks as the average daily traffic flow.

The total number of placarded trucks on I-64 during the study period, as shown in Figure 2.1, was 1275, with 632 recorded for the East bound lane and 643 recorded for the West bound lane. An average of approximately six placarded trucks were recorded per hour, as shown in Figure 2.2, which can be extrapolated to 144 (6 placarded trucks per hour x 24 hours) placarded trucks daily on I-64. This means that on a daily basis hazmat trucks made up roughly 4.32% of the daily truck traffic or 0.75% of the total daily traffic in Rowan County. When comparing the total placarded truck traffic and the average hourly placarded truck traffic for East and West bound lanes there is only a very small difference in the number of trucks.

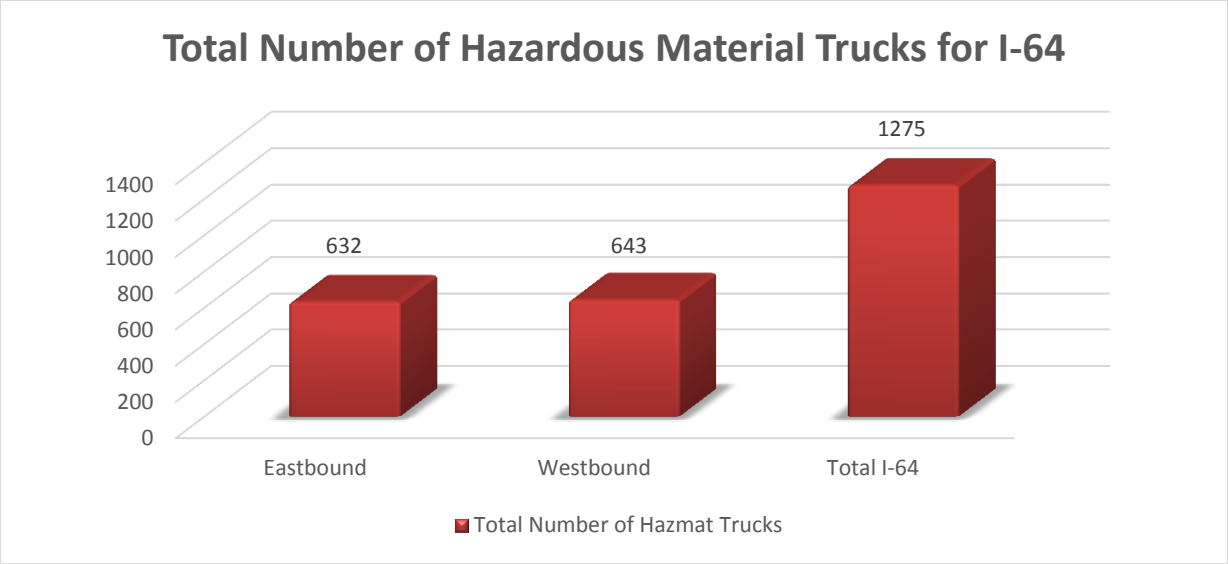


Figure 2.1 Placarded commercial trucks observed in the I-64 corridor

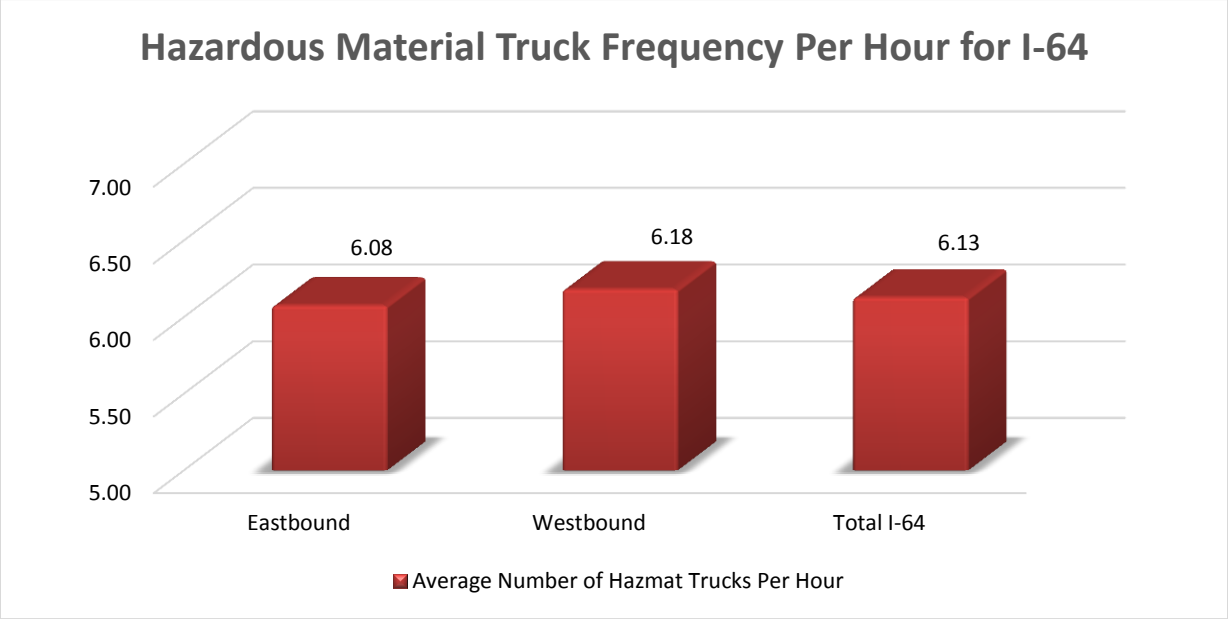


Figure 2.2 Placarded commercial trucks observed per hour on I-64

2.2 Truck Frequencies by Day of the Week

Monitoring hours on I-64 were scheduled on all five week days (Monday – Friday) in order to determine if differences existed in the placarded truck traffic depending on the day of the week. A total of two Mondays, two Tuesdays, three Wednesdays, three Thursdays, and three Fridays were included within the study period.

As shown in Figure 2.3, noticeable differences did exist based on the day of the week when observations were made. Both Mondays and Fridays had an hourly average of approximately 5 placarded trucks, 4.81 and 4.96 respectively, while Tuesdays, Wednesdays and Thursdays had an hourly average of approximately 7 placarded trucks, 6.97, 6.58, and 7.17 respectively. This difference can also be seen in both the East and West bound lanes as displayed in Figure 2.4. Average placarded truck traffic was highest on Tuesdays for the West bound lanes and on Thursdays for the East bound lanes, with the lowest placarded truck traffic being on Fridays for the West bound lanes and Mondays for the East bound lanes.

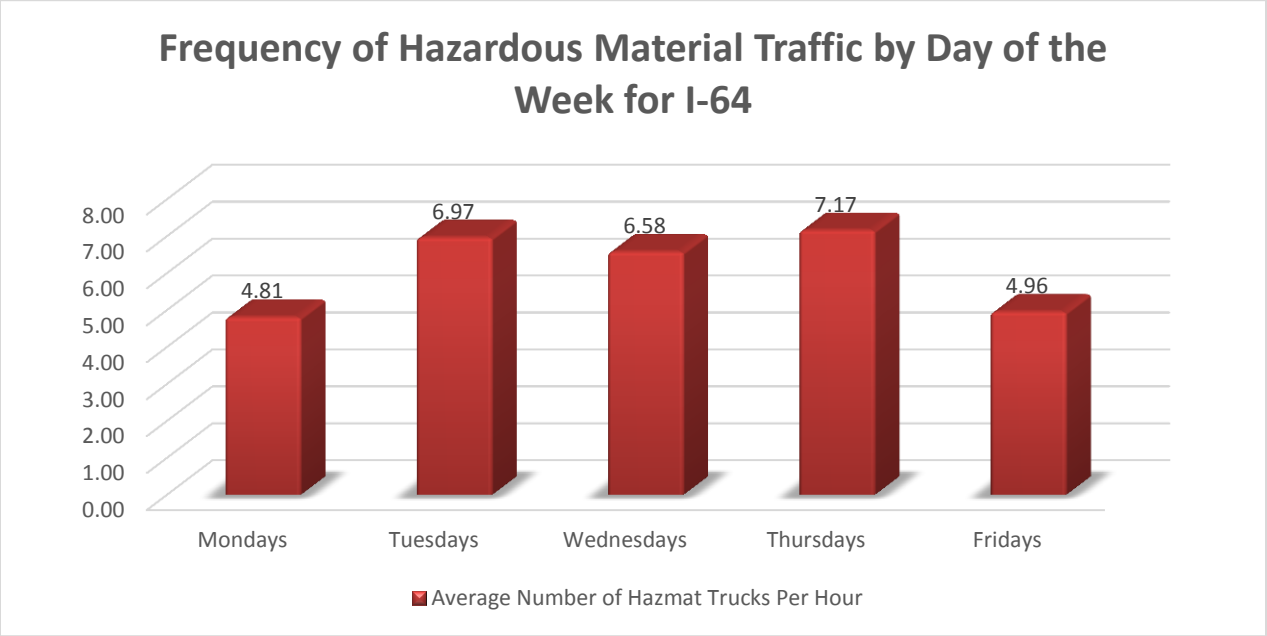


Figure 2.3 Placarded commercial truck traffic hourly averages by day of the week

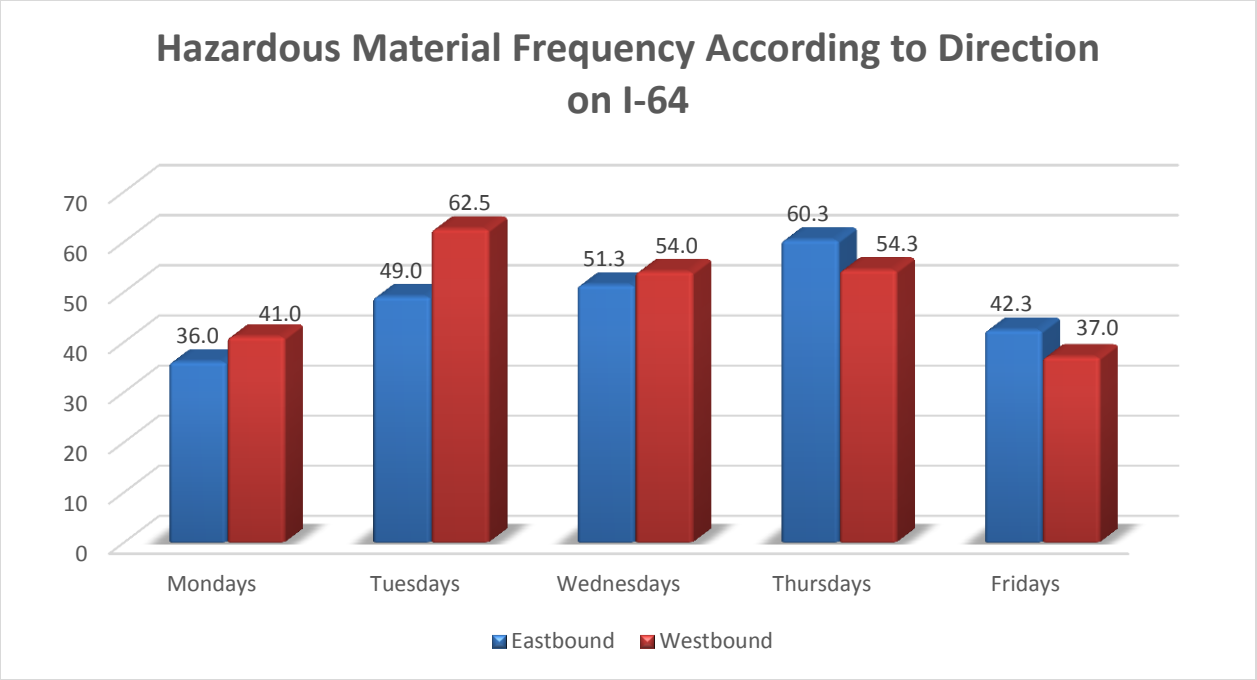


Figure 2.4 Average placarded commercial truck traffic on East and West bound lanes of I-64 by day of the week

2.3 Truck Frequencies by Time of Day

Time of day was recorded for each placarded truck observed so that comparisons could be made to determine if differences existed based on this. In order to analyze differences in placarded truck traffic based on time of day, the observation hours were split into four groups. These divisions were the same for both West and East bound lanes and are as follows:

Period 1 (Early Morning): 7:00 – 9:00
Period 2 (Late Morning): 9:01 – 11:00
Period 3 (Early Afternoon): 11:01 – 13:00
Period 4 (Late Afternoon): 13:01 – 15:00

As shown in Figure 2.5, overall the highest truck volume for the study period was observed in the late morning and early afternoon hours, 336 and 348 respectively, with the lowest volume being observed in the early morning hours, 272. The East bound lanes follow this same pattern but a difference is seen in the pattern of the West bound lanes. The least amount of truck traffic in the West bound lanes was observed in the late morning, 147, while the highest was observed in the late afternoon, 167.

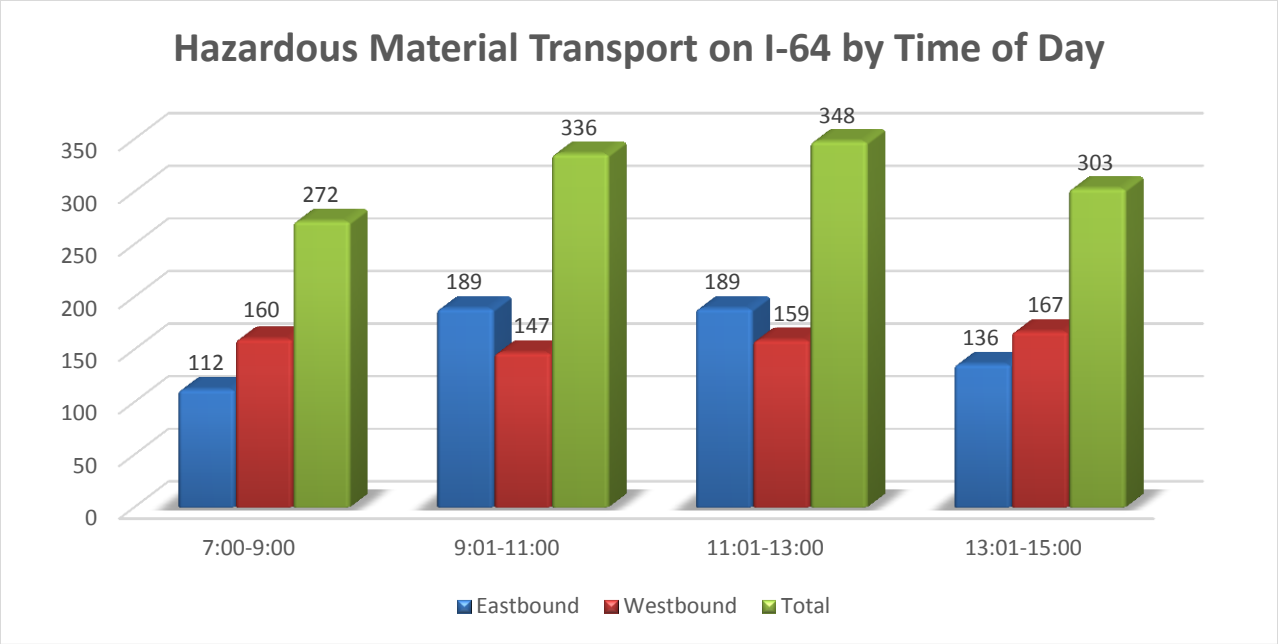


Figure 2.5 Placarded commercial truck traffic observed in the I-64 corridor by time of day

2.4 Composition of Hazardous Materials Being Transported

Analysis of the placard data was performed to assess what materials were being transported within the I-64 corridor. Based on Figure 2.6, the most frequently transported hazmat was Petrol / Gasoline (ID no. 1203) for the East bound lanes. Other frequently transported hazmats on the East bound lane of I-64 included Petroleum Crude Oil (ID no. 1267), Flammables, Flammable Gases / Propane (ID no. 1075) and Elevated Temperature Liquids (ID no. 3257). The top ten most common placard IDs and the number of each that was seen during the study period are shown in Figure 2.6. Analysis of the total distribution of placard IDs allowed calculation of percentages of all identified placards in the study period (Figure 2.7). As illustrated in Figure 2.7, 37.77% of the placards were categorized as other, while 10.85% of the placards were identified as Gasoline (ID no. 1203). Hazardous materials classified as other only made up 2.5% or less individually and were therefore grouped in the other category. A list of the other placards numbers can be found in Appendix 1.

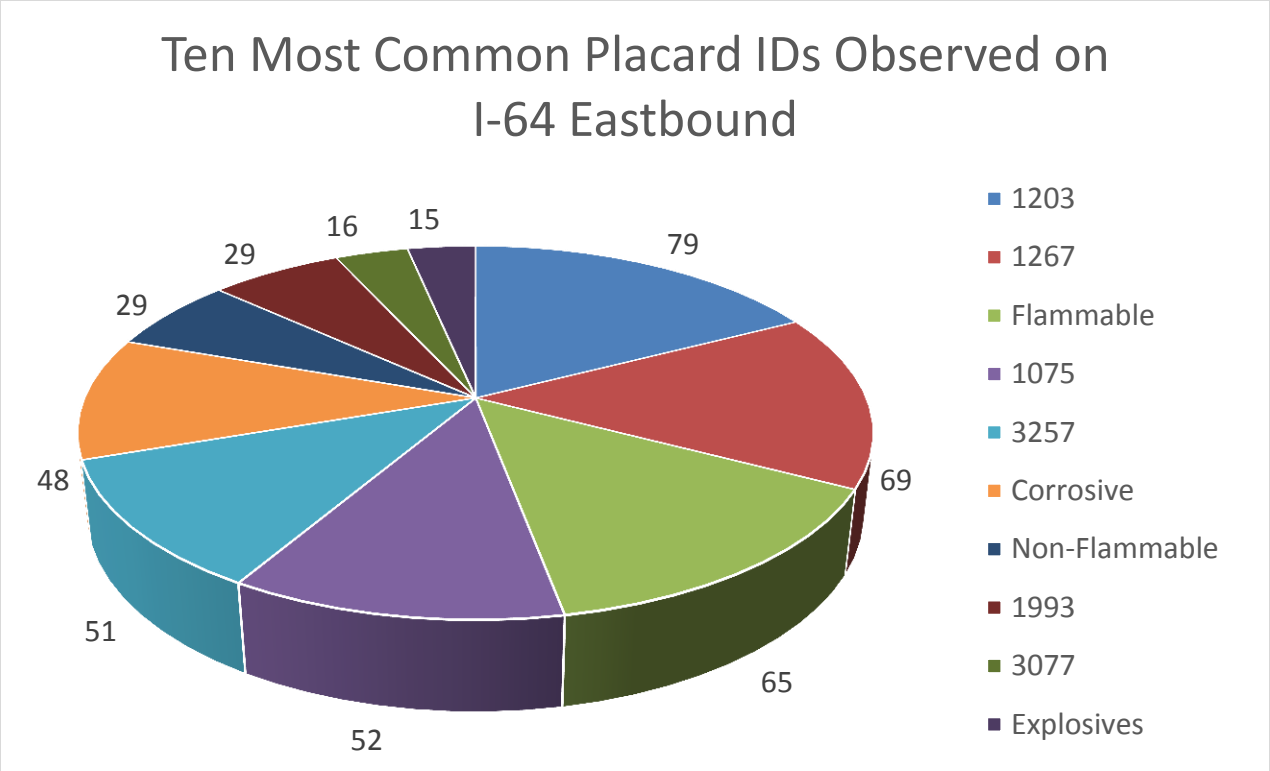


Figure 2.6 Top ten most common placard numbers observed on I-64 East bound

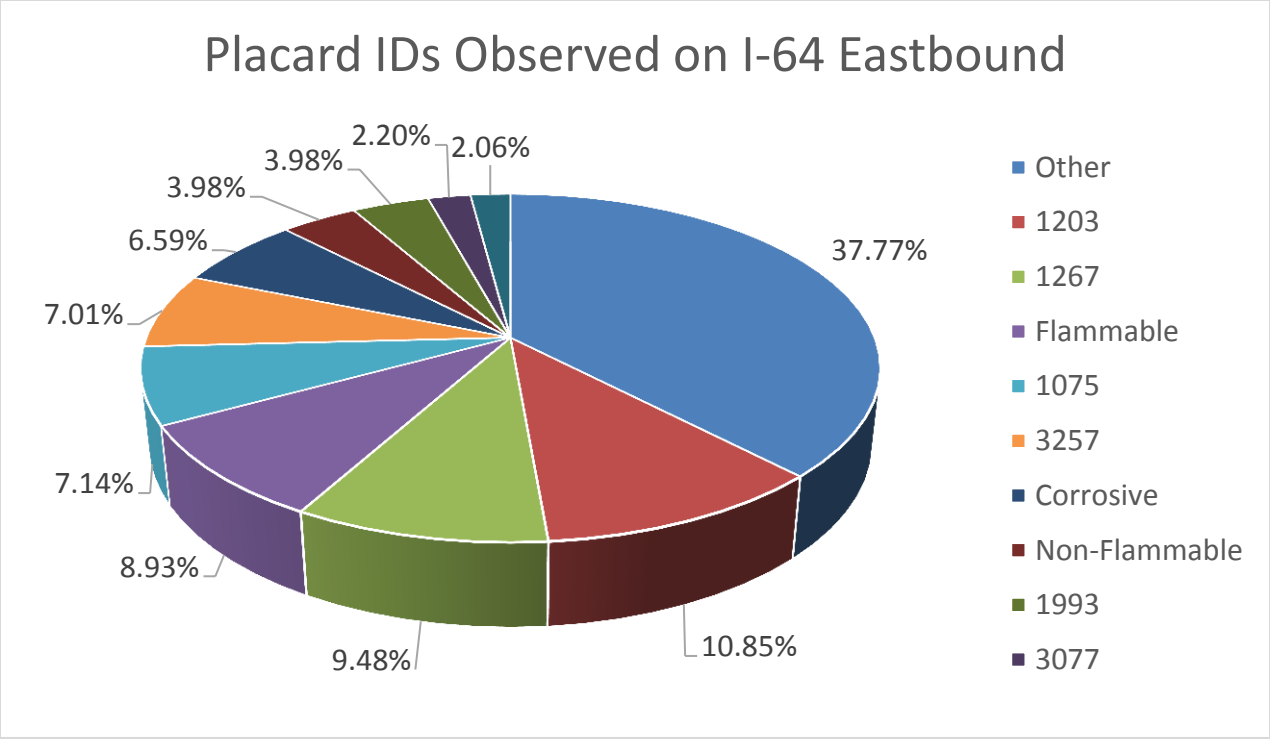


Figure 2.7 Distribution of placard numbers on I-64 East bound as percentages of grand total

Analysis of the West bound lanes of I-64 was performed the same manner as the East bound lanes. The most frequently transported hazmat was Petrol / Gasoline (ID no. 1203) for the West bound lane (Figure 2.8). Other frequently transported hazmats on the West bound lane of I-64 included Petroleum Crude Oil (ID no. 1267), Elevated Temperature Liquids (ID no. 3257), Flammable Gases / Propane (ID no. 1075) and Combustible Liquids / Diesel Fuel (ID no. 1993). The rest of the top ten most common placard IDs for the West bound lanes of I-64 can be seen in Figure 2.8, along with the number of that placard ID that were observed during the study period. Figure 2.9, further explains the observed placard data by identifying the percentage of the grand total for a specific placard number. Analysis of the data indicated that 41.06% of placard IDs were classified as other, while 11.98% were Petrol / Gasoline (ID no. 1203). Hazardous materials classified as other only made up 2.5% or less individually and were therefore grouped in the other category. A list of the other placards numbers can be found in Appendix 2.

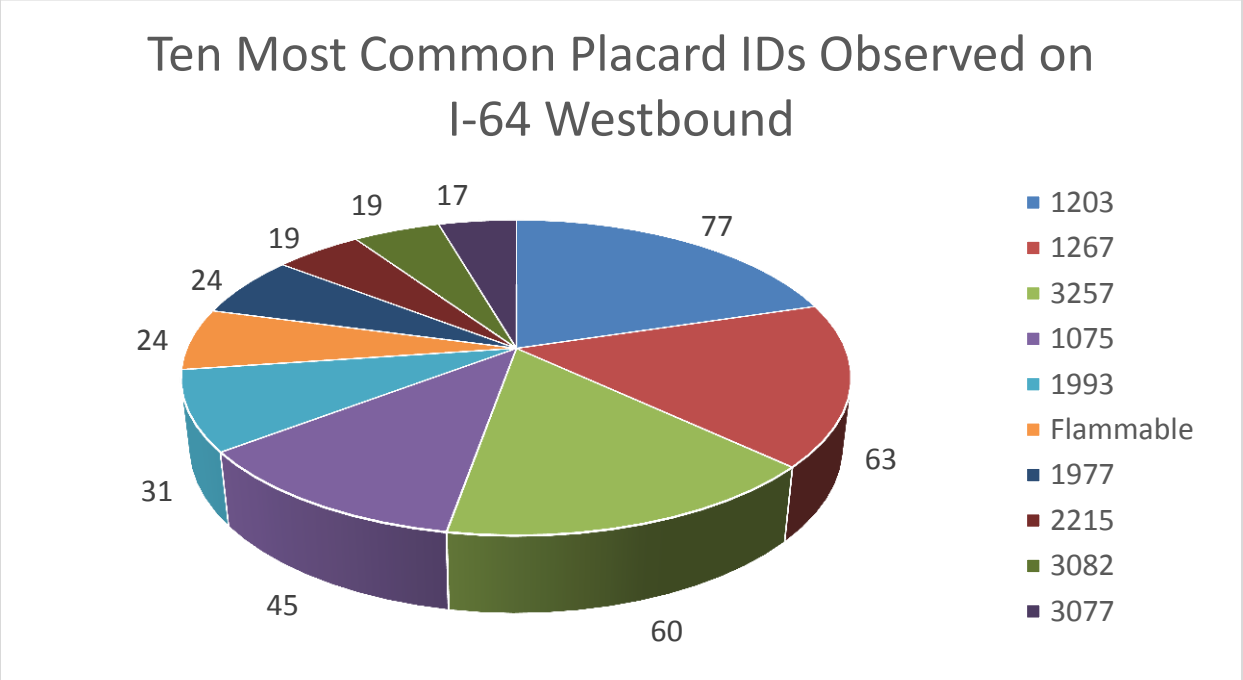


Figure 2.8 Top ten most common placard IDs observed on I-64 West bound

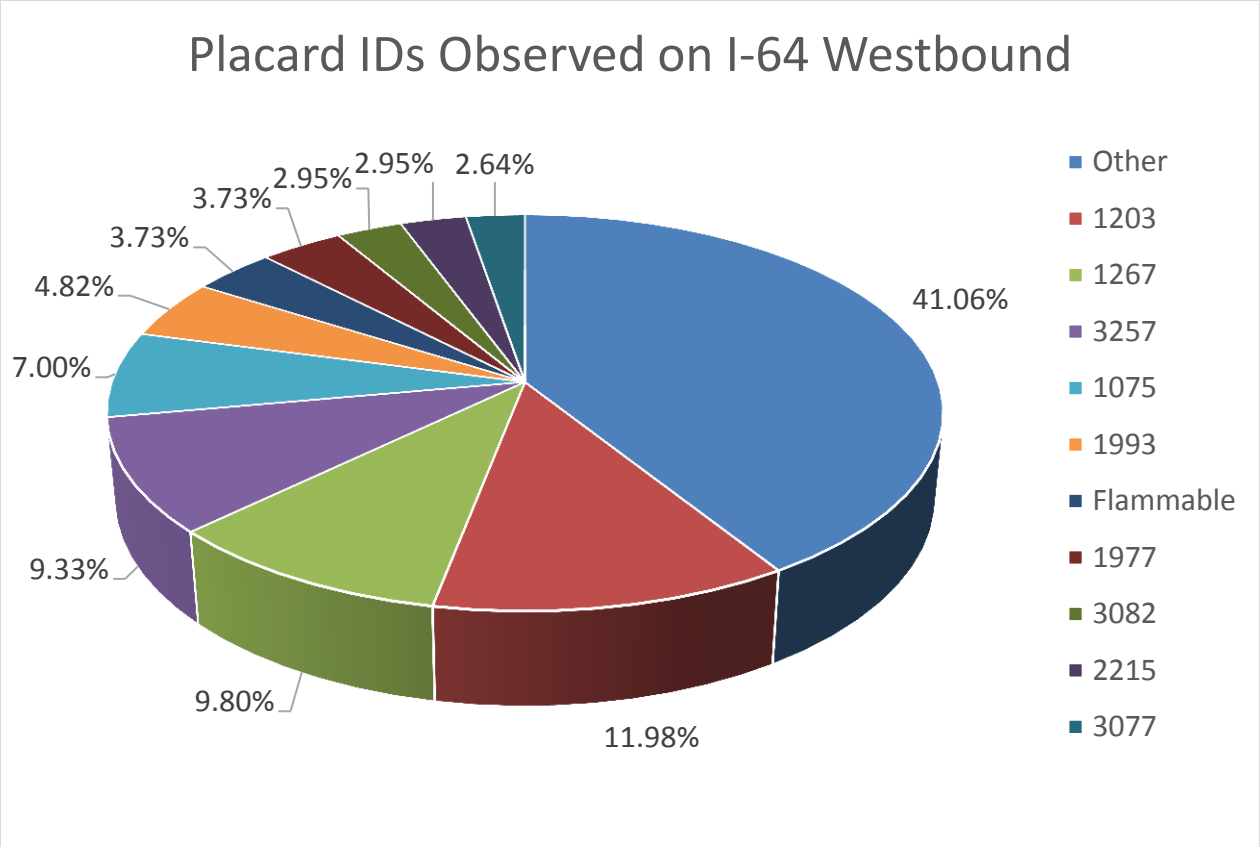


Figure 2.9 Distribution of placard numbers on I-64 West bound as percentages of grand total

2.5 Recommended Responses to the Frequently Transported Hazardous Materials

By observing the most common placard identification numbers it is possible to determine the most frequently recurring guide number that would be needed if an accident were to take place. A significant number of trucks only contained labels, which indicated the 'nature' or 'Class' of the hazardous material being transported instead of containing a four-digit placard number. In order to ensure accuracy of the guide numbers only placard numbers were considered and labels were eliminated. The guide number, retrieved from the US DOT (2012) Emergency Response Guide, will help in preparing for hazmat accidents and training the emergency response teams.

The most frequent guide number for the East bound lanes of I-64 in Rowan County is 128 (Flammable Liquids, Water Immiscible), as shown in Figure 2.10. This guide number encompassed 31.32% of the top ten placard numbers. Other frequent guide numbers according to

the top ten most common placard IDs include 115 (Gases – Flammable) and 171 (Substances – Low to Moderate Hazards).

All three of the recommended guide numbers for I-64 East bound lanes were also seen for the West bound lanes, as illustrated in Figure 2.11, with 128 (35.93%) still being the most frequently used followed by 115 (7.00%) and 171 (5.59%). In addition to these, guide numbers 120 (Gases – Inert) and 156 (Substances – Toxic and/or Corrosive) were also seen for Westbound lanes.

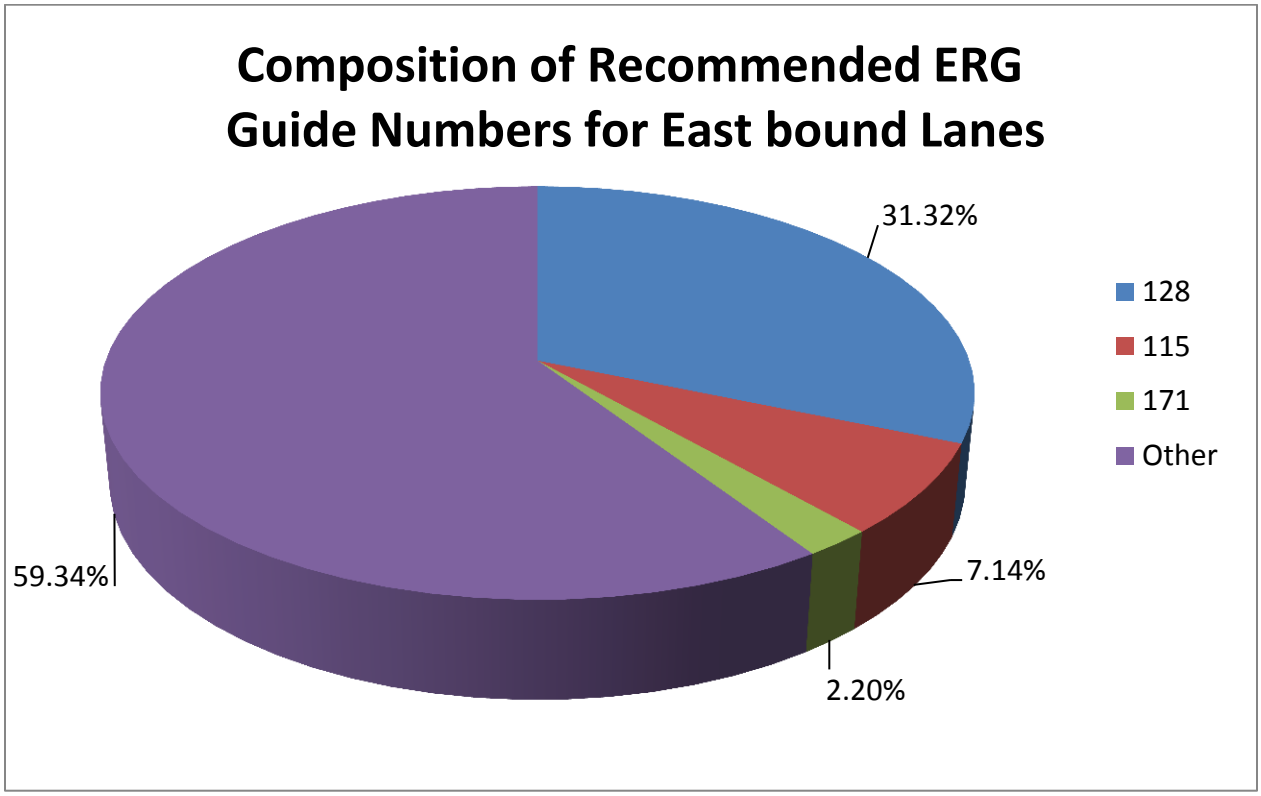


Figure 2.10 Composition of the most frequently used ERG's for East bound lanes

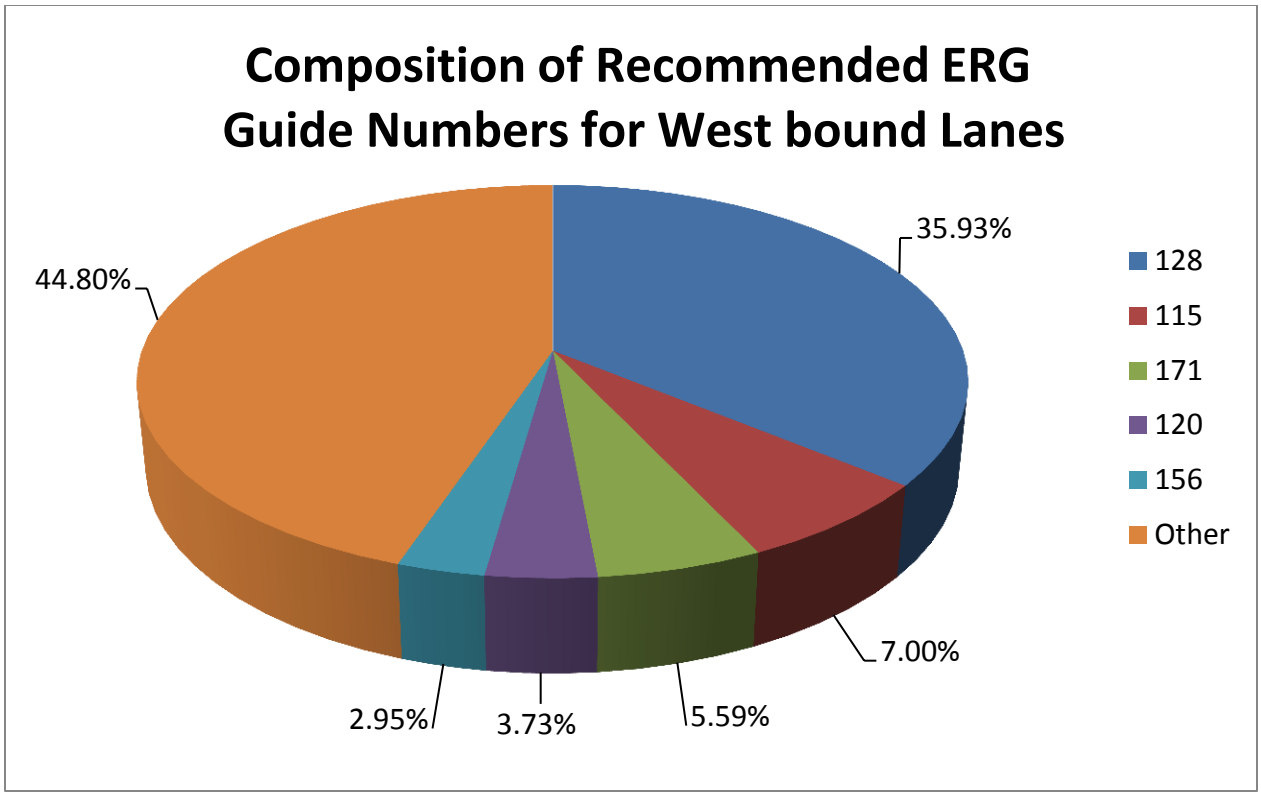


Figure 2.11 Composition of the most frequently used ERG's for West bound lanes

Chapter 3: Fixed Facilities along the I-64 Corridor

A total of six fixed facilities are located within the I-64 corridor in Rowan County. The Kentucky Emergency Response Commission monitors these facilities because it is possible that they store, ship, and/or receive hazardous materials. Golla et al. (2011) explains that these fixed facilities, such as "manufacturing plants, regional terminals and distributors, municipal water plants, and retail operations that serve agriculture", must maintain their inventories and this requires them to receive shipments and sometimes send out hazardous materials. In order to properly plan for hazardous material incidents the timing and placement of these fixed facilities shipments should be known.

Voluntary questionnaires were mailed to the environmental health and safety managers at these fixed facilities in July 2014 in order to learn more about the uses of local roads, highways and streets in the movement of hazardous materials to and from these facilities. The questionnaires were used to document the origins and destinations of hazmats interacting with the fixed facilities and requested information that included:

- Frequency of Hazmat Shipments
- Routine of Hazmat Shipments
- Total Quantities of Hazardous Materials
- Origins/Destinations of Shipments
- Timing of Hazmat Shipments
- Composition of Hazmat Shipments
- Recent Trends in Hazmat Shipments

A total of six usable questionnaires were returned to the LEPC and assessed to determine the types of hazmat transport taking place within Rowan County. After reviewing the questionnaires, it was determined that a wide variety existed between the firms in terms of size and function, which adds further support to the assumption of a representative sample.

3.1 Fixed Facilities and Hazardous Materials

Six industrial facilities, both large and small, that use roadways for transportation of hazmats are located in Rowan County around the I-64 corridor. All reported the shipping and receiving of hazardous materials but only four reported information about the materials. This information will elucidate the most common substances being transported, the origins and destinations of these substances, and the trends of transportation over the last five years (i.e. 2009-2013). The information obtained from these fixed facility questionnaires will be used to help the LEPC plan for what steps should be taken for the most common hazardous materials being transported. An important portion of this survey was used to assess if facilities transported hazardous materials

on legal holidays and if climatic conditions were considered for transport. Facilities that responded they do not carry hazardous materials were discarded from the results.

3.2 Fixed Facility Locations

Fixed facilities and local industries were given survey questions regarding their location based on city, state and county. This data was used to determine where the facilities were located in Kentucky and the location of their corporate offices. All six facilities that completed the survey were located in the city of Morehead within Rowan County. Some corporate offices were located outside of Kentucky but for the most part (4 facilities) the corporate offices were also located within the city of Morehead.

In addition to location, facilities were asked about the most common mode of transportation of hazmats through their facilities. All six facilities reported using trucks as their major source of transportation. The other option that facilities were given, but none reported, was railroad transport. Survey questions were also given that required facilities to give information about the number of placarded trucks that enter or leave their facilities. Additionally, they were asked to identify the routes used for movement of their hazmats, and to get to I-64, as this can be useful information to trace accidents or leaks.

One specific question in the survey asked the facilities to give information regarding the number of placarded trucks entering and leaving the facilities. Figure 3.1 gives an overview of the movement of trucks going to and from each facility. Two facilities, both Windstream Corporation locations, did not report any placarded trucks entering or leaving their facilities but they reported the amount of tonnage shipped and received from their facilities and therefore were included in the usable surveys. The amount of tonnage shipped and received by all of the facilities over the previous 5 years, 2009 – 2013, is recorded in Figure 3.2.

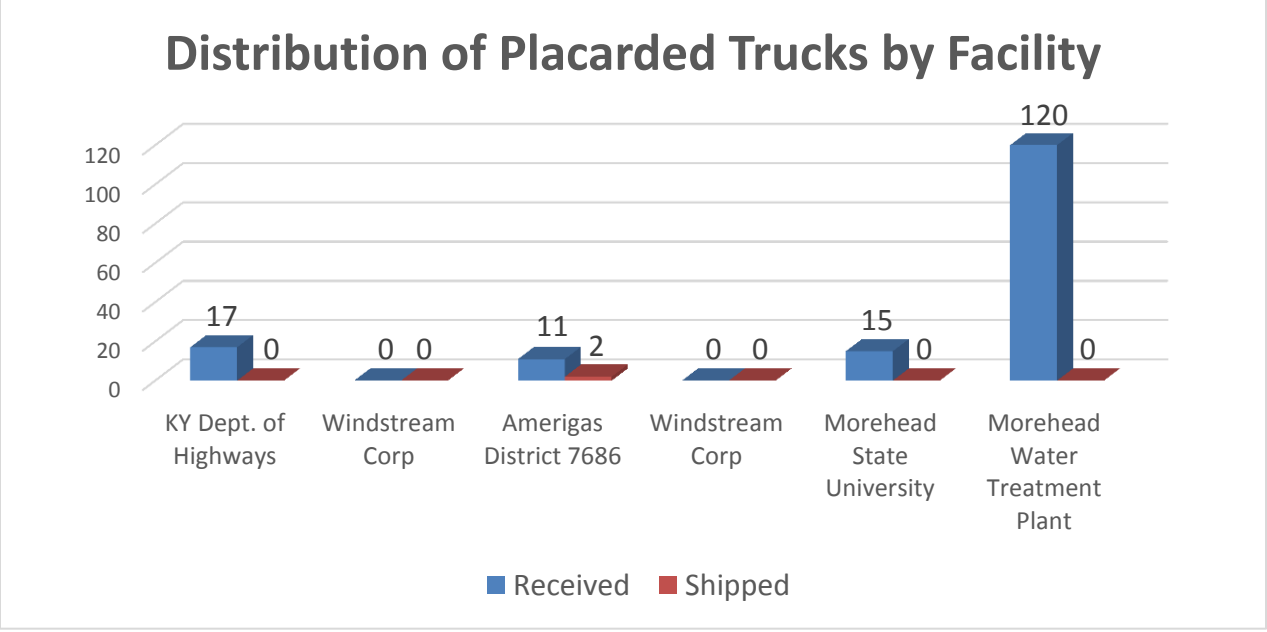


Figure 3.1. Distribution of Placarded trucks based on Shipping/Receiving by facility

The largest amount of tonnage was shipped in 2010 followed by 2013, 1108.1 tons and 1105.9 tons respectively. The lowest amount of tonnage was in 2009 with 1064.3 tons being shipped and/or received that year. From the year 2011 to 2013 a steady increase in tonnage can be seen.

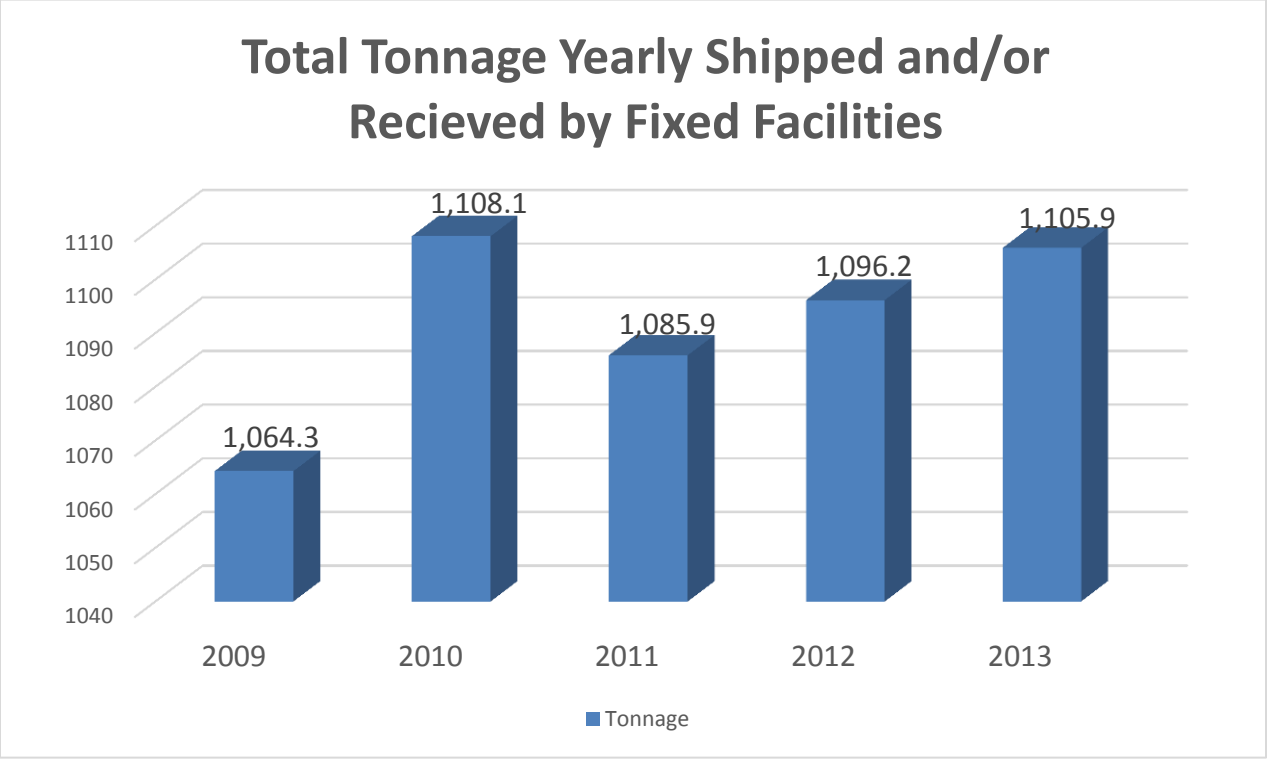


Figure 3.2. Tonnage of materials shipped and received for the calendar years 2006-2010

3.3 Time and Space Pattern for Shipments out of the Facilities

Facilities were asked to report on days of shipment. As shown in Figure 3.3, one facility reported shipping Monday – Friday while no facilities reported shipping on Saturday or Sunday. Figure 3.4 further explains the shipment frequencies by time of day and shows that three facilities reported having no routine times for shipments. Both of these results illustrate that the facilities ship when they deem necessary instead of according to a set schedule.

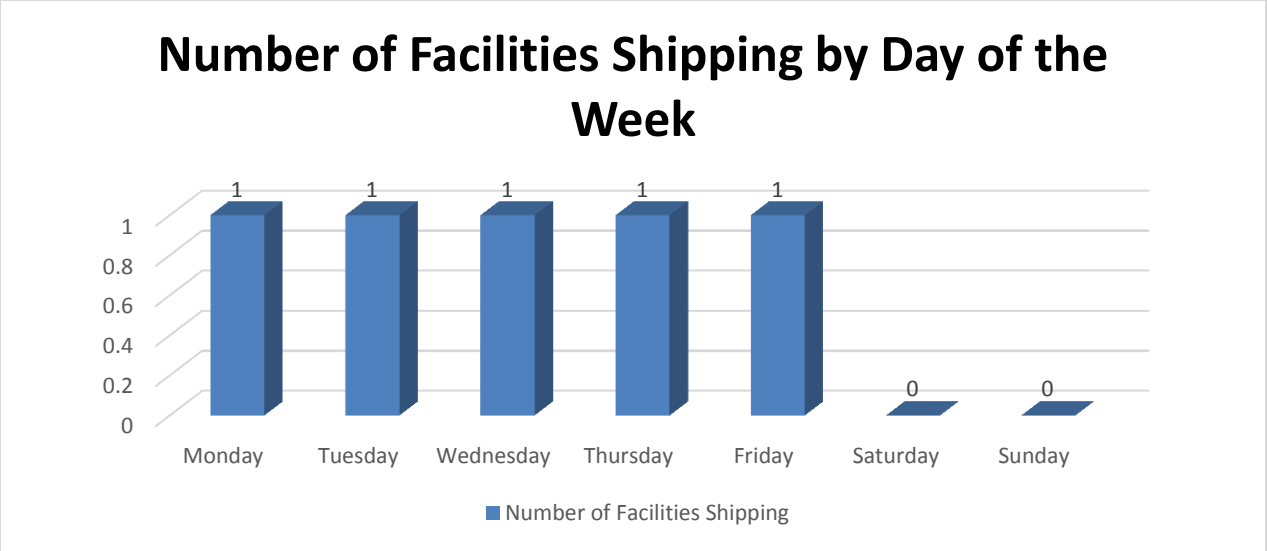


Figure 3.3. Distribution of facilities shipping based on day of the week

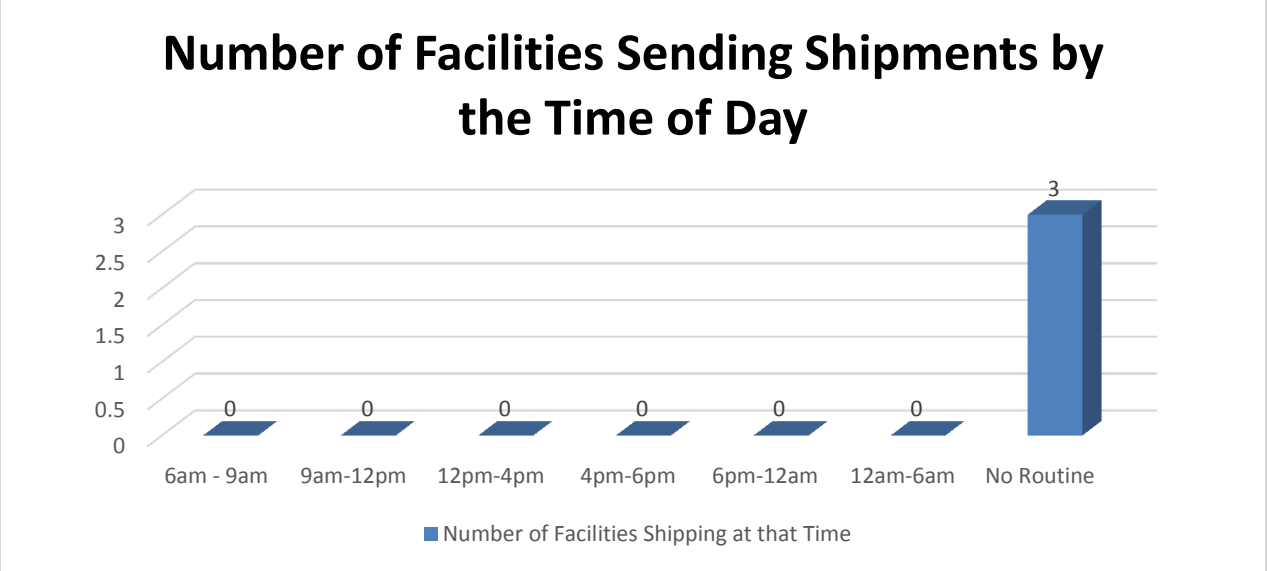


Figure 3.4. Time of day of shipping from facilities

3.4 Space and Time Pattern for Receiving into the Facilities

Information reported by facilities in the survey was analyzed to determine time patterns associated with receiving. Figure 3.5 gives information about the days of the week during which the facilities received shipments. The most frequent days that facilities received shipments were Tuesdays and Thursdays. There were no facilities reporting receiving shipments on Saturday or Sunday, which makes it, clear that workdays are when shipments are normally received.

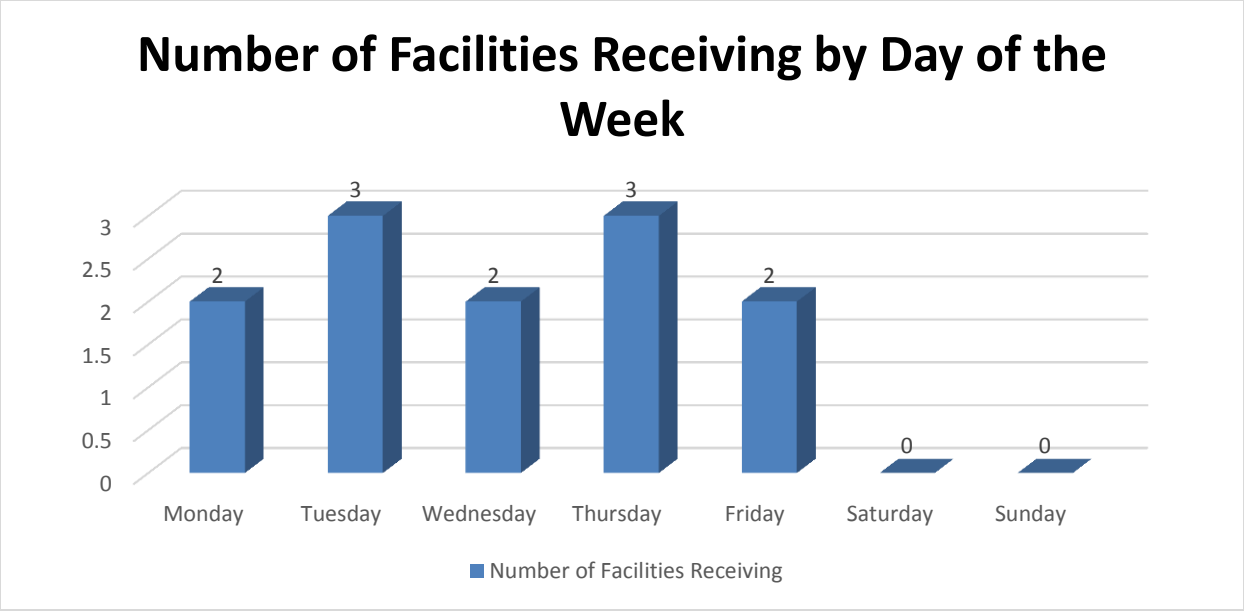


Figure 3.5. Distribution of facilities receiving based on day of the week

Analysis of times when shipments are received indicates that most occur between 6 am and 4 pm, standard working hours. Three facilities reported having no routine time for receiving shipments. Figure 3.6 shows the distribution based on the surveys.

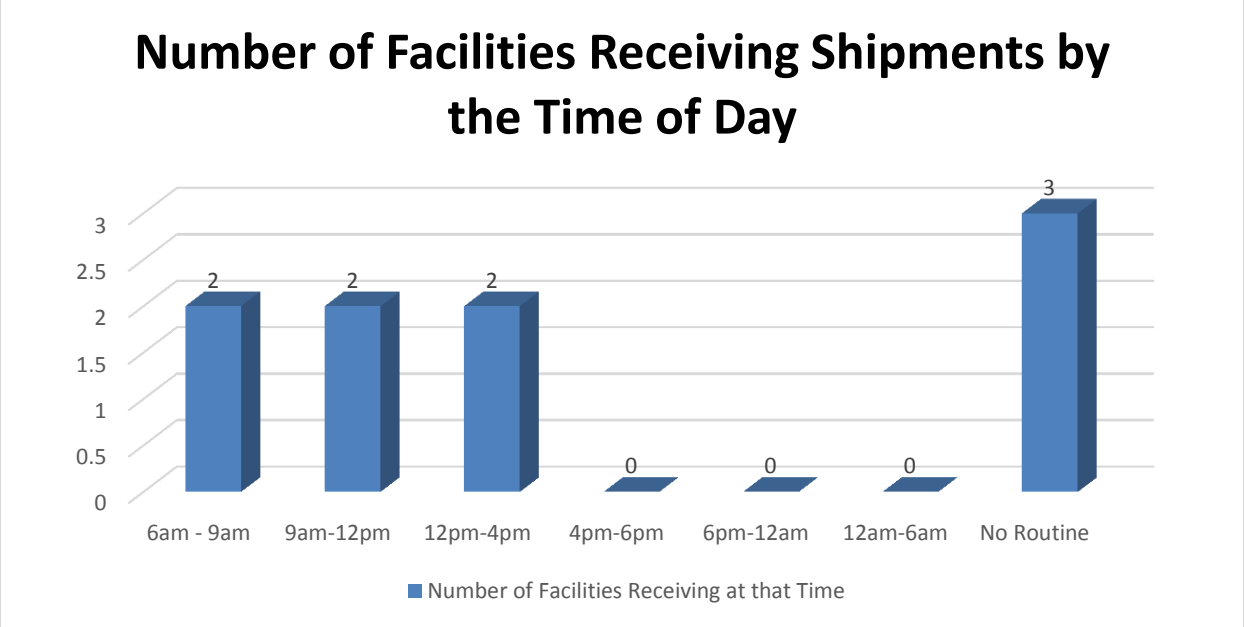


Figure 3.6. Time of day of receiving from facilities

Facilities were also asked if they received or shipped hazardous materials on legal holidays. Two of the six facilities (33%) indicated that they did ship and receive hazardous materials on legal holidays. This may be a cause of concern as with low traffic, trucks can drive at higher rates of speed, which increases the chance of incidents occurring. Additionally, fixed facilities were asked if they accounted for climatic conditions when receiving or shipping hazardous materials.

Two of the six facilities (33%) reported that they did consider climatic conditions. This can also be a cause for concern as slick roadways caused by rain or snow can increase the chances of an incident.

3.5 Material Data Analysis

The questionnaire was also designed to collect information about the five most frequently shipped hazardous materials to and from the fixed facilities within the study corridor. The six respondents listed a total of three hazardous materials that were transported during the five-year period from January 2009 through December 2013. The survey had questions regarding the most common cities and states the materials are received from or shipped to, as well as the season of the year.

Out of the three kinds of hazardous materials shipped, Chlorine (ID no. 1017) was reported the most frequently (33% of facilities). As can be seen in Figure 3.7, 33% of facilities also reported shipping no hazardous materials. The other hazardous materials that were shipped by facilities in Rowan County included Calcium Chloride and Propane (ID no. 1075).

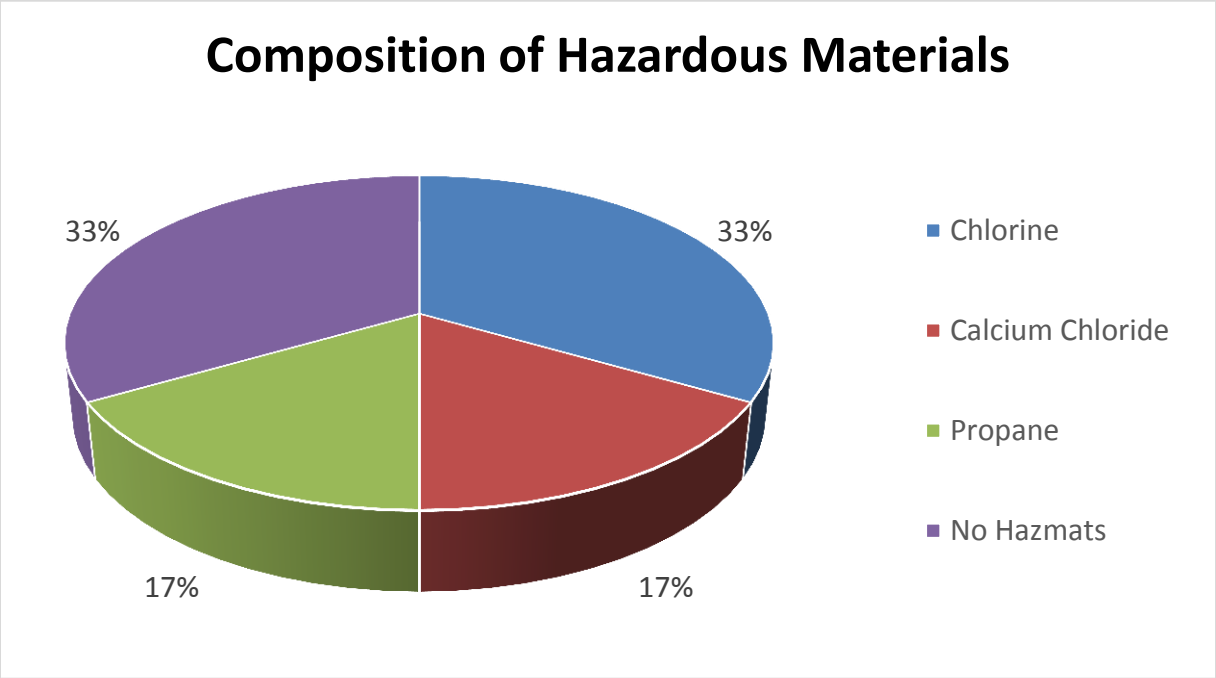


Figure 3.7. Hazardous Materials Most Commonly Shipped / Received

Facilities were also asked to fill out information about the city and state of origin of materials they received. This information helps provide guidance on the routes that commercial trucks may take to the fixed facilities, which is an important piece of information to consider in emergency preparedness. Figure 3.8 shows that Kentucky (KY) was the most common state of origin, followed by West Virginia (WV). Figure 3.9 further explains the origins of shipments by

showing the cities of origins. These included Parkersburg, WV; Catlettsburg, KY; Morehead, KY; and Lexington, KY. Morehead, KY was the most commonly reported (40%), which indicates that many shipments originate within the Rowan County area.

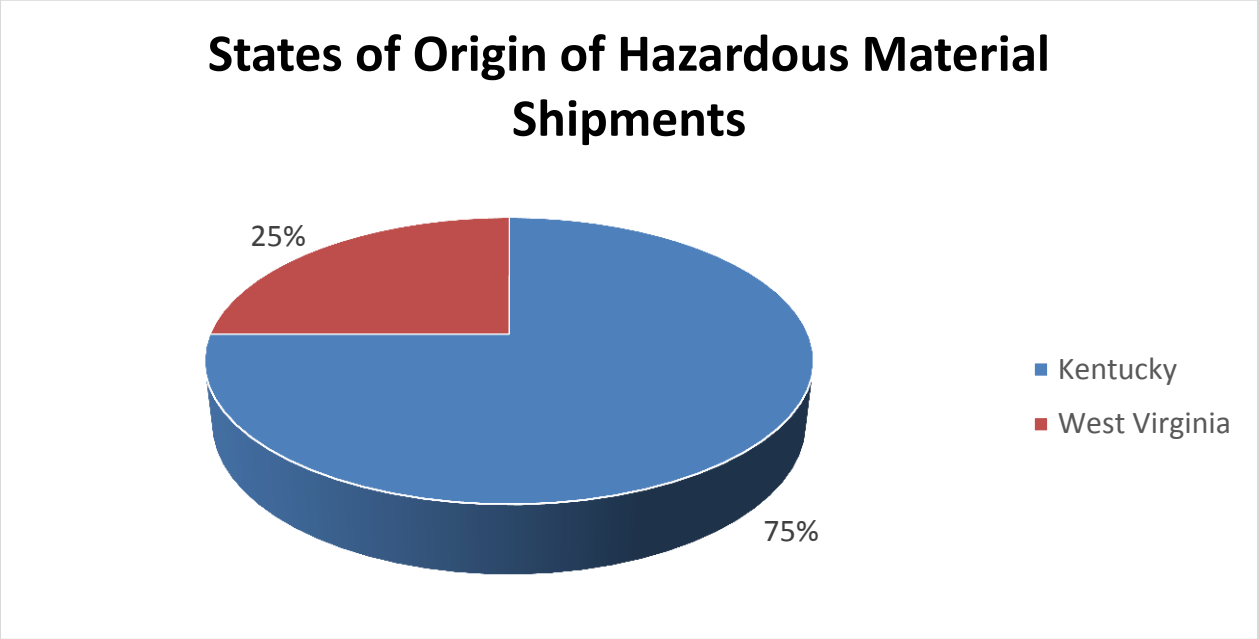


Figure 3.8. States of Origins of Hazardous Material Shipments

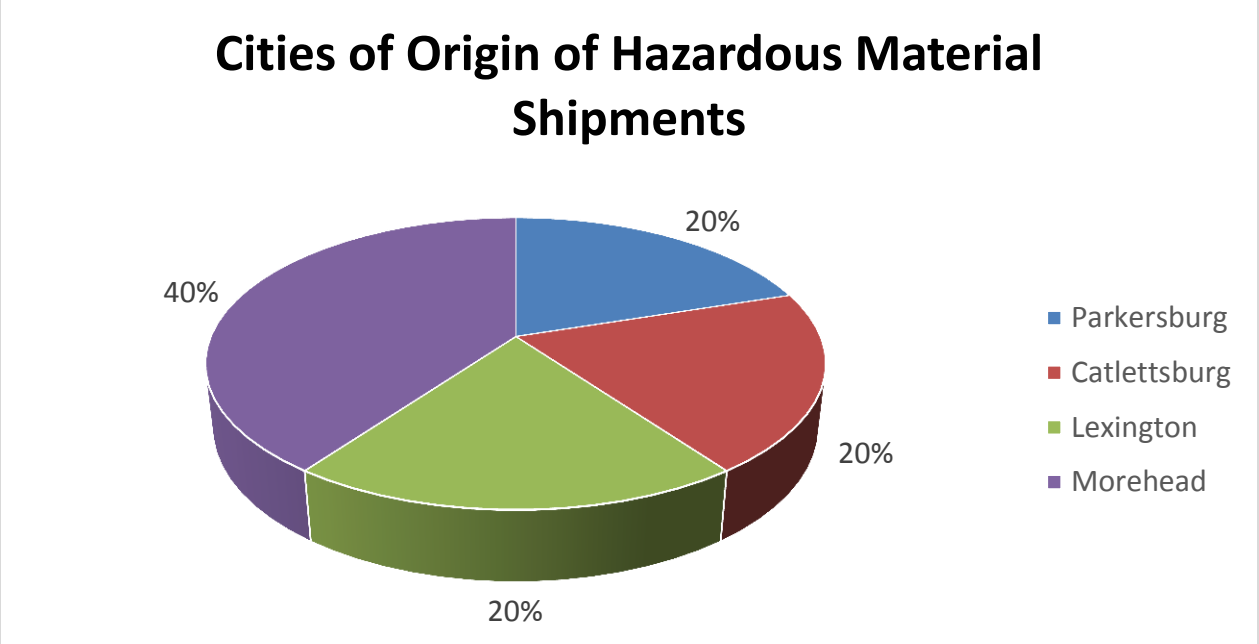


Figure 3.9. Cities of Origins of Hazardous Material Shipments

Facilities furthermore provided the most common seasons of the year during which they transported hazardous materials. Figure 3.10 demonstrates that a majority (43%) of facilities reported "variable" as their shipping season. These facilities ship when they need to and not necessarily during a set time of year. The most noted season for shipments was January – March (29%). Responses indicated that hazardous materials are shipped most commonly during the winter months. This can be a potential problem as roadway conditions can be hazardous during this time of year in Kentucky due to snow and/or ice.

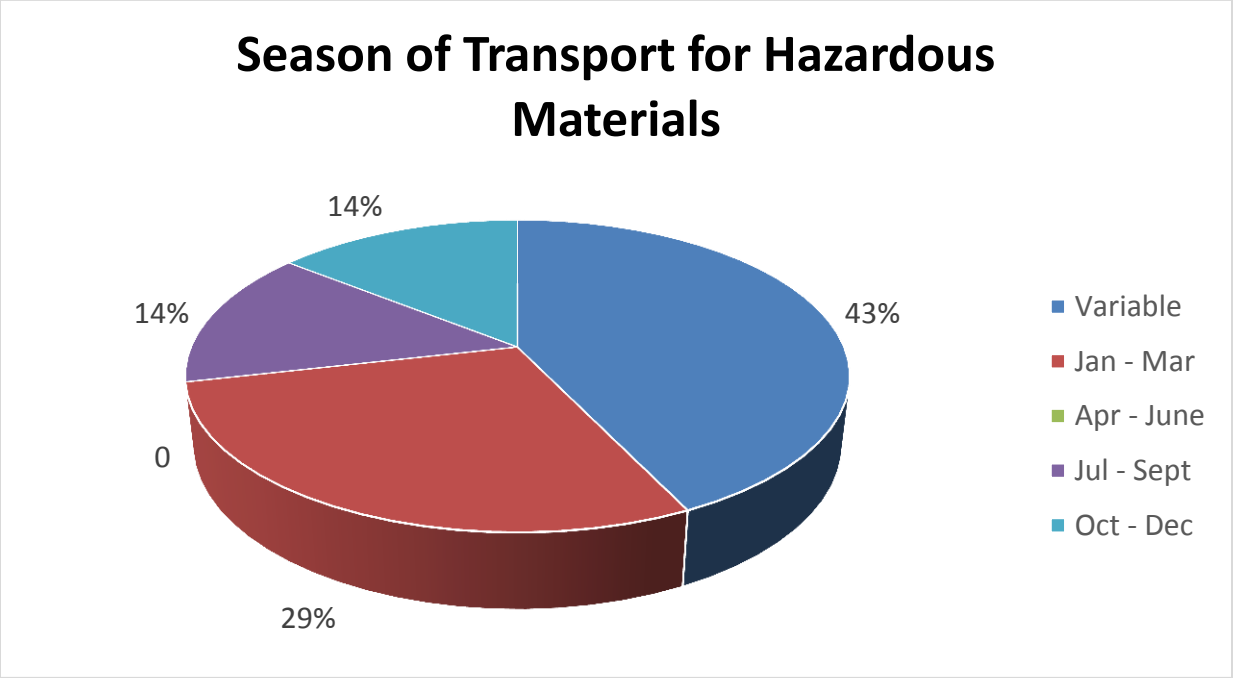


Figure 3.10. Season of Hazardous Material Shipments

Chapter 4: Conclusion

Hazardous materials are an important and necessary part of the American society. In order to produce needed resources hazardous materials have to be produced, transported, stored, used and discarded. This poses a threat to the environment and human health when incidents occur and hazardous materials are released. Incidents with hazardous materials can occur at any time in their lifecycle, from production to disposition. This study helps to give an accurate account of the quantities and types of hazardous materials being transported in the Rowan County area of Kentucky. In addition, timing of transport was provided to the LEPC and is essential information for emergency preparedness.

Both communities large and small must be educated about the care that needs to be taken when working with hazardous materials. Hence, it is critical to construct a knowledge base that concerns certain types of hazardous materials that are transported into, out of, and through a jurisdiction. In addition to the frequencies of hazmats, it is important to determine the timings and routes that are taken in order to further prepare for emergency response. The LEPC committee must be based on an adequate account of these elements of hazmat movements. The sufficiency of emergency response organization schemes, equipment inventories and purchases, and personal training can only be assessed with the knowledge of this type of information.

This report works to create an accurate starting point, and begins to develop the necessary knowledge base about the transportation of hazardous materials through the Rowan County jurisdiction. An initial line of incident response can be established before an event occurs by communicating this information to emergency responders. Emergency response coordination will be essential to adequately protect human health and the environment from the potential impacts of the documented hazardous materials. The results and recommendations of this report will hopefully prove to be a useful guide in preparing emergency responders.

This study focuses on highway transportation of hazardous materials. The empirical results that are summarized below are based on the following:

- Commodity flow data collected by placard surveys in the I-64 corridor
- A fixed facility survey sent out to all the facilities in Rowan County and the surrounding area

The following section summarizes the results obtained in chapters 2 and 3 and gives recommendations which can be used as a guidance tool for emergency preparedness:

Result 1:

The frequency of hazardous materials was recorded to be highest Tuesday through Thursday as compared to the other weekdays. Additionally, facilities in the area also reported Tuesday and Thursday as their most common day to receive shipments.

Recommendation 1:

It is essential for emergency responders to be familiar with peak days with reference to hazardous materials transport. This will ensure better alertness and preparedness in case of an incident occurring during these time periods. Extra emergency responders within these areas should be on call during the aforementioned peak timing in order to ensure efficient response. One potential problem in areas with volunteer emergency responders is that these responders are usually working other jobs during these peak times. A system needs to be created to improve incident response in these areas.

Result 2:

The most commonly transported hazardous material on I-64 East and West bound lanes was Petrol / Gasoline (ID no. 1203). This demonstrates the increased transportation of fuel products within this area and between states.

Recommendation 2:

This indicates an increased need for developing emergency response for fuel related products in case of an incident. It is important to train emergency responders with reference to these products and to provide annual training for incidents involving ID 1203.

Result 3:

The most common ERG guide number recorded for both East and West bound lanes of the I-64 corridor was 128.

Recommendation 3:

It is important for Local Emergency responders to be properly trained for response to Guide no. 128. They should be updated with any changes that are made to this guide. Annual training for emergency responders should include a refresher on application of response guide 128 under various scenarios.

Result 4:

The most commonly reported hazardous material being shipped by facilities in Rowan County was Chlorine (ID no. 1017) with an ERG Guide Number of 124.

Recommendation 4:

Emergency responders should be aware of this information and properly trained for response to Guide Number 124. They should be updated about any changes made to this guide and be given a refresher on the application of response guide 124 during their annual training.

Result 5:

The most common states of origins were Kentucky and West Virginia with the most common cities being Morehead in Kentucky and Parkersburg in West Virginia.

Recommendation 5:

The part of the I-64 corridor that connects the cities of Parkersburg, WV and Morehead, KY should be considered important, and emergency response stations should be established at regular intervals along this corridor.

Chapter 5: References

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