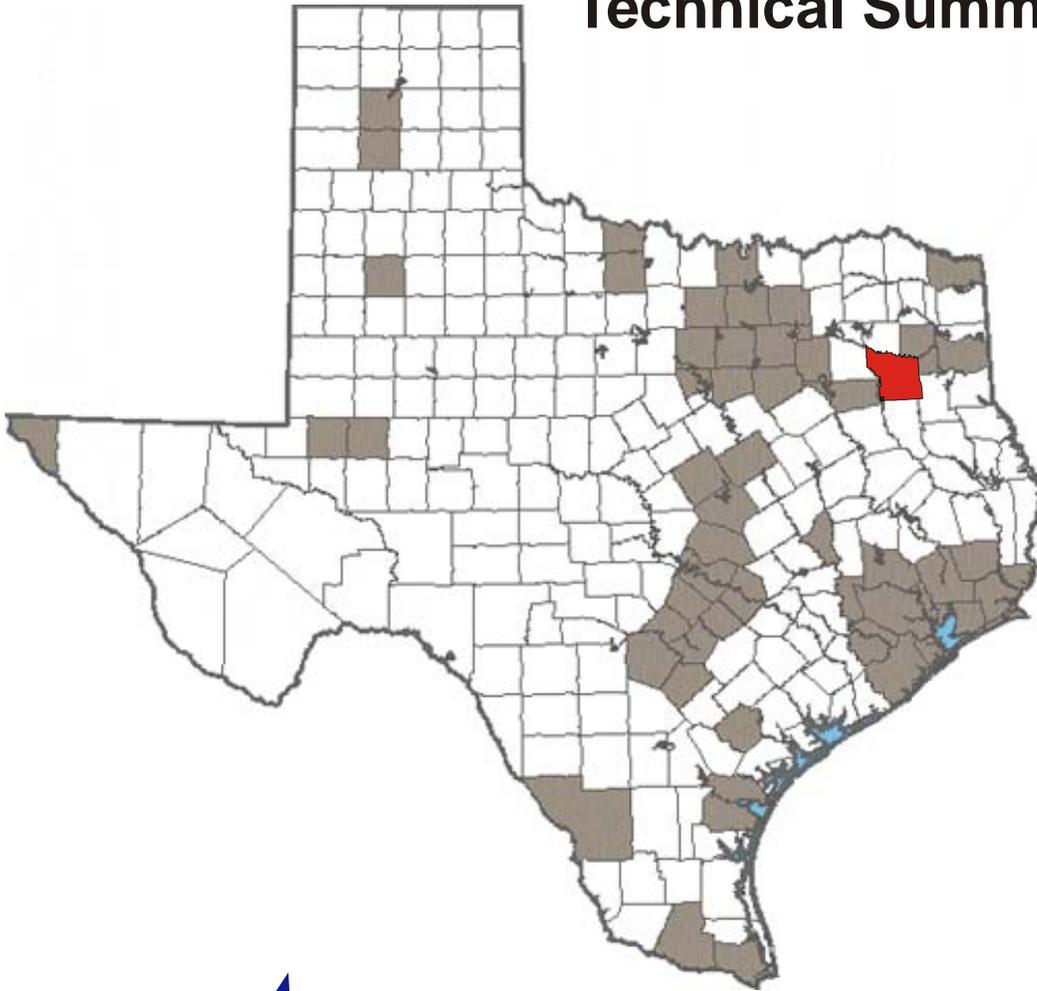


2004 Tyler Commercial Vehicle Survey Technical Summary



Prepared by the
Texas Transportation Institute
June 2005

2004 Tyler Commercial Vehicle Survey

TECHNICAL SUMMARY

Texas Department of Transportation Travel Survey Program

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INTRODUCTION

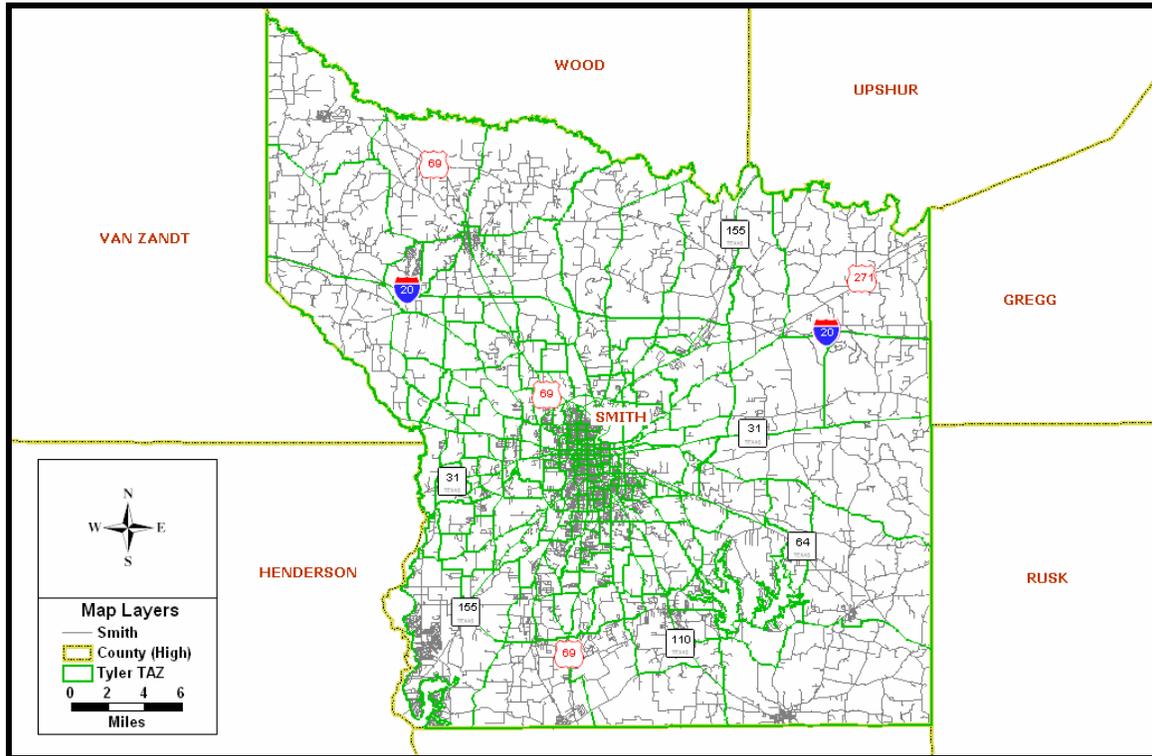
In 2004 the Transportation Planning and Programming (TPP) Division of the Texas Department of Transportation (TxDOT) funded a commercial vehicle travel survey in the Tyler and Longview Metropolitan Planning Organization (MPO) study areas. The commercial vehicle survey measured commercial vehicle travel patterns within the study areas. The purpose of the survey is to provide data that allows TxDOT to forecast commercial vehicle demand and travel patterns within the area.

This report presents a Technical Summary of the 2004 Tyler Commercial Vehicle Survey and documents the data collected and the analysis results for the Tyler study area. The summary is organized into seven sections. The first section presents a brief description of the Tyler study area. The second discusses the survey methodology. The third section describes the data editing that was done, the fourth provides an overview of external commercial vehicle data, and the fifth presents summaries of the survey data. The sixth section discusses the methodology utilized to expand the survey data and also provide expanded survey results. The final section presents recommendations for use of the data in travel demand models. Additionally, survey instruments utilized for the Tyler Commercial Vehicle survey are provided in the Appendix.

TYLER STUDY AREA

The boundary established for the Tyler commercial vehicle survey was comprised of Smith County. The study area, as shown in Figure 1, is located in east Texas near the Texas/Louisiana border. For travel demand modeling purposes, urban areas are typically divided into small geographic sections called traffic analysis zones (TAZ). Each zone is normally bound by transportation facilities and/or geographic features (e.g. bodies of water, parks, etc), and the activity that occurs within that area is typically somewhat homogenous. Zones are categorized by the density of activity associated with them. The zonal density is measured in terms of population and employment relative to the area in acres. The Tyler MPO defined the TAZ structure within the study area boundary for the MPO. The general location of the study area for Tyler is provided in Figure 1.

Figure 1. Tyler MPO Study Area.



According to the 2000 census, the population of Smith County was nearly 175,000 persons. There were over 65,000 households in the study area in 2000 and the average household size according to this census was 2.59 persons per household.

SURVEY METHODOLOGY

The sample of survey vehicles was randomly selected from motor carrier and vehicle registration databases. For the purpose of the survey, commercial vehicles were defined as any vehicle having six or more tires, a gross vehicle weight of over 8,500 pounds, and primarily used for commercial purposes. Gram Traffic Counting conducted the commercial vehicle survey in Tyler and Longview. Selected businesses were contacted by Gram and asked to participate in the survey effort. Those businesses agreeing to participate were provided with survey packets to distribute to drivers and with instructions on how the survey forms should be filled out. After the survey of a business was complete, a representative from Gram would retrieve all survey packets. A total of

250 vehicle surveys were obtained from 113 participating businesses during the conduct of the Tyler commercial vehicle survey. It is worth noting that some totals (such as the number of vehicles in Table 2) will not always match this total exactly. This is a result of non-response to certain questions on the survey instrument.

DATA EDITING

Data editing consisted primarily of reviewing the database to ensure that it was complete and followed guidelines set forth in the bid specification issued by TxDOT. A program was utilized to perform checks relative to geocoding of locations as well as logic checks of survey responses. The majority of the data errors were corrected prior to the data being submitted by Gram. However, there was one prevalent error that was not correctable. It is not uncommon for there to be a misunderstanding between transportation planners and the general public as to the definition of a trip. In travel surveys, a trip is defined as the journey from one location to another. The trip ends consist of the last location where a driver got into the vehicle (the origin) and the next location that the driver will stop or exit the vehicle (the destination). However, to the general public a trip is often interpreted as a “round-trip” where the origin and destination are the same location and any stops in between are omitted. In the Tyler commercial vehicle survey, there were a number of trips with the same TAZ for the origin and destination location. Each trip was reviewed to ascertain whether the address and/or location provided were identical for each trip end. If identical origin and destination information was given, then the trip was removed from the analysis. If multiple instances of duplicate origin/destination information were given for a vehicle, then the vehicle data were removed from the analysis. As a result of the data review, four vehicles were dropped from the analysis. The rationale for dropping the vehicles from the analysis is that the trip specific information is not accurate and therefore could compromise the analysis results.

TRIP TYPE INFORMATION

For the purpose of this analysis, two primary trip types are utilized. Those trips types are internal trips and external trips. Internal trips are those with both trip ends (origin and destination) inside the study area. External trips are those where one or both trip ends are

located outside of the study area. The primary purpose of the commercial vehicle analysis is to ascertain commercial vehicle characteristics and movements within a study area. Therefore, with the exception of trip tour characteristics, trip data for vehicles having one trip end outside of the study area (external trips) were removed from the analysis of trip related characteristics.

Certain data quality elements preclude a detailed analysis of external trip data. For instance, trip information relative to reported departure and arrival times as well as odometer readings are historically inaccurate. For internal trips, trip lengths and travel times from one TAZ to another can be estimated from network travel time and distance matrices developed from the transportation network for Tyler. However, this type of information is not available for locations outside of a specific study area. As a result, external trips were categorized into one of three groups.

- Texas (non-study area)
- Mexico
- United States (non-Texas)

Using these groups, trips were summarized by origin and destination and the results are provided in Table 1. As shown in Table 1, 769 of the 1325 trips (58.04%) were internal trips (both the origin and destination were within the study area). Of those internal trips, 670 (87.13%) were inter-zonal and 99 (12.87%) were intra-zonal.

External trips (one or both trip ends outside of the study area) comprised 556 of the total 1325 trips (41.96%). Of those 556 trips, 313 (56.29%) had only one trip end outside the study area, and 243 trips (43.71%) had both trip ends outside of the study area. Twenty-three trips ended within the United States (non-Texas) and no trips were reported having an origin or destination in Mexico.

Table 1. Trips by Origin and Destination.

Trip Origin	Trip Destination				
	External (Texas)	Mexico	External (non-Texas)	Internal	Total
External (Texas)	226	0	4	145	375
Mexico	0	0	0	0	0
External (non-Texas)	0	0	13	8	21
Internal	154	0	6	769	929
Total Trips	380	0	23	922	1325

SURVEY SUMMARIES

Survey Sample Fleet Characteristics

Since the survey methodology employs a random selection process, it is presumed that each commercial vehicle in the study area has a non-zero probability of being selected to participate in the survey. Using a random sampling of vehicles provides a means for expanding the data that were obtained through the survey to the entire population of vehicles operating within the study area.

As previously mentioned, a total of 250 commercial vehicles were surveyed in the Tyler area. However, four commercial vehicles had base locations that were not within the Tyler study area and therefore, the data for those vehicles were not included in the analysis.

As part of the survey, information relative to the year, make and model, odometer reading, and fuel type of each vehicle surveyed was collected. This provides an indication of the distribution of vehicles traveling in the study area by type, age, and condition (as implied by the number of miles on the vehicle). Table 2 below shows the age distribution of the surveyed vehicles. Figure 2 and Figure 3 provide the distribution and cumulative distribution of surveyed vehicles by age. Vehicles three years old or less comprised nearly a quarter of the fleet (23.17%), while over half the vehicles (52.85%) were six

years old or less. Three-quarters of the vehicles (76.02%) were ten years of age or less. A total of 246 vehicles responded to the age of vehicle question, and all of the vehicles reported odometer values. The average reported odometer value for all vehicles was 249,538 miles per vehicle and the average vehicle age was 7.64 years.

Table 2. Commercial Vehicle Age Distribution.

Age	Number of Vehicles	Percent of Total	Cumulative Percent of Total	Vehicles with Odometer Values Reported	Percent of Total	Average Reported Odometer Value
1	11	4.47	4.47	11	4.47	8,531
2	20	8.13	12.60	20	8.13	62,131
3	26	10.57	23.17	26	10.57	129,781
4	21	8.54	31.71	21	8.54	139,137
5	29	11.79	43.50	29	11.79	223,423
6	23	9.35	52.85	23	9.35	305,553
7	12	4.88	57.72	12	4.88	459,503
8	16	6.50	64.23	16	6.50	267,623
9	11	4.47	68.70	11	4.47	256,373
10	18	7.32	76.02	18	7.32	167,915
11	18	7.32	83.33	18	7.32	315,512
12	5	2.03	85.37	5	2.03	338,225
13	9	3.66	89.02	9	3.66	629,175
14	4	1.63	90.65	4	1.63	254,706
15	4	1.63	92.28	4	1.63	621,109
16	2	0.81	93.09	2	0.81	774,913
17	4	1.63	94.72	4	1.63	485,431
18	2	0.81	95.53	2	0.81	551,082
19	2	0.81	96.34	2	0.81	570,295
20	0	0.00	96.34	0	0.00	0
>20	9	3.66	100.00	9	3.66	259,746
Total	246	100.00		246	100.00	

Figure 2. Commercial Vehicle Age Distribution.

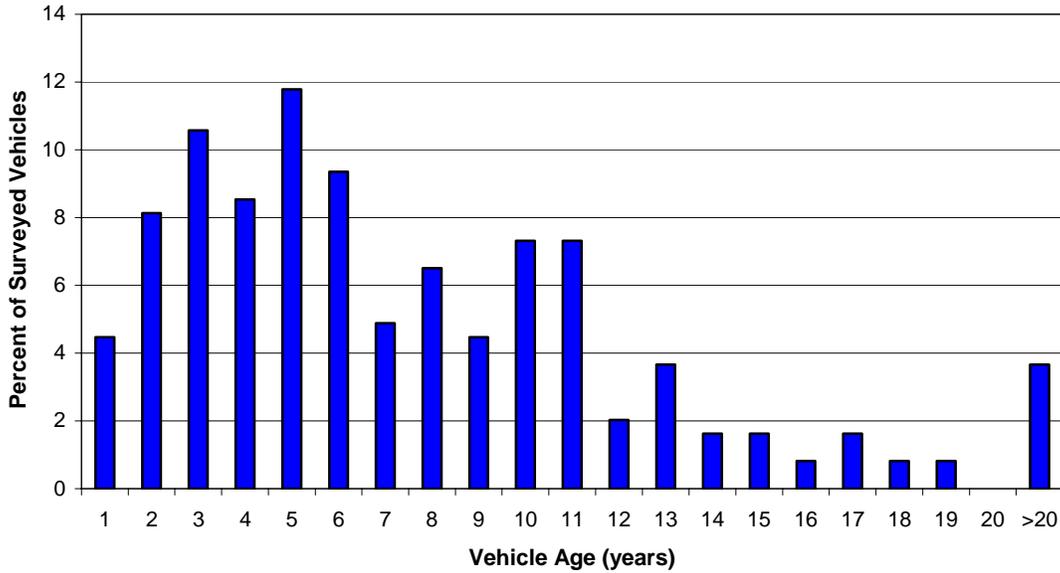
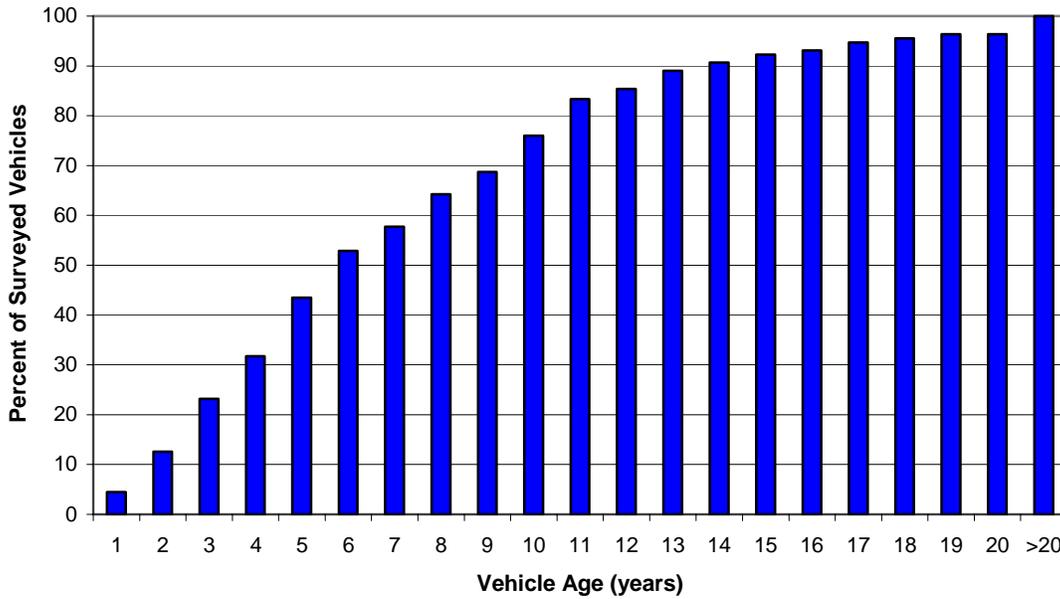


Figure 3. Cumulative Vehicle Age Distribution.



The majority of the respondents surveyed listed diesel as the fuel utilized by the vehicle. Diesel accounted for 96.75 percent of the fuel types, followed by unleaded gasoline at 2.44 percent. Two vehicles (0.81%) reported using propane.

Single unit 2-axle vehicles comprised 52.44 percent of the sample, with single unit 3-axle vehicles accounting for 11.79 percent of the sample. Tractor-trailers accounted for an additional 31.30 percent of the sample. The distribution of vehicle classification information is provided in Table 3.

Table 3. Vehicle Classification Distribution.

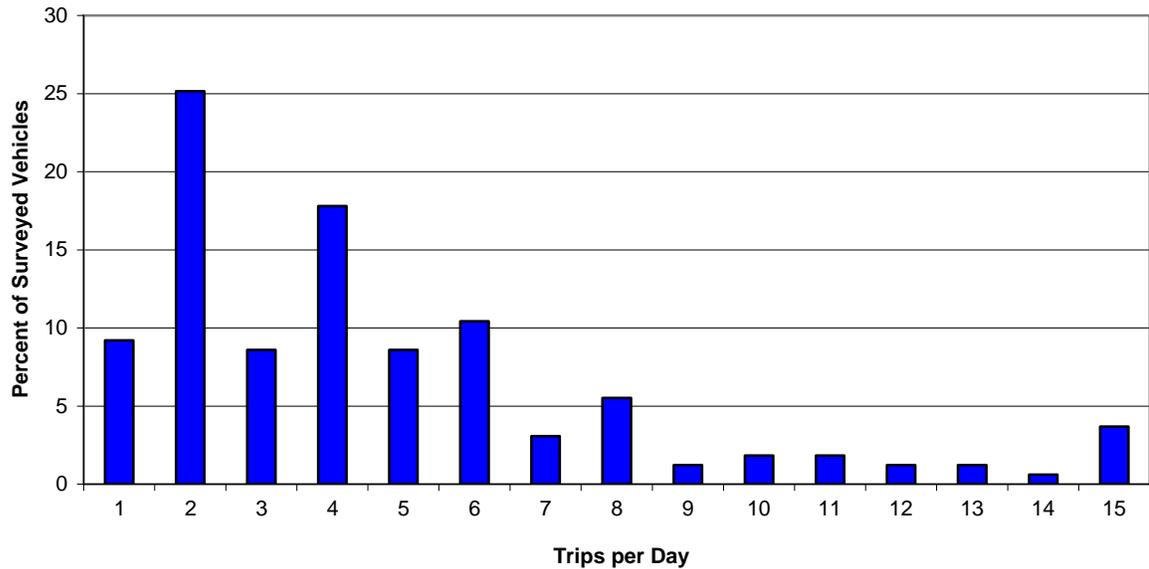
Vehicle Classification	Number of Vehicles	Percent of Total	Cumulative Number	Cumulative Percent
Single Unit 2-axle (6 wheels)	129	52.44	129	52.44
Single Unit 3-axle (10 wheels)	29	11.79	158	64.23
Single Unit 4-axle (14 wheels)	6	2.44	164	66.67
Semi (all tractor-trailer combinations)	77	31.30	241	97.97
Other	5	2.03	246	100.00
Total	246	100.00		

The distribution of the number of trips per day for commercial vehicles is provided in Table 4 and Figure 4. The greatest percentage of vehicles (25.15%) made only two trips and approximately half (60.74%) made four or fewer trips per day. Nearly a tenth of the vehicles (10.43%) made 10 or more trips per day. Six vehicles (3.68%) made 15 trips in one day. The average number of trips per day per vehicle was 4.72.

Table 4. Distribution of Vehicles by Total Number of Trips.

Number of Trips per Day	Number of Vehicles	Percent of Total	Cumulative Total	Number of Trips per Day	Number of Vehicles	Percent of Total	Cumulative Total
1	15	9.20	9.20	9	2	1.23	89.57
2	41	25.15	34.36	10	3	1.84	91.41
3	14	8.59	42.94	11	3	1.84	93.25
4	29	17.79	60.74	12	2	1.23	94.48
5	14	8.59	69.33	13	2	1.23	95.71
6	17	10.43	79.75	14	1	0.61	96.32
7	5	3.07	82.82	15	6	3.68	100.00
8	9	5.52	88.34	Total	163	100.00	

Figure 4. Vehicle Trip Count Distribution.



The number of trips per day by vehicle classification is provided in Table 5. Due to similarities among certain classes of vehicles, the classification groups provided in Table 3 are aggregated into three new groups. For the remainder of the analysis, all of the single unit multi-axle vehicles are aggregated into a “small-medium” classification. Semi/tractor-trailer combinations are listed as the “large” classification, and any vehicles listed as other are categorized as “other”. 74.85 percent of the trips shown in Table 5 were made by vehicles in the small-medium category and large vehicles accounted for 23.31 percent of the trips. Vehicles in the ‘other’ category accounted for the remaining 1.84 percent. The total number of vehicles provided in Table 4 and Table 5 (163) is significantly less than the total number of surveyed vehicles (246). The reason for this is that for this portion of the analysis, vehicles making any external trips were removed from the analysis. Although this amounts to 33.74 percent of the vehicles being removed, trip related characteristics for vehicles making external trips are included in the trip tour characteristics portion of the analysis.

Table 5. Distribution of Total Number of Trips by Vehicle Classification.

Number of Trips per Day	Small-Medium Vehicles		Large Vehicles		Other Vehicles		Total
	Number of Vehicles	Percent of Total	Number of Vehicles	Percent of Total	Number of Vehicles	Percent of Total	
1	10	8.20	5	13.16	0	0.00	15
2	27	22.13	14	36.84	0	0.00	41
3	10	8.20	3	7.89	1	33.33	14
4	26	21.31	3	7.89	0	0.00	29
5	12	9.84	2	5.26	0	0.00	14
6	9	7.38	7	18.42	1	33.33	17
7	4	3.28	0	0.00	1	33.33	5
8	8	6.56	1	2.63	0	0.00	9
9	1	0.82	1	2.63	0	0.00	2
10	3	2.46	0	0.00	0	0.00	3
11	2	1.64	1	2.63	0	0.00	3
12	1	0.82	1	2.63	0	0.00	2
13	2	1.64	0	0.00	0	0.00	2
14	1	0.82	0	0.00	0	0.00	1
15	6	4.92	0	0.00	0	0.00	6
Total	122	100.00	38	100.00	3	100.00	163

Trip Purpose and Cargo Characteristics

An analysis of the distribution of trip origins (productions) and destinations (attractions) disaggregated by land use type are provided in Table 6. The largest percentage of trip origins and destinations was classified as industrial (28.74% and 28.22%, respectively). Industrial, retail, residential, and office building land use types accounted for 74.51 percent of the origins and 73.73 percent of the destinations. The survey instrument provided two educational land use categories (12th grade or less and college/trade/etc.), but for the purpose of the analysis, the two categories were combined into one.

Table 6. Distribution of Trip Origins and Destinations by Land Use Activity.

Land Use Type	Origins	Percent of Total	Destinations	Percent of Total
Office Building	69	8.97	64	8.32
Retail	133	17.30	138	17.95
Industrial	221	28.74	217	28.22
Medical	7	0.91	8	1.04
Educational	5	0.65	5	0.65
Government	12	1.56	13	1.69
Residential	150	19.51	148	19.25
Airport	1	0.13	0	0.00
Eating Establishment	30	3.90	33	4.29
Other	141	18.34	143	18.60
Refused/Unknown	0	0.00	0	0.00
Total	769	100.00	769	100.00

A large majority of the trip origins and destinations (78.93%) were for the small-medium vehicle classification. Large vehicles accounted for 18.99 percent of the trip origins and destinations, and the remaining 2.08 percent was comprised of other vehicles . Table 7 provides the trip origins by land use type and vehicle classification while Table 8 provides the trip destinations for the same categories.

Table 7. Distribution of Trip Origins by Land Use Type and Vehicle Classification.

Land Use Type	Small-Medium Vehicles		Large Vehicles		Other Vehicles		Total
	Number of Vehicles	Percent of Total	Number of Vehicles	Percent of Total	Number of Vehicles	Percent of Total	
Office Building	47	7.74	18	12.33	4	25.00	69
Retail	90	14.83	42	28.77	1	6.25	133
Industrial	171	28.17	50	34.25	0	0.00	221
Medical	5	0.82	2	1.37	0	0.00	7
Educational	4	0.66	1	0.68	0	0.00	5
Government	12	1.98	0	0.00	0	0.00	12
Residential	150	24.71	0	0.00	0	0.00	150
Airport	1	0.16	0	0.00	0	0.00	1
Eating Estab.	27	4.45	2	1.37	1	6.25	30
Other	100	16.47	31	21.23	10	62.50	141
Refused/Unknown	0	0.00	0	0.00	0	0.00	0
Total	607	100.00	146	100.00	16	100.00	769

Table 8. Distribution of Trip Destinations by Land Use Type and Vehicle Classification.

Land Use Type	Small-Medium Vehicles		Large Vehicles		Other Vehicles		Total
	Number of Vehicles	Percent of Total	Number of Vehicles	Percent of Total	Number of Vehicles	Percent of Total	
Office Building	44	7.25	17	11.64	3	18.75	64
Retail	98	16.14	39	26.71	1	6.25	138
Industrial	164	27.02	52	35.62	1	6.25	217
Medical	5	0.82	3	2.05	0	0.00	8
Educational	4	0.66	1	0.68	0	0.00	5
Government	13	2.14	0	0.00	0	0.00	13
Residential	148	24.38	0	0.00	0	0.00	148
Airport	0	0.00	0	0.00	0	0.00	0
Eating Estab.	30	4.94	2	1.37	1	6.25	33
Other	101	16.64	32	21.92	10	62.50	143
Refused/Unknown	0	0.00	0	0.00	0	0.00	0
Total	607	100.00	146	100.00	16	100.00	769

Table 9 summarizes the analysis of trip purposes reported in the survey in terms of the trip origin and destination. The most common trip purpose reported at both the origin and destination was delivery (47.46% and 49.41%, respectively). 24.71 percent of the origin purposes and 21.46 percent of the destination purposes were listed as ‘base location/return to base’.

Table 9. Trip Purpose Origin – Destination Summary.

Trip Origin Purpose	Trip Destination Purpose								
	Base Location/ Return to Base	Delivery	Pick-up	Vehicle Maintenance	Driver Needs	To Home	Other	No Response	Total
Base Location/ Return to Base	4	136	22	6	3	3	16	0	190
Delivery	115	183	48	7	9	0	3	0	365
Pick-up	14	47	47	0	2	1	1	0	112
Vehicle Maintenance	6	3	1	2	0	0	3	0	15
Driver Needs	3	7	1	0	0	0	8	0	19
To Home	2	2	0	0	0	0	0	0	4
Other	21	2	2	0	5	0	34	0	64
No Response	0	0	0	0	0	0	0	0	0
Total Trips	165	380	121	15	19	4	65	0	769

A more detailed breakdown by vehicle classification is provided in Table 10. As with the overall totals, ‘delivery’ was the most commonly cited origin and destination purpose (46.79% and 48.27%, respectively) for the small-medium category. In the large category, 55.48 percent of the origin purposes and 59.59 percent of the destination purposes were listed as ‘delivery’.

Table 10. Trip Purpose Origin – Destination Summary by Vehicle Classification.

Small-Medium Vehicles									
Trip Origin Purpose	Trip Destination Purpose								
	Base Location/ Return to Base	Delivery	Pick-up	Vehicle Maintenance	Driver Needs	To Home	Other	No Response	Total
Base Location/ Return to Base	4	106	18	3	1	3	15	0	150
Delivery	89	150	29	5	8	0	3	0	284
Pick-up	13	26	46	0	2	1	1	0	89
Vehicle Maintenance	2	2	1	0	0	0	3	0	8
Driver Needs	3	5	1	0	0	0	6	0	15
To Home	2	2	0	0	0	0	0	0	4
Other	18	2	2	0	4	0	31	0	57
No Response	0	0	0	0	0	0	0	0	0
Total Trips	131	293	97	8	15	4	59	0	607
Large Vehicles									
Trip Origin Purpose	Trip Destination Purpose								
	Base Location/ Return to Base	Delivery	Pick-up	Vehicle Maintenance	Driver Needs	To Home	Other	No Response	Total
Base Location/ Return to Base	0	30	4	1	1	0	0	0	36
Delivery	26	33	19	2	1	0	0	0	81
Pick-up	1	21	1	0	0	0	0	0	23
Vehicle Maintenance	2	1	0	0	0	0	0	0	3
Driver Needs	0	2	0	0	0	0	0	0	2
To Home	0	0	0	0	0	0	0	0	0
Other	1	0	0	0	0	0	0	0	1
No Response	0	0	0	0	0	0	0	0	0
Total Trips	30	87	24	3	2	0	0	0	146

Table 10. Trip Purpose Origin – Destination Summary by Vehicle Classification (cont).

Other Vehicles									
Trip Origin Purpose	Trip Destination Purpose								
	Base Location/ Return to Base	Delivery	Pick-up	Vehicle Maintenance	Driver Needs	To Home	Other	No Response	Total
Base Location/ Return to Base	0	0	0	2	1	0	1	0	4
Delivery	0	0	0	0	0	0	0	0	0
Pick-up	0	0	0	0	0	0	0	0	0
Vehicle Maintenance	2	0	0	2	0	0	0	0	4
Driver Needs	0	0	0	0	0	0	2	0	2
To Home	0	0	0	0	0	0	0	0	0
Other	2	0	0	0	1	0	3	0	6
No Response	0	0	0	0	0	0	0	0	0
Total Trips	4	0	0	4	2	0	6	0	16

Drivers of commercial vehicles were asked to provide the type of cargo being delivered or picked up at each stop. The results of the responses are provided in Table 11. For cargo origins, ‘clay, concrete, glass, or stone’ was the most common response (16.12%), followed by manufactured goods (11.57%) and miscellaneous shipments (10.79%). At the destination, empty was the most common response (14.82%). Other common cargos at the destination include ‘clay, concrete, glass, or stone’ (14.04%), manufactured goods (10.79%), and miscellaneous shipments (9.23%).

Table 11. Distribution of Cargo Types by Origin and Destination.

Cargo Description		Surveyed Cargo at Origin	Percent of Total	Surveyed Cargo at Destination	Percent of Total
1	— Farm Products	7	0.91	5	0.65
2	— Forest Products	9	1.17	7	0.91
3	— Marine Products	1	0.13	1	0.13
4	— Metals and Minerals	25	3.25	23	2.99
5	— Food, Health, and Beauty Products	69	8.97	64	8.32
6	— Tobacco Products	1	0.13	1	0.13
7	— Textiles	6	0.78	5	0.65
8	— Wood Products	58	7.54	52	6.76
9	— Printer Matter	14	1.82	14	1.82
10	— Chemical Products	3	0.39	3	0.39
11	— Refined Petroleum or Coal Products	35	4.55	28	3.64
12	— Rubber, Plastic, and Styrofoam Products	9	1.17	8	1.04
13	— Clay, Concrete, Glass, or Stone	124	16.12	108	14.04
14	— Manufactured Goods/Equipment	89	11.57	83	10.79
15	— Wastes	45	5.85	48	6.24
16	— Miscellaneous Shipments	83	10.79	71	9.23
17	— Hazardous Materials	59	7.67	55	7.15
18	— Transportation	5	0.65	5	0.65
19	— Unclassified Cargo	6	0.78	7	0.91
20	— Driver Refused to Answer	0	0.00	0	0.00
21	— Unknown to Driver	5	0.65	4	0.52
22	— Empty	65	8.45	114	14.82
23	— Other	51	6.63	63	8.19
	Total	769	100.00	769	100.00

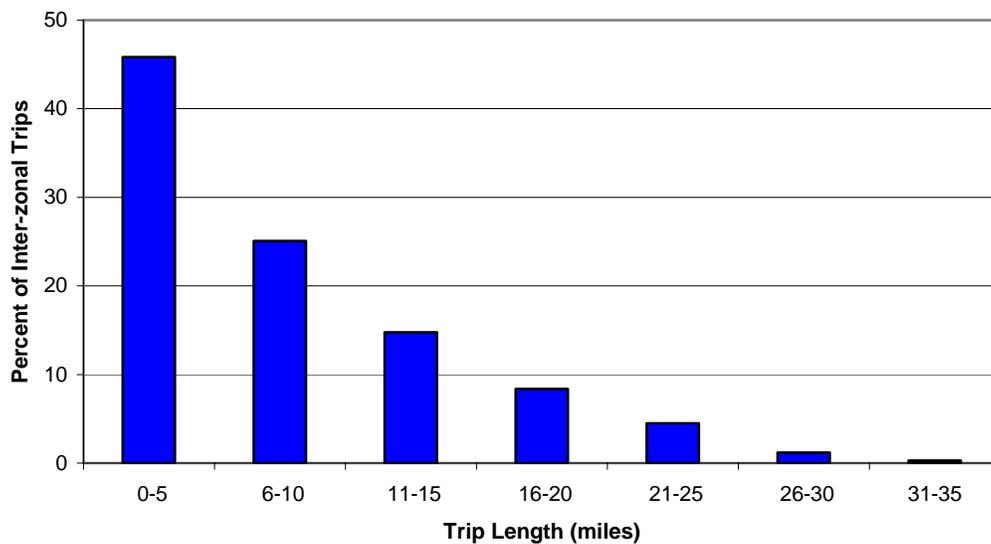
Survey Trip Length Characteristics

As part of the survey, respondents were asked to provide odometer readings at the beginning and end of each trip. This data can be useful in estimating the trip lengths of external and intra-zonal trips. Reported trip lengths for inter-zonal trips can also be compared with trips lengths provided in network travel time and distance matrices. However, when reviewing the completed data set a high number of inconsistent and inaccurate odometer values were observed. In an effort to not compromise the integrity of the analysis, reported odometer values were not used in the analysis of trip length measurements. As a result, trip length frequency distribution results are based on network travel time and distance matrices and contain information on only local (inter-zonal) trips. The results of this analysis are provided in Table 12 and in Figure 5. Nearly half of the trips (45.82%) were less than five miles in length. Only 5.97 percent of the trips were longer than twenty miles. The average trip length for all trips was 8.47 miles.

Table 12. Trip Length Frequency Distribution for Local Trips (grouped intervals).

Trip Length (miles)	Number of Trips	Percent of Trips
0-5	307	45.82
6-10	168	25.07
11-15	99	14.78
16-20	56	8.36
21-25	30	4.48
26-30	8	1.19
31-35	2	0.30
Total	670	100.00

Figure 5. Trip Length Frequency Distribution for Local Trips (grouped intervals).



In order to provide a more detailed summary, Table 13 provides the grouped interval trip length frequency distribution by vehicle classification. Additionally, trip length frequency distribution information is also provided in an ungrouped format in Table 14 and Figure 6.

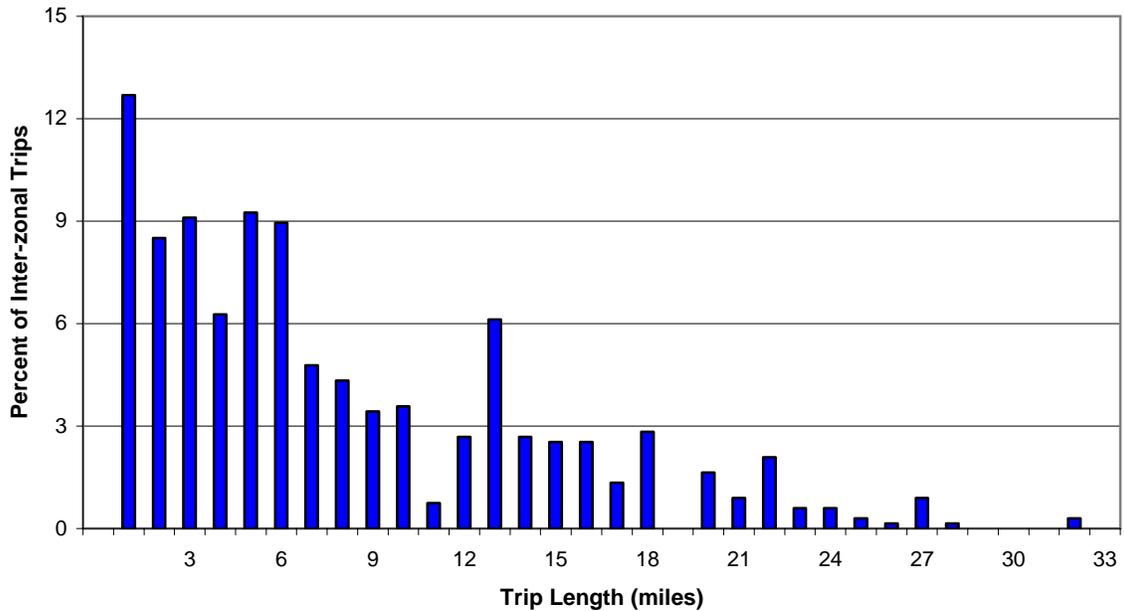
Table 13. Trip Length Frequency Distribution by Vehicle Classification for Local Trips.

Trip Length (miles)	Small-Medium Vehicles		Large Vehicles		Other Vehicles		Total
	Number of Vehicles	Percent of Total	Number of Vehicles	Percent of Total	Number of Vehicles	Percent of Total	
0-5	227	43.07	72	56.25	8	53.33	307
6-10	125	23.72	37	28.91	6	40.00	168
11-15	91	17.27	7	5.47	1	6.67	99
16-20	48	9.11	8	6.25	0	0.00	56
21-25	26	4.93	4	3.13	0	0.00	30
26-30	8	1.52	0	0.00	0	0.00	8
31-35	2	0.38	0	0.00	0	0.00	2
Total	527	100.00	128	100.00	15	100.00	670

Table 14. Ungrouped Trip Length Frequency Distribution for Local Trips.

Trip Length (miles)	Number of Trips	Percent of Trips	Trip Length (miles)	Number of Trips	Percent of Trips
1	85	12.69	17	9	1.34
2	57	8.51	18	19	2.84
3	61	9.10	19	0	0.00
4	42	6.27	20	11	1.64
5	62	9.25	21	6	0.90
6	60	8.96	22	14	2.09
7	32	4.78	23	4	0.60
8	29	4.33	24	4	0.60
9	23	3.43	25	2	0.30
10	24	3.58	26	1	0.15
11	5	0.75	27	6	0.90
12	18	2.69	28	1	0.15
13	41	6.12	29	0	0.00
14	18	2.69	30	0	0.00
15	17	2.54	31	0	0.00
16	17	2.54	32	2	0.30
			Total	670	100.00

Figure 6. Ungrouped Trip Length Frequency Distribution for Local Trips.



Mean trip lengths for internal trips by land use type at the destination are presented in Table 15. The table also provides the mean trip lengths by vehicle classification. Internal (local) trip lengths are relatively small, and in Tyler the overall average was 8.47 miles. The averages ranged from 6.85 miles for the medical land uses to 13.11 miles for educational land use destinations. The shortest and longest mean trip length for land use types was more varied when the data were disaggregated by vehicle classification. For example, in the small-medium vehicle classification, the shortest mean trip length was for the residential land use type (7.14 miles) and the longest mean trip length was 14.35 miles for the educational category.

Table 15. Mean Trip Length for Local Trips.

Land Use Type	Overall Mean Trip Length (miles)	Mean Trip Length (miles)		
		Small-Medium Vehicles	Large Vehicles	Other Vehicles
Office Building	7.43	7.81	7.20	3.66
Retail	7.33	8.15	5.45	—
Industrial	8.46	9.03	6.86	2.35
Medical	6.85	8.38	4.31	—
Educational	13.11	14.35	8.15	—
Government	7.89	7.89	—	—
Residential	7.14	7.14	—	—
Airport	—	—	—	—
Eating Establishment	6.95	7.31	4.76	1.33
Other	12.18	13.48	9.01	6.44
Refused/Unknown	—	—	—	—
Average	8.47	9.00	6.66	5.27

Survey Travel Time and Speed Characteristics

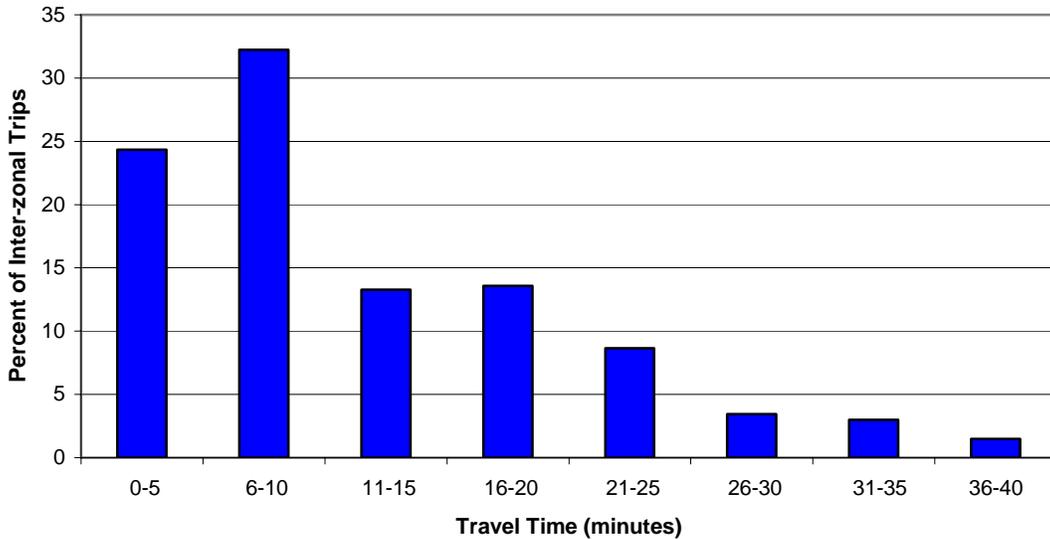
Survey respondents were also asked to provide arrival and departure times for each logged trip on the survey day. Since external and intra-zonal travel time data is not provided in network travel time and distance matrices, reported travel times can provide information useful in estimating travel times for these types of trips. Additionally, reported travel times for inter-zonal trips can be compared to travel times provided in network travel time and distance matrices. However, much like the reported trip length information, reported travel time data in Tyler was found to be illogical and inaccurate. For instance, there were numerous occasions where a trip would be reported to arrive at the next location before it left the previous location. Additionally, it was observed that the time information provided for arrivals and departures was almost always rounded off. Most often the times were rounded off to either 15 or 30 minute increments. As a result, reported travel time information was not utilized in the analysis of travel time characteristics. All travel time results are for inter-zonal trips and are based on network travel time matrices. The results of this analysis are provided in Table 16 and Figure 7. The most prevalent time interval was 6-10 minutes. Nearly one-third of the trips (32.24%) fell into this

range. Over half of the trips (56.57%) were less than ten minutes. Only 7.91 percent of the trips were longer than twenty-five minutes.

Table 16. Travel Time Frequency Distribution for Local Trips (grouped intervals).

Travel Time (minutes)	Number of Trips	Percent of Trips
0-5	163	24.33
6-10	216	32.24
11-15	89	13.28
16-20	91	13.58
21-25	58	8.66
26-30	23	3.43
31-35	20	2.99
36-40	10	1.49
Total	670	100.00

Figure 7. Travel Time Frequency Distribution for Local Trips (grouped intervals).



In order to provide a more detailed analysis, Table 17 provides the grouped interval travel time frequency distribution by vehicle classification. Additionally, travel time frequency distribution information is also provided in an ungrouped format in Table 18 and Figure 8.

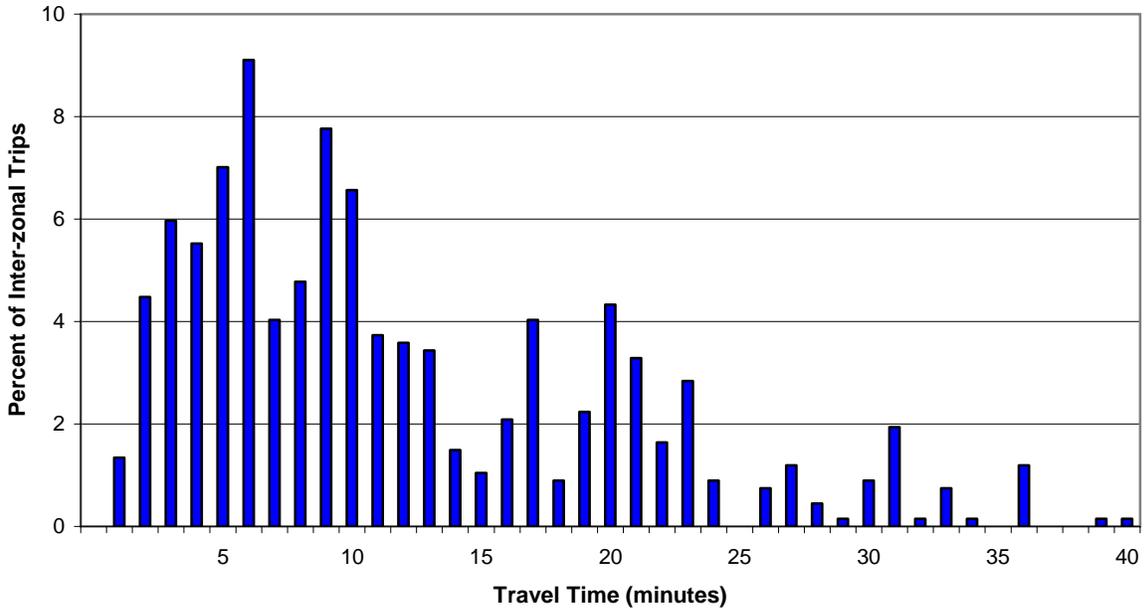
Table 17. Travel Time Frequency Distribution by Vehicle Classification for Local Trips.

Travel Time (minutes)	Small-Medium Vehicles		Large Vehicles		Other Vehicles		Total
	Number of Vehicles	Percent of Total	Number of Vehicles	Percent of Total	Number of Vehicles	Percent of Total	
0-5	120	22.77	36	28.13	7	46.67	163
6-10	161	30.55	52	40.63	3	20.00	216
11-15	67	12.71	18	14.06	4	26.67	89
16-20	83	15.75	7	5.47	1	6.67	91
21-25	49	9.30	9	7.03	0	0.00	58
26-30	19	3.61	4	3.13	0	0.00	23
31-35	19	3.61	1	0.78	0	0.00	20
36-40	9	1.71	1	0.78	0	0.00	10
Total	527	100.00	128	100.00	15	100.00	670

Table 18. Ungrouped Travel Time Frequency Distribution for Local Trips.

Travel Time (minutes)	Number of Trips	Percent of Trips	Travel Time (minutes)	Number of Trips	Percent of Trips
1	9	1.34	21	22	3.28
2	30	4.48	22	11	1.64
3	40	5.97	23	19	2.84
4	37	5.52	24	6	0.90
5	47	7.01	25	0	0.00
6	61	9.10	26	5	0.75
7	27	4.03	27	8	1.19
8	32	4.78	28	3	0.45
9	52	7.76	29	1	0.15
10	44	6.57	30	6	0.90
11	25	3.73	31	13	1.94
12	24	3.58	32	1	0.15
13	23	3.43	33	5	0.75
14	10	1.49	34	1	0.15
15	7	1.04	35	0	0.00
16	14	2.09	36	8	1.19
17	27	4.03	37	0	0.00
18	6	0.90	38	0	0.00
19	15	2.24	39	1	0.15
20	29	4.33	40	1	0.15
			Total	670	100.00

Figure 8. Ungrouped Travel Time Frequency Distribution for Local Trips.



Mean travel times for local trips by land use type at the destination are provided in Table 19. The overall mean travel time for Tyler was 12.37 minutes. The shortest mean travel time was for medical land use types (10.88 minutes) and the longest was 18.76 minutes for educational land use types. The table also provides the mean travel times by vehicle classification.

Table 19. Mean Travel Times for Local Trips.

Land Use Type	Overall Mean Travel Time (minutes)	Mean Travel Time (minutes)		
		Small-Medium Vehicles	Large Vehicles	Other Vehicles
Office Building	11.22	11.58	11.15	6.88
Retail	10.94	11.90	8.75	—
Industrial	12.02	12.61	10.38	5.00
Medical	10.88	12.83	7.64	—
Educational	18.76	20.91	10.15	—
Government	11.33	11.33	—	—
Residential	11.04	11.04	—	—
Airport	—	—	—	—
Eating Establishment	10.94	11.49	7.60	2.11
Other	17.07	18.70	13.24	9.63
Refused/Unknown	—	—	—	—
Average	12.37	13.01	10.23	8.27

In Tyler, the overall mean travel time was 12.37 minutes and the overall average speed for local trips was 38.00 miles per hour. Mean travel speeds for local trips by land use at the destination are provided in Table 20. The table also provides the travel speeds for each land use type by vehicle classification. Residential land use types had the lowest average travel speed (35.43 mph) and educational land use types had the highest average travel speed (41.05 mph).

Table 20. Mean Travel Speed for Local Trips.

Land Use Type	Overall Mean Speed (miles per hour)	Mean Speed (miles per hour)		
		Small-Medium Vehicles	Large Vehicles	Other Vehicles
Office Building	37.33	37.85	37.34	30.40
Retail	37.42	38.22	35.60	—
Industrial	38.76	39.79	35.91	28.22
Medical	35.93	37.82	32.77	—
Educational	41.05	39.27	48.19	—
Government	40.61	40.61	—	—
Residential	35.43	35.43	—	—
Airport	—	—	—	—
Eating Establishment	35.82	35.91	33.58	37.72
Other	40.67	41.58	37.71	37.85
Refused/Unknown	—	—	—	—
Average	38.00	38.50	36.21	35.71

Given the geographic size of the study area, mean trip length, travel time, and speed values seem reasonable. However, until better methods are available to provide more accurate reported odometer readings and arrival and departure times, there is a limited ability to compare the difference between observed values and transportation network travel time and distance matrices. Additionally, external and intra-zonal trip lengths and travel times can not be determined.

Trip Tour Characteristics

In an effort to ascertain the amount of circuitous travel performed by commercial vehicles, analyses of trip tours were conducted. A trip tour is defined as a combination (or chaining) of trips where a surveyed vehicle leaves and returns to a common point, typically the vehicle’s base location. In order to accurately analyze trip tour information, external trips had to be added back into the analysis. As a result, there are a total of 1325 trips recorded. This was done since it is possible for trip tours to begin within the study area, travel outside of the study area, and return

back during the one-day survey period. Therefore, to exclude external trip data would significantly reduce the accuracy of trip tour analyses.

For each trip recorded, information was provided on whether or not the trip origin location was the vehicle’s base location. This served as the basis for determining if the trip was a base trip or non-base trip. For a trip to be a base trip, either the origin or destination of the trip had to be at the base location. If neither trip end was at the base location, then the trip was a non-base trip. In Tyler, there were a total of 628 base trips (47.40%) and 697 non-base trips (52.60%). Table 21 provides a breakdown of base and non-base trip by vehicle classification.

Table 21. Base vs. Non-Base Trips by Functional Classification.

Trip Type	Small-Medium Vehicles		Large Vehicles		Other Vehicles		Total
	Number of Trips	Percent of Total	Number of Trips	Percent of Total	Number of Trips	Percent of Total	
Base	443	45.67	173	51.64	12	60.00	628
Non-Base	527	54.33	162	48.36	8	40.00	697
Total	970	100.00	335	100.00	20	100.00	1325

The sequence of trips provided by survey respondents was analyzed in order to determine the total number of trip tours that were made on the survey day as well as ascertain the number and type of trips made during each respective trip tour. The 246 commercial vehicles included in the analysis reported making 303 trip tours. A breakdown of the number and percent of tours performed per vehicle is provided in Table 22 and in Figure 9. A detailed breakdown by vehicle classification is provided in Table 23. The majority of the vehicles (72.76%) made only one trip tour on the survey day. The overwhelming majority of vehicles (94.31%) made two or less trip tours on the survey day. Seventeen vehicles (6.91%) reported making no trip tours and the most tours made in one day was six. The average number of tours per vehicle was 1.23. Additionally, there were 23 instances where a vehicle reported leaving a base location and it did not return to the base on the survey day. Reasons for this include a trip tour that involved traveling out of the study area and not returning until the next day, or instances when the vehicle operator took the vehicle to the person’s residence at the end of the day.

Table 22. Number and Percent of Trips Tours per Vehicle.

Number of Trip Tours	Number of Vehicles	Percent of Total	Cumulative Number	Cumulative Percent	Total Number of tours
0	17	6.91	17	6.91	0
1	179	72.76	196	79.67	179
2	36	14.63	232	94.31	72
3	7	2.85	239	97.15	21
4	5	2.03	244	99.19	20
5	1	0.41	245	99.59	5
6	1	0.41	246	100.00	6
Total	246	100.00			303

Figure 9. Number and Percent of Trip Tours per Vehicle.

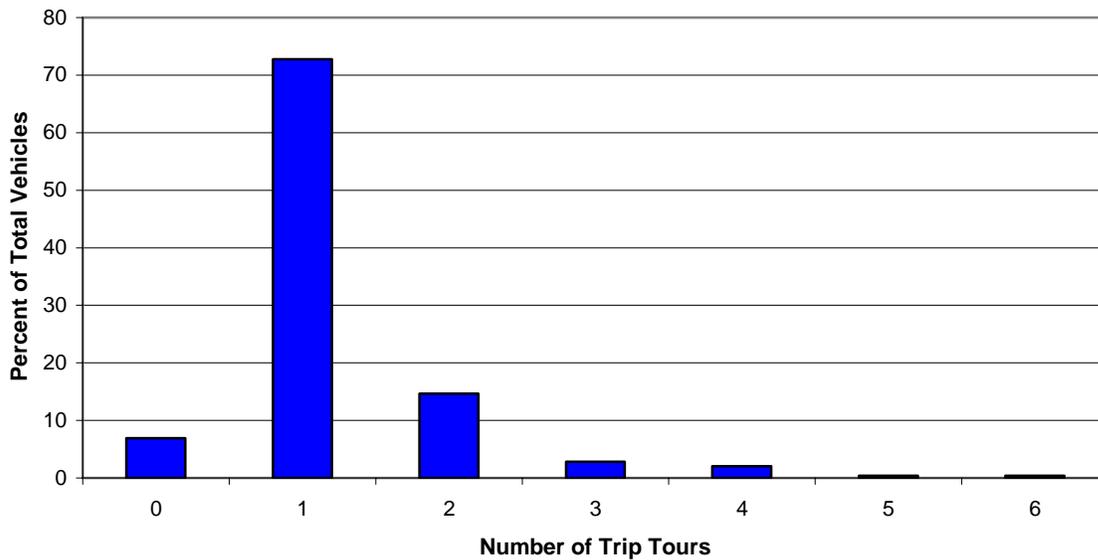


Table 23. Number and Percent of Trips Tours per Vehicle by Vehicle Classification.

Number of Trip Tours	Small-Medium Vehicles		Large Vehicles		Other Vehicles		Total
	Number of Vehicles	Percent of Total	Number of Vehicles	Percent of Total	Number of Vehicles	Percent of Total	
0	11	6.71	6	7.79	0	0.00	17
1	112	68.29	63	81.82	4	80.00	179
2	28	17.07	7	9.09	1	20.00	36
3	7	4.27	0	0.00	0	0.00	7
4	5	3.05	0	0.00	0	0.00	5
5	1	0.61	0	0.00	0	0.00	1
6	0	0.00	1	1.30	0	0.00	1
Total	164	100.00	77	100.00	5	100.00	246

Knowing the number of trip tours that were made is useful, but it does not reveal the total amount and type of travel that occurred during the course of the tour. Therefore, the analysis also ascertained the number and type of trips that were made in the trip tours. The review of trip tour data was divided into three components; the number of non-base trips within trip tours, the number of external trips within trip tours, and the number of internal trips within trip tours. The analysis provides the frequency that a particular vehicle made a specific number of trip types (i.e. non-base, external, and internal). In Table 24, the number of non-base trips that occurred within trip tours is provided. As shown in the table, all but one trip tour had two non-base trips. The number of non-base trips within trip tours by vehicle classification is provided in Table 25.

Table 24. Number and Percent of Non-Base Trips Within Trip Tours.

Number of Trips	Frequency	Percent of Total	Cumulative Number	Cumulative Percent
0	0	0.00	0	0.00
1	1	0.33	1	0.33
2	302	99.67	303	100.00
Total	303	100.00		

Table 25. Number and Percent of Non-Base Trips Within Trip Tours by Vehicle Classification.

Number of Trips	Small-Medium Vehicles		Large Vehicles		Other Vehicles		Total
	Frequency	Percent of Total	Frequency	Percent of Total	Frequency	Percent of Total	
0	0	0.00	0	0.00	0	0.00	0
1	1	0.47	0	0.00	0	0.00	1
2	213	99.53	83	100.00	6	100.00	302
Total	214	100.00	83	100.00	6	100.00	303

The number and percent of external trips within trip tours is provided in Table 26, while Table 27 provides the information by vehicle classification. Over half of the trip tours (55.12%) did not have any external trips. Two external trips within a tour was the second most common occurrence (23.43%). This is logical since each trip leaving the study area needs to have a trip returning to the study area in order to make a completed tour possible. However, there was one trip tour that recorded only one external trip. This appears to be an illogical event.

Table 26. Number and Percent of External Trips Within Trip Tours.

Number of Trips	Frequency	Percent of Total	Cumulative Number	Cumulative Percent
0	167	55.12	167	55.12
1	1	0.33	168	55.45
2	71	23.43	239	78.88
3	23	7.59	262	86.47
4	14	4.62	276	91.09
5	4	1.32	280	92.41
6	9	2.97	289	95.38
7	2	0.66	291	96.04
8	3	0.99	294	97.03
9	3	0.99	297	98.02
10	2	0.66	299	98.68
11	1	0.33	300	99.01
12	2	0.66	302	99.67
13	0	0.00	302	99.67
14	0	0.00	302	99.67
15	1	0.33	303	100.00
Total	303	100.00		

Table 27. Number and Percent of External Trips Within Trip Tours by Vehicle Classification.

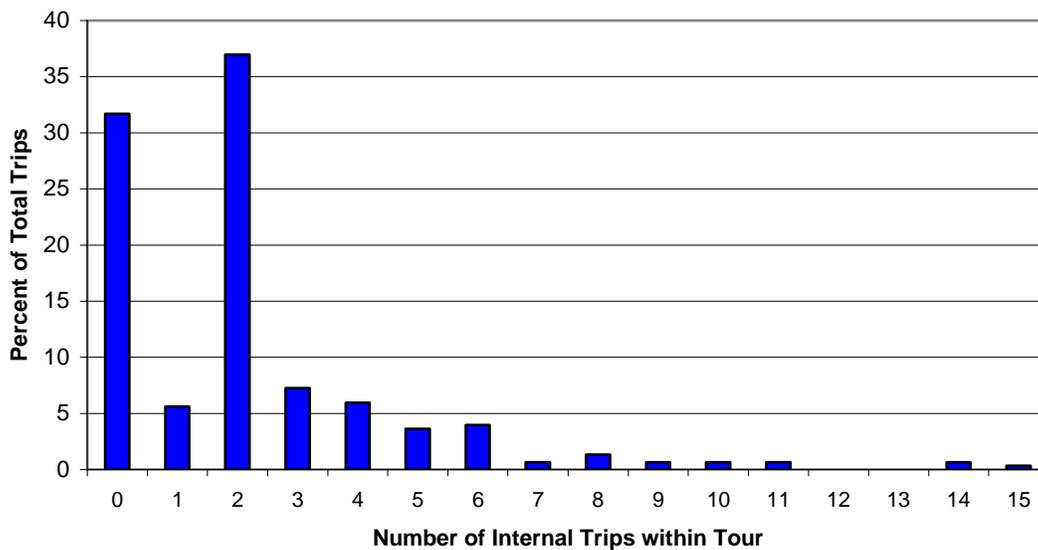
Number of Trips	Small-Medium Vehicles		Large Vehicles		Other Vehicles		Total
	Frequency	Percent of Total	Frequency	Percent of Total	Frequency	Percent of Total	
0	130	60.75	33	39.76	4	66.67	167
1	1	0.47	0	0.00	0	0.00	1
2	43	20.09	26	31.33	2	33.33	71
3	12	5.61	11	13.25	0	0.00	23
4	8	3.74	6	7.23	0	0.00	14
5	2	0.93	2	2.41	0	0.00	4
6	7	3.27	2	2.41	0	0.00	9
7	2	0.93	0	0.00	0	0.00	2
8	2	0.93	1	1.20	0	0.00	3
9	2	0.93	1	1.20	0	0.00	3
10	2	0.93	0	0.00	0	0.00	2
11	1	0.47	0	0.00	0	0.00	1
12	1	0.47	1	1.20	0	0.00	2
13	0	0.00	0	0.00	0	0.00	0
14	0	0.00	0	0.00	0	0.00	0
15	1	0.47	0	0.00	0	0.00	1
Total	214	100.00	83	100.00	6	100.00	303

The number and percent of internal trips within trip tours is provided in Table 28 and Figure 10. The largest percentage of trip tours (36.96%) had two internal trips. No internal trips within a tour was the second most common occurrence (31.68%). This is consistent with the fact that over forty percent of the trips in the analysis were external trips. Over ninety percent (91.09%) had five or less internal trips within their respective trip tours. Seven of the trip tours (2.31%) had ten or more internal trips.

Table 28. Number and Percent of Internal Trips Within Trip Tours.

Number of Trips	Frequency	Percent of Total	Cumulative Number	Cumulative Percent
0	96	31.68	96	31.68
1	17	5.61	113	37.29
2	112	36.96	225	74.26
3	22	7.26	247	81.52
4	18	5.94	265	87.46
5	11	3.63	276	91.09
6	12	3.96	288	95.05
7	2	0.66	290	95.71
8	4	1.32	294	97.03
9	2	0.66	296	97.69
10	2	0.66	298	98.35
11	2	0.66	300	99.01
12	0	0.00	300	99.01
13	0	0.00	300	99.01
14	2	0.66	302	99.67
15	1	0.33	303	100.00
Total	303	100.00		

Figure 10. Number and Percent of Internal Trips Within Trip Tours.

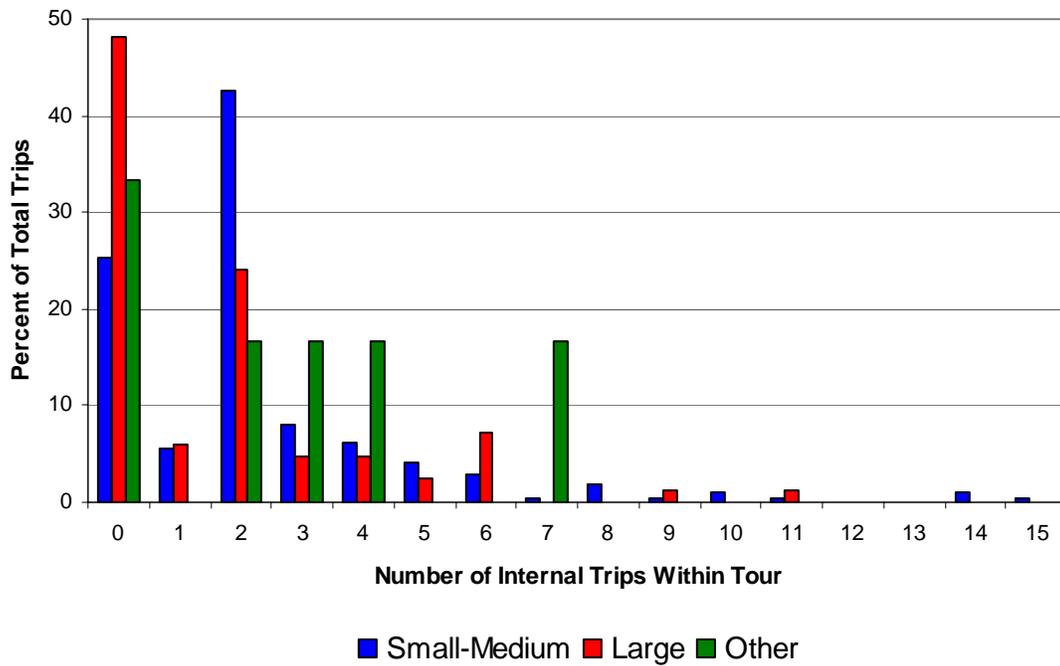


The number and percent of internal trips within trip tours are disaggregated by vehicle classification and are provided in Table 29 and Figure 11.

Table 29. Number and Percent of Internal Trips Within Trip Tours by Vehicle Classification.

Number of Trips	Small-Medium Vehicles		Large Vehicles		Other Vehicles		Total
	Frequency	Percent of Total	Frequency	Percent of Total	Frequency	Percent of Total	
0	54	25.23	40	48.19	2	33.33	96
1	12	5.61	5	6.02	0	0.00	17
2	91	42.52	20	24.10	1	16.67	112
3	17	7.94	4	4.82	1	16.67	22
4	13	6.07	4	4.82	1	16.67	18
5	9	4.21	2	2.41	0	0.00	11
6	6	2.80	6	7.23	0	0.00	12
7	1	0.47	0	0.00	1	16.67	2
8	4	1.87	0	0.00	0	0.00	4
9	1	0.47	1	1.20	0	0.00	2
10	2	0.93	0	0.00	0	0.00	2
11	1	0.47	1	1.20	0	0.00	2
12	0	0.00	0	0.00	0	0.00	0
13	0	0.00	0	0.00	0	0.00	0
14	2	0.93	0	0.00	0	0.00	2
15	1	0.47	0	0.00	0	0.00	1
Total	214	100.00	83	100.00	6	100.00	303

Figure 11. Number and Percent of Internal Trips Within Trip Tours by Vehicle Classification.



SURVEY EXPANSION

Expansion of the commercial vehicle survey data was performed in an indirect manner. Typically, an estimate of the population being sampled is known and the survey data are expanded to represent that population. However, the population of commercial vehicles operating in the Tyler area is unknown. Vehicle registration was not considered a viable basis for estimation purposes since vehicles registered in counties outside of Smith County may be operating within the study area.

The methodology utilized for expanding the survey data was vehicle miles of travel estimates from the Highway Performance Monitoring System (HPMS) combined with vehicle classification counts by functional classification. Essentially, an estimate of the commercial vehicle miles of travel is developed from the HPMS data and is then used to expand the vehicle miles of travel observed from sampled commercial vehicles.

HPMS data contains annual average daily traffic (AADT) estimates of the total vehicle miles of travel by functionally classified facilities. Since AADT includes weekend traffic, a correction factor was applied to the data in order to obtain average week day volumes by functional classification (freeway, arterial, collector, and local). As part of an external station motorist intercept survey, 24-hour vehicle classification counts were performed at all external stations in the Tyler area. Additionally, vehicle classification data were collected at 114 randomly selected locations within the study area. The percentage of commercial and non-commercial vehicles for each functional classification was determined for the external sites and internal sites separately. The percent of commercial vehicles (by functional classification) for internal sites was then averaged with the corresponding group of external sites. Since the majority of the vehicle classification counts were within the city limits of Tyler, the percentage of non-commercial and commercial vehicles were weighted so that counts in the rural areas could be more equitably represented. Table 30 provides the internal, external, and weighted percentage of commercial and non-commercial vehicles by functional classification as determined with the vehicle classification counts performed in 2003.

Table 30. Vehicle Classification Counts by Functional Classification.

Functional Classification	Percentage of Commercial Vehicles			Percentage of Non-Commercial Vehicles		
	Internal Avg. (0.3)	External Avg. (0.7)	Weighted Avg.	Internal Avg. (0.3)	External Avg. (0.7)	Weighted Avg.
Freeway	36.23	32.80	33.83	63.77	67.20	66.17
Arterial	8.16	16.90	14.28	91.84	83.10	85.72
Collector	4.32	13.30	10.60	95.68	86.70	89.40
Local	5.40	N/A	5.40	94.60	N/A	94.60

An assumption is made that the amount of travel on each facility by functional classification is equivalent to the percentage of vehicles counted on that facility. For example, since 8.16 percent of the vehicles counted on arterials were commercial vehicles, it is assumed that 8.16 percent of the vehicle miles of travel on arterials is being made by commercial vehicles. The estimate of commercial vehicle miles of travel within the study area may be developed by multiplying the

percentages provided in Table 30 with the 2003 HPMS vehicle miles of travel estimates which are provided in Table 31.

Table 31. 2003 HPMS Estimates of Week Day Vehicle Miles of Travel.

Functional Classification	Week Day Vehicle Miles of Travel
Freeway	1,067,446
Arterial	3,306,803
Collector	1,319,939
Local	512,799
Total	6,206,987

An adjustment must be made to these estimates in order to account for intra-zonal and external travel. The HPMS data includes all vehicle miles of travel. However, data from the commercial vehicle survey approximates vehicle miles of travel based on zone to zone distances as measured from the transportation network travel time and distance matrices used for travel demand modeling. Intra-zonal trips in the survey do not have an estimate of vehicle miles of travel because the travel distance associated with these trips via the transportation network is not known. The amount of vehicle miles of travel associated with intra-zonal commercial vehicle trips is not known, and it is assumed to be a relatively small amount. Therefore, for the purpose of this analysis, the vehicle miles of travel attributed to intra-zonal commercial vehicle trips is not removed from the HPMS totals.

However, vehicle miles of travel attributable to external commercial vehicles was removed in order to provide a more accurate estimate of vehicle miles of travel within the study area. In order to ascertain the estimated vehicle miles of travel for external commercial vehicles, the trip length for each external trip was multiplied by the total number of commercial vehicle trips recorded at external stations in the Tyler area. Using this methodology, it was estimated that there were 739,464 vehicle miles of travel attributed to external commercial vehicles.

The percentages of commercial vehicles by functional classification provided in Table 30 were then multiplied by the vehicle miles of travel by functional classification. The result is the estimated total week day commercial vehicle miles of travel by functional classification. This information is provided in Table 32.

Table 32. Estimates of Commercial Vehicle Miles of Travel.

Functional Classification	Percentage of Commercial Vehicles	Adjusted Vehicle Miles of Travel	Estimated Commercial Vehicle Miles of Travel
Freeway	33.83	1,067,446	361,117
Arterial	14.28	3,306,803	472,211
Collector	10.60	1,319,939	139,914
Local	5.40	512,799	27,679
Total		6,206,987	1,000,921

Next, the external related commercial vehicle miles of travel (739,464) was removed to provide the total internal vehicle miles of travel attributable to commercial vehicles. The resulting vehicle miles of travel is 261,457.

The next step is the computation of the survey expansion factor. The commercial vehicle survey had a total of 246 respondents with useable data. There was a total of 1,325 trips recorded, of which 769 (58.04%) were internal. Of the internal trips, 670 (87.13%) were inter-zonal and 99 (12.87%) were intra-zonal. The amount of commercial vehicle miles of travel for surveyed vehicles was determined by summing the distance between all inter-zonal trip ends. Using lengths provided in the transportation network travel distance matrix, a total of 5,673 vehicle miles were attributed to surveyed commercial vehicles. The resulting average vehicle miles traveled per trip was 8.47 miles. To obtain the survey expansion factor, the population vehicle miles of travel (261,457) is divided by the survey vehicle miles of travel (5,673). The resulting expansion factor is 46.1.

The expansion factor is then applied to the total number of inter-zonal commercial vehicle trips (670) to yield a total of 30,887 daily inter-zonal commercial vehicle trips in the Tyler area. The expansion factor is assumed to be reasonable for intra-zonal trips also. With approximately thirteen percent (12.87%) of the trips being intra-zonal, a total of 4,564 commercial trips in the

study area are estimated to be intra-zonal. The inter-zonal and intra-zonal trips combined amounts to 35,451. Since the average number of trips per commercial vehicle in the Tyler area is 4.72, the resulting average number of commercial vehicles operating within the study area on an average week day is 7,511.

SURVEY SUMMARY

The 2004 Tyler Commercial Vehicle Survey for the Tyler area provides information relative to the operating characteristics of commercial vehicles. Through the analysis of 246 commercial vehicles that participated in the survey, estimates of the total amount of commercial vehicles operating in the study area were developed. Survey data was combined with HPMS data to estimate that 261,457 vehicle miles of travel can be attributed to commercial vehicles operating internally on a daily basis. Additionally, the expansion of the survey data also provides an estimate of 35,451 internal trips and 7,511 commercial vehicles operating within the Tyler area each day.

In addition to providing expanded results related to vehicle miles of travel and number of commercial vehicles operating in the area, the survey provided valuable insight into the composition of the fleet, types of trips being made, and cargo related information. The average vehicle age was 7.64 years and the average reported odometer reading was 249,538. The average number of trips per day per truck was 4.72. A majority of the trips (52.60%) were non-base trips, over half the vehicles (60.74%) made four or fewer trips per day, and 72.76 percent of the vehicles made only one trip tour on the survey day. Additionally, the average trip length was 8.47 miles and the average travel time per trip was 12.37 minutes.

While the information provided in this analysis summarizes responses from a portion of the commercial vehicles operating within the study area, it is possible to presume that the results can be viewed as representative of the commercial fleet as a whole. However, due to unique characteristics of the Tyler area, the survey results are not applicable to other study areas. Each urbanized area needs to have an individual analysis conducted in order to ascertain the amount and characteristics of commercial vehicles in that area.

APPENDIX

Record Type 20
(Example Only)

COMMERCIAL VEHICLE SURVEY
PART 1: VEHICLE INFORMATION

(If you have participated in prior surveys, please fill out this form anyway.)

Vehicle ID#: _____

Vehicle License #: _____

Survey Location (zone): _____

SIC Code: _____

Travel Day: _____
Month / Day

Company, Public Agency, or Name of Owner (name on registration):

Address of location where vehicle was based at beginning of travel day:

(Street Address or Nearest Intersection)

City

State

ZIP

Vehicle Make: _____

Vehicle Model: _____

Vehicle Year: _____

Vehicle Fuel Type: 1) Leaded Gas 2) Unleaded Gas 3) Diesel 4) Propane

5) Other _____ (Specify)

Vehicle Classification:

- 1) Single Unit 2-axle (6 wheels)
- 2) Single Unit 3-axle (10 wheels)
- 3) Single Unit 4-axle (14 wheels)
- 4) Semi (all Tractor-Trailer combinations)
- 5) Other _____

Gross Vehicle Weight: _____ pounds

Beginning Odometer Reading: _____

(Example Only)
COMMERCIAL VEHICLE SURVEY
PART 2: TRIP INFORMATION

VEHICLE LICENSE #: _____
 BEGINNING ODOMETER READING: _____

BEGIN: MY FIRST TRIP TODAY BEGAN AT: (1) Base Location (6) Home (7) Other Location

PLEASE ENTER YOUR :

TRAVEL DAY _____
 Month / Day

DEPARTURE TIME: _____ Am
 pm

 (Fill in address)

 (Place/address or nearest intersection, city, county, state, zip code)

Stop Number	Location Address	When did you Arrive/Depart?	Purpose of Stop (check one)	Type of Activity at This Location (check one)	Type of Cargo (check one)	Facilities Used	
1 FIRST I WENT TO:	Name of Place	Arrive ____: ____	<input type="checkbox"/> (1) Base Location / Return to Base Location <input type="checkbox"/> (2) Delivery <input type="checkbox"/> (3) Pick-up <input type="checkbox"/> (4) Maintenance (fuel, oil, etc.) <input type="checkbox"/> (5) Driver Needs (lunch, etc.) <input type="checkbox"/> (6) To Home <input type="checkbox"/> (7) Other	<input type="checkbox"/> (1) Office building (non-government) <input type="checkbox"/> (2) Retail/Shopping/Gas <input type="checkbox"/> (3) Industrial/Manufacturing/Warehouse <input type="checkbox"/> (4) Medical <input type="checkbox"/> (5) Educational (12th grade or <) <input type="checkbox"/> (6) Educational (College, trade, etc.) <input type="checkbox"/> (7) Government <input type="checkbox"/> (8) Residential <input type="checkbox"/> (9) Airport <input type="checkbox"/> (10) Eating Establishment <input type="checkbox"/> (11) Other (Specify) _____ <input type="checkbox"/> (99) Do not know	<input type="checkbox"/> (1) Farm Products <input type="checkbox"/> (2) Forest Products <input type="checkbox"/> (3) Marine Products <input type="checkbox"/> (4) Metals & Minerals <input type="checkbox"/> (5) Food, Health & Beauty Products <input type="checkbox"/> (6) Tobacco Products <input type="checkbox"/> (7) Textiles <input type="checkbox"/> (8) Wood Products <input type="checkbox"/> (9) Printed Matter <input type="checkbox"/> (10) Chemical Products <input type="checkbox"/> (11) Refined Petroleum or Coal Products	<input type="checkbox"/> (12) Rubber, Plastic or Styrofoam Products <input type="checkbox"/> (13) Clay, Concrete, Glass or Stone <input type="checkbox"/> (14) Manufactured Goods / Equipment <input type="checkbox"/> (15) Wastes <input type="checkbox"/> (16) Miscellaneous <input type="checkbox"/> (17) Hazardous Materials <input type="checkbox"/> (18) Transportation <input type="checkbox"/> (19) Unclassified Cargo <input type="checkbox"/> (20) Driver Refused to Answer <input type="checkbox"/> (21) Unknown to Driver <input type="checkbox"/> (22) Empty <input type="checkbox"/> (23) No Cargo picked up or dropped off at location. *If 17 above, Hazardous Material Placard # _____	<input type="checkbox"/> (1) IH 20 <input type="checkbox"/> (2) US 59 <input type="checkbox"/> (3) US 69 <input type="checkbox"/> (4) US 271 <input type="checkbox"/> (5) US 79 <input type="checkbox"/> (6) SH 155 <input type="checkbox"/> (7) SH 31 <input type="checkbox"/> (8) SH 64 <input type="checkbox"/> (9) SH 110 <input type="checkbox"/> (10) SH 42 <input type="checkbox"/> (11) SH 135 <input type="checkbox"/> (12) SH 322 <input type="checkbox"/> (13) SH 149 <input type="checkbox"/> (14) SH 43 <input type="checkbox"/> (15) SH 300 <input type="checkbox"/> (16) Loop 323 <input type="checkbox"/> (17) Loop 281 <input type="checkbox"/> Other <input type="checkbox"/> (99) None
	Address, nearest intersection, landmark City/County/State/Zip If location written above is not Smith, Harrison, Gregg, Rusk, or Upshur county, which road did you use to leave the Tyler / Longview area? _____ (Road name)	a.m. p.m. Depart ____: ____ a.m. p.m.					
	Is this vehicle usually based at or out of this location? <input type="checkbox"/> Yes <input type="checkbox"/> No Odometer reading _____						

☞ We are collecting 'complete' information on all travel during the day. Please include ANY and ALL stops including lunch, restroom, convenient store, rest stops, etc. Please be sure to mark the 'OTHER' box under 'Purpose of Stop' and specify in the space provided. We appreciate your cooperation.

COMMERCIAL VEHICLE SURVEY PART 2: TRIP INFORMATION

Stop Number	Location Address	When did you Arrive/Depart?	Purpose of Stop (check one)	Type of Activity at This Location (check one)	Type of Cargo (check one)	Facilities Used	
2 THEN I WENT TO:	_____ Name of Place	Arrive ____:_____	<input type="checkbox"/> (1) Base Location / Return to Base Location <input type="checkbox"/> (2) Delivery <input type="checkbox"/> (3) Pick-up <input type="checkbox"/> (4) Maintenance (fuel, oil, etc.) <input type="checkbox"/> (5) Driver Needs (lunch, etc.) <input type="checkbox"/> (6) To Home <input type="checkbox"/> (7) Other	<input type="checkbox"/> (1) Office building (non-government) <input type="checkbox"/> (2) Retail/Shopping/Gas <input type="checkbox"/> (3) Industrial/Manufacturing/Warehouse <input type="checkbox"/> (4) Medical <input type="checkbox"/> (5) Educational (12th grade or <) <input type="checkbox"/> (6) Educational (College, trade, etc.) <input type="checkbox"/> (7) Government <input type="checkbox"/> (8) Residential <input type="checkbox"/> (9) Airport <input type="checkbox"/> (10) Eating Establishment <input type="checkbox"/> (11) Other (Specify) _____ <input type="checkbox"/> (99) Do not know	<input type="checkbox"/> (1) Farm Products <input type="checkbox"/> (2) Forest Products <input type="checkbox"/> (3) Marine Products <input type="checkbox"/> (4) Metals & Minerals <input type="checkbox"/> (5) Food, Health & Beauty Products <input type="checkbox"/> (6) Tobacco Products <input type="checkbox"/> (7) Textiles <input type="checkbox"/> (8) Wood Products <input type="checkbox"/> (9) Printed Matter <input type="checkbox"/> (10) Chemical Products <input type="checkbox"/> (11) Refined Petroleum or Coal Products <input type="checkbox"/> (12) Rubber, Plastic or Styrofoam Products <input type="checkbox"/> (13) Clay, Concrete, Glass or Stone	<input type="checkbox"/> (14) Manufactured Goods / Equipment <input type="checkbox"/> (15) Wastes <input type="checkbox"/> (16) Miscellaneous Materials <input type="checkbox"/> (17)* Hazardous <input type="checkbox"/> (18) Transportation <input type="checkbox"/> (19) Unclassified Cargo <input type="checkbox"/> (20) Driver Refused to Answer <input type="checkbox"/> (21) Unknown to Driver <input type="checkbox"/> (22) Empty <input type="checkbox"/> (23) No Cargo picked up or dropped off at location. *If 17 above, Hazardous Material Placard # _____	<input type="checkbox"/> (1) IH 20 <input type="checkbox"/> (2) US 59 <input type="checkbox"/> (3) US 69 <input type="checkbox"/> (4) US 271 <input type="checkbox"/> (5) US 79 <input type="checkbox"/> (6) SH 155 <input type="checkbox"/> (7) SH 31 <input type="checkbox"/> (8) SH 64 <input type="checkbox"/> (9) SH 110 <input type="checkbox"/> (10) SH 42 <input type="checkbox"/> (11) SH 135 <input type="checkbox"/> (12) SH 322 <input type="checkbox"/> (13) SH 149 <input type="checkbox"/> (14) SH 43 <input type="checkbox"/> (15) SH 300 <input type="checkbox"/> (16) Loop 323 <input type="checkbox"/> (17) Loop 281 <input type="checkbox"/> (18) Loop 281 <input type="checkbox"/> (19) Loop 281 <input type="checkbox"/> (20) Loop 281 <input type="checkbox"/> (21) Loop 281 <input type="checkbox"/> (22) Loop 281 <input type="checkbox"/> (23) Loop 281 <input type="checkbox"/> (24) Loop 281 <input type="checkbox"/> (25) Loop 281 <input type="checkbox"/> (26) Loop 281 <input type="checkbox"/> (27) Loop 281 <input type="checkbox"/> (28) Loop 281 <input type="checkbox"/> (29) Loop 281 <input type="checkbox"/> (30) Loop 281 <input type="checkbox"/> (31) Loop 281 <input type="checkbox"/> (32) Loop 281 <input type="checkbox"/> (33) Loop 281 <input type="checkbox"/> (34) Loop 281 <input type="checkbox"/> (35) Loop 281 <input type="checkbox"/> (36) Loop 281 <input type="checkbox"/> (37) Loop 281 <input type="checkbox"/> (38) Loop 281 <input type="checkbox"/> (39) Loop 281 <input type="checkbox"/> (40) Loop 281 <input type="checkbox"/> (41) Loop 281 <input type="checkbox"/> (42) Loop 281 <input type="checkbox"/> (43) Loop 281 <input type="checkbox"/> (44) Loop 281 <input type="checkbox"/> (45) Loop 281 <input type="checkbox"/> (46) Loop 281 <input type="checkbox"/> (47) Loop 281 <input type="checkbox"/> (48) Loop 281 <input type="checkbox"/> (49) Loop 281 <input type="checkbox"/> (50) Loop 281 <input type="checkbox"/> (51) Loop 281 <input type="checkbox"/> (52) Loop 281 <input type="checkbox"/> (53) Loop 281 <input type="checkbox"/> (54) Loop 281 <input type="checkbox"/> (55) Loop 281 <input type="checkbox"/> (56) Loop 281 <input type="checkbox"/> (57) Loop 281 <input type="checkbox"/> (58) Loop 281 <input type="checkbox"/> (59) Loop 281 <input type="checkbox"/> (60) Loop 281 <input type="checkbox"/> (61) Loop 281 <input type="checkbox"/> (62) Loop 281 <input type="checkbox"/> (63) Loop 281 <input type="checkbox"/> (64) Loop 281 <input type="checkbox"/> (65) Loop 281 <input type="checkbox"/> (66) Loop 281 <input type="checkbox"/> (67) Loop 281 <input type="checkbox"/> (68) Loop 281 <input type="checkbox"/> (69) Loop 281 <input type="checkbox"/> (70) Loop 281 <input type="checkbox"/> (71) Loop 281 <input type="checkbox"/> (72) Loop 281 <input type="checkbox"/> (73) Loop 281 <input type="checkbox"/> (74) Loop 281 <input type="checkbox"/> (75) Loop 281 <input type="checkbox"/> (76) Loop 281 <input type="checkbox"/> (77) Loop 281 <input type="checkbox"/> (78) Loop 281 <input type="checkbox"/> (79) Loop 281 <input type="checkbox"/> (80) Loop 281 <input type="checkbox"/> (81) Loop 281 <input type="checkbox"/> (82) Loop 281 <input type="checkbox"/> (83) Loop 281 <input type="checkbox"/> (84) Loop 281 <input type="checkbox"/> (85) Loop 281 <input type="checkbox"/> (86) Loop 281 <input type="checkbox"/> (87) Loop 281 <input type="checkbox"/> (88) Loop 281 <input type="checkbox"/> (89) Loop 281 <input type="checkbox"/> (90) Loop 281 <input type="checkbox"/> (91) Loop 281 <input type="checkbox"/> (92) Loop 281 <input type="checkbox"/> (93) Loop 281 <input type="checkbox"/> (94) Loop 281 <input type="checkbox"/> (95) Loop 281 <input type="checkbox"/> (96) Loop 281 <input type="checkbox"/> (97) Loop 281 <input type="checkbox"/> (98) Loop 281 <input type="checkbox"/> (99) None
	_____ Address, intersection, landmark	a.m. p.m.					
	_____ City/County/State/Zip	Depart ____:_____					
	If location written above is not Smith, Harrison, Gregg, Rusk, or Upshur county, which road did you use to leave the Tyler / Longview area? _____(Road name)						
	Is this vehicle usually based at or out of this location? <input type="checkbox"/> Yes <input type="checkbox"/> No						
	Odometer reading _____						
3 THEN I WENT TO:	_____ Name of Place	Arrive ____:_____	<input type="checkbox"/> (1) Base Location / Return to Base Location <input type="checkbox"/> (2) Delivery <input type="checkbox"/> (3) Pick-up <input type="checkbox"/> (4) Maintenance (fuel, oil, etc.) <input type="checkbox"/> (5) Driver Needs (lunch, etc.) <input type="checkbox"/> (6) To Home <input type="checkbox"/> (7) Other	<input type="checkbox"/> (1) Office building (non-government) <input type="checkbox"/> (2) Retail/Shopping/Gas <input type="checkbox"/> (3) Industrial/Manufacturing/Warehouse <input type="checkbox"/> (4) Medical <input type="checkbox"/> (5) Educational (12th grade or <) <input type="checkbox"/> (6) Educational (College, trade, etc.) <input type="checkbox"/> (7) Government <input type="checkbox"/> (8) Residential <input type="checkbox"/> (9) Airport <input type="checkbox"/> (10) Eating Establishment <input type="checkbox"/> (11) Other (Specify) _____ <input type="checkbox"/> (99) Do not know	<input type="checkbox"/> (1) Farm Products <input type="checkbox"/> (2) Forest Products <input type="checkbox"/> (3) Marine Products <input type="checkbox"/> (4) Metals & Minerals <input type="checkbox"/> (5) Food, Health & Beauty Products <input type="checkbox"/> (6) Tobacco Products <input type="checkbox"/> (7) Textiles <input type="checkbox"/> (8) Wood Products <input type="checkbox"/> (9) Printed Matter <input type="checkbox"/> (10) Chemical Products <input type="checkbox"/> (11) Refined Petroleum or Coal Products <input type="checkbox"/> (12) Rubber, Plastic or Styrofoam Products <input type="checkbox"/> (13) Clay, Concrete, Glass or Stone	<input type="checkbox"/> (14) Manufactured Goods / Equipment <input type="checkbox"/> (15) Wastes <input type="checkbox"/> (16) Miscellaneous Materials <input type="checkbox"/> (17)* Hazardous <input type="checkbox"/> (18) Transportation <input type="checkbox"/> (19) Unclassified Cargo <input type="checkbox"/> (20) Driver Refused to Answer <input type="checkbox"/> (21) Unknown to Driver <input type="checkbox"/> (22) Empty <input type="checkbox"/> (23) No Cargo picked up or dropped off at location. *If 17 above, Hazardous Material Placard # _____	<input type="checkbox"/> (1) IH 20 <input type="checkbox"/> (2) US 59 <input type="checkbox"/> (3) US 69 <input type="checkbox"/> (4) US 271 <input type="checkbox"/> (5) US 79 <input type="checkbox"/> (6) SH 155 <input type="checkbox"/> (7) SH 31 <input type="checkbox"/> (8) SH 64 <input type="checkbox"/> (9) SH 110 <input type="checkbox"/> (10) SH 42 <input type="checkbox"/> (11) SH 135 <input type="checkbox"/> (12) SH 322 <input type="checkbox"/> (13) SH 149 <input type="checkbox"/> (14) SH 43 <input type="checkbox"/> (15) SH 300 <input type="checkbox"/> (16) Loop 323 <input type="checkbox"/> (17) Loop 281 <input type="checkbox"/> (18) Loop 281 <input type="checkbox"/> (19) Loop 281 <input type="checkbox"/> (20) Loop 281 <input type="checkbox"/> (21) Loop 281 <input type="checkbox"/> (22) Loop 281 <input type="checkbox"/> (23) Loop 281 <input type="checkbox"/> (24) Loop 281 <input type="checkbox"/> (25) Loop 281 <input type="checkbox"/> (26) Loop 281 <input type="checkbox"/> (27) Loop 281 <input type="checkbox"/> (28) Loop 281 <input type="checkbox"/> (29) Loop 281 <input type="checkbox"/> (30) Loop 281 <input type="checkbox"/> (31) Loop 281 <input type="checkbox"/> (32) Loop 281 <input type="checkbox"/> (33) Loop 281 <input type="checkbox"/> (34) Loop 281 <input type="checkbox"/> (35) Loop 281 <input type="checkbox"/> (36) Loop 281 <input type="checkbox"/> (37) Loop 281 <input type="checkbox"/> (38) Loop 281 <input type="checkbox"/> (39) Loop 281 <input type="checkbox"/> (40) Loop 281 <input type="checkbox"/> (41) Loop 281 <input type="checkbox"/> (42) Loop 281 <input type="checkbox"/> (43) Loop 281 <input type="checkbox"/> (44) Loop 281 <input type="checkbox"/> (45) Loop 281 <input type="checkbox"/> (46) Loop 281 <input type="checkbox"/> (47) Loop 281 <input type="checkbox"/> (48) Loop 281 <input type="checkbox"/> (49) Loop 281 <input type="checkbox"/> (50) Loop 281 <input type="checkbox"/> (51) Loop 281 <input type="checkbox"/> (52) Loop 281 <input type="checkbox"/> (53) Loop 281 <input type="checkbox"/> (54) Loop 281 <input type="checkbox"/> (55) Loop 281 <input type="checkbox"/> (56) Loop 281 <input type="checkbox"/> (57) Loop 281 <input type="checkbox"/> (58) Loop 281 <input type="checkbox"/> (59) Loop 281 <input type="checkbox"/> (60) Loop 281 <input type="checkbox"/> (61) Loop 281 <input type="checkbox"/> (62) Loop 281 <input type="checkbox"/> (63) Loop 281 <input type="checkbox"/> (64) Loop 281 <input type="checkbox"/> (65) Loop 281 <input type="checkbox"/> (66) Loop 281 <input type="checkbox"/> (67) Loop 281 <input type="checkbox"/> (68) Loop 281 <input type="checkbox"/> (69) Loop 281 <input type="checkbox"/> (70) Loop 281 <input type="checkbox"/> (71) Loop 281 <input type="checkbox"/> (72) Loop 281 <input type="checkbox"/> (73) Loop 281 <input type="checkbox"/> (74) Loop 281 <input type="checkbox"/> (75) Loop 281 <input type="checkbox"/> (76) Loop 281 <input type="checkbox"/> (77) Loop 281 <input type="checkbox"/> (78) Loop 281 <input type="checkbox"/> (79) Loop 281 <input type="checkbox"/> (80) Loop 281 <input type="checkbox"/> (81) Loop 281 <input type="checkbox"/> (82) Loop 281 <input type="checkbox"/> (83) Loop 281 <input type="checkbox"/> (84) Loop 281 <input type="checkbox"/> (85) Loop 281 <input type="checkbox"/> (86) Loop 281 <input type="checkbox"/> (87) Loop 281 <input type="checkbox"/> (88) Loop 281 <input type="checkbox"/> (89) Loop 281 <input type="checkbox"/> (90) Loop 281 <input type="checkbox"/> (91) Loop 281 <input type="checkbox"/> (92) Loop 281 <input type="checkbox"/> (93) Loop 281 <input type="checkbox"/> (94) Loop 281 <input type="checkbox"/> (95) Loop 281 <input type="checkbox"/> (96) Loop 281 <input type="checkbox"/> (97) Loop 281 <input type="checkbox"/> (98) Loop 281 <input type="checkbox"/> (99) None
	_____ Address, nearest intersection, landmark	a.m. p.m.					
	_____ City/County/State/Zip	Depart ____:_____					
	If location written above is not Smith, Harrison, Gregg, Rusk, or Upshur county, which road did you use to leave the Tyler / Longview area? _____(Road name)						
	Is this vehicle usually based at or out of this location? <input type="checkbox"/> Yes <input type="checkbox"/> No						
	Odometer reading _____						

COMMERCIAL VEHICLE SURVEY PART 2: TRIP INFORMATION

Stop Number	Location Address	When did you Arrive/Depart?	Purpose of Stop (check one)	Type of Activity at This Location (check one)	Type of Cargo (check one)	Facilities Used	
4 THEN I WENT TO:	_____ Name of Place	Arrive ____:_____	<input type="checkbox"/> (1) Base Location / Return to Base Location <input type="checkbox"/> (2) Delivery <input type="checkbox"/> (3) Pick-up <input type="checkbox"/> (4) Maintenance (fuel, oil, etc.) <input type="checkbox"/> (5) Driver Needs (lunch, etc.) <input type="checkbox"/> (6) To Home <input type="checkbox"/> (7) Other	<input type="checkbox"/> (1) Office building (non-government) <input type="checkbox"/> (2) Retail/Shopping/Gas <input type="checkbox"/> (3) Industrial/Manufacturing/Warehouse <input type="checkbox"/> (4) Medical <input type="checkbox"/> (5) Educational (12th grade or <) <input type="checkbox"/> (6) Educational (College, trade, etc.) <input type="checkbox"/> (7) Government <input type="checkbox"/> (8) Residential <input type="checkbox"/> (9) Airport <input type="checkbox"/> (10) Eating Establishment <input type="checkbox"/> (11) Other (Specify) _____ <input type="checkbox"/> (99) Do not know	<input type="checkbox"/> (1) Farm Products <input type="checkbox"/> (2) Forest Products <input type="checkbox"/> (3) Marine Products <input type="checkbox"/> (4) Metals & Minerals <input type="checkbox"/> (5) Food, Health & Beauty Products <input type="checkbox"/> (6) Tobacco Products <input type="checkbox"/> (7) Textiles <input type="checkbox"/> (8) Wood Products <input type="checkbox"/> (9) Printed Matter <input type="checkbox"/> (10) Chemical Products <input type="checkbox"/> (11) Refined Petroleum or Coal Products <input type="checkbox"/> (12) Rubber, Plastic or Styrofoam Products <input type="checkbox"/> (13) Clay, Concrete, Glass or Stone	<input type="checkbox"/> (14) Manufactured Goods / Equipment <input type="checkbox"/> (15) Wastes <input type="checkbox"/> (16) Miscellaneous <input type="checkbox"/> (17)* Hazardous Materials <input type="checkbox"/> (18) Transportation <input type="checkbox"/> (19) Unclassified Cargo <input type="checkbox"/> (20) Driver Refused to Answer <input type="checkbox"/> (21) Unknown to Driver <input type="checkbox"/> (22) Empty <input type="checkbox"/> (23) No Cargo picked up or dropped off at location. *If 17 above, Hazardous Material Placard # _____	<input type="checkbox"/> (1) IH 20 <input type="checkbox"/> (2) US 59 <input type="checkbox"/> (3) US 69 <input type="checkbox"/> (4) US 271 <input type="checkbox"/> (5) US 79 <input type="checkbox"/> (6) SH 155 <input type="checkbox"/> (7) SH 31 <input type="checkbox"/> (8) SH 64 <input type="checkbox"/> (9) SH 110 <input type="checkbox"/> (10) SH 42 <input type="checkbox"/> (11) SH 135 <input type="checkbox"/> (12) SH 322 <input type="checkbox"/> (13) SH 149 <input type="checkbox"/> (14) SH 43 <input type="checkbox"/> (15) SH 300 <input type="checkbox"/> (16) Loop 323 <input type="checkbox"/> (17) Loop 281 <input type="checkbox"/> Other <input type="checkbox"/> (99) None
	Address, intersection, landmark _____ City/County/State/Zip If location written above is not Smith, Harrison, Gregg, Rusk, or Upshur county, which road did you use to leave the Tyler / Longview area? _____ (Road name) Is this vehicle usually based at or out of this location? <input type="checkbox"/> Yes <input type="checkbox"/> No Odometer reading _____	a.m. p.m. Depart ____:_____					
5 THEN I WENT TO:	_____ Name of Place	Arrive ____:_____	<input type="checkbox"/> (1) Base Location / Return to Base Location <input type="checkbox"/> (2) Delivery <input type="checkbox"/> (3) Pick-up <input type="checkbox"/> (4) Maintenance (fuel, oil, etc.) <input type="checkbox"/> (5) Driver Needs (lunch, etc.) <input type="checkbox"/> (6) To Home <input type="checkbox"/> (7) Other	<input type="checkbox"/> (1) Office building (non-government) <input type="checkbox"/> (2) Retail/Shopping/Gas <input type="checkbox"/> (3) Industrial/Manufacturing/Warehouse <input type="checkbox"/> (4) Medical <input type="checkbox"/> (5) Educational (12th grade or <) <input type="checkbox"/> (6) Educational (College, trade, etc.) <input type="checkbox"/> (7) Government <input type="checkbox"/> (8) Residential <input type="checkbox"/> (9) Airport <input type="checkbox"/> (10) Eating Establishment <input type="checkbox"/> (11) Other (Specify) _____ <input type="checkbox"/> (99) Do not know	<input type="checkbox"/> (1) Farm Products <input type="checkbox"/> (2) Forest Products <input type="checkbox"/> (3) Marine Products <input type="checkbox"/> (4) Metals & Minerals <input type="checkbox"/> (5) Food, Health & Beauty Products <input type="checkbox"/> (6) Tobacco Products <input type="checkbox"/> (7) Textiles <input type="checkbox"/> (8) Wood Products <input type="checkbox"/> (9) Printed Matter <input type="checkbox"/> (10) Chemical Products <input type="checkbox"/> (11) Refined Petroleum or Coal Products <input type="checkbox"/> (12) Rubber, Plastic or Styrofoam Products <input type="checkbox"/> (13) Clay, Concrete, Glass or Stone	<input type="checkbox"/> (14) Manufactured Goods / Equipment <input type="checkbox"/> (15) Wastes <input type="checkbox"/> (16) Miscellaneous <input type="checkbox"/> (17)* Hazardous Materials <input type="checkbox"/> (18) Transportation <input type="checkbox"/> (19) Unclassified Cargo <input type="checkbox"/> (20) Driver Refused to Answer <input type="checkbox"/> (21) Unknown to Driver <input type="checkbox"/> (22) Empty <input type="checkbox"/> (23) No Cargo picked up or dropped off at location. *If 17 above, Hazardous Material Placard # _____	<input type="checkbox"/> (1) IH 20 <input type="checkbox"/> (2) US 59 <input type="checkbox"/> (3) US 69 <input type="checkbox"/> (4) US 271 <input type="checkbox"/> (5) US 79 <input type="checkbox"/> (6) SH 155 <input type="checkbox"/> (7) SH 31 <input type="checkbox"/> (8) SH 64 <input type="checkbox"/> (9) SH 110 <input type="checkbox"/> (10) SH 42 <input type="checkbox"/> (11) SH 135 <input type="checkbox"/> (12) SH 322 <input type="checkbox"/> (13) SH 149 <input type="checkbox"/> (14) SH 43 <input type="checkbox"/> (15) SH 300 <input type="checkbox"/> (16) Loop 323 <input type="checkbox"/> (17) Loop 281 <input type="checkbox"/> Other <input type="checkbox"/> (99) None
	Address, intersection, landmark _____ City/County/State/Zip If location written above is not Smith, Harrison, Gregg, Rusk, or Upshur county, which road did you use to leave the Tyler / Longview area? _____ (Road name) Is this vehicle usually based at or out of this location? <input type="checkbox"/> Yes <input type="checkbox"/> No Odometer reading _____	a.m. p.m. Depart ____:_____					

COMMERCIAL VEHICLE SURVEY PART 2: TRIP INFORMATION

Stop Number	Location Address	When did you Arrive/Depart?	Purpose of Stop (check one)	Type of Activity at This Location (check one)	Type of Cargo (check one)	Facilities Used
6 THEN I WENT TO:	Name of Place _____	Arrive ____:____	<input type="checkbox"/> (1) Base Location / Return to Base Location <input type="checkbox"/> (2) Delivery <input type="checkbox"/> (3) Pick-up <input type="checkbox"/> (4) Maintenance (fuel, oil, etc.) <input type="checkbox"/> (5) Driver Needs (lunch, etc.) <input type="checkbox"/> (6) To Home <input type="checkbox"/> (7) Other	<input type="checkbox"/> (1) Office building (non-government) <input type="checkbox"/> (2) Retail/Shopping/Gas <input type="checkbox"/> (3) Industrial/Manufacturing/Warehouse <input type="checkbox"/> (4) Medical <input type="checkbox"/> (5) Educational (12th grade or <) <input type="checkbox"/> (6) Educational (College, trade, etc.) <input type="checkbox"/> (7) Government <input type="checkbox"/> (8) Residential <input type="checkbox"/> (9) Airport <input type="checkbox"/> (10) Eating Establishment <input type="checkbox"/> (11) Other (Specify) <input type="checkbox"/> (99) Do not know	<input type="checkbox"/> (1) Farm Products <input type="checkbox"/> (2) Forest Products <input type="checkbox"/> (3) Marine Products <input type="checkbox"/> (4) Metals & Minerals <input type="checkbox"/> (5) Food, Health & Beauty Products <input type="checkbox"/> (6) Tobacco Products <input type="checkbox"/> (7) Textiles <input type="checkbox"/> (8) Wood Products <input type="checkbox"/> (9) Printed Matter <input type="checkbox"/> (10) Chemical Products <input type="checkbox"/> (11) Refined Petroleum or Coal Products <input type="checkbox"/> (12) Rubber, Plastic or Styrofoam Products <input type="checkbox"/> (13) Clay, Concrete, Glass or Stone <input type="checkbox"/> (14) Manufactured Goods / Equipment <input type="checkbox"/> (15) Wastes <input type="checkbox"/> (16) Miscellaneous <input type="checkbox"/> (17)* Hazardous Materials <input type="checkbox"/> (18) Transportation <input type="checkbox"/> (19) Unclassified Cargo <input type="checkbox"/> (20) Driver Refused to Answer <input type="checkbox"/> (21) Unknown to Driver <input type="checkbox"/> (22) Empty <input type="checkbox"/> (23) No Cargo picked up or dropped off at location. *If 17 above, Hazardous Material Placard # _____	<input type="checkbox"/> (1) IH 20 <input type="checkbox"/> (2) US 59 <input type="checkbox"/> (3) US 69 <input type="checkbox"/> (4) US 271 <input type="checkbox"/> (5) US 79 <input type="checkbox"/> (6) SH 155 <input type="checkbox"/> (7) SH 31 <input type="checkbox"/> (8) SH 64 <input type="checkbox"/> (9) SH 110 <input type="checkbox"/> (10) SH 42 <input type="checkbox"/> (11) SH 135 <input type="checkbox"/> (12) SH 322 <input type="checkbox"/> (13) SH 149 <input type="checkbox"/> (14) SH 43 <input type="checkbox"/> (15) SH 300 <input type="checkbox"/> (16) Loop 323 <input type="checkbox"/> (17) Loop 281 <input type="checkbox"/> Other <input type="checkbox"/> (99) None
	Address, intersection, landmark _____ City/County/State/Zip _____ If location written above is not Smith, Harrison, Gregg, Rusk, or Upshur county, which road did you use to leave the Tyler / Longview area? _____(Road name) Is this vehicle usually based at or out of this location? <input type="checkbox"/> Yes <input type="checkbox"/> No Odometer reading _____	a.m. p.m. Depart ____:____ a.m. p.m.				
7 THEN I WENT TO:	Name of Place _____	Arrive ____:____	<input type="checkbox"/> (1) Base Location / Return to Base Location <input type="checkbox"/> (2) Delivery <input type="checkbox"/> (3) Pick-up <input type="checkbox"/> (4) Maintenance (fuel, oil, etc.) <input type="checkbox"/> (5) Driver Needs (lunch, etc.) <input type="checkbox"/> (6) To Home <input type="checkbox"/> (7) Other	<input type="checkbox"/> (1) Office building (non-government) <input type="checkbox"/> (2) Retail/Shopping/Gas <input type="checkbox"/> (3) Industrial/Manufacturing/Warehouse <input type="checkbox"/> (4) Medical <input type="checkbox"/> (5) Educational (12th grade or <) <input type="checkbox"/> (6) Educational (College, trade, etc.) <input type="checkbox"/> (7) Government <input type="checkbox"/> (8) Residential <input type="checkbox"/> (9) Airport <input type="checkbox"/> (10) Eating Establishment <input type="checkbox"/> (11) Other (Specify) <input type="checkbox"/> (99) Do not know	<input type="checkbox"/> (1) Farm Products <input type="checkbox"/> (2) Forest Products <input type="checkbox"/> (3) Marine Products <input type="checkbox"/> (4) Metals & Minerals <input type="checkbox"/> (5) Food, Health & Beauty Products <input type="checkbox"/> (6) Tobacco Products <input type="checkbox"/> (7) Textiles <input type="checkbox"/> (8) Wood Products <input type="checkbox"/> (9) Printed Matter <input type="checkbox"/> (10) Chemical Products <input type="checkbox"/> (11) Refined Petroleum or Coal Products <input type="checkbox"/> (12) Rubber, Plastic or Styrofoam Products <input type="checkbox"/> (13) Clay, Concrete, Glass or Stone <input type="checkbox"/> (14) Manufactured Goods / Equipment <input type="checkbox"/> (15) Wastes <input type="checkbox"/> (16) Miscellaneous <input type="checkbox"/> (17)* Hazardous Materials <input type="checkbox"/> (18) Transportation <input type="checkbox"/> (19) Unclassified Cargo <input type="checkbox"/> (20) Driver Refused to Answer <input type="checkbox"/> (21) Unknown to Driver <input type="checkbox"/> (22) Empty <input type="checkbox"/> (23) No Cargo picked up or dropped off at location. *If 17 above, Hazardous Material Placard # _____	<input type="checkbox"/> (1) IH 20 <input type="checkbox"/> (2) US 59 <input type="checkbox"/> (3) US 69 <input type="checkbox"/> (4) US 271 <input type="checkbox"/> (5) US 79 <input type="checkbox"/> (6) SH 155 <input type="checkbox"/> (7) SH 31 <input type="checkbox"/> (8) SH 64 <input type="checkbox"/> (9) SH 110 <input type="checkbox"/> (10) SH 42 <input type="checkbox"/> (11) SH 135 <input type="checkbox"/> (12) SH 322 <input type="checkbox"/> (13) SH 149 <input type="checkbox"/> (14) SH 43 <input type="checkbox"/> (15) SH 300 <input type="checkbox"/> (16) Loop 323 <input type="checkbox"/> (17) Loop 281 <input type="checkbox"/> Other <input type="checkbox"/> (99) None
	Address, intersection, landmark _____ City/County/State/Zip _____ If location written above is not Smith, Harrison, Gregg, Rusk, or Upshur county, which road did you use to leave the Tyler / Longview area? _____(Road name) Is this vehicle usually based at or out of this location? <input type="checkbox"/> Yes <input type="checkbox"/> No Odometer reading _____	a.m. p.m. Depart ____:____ a.m. p.m.				

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Stop Number	Location Address	When did you Arrive/Depart?	Purpose of Stop (check one)	Type of Activity at This Location (check one)	Type of Cargo (check one)	Facilities Used	
8 THEN I WENT TO:	Name of Place _____	Arrive ____:____	<input type="checkbox"/> (1) Base Location / Return to Base Location <input type="checkbox"/> (2) Delivery <input type="checkbox"/> (3) Pick-up <input type="checkbox"/> (4) Maintenance (fuel, oil, etc.) <input type="checkbox"/> (5) Driver Needs (lunch, etc.) <input type="checkbox"/> (6) To Home <input type="checkbox"/> (7) Other	<input type="checkbox"/> (1) Office building (non-government) <input type="checkbox"/> (2) Retail/Shopping/Gas <input type="checkbox"/> (3) Industrial/Manufacturing/Warehouse <input type="checkbox"/> (4) Medical <input type="checkbox"/> (5) Educational (12th grade or <) <input type="checkbox"/> (6) Educational (College, trade, etc.) <input type="checkbox"/> (7) Government <input type="checkbox"/> (8) Residential <input type="checkbox"/> (9) Airport <input type="checkbox"/> (10) Eating Establishment <input type="checkbox"/> (11) Other (Specify) _____ <input type="checkbox"/> (99) Do not know	<input type="checkbox"/> (1) Farm Products <input type="checkbox"/> (2) Forest Products <input type="checkbox"/> (3) Marine Products <input type="checkbox"/> (4) Metals & Minerals <input type="checkbox"/> (5) Food, Health & Beauty Products <input type="checkbox"/> (6) Tobacco Products <input type="checkbox"/> (7) Textiles <input type="checkbox"/> (8) Wood Products <input type="checkbox"/> (9) Printed Matter <input type="checkbox"/> (10) Chemical Products <input type="checkbox"/> (11) Refined Petroleum or Coal Products <input type="checkbox"/> (12) Rubber, Plastic or Styrofoam Products <input type="checkbox"/> (13) Clay, Concrete, Glass or Stone	<input type="checkbox"/> (14) Manufactured Goods / Equipment <input type="checkbox"/> (15) Wastes <input type="checkbox"/> (16) Miscellaneous Materials <input type="checkbox"/> (17)* Hazardous <input type="checkbox"/> (18) Transportation <input type="checkbox"/> (19) Unclassified Cargo <input type="checkbox"/> (20) Driver Refused to Answer <input type="checkbox"/> (21) Unknown to Driver <input type="checkbox"/> (22) Empty <input type="checkbox"/> (23) No Cargo picked up or dropped off at location. *If 17 above, Hazardous Material Placard # _____	<input type="checkbox"/> (1) IH 20 <input type="checkbox"/> (2) US 59 <input type="checkbox"/> (3) US 69 <input type="checkbox"/> (4) US 271 <input type="checkbox"/> (5) US 79 <input type="checkbox"/> (6) SH 155 <input type="checkbox"/> (7) SH 31 <input type="checkbox"/> (8) SH 64 <input type="checkbox"/> (9) SH 110 <input type="checkbox"/> (10) SH 42 <input type="checkbox"/> (11) SH 135 <input type="checkbox"/> (12) SH 322 <input type="checkbox"/> (13) SH 149 <input type="checkbox"/> (14) SH 43 <input type="checkbox"/> (15) SH 300 <input type="checkbox"/> (16) Loop 323 <input type="checkbox"/> (17) Loop 281 <input type="checkbox"/> Other <input type="checkbox"/> (99) None
	Address, intersection, landmark _____ City/County/State/Zip _____ If location written above is not Smith, Harrison, Gregg, Rusk, or Upshur county, which road did you use to leave the Tyler / Longview area? _____ (Road name) Is this vehicle usually based at or out of this location? <input type="checkbox"/> Yes <input type="checkbox"/> No Odometer reading _____	a.m. p.m. Depart ____:____ a.m. p.m.					
9 THEN I WENT TO:	Name of Place _____	Arrive ____:____	<input type="checkbox"/> (1) Base Location / Return to Base Location <input type="checkbox"/> (2) Delivery <input type="checkbox"/> (3) Pick-up <input type="checkbox"/> (4) Maintenance (fuel, oil, etc.) <input type="checkbox"/> (5) Driver Needs (lunch, etc.) <input type="checkbox"/> (6) To Home <input type="checkbox"/> (7) Other	<input type="checkbox"/> (1) Office building (non-government) <input type="checkbox"/> (2) Retail/Shopping/Gas <input type="checkbox"/> (3) Industrial/Manufacturing/Warehouse <input type="checkbox"/> (4) Medical <input type="checkbox"/> (5) Educational (12th grade or <) <input type="checkbox"/> (6) Educational (College, trade, etc.) <input type="checkbox"/> (7) Government <input type="checkbox"/> (8) Residential <input type="checkbox"/> (9) Airport <input type="checkbox"/> (10) Eating Establishment <input type="checkbox"/> (11) Other (Specify) _____ <input type="checkbox"/> (99) Do not know	<input type="checkbox"/> (1) Farm Products <input type="checkbox"/> (2) Forest Products <input type="checkbox"/> (3) Marine Products <input type="checkbox"/> (4) Metals & Minerals <input type="checkbox"/> (5) Food, Health & Beauty Products <input type="checkbox"/> (6) Tobacco Products <input type="checkbox"/> (7) Textiles <input type="checkbox"/> (8) Wood Products <input type="checkbox"/> (9) Printed Matter <input type="checkbox"/> (10) Chemical Products <input type="checkbox"/> (11) Refined Petroleum or Coal Products <input type="checkbox"/> (12) Rubber, Plastic or Styrofoam Products <input type="checkbox"/> (13) Clay, Concrete, Glass or Stone	<input type="checkbox"/> (14) Manufactured Goods / Equipment <input type="checkbox"/> (15) Wastes <input type="checkbox"/> (16) Miscellaneous Materials <input type="checkbox"/> (17)* Hazardous <input type="checkbox"/> (18) Transportation <input type="checkbox"/> (19) Unclassified Cargo <input type="checkbox"/> (20) Driver Refused to Answer <input type="checkbox"/> (21) Unknown to Driver <input type="checkbox"/> (22) Empty <input type="checkbox"/> (23) No Cargo picked up or dropped off at location. *If 17 above, Hazardous Material Placard # _____	<input type="checkbox"/> (1) IH 20 <input type="checkbox"/> (2) US 59 <input type="checkbox"/> (3) US 69 <input type="checkbox"/> (4) US 271 <input type="checkbox"/> (5) US 79 <input type="checkbox"/> (6) SH 155 <input type="checkbox"/> (7) SH 31 <input type="checkbox"/> (8) SH 64 <input type="checkbox"/> (9) SH 110 <input type="checkbox"/> (10) SH 42 <input type="checkbox"/> (11) SH 135 <input type="checkbox"/> (12) SH 322 <input type="checkbox"/> (13) SH 149 <input type="checkbox"/> (14) SH 43 <input type="checkbox"/> (15) SH 300 <input type="checkbox"/> (16) Loop 323 <input type="checkbox"/> (17) Loop 281 <input type="checkbox"/> Other <input type="checkbox"/> (99) None
	Address, intersection, landmark _____ City/County/State/Zip _____ If location written above is not Smith, Harrison, Gregg, Rusk, or Upshur county, which road did you use to leave the Tyler / Longview area? _____ (Road name) Is this vehicle usually based at or out of this location? <input type="checkbox"/> Yes <input type="checkbox"/> No Odometer reading _____	a.m. p.m. Depart ____:____ a.m. p.m.					

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Stop Number	Location Address	When did you Arrive/Depart?	Purpose of Stop (check one)	Type of Activity at This Location (check one)	Type of Cargo (check one)	Facilities Used
10 THEN I WENT TO:	Name of Place _____	Arrive ____:____	<input type="checkbox"/> (1) Base Location / Return to Base Location <input type="checkbox"/> (2) Delivery <input type="checkbox"/> (3) Pick-up <input type="checkbox"/> (4) Maintenance (fuel, oil, etc.) <input type="checkbox"/> (5) Driver Needs (lunch, etc.) <input type="checkbox"/> (6) To Home <input type="checkbox"/> (7) Other	<input type="checkbox"/> (1) Office building (non-government) <input type="checkbox"/> (2) Retail/Shopping/Gas <input type="checkbox"/> (3) Industrial/Manufacturing/Warehouse <input type="checkbox"/> (4) Medical <input type="checkbox"/> (5) Educational (12th grade or <) <input type="checkbox"/> (6) Educational (College, trade, etc.) <input type="checkbox"/> (7) Government <input type="checkbox"/> (8) Residential <input type="checkbox"/> (9) Airport <input type="checkbox"/> (10) Eating Establishment <input type="checkbox"/> (11) Other (Specify) <input type="checkbox"/> (99) Do not know	<input type="checkbox"/> (1) Farm Products <input type="checkbox"/> (2) Forest Products <input type="checkbox"/> (3) Marine Products <input type="checkbox"/> (4) Metals & Minerals <input type="checkbox"/> (5) Food, Health & Beauty Products <input type="checkbox"/> (6) Tobacco Products <input type="checkbox"/> (7) Textiles <input type="checkbox"/> (8) Wood Products <input type="checkbox"/> (9) Printed Matter <input type="checkbox"/> (10) Chemical Products <input type="checkbox"/> (11) Refined Petroleum or Coal Products <input type="checkbox"/> (12) Rubber, Plastic or Styrofoam Products <input type="checkbox"/> (13) Clay, Concrete, Glass or Stone <input type="checkbox"/> (14) Manufactured Goods / Equipment <input type="checkbox"/> (15) Wastes <input type="checkbox"/> (16) Miscellaneous <input type="checkbox"/> (17)* Hazardous Materials <input type="checkbox"/> (18) Transportation <input type="checkbox"/> (19) Unclassified Cargo <input type="checkbox"/> (20) Driver Refused to Answer <input type="checkbox"/> (21) Unknown to Driver <input type="checkbox"/> (22) Empty <input type="checkbox"/> (23) No Cargo picked up or dropped off at location. *If 17 above, Hazardous Material Placard # _____	<input type="checkbox"/> (1) IH 20 <input type="checkbox"/> (2) US 59 <input type="checkbox"/> (3) US 69 <input type="checkbox"/> (4) US 271 <input type="checkbox"/> (5) US 79 <input type="checkbox"/> (6) SH 155 <input type="checkbox"/> (7) SH 31 <input type="checkbox"/> (8) SH 64 <input type="checkbox"/> (9) SH 110 <input type="checkbox"/> (10) SH 42 <input type="checkbox"/> (11) SH 135 <input type="checkbox"/> (12) SH 322 <input type="checkbox"/> (13) SH 149 <input type="checkbox"/> (14) SH 43 <input type="checkbox"/> (15) SH 300 <input type="checkbox"/> (16) Loop 323 <input type="checkbox"/> (17) Loop 281 <input type="checkbox"/> Other <input type="checkbox"/> (99) None
	Address, intersection, landmark _____ City/County/State/Zip _____ If location written above is not Smith, Harrison, Gregg, Rusk, or Upshur county, which road did you use to leave the Tyler / Longview area? _____(Road name) Is this vehicle usually based at or out of this location? <input type="checkbox"/> Yes <input type="checkbox"/> No Odometer reading _____	a.m. p.m. Depart ____:____ a.m. p.m.				
11 THEN I WENT TO:	Name of Place _____	Arrive ____:____	<input type="checkbox"/> (1) Base Location / Return to Base Location <input type="checkbox"/> (2) Delivery <input type="checkbox"/> (3) Pick-up <input type="checkbox"/> (4) Maintenance (fuel, oil, etc.) <input type="checkbox"/> (5) Driver Needs (lunch, etc.) <input type="checkbox"/> (6) To Home <input type="checkbox"/> (7) Other	<input type="checkbox"/> (1) Office building (non-government) <input type="checkbox"/> (2) Retail/Shopping/Gas <input type="checkbox"/> (3) Industrial/Manufacturing/Warehouse <input type="checkbox"/> (4) Medical <input type="checkbox"/> (5) Educational (12th grade or <) <input type="checkbox"/> (6) Educational (College, trade, etc.) <input type="checkbox"/> (7) Government <input type="checkbox"/> (8) Residential <input type="checkbox"/> (9) Airport <input type="checkbox"/> (10) Eating Establishment <input type="checkbox"/> (11) Other (Specify) <input type="checkbox"/> (99) Do not know	<input type="checkbox"/> (1) Farm Products <input type="checkbox"/> (2) Forest Products <input type="checkbox"/> (3) Marine Products <input type="checkbox"/> (4) Metals & Minerals <input type="checkbox"/> (5) Food, Health & Beauty Products <input type="checkbox"/> (6) Tobacco Products <input type="checkbox"/> (7) Textiles <input type="checkbox"/> (8) Wood Products <input type="checkbox"/> (9) Printed Matter <input type="checkbox"/> (10) Chemical Products <input type="checkbox"/> (11) Refined Petroleum or Coal Products <input type="checkbox"/> (12) Rubber, Plastic or Styrofoam Products <input type="checkbox"/> (13) Clay, Concrete, Glass or Stone <input type="checkbox"/> (14) Manufactured Goods / Equipment <input type="checkbox"/> (15) Wastes <input type="checkbox"/> (16) Miscellaneous <input type="checkbox"/> (17)* Hazardous Materials <input type="checkbox"/> (18) Transportation <input type="checkbox"/> (19) Unclassified Cargo <input type="checkbox"/> (20) Driver Refused to Answer <input type="checkbox"/> (21) Unknown to Driver <input type="checkbox"/> (22) Empty <input type="checkbox"/> (23) No Cargo picked up or dropped off at location. *If 17 above, Hazardous Material Placard # _____	<input type="checkbox"/> (1) IH 20 <input type="checkbox"/> (2) US 59 <input type="checkbox"/> (3) US 69 <input type="checkbox"/> (4) US 271 <input type="checkbox"/> (5) US 79 <input type="checkbox"/> (6) SH 155 <input type="checkbox"/> (7) SH 31 <input type="checkbox"/> (8) SH 64 <input type="checkbox"/> (9) SH 110 <input type="checkbox"/> (10) SH 42 <input type="checkbox"/> (11) SH 135 <input type="checkbox"/> (12) SH 322 <input type="checkbox"/> (13) SH 149 <input type="checkbox"/> (14) SH 43 <input type="checkbox"/> (15) SH 300 <input type="checkbox"/> (16) Loop 323 <input type="checkbox"/> (17) Loop 281 <input type="checkbox"/> Other <input type="checkbox"/> (99) None
	Address, intersection, landmark _____ City/County/State/Zip _____ If location written above is not Smith, Harrison, Gregg, Rusk, or Upshur county, which road did you use to leave the Tyler / Longview area? _____(Road name) Is this vehicle usually based at or out of this location? <input type="checkbox"/> Yes <input type="checkbox"/> No Odometer reading _____	a.m. p.m. Depart ____:____ a.m. p.m.				

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Stop Number	Location Address	When did you Arrive/Depart?	Purpose of Stop (check one)	Type of Activity at This Location (check one)	Type of Cargo (check one)	Facilities Used	
12 THEN I WENT TO:	Name of Place _____	Arrive ____:____	<input type="checkbox"/> (1) Base Location / Return to Base Location <input type="checkbox"/> (2) Delivery <input type="checkbox"/> (3) Pick-up <input type="checkbox"/> (4) Maintenance (fuel, oil, etc.) <input type="checkbox"/> (5) Driver Needs (lunch, etc.) <input type="checkbox"/> (6) To Home <input type="checkbox"/> (7) Other	<input type="checkbox"/> (1) Office building (non-government) <input type="checkbox"/> (2) Retail/Shopping/Gas <input type="checkbox"/> (3) Industrial/Manufacturing/Warehouse <input type="checkbox"/> (4) Medical <input type="checkbox"/> (5) Educational (12th grade or <) <input type="checkbox"/> (6) Educational (College, trade, etc.) <input type="checkbox"/> (7) Government <input type="checkbox"/> (8) Residential <input type="checkbox"/> (9) Airport <input type="checkbox"/> (10) Eating Establishment <input type="checkbox"/> (11) Other (Specify) _____ <input type="checkbox"/> (99) Do not know	<input type="checkbox"/> (1) Farm Products <input type="checkbox"/> (2) Forest Products <input type="checkbox"/> (3) Marine Products <input type="checkbox"/> (4) Metals & Minerals <input type="checkbox"/> (5) Food, Health & Beauty Products <input type="checkbox"/> (6) Tobacco Products <input type="checkbox"/> (7) Textiles <input type="checkbox"/> (8) Wood Products <input type="checkbox"/> (9) Printed Matter <input type="checkbox"/> (10) Chemical Products <input type="checkbox"/> (11) Refined Petroleum or Coal Products <input type="checkbox"/> (12) Rubber, Plastic or Styrofoam Products <input type="checkbox"/> (13) Clay, Concrete, Glass or Stone	<input type="checkbox"/> (14) Manufactured Goods / Equipment <input type="checkbox"/> (15) Wastes <input type="checkbox"/> (16) Miscellaneous Materials <input type="checkbox"/> (17)* Hazardous <input type="checkbox"/> (18) Transportation <input type="checkbox"/> (19) Unclassified Cargo <input type="checkbox"/> (20) Driver Refused to Answer <input type="checkbox"/> (21) Unknown to Driver <input type="checkbox"/> (22) Empty <input type="checkbox"/> (23) No Cargo picked up or dropped off at location. *If 17 above, Hazardous Material Placard # _____	<input type="checkbox"/> (1) IH 20 <input type="checkbox"/> (2) US 59 <input type="checkbox"/> (3) US 69 <input type="checkbox"/> (4) US 271 <input type="checkbox"/> (5) US 79 <input type="checkbox"/> (6) SH 155 <input type="checkbox"/> (7) SH 31 <input type="checkbox"/> (8) SH 64 <input type="checkbox"/> (9) SH 110 <input type="checkbox"/> (10) SH 42 <input type="checkbox"/> (11) SH 135 <input type="checkbox"/> (12) SH 322 <input type="checkbox"/> (13) SH 149 <input type="checkbox"/> (14) SH 43 <input type="checkbox"/> (15) SH 300 <input type="checkbox"/> (16) Loop 323 <input type="checkbox"/> (17) Loop 281 <input type="checkbox"/> Other <input type="checkbox"/> (99) None
	Address, intersection, landmark _____	a.m. p.m.					
	City/County/State/Zip _____	Depart ____:____					
	If location written above is not Smith, Harrison, Gregg, Rusk, or Upshur county, which road did you use to leave the Tyler / Longview area? _____ (Road name)	a.m. p.m.					
	Is this vehicle usually based at or out of this location? <input type="checkbox"/> Yes <input type="checkbox"/> No						
	Odometer reading _____						
13 THEN I WENT TO:	Name of Place _____	Arrive ____:____	<input type="checkbox"/> (1) Base Location / Return to Base Location <input type="checkbox"/> (2) Delivery <input type="checkbox"/> (3) Pick-up <input type="checkbox"/> (4) Maintenance (fuel, oil, etc.) <input type="checkbox"/> (5) Driver Needs (lunch, etc.) <input type="checkbox"/> (6) To Home <input type="checkbox"/> (7) Other	<input type="checkbox"/> (1) Office building (non-government) <input type="checkbox"/> (2) Retail/Shopping/Gas <input type="checkbox"/> (3) Industrial/Manufacturing/Warehouse <input type="checkbox"/> (4) Medical <input type="checkbox"/> (5) Educational (12th grade or <) <input type="checkbox"/> (6) Educational (College, trade, etc.) <input type="checkbox"/> (7) Government <input type="checkbox"/> (8) Residential <input type="checkbox"/> (9) Airport <input type="checkbox"/> (10) Eating Establishment <input type="checkbox"/> (11) Other (Specify) _____ <input type="checkbox"/> (99) Do not know	<input type="checkbox"/> (1) Farm Products <input type="checkbox"/> (2) Forest Products <input type="checkbox"/> (3) Marine Products <input type="checkbox"/> (4) Metals & Minerals <input type="checkbox"/> (5) Food, Health & Beauty Products <input type="checkbox"/> (6) Tobacco Products <input type="checkbox"/> (7) Textiles <input type="checkbox"/> (8) Wood Products <input type="checkbox"/> (9) Printed Matter <input type="checkbox"/> (10) Chemical Products <input type="checkbox"/> (11) Refined Petroleum or Coal Products <input type="checkbox"/> (12) Rubber, Plastic or Styrofoam Products <input type="checkbox"/> (13) Clay, Concrete, Glass or Stone	<input type="checkbox"/> (14) Manufactured Goods / Equipment <input type="checkbox"/> (15) Wastes <input type="checkbox"/> (16) Miscellaneous Materials <input type="checkbox"/> (17)* Hazardous <input type="checkbox"/> (18) Transportation <input type="checkbox"/> (19) Unclassified Cargo <input type="checkbox"/> (20) Driver Refused to Answer <input type="checkbox"/> (21) Unknown to Driver <input type="checkbox"/> (22) Empty <input type="checkbox"/> (23) No Cargo picked up or dropped off at location. *If 17 above, Hazardous Material Placard # _____	<input type="checkbox"/> (1) IH 20 <input type="checkbox"/> (2) US 59 <input type="checkbox"/> (3) US 69 <input type="checkbox"/> (4) US 271 <input type="checkbox"/> (5) US 79 <input type="checkbox"/> (6) SH 155 <input type="checkbox"/> (7) SH 31 <input type="checkbox"/> (8) SH 64 <input type="checkbox"/> (9) SH 110 <input type="checkbox"/> (10) SH 42 <input type="checkbox"/> (11) SH 135 <input type="checkbox"/> (12) SH 322 <input type="checkbox"/> (13) SH 149 <input type="checkbox"/> (14) SH 43 <input type="checkbox"/> (15) SH 300 <input type="checkbox"/> (16) Loop 323 <input type="checkbox"/> (17) Loop 281 <input type="checkbox"/> Other <input type="checkbox"/> (99) None
	Address, intersection, landmark _____	a.m. p.m.					
	City/County/State/Zip _____	Depart ____:____					
	If location written above is not Smith, Harrison, Gregg, Rusk, or Upshur county, which road did you use to leave the Tyler / Longview area? _____ (Road name)	a.m. p.m.					
	Is this vehicle usually based at or out of this location? <input type="checkbox"/> Yes <input type="checkbox"/> No						
	Odometer reading _____						

COMMERCIAL VEHICLE SURVEY PART 2: TRIP INFORMATION

Stop Number	Location Address	When did you Arrive/Depart?	Purpose of Stop (check one)	Type of Activity at This Location (check one)	Type of Cargo (check one)	Facilities Used	
14 THEN I WENT TO:	Name of Place _____	Arrive _____:_____	<input type="checkbox"/> (1) Base Location / Return to Base Location <input type="checkbox"/> (2) Delivery <input type="checkbox"/> (3) Pick-up <input type="checkbox"/> (4) Maintenance (fuel, oil, etc.) <input type="checkbox"/> (5) Driver Needs (lunch, etc.) <input type="checkbox"/> (6) To Home <input type="checkbox"/> (7) Other	<input type="checkbox"/> (1) Office building (non-government) <input type="checkbox"/> (2) Retail/Shopping/Gas <input type="checkbox"/> (3) Industrial/Manufacturing/Warehouse <input type="checkbox"/> (4) Medical <input type="checkbox"/> (5) Educational (12th grade or <) <input type="checkbox"/> (6) Educational (College, trade, etc.) <input type="checkbox"/> (7) Government <input type="checkbox"/> (8) Residential <input type="checkbox"/> (9) Airport <input type="checkbox"/> (10) Eating Establishment <input type="checkbox"/> (11) Other (Specify) _____ <input type="checkbox"/> (99) Do not know	<input type="checkbox"/> (1) Farm Products <input type="checkbox"/> (2) Forest Products <input type="checkbox"/> (3) Marine Products <input type="checkbox"/> (4) Metals & Minerals <input type="checkbox"/> (5) Food, Health & Beauty Products <input type="checkbox"/> (6) Tobacco Products <input type="checkbox"/> (7) Textiles <input type="checkbox"/> (8) Wood Products <input type="checkbox"/> (9) Printed Matter <input type="checkbox"/> (10) Chemical Products <input type="checkbox"/> (11) Refined Petroleum or Coal Products <input type="checkbox"/> (12) Rubber, Plastic or Styrofoam Products <input type="checkbox"/> (13) Clay, Concrete, Glass or Stone	<input type="checkbox"/> (14) Manufactured Goods / Equipment <input type="checkbox"/> (15) Wastes <input type="checkbox"/> (16) Miscellaneous Materials <input type="checkbox"/> (17)* Hazardous <input type="checkbox"/> (18) Transportation <input type="checkbox"/> (19) Unclassified Cargo <input type="checkbox"/> (20) Driver Refused to Answer <input type="checkbox"/> (21) Unknown to Driver <input type="checkbox"/> (22) Empty <input type="checkbox"/> (23) No Cargo picked up or dropped off at location. *If 17 above, Hazardous Material Placard # _____	<input type="checkbox"/> (1) IH 20 <input type="checkbox"/> (2) US 59 <input type="checkbox"/> (3) US 69 <input type="checkbox"/> (4) US 271 <input type="checkbox"/> (5) US 79 <input type="checkbox"/> (6) SH 155 <input type="checkbox"/> (7) SH 31 <input type="checkbox"/> (8) SH 64 <input type="checkbox"/> (9) SH 110 <input type="checkbox"/> (10) SH 42 <input type="checkbox"/> (11) SH 135 <input type="checkbox"/> (12) SH 322 <input type="checkbox"/> (13) SH 149 <input type="checkbox"/> (14) SH 43 <input type="checkbox"/> (15) SH 300 <input type="checkbox"/> (16) Loop 323 <input type="checkbox"/> (17) Loop 281 <input type="checkbox"/> Other <input type="checkbox"/> (99) None
	Address, intersection, landmark _____ City/County/State/Zip _____ If location written above is not Smith, Harrison, Gregg, Rusk, or Upshur county, which road did you use to leave the Tyler / Longview area? _____ (Road name) Is this vehicle usually based at or out of this location? <input type="checkbox"/> Yes <input type="checkbox"/> No Odometer reading _____	a.m. p.m. Depart ____:_____ a.m. p.m.					
15 THEN I WENT TO:	Name of Place _____	Arrive _____:_____	<input type="checkbox"/> (1) Base Location / Return to Base Location <input type="checkbox"/> (2) Delivery <input type="checkbox"/> (3) Pick-up <input type="checkbox"/> (4) Maintenance (fuel, oil, etc.) <input type="checkbox"/> (5) Driver Needs (lunch, etc.) <input type="checkbox"/> (6) To Home <input type="checkbox"/> (7) Other	<input type="checkbox"/> (1) Office building (non-government) <input type="checkbox"/> (2) Retail/Shopping/Gas <input type="checkbox"/> (3) Industrial/Manufacturing/Warehouse <input type="checkbox"/> (4) Medical <input type="checkbox"/> (5) Educational (12th grade or <) <input type="checkbox"/> (6) Educational (College, trade, etc.) <input type="checkbox"/> (7) Government <input type="checkbox"/> (8) Residential <input type="checkbox"/> (9) Airport <input type="checkbox"/> (10) Eating Establishment <input type="checkbox"/> (11) Other (Specify) _____ <input type="checkbox"/> (99) Do not know	<input type="checkbox"/> (1) Farm Products <input type="checkbox"/> (2) Forest Products <input type="checkbox"/> (3) Marine Products <input type="checkbox"/> (4) Metals & Minerals <input type="checkbox"/> (5) Food, Health & Beauty Products <input type="checkbox"/> (6) Tobacco Products <input type="checkbox"/> (7) Textiles <input type="checkbox"/> (8) Wood Products <input type="checkbox"/> (9) Printed Matter <input type="checkbox"/> (10) Chemical Products <input type="checkbox"/> (11) Refined Petroleum or Coal Products <input type="checkbox"/> (12) Rubber, Plastic or Styrofoam Products <input type="checkbox"/> (13) Clay, Concrete, Glass or Stone	<input type="checkbox"/> (14) Manufactured Goods / Equipment <input type="checkbox"/> (15) Wastes <input type="checkbox"/> (16) Miscellaneous Materials <input type="checkbox"/> (17)* Hazardous <input type="checkbox"/> (18) Transportation <input type="checkbox"/> (19) Unclassified Cargo <input type="checkbox"/> (20) Driver Refused to Answer <input type="checkbox"/> (21) Unknown to Driver <input type="checkbox"/> (22) Empty <input type="checkbox"/> (23) No Cargo picked up or dropped off at location. *If 17 above, Hazardous Material Placard # _____	<input type="checkbox"/> (1) IH 20 <input type="checkbox"/> (2) US 59 <input type="checkbox"/> (3) US 69 <input type="checkbox"/> (4) US 271 <input type="checkbox"/> (5) US 79 <input type="checkbox"/> (6) SH 155 <input type="checkbox"/> (7) SH 31 <input type="checkbox"/> (8) SH 64 <input type="checkbox"/> (9) SH 110 <input type="checkbox"/> (10) SH 42 <input type="checkbox"/> (11) SH 135 <input type="checkbox"/> (12) SH 322 <input type="checkbox"/> (13) SH 149 <input type="checkbox"/> (14) SH 43 <input type="checkbox"/> (15) SH 300 <input type="checkbox"/> (16) Loop 323 <input type="checkbox"/> (17) Loop 281 <input type="checkbox"/> Other <input type="checkbox"/> (99) None
	Address, intersection, landmark _____ City/County/State/Zip _____ If location written above is not Smith, Harrison, Gregg, Rusk, or Upshur county, which road did you use to leave the Tyler / Longview area? _____ (Road name) Is this vehicle usually based at or out of this location? <input type="checkbox"/> Yes <input type="checkbox"/> No Odometer reading _____	a.m. p.m. Depart ____:_____ a.m. p.m.					

16 HOW MANY MORE TRIPS WILL YOU MAKE TODAY? _____