



Commodity Flow Study

Tucker County Local Emergency Planning Committee

Updated 2022

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TUCKER COUNTY COMMODITY FLOW STUDY

**TUCKER COUNTY LOCAL EMERGENCY PLANNING COMMITTEE
UPDATED 2022**

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TUCKER COUNTY COMMODITY FLOW STUDY

INTRODUCTION

1.0 INTRODUCTION

1.1 Purpose of Study

Congress passed the Emergency Planning and Community Right-to-Know Act (EPCRA), also known as Title III of the Superfund Amendment and Reauthorization Act (SARA), in 1986, which provides for the collection and availability of information regarding the use, storage, production, and release of hazardous chemicals to the public and emergency responders in local communities. Community right-to-know provisions provide education, information, and public access regarding chemical uses and releases into the environment respective to individual facilities. By doing so, states and communities, working with facilities, can improve chemical safety and protect public health and the environment.

In 1993, the West Virginia Legislature passed House Bill 2382 to implement the EPCRA in West Virginia. The State Emergency Response Commission (SERC) serves as the administrative body for the implementation of House Bill 2382 at the state level; the SERC works cooperatively with the local emergency planning committees (LEPCs) serving the counties of West Virginia. The EPCRA is indicative of the fact that Congress realizes the risk to communities posed by the use, storage, and transportation of hazardous materials. West Virginia's implementation of the EPCRA indicates the state's realization of this risk as well.

As part of the implementation of the EPCRA, LEPCs should develop and implement comprehensive emergency response plans. As part of the process of developing these plans, LEPCs conduct various hazard analyses and risk assessments, of which this commodity flow study is an example.

Utilizing local funding, the Tucker County Local Emergency Planning Committee (LEPC) coordinated the completion of this flow study. The LEPC hired a contractor, JH Consulting, LLC (JHC) of Buckhannon, West Virginia to facilitate data collection and analysis throughout Calendar Year 2022. Following the collection of data, JHC completed the final analysis and assimilated the results into a report. (NOTE: The sections below provide detailed methodologies by analysis.)

This study intends to provide emergency managers and responders in Tucker



County with information to more fully advise efforts to mitigate, prepare for, respond to, and recover from hazardous material incidents. These efforts may significantly minimize damage or harm to equipment, facilities, personnel, and to the community at large.

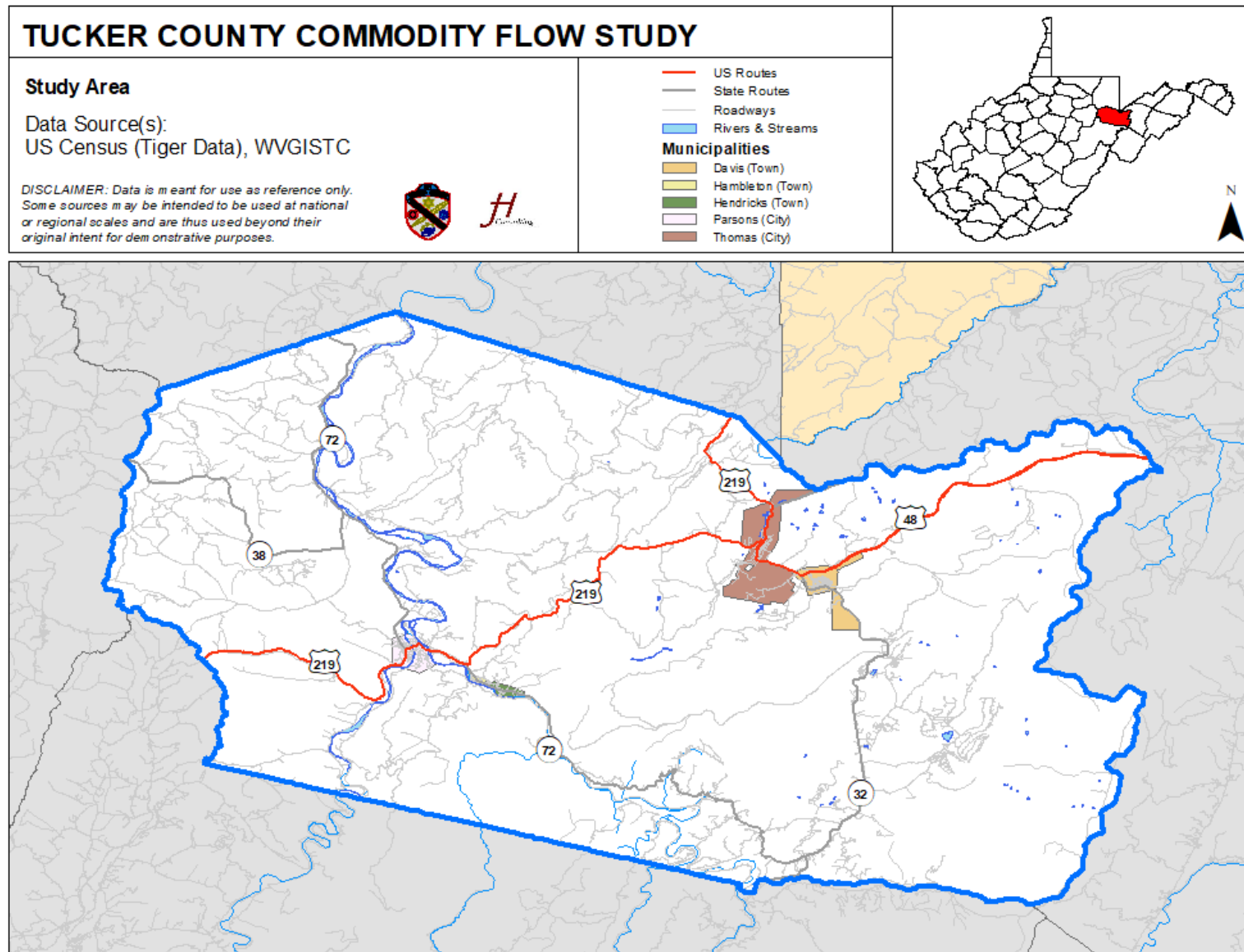
1.2 Description of the Study Area

Tucker County is located in northeastern West Virginia (WV) and is predominantly rural with a considerable amount of tourism associated with it. The county is mountainous with a reported total area of 421 square miles and, according to US Census Bureau, had a population of 6,752 as of the 2020 census, making it the fourth-least-populated county in West Virginia. The county is home to two cities, Parsons (the county seat) and Thomas, three towns (Davis, Hambleton and Hendricks) and 26 unincorporated communities.

The climate for Tucker County has been described as being cooler and wetter than other areas of the state with average temperatures ranging from a reported average annual high of 61°F to 39°F as the average annual low. Average annual precipitation is 51.33 inches with average annual snowfall coming in at 58 inches (US Climate Data, 2022). Figure 1.2.a depicts the study area.



Figure 1.2.a



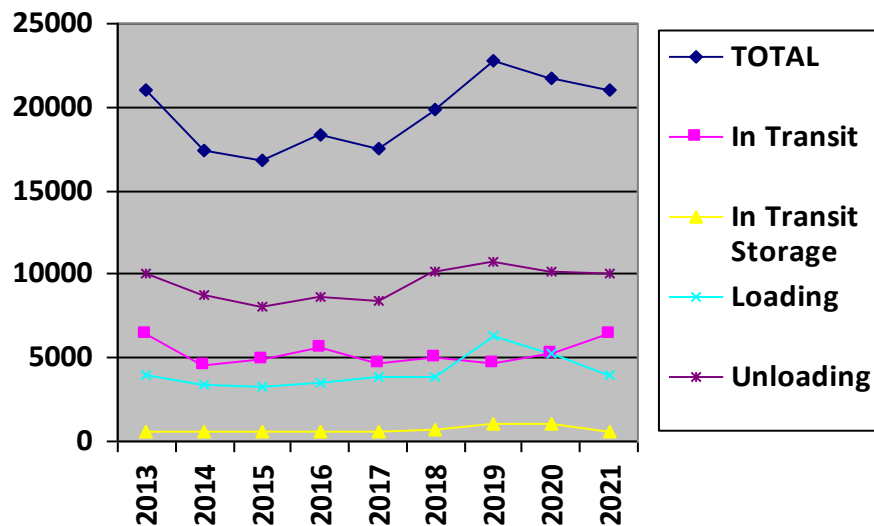
2.0 HIGHWAY ANALYSIS

2.1 Statistics

The annual number of hazardous material incidents during transport in the United States has increased since 2013, though since 2014 the number has oscillated. Figure 2.1.a shows the total hazardous material incidents in the U.S. for the period 2013-2021. The blue line with the diamond year indicators represents the total number of incidents. The sub-lines are all parts of that total, and they indicate the transport phase in which the incident occurred.

Figure 2.1.a

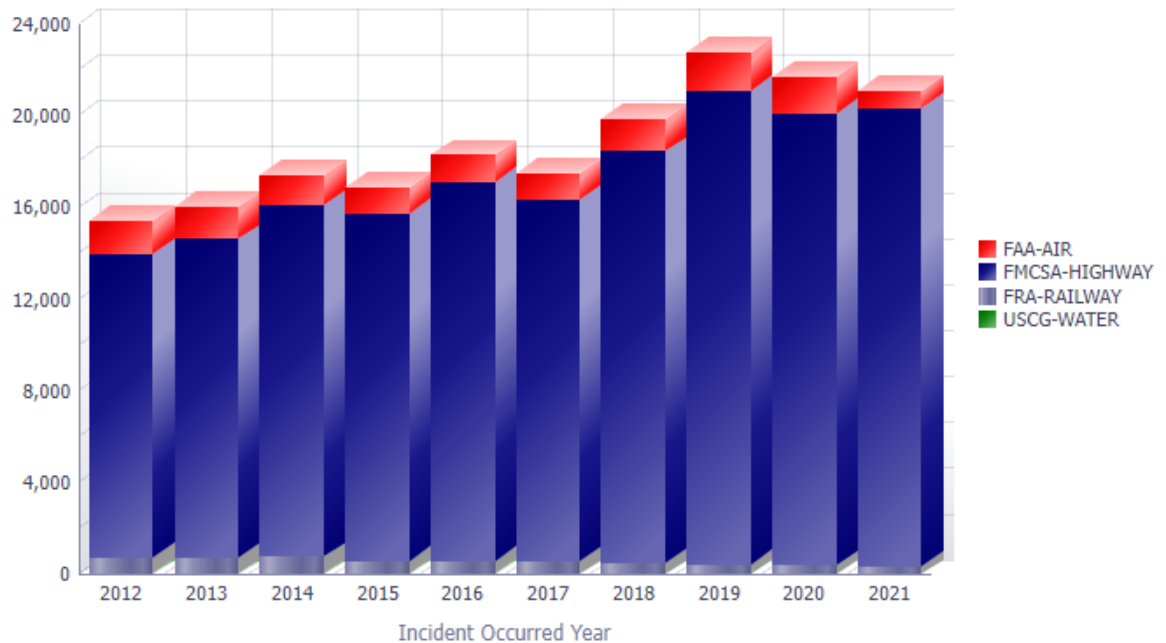
Hazardous Materials Incidents in the U.S., 2013-2021



Per Figure 2.1.b, the U.S. Department of Transportation (DOT) has posited that a majority of hazardous material incidents in the United States occur on highways (<http://www.phmsa.dot.gov/hazmat/library/data-stats/incidents>).

Figure 2.1.b

Hazardous Materials Incidents by Mode



The DOT also maintains data on the causes of hazardous material incidents. According to the DOT, the causes of the highway incidents have been as follows (<http://www.phmsa.dot.gov/hazmat/library/data-stats/incidents>).

Table 2.1.1

Cause of Hazardous Materials Incidents, 2019-2021

Cause	2019	2020	2021	Total
Abrasion	204	141	110	355
Broken Component or Device	223	289	172	684
Cause Not reported	5605	5995	6,348	17948
Commodity Polymerization	1	3	3	7
Commodity Self-Ignition	11	9	4	24
Conveyer or Material Handling Equipment Mishap	204	154	211	569
Corrosion – Exterior	33	20	20	77
Corrosion – Interior	47	31	44	122
Defective Component or Device	967	911	873	2751
Derailment	15	26	31	72
Deterioration or Aging	123	103	70	296
Dropped	2289	1441	1788	5518
Fire, Temperature, or Heat	17	26	9	52
Forklift Accident	1601	945	1215	3761
Freezing	31	11	18	60

Cause	2019	2020	2021	Total
Human Error	3038	3966	2482	9486
Impact with Sharp or Protruding Object (e.g., Nails)	794	594	502	1890
Improper Preparation for Transportation	2226	2016	2951	7193
Inadequate Accident Damage Protection	2	2	-	4
Inadequate Blocking and Bracing	357	311	147	815
Inadequate Maintenance	10	6	8	24
Inadequate Preparation for Transportation	969	885	1123	2977
Inadequate Procedures	595	322	74	991
Inadequate Training	23	10	24	57
Incompatible Product	4	1	-	5
Incorrectly Sized Component or Device	4	8	2	14
Loose Closure, Component, or Device	2497	2918	2288	5503
Misaligned Material, Component, or Device	41	34	28	103
Missing Component or Device	30	38	19	87
Over-Pressurized	84	51	40	175
Overfilled	92	63	27	182
Rollover Accident	70	43	16	129
Threads Worn or Cross Threaded	14	17	15	46
Too Much Weight on Package	299	158	165	622
Valve Open	235	137	268	640
Vandalism	3	1	-	4
Vehicular Crash or Accident Damage	113	64	32	209
Water Damage	20	16	11	47

There are many types of hazardous materials transported via highways, each divided into “classes” denoted on the placards labeling shipments. Table 2.1.2 lists the hazardous material classes involved in 2019, 2020, and 2021 incidents (<http://www.phmsa.dot.gov/hazmat/library/data-stats/incidents>).

Table 2.1.2

Hazmat Incidents by Class, 2019-2021

Hazard Class		2019	2020	2021
1: Explosives	Highway	18	51	68
	Total	46	80	100
2: Flammable, Non-Flammable, & Poisonous Gases	Highway	549	496	412
	Total	963	871	503
3: Flammable Liquids	Highway	10,166	10,497	10,119
	Total	10,942	11,360	10,545
4: Other Ignitable Hazards	Highway	89	92	82
	Total	113	103	93
5: Oxidizers	Highway	256	1504	1785
	Total	1,463	1,517	1,797
6: Poisonous & Infectious Materials	Highway	263	262	318
	Total	323	307	344



Hazard Class		2019	2020	2021
7: Radioactive Materials	Highway	5	2	0
	Total	10	5	0
8: Corrosive	Highway	7,522	6,346	6,720
	Total	7,757	6,553	6,851
9: Other Miscellaneous Hazardous	Highway	581	429	460
	Total	1,101	810	678

The DOT also maintains the results of the hazardous material incidents discussed above. Table 2.1.3 presents those results (<http://www.phmsa.dot.gov/hazmat/library/data-stats/incidents>).

Table 2.1.3

Hazmat Incidents Results, 2019-2021

Result		2019	2020	2021
Environmental Damage	Highway	34	30	17
	Total	34	38	19
Explosion	Highway	8	5	2
	Total	8	6	2
Fire	Highway	59	43	15
	Total	96	85	46
Material Entered Waterway/Sewer	Highway	40	37	17
	Total	41	41	22
None	Highway	459	480	351
	Total	1,308	1,333	816
Spillage	Highway	20,059	19,163	19,594
	Total	21,109	20,095	20,099
Vapor (Gas) Dispersion	Highway	200	145	78
	Total	372	317	193

2.2 Methodology

The highway network for Tucker County is primarily rural two-lane road with a small portion of four-lane highway running from Davis to the Grant County line as part of Corridor H (US 48). Another portion of this project that connects from Kerens (in neighboring Randolph County) to Parsons is currently under construction. When completed, Corridor H will traverse the county east-west.

To complete the highway analysis, monitors identified and established sites along the primary transportation routes and at key intersections throughout the study area. For Tucker County, monitors selected the following sites.

- US 219, Randolph County Line

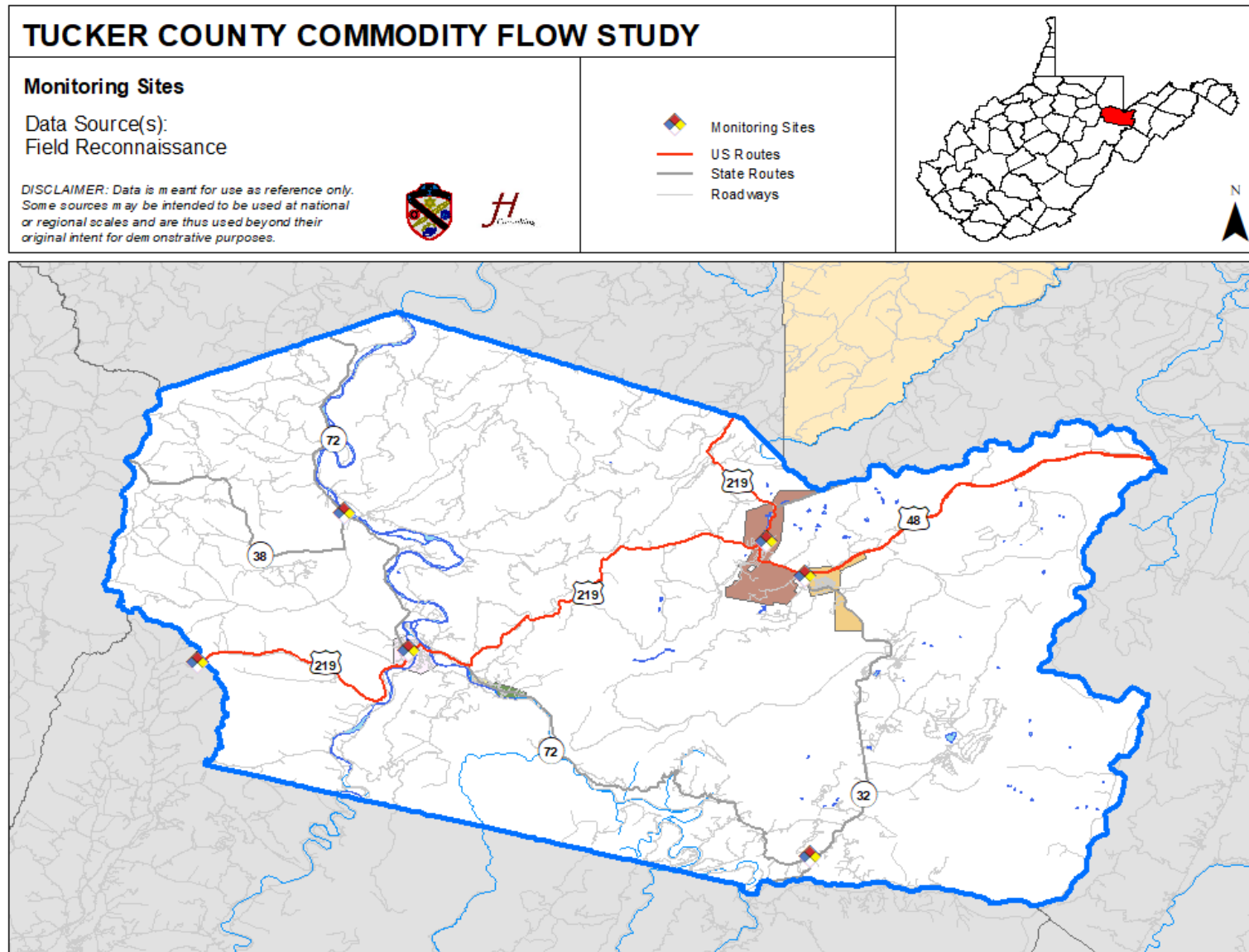


- US 219 / SR 72, Parsons
- US 219 / US 48, Thomas
- US 48 / SR 93, Davis
- SR 72 / SR 38, St. George
- SR 32, Randolph County Line

Detailed data sheets for each of these sites are in Appendix 2. Figure 2.2.a depicts the location of the monitoring sites in Tucker County.



Figure 2.2.a



A one-person crew staffed each observation point. This individual noted the UN numbers and the hazard classes of the placards passing through the site. The monitor manually counted the total truck traffic through the site to allow for real-time comparisons between hazmat-carrying and non-hazmat-carrying truck traffic. Planners also researched total traffic volume data (maintained by the West Virginia Department of Transportation [WVDOT]) for the planning area (WVDOT, 2022). This data allows the planning committee to compare total traffic versus total hazmat traffic.

2.3 Field Data

Monitors counted a total of 1,031 trucks during the observation periods. Of the total trucks, 47 (4.56%) bore placards and were thus carrying hazardous materials. This total represents an increase from Tucker County's previous commodity flow study, during which 2.91% of observed trucks carried placards. Monitors recorded a total of 43 trucks labeled with UN numbers bearing a total of eight (8) unique UN numbers. Monitors also observed four (4) additional placards, labeled generally with the name of a DOT hazard class. General placards included the following.

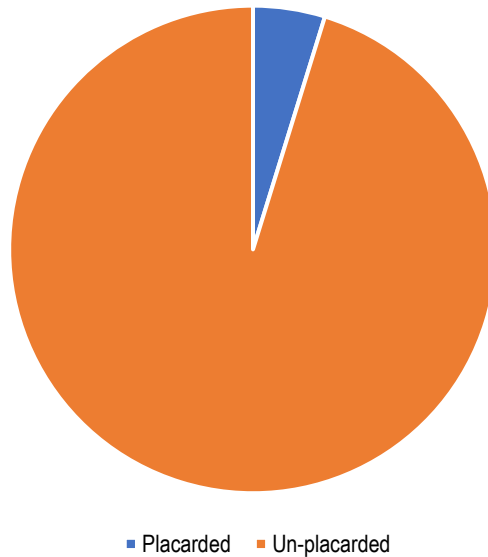
- Flammable Liquid
- Corrosive

Below, planners considered trucks bearing general placards with the hazard class of the placard; thus, total figures per hazard class from this point include specifically identified UN numbers and the general placards. Figure 2.3.a depicts the placarded and un-placarded truck traffic observed at monitoring points.



Figure 2.3.a

Placarded vs. Un-placarded Trucks



Monitors recorded placarded trucks by trailer type (e.g., mixed cargo, compressed liquefied gases, flammable liquids, etc.), per the latest edition of the U.S. DOT's *Emergency Response Guidebook* (2020). Monitors listed placarded trucks that did not fall into any of the trailer type categories (e.g., flatbed trucks) as "Other." The top three trailer classes observed during the study were 131, 137 and 117. See Appendix 4 for a graphic representation of each trailer type. Figure 2.3.b depicts the total placarded truck traffic counted by trailer type. Figure 2.3.c shows the placards by hazard class.

Figure 2.3.b

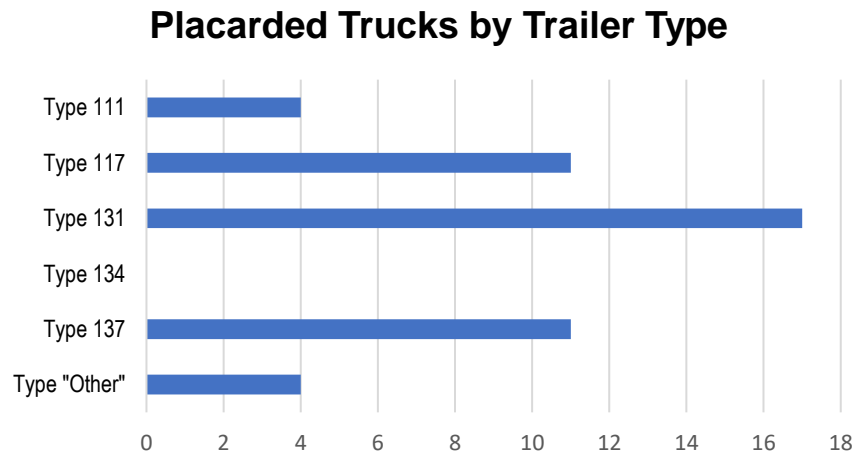
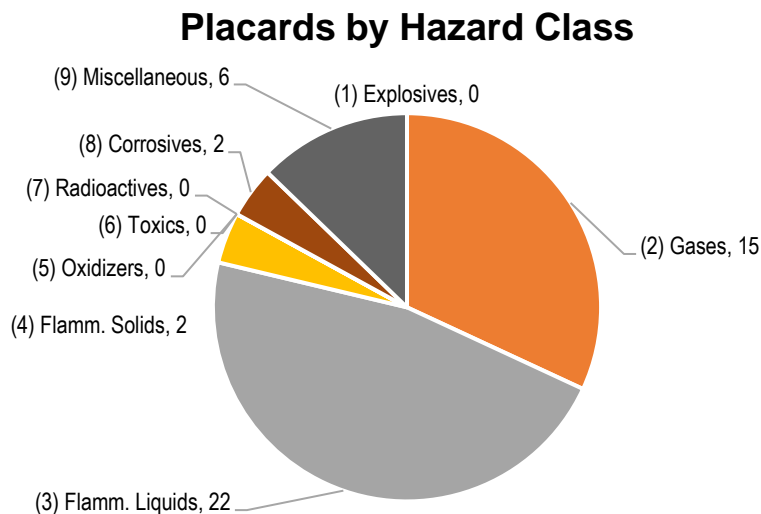


Figure 2.3.c



Approximately 41% of the total placarded vehicles recorded were carrying Class 3 (Flammable Liquids). Class 2 (Gases) were the second-most frequently carried materials (30%), followed by Class 9 (Miscellaneous, 21.7%). Within Class 3, Flammable Liquids (UN 1993) was the most frequent material, contributing 48.4% of all Class 3 placards sighted. Gasoline (UN 1203) was the second-most cited material (comprising 41.9% of the Class 3 placards).

The following map (Figure 2.3.d) depicts the hazardous materials observed in this study, organized by monitoring site. Afterward, Figure 2.3.e shows the monitoring sites by the two most frequent hazard classes observed.

Figure 2.3.d

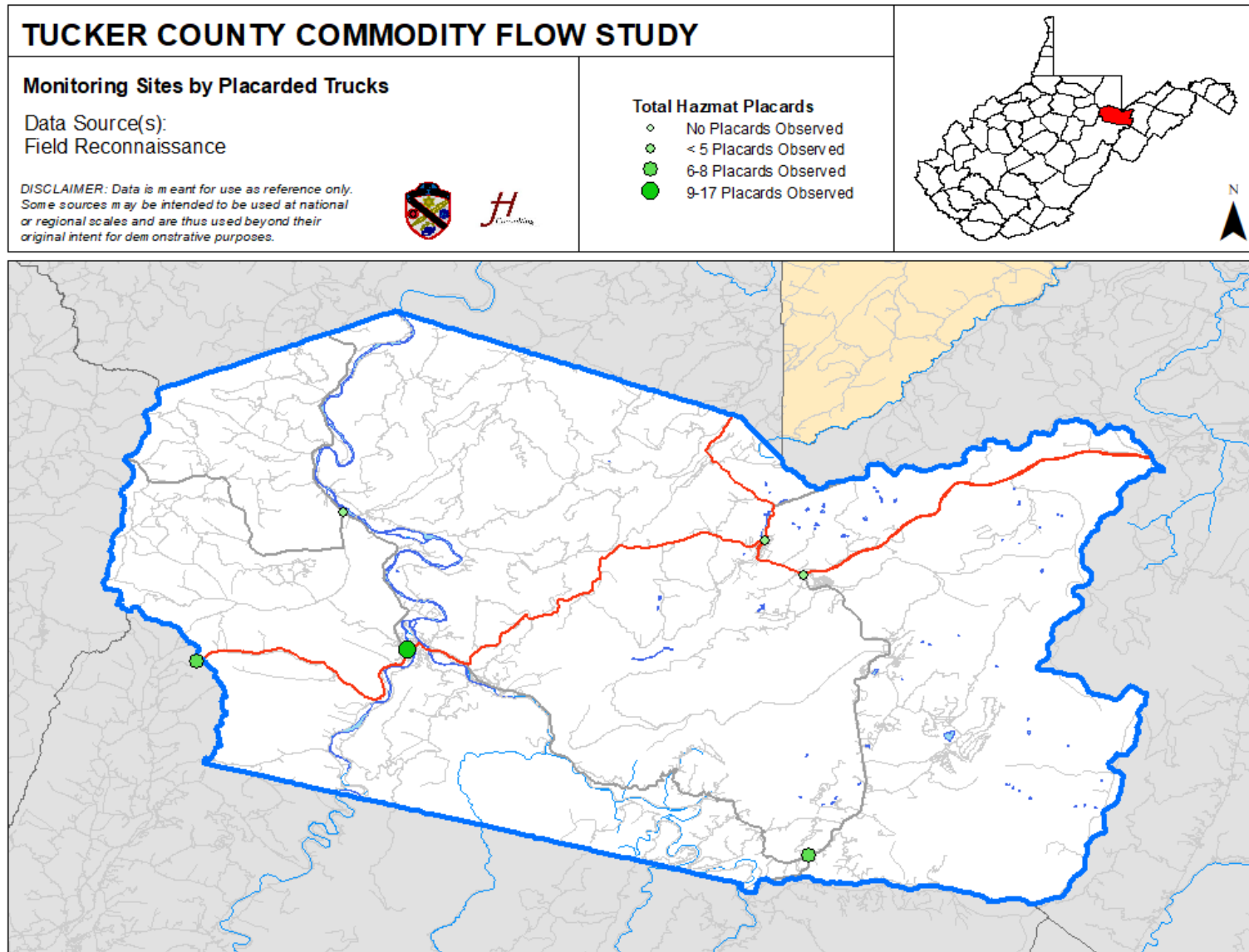
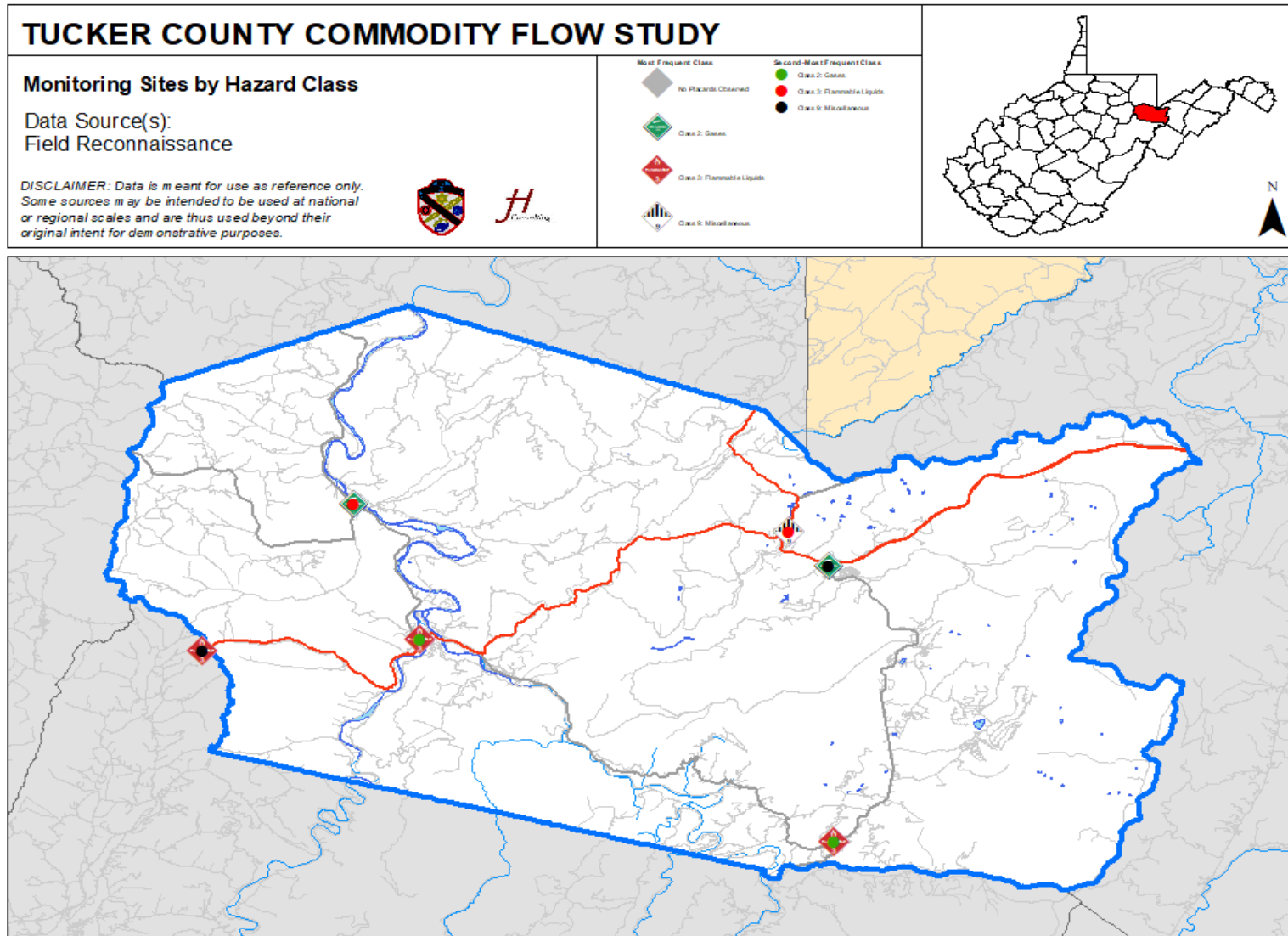


Figure 2.3.e



Monitors did not record any materials at the observation points that appear on the U.S. Environmental Protection Agency's (EPA) list of "extremely hazardous substances" (EHS).

2.4 Route-by-Route Analysis

This section presents data for the six (6) different routes included in the study. It identifies:

- the breakdown of hazard classes,
- the top materials transported (with volume), and
- the extremely hazardous substances observed along each route.

This section also includes a calculation of potential accidents with placarded loads based on route-specific data per a methodology from Transcaer¹. Transcaer based its formula on several criteria, including:

- the number of placarded vehicles observed in the study area,
- the highway road miles within the study area, and
- the national hazardous material accident frequency rate.

The Transcaer formula estimates the likely number of accidents involving "placarded loads" on the highways in the study. Figures less than one would indicate the likely instance of years passing without accidents involving placarded loads. Further, an accident involving a placarded load may not involve a hazardous material release. Officials at the local level may consider mitigation measures for highways with higher estimated accidents, or they may seek to train response agencies with those routes in their first-due areas more fully on transportation-based hazardous materials emergencies.

¹ The Transcaer formula is:

$$(((\alpha * \beta) / 1,000,000) * 0.608) / (\gamma / 24 \text{ hrs. per Day})) * 365 \text{ Days per Year}$$

α : Route Miles in Study Area (i.e., Tucker County)

β : Placarded Vehicles

γ : Survey Time on Route



2.4.1 US Route 219

Monitoring Location with Latitude/Longitude:

- US 219, Randolph County Line (39.08969, -79.78947)
- US 219 / SR 72, Parsons (39.09607, -79.68068)
- US 219 / US 48, Thomas (39.15263, -79.4952)

Monitors observed a total of 702 trucks, 30 (4.3%) of which bore placards, along US 219. The monitoring of US 219 occurred over six (6), four-hour periods, for a total of 24 hours of monitoring.

Table 2.4.1.1

Observed Hazard Classes, US 219

1	2	3	4	5	6	7	8	9
0 0.0%	6 20.0%	16 53.3%	2 6.7%	0 0.0%	0 0.0%	0 0.0%	1 3.3%	5 16.7%

Table 2.4.1.2

Materials Observed, US 219

Material	UN Number	Total
Liquified petroleum gas	1075	5
Gasoline	1203	3
Charcoal	1361	2
Flammable liquid	1993	9
Carbon dioxide	2187	1
Elevated temp liquid, n.o.s.	3257	3
Hydrocarbons, liquid, n.o.s.	3295	1

Table 2.4.1.3

Estimated Annual Accidents Involving Placarded Loads, US 219

Route	Approx. Miles in Tucker County	Accidents with Placarded Loads per Year
US 219	27.27	0.18155

2.4.2 US Route 48

Monitoring Location with Latitude/Longitude:

- US 219 / US 48, Thomas (39.15263, -79.4952)
- US 48 / SR 93, Davis (39.13894, -79.45971)



Monitors observed a total of 402 trucks, 10 (2.5%) of which bore placards, along US 48. The monitoring of US 48 occurred over four (4), four-hour periods, for a total of 16 hours of monitoring.

Table 2.4.2.1

Observed Hazard Classes, US 48

1	2	3	4	5	6	7	8	9
0 0.0%	4 1.0%	2 0.5%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	1 0.2%	3 0.7%

Table 2.4.2.2

Materials Observed, US 48

Material	UN Number	Total
Liquefied petroleum gas	1075	3
Gasoline	1203	1
Elevated temperature liquid, n.o.s.	3257	3
Flammable liquid, toxic, corrosive	3286	1
Carbon dioxide	2187	1

Table 2.4.2.3

Estimated Annual Accidents Involving Placarded Loads, US 48

Route	Approx. Miles in Tucker County	Accidents with Placarded Loads per Year
US 48	35.07	0.11674

2.4.3 State Route 93

Monitoring Location with Latitude/Longitude:

- US 48 / SR 93, Davis (39.13894, -79.45971)

Monitors observed a total of 213 trucks, five (5) (2.3%) of which bore placards, along SR 93. The monitoring of SR 93 occurred over two (2) four-hour periods, for a total of eight (8) hours of monitoring.

Table 2.4.3.1

Observed Hazard Classes, SR 93

1	2	3	4	5	6	7	8	9
0 0.0%	3 1.4%	1 0.5%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	1 0.5%



Table 2.4.3.2

Materials Observed, SR 93

Material	UN Number	Total
Liquefied petroleum gas	1075	3
Gasoline	1203	1
Elevated temp. liquid, n.o.s.	3257	1

Table 2.4.3.3

Estimated Annual Accidents Involving Placarded Loads, SR 93

Route	Approx. Miles in Tucker County	Accidents with Placarded Loads per Year
SR 93	11.5	0.03828

2.4.4 State Route 72

Monitoring Location with Latitude/Longitude:

- SR 72 / SR 38, St. George (39.16719, -79.71361)

Monitors observed a total of 305 trucks, 21 (6.9%) of which bore placards, along SR 72. The monitoring of SR 72 occurred over five (5), four-hour periods, for a total of 20 hours of monitoring.

Table 2.4.4.1

Observed Hazard Classes, SR 72

1	2	3	4	5	6	7	8	9
0 0.0%	6 2.0%	11 3.6%	2 0.7%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	2 0.7%

Table 2.4.4.2

Materials Observed, SR 72

Material	UN Number	Total
Liquified petroleum gas	1075	6
Gasoline	1203	4
Charcoal	1361	2
Flammable liquid	1993	5
Elevated temp liquid, n.o.s.	3257	2
Hydrocarbons, liquid, n.o.s.	3295	1

Table 2.4.4.3

Estimated Annual Accidents Involving Placarded Loads, SR 72

Route	Approx. Miles in Tucker County	Accidents with Placarded Loads per Year
SR 72	32.82	0.18354

2.4.5 State Route 38

Monitoring Location with Latitude/Longitude:

- SR 72 / SR 38, St. George (39.16719, -79.71361)

Monitors observed a total of 46 trucks, four (4) (8.7%) of which bore placards, along SR 38. The monitoring of SR 38 occurred over two (2), four-hour periods, for a total of eight (8) hours of monitoring.

Table 2.4.5.1

Observed Hazard Classes, SR 38

1	2	3	4	5	6	7	8	9
0 0.0%	3 6.5%	1 2.2%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%

Table 2.4.5.2

Materials Observed, SR 38

Material	UN Number	Total
Liquified petroleum gas	1075	3
Gasoline	1203	1

Table 2.4.5.3

Estimated Annual Accidents Involving Placarded Loads, SR 38

Route	Approx. Miles in Tucker County	Accidents with Placarded Loads per Year
SR 38	10.18	0.02711



2.4.6 State Route 32

Monitoring Location with Latitude/Longitude:

- SR 32, Randolph County Line (38.98955, -79.47291)

Monitors observed a total of 54 trucks, eight (8) (14.8%) of which bore placards, along SR 32. The monitoring of SR 32 occurred over two (2), four-hour periods, for a total of eight (8) hours of monitoring.

Table 2.4.6.1

Observed Hazard Classes, SR 32

1	2	3	4	5	6	7	8	9
0 0.0%	3 5.6%	4 7.4%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	1 1.9%	0 0.0%

Table 2.4.6.2

Materials Observed, SR 32

Material	UN Number	Total
Liquefied petroleum gas	1075	3
Gasoline	1203	3
Combustible liquids, n.o.s.	1993	1

Table 2.4.6.3

Estimated Annual Accidents Involving Placarded Loads, SR 32

Route	Approx. Miles in Tucker County	Accidents with Placarded Loads per Year
SR 32	16.88	0.0899



2.5 Conclusions

Table 2.5.1 presents the materials identified by the highway analysis.

Table 2.5.1

Materials Observed – Highway Analysis

Material Name	UN Number	Total Observations
Liquified petroleum gas	1075	23
Flammable liquid	1993	15
Gasoline	1203	13
Elevated temperature liquid, n.o.s.	3257	9
Charcoal	1361	4
Carbon dioxide	2187	2
Hydrocarbons, liquid, n.o.s.	3295	2
Flammable liquid, toxic, corrosive	3286	1

Though conclusions based on one of many analyses can be misleading, for planning purposes, highway data suggested the following.

- National hazardous material incident trends *generally* predicted the hazardous materials seen locally.
 - Confirmations
 - Class 3 (Flammable Liquids) are involved in the most incidents nationally and were the most frequently recorded materials in the Tucker County.
 - Class 2, which includes non-flammable gases ranked third nationally in incidents and frequently appeared in Tucker County.
 - **Deviation:** Class 8 (Corrosives) were involved in the second most incidents nationally and were not frequently noted locally.

3.0 COVERED FACILITIES ANALYSIS

3.1 Statistics

Hazardous materials incidents can occur during the transportation phase or at fixed facilities. While in-depth fixed facility considerations are not the focus of this study, it can be helpful to understand the nature of those events. Further, understanding the materials used and stored at local fixed facilities supports a baseline of knowledge about what types of materials may be involved in a transportation incident originating from or destined for those fixed facilities. Fixed facility incidents “occur in stationary structures (e.g., buildings) or through another form of transport within a stationary structure (e.g., a facility rail system for moving chemicals within a chemical manufacturing plant)” (NTSIP, 2014).

The National Toxic Substance Incidents Program (NTSIP) within the Centers for Disease Control and Prevention (CDC) collects information on acute hazardous chemical incidents. It produces a report with key findings regarding those releases. The 2013-2014 report noted 2,575 fixed facility incidents in the U.S in 2013-2014, accounting for 60.1% of all incidents reported (p. 9). Of these incidents:

- 423 (23.9%) involved pipelines,
- 309 (17.5%) occurred in a material handling area,
- 221 (12.5%) occurred in a storage area above the ground, and
- 218 (12.3%) involved with ancillary process equipment.

This four year study, which was retired in 2014, reported 13,529 incidents that met the case definition for acute toxic substance incidents, and included 6,635 injuries among 5,134 injured persons, of whom 190 died.

In 2020, the U.S. Department of Health and Human Services provided a summary of this study in the *Morbidity and Mortality Weekly Report* (Melnikova, Wu, Ruiz, & Orr, 2020) which noted that incidents meeting the NTSIP reporting requirements were 1.8 times more likely and injured persons were 10 times more likely to be associated with fixed facilities than transportation. The NTSIP considers incidents that occur while unloading a stationary vehicle or vessel as transportation-based, even those that occur on a fixed-facility property if the release occurs before all of the material has been unloaded from the vehicle (<https://epi.ncpublichealth.com/oeo/docs/TransportationVsFixedFacilityDefinition.pdf>).



3.2 Methodology

Planners contacted the covered facilities noted by the LEPC to request brief interviews. The interviews included questions about the materials used/stored at the facility locations, frequency (including average quantities) of shipments to/from those facilities, and routes utilized.

This information both verifies and supplements data from the highway analysis. It will allow the Tucker County to determine which types of materials are present year-round and which materials are simply “passing through” to facilities in neighboring counties.

3.3 Field Data

For this study two facilities were identified. One (1) facility responded to the information request (for a response rate of 50%). Kokosing Construction reported an average of around 10,000+ gallons per day of diesel fuel for its use in the construction of the Kerens-Parsons section of Corridor H. Transport would be along US 219 and SR 72, with storage at various temporary sites. No materials were reported nor indicated in the interview that appear on the U.S. Environmental Protection Agency’s list of “extremely hazardous substances” (EHS).

3.4 Conclusions

Table 3.4.1 presents the materials identified by the covered facilities analysis.

Table 3.4.1

Reported Materials – Covered Facilities Analysis

Material Name (and UN Number)	Total Reports	Number of Facilities Reporting
Diesel fuel	1	1

The covered facilities analysis yielded the conclusions.

- Only one material, diesel fuel, was reported.
- Diesel fuel was also observed during the highway analysis.



4.0 CONCLUSION AND RECOMMENDATIONS

4.1 Conclusions

The following conclusions summarize the transport, use, and storage of hazardous materials in Tucker County.

- This commodity flow study reflects a total of eight (8) different specifically-named materials.
 - Seven materials (87.5%) appeared only in the highway analysis.
 - One material (12.5%) appeared in both the covered facility and highway analyses.
- This study did not identify any “extremely hazardous substances” (EHS) that require extraordinary planning and response considerations.
- In addition to those 47 materials above, the study included a total of two (2) other placards (a total of four [4] shipments) during the highway analysis that did not have a UN number.
 - Flammable Liquids
 - Corrosives

4.2 Recommendations

4.2.1 Continue to update this flow study on a regular basis.

As the construction of the Corridor H project progresses, Tucker County has the potential to see economic growth in the near future. As such, the nature of the county’s industry is likely to change as are the amounts and types of hazardous materials being transported, utilized and stored. For this document to remain an accurate, viable basis for hazardous material planning and training efforts, it should reflect these continual changes. This document should be updated every three to five years.

4.2.2 Vary data collection times throughout a calendar year.

The covered facilities that responded to the information request indicated that shipments occur at all times of the year. Some materials are only shipped one to five times per year; as such, it is extremely difficult to capture these infrequent shipments by monitoring roadways once in a calendar year. As this study is updated, planners should make an effort to vary data collection times to show shipping trends.



4.2.3 Update the vulnerability assessment based on covered facilities and the areas surrounding them.

This study presents a brief list of materials used and stored at the covered facilities that report to the LEPC. By design, this study only lists the materials that were reported present in the Tucker County. A detailed vulnerability assessment would characterize not only the material presence but also material quantities, at-risk populations, potential protective measures, etc. A detailed vulnerability assessment would be a companion to this document. The LEPC completed this type of an assessment in approximately 2008; this recommendation would, therefore, be an update.

4.2.4 Ensure that responders receive training in response to incidents involving Flammable Liquids.

Flammable Liquids (Class 3) are the most frequently-transported products in the Tucker County. As such, they are the hazardous materials most likely to be involved in an incident. Responders should seek training to prepare themselves for such an incident properly.

4.2.5 Design emergency exercises that include the materials recorded in this study.

Earlier recommendations in this report call for the need to properly train local responders. A significant aspect of this preparedness is designing realistic exercises involving the materials they are likely to encounter. Training efforts are misspent if involving materials that responders are highly unlikely to see in a local incident.

4.2.6 Encourage covered facilities that use/store extremely hazardous substances to participate in emergency exercises.

Any facility that actively participates in emergency exercises enhances the overall preparedness in the study area. However, those facilities with EHS materials should be particularly encouraged to participate due to the EPA designation of the materials they use/store.



5.0 REFERENCES

- Melnikova N, Wu J, Ruiz P, Orr MF. National Toxic Substances Incidents Program — Nine States, 2010–2014. *MMWR Surveill Summ* 2020;69(No. SS-2):1–10. DOI: <http://dx.doi.org/10.15585/mmwr.ss6902a1external icon>.
- National Toxic Substance Incidents Program. (n.d.). Transportation versus fixed facility incidents. Online. <https://epi.ncpublichealth.com/oeo/docs/TransportationVsFixedFacilityDefinition.pdf>.
- Transcaer. (2012). Online. <http://www.transcaer.com/>. Washington, D.C.: Federal Government.
- U.S. Climate Data (2022). Online. <https://www.usclimatedata.com/climate/parsons/west-virginia/united-states/uswv0573>.
- United States Department of Health and Human Resources. (2014). *National Toxic Substance Incidents Program (NTSIP) Biennial Report 2013-2014*. Atlanta, GA: Federal Government.
- United States Department of Transportation, Research and Special Programs Administration. (2020). *2020 Emergency Response Guidebook*. Washington, D.C.
- United States Environmental Protection Agency. (2012). *Envirofacts Data Warehouse*. Online. http://oaspub.epa.gov/enviro/ef_home2.other.
- West Virginia Department of Transportation, (2022). Traffic volume maps. Online. <http://www.transportation.wv.gov/Pages/default.asp>.



APPENDIX 1

HAZARDOUS MATERIALS IN TUCKER COUNTY

This appendix contains a complete list of all of the hazardous materials identified in Tucker County, regardless of phase.

Table A1.1

Materials List (w/ Known Corresponding UN Number)

Hazardous Materials	UN Number	Mode	
		Highway	Facility
Liquified petroleum gas	1075	X	
Flammable liquid (diesel fuel)	1993	X	X
Gasoline	1203	X	
Elevated temperature liquid, n.o.s.	3257	X	
Charcoal	1361	X	
Carbon dioxide	2187	X	
Hydrocarbons, liquid, n.o.s.	3295	X	
Flammable liquid, toxic, corrosive	3286	X	

* EHS Materials

Table A1.2

General Placards Observed

Placard	Definition	Mode
		Highway
Corrosive	Toxic; inhalation, ingestion, or skin contact may cause severe injury or death.	X
Flammable Liquid	Highly flammable; easily ignited by sparks or flame.	X





APPENDIX 2

Highway Monitoring Site Data

This appendix contains detailed information regarding the monitoring sites observed as part of this project.



Date: 05 Oct 2022

Time: 0800-1200

Interval: 4 hrs

US 219, RANDOLPH COUNTY LINE

Monitor: US 219 N/S

Weather: Partly Cloudy Temp: 46°

Special Considerations: N/A

Trucks Carrying Haz-Mat

Trucks may have multiple placards

Trailer Type	Totals	% of Total	UN No.	Class	Name	Total	% of All Placards	General Placards	Totals	% of All Placards
111	0	0.0%	1993	3	Flammable liquid	3	75.0%			
117	0	0.0%	3257	9	Elevated temp liquid, n.o.s.	1	25.0%			
131	2	1.3%								
134	0	0.0%								
137	1	0.7%								
Other	1	0.7%								

Site Summary Data

Total Haz-Mat:	4
Unique Placards (#):	2
Total Truck Traffic:	149
% w/ Placard:	2.7%
WVDOT Count:	1827
24 hr-Trucks Calc:	894
24-hr Haz Calc:	24
Est Haz per hr:	1
% Haz per 24-hr:	1.3%

Hazard Classes

1-Explosives:	0	0.0%
2-Gases:	0	0.0%
3-Flamm. Liquids:	3	75.0%
4-Flamm. Solids:	0	0.0%
5-Oxidizers:	0	0.0%
6-Toxics:	0	0.0%
7-Radioactives:	0	0.0%
8-Corrosives:	0	0.0%
9-Miscellaneous:	1	25.0%



Date: 05 Oct 2022

Time: 1300-1700

Interval: 4 hrs

US 219 / SR 72, PARSONS

Monitor: US 219 N/S; traffic turning into town

Weather: Sunny; Temp: 60°

Special Considerations: Bulk of truck traffic comprised of trucks with asphalt for paving at St. George

Trucks Carrying Haz-Mat

Trucks may have multiple placards

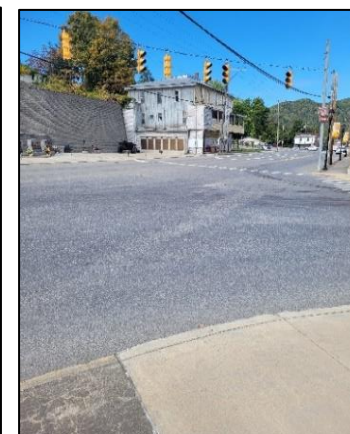
Trailer Type	Totals	% of Total	UN No.	Class	Name	Total	% of All Placards	General Placards	Totals	% of All Placards
111	0	0.0%	1075	2	Liquified petroleum gas	1	12.5%	Flamm Liquid	1	12.5%
117	1	0.7%	1993	3	Flammable liquid	5	62.5%			
131	5	3.6%	3295	3	Hydrocarbons, liquid, n.o.s.	1	12.5%			
134	0	0.0%								
137	1	0.7%								
Other	1	0.7%								

Site Summary Data

Total Haz-Mat:	8
Unique Placards (#):	4
Total Truck Traffic:	139
% w/ Placard:	5.8%
WVDOT Count:	2175
24 hr-Trucks Calc:	834
24-hr Haz Calc:	48
Est Haz per hr:	2
% Haz per 24-hr:	2.2%

Hazard Classes

1-Explosives:	0	0.0%
2-Gases:	1	12.5%
3-Flamm. Liquids:	7	87.5%
4-Flamm. Solids:	0	0.0%
5-Oxidizers:	0	0.0%
6-Toxics:	0	0.0%
7-Radioactives:	0	0.0%
8-Corrosives:	0	0.0%
9-Miscellaneous:	0	0.0%



Date: 06 Oct 2022

Time: 0800-1200

Interval: 4 hrs

US 219 / SR 72, PARSONS

Monitor: US 219 N/S; traffic turning into town

Weather: Clear Temp: 36°

Special Considerations: Bulk of truck traffic comprised of trucks with asphalt for paving at St. George

Trucks Carrying Haz-Mat

Trucks may have multiple placards

Trailer Type	Totals	% of Total	UN No.	Class	Name	Total	% of All Placards	General Placards	Totals	% of All Placards
111	2	1.9%	1075	2	Liquified petroleum gas	2	22.2%			
117	0	0.0%	1203	3	Gasoline	3	33.3%			
131	3	2.8%	1361	4	Charcoal	2	22.2%			
134	0	0.0%	3257	9	Elevated temp liquid, n.o.s.	2	22.2%			
137	4	3.8%								
Other	0	0.0%								

Site Summary Data

Total Haz-Mat:	9
Unique Placards (#):	4
Total Truck Traffic:	106
% w/ Placard:	8.5%
WVDOT Count:	2175
24 hr-Trucks Calc:	636
24-hr Haz Calc:	54
Est Haz per hr:	2
% Haz per 24-hr:	2.5%

Hazard Classes

1-Explosives:	0	0.0%
2-Gases:	2	22.2%
3-Flamm. Liquids:	3	33.3%
4-Flamm. Solids:	2	22.2%
5-Oxidizers:	0	0.0%
6-Toxics:	0	0.0%
7-Radioactives:	0	0.0%
8-Corrosives:	0	0.0%
9-Miscellaneous:	2	22.2%



Date: 06 Oct 2022

Time: 1230-1630

Interval: 4 hrs

SR 72 / SR 38, ST. GEORGE

Monitor: Through traffic SR 72; on off SR 38

Weather: Clear Temp: 66°

Special Considerations: N/A

Trucks Carrying Haz-Mat

Trucks may have multiple placards

Trailer Type	Totals	% of Total	UN No.	Class	Name	Total	% of All Placards	General Placards	Totals	% of All Placards
111	0	0.0%	1075	2	Liquified petroleum gas	1	50.0%			
117	1	10.0%	1203	3	Gasoline	1	50.0%			
131	1	10.0%								
134	0	0.0%								
137	0	0.0%								
Other	0	0.0%								

Site Summary Data

Total Haz-Mat:	2
Unique Placards (#):	2
Total Truck Traffic:	10
% w/ Placard:	20.0%
WV DOT Count:	826
24 hr-Trucks Calc:	60
24-hr Haz Calc:	12
Est Haz per hr:	1
% Haz per 24-hr:	1.5%

Hazard Classes

1-Explosives:	0	0.0%
2-Gases:	1	50.0%
3-Flamm. Liquids:	1	50.0%
4-Flamm. Solids:	0	0.0%
5-Oxidizers:	0	0.0%
6-Toxics:	0	0.0%
7-Radioactives:	0	0.0%
8-Corrosives:	0	0.0%
9-Miscellaneous:	0	0.0%

Date: October 11, 2022

Time: 8:00 a.m. **Interval:** 4 hours

SR 72 / SR 38 ST. GEORGE

Monitor: Through traffic on 72, on/off 38

Weather: Cloudy 33°

Special Considerations: N/A

Trucks Carrying Haz-Mat

Trailer Type	Totals	% of Total	UN No.	Class	Name	Total	% of All Placards	General Placards	Totals	% of All Placards
111	0	0.0%	1075	2	Propane	2	100.0%			
117	0	0.0%								
131	2	5.6%								
134	0	0.0%								
137	0	0.0%								
Other	0	0.0%								

Site Summary Data

Total Haz-Mat:	2
Unique Placards (#):	1
Total Truck Traffic:	36
% w/ Placard:	5.6%
WVDOT Count:	591
24 hr-Trucks Calc:	216
24-hr Haz Calc:	12
Est Haz per hr:	1
% Haz per 24-hr:	2.0%

Hazard Classes

1-Explosives:	0	0.0%
2-Gases:	2	100.0%
3-Flamm. Liquids:	0	0.0%
4-Flamm. Solids:	0	0.0%
5-Oxidizers:	0	0.0%
6-Toxics:	0	0.0%
7-Radioactives:	0	0.0%
8-Corrosives:	0	0.0%
9-Miscellaneous:	0	0.0%

Date: October 11, 2022

Time: 100 p.m. **Interval:** 4 hours

US 219, RANDOLPH COUNTY LINE

Monitor: Through traffic on 219

Weather: Sunny, 64°

Special Considerations: N/A

Trucks Carrying Haz-Mat

Trailer Type	Totals	% of Total	UN No.	Class	Name	Total	% of All Placards	General Placards	Totals	% of All Placards
111	1	0.8%	1075	2	Liquefied petroleum gas	2	50.0%	Flamm Liquid	1	25.0%
117	0	0.0%	1993	3	Combustible liquid, n.o.s.	1	25.0%			
131	1	0.8%								
134	0	0.0%								
137	1	0.8%								
Other	1	0.8%								

Site Summary Data

Total Haz-Mat:	4
Unique Placards (#):	3
Total Truck Traffic:	119
% w/ Placard:	3.4%
WVDOT Count:	2,647
24 hr-Trucks Calc:	714
24-hr Haz Calc:	24
Est Haz per hr:	1
% Haz per 24-hr:	0.9%

Hazard Classes

1-Explosives:	0	0.0%
2-Gases:	2	50.0%
3-Flamm. Liquids:	2	50.0%
4-Flamm. Solids:	0	0.0%
5-Oxidizers:	0	0.0%
6-Toxics:	0	0.0%
7-Radioactives:	0	0.0%
8-Corrosives:	0	0.0%
9-Miscellaneous:	0	0.0%

Date: October 12, 2022

Time: 800 a.m. **Interval:** 4 hours

US 219 / US 48, THOMAS

Monitor: Traffic on bridge, through traffic

Weather: Clear 43°

Special Considerations: N/A

Trucks Carrying Haz-Mat

Trailer Type	Totals	% of Total	UN No.	Class	Name	Total	% of All Placards	General Placards	Totals	% of All Placards
111	0	0.0%	3257	9	Elevated temperature liquid, n.o.s.	2	50.0%	Corrosive	1	25.0%
117	0	0.0%	3286	3	Flammable liquid, toxic, corrosive	1	25.0%			
131	0	0.0%								
134	0	0.0%								
137	3	2.6%								
Other	1	0.9%								

Site Summary Data

Total Haz-Mat:	4
Unique Placards (#):	3
Total Truck Traffic:	117
% w/ Placard:	3.4%
WVDOT Count:	2,697
24 hr-Trucks Calc:	702
24-hr Haz Calc:	24
Est Haz per hr:	1
% Haz per 24-hr:	0.9%

Hazard Classes

1-Explosives:	0	0.0%
2-Gases:	0	0.0%
3-Flamm. Liquids:	1	25.0%
4-Flamm. Solids:	0	0.0%
5-Oxidizers:	0	0.0%
6-Toxics:	0	0.0%
7-Radioactives:	0	0.0%
8-Corrosives:	1	25.0%
9-Miscellaneous:	2	50.0%

Date: October 12, 2022

Time: 1230 p.m. **Interval:** 4 hours

US 48 / SR 93, DAVIS

Monitor: Through on 48/93

Weather: Sunny 64°

Special Considerations: N/A

Trucks Carrying Haz-Mat

Trailer Type	Totals	% of Total	UN No.	Class	Name	Total	% of All Placards	General Placards	Totals	% of All Placards
111	0	0.0%								
117	0	0.0%								
131	0	0.0%								
134	0	0.0%								
137	0	0.0%								
Other	0	0.0%								

Site Summary Data

Total Haz-Mat:	0
Unique Placards (#):	0
Total Truck Traffic:	89
% w/ Placard:	0.0%
WVDOT Count:	1,262
24 hr-Trucks Calc:	534
24-hr Haz Calc:	0
Est Haz per hr:	0
% Haz per 24-hr:	0.0%

Hazard Classes

1-Explosives:	0	0.0%
2-Gases:	0	0.0%
3-Flamm. Liquids:	0	0.0%
4-Flamm. Solids:	0	0.0%
5-Oxidizers:	0	0.0%
6-Toxics:	0	0.0%
7-Radioactives:	0	0.0%
8-Corrosives:	0	0.0%
9-Miscellaneous:	0	0.0%

Date: October 14, 2022

Time: 8:00 a.m. **Interval:** 4 hours

US 48 / SR 93, DAVIS

Monitor: Through on 48/93 (added through on 32 between Thomas and Davis)

Weather: Clear, sunny, 37° F

Special Considerations: Entrance to landfill nearby, increase in garbage trucks noted

Trucks Carrying Haz-Mat

Trucks may have multiple placards

Trailer Type	Totals	% of Total	UN No.	Class	Name	Total	% of All Placards	General Placards	Totals	% of All Placards
111	0	0.0%	1075	2	Liquefied petroleum gas	3	60.0%			
117	3	2.4%	1203	3	Gasoline	1	20.0%			
131	1	0.8%	3257	9	Elevated temp. liquid, n.o.s.	1	20.0%			
134	0	0.0%								
137	1	0.8%								
Other	0	0.0%								

Site Summary Data

Total Haz-Mat:	5
Unique Placards (#):	3
Total Truck Traffic:	124
% w/ Placard:	4.0%
WVDOT Count:	2697
24 hr-Trucks Calc:	744
24-hr Haz Calc:	30
Est Haz per hr:	1
% Haz per 24-hr:	1.1%

Hazard Classes

1-Explosives:	0	0.0%
2-Gases:	3	60.0%
3-Flamm. Liquids:	1	20.0%
4-Flamm. Solids:	0	0.0%
5-Oxidizers:	0	0.0%
6-Toxics:	0	0.0%
7-Radioactives:	0	0.0%
8-Corrosives:	0	0.0%
9-Miscellaneous:	1	20.0%



Date: October 14, 2022

Time: 12:30 p.m. **Interval:** 4 hours

SR 32, RANDOLPH COUNTY LINE

Monitor: Through traffic

Weather: Clear, sunny, 56° F

Special Considerations: N/A

Trucks Carrying Haz-Mat

Trucks may have multiple placards

Trailer Type	Totals	% of Total	UN No.	Class	Name	Total	% of All Placards	General Placards	Totals	% of All Placards
111	0	0.0%	1075	2	Liquefied petroleum gas	1	50.0%			
117	1	5.0%	1993	3	Combustible liquids, n.o.s.	1	50.0%			
131	1	5.0%								
134	0	0.0%								
137	0	0.0%								
Other	0	0.0%								

Site Summary Data

Total Haz-Mat:	2
Unique Placards (#):	2
Total Truck Traffic:	20
% w/ Placard:	10.0%
WVDOT Count:	1305
24 hr-Trucks Calc:	120
24-hr Haz Calc:	12
Est Haz per hr:	1
% Haz per 24-hr:	0.9%

Hazard Classes

1-Explosives:	0	0.0%
2-Gases:	1	50.0%
3-Flamm. Liquids:	1	50.0%
4-Flamm. Solids:	0	0.0%
5-Oxidizers:	0	0.0%
6-Toxics:	0	0.0%
7-Radioactives:	0	0.0%
8-Corrosives:	0	0.0%
9-Miscellaneous:	0	0.0%



Date: 19 Oct 2022

Time: 0800-1200

Interval: 4 hrs

SR 32, RANDOLPH COUNTY LINE

Monitor: SR 32 N/S

Weather: Snow Temp: 31°

Special Considerations: N/A

Trucks Carrying Haz-Mat

Trucks may have multiple placards

Trailer Type	Totals	% of Total	UN No.	Class	Name	Total	% of All Placards	General Placards	Totals	% of All Placards
111	1	5.6%	1075	2	Liquified petroleum gas	1	33.3%	Corrosive	1	33.3%
117	1	5.6%	1203	3	Gasoline	1	33.3%			
131	1	5.6%								
134	0	0.0%								
137	0	0.0%								
Other	0	0.0%								

Site Summary Data

Total Haz-Mat:	3
Unique Placards (#):	3
Total Truck Traffic:	18
% w/ Placard:	16.7%
WVDOT Count:	1305
24 hr-Trucks Calc:	108
24-hr Haz Calc:	18
Est Haz per hr:	1
% Haz per 24-hr:	1.4%

Hazard Classes

1-Explosives:	0	0.0%
2-Gases:	1	33.3%
3-Flamm. Liquids:	1	33.3%
4-Flamm. Solids:	0	0.0%
5-Oxidizers:	0	0.0%
6-Toxics:	0	0.0%
7-Radioactives:	0	0.0%
8-Corrosives:	1	33.3%
9-Miscellaneous:	0	0.0%



Date: 19 Oct 2022

Time: 1230-1630

Interval: 4 hrs

US 219 / US 48, THOMAS

Monitor: US 219 N/S; US 48 E/W

Weather: Snow; Temp: 32°

Special Considerations: N/A

Trucks Carrying Haz-Mat

Trucks may have multiple placards

Trailer Type	Totals	% of Total	UN No.	Class	Name	Total	% of All Placards	General Placards	Totals	% of All Placards
111	0	0.0%	2187	2	Carbon dioxide	1	100.0%			
117	1	1.4%								
131	0	0.0%								
134	0	0.0%								
137	0	0.0%								
Other	0	0.0%								

Site Summary Data

Total Haz-Mat:	1
Unique Placards (#):	1
Total Truck Traffic:	72
% w/ Placard:	1.4%
WVDOT Count:	1131
24 hr-Trucks Calc:	432
24-hr Haz Calc:	6
Est Haz per hr:	0
% Haz per 24-hr:	0.5%

Hazard Classes

1-Explosives:	0	0.0%
2-Gases:	1	100.0%
3-Flamm. Liquids:	0	0.0%
4-Flamm. Solids:	0	0.0%
5-Oxidizers:	0	0.0%
6-Toxics:	0	0.0%
7-Radioactives:	0	0.0%
8-Corrosives:	0	0.0%
9-Miscellaneous:	0	0.0%



Date: 06 Oct 2022

Time: 1230-1630

Interval: 4 hrs

SR 72 / SR38, ST. GEORGE

Monitor: Through traffic SR 72; on off SR 38

Weather: Clear Temp: 31°

Special Considerations: N/A

Trucks Carrying Haz-Mat

Trucks may have multiple placards

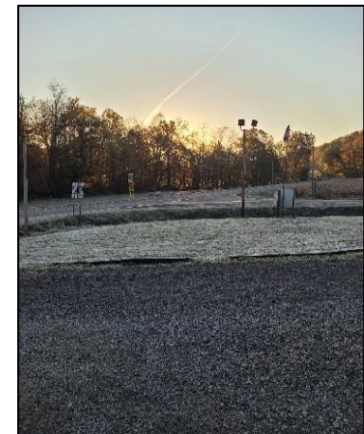
Trailer Type	Totals	% of Total	UN No.	Class	Name	Total	% of All Placards	General Placards	Totals	% of All Placards
111	0	0.0%								
117	0	0.0%								
131	0	0.0%								
134	0	0.0%								
137	0	0.0%								
Other	0	0.0%								

Site Summary Data

Total Haz-Mat:	0
Unique Placards (#):	0
Total Truck Traffic:	14
% w/ Placard:	0.0%
WV DOT Count:	826
24 hr-Trucks Calc:	84
24-hr Haz Calc:	0
Est Haz per hr:	0
% Haz per 24-hr:	0.0%

Hazard Classes

1-Explosives:	0	0.0%
2-Gases:	0	0.0%
3-Flamm. Liquids:	0	0.0%
4-Flamm. Solids:	0	0.0%
5-Oxidizers:	0	0.0%
6-Toxics:	0	0.0%
7-Radioactives:	0	0.0%
8-Corrosives:	0	0.0%
9-Miscellaneous:	0	0.0%



Date: 20 Oct 2022

Time: 1300-1700

Interval: 4 hrs

SR 32, RANDOLPH COUNTY LINE

Monitor: SR 32 N/S

Weather: Sunny Temp: 44°

Special Considerations: N/A

Trucks Carrying Haz-Mat

Trucks may have multiple placards

Trailer Type	Totals	% of Total	UN No.	Class	Name	Total	% of All Placards	General Placards	Totals	% of All Placards
111	0	0.0%	1075	2	Liquified petroleum gas	1	33.3%			
117	1	5.6%	1203	3	Gasoline	2	66.7%			
131	2	11.1%								
134	0	0.0%								
137	0	0.0%								
Other	0	0.0%								

Site Summary Data

Total Haz-Mat:	3
Unique Placards (#):	3
Total Truck Traffic:	18
% w/ Placard:	16.7%
WV DOT Count:	1305
24 hr-Trucks Calc:	108
24-hr Haz Calc:	18
Est Haz per hr:	1
% Haz per 24-hr:	1.4%

Hazard Classes

1-Explosives:	0	0.0%
2-Gases:	1	33.3%
3-Flamm. Liquids:	2	66.7%
4-Flamm. Solids:	0	0.0%
5-Oxidizers:	0	0.0%
6-Toxics:	0	0.0%
7-Radioactives:	0	0.0%
8-Corrosives:	0	0.0%
9-Miscellaneous:	0	0.0%



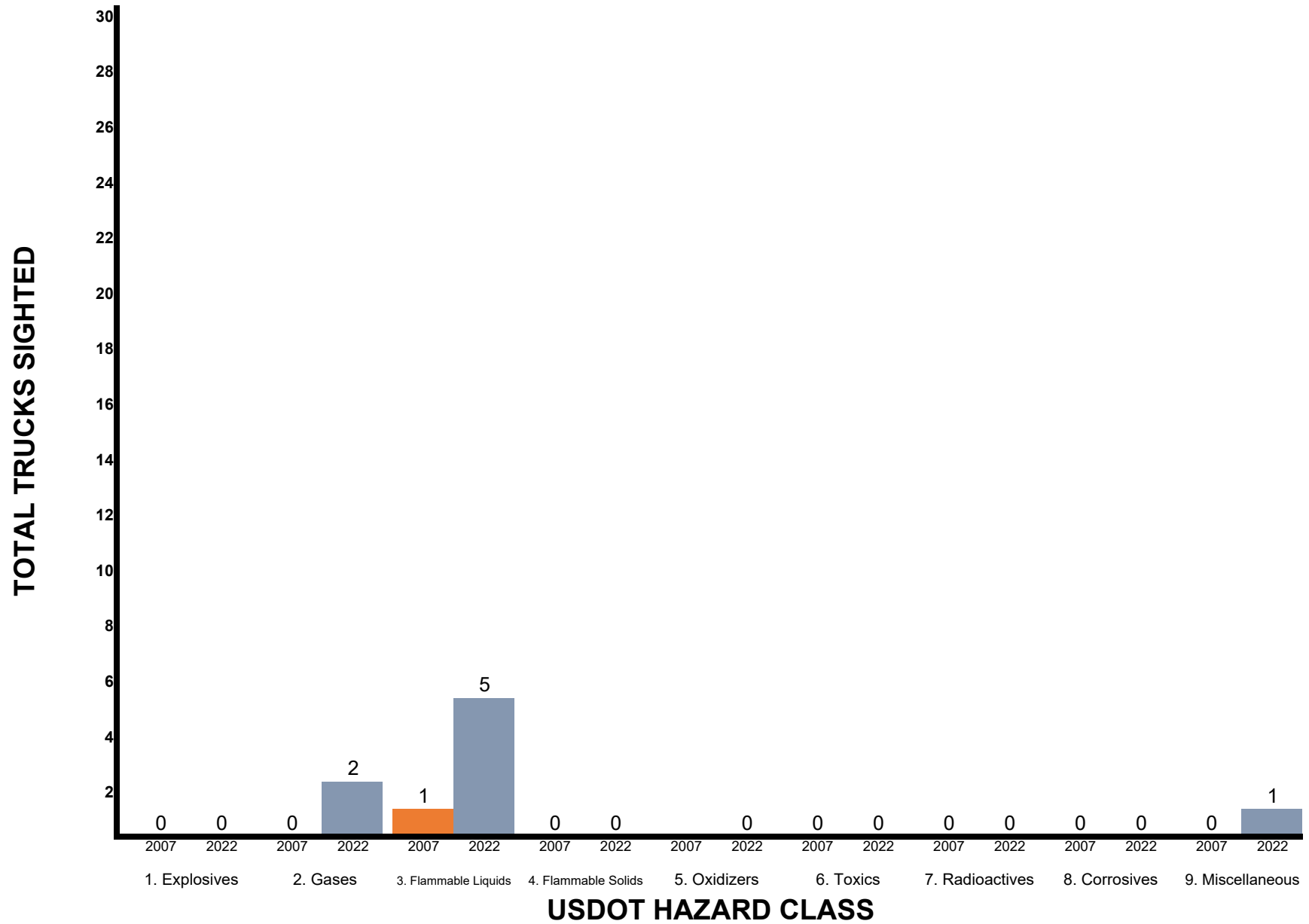
APPENDIX 3

Highway Data Comparisons, 2007 and 2022 Studies

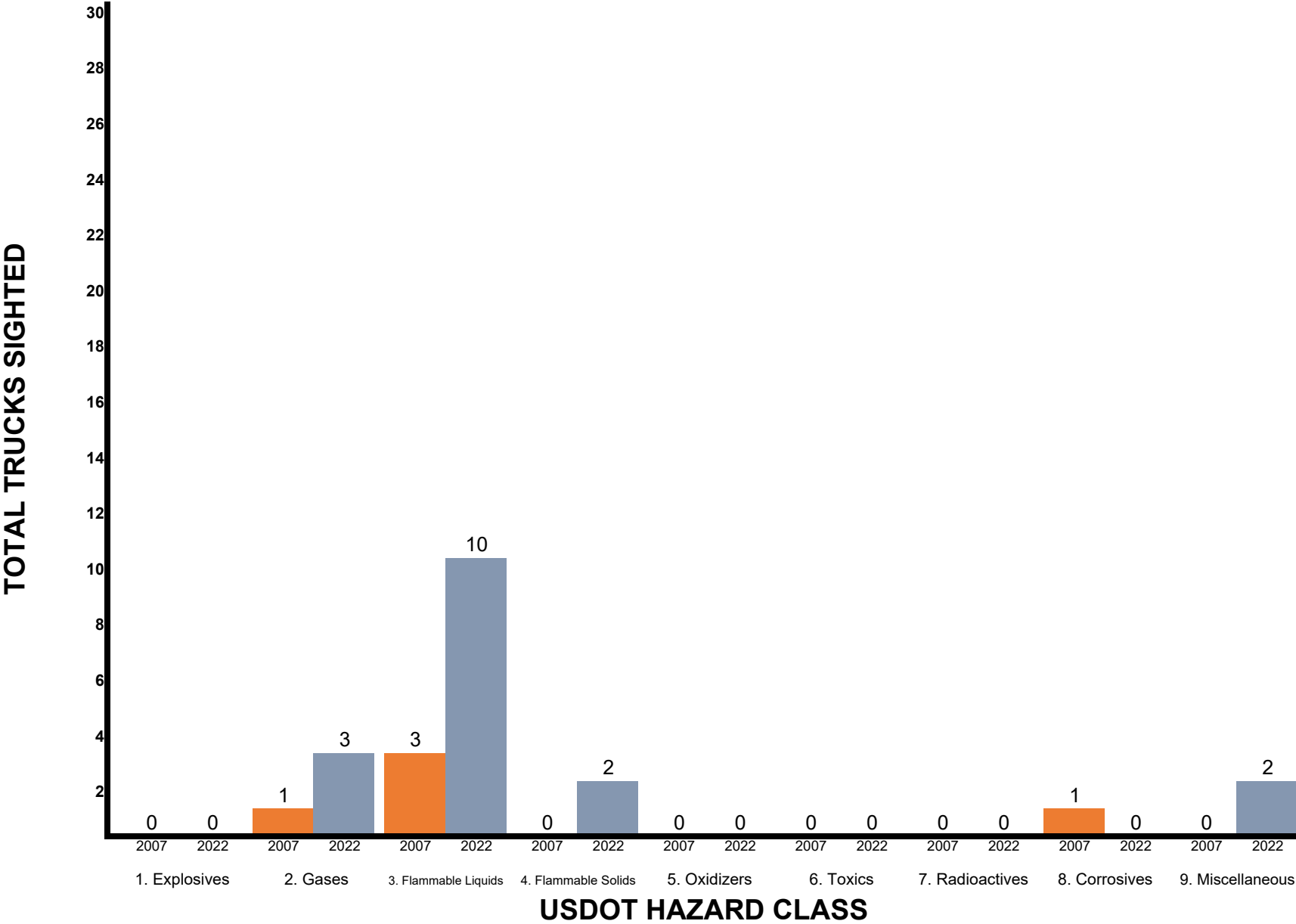
This appendix contains bar graphs that compare the site data from 2007 with the data collected in 2022.



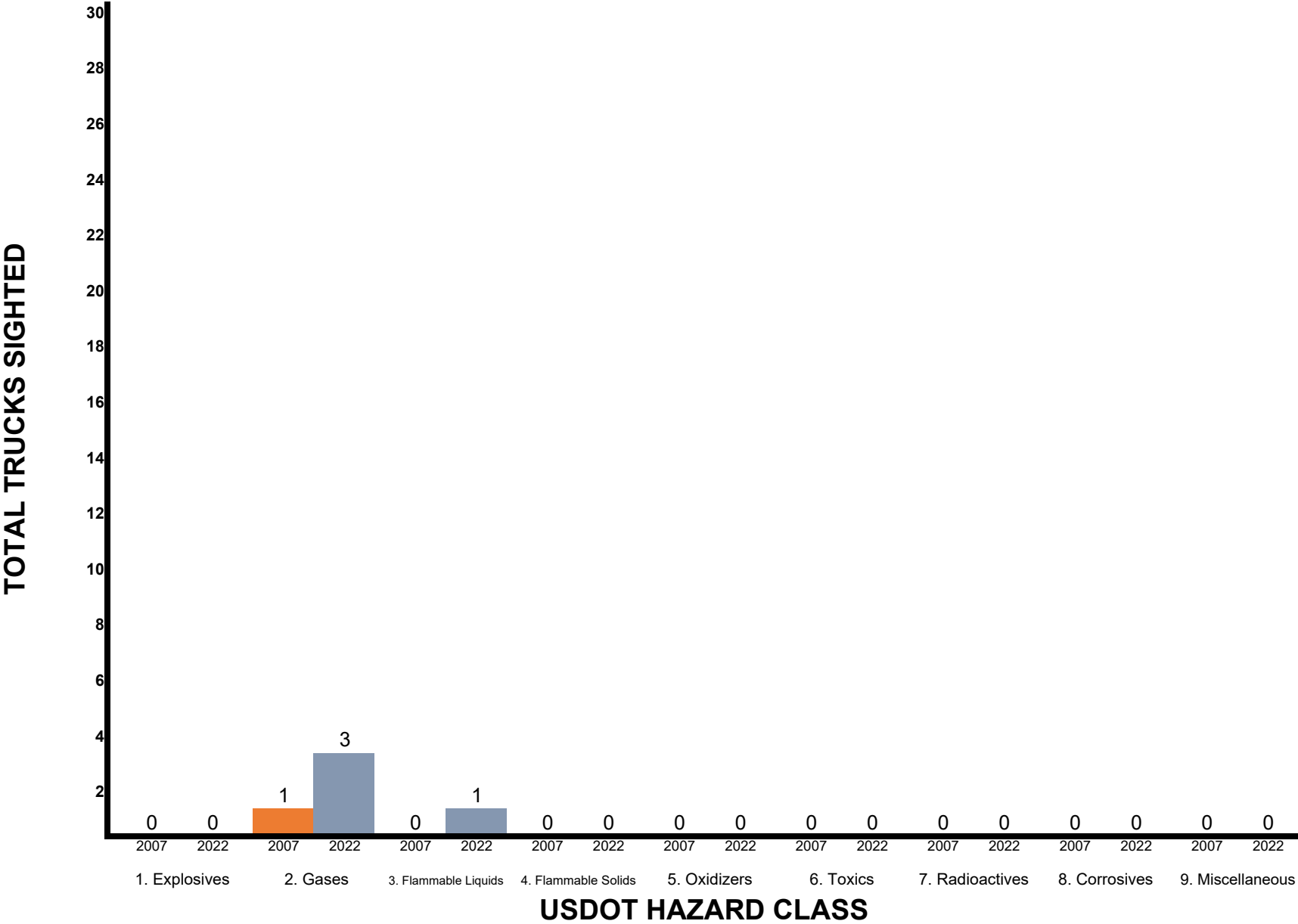
US 219, RANDOLPH COUNTY LINE



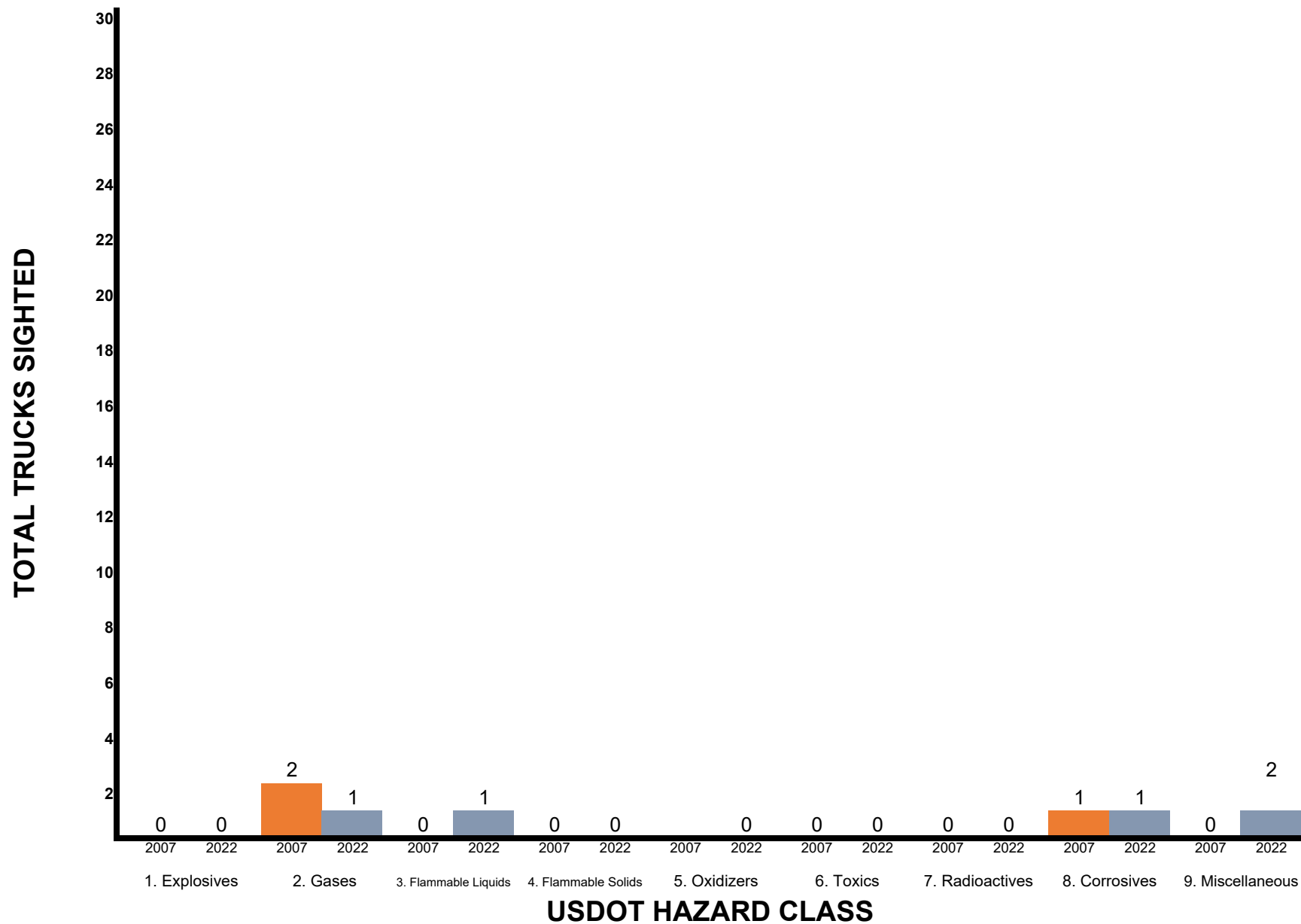
US 219 / SR 72, PARSONS



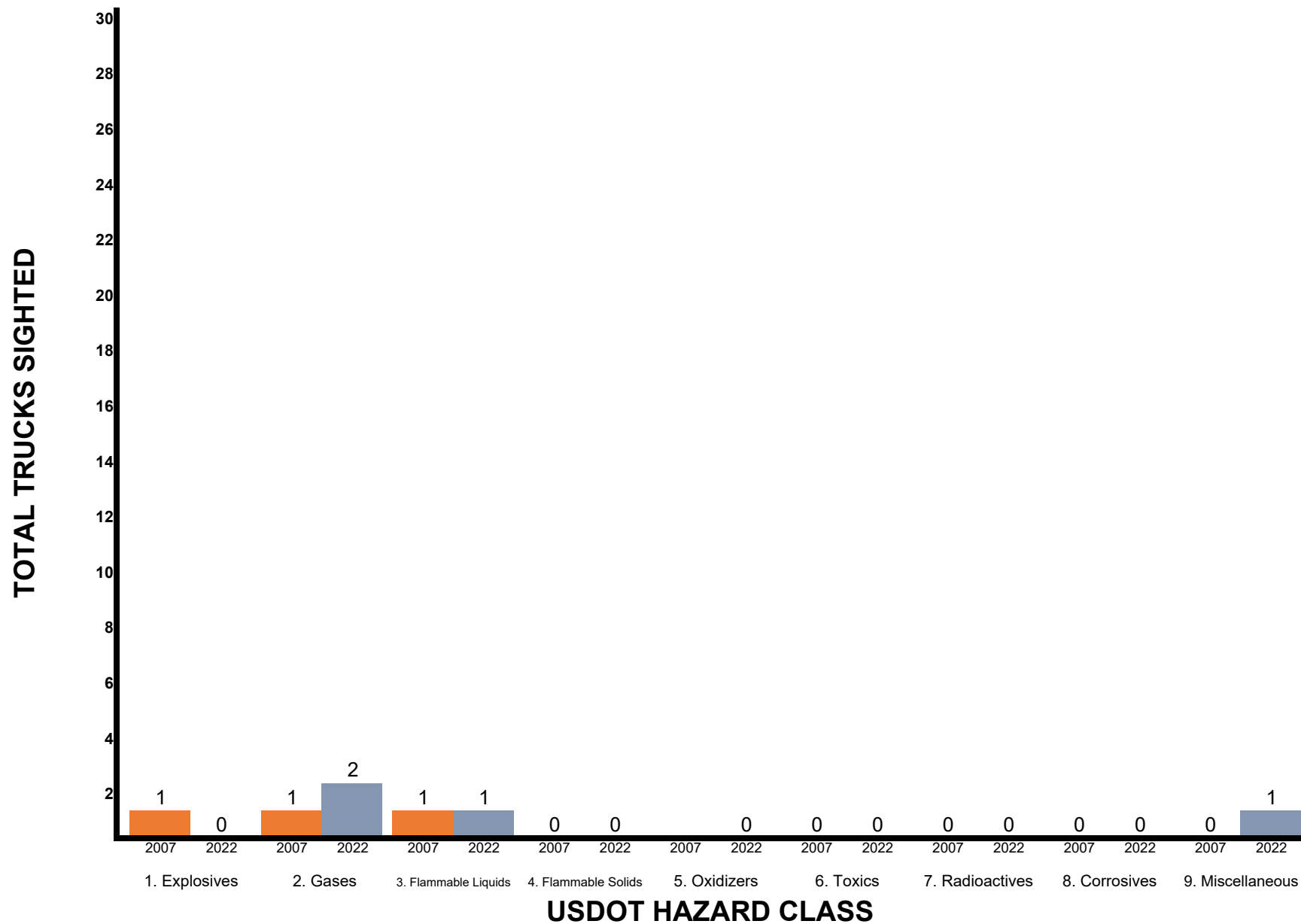
SR 72 / SR 38, ST. GEORGE



US 219 / US 48, THOMAS (former SR 32 / US 219)



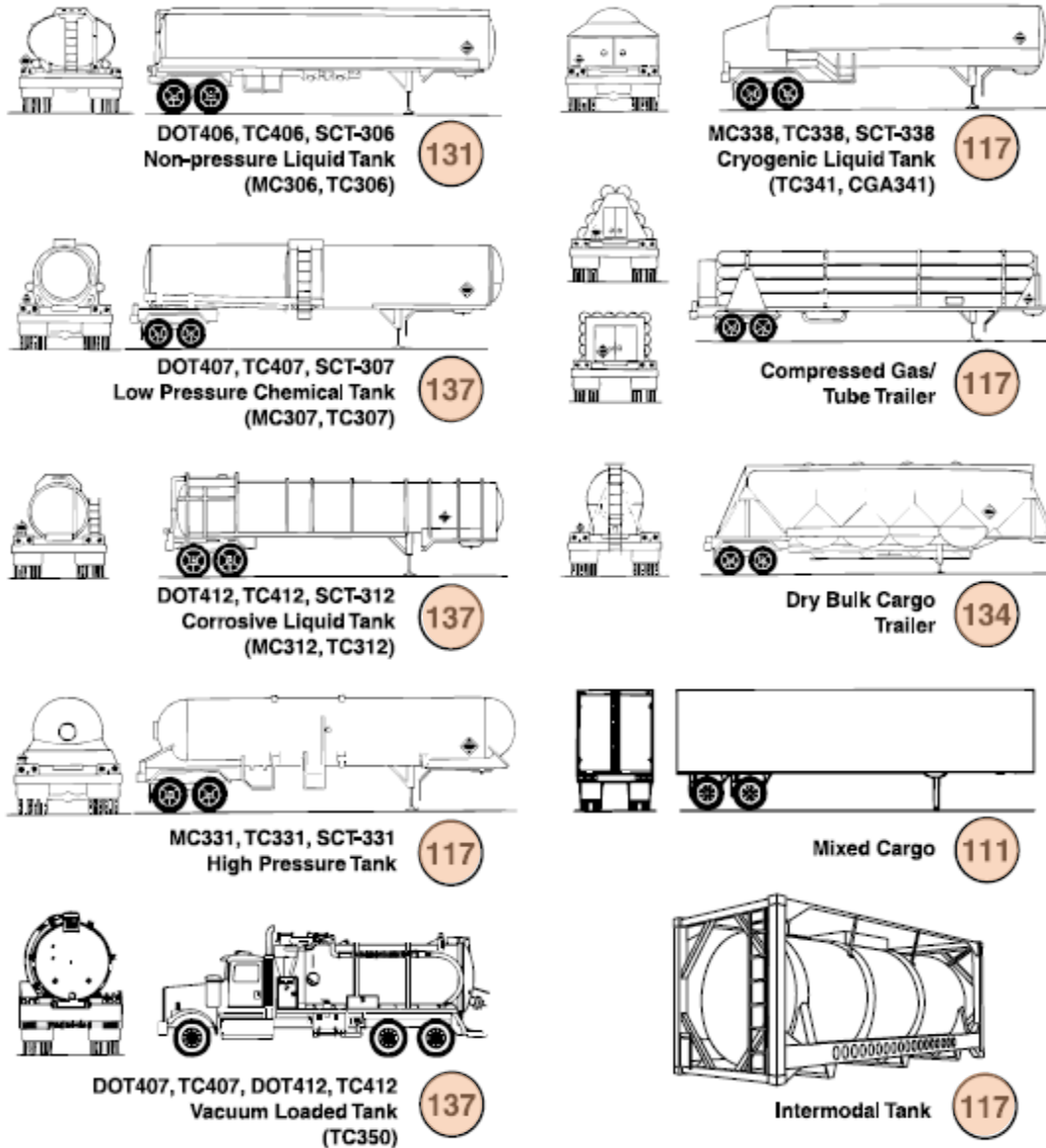
US 48 / SR 93, DAVIS (former SR 32 / SR 93)



APPENDIX 4

TRAILER TYPE REFERENCE SHEET

This appendix contains the reference sheet used for determining trailer types during highway field reconnaissance.



APPENDIX 5

GLOSSARY

This appendix is a glossary of key terms and a list of acronyms used throughout the report. Definitions presented in this appendix may differ slightly from the common definitions of the terms; these definitions correspond to how the term is used (and its meaning) as part of the study.

LIST OF TERMS

Commodity Flow Study: A study to identify the types of hazardous materials transported on a variety of transportation systems (e.g., highway, railway, waterway, airway, pipeline, or at covered facilities).

Covered Facility: A facility that reports to a Local Emergency Planning Committee as part of Tier II reporting requirements under Title III of the Superfund Amendment and Reauthorization Act of 1986.

Covered Facility Analysis: An analysis of the hazardous materials used and stored by covered facilities. The analysis includes an identification of shipping routes, quantities shipped, and frequency of shipments.

Emergency: Any incident, whether natural or human-caused, that requires responsive action to protect life or property. Under the Robert T. Stafford Act, an “emergency” is an incident for which federal assistance is needed to supplement state and local efforts and capabilities to save lives and to protect property.

Extremely Hazardous Substance: A hazardous material recognized by the United States Environmental Protection Agency as having extremely toxic properties and thus necessitates additional safety measures during handling and transport.

Hazard Class: A system utilized by the United States Department of Transportation to classify the type of hazardous material in transport. There are nine (9) hazard classes: Explosives (Class 1), Gases (Class 2), Flammable Liquids (Class 3), Flammable Solids (Class 4), Oxidizers (Class 5), Toxics (Class 6), Radioactive (Class 7), Corrosives (Class 8), and Miscellaneous (Class 9).

Hazardous Material: A material that is (or can be) harmful to human health and the environment.

Highway Analysis: An analysis of hazardous materials transported along roadways in a



study area. The analysis is usually completed by visually monitoring select sites along the roadways and recording the hazardous materials that pass through the site. An analysis can also be conducted remotely through the use of waybills, shipping company reporting, etc.

Incident: An occurrence, natural or human-caused, that requires a response to protect life or property.

Placard: A sign or notice for display in a public place. For this document, the sign is the diamond or rectangular-shaped card attached to a truck and trailer labeling hazardous material shipments.

Threshold Planning Quantity: A quantity designated for each chemical on the list of extremely hazardous substances that triggers a notification by facilities to the State Emergency Response Commission that such facilities are subject to emergency planning requirements under SARA Title III.

LIST OF ACRONYMS

DOT	United States Department of Transportation
EHS	Extremely Hazardous Substance
EPCRA	Emergency Planning & Community Right-to-Know Act
FRA	Federal Railroad Administration
JHC	JH Consulting, LLC
LEPC	Local Emergency Planning Committee
SARA	Superfund Amendment and Reauthorization Act
SERC	State Emergency Response Commission
TPQ	Threshold Planning Quantity
USACE	United States Army Corps of Engineers
WV	West Virginia
WVDOT	West Virginia Department of Transportation
WWTP	Wastewater Treatment Plant

