

# Grayson County Freight Mobility Plan

*U.S. 75 Data and Needs*

## final report

*prepared for*

**Sherman-Denison MPO**

*prepared by*

**Cambridge Systematics, Inc.**

*with*

GRAM Traffic NTX



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**September 30, 2019**

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## 1.0 Summary of Findings

This study focuses on the freight-related use and opportunities for U.S. 75 in Grayson County, TX. The study was undertaken by the Sherman-Denison Metropolitan Planning Organization (SDMPO) in 2019. The recommendation for a traffic counts study and inventory of businesses on U.S. 75 was developed in 2018 as part of the Grayson County Freight Mobility Plan. The study results demonstrate that U.S. 75 carries the same or higher truck traffic levels as comparable segments of I-35 to the west.

The U.S. 75 corridor is the central north-south artery in Grayson County. Connecting to the Metroplex to the south and Oklahoma to the north, this highway carries more passenger and truck traffic than any other roadway in the County. Most of U.S. 75 is designed to Interstate standards and in particular south of Grayson County the highway is up to 10 lanes wide. However, within Grayson County U.S. 75 is limited to 4 lanes wide, and the geometry is not up to Interstate standards on a 4-mile gap from FM 1417 to SH 91. In particular, multiple entrances and exits for U.S. 75 in Grayson County are not designed for the traffic volumes and speeds currently on the highway. Frontage roads exist on both sides of the highway; however, they are not continuous throughout the County.

U.S. 75 is a critical asset for the County's freight system and economic potential. While current traffic levels are not creating congestion at levels to stall economic growth, increasing traffic and future congestion are a threat. The population of Grayson County is forecasted to increase to 335,000 by 2050—an over twofold increase. Increasing traffic and future congestion are a threat to potential growth within the County. This booming population is an economic opportunity, yet unchecked growth can also be a threat to the County's current amenities and assets. Planning and employment of smart growth strategies can help the County preserve desired land uses, minimize congestion growth, and reduce land use conflicts.

This study takes a detailed analysis of the Grayson County U.S. 75 corridor. Traffic counts were collected at 4 locations on U.S. 75 in 2019. The 4 locations were near the Oklahoma border, north of U.S. 82, south of U.S. 82, and in Van Alstyne. It was found that this corridor carries up to about 67,000 vehicles and 7,000 trucks daily. This is similar to levels carried by I-35 to the west and more than the total traffic carried by I-30. However, I-30 carries more trucks.

This study also conducted an inventory of freight-dependent businesses along the U.S. 75 corridor. Fifty-three percent of freight businesses in the County are located within 2 miles of the corridor and 32 percent are located within 1 mile. Almost 250 businesses taking up an estimated 7.5 million square feet are found along the U.S. 75 corridor within the County. Manufacturing businesses make up the largest area of land use adjacent to U.S. 75 with an estimated 2.1 million square feet.

Finally, this study revisited priorities and opportunities for freight in Grayson County by interviewing local agencies and economic development corporations (EDC) and by engaging the Freight Advisory Committee (FAC). These groups confirmed the top priority freight projects were the completion of improvements to U.S. 75. Widening of the highway and pavement improvements between SH 91 and FM 120 was ranked as the top priority project. Frontage roads and ramp improvements will also enhance performance of the roadway in locations where widening is not yet warranted by improving reliability and increasing access to local businesses.

The following chapters of this report describe the traffic analysis, business inventory, and needs and improvements on U.S. 75 in Grayson County.



## 2.0 U.S. 75 Traffic Analysis

### 2.1 Data and Definitions

Traffic counts were collected by the study team at 4 locations on U.S. 75 in 2019. The 4 locations were near the Oklahoma border, north of U.S. 82, south of U.S. 82, and in Van Alstyne. These locations were selected to capture traffic levels in the busiest parts of the county as well as its north and south boundaries. Counts were taken over two 72-hour periods (March 2019 and May 2019) to provide a verification of traffic patterns, to account for unpredictable interruptions such as weather events or crashes, and to ensure quality of counts in the event of a data collection issue. The following sections describe the data collection, definitions for discussing the data, and a summary of the analysis approach.

#### 2.1.1 Data Collection

Traffic counts were collected using a video system. Video counts have the advantage of providing accurate classification of vehicles into lights (small, typically passenger vehicles), mediums (buses and single-unit trucks), and articulated trucks (large trucks such as 18-wheelers), and these systems can easily be installed for temporary counts. However, video detection is more susceptible to inclement weather than systems that use inductive loops or pneumatic tubes.

The Texas Department of Transportation (TxDOT) uses a variety of traffic count methods, including automatic traffic recorders, accumulative count recorders, and automated vehicle classification. There are no permanent automatic traffic recorders operated by TxDOT in Grayson County. Accumulative count recorders are used for the majority of traffic counts conducted by TxDOT in Grayson County and throughout the State. These recorders count the number of axles at a location and use an axle factor to estimate the number of passenger and large vehicles. Axle factors are calculated based on classification counts (automatic or manual) conducted in the region or along the corridor.

When comparing the findings from this study to previous traffic counts conducted by TxDOT, it is important to note the differences in collection methodology, which creates limitations in terms of direct comparison. However, both methods are widely used by transportation agencies to capture traffic and truck volumes. While there are limitations on the ability to directly compare between volumes identified by each method, the analysis is able to show a general trend of traffic and estimates of truck traffic.

During one period, counts at location near U.S. 82 were found to be lower than at the other sites due to an unknown cause, potentially a special event, crash, construction or other event impacting roadway traffic that was not identified. Averages from the other three U.S. 75 traffic count locations were used to adjust the volumes at the U.S. 82 location. Further methodological details are included in Appendix A.

#### 2.1.2 Definitions

For the purpose of this freight plan, terms are defined as follows:

- Raw Traffic Count—Traffic counts before seasonal adjustment.
- Adjusted Traffic Count—Traffic counts after seasonal adjustment by day of week and month. Seasonal adjustment factors from TxDOT were used in this study.

- Annual Average Daily (Truck) Traffic—The estimated level of traffic on an average day over the course of the year. Annual average values are seasonally adjusted.
- Light Vehicle—Passenger or other small vehicle.
- Truck—Medium and articulated vehicles. While buses can also be classified as medium vehicles, these represent a small percentage of medium vehicles in the region and the State.

## 2.2 Analysis

### 2.2.1 Annual Average Daily Traffic and Annual Average Daily Truck Traffic

Annual average daily traffic (AADT) is the standard measurement used by TxDOT and other agencies to understand traffic levels on highways. The study used the typical approach to calculating AADT, by applying seasonal adjustment factors and/or other multipliers to raw traffic count data in order to most closely approximate an average day.

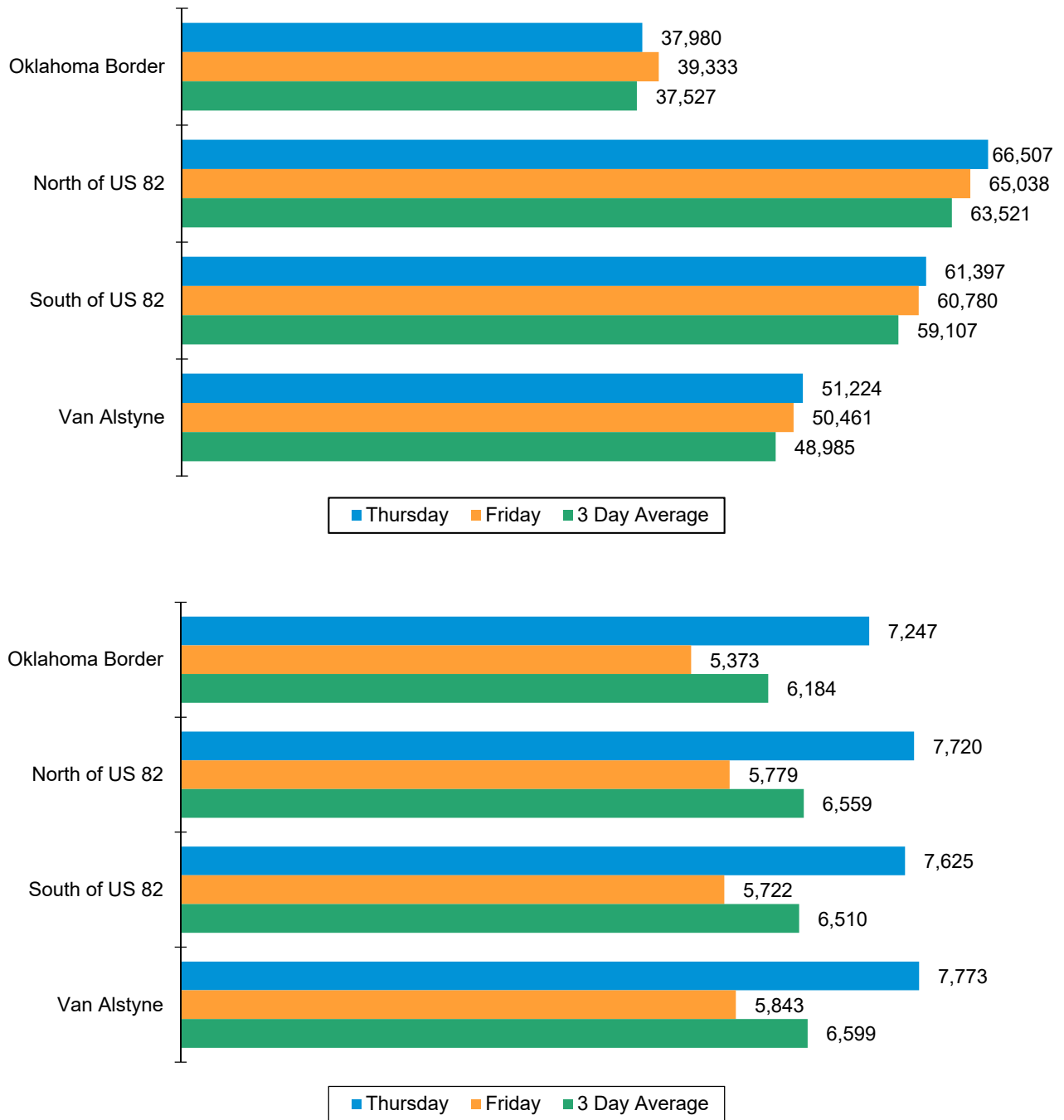
The video counts collected for this study spanned two 72-hour periods covering weekday and weekend conditions: noon Wednesday to noon Saturday for both periods. Seasonal adjustment factors are calibrated to total traffic counts to account for variation in total traffic by month and day of week, and either of the full-collection days or a three-day average could be used to estimate the AADT and annual average daily truck traffic (AADTT). Figure 2.1 shows a similar calculated AADT for Thursday, Friday, and a three-day average.

Truck traffic, however, does not move in the same patterns as passenger traffic, and seasonal adjustment factors do not account for commercial vehicle patterns. As a result, the calculated AADTT differs significantly across Thursday, Friday, and the three-day average (Figure 2.1). AADT and AADTT report by TxDOT are typically based on a single weekday. For the purpose of this freight study, Thursday values will be used to estimate AADT and AADTT to ensure comparability with past weekday counts and in recognition of day-of-week truck fluctuation.

Total traffic is highest north of U.S. 82 (66,500 AADT), followed by south of U.S. 82 (61,400 AADT). These locations are near the intersection of two major highways and in the middle of the largest urbanized area in the County. The locations at the edge of the County have lower traffic levels. These patterns reflect density of residential and industrial development in the urban areas. Notably, past TxDOT counts from 2008 and 2013 found higher traffic levels south of U.S. 82 than north of U.S. 82. This change could be due to development patterns, and continued trends should be monitored.

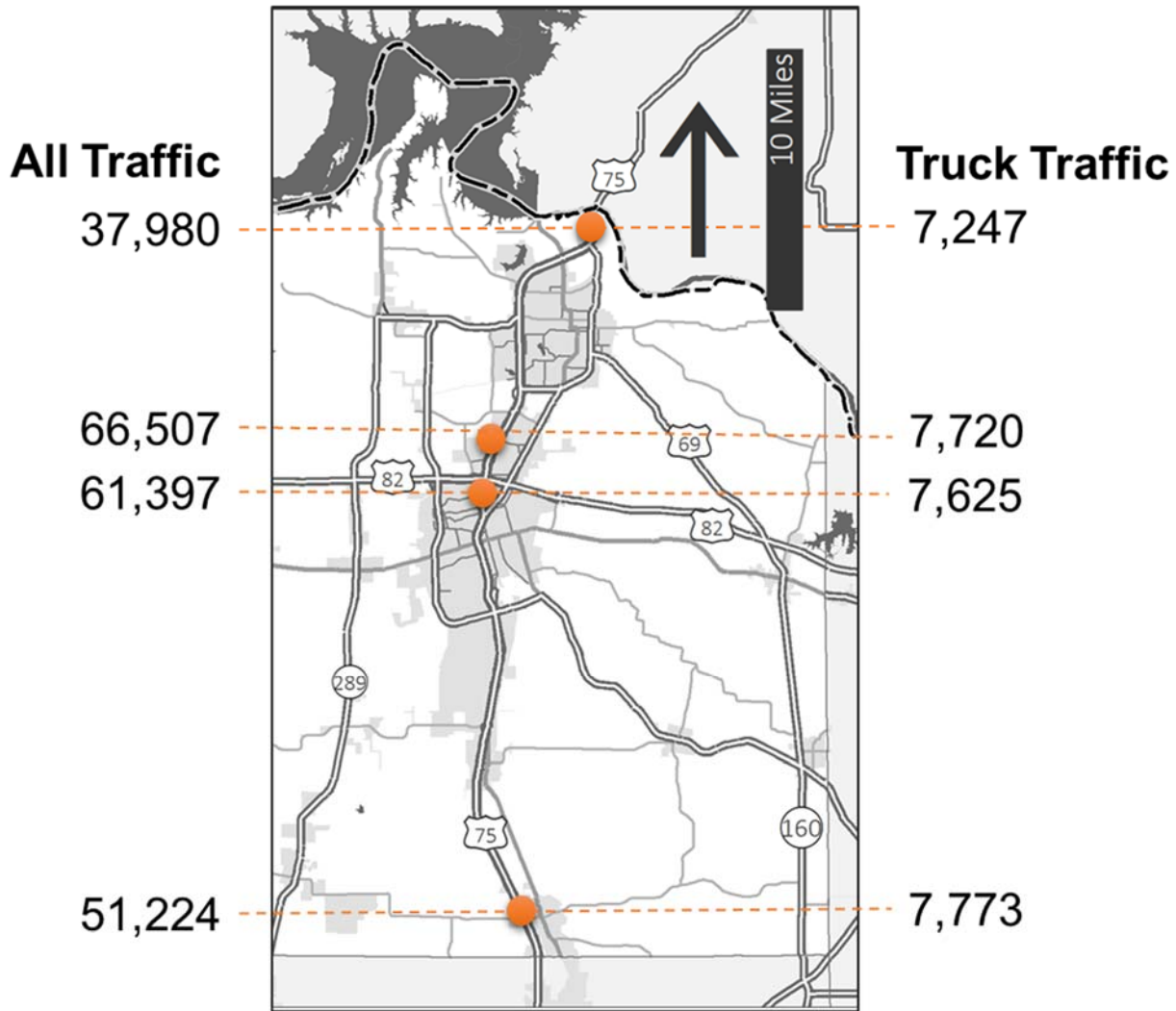
Truck traffic is more consistent throughout the corridor, and all locations have between 7,200 and 7,800 AADTT, with slightly higher counts at U.S. 82 and Van Alstyne than at the Oklahoma border. Truck traffic includes local and regional traffic that serves freight businesses in the county as well as long-haul traffic traveling to destinations within or beyond Grayson County. These travel patterns are less dependent on population centers and result in more uniform traffic throughout U.S. 75. Figure 2.2 displays the AADT and AADTT for each collection location.

**Figure 2.1 Seasonally Adjusted Traffic by Collection Day**



Source: Collected by GRAM NTX, 2019. Analyzed by Cambridge Systematics. Average of March and May.

**Figure 2.2 Average Annual Daily Traffic on U.S. 75**  
*Seasonally Adjusted*



Source: Collected by GRAM NTX, 2019. Analyzed by Cambridge Systematics. Average of March and May.

### 2.2.2 Comparison to Previous Traffic Counts

Traffic on U.S. 75 has increased as development and population have increased; however, the timing/ amount of traffic count data collected in the County has not been sufficient to reflect the most current volumes. TxDOT has permanent traffic counters throughout the State but none in Grayson County. Instead, TxDOT collects data on U.S. 75 traffic in Grayson County for one 24-hour period annually.<sup>1</sup> These TxDOT annual counts are conducted using accumulative count recorders which count the number of axles passing a certain point. Axle factors based on historical data are then applied to the total axle count to estimate the number of trucks and passenger vehicles at a certain point.

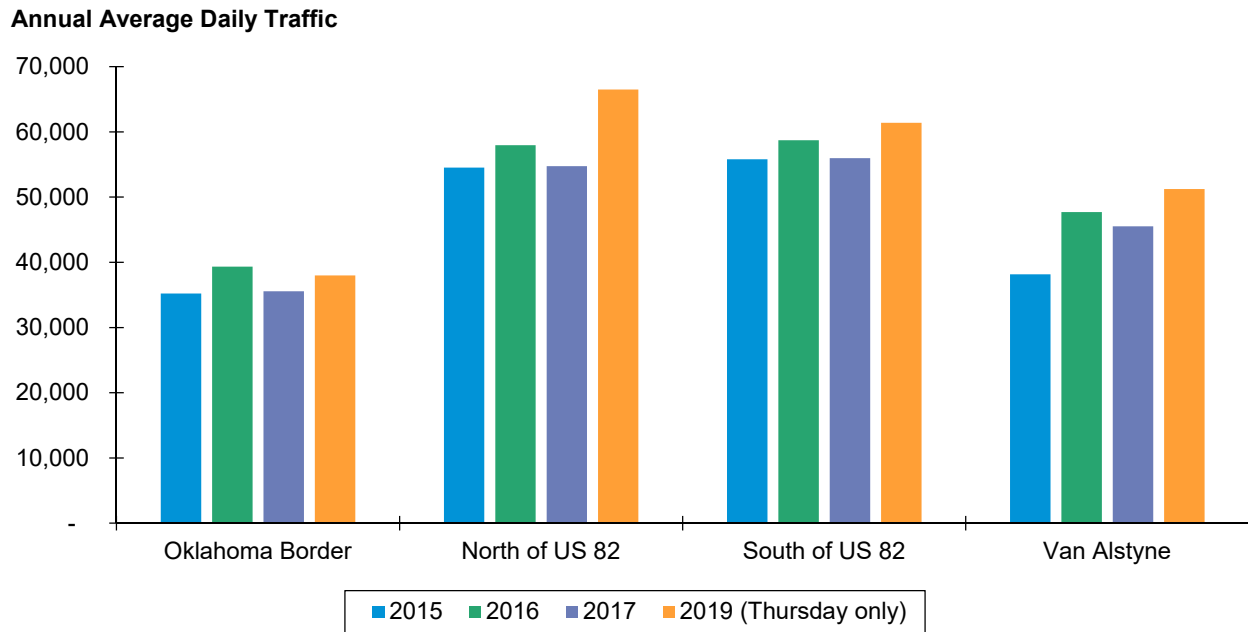
Figure 2.3 displays the historical traffic count at each location. Across the 4 locations combined, total traffic in the U.S. 75 corridor has increased by 13 percent since 2017. Total volumes at the Oklahoma border showed

<sup>1</sup> At the time of this study, 2017 data was the latest available.



the most modest increase from 2017 at 7 percent, and variation from 2015 to 2017 suggests that this increase may not be significant. The largest increases were observed near U.S. 82, with a 21 percent increase north of the intersection and a 10 percent increase south of it. Traffic growth in Van Alstyne, the southernmost city of the County and nearest to the Dallas-Fort Worth metroplex, increased 13 percent, and historical data indicates a steady increase over the past several years.

**Figure 2.3 Historical Annual Average Daily Traffic by Location**  
*Seasonally Adjusted*



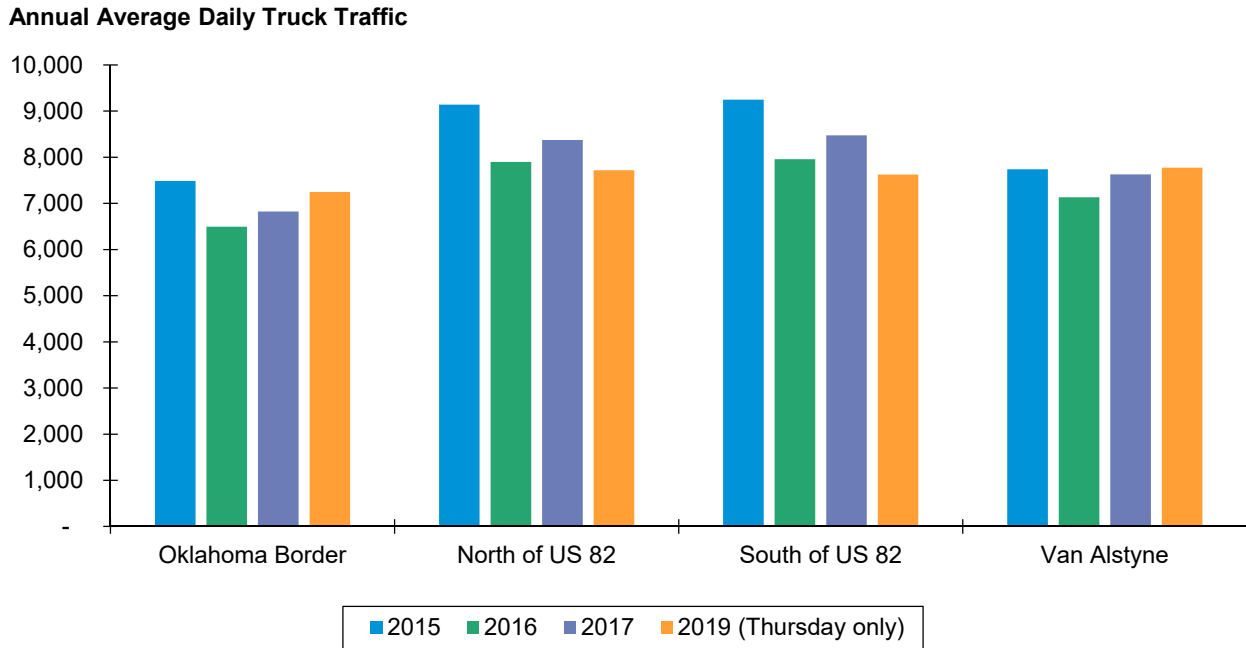
Source: 2015 to 2017: TxDOT STARS II; 2019: collected by GRAM NTX, Analyzed by Cambridge Systematics.

Figure 2.4 shows the truck traffic by year since 2015. Truck traffic in the county has not grown at the same rate as total traffic. Truck traffic near U.S. 82 has remained fairly steady since 2015, fluctuating between 7,600 and 8,500 AADTT. At the edges of the County, reported truck traffic has been steadily increasing since 2016. At all locations, truck counts from 2015 were the highest of any year.<sup>2</sup>

The lack of growth in truck traffic may be an indication that freight development has not accelerated at the same rate as residential development. Residential development leads to modest increases in freight traffic due to activities related to construction, food, fuel, and other services and commodities consumed by residents. Growth in this type of traffic can potentially be offset by other factors, such as county businesses relocating or reducing operations. Anticipated future freight development pattern, which have an effect on truck traffic volumes, are discussed in the next section. Also, variations in truck traffic can also be the result of shifting market trends beyond the influence of the County, particularly for through traffic and goods moving in and out of the Metroplex. Further data collection on the origins and destinations of trucks would be needed to draw conclusions on the impact of through traffic compared to regional traffic patterns.

<sup>2</sup> As noted earlier, reported truck counts often rely on axle factors-based classification counts from other locations. This finding could be the result of actual truck traffic variation or due to an anomaly in the axle factor used for the period.

**Figure 2.4 Historical Seasonally Adjusted Truck Traffic by Location**



Source: TxDOT STARS II; 2019 collected by GRAM NTX, Analyzed by Cambridge Systematics.

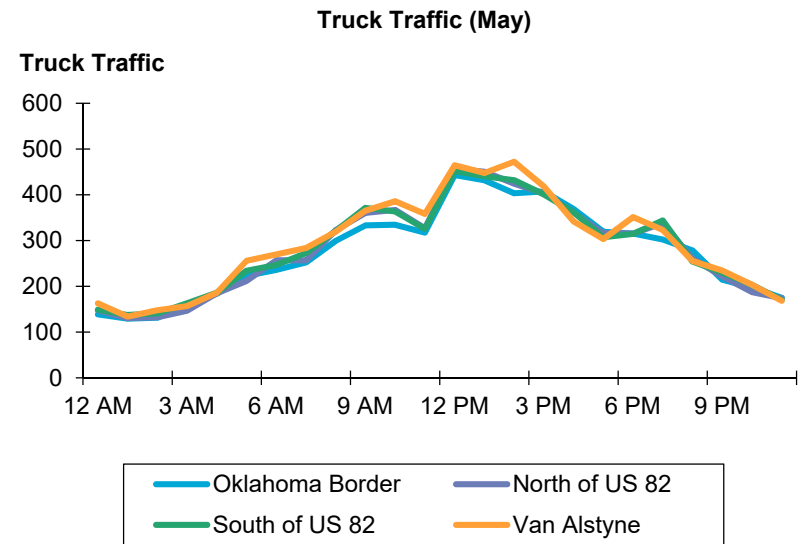
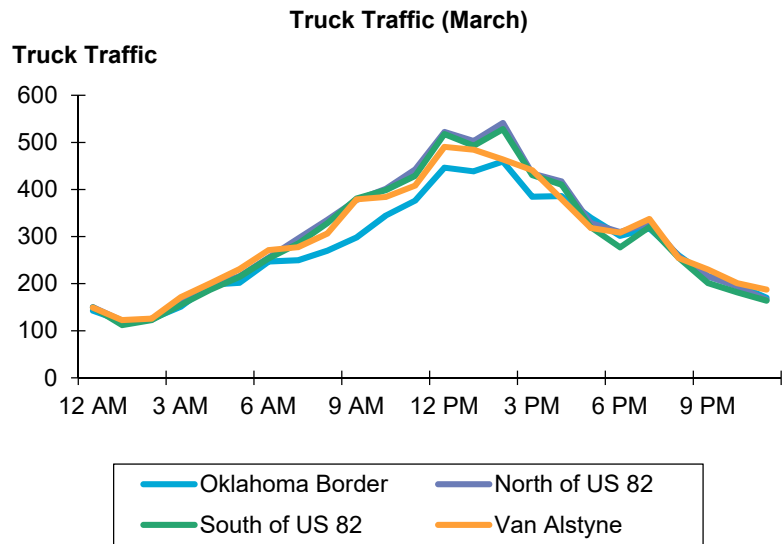
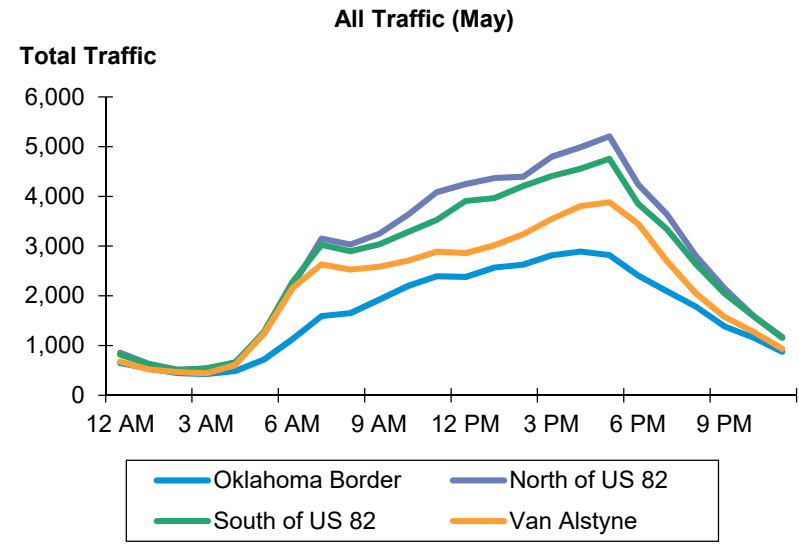
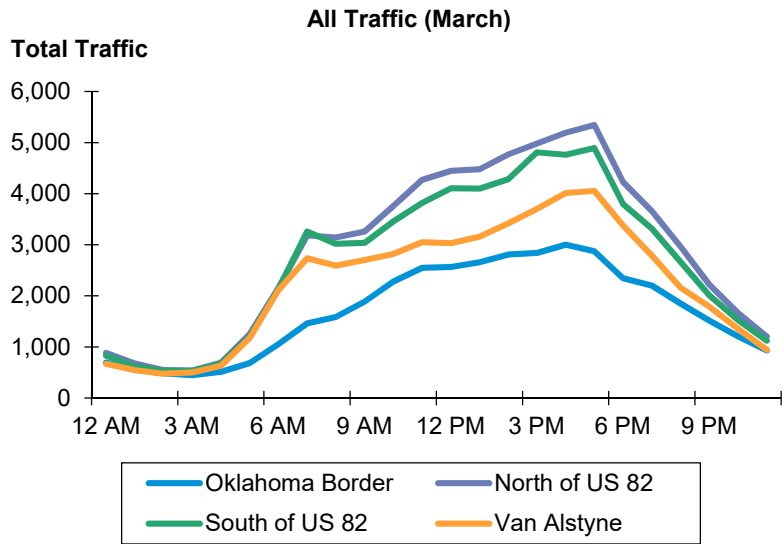
### 2.2.3 Time of Day and Day of Week

Quantifying total and truck traffic by time of day and day of week is important for effectively planning and developing to accommodate passenger and freight transportation needs. While the 66,500 AADT calculated for U.S. 75 north of U.S. 82 would result in approximately 2,800 vehicles per hour on average, there is wide variation throughout the day and week.

Figure 2.5 shows the raw hourly traffic data averaged across all 6 collection days for each location. Peak traffic during both March and May collection periods show more than 5,000 vehicles per hour. Total traffic volumes remain low overnight and begin to increase as residents drive to work, increasing significantly around 7 a.m. and continuing to steadily increase until the evening commute around 6 p.m.

Truck traffic moves in a different pattern. Truck volumes steadily increase from 3 a.m. through 3 p.m., a pattern shifted about three hours ahead of total and passenger travel. The rise and fall of truck traffic throughout the day is steadier than total traffic, reflecting the extended hours of freight movement due to off-peak delivery windows, multiple shifts at manufacturing facilities, and regional or long-haul traffic with a schedule driven by factors outside of Grayson County. Additionally, truck volumes display a prolonged peak from 12 p.m. to 3 p.m. This peak highlights the large number of truck drivers avoiding peak commuting times while operating during daytime hours, though there is still significant interaction between truck and passenger traffic on the corridor throughout the day.

Figure 2.5 Raw Total and Truck Traffic by Time of Day



Source: Collected by GRAM NTX, 2019. Analyzed by Cambridge Systematics.

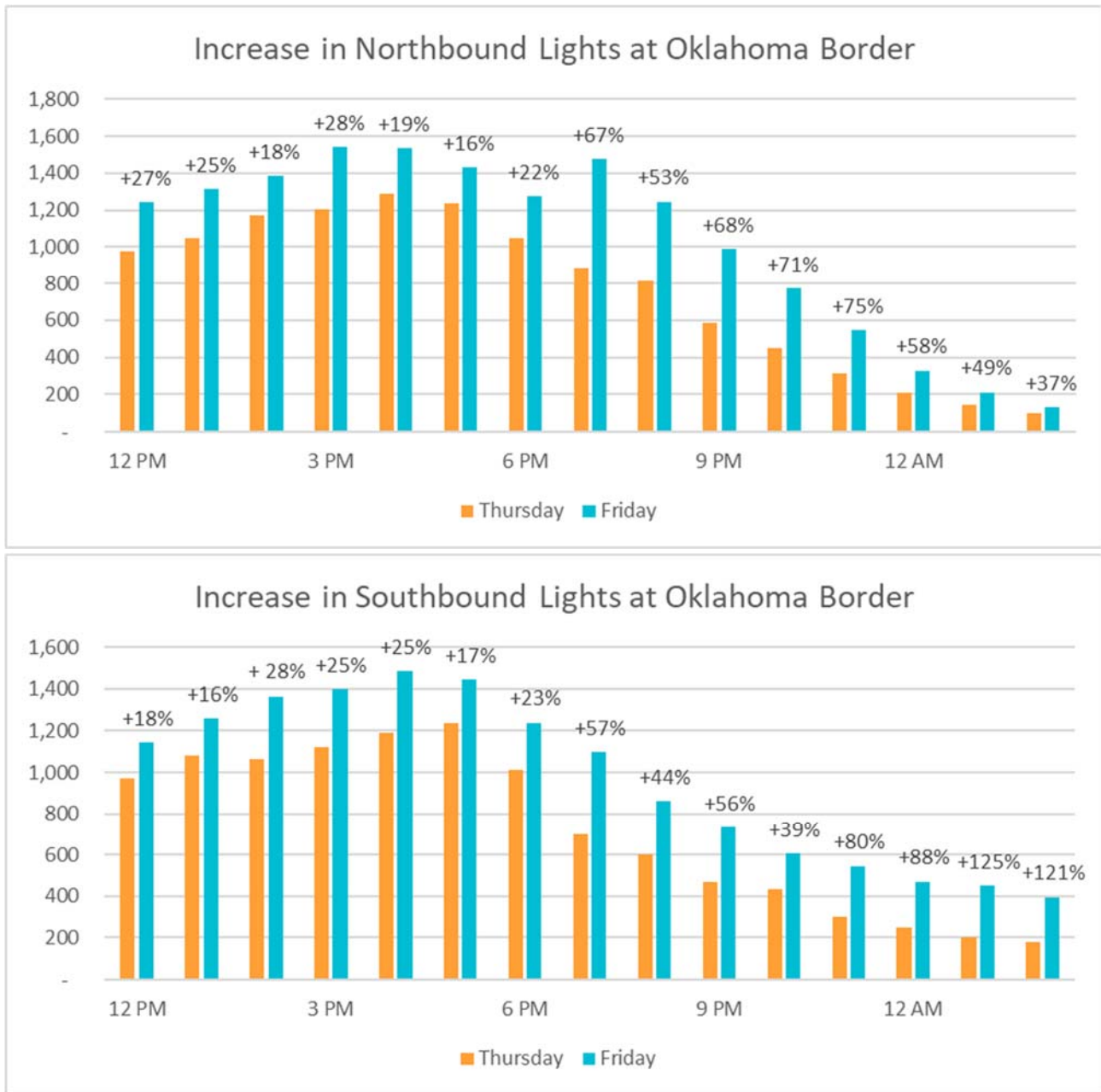
Figure 2.5 shows total and truck traffic by time of day and day of week to illustrate the variation in traffic volumes throughout the week. Total traffic on Wednesday, Thursday, and Friday generally follows commute patterns. On Friday total traffic increases more rapidly throughout the afternoon and remains higher during the evening as drivers go out for dining, entertainment, or travel. In Grayson County, this can be partially attributed to traffic to and from the Choctaw Casino in Durant, OK. The casino is a major entertainment attractor in North Texas and is located less than 15 miles north of the Grayson County line.

Northbound passenger traffic was 15 to 30 percent higher on Friday afternoons than Thursday afternoons. Between 7 p.m. and midnight, Friday traffic was more than 50 percent higher on Fridays than on Thursdays, and the largest difference was between 10 p.m. and 11 p.m. (70 to 75 percent higher). Similarly, southbound passenger traffic was higher on Fridays than on Thursdays throughout the day, but late night increases in traffic also suggest travel to the casino for entertainment. The largest increase in southbound traffic occurred between 1 a.m. and 3 a.m. with over 100 percent more traffic on Friday night (Saturday morning) than Thursday night (Friday morning). Figure 2.6 shows passenger traffic at the Oklahoma border for Thursday and Friday afternoons and nights. In total, approximately 2,000 more passenger vehicles traveled northbound into Oklahoma on Friday evenings (7 p.m. to midnight) compared to the same time period on Thursday evenings.

Total traffic on Saturday increases more slowly throughout the morning compared to the steep increase seen in the weekday commute. However, by midday the total traffic volume is similar to the same time on weekdays as residents drive to leisure activities, errands, or work.

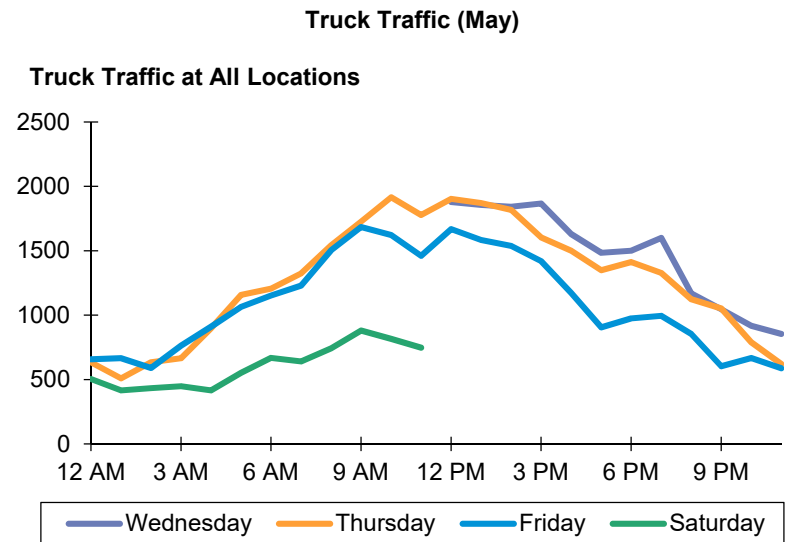
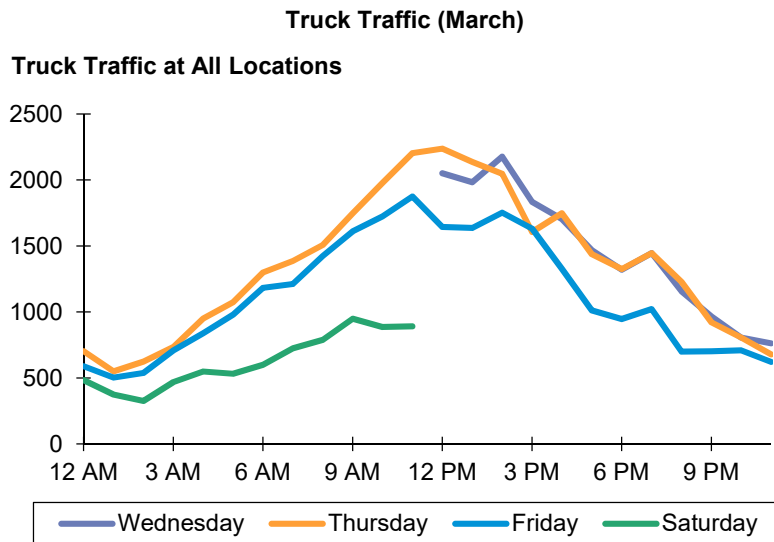
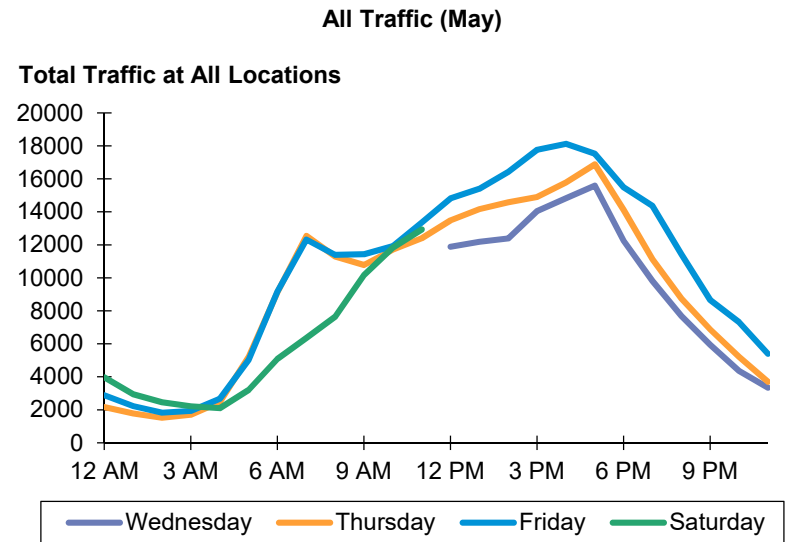
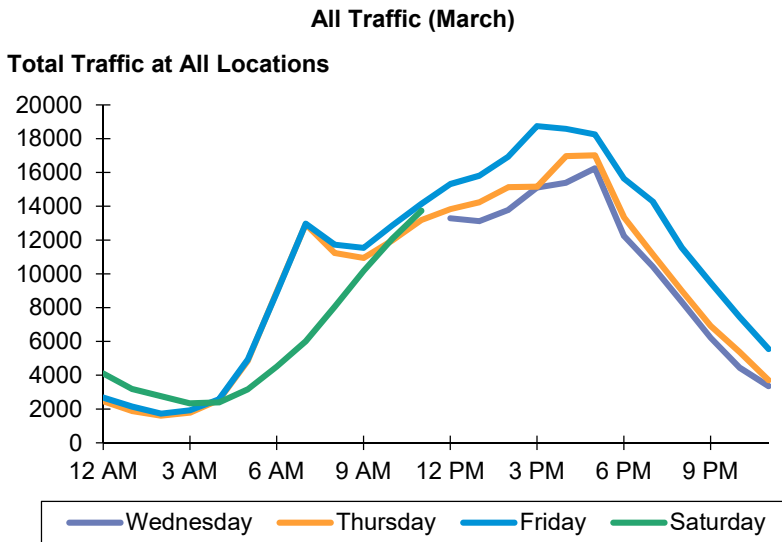
Truck traffic volumes were highest on Wednesday and Thursday, exhibiting the steady climb and prolonged peak observed in the time-of-day analysis. On Friday the same overall time-of-day pattern also is observed; however, the truck volumes reach a lower peak around noon and remain below weekday levels for the remainder of the day. This may reflect trucks entering or leaving the County adjusting their travel schedules due to congestion both within Grayson County as well as in the Dallas-Fort Worth metroplex to the south. Saturday truck traffic is significantly lower than any other day of the week, likely reflecting fewer local and regional pick-ups and deliveries when manufactures and wholesalers are closed and less through traffic, as indicated by the lower volumes both overnight and during the morning.

**Figure 2.6 Raw Passenger Traffic on Thursday and Friday**



Source: Collected by GRAM NTX, 2019. Analyzed by Cambridge Systematics.

**Figure 2.7 Raw Total and Truck Traffic by Day of Week**



Source: Collected by GRAM NTX, 2019. Analyzed by Cambridge Systematics.

## 2.2.4 Capacity, Congestion and Traffic Counts

Under ideal conditions, a basic freeway with a speed limit of 70 to 75 miles per hour (mph) has a capacity of 2,400 passenger cars per hour per lane.<sup>3</sup> Trucks, buses, recreational vehicles (RV), and other large vehicles take up more space than passenger cars and can be converted to passenger car equivalents for the purpose of estimating traffic density against this standard. Many conditions can lower the capacity of a facility below the ideal capacity, including construction, lane closures, pavement quality, weather, or other external factors that may cause drivers to drive more slowly and cautiously along a highway. For facilities operating below maximum capacity, the density in passenger cars per mile per lane can be estimated using traffic volumes and speed.

Level of service (LOS) is a commonly used measure of congestion that estimates the density of traffic on a roadway. The Highway Capacity Manual, 6<sup>th</sup> Edition, defines the following levels of service:

- LOS A: Free-flow operations.
- LOS B: Reasonably free-flow operations, with slight restrictions to maneuverability.
- LOS C: Near free-flow speeds with noticeable restrictions to maneuverability. Queues may be expected to form behind any significant blockages.
- LOS D: Declining speeds and increasing density. Serious limitations to maneuverability. Even minor incidents can be expected to create queuing, because the traffic stream has little space to absorb disruptions.
- LOS E: Operation at or near capacity. Highly volatile operations because there are virtually no usable gaps within the traffic stream, leaving little room to maneuver. Any incident can be expected to produce a serious breakdown and substantial queuing. The physical and psychological comfort afforded to drivers is poor.
- LOS F: Unstable flow with queues forming behind bottlenecks. Breakdowns occurs for a number of reasons, such as temporary traffic incidents, or points or recurring congestion.

Table 2.1 shows the LOS criteria for basic freeways, which are defined as highways with 4 to 8 lanes (in both directions) with posted speed limits between 50 and 75 mph and outside of the influence of merge, diverge, or weave points.

**Table 2.1 LOS Criteria for Basic Freeways and Multilane Highway Segments**

Level of Service	Density (pc/mi/ln)
A	≤ 11
B	> 11–18
C	> 18–26
D	> 26–35
E	> 35–45
F	> 45 or Demand Exceeds Capacity

Source: Highway Capacity Manual, Version 6.0.

<sup>3</sup> Transportation Research Board, *Highway Capacity Manual*, 6<sup>th</sup> Edition. 2018.

Figure 2.8 displays the calculated LOS and AADT for each of the four count locations assuming speeds of 75 mph. Speed will be reduced on the corridor during construction, weather events, crashes, or other incidents that result in slowing traffic. A reduction in speed would result in a higher density of traffic, and therefore a lower LOS. Therefore, the levels of service shown in Figure 2.8 are the highest expected levels.

The majority of the corridor has two lanes in each direction except for an approximately 1.5-mile segment between SH 91 and U.S. 82, where the count location south of U.S. 82 is located. This increased capacity results in lower density of vehicles at this location compared to the location north of U.S. 82. Our analysis found the following conditions:

- North of U.S. 82, U.S. 75 has two lanes and more traffic than any other location. As a result, the corridor operates at LOS C for the duration of the afternoon and LOS B in the morning and evening.
- The count location in Van Alstyne exhibited the next most congestion and operates at LOS B for much of the day. Commute patterns to Collin and Dallas counties to the south are evident in the increased density southbound during the morning commute and longer duration of increased density in the northbound direction during the evening commute.

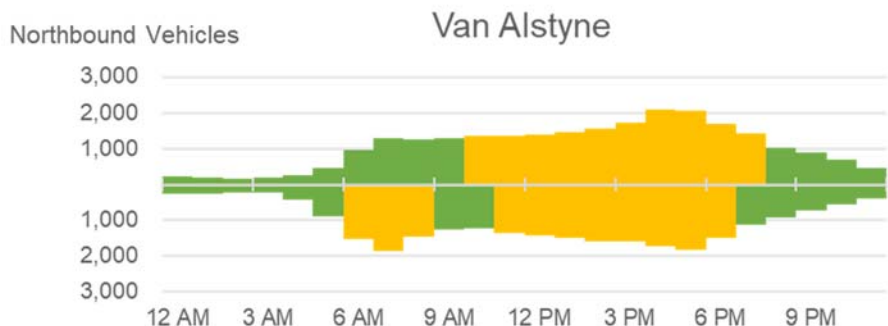
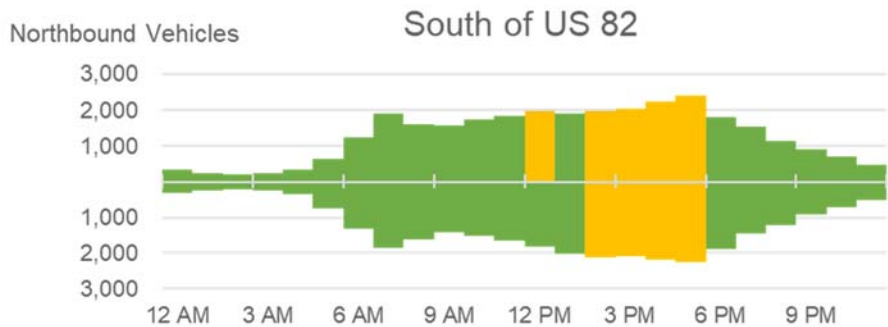
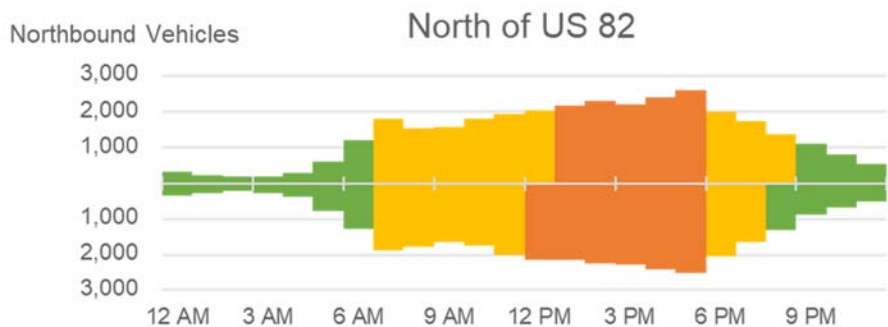
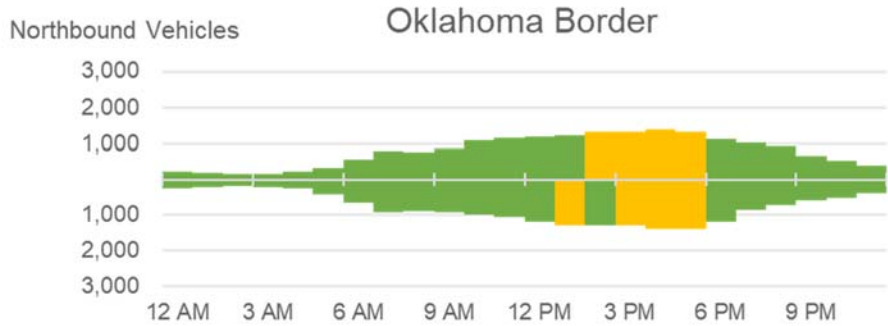
The remaining two locations only operated at LOS B in the afternoon. At the location south of U.S. 82, this result reflects the increased capacity of the three-lane segment where counts were collected. Higher levels of congestion are expected in Sherman south of SH 91 where only two lanes are available.

Another measure of density is the estimated space between vehicles during the peak hour. TxDOT has developed a similar density methodology called the “car space” method that defines congestion by the space between vehicles. In this model, moderately congested corridors have between 175 and 350 feet between vehicles, and congested corridors have less than 175 feet between vehicles. The results of this analysis for a base and forecast year are shown in Figure 2.9. Almost all of U.S. 75 currently is moderately congested, and more congestion is located south of Spur 503. In 20 years, the majority of the corridor south of FM 120 is forecasted to be congested, and all segments will be at least moderately congested.



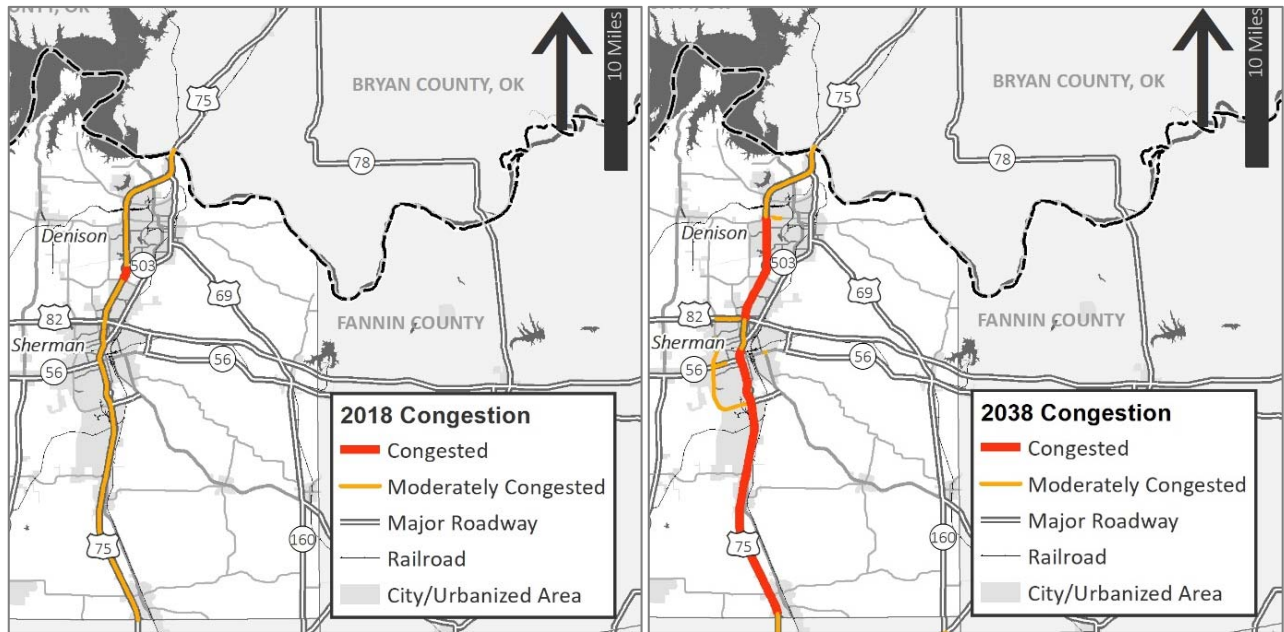
**Figure 2.8 LOS by Location and Time of Day**

■ Level of Service A   
 ■ Level of Service B   
 ■ Level of Service C



Source: Collected by GRAM NTX, 2019. Analyzed by Cambridge Systematics.

**Figure 2.9 Congested Segments in 2018 and 2038**



Source: TxDOT Transportation Planning and Programming Division, 2019.

### 2.2.5 Comparison to I-35 and I-30

U.S. 75 was compared to nearby interstates to better understand its relative performance within the County and within the region. I-35 and I-30 were selected for comparison because of their roles as alternate and complementary routes, respectively. I-35 is parallel to U.S. 75 to the west, and I-35E, I-30, and U.S. 75 all converge in downtown Dallas. The segments of the corridors in Cooke and Hunt counties were selected due to their similar position relative to the Dallas-Fort Worth metroplex.

Table 2.2 compares 2017 average annual daily traffic reported by TxDOT. U.S. 75 and I-35 are compared at similar latitudes and positions relative to U.S. 82. I-30 is compared near Greenville which, like Sherman, is the County seat and largest urbanized area in the County. Total and truck volumes on U.S. 75 were slightly higher than on I-35. Total volume on U.S. 75 exceeds volume on I-30 by more than 10,000 vehicles per day, though more truck traffic was reported on I-30 than either of the other corridors.

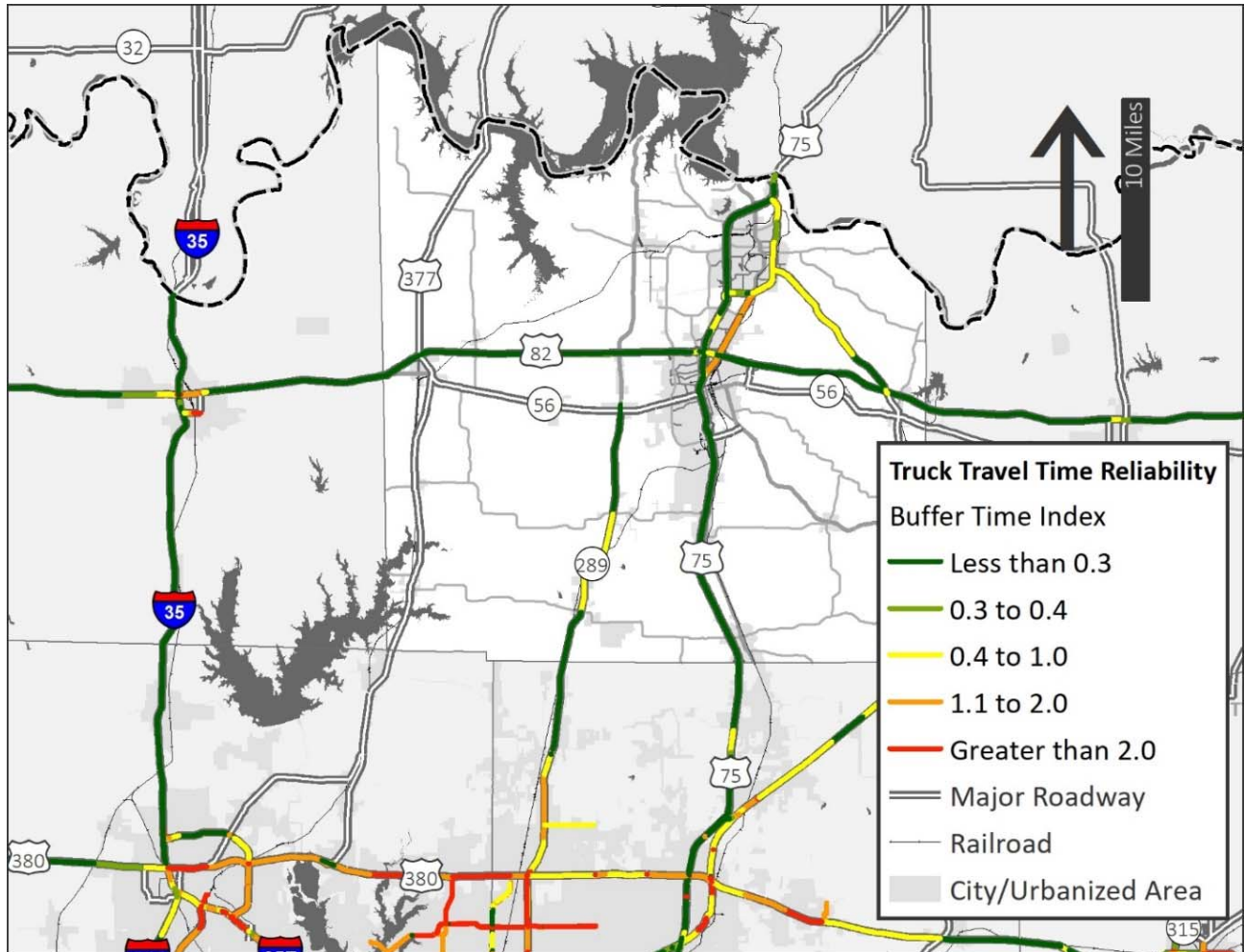
**Table 2.2 Comparison to I-35 and I-30 Traffic Counts**  
2017

Location	Year	Total Traffic	Truck Traffic	Truck Percent
U.S. 75 south of U.S. 82	2017	49,190	7,926	16%
I-35 south of U.S. 82 (near Gainsville)	2017	48,838	7,383	15%
I-30 east of Greenville	2017	37,037	13,140	35%

Source: 2017: TxDOT STARS II. 2019: Collected by GRAM NTX. Analyzed by Cambridge Systematics.

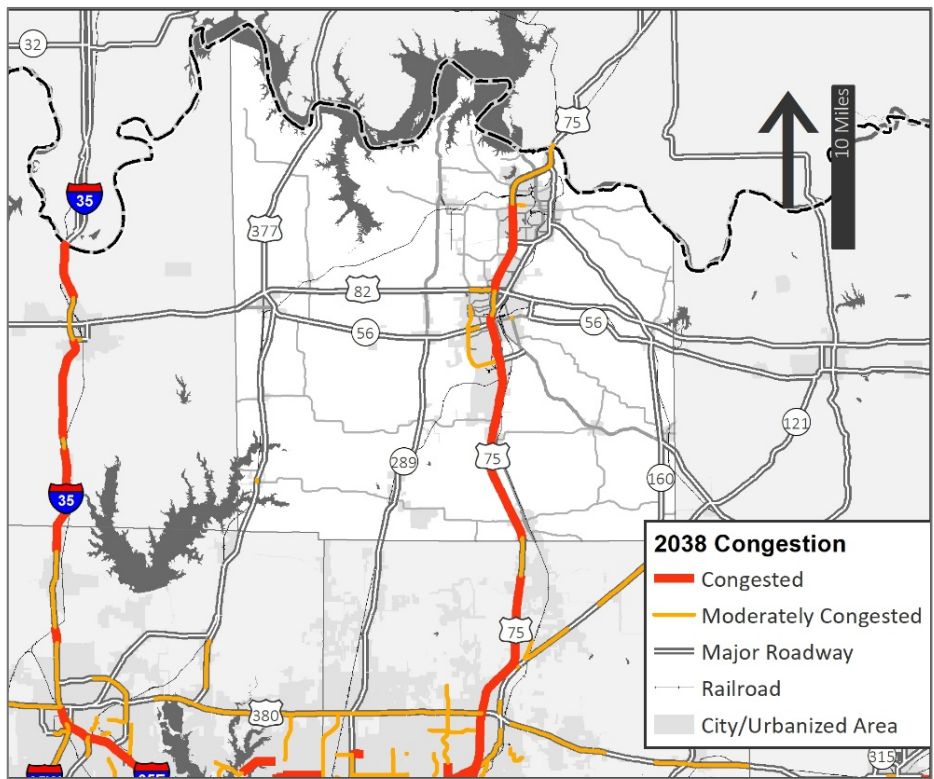
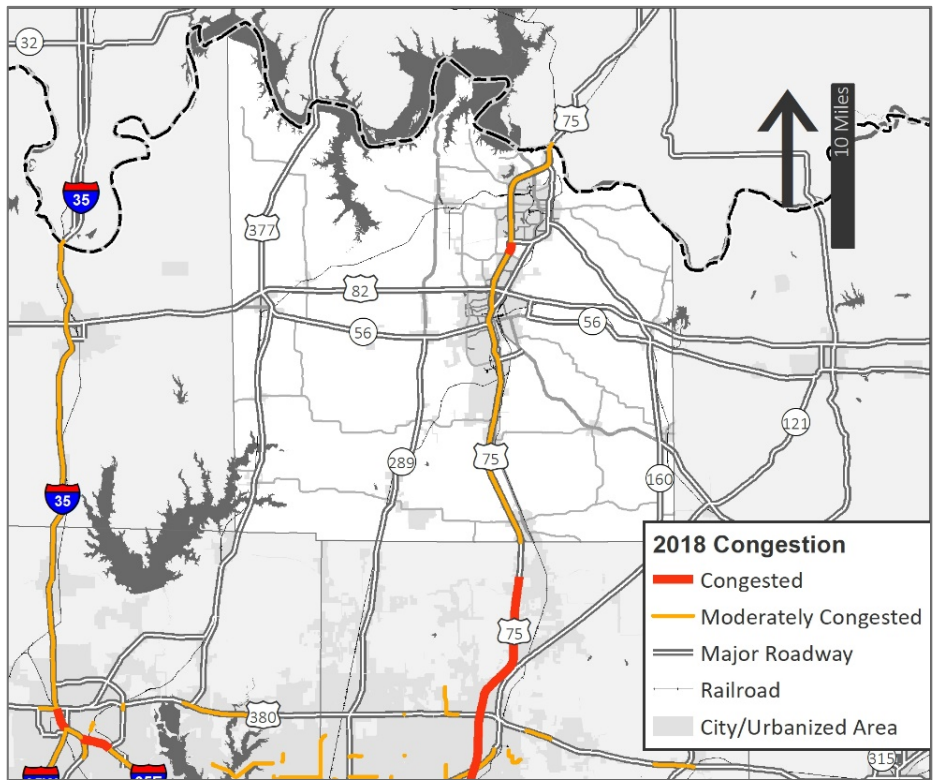
Reliability and congestion patterns are similar between U.S. 75 and I-35. Both corridors are generally reliable, and have moderate congestion throughout. U.S. 75 has sections south of Spur 503 with lower reliability and more congestion than the rest of the two corridors (Figure 2.10 and Figure 2.11). TxDOT estimates that congestion will increase on nearly the entire U.S. 75 and I-35 corridors (Figure 2.10).

**Figure 2.10 Reliability on U.S. 75 and I-35**



Source: National Performance Management Research Dataset processed for Texas Freight Mobility Plan, 2016.

Figure 2.11 Current and Future Congestion on U.S. 75 and I-35



Source: TxDOT Transportation Planning and Programming Division, 2019.

Table 2.3 expands the corridor comparison conducted in the first phase of the Grayson County Freight Mobility Plan to include U.S. 75 in Collin County and displays several factors related to congestion, reliability, pavement quality, and safety on U.S. 75, I-35, and I-30. Key findings include:

- U.S. 75 in Grayson County and I-35 in Cooke County have similar levels of total and truck traffic, with slightly higher traffic in Grayson County for the most recent data available. U.S. 75 in Collin County has the most traffic of any of the segment analyzed, and I-30 has the most truck traffic of any segment.
- U.S. 75 in Collin County is the only corridor of the four locations compared with significant congestion today. U.S. 75 in Grayson County and I-30 in Hunt County are expected be congested on 75 percent of the corridor by 2038, and I-35 in Cooke County is expected to be congested on more than 80 percent of the corridor.
- U.S. 75 currently is more reliable in Grayson County than in Collin County to the south. Investment in mobility and accessibility are needed to maintain this advantage as the county continues to grow and develop.
- Pavement condition on U.S. 75 in Grayson County is worse than any of the other comparison corridors with 16 percent of lane-miles in poor condition. U.S. 75 in Collin County reported only 9 percent in poor condition during the same year, and I-35 and I-30 did not report significant pavement issues.
- U.S. 75 in Grayson County ranked in the middle of these corridor in terms of commercial vehicle-involved crashes. While this segment had fewer crashes per mile than the others, the crash rate fell in the middle when normalized by truck-miles traveled. Additionally, while there was a lower truck crash rate on U.S. 75 in Grayson County than in Collin County, there was a higher rate of fatal crashes in Grayson County compared to Collin County. I-35 in Cooke County reported the highest rate of fatal crashes of any of the corridors.

**Table 2.3 U.S. 75 Corridor Benchmarking**

Corridor	U.S. 75 in Grays on County	U.S. 75 in Collin County	I-35 in Cooke County	I-30 in Hunt County
Mobility: 2017 AADT (Location)	● 49,190 (South of U.S. 82)	● 117,866 (South of U.S. 380)	● 48,838 (South of U.S. 82)	● 37,037 (East of Greenville)
Mobility: 2017 AADTT (Location)	● 7,926 (South of U.S. 82)	● 11,660 (South of U.S. 380)	● 7,383 (South of U.S. 82)	● 13,140 (East of Greenville)
Current Congestion: Percent of Lane-Miles Congested	● 3%	● 93%	● 0%	● 0%
Future Congestion: Percent of Lane-Miles Congested	● 73%	● 93%	● 82%	● 75%
Reliability: Percent of Lane-Miles Unreliable (Buffer Index >= 0.5)	● 4%	● 44%	● 0%	● 0%
Asset Condition: Percent of Lane-Miles in Poor Pavement Condition	● 16%	● 9%	● 4%	● 0%

Corridor	U.S. 75 in Grays on County	U.S. 75 in Collin County	I-35 in Cooke County	I-30 in Hunt County
Safety: CMV-Involved Crashes per Mile (2012–2016)	● 7.16	● 23.66	● 9.27	● 10.61
Safety: CMV-Involved Fatalities per Mile (2012–2016)	● 0.20	● 0.07	● 0.37	● 0.30
Safety: CMV-Involved Crashes per Million TVMT (2012–2016)	● 0.69	● 2.06	● 0.63	● 0.65
Safety: CMV-Involved Fatalities per Million TVMT (2012–2016)	● 0.019	● 0.006	● 0.025	● 0.018

Source: TxDOT Transportation Planning and Programming, 2016, 2017.  
National Performance Management Research Dataset processed for Texas Freight Mobility Plan, 2016.

## 3.0 Freight Business Inventory

### 3.1 Current Business Inventory

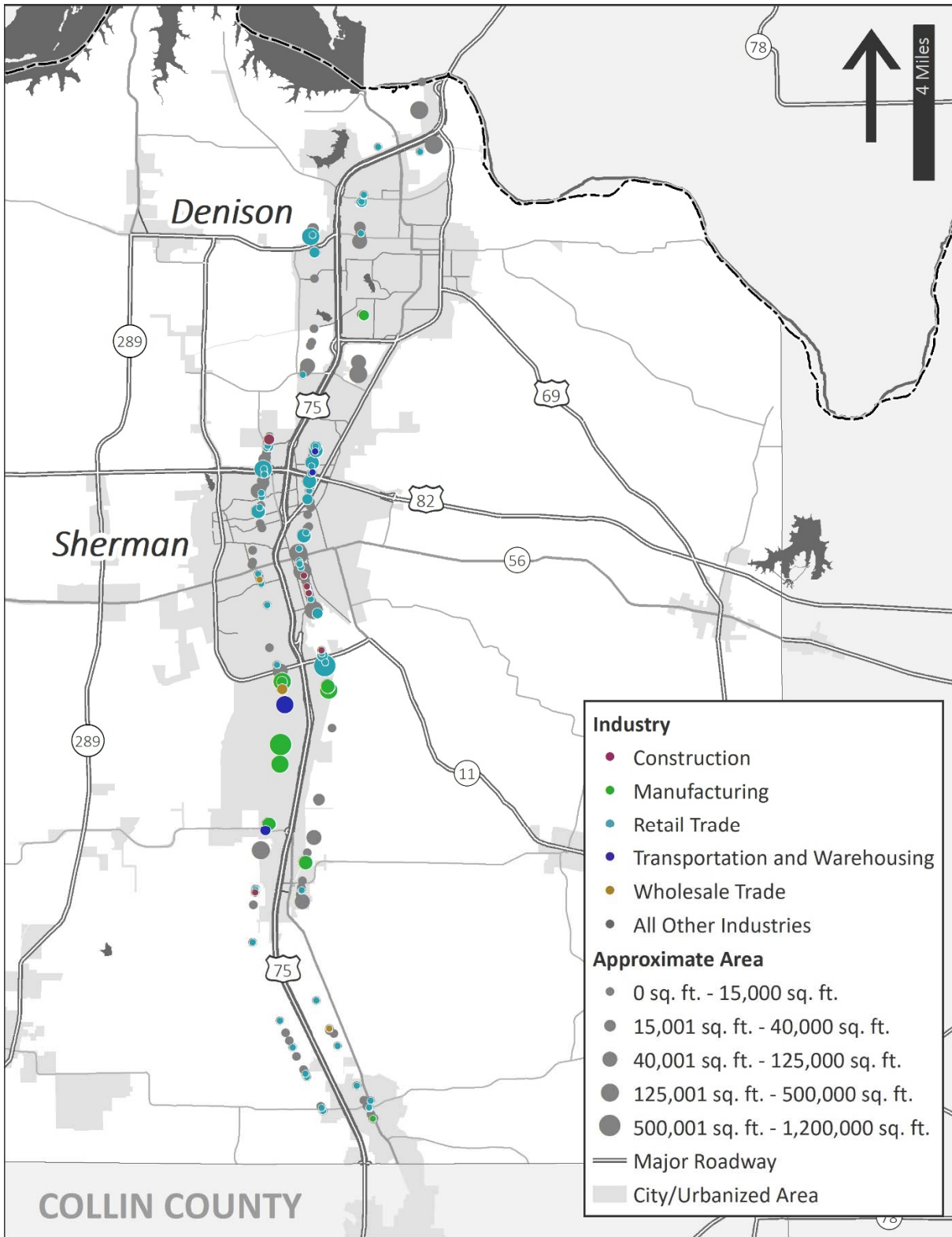
An inventory of businesses on U.S. 75 was conducted to identify current and future truck origins and destinations along the corridor. Businesses that do not front U.S. 75 also are impacted by congestion, reliability, safety, and access to the highway. Manufacturing businesses, including advanced manufacturing, basic manufacturing, and food processing, make up the largest area of land use adjacent to U.S. 75 with an estimated 2.1 million square feet. The largest manufacturers (in terms of square footage) are located near or south of FM 1417, including Tyson, Finisar, Kaiser Aluminum, Texas Instruments, and Emerson Process Management. Retail trade and other establishments, such as hospitals, may ship and receive less freight than manufacturers or wholesalers, but still depend on regular freight movement to operate. These establishments are located throughout the corridor, especially in the most developed parts of the County, especially near U.S. 82. Figure 3.1 shows the location of freight businesses adjacent to U.S. 75.

**Table 3.1 Businesses Directly Adjacent to U.S. 75 in Grayson County**

Industry	Number of Businesses	Total Square Footage
Manufacturing	10	2,172,750
Services	56	1,697,404
Retail Trade	80	1,480,454
Accommodation and Food Services	57	655,052
Health Care and Social Assistance	28	608,725
Transportation and Warehousing	4	528,650
Construction	7	46,400
Wholesale Trade	3	30,800
Agriculture, Forestry, Fishing and Hunting	1	6,000
<b>Grand Total</b>	<b>246</b>	<b>7,226,235</b>

Source: Collected by GRAM NTX, 2019. Analyzed by Cambridge Systematics.

**Figure 3.1 Freight Businesses Adjacent to U.S. 75 in Grayson County**



Source: Collected by GRAM NTX, 2019. Analyzed by Cambridge Systematics.

Note: Business locations have been shifted slightly in the figure to improve the display of the actual location on the north or southbound side of the highway.



## 3.2 Anticipated Development

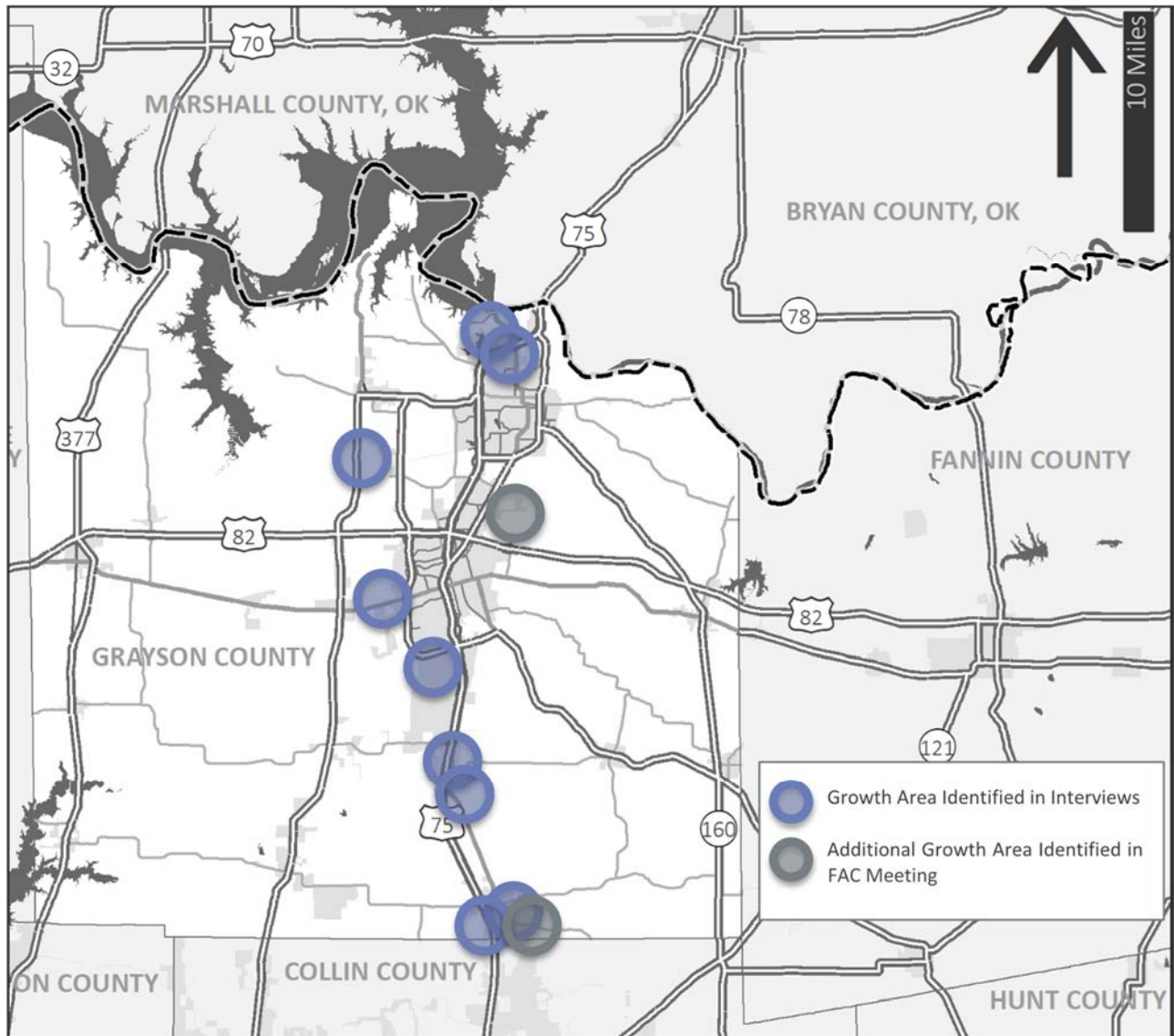
Interviews were conducted with cities and EDCs, including the Sherman Economic Development Corporation, the Denison Development Alliance, the Howe Development Alliance, and the City of Van Alstyne. All of the interviewees noted that U.S. 75 is an asset for attracting businesses to the County. Furthermore, industrial and freight development is expected to be primarily centered along the U.S. 75 corridor over the next several years. Much of this growth is expected to be driven with population growth throughout the County.

Industrial/freight development is expected to continue in several ways in Grayson County: new sites and industrial parks, new tenants in existing industrial parks, growth within existing businesses, and replacement of declining businesses with new tenants or products. EDCs in Grayson County expressed interest in supporting existing manufacturing industries while attracting higher-paying, higher-skill jobs in industries such as advanced manufacturing to grow the county's economic base and opportunities for residents.

Recently, Finisar's new facility and growth at Premier Truck Group of North Texas, Emerson, Modular Power Systems, V-cell Capital, and Presco Products have contributed to increased truck traffic. Notably, many of these industries share supply chain or workforce requirements for advanced manufacturing. Colocation of industries can be advantageous even if businesses are not currently producing intermediate products for other regional businesses by attracting and retaining businesses and skilled employees. These new or expanding businesses also are expected to play a large role in freight growth and increased truck traffic on U.S. 75 in the future.

Several sites for likely future industrial/freight development were identified by EDCs, shown in Figure 3.2. Additionally, these locations were presented to the FAC for comment and additional locations were added. Industrial parks, including North Pointe, Foundation Park, Progress Park, and the Van Alstyne industrial park are expected to growth by attracting tenants and/or expanding over the next several years. In addition to development on U.S. 75, staff from cities and EDCs noted that development on FM 1417, SH 289, SH 56, and other nearby corridors will impact truck traffic on U.S. 75. Utilities also were identified as a limiting or potentially directing factor for growth.

**Figure 3.2 Anticipated Freight Growth Areas along U.S. 75**



Source: Interviews with Denison, Sherman, Howe, and Van Alstyne economic development staff. June 2019 FAC Meeting.

## 4.0 Needs and Improvements on U.S. 75

In 2018, the Grayson County Freight Plan Phase I identified a number of needs and improvements on U.S. 75. Figure 4.1 displays the locations of these needs. These needs have been revisited based on the data collection, interviews, and input from the Grayson County FAC gathered during this phase. Overall, this input confirmed many of these findings and provided additional detail on the importance of U.S. 75 to the region and specific improvements needed.

### 4.1 Mobility and Reliability

The traffic count location north of U.S. 82 was found to have more congestion than south of U.S. 82 (which has additional lanes at the location studied), in Van Alstyne, or near the Oklahoma border. As noted in Section 2.2.1, past traffic counts have found more traffic south of U.S. 82 than north of U.S. 82, though both locations have more traffic than the remainder of the corridor in Grayson County. TxDOT's car density method of determining congestion yielded similar findings and identified the segment between SH 91 and Spur 503 as the most congested segment of U.S. 75. This segment also coincides with the most significant pavement challenges on U.S. 75; the TxDOT Paris District spends nearly \$3 million annually to maintain it and poor conditions persist. TxDOT's congestion analysis found that the entire corridor is at least moderately congested in Grayson County, and will be almost entirely congested within 20 years (Figure 2.9).

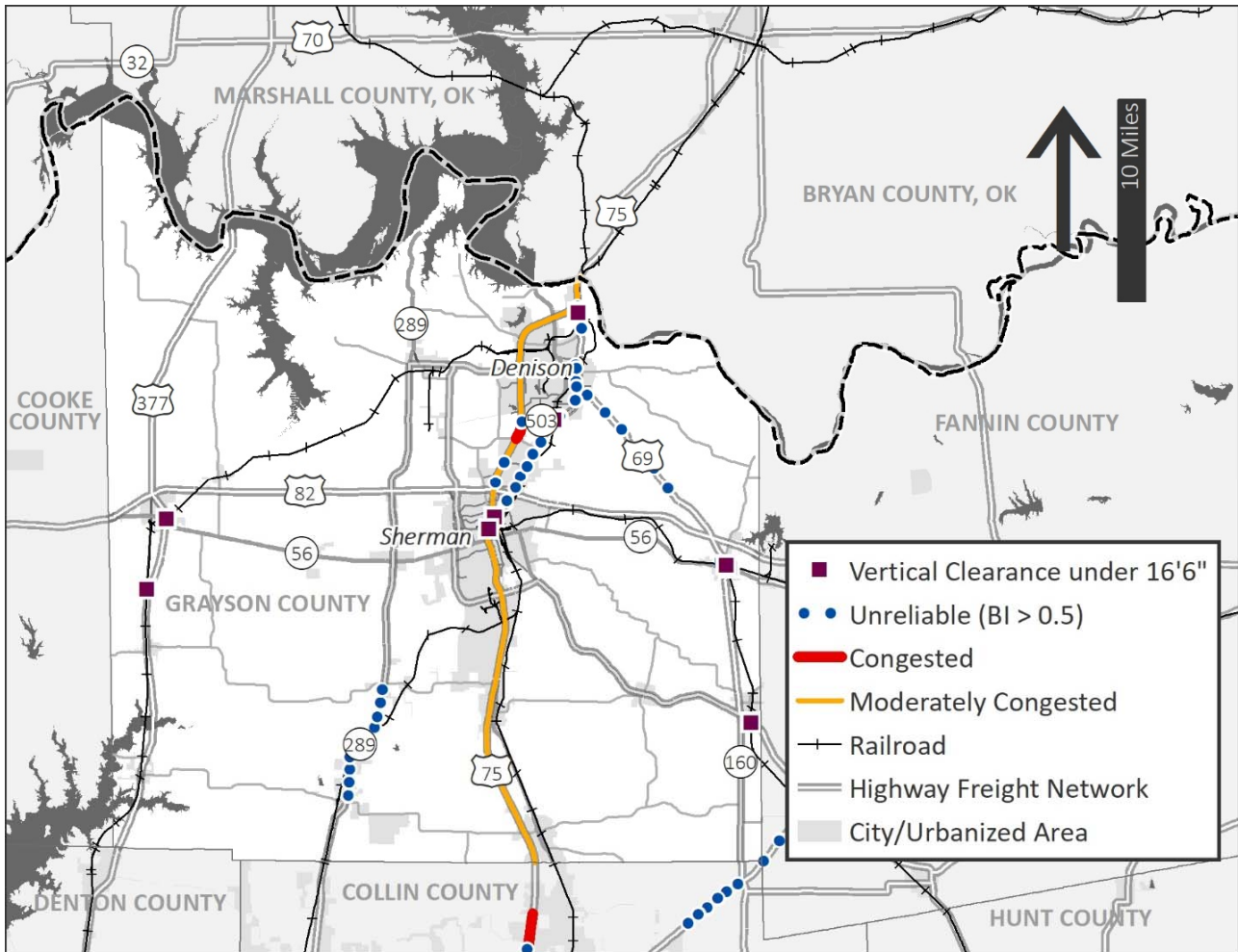
Based on these findings, **the widening of U.S. 75 through the urbanized areas of Sherman and Denison remains the top mobility priority for Grayson County.** Widening U.S. 75 to six lanes south to Collin County as well would improve consistency throughout the multicounty corridor, prevent bottlenecks associated with lane drops, and provide additional capacity for development patterns that are increasing the amount of freight and passenger traffic moving between Collin and Grayson counties (and beyond).

### 4.2 Bridge and Pavement Condition

The FAC identified asset condition and design for freight as a key issue for U.S. 75 and the County. When comparing U.S. 75 in Grayson County to similar corridors in the region, committee members noted that U.S. 75 has similar truck traffic levels but markedly worse pavement quality. The corridor benchmarking discussed in Section 2 confirms this observation from local stakeholders. Additionally, segments of the frontage road have washed out and cannot carry permitted loads, including between SH 91 and FM 84. These segments are expected to reopen within a year; however, this issue highlights the need to modernize U.S. 75 to better handle extreme rain and weather events.

Low bridges continue to be a limiting factor for moving freight on or accessing U.S. 75, and no additional vertical clearance issues were identified on the corridor. Narrow bridges were identified by stakeholders as another barrier to freight mobility, such as the FM 902 bridge in Howe. This bridge not only connects a growing trucking company to U.S. 75 and markets to the north and south; it also is adjacent to Howe High School and used by school buses. **Funding for these bridge raising and widening projects remains a critical need for Grayson County to increase freight mobility, safety, and asset condition.**

**Figure 4.1 Highway Needs in Grayson County**



Source: TxDOT Open Data Portal; National Performance Management Research Data Set; Bureau of Transportation Statistics.

### 4.3 Access and Connectivity

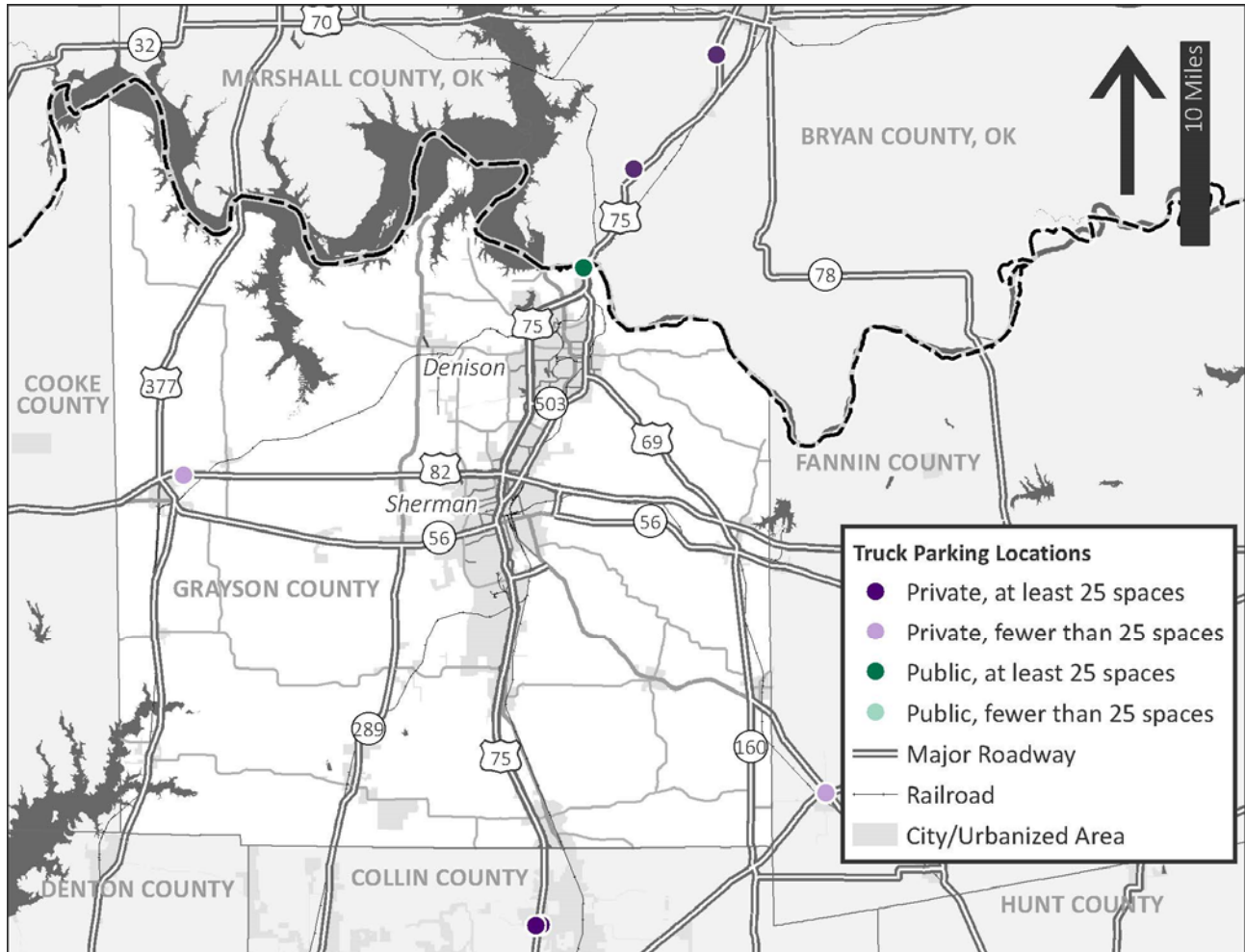
Despite mounting congestion and pavement quality issues, local EDCs report that U.S. 75 is still an asset when attracting businesses and development to Grayson County. However, **connections to the corridor were identified as a challenge to access and mobility in the County and a limitation for freight.** For example, FM 902 is discontinuous at U.S. 75, and trucks must travel across a narrow bridge to travel to the opposite segment. Another location near Fallon Drive also was identified as a difficult transition onto U.S. 75 due to a lack of ramps, and the FedEx facility at this location is relocating to FM 1417. Interchanges and jug handles designed for heavy freight vehicles also were mentioned by the FAC as a connection need along U.S. 75.

### 4.4 Truck Parking

Lack of truck parking is an issue in Grayson County as it is nationally. Drivers need safe locations to stop for federally mandated hours-of-service breaks. They also need locations to stage to wait for a pick-up/delivery

or to avoid curfew hours, congestion, or traffic interruptions. Grayson County does not have any full-service truck stops despite having Interstate-level traffic and its proximity to activity and congestion in Dallas-Fort Worth. Figure 4.2 displays available truck parking in Grayson County and its surrounding area. There is a 40-space rest area on the southbound U.S. 75 frontage road just south of the Oklahoma border. TxDOT’s ongoing truck parking study has found that this location is at or over capacity for much of the day. There are no other truck parking locations on U.S. 75 in the County, and drivers must use the Love’s or Choctaw truck stops in Oklahoma or the Love’s or Flying J truck stops in Collin County. A small, 10-space truck stop exists on U.S. 82 near U.S. 377 in Whitesboro. This location also was found to be regularly over capacity.

**Figure 4.2 Truck Parking Inventory In Grayson County**



Source: TxDOT Statewide Truck Parking Study, 2019.

## 4.5 Proposed Improvements

The top priority highway freight projects in the Grayson County Freight Mobility Plan Phase I were the completion of improvements to U.S. 75, which also are the focus of this study. The gap project is widening U.S. 75 from 4 to 6 lanes in Sherman (FM 1417 to SH 91). Ten miles north of Grayson County, a second project is underway in Calera, Oklahoma which will remove a signalized intersection on U.S. 75/U.S. 69 to improve safety and mobility. Additionally, a planned project will widen U.S. 75 from the Grayson/Collin

County Line to FM 902, and it is expected to begin construction in 2024. The remainder of the 4-lane corridor does not have a funded widening project. The TxDOT Paris District has included the segment from SH 91 to FM 120 in its stakeholder outreach conducted as part of Federal environmental regulations in anticipation of a phased implementation. Additionally, one other segment is under development: from U.S. 69 to the State line to the north. In the long term, increased traffic may warrant development of projects to widen the remaining segments beyond those currently under development, including from the county line to FM 1417 and FM 120 to U.S. 69. The top priority segments are:

- SH 91 to FM 120: Complete current study area.
- Grayson/Collin County line to FM 1417: Align roadway with improvements to the south.
- FM 120 to U.S. 69: Align roadway with improvements to the south.
- U.S. 69 to Oklahoma State line: Align roadway with improvements to the north.

Continuous frontage roads and ramp improvements will enhance performance of the roadway in locations where widening is not yet warranted by improving reliability and increasing access to local businesses. These features will be addressed during planned widening projects. However, they may be advanced as individual projects in locations without a funded project as a near-term mobility solution.

#### 4.5.1 Freight Advisory Committee Input on Project Priorities

The FAC was presented with the list of projects shown in Table A.1, and each member was asked to rank the top five most important projects for the Sherman-Denison MPO to pursue. These rankings were scored by assigning five points for every top ranking, four points for every second ranking, and so on. **The top ranked project was the widening and improvement of U.S. 75 from SH 91 to FM 120.** This segment also was found to have the greatest pavement challenges and highest congestion by the analysis conducted during this project. The southernmost segment of U.S. 75 in Grayson County was the next most popular, and the three others also were in the top five ranked projects (including a tie for fifth). Two bridge clearance projects also were ranked in the top five: FM 120 and Fallon Drive. Only one new project on U.S. 75 was written in by a committee member: improvements to U.S. 75 and County Line Road.

Three additional projects not on U.S. 75 also were noted by the committee:

- Redevelopment of Van Alstyne Commercial Development.
- FM 691 West connection to SH 289.
- U.S. 69 bridge clearance in Bells and Whitewright.

This input from local public- and private-sector stakeholders reinforces the significance of the U.S. 75 widening projects and removal of key vertical clearance barriers to the freight mobility and economic success of Grayson County.

**Table 4.1 Freight Projects on U.S. 75**

<b>Location</b>	<b>Limits</b>	<b>Description</b>	<b>Score</b>	<b>Rank</b>
Sherman/Denison	FM 120 to SH 91	Widen From 4 Lanes to 6 Lanes	22	1
Grayson County	FM 902 to Collin County Line	Widen From 4 Lanes To 6 Lanes	15	2
Denison	U.S. 69 to FM 120	Widen From 4 Lanes to 6 Lanes	12	3
Denison	FM 120	Increase Bridge Clearance (Current Minimum is 15'10")	10	4
Grayson County	FM 1417 to FM 902	Widen From 4 Lanes To 6 Lanes	7	5
Sherman	Fallon Drive	Increase Bridge Clearance (Current Minimum is 16'2")	7	5
Denison	State Line to U.S. 69	Widen From 4 Lanes to 6 Lanes	6	7
Sherman	Loy Lake Road	Increase Bridge Clearance (Current Minimum is 16'4")	6	7
Sherman	At U.S. 82	Interchange and Frontage Road Improvements	5	9
Denison	At Spur 503	Ramp relocation	3	10
Sherman	Fallon Drive	New Entrance/Exit Ramps U.S. 75; Increase Number of Bridge Lanes (Write-in)	3	10
Howe	SH 5/FM 902	Increase Bridge Clearance (Current Minimum is 15'9")	2	12
Grayson/Collin County	County Line Road and 75	(Write-in)	N/A	N/A





## Appendix A. Traffic Count Data Collection and Methodology

Video traffic counts were collected by Gram Traffic of North Texas, Inc.<sup>4</sup> at four locations on U.S. 75: near the Oklahoma Border, north of U.S. 82, south of U.S. 82, and in Van Alstyne. Counts were taken over two 72-hour periods to provide a verification of traffic patterns, to account for unpredictable interruptions such as weather events or crashes, and to ensure quality of counts in the event of a data collection issue. Data were reported in 15-minute intervals. The first round of video counts was conducted in March 2019, and the second was conducted in May 2019. However, due to camera issues, the second period was recounted during an additional third period. The final dates of the traffic count collection were:

- March 20–23, 2019: Northbound and southbound.
- May 8–11, 2019: Southbound only.
- May 29–June 1, 2019: Northbound only.

The collected data can be compared at each location and direction to assess the uniformity and quality of the counts before analyzing them for traffic patterns. Figure A.1 and Figure A.2 display the light (passenger) vehicle count and truck count by location and direction for March and May periods.

Traffic varies throughout the week and the year, and seasonal adjustment factors are used to estimate the annual average traffic volumes at a location based on the date of data collection. The seasonal adjustment factors developed by TxDOT were used in this study to enable better comparison to previous counts. The values shown are averaged across the three-day period and seasonally adjusted using the factors shown in Table A.1.

**Table A.1 TxDOT Paris District Seasonal Adjustment Factors**  
*Functional Class 2*

Month	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
March	1.202	1.021	0.974	0.977	0.955	0.875	0.963
May	1.125	1.016	1.000	0.987	0.981	0.833	0.956

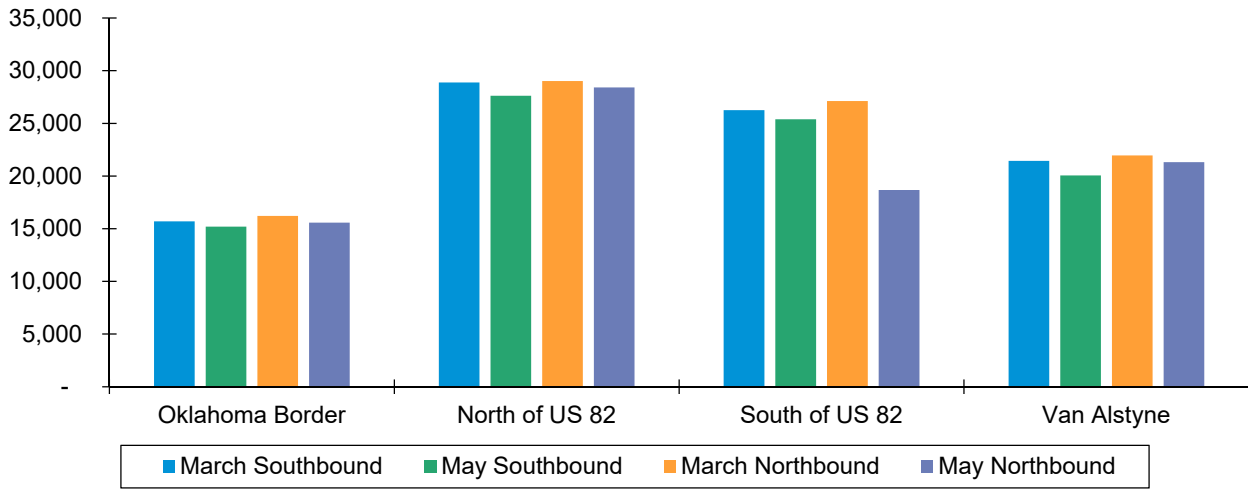
Source: TxDOT, 2019.

In the southbound direction, the percent difference between March and May counts for passenger vehicles was within 6.5 percent at all locations. In the northbound direction, passenger vehicle counts during March and May were within 4 percent for all locations but one: south of U.S. 82. This location was 30 percent lower during the May collection period (Figure A.1). The truck counts varied more between the two months, and the percent difference between months was less than 10 percent for all but one data point; truck counts at the location south of U.S. 82 were 19 percent lower in May than in March (Figure A.2).

<sup>4</sup> <http://gramntx.com/>.

**Figure A.1 Original Light Vehicle Traffic**  
*Seasonally Adjusted, Three-Day Average*

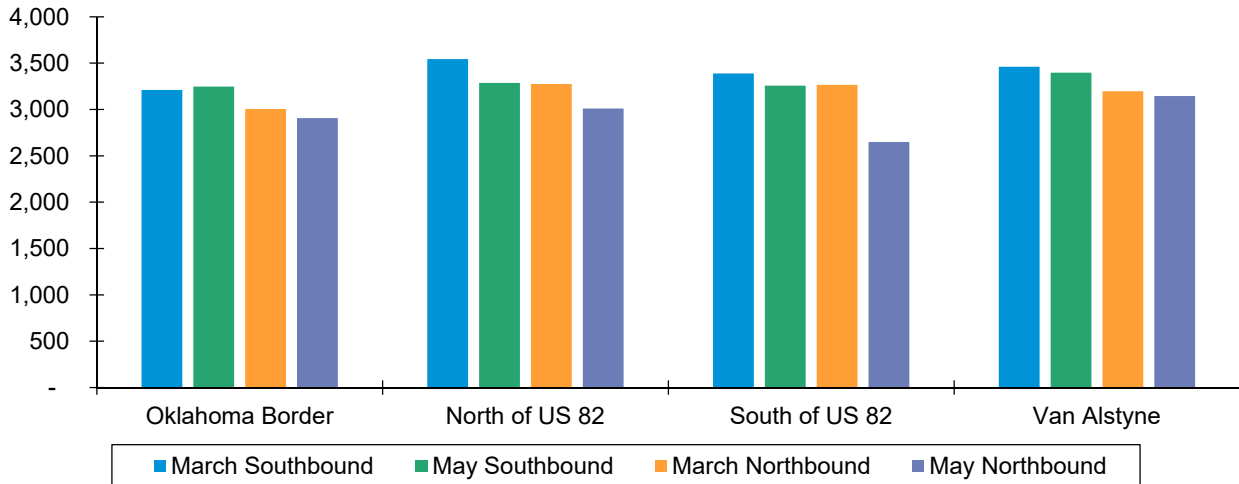
**Annual Average Daily Light Vehicles**



Source: Collected by GRAM NTX, 2019. Analyzed by Cambridge Systematics.

**Figure A.2 Original Truck Traffic**  
*Seasonally Adjusted, Three-Day Average*

**Annual Average Daily Truck Traffic**

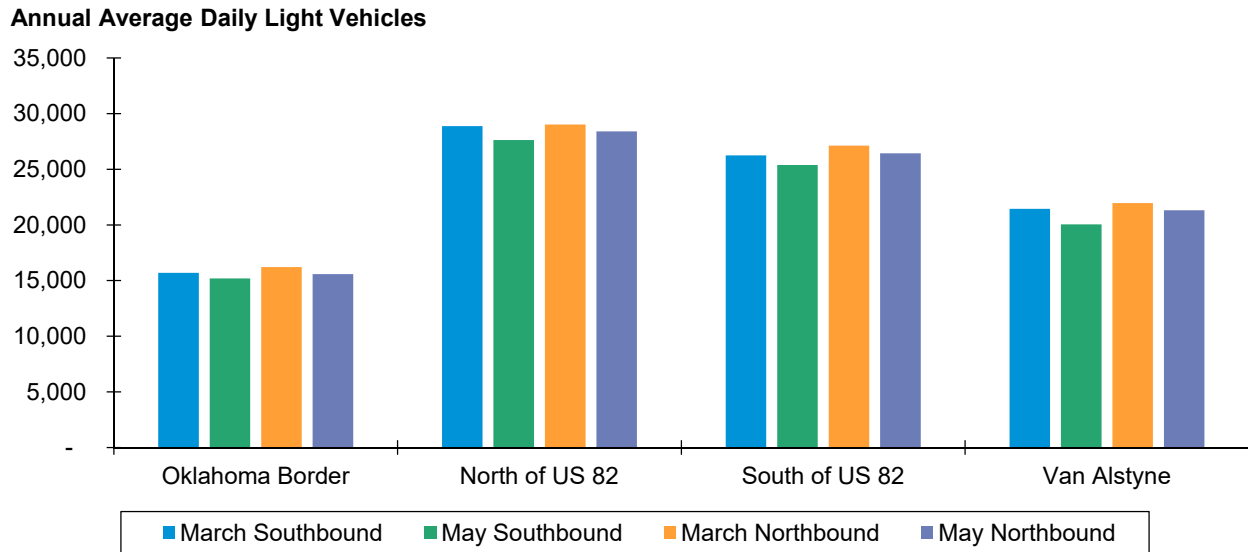


Source: Collected by GRAM NTX, 2019. Analyzed by Cambridge Systematics.

No issues were visible on the video recording and the lower traffic levels were observed throughout the time period. Diversion of traffic due to a special event, crash, construction, or other closure may have resulted in lower traffic. However, the locations north and south of this location did not show a similar pattern and no causes were identified. In order to continue to use the data to assess overall traffic, time-of-day, and day-week patterns, counts at this location and direction were adjusted to align with the overall corridor. The percent change in passenger and truck counts for the locations north and south of this location were

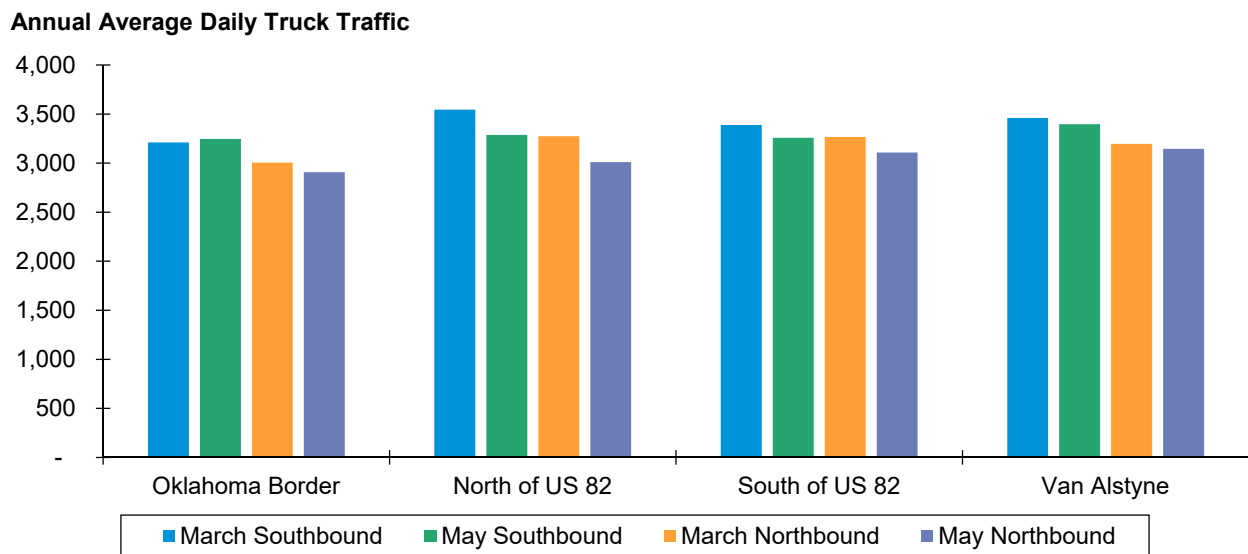
averaged, and the location north of U.S. 82 was assumed to have changed by that amount. The percent change in the southbound direction at the location north of U.S. 82 also was compared to verify reasonableness. The final traffic counts, including this revision are shown in Figure A.3 and Figure A.4. Figure A.3 and Figure A.4 show the difference between the seasonally adjusted traffic counts before and after correcting the location north of U.S. 82.

**Figure A.3 Final U.S. 75 Light Vehicle Traffic Counts**  
*Seasonally Adjusted, Three-Day Average*



Source: Collected by GRAM NTX, 2019. Analyzed by Cambridge Systematics.

**Figure A.4 Final U.S. 75 Truck Traffic**  
*Seasonally Adjusted, Three-Day Average*



Source: Collected by GRAM NTX, 2019. Analyzed by Cambridge Systematics.

**Table A.2 Percent Difference Between Final and Raw Annual Average Light Vehicle Traffic**

Location	Southbound				Northbound			
	March	May	Range	Percent Difference	March	May	Range	Percent Difference
Oklahoma Border	15,699	15,190	508	3.2%	16,214	15,583	631	3.9%
North of U.S. 82	28,879	27,626	1,254	4.3%	29,016	28,404	612	2.1%
South of U.S. 82	26,250	25,385	865	3.3%	27,119	18,670	8,449	31.2%
Van Alstyne	21,441	20,053	1,388	6.5%	21,957	21,321	636	2.9%

Source: Collected by GRAM NTX, 2019. Analyzed by Cambridge Systematics.

**Table A.3 Percent Difference Between Final and Raw Annual Average Truck Traffic**

Location	Southbound				Northbound			
	March	May	Range	Percent Difference	March	May	Range	Percent Difference
Oklahoma Border	3,210	3,246	36	1.1%	3,005	2,907	98	3.3%
North of U.S. 82	3,544	3,287	257	7.3%	3,275	3,011	265	8.1%
South of U.S. 82	3,389	3,257	131	3.9%	3,266	2,650	615	18.8%
Van Alstyne	3,461	3,396	64	1.9%	3,196	3,145	51	1.6%

Source: Collected by GRAM NTX, 2019. Analyzed by Cambridge Systematics.

**Table A.4 Percent Difference in Revised Annual Average Light Vehicle Traffic**

Location	Southbound				Northbound			
	March	May	Range	Percent Difference	March	May	Range	Percent Difference
Oklahoma Border	15,699	15,190	508	3.2%	16,214	15,583	631	3.9%
North of U.S. 82	28,879	27,626	1,254	4.3%	29,016	28,404	612	2.1%
South of U.S. 82	26,250	25,385	865	3.3%	27,119	26,440	679	2.5%
Van Alstyne	21,441	20,053	1,388	6.5%	21,957	21,321	636	2.9%

Source: Collected by GRAM NTX, 2019. Analyzed by Cambridge Systematics.

**Table A.5 Percent Difference in Revised Annual Average Truck Traffic**

Location	Southbound				Northbound			
	March	May	Range	Percent Difference	March	May	Range	Percent Difference
Oklahoma Border	3,210	3,246	36	1.1%	3,005	2,907	98	3.3%
North of U.S. 82	3,544	3,287	257	7.3%	3,275	3,011	265	8.1%
South of U.S. 82	3,389	3,257	131	3.9%	3,266	3,108	158	4.8%
Van Alstyne	3,461	3,396	64	1.9%	3,196	3,145	51	1.6%

Source: Collected by GRAM NTX, 2019. Analyzed by Cambridge Systematics.



## Appendix B. Freight Business Inventory

Table B.1 displays selected attributes from the U.S. 75 freight business inventory. Additional information and photos of buildings also were submitted with this report.

**Table B.1 Percent Difference in Revised Annual Average Truck Traffic**

Name	City	NAICS Category	Vacant	Size Estimate	Latitude	Longitude	Direction
Elite Self Storage	Van Alstyne	Real Estate Rental and Leasing	N	260 x 30	Not Collected	Not Collected	Northbound
Elite Self Storage	Van Alstyne	Real Estate Rental and Leasing	N	140 x 20	Not Collected	Not Collected	Northbound
Howe Elementary School/ Howe Middle School	Howe	Educational Services		60 x 70	33.502323	-96.617031	Northbound
Howe Elementary School/ Howe Middle School	Howe	Educational Services		150 x 380	33.502323	-96.617031	Northbound
Magni-Fab Southwest	Howe	Manufacturing	N	400 x 200	33.517418	-96.615061	Northbound
Magni-Fab Southwest	Howe	Manufacturing	N	100 x 500	33.517418	-96.615061	Northbound
Sherman Collision Repair	Sherman	Other Services	N	50 x 60	33.62153	-96.611032	Northbound
Sherman Collision Repair	Sherman	Other Services	N	75 x 75	33.62153	-96.611032	Northbound
Abel Alemen Roofing	Sherman	Construction	N	80 x 50	33.622602	-96.611346	Northbound
Abel Alemen Roofing	Sherman	Construction	N	40 x 30	33.622602	-96.611346	Northbound
Sherman Chevrolet Cadillac	Sherman	Retail Trade	N	60 x 200	33.66243	-96.610355	Northbound
Sherman Chevrolet Cadillac	Sherman	Retail Trade	N	110 x 90	33.66243	-96.610355	Northbound
B&B Automotive	Denison	Other Services	Y	N/A	33.744928	-96.586202	Southbound
Texoma Health Foundation Park	Denison	Public Administration	N	Not Collected	33.71889	-96.588632	Southbound
Red River ER	Sherman	Health Care and Social Assistance	N	Not Collected	33.657	-96.613	Southbound
Southwest Auction	Howe	Retail Trade	N	210 x 60	33.486744	-96.620419	Southbound
Southwest Auction	Howe	Retail Trade	N	110 x 40	33.486744	-96.620419	Southbound
Southwest Auction	Howe	Retail Trade	N	60 x 75	33.486744	-96.620419	Southbound
Texas Instruments	Sherman	Manufacturing	N	1200 x 1000	33.563827	-96.6057	Southbound
Legacy Village	Sherman	Retail Trade	Y	1000 x 1000	33.594268	-96.604535	Northbound
Tyson Plant	Sherman	Transportation and Warehousing		1000 x 500	33.579318	-96.603469	Southbound
Unknown	Sherman	None	Y	700 x 400	33.61593	-96.609225	Northbound
Clear Key Storage Solutions	Denison	Real Estate Rental and Leasing	N	600 x 450	33.809974	-96.535788	Southbound
Emerson Process Management	Sherman	Manufacturing	N	500 x 500	33.5847	-96.603039	Northbound
Sherman Bearcat Stadium	Sherman	Arts; Entertainment; and Recreation	N	500 x 500	33.638441	-96.615951	Northbound
Texoma Medical Center	Denison	Health Care and Social Assistance	N	500 x 500	33.707608	-96.586516	Northbound

Name	City	NAICS Category	Vacant	Size Estimate	Latitude	Longitude	Direction
Denison High School	Denison	Educational Services	N	500 x 500	33.796253	-96.549442	Northbound
Finisar	Sherman	Manufacturing	N	1000 x 250	33.556208	-96.606192	Southbound
TBD	Howe	None	Y	500 x 500	33.522565	-96.615836	Southbound
Travelers Inn Sherman	Sherman	Accommodation and Food Services	N	450 x 450	33.631156	-96.614161	Northbound
Walmart Supercenter	Sherman	Retail Trade	N	550 x 335	33.671287	-96.611604	Southbound
Walmart Supercenter	Denison	Retail Trade	N	550 x 320	33.761431	-96.587578	Southbound
Kaiser Aluminum	Sherman	Manufacturing	N	550 x 310	33.588453	-96.604553	Southbound
Piner Middle School	Sherman	Educational Services	N	375 x 325	33.637419	-96.614906	Northbound
Consolidated Containers	Sherman	Manufacturing	N	400 x 300	33.586123	-96.603364	Northbound
Sam's Club	Sherman	Retail Trade	N	330 x 350	33.673373	-96.608816	Northbound
Howe High School	Howe	Educational Services		500 x 200	33.52712	-96.611039	Northbound
Academy Sports and Outdoors	Sherman	Retail Trade	N	250 x 325	33.678084	-96.606916	Northbound
Petsmart	Sherman	Retail Trade	N	250 x 325	33.678084	-96.606916	Northbound
Days Inn by Wyndham Sherman	Sherman	Accommodation and Food Services	N	200 x 400	33.595967	-96.604705	Northbound
Dermatology Associates of Denison	Denison	Health Care and Social Assistance	N	260 x 300	33.707608	-96.586516	Northbound
Sherman Area Engineer and Maintenance Facility (TxDOT)	Sherman	Public Administration		240 x 300	33.592484	-96.605313	Southbound
Magni-Fab	Howe	Manufacturing	Y	170 x 375	33.532827	-96.611701	Southbound
ENT Centers of North Texas	Sherman	Health Care and Social Assistance	N	300 x 210	33.66286	-96.61402	Southbound
N/A	Denison	None	Y	250 x 250	33.711065	-96.58998	Southbound
Albertsons	Sherman	Retail Trade	N	275 x 225	33.654886	-96.614301	Southbound
Cigna	Denison	Finance and Insurance	N	400 x 150	33.712197	-96.586242	Northbound
KAM Corners Shopping Center	Sherman	Retail Trade	N	160 x 320	33.645096	-96.613097	Northbound
Nautilus Family Fitness	Sherman	Arts; Entertainment; and Recreation	N	100 x 500	33.666125	-96.610098	Northbound
Tuesday Morning	Sherman	Retail Trade	N	100 x 500	33.666125	-96.610098	Northbound
Alorica	Sherman	Administrative and Support and Waste Management and Remediation Services	N	100 x 500	33.666125	-96.610098	Northbound
Parkside Baptist Church	Denison	Other Services	N	140 x 350	33.75918	-96.58479	Northbound
Cinemark	Sherman	Arts; Entertainment; and Recreation	N	300 x 125	33.675189	-96.610968	Southbound



Name	City	NAICS Category	Vacant	Size Estimate	Latitude	Longitude	Direction
Texas Oncology	Sherman	Health Care and Social Assistance	N	250 x 150	33.665983	-96.611563	Southbound
Herald Democrat	Sherman	Information	N	180 x 180	33.630246	-96.613742	Northbound
Classic Toyota of Texoma	Denison	Retail Trade	N	100 x 300	33.774661	-96.583958	Northbound
La Quinta Inn	Sherman	Accommodation and Food Services	N	100 x 300	33.668465	-96.611282	Southbound
Kaiser Aluminum	Sherman	Manufacturing	N	125 x 230	33.588453	-96.604737	Southbound
Blake Utter Ford	Denison	Retail Trade	N	110 x 260	33.755331	-96.585989	Southbound
Kohl's	Sherman	Retail Trade	N	140 x 200	33.679712	-96.606976	Northbound
Office Depot	Sherman	Retail Trade	N	140 x 200	33.679712	-96.606976	Northbound
Ulta Beauty	Sherman	Retail Trade	N	140 x 200	33.679712	-96.606976	Northbound
Five Below	Sherman	Retail Trade	N	140 x 200	33.679712	-96.606976	Northbound
JoAnn Fabrics	Sherman	Retail Trade	N	140 x 200	33.679712	-96.606976	Northbound
United Built Homes	Sherman	Construction	N	210 x 120	33.682826	-96.608512	Southbound
Hilton Garden Inn	Denison	Accommodation and Food Services	N	250 x 100	33.709427	-96.59105	Southbound
Classic Honda of Texoma	Denison	Retail Trade	N	100 x 230	33.774661	-96.583548	Northbound
Sofa Mart	Sherman	Retail Trade	N	110 x 200	33.659227	-96.611249	Northbound
Bedroom Express	Sherman	Retail Trade	N	110 x 200	33.659227	-96.611249	Northbound
Oak Express	Sherman	Retail Trade	N	110 x 200	33.659227	-96.611249	Northbound
Texoma Event Center	Denison	Arts; Entertainment; and Recreation	N	175 x 125	33.710273	-96.590472	Southbound
Texoma Harley-Davidson	Sherman	Retail Trade	N	130 x 165	33.680027	-96.609234	Southbound
Best Western Plus	Denison	Accommodation and Food Services	N	100 x 200	33.764822	-96.584632	Northbound
Longhorn Inc; Irrigation	Sherman	Wholesale Trade	N	200 x 100	33.585408	-96.604633	Southbound
Ironroot Republic Distilling	Denison	Manufacturing	N	90 x 200	33.730493	-96.58347	Northbound
La Quinta Inn	Denison	Accommodation and Food Services	N	230 x 75	33.764547	-96.586437	Southbound
Angels of Care Pediatric	Sherman	Health Care and Social Assistance	N	50 x 325	33.542256	-96.608365	Northbound
Red River Truck Repair	Sherman	Other Services	N	60 x 250	33.59764	-96.60544	Northbound
Equipment Depot	Sherman	Retail Trade	N	100 x 150	33.598283	-96.605612	Northbound
Camping World of Sherman	Sherman	Retail Trade	N	75 x 200	33.614825	-96.607484	Northbound
Truth Church of Denison	Denison	Other Services	N	150 x 100	33.725483	-96.58668	Southbound
Holiday Inn Express	Sherman	Accommodation and Food Services	N	200 x 75	33.666521	-96.612544	Southbound
Trinity Lutheran Church	Sherman	Other Services	N	200 x 75	33.650002	-96.613415	Southbound
Home Hospice of Grayson County	Sherman	Health Care and Social Assistance	N	80 x 180	33.628723	-96.612944	Northbound
Premier Truck Group of North Texas	Howe	Transportation and Warehousing	N	60 x 240	33.530406	-96.613493	Southbound
Classic Nissan of Texoma	Denison	Retail Trade	N	60 x 230	33.774681	-96.583458	Northbound

Name	City	NAICS Category	Vacant	Size Estimate	Latitude	Longitude	Direction
Exxon	Denison	Retail Trade	N	125 x 110	33.79574	-96.555353	Southbound
Devon Self Storage	Sherman	Real Estate Rental and Leasing	N	58 x 235			Southbound
Sherman Powersports	Sherman	Retail Trade		220 x 60	33.623124	-96.61152	Northbound
RGB Cataract & Lasik	Sherman	Health Care and Social Assistance	N	130 x 100	33.653147	-96.611242	Northbound
Kelley Services Inc.	Sherman	Health Care and Social Assistance	N	140 x 90	33.648192	-96.612664	Southbound
Travis Street Optical	Sherman	Health Care and Social Assistance	N	140 x 90	33.648192	-96.612664	Southbound
North Rig Grill	Denison	Accommodation and Food Services	N	120 x 100	33.761036	-96.584481	Northbound
Calvary Baptist Church	Sherman	Other Services	N	85 x 140	33.627425	-96.61293	Northbound
Cowboy Chicken	Sherman	Accommodation and Food Services	N	170 x 70	33.678084	-96.606916	Northbound
AdvanTx Home Care Inc	Sherman	Health Care and Social Assistance		130 x 90	33.629432	-96.614396	Southbound
Texas Star Bank	Sherman	Finance and Insurance	N	145 x 80	33.639599	-96.617182	Southbound
Promiseland Church of Sherman	Sherman	Other Services	N	105 x 110	33.64011	-96.614594	Northbound
Howe Church of Christ	Howe	Other Services	N	105 x 105	33.521253	-96.614249	Northbound
Cracker Barrel Old Country	Sherman	Accommodation and Food Services	N	110 x 100	33.674769	-96.607689	Northbound
Texas Department of Public Safety	Sherman	Public Administration	N	120 x 90	33.648483	-96.610841	Northbound
DaVita Kidney Care	Denison	Health Care and Social Assistance	N	80 x 135	33.757516	-96.585996	Southbound
Select ER	Sherman	Health Care and Social Assistance	N	135 x 80	33.683885	-96.608343	Southbound
Sherman Bazaar	Sherman	Retail Trade	N	150 x 70	33.64621	-96.61218	Northbound
UPS Store	Sherman	Transportation and Warehousing	N	150 x 70	33.669586	-96.608611	Northbound
Texas Information Center	Denison	Public Administration	N	175 x 60	33.820824	-96.534481	Southbound
Auto Body by Fisher	Van Alstyne	Other Services	N	50 x 200	33.417602	-96.585572	Northbound
TSI Trailers	Van Alstyne	Retail Trade	N	100 x 100	33.430444	-96.593303	Northbound
Community Bible Fellowship	Howe	Other Services	N	80 x 125	#VALUE!	-96.618822	Northbound
First United Bank	Sherman	Finance and Insurance	Y	100 x 100	33.656374	-96.610003	Northbound
Texas Roadhouse	Sherman	Accommodation and Food Services	N	100 x 100	33.667301	-96.609893	Northbound
Fossil Creek Liquor	Denison	Accommodation and Food Services	N	200 x 50	33.730841	-96.584607	Northbound
Cheddar's Scratch Kitchen	Sherman	Accommodation and Food Services	N	100 x 100	33.675732	-96.609958	Southbound
Dollar General	Howe	Retail Trade		75 x 130	#VALUE!	-96.618822	Northbound

Name	City	NAICS Category	Vacant	Size Estimate	Latitude	Longitude	Direction
Stone Ranch	Van Alstyne	Wholesale Trade		80x120	33.452764	-96.605496	Northbound
Angels of Care Therapy	Sherman	Health Care and Social Assistance	N	75 x 125	33.542256	-96.608365	Northbound
N/A	Sherman	None	Y	180 x 50	33.647908	-96.611565	Northbound
John Shoemaker DDS	Sherman	Health Care and Social Assistance	Y	120 x 75	33.653147	-96.611242	Northbound
Classic Certified Preowned	Denison	Retail Trade	N	60 x 150	33.776938	-96.582464	Northbound
Valero/Lone Star Food Store	Denison	Retail Trade	N	150 x 60	33.761972	-96.586677	Southbound
TMC Advanced Medical Imaging	Sherman	Health Care and Social Assistance	N	120 x 75	33.663935	-96.612109	Southbound
Much Love Motors	Howe	Retail Trade	N	150 x 60	33.50764	-96.618503	Southbound
N/A	Sherman	None		110 x 80	33.632054	-96.614597	Northbound
English Color; MinuteMan Press; Re-Bath	Sherman	Retail Trade	N	175 x 50	33.620278	-96.61063	Northbound
Farmers Insurance; Jordan Health Services; The Smoker Alternative	Sherman	Finance and Insurance	N	175 x 50	33.620278	-96.61063	Northbound
Rental One	Van Alstyne	Real Estate Rental and Leasing	N	90 x 95	33.445758	-96.602687	Southbound
Lonestar Food Store/ Mobil/Subway	Van Alstyne	Retail Trade	N	120 x 70	33.421616	-96.587674	Northbound
Olive Garden	Sherman	Accommodation and Food Services	N	90 x 90	33.675988	-96.607532	Northbound
F & I Pawn Shop	Sherman	Retail Trade	N	80 x 100	33.635192	-96.615595	Northbound
Vein Center of North Texas	Sherman	Health Care and Social Assistance	N	100 x 80	33.656221	-96.609662	Northbound
Six and Mango (formerly Grayson Co Equipment)	Sherman	Retail Trade		80 x 100	33.626539	-96.61349	Southbound
Red Lobster	Sherman	Accommodation and Food Services	N	70 x 108	33.677479	-96.609964	Southbound
IHOP	Sherman	Accommodation and Food Services	N	100 x 75	33.664752	-96.609191	Northbound
Valero	Sherman	Retail Trade	N	150 x 50	33.669201	-96.609575	Northbound
Starbucks	Denison	Accommodation and Food Services	N	100 x 75	33.709164	-96.591477	Southbound
Quick Trip	Sherman	Retail Trade	N	150 x 50	33.70758	-96.592431	Southbound
Cavendar Motors	Van Alstyne	Retail Trade		75 x 95	33.456137	-96.608309	Southbound
Cupid Homes	Sherman	Construction	N	70 x 100	33.629438	-96.613443	Northbound
McDonalds	Denison	Accommodation and Food Services	N	70 x 100	33.762834	-96.584667	Northbound
Hoyt Dodge; Chrysler; Jeep	Sherman	Retail Trade	N	100 x 70	33.660366	-96.61252	Southbound
Catfish King	Sherman	Accommodation and Food Services	N	75 x 90	33.672728	-96.608968	Northbound
Logan's Roadhouse	Sherman	Accommodation and Food Services	N	90 x 75	33.677598	-96.609946	Southbound

Name	City	NAICS Category	Vacant	Size Estimate	Latitude	Longitude	Direction
Braums Ice Cream Burger Restaurant	Sherman	Accommodation and Food Services	N	135 x 50	33.660859	-96.61246	Southbound
Chuck E. Cheese	Sherman	Arts; Entertainment; and Recreation	N	82 x 82	33.678798	-96.609449	Southbound
Discount Tire	Sherman	Retail Trade	N	55 x 120	33.679323	-96.609843	Southbound
Braums Ice Cream Burger Restaurant	Denison	Accommodation and Food Services	N	50 x 130	33.763832	-96.584691	Northbound
Reggis Liquor	Sherman	Accommodation and Food Services	N	65 x 100	33.669005	-96.611151	Southbound
Pho Kitchen	Sherman	Accommodation and Food Services	N	65 x 100	33.669005	-96.611151	Southbound
The Jeweler's Bench	Sherman	Retail Trade	N	65 x 100	33.669005	-96.611151	Southbound
Tokyo Sushi	Sherman	Accommodation and Food Services	N	65 x 100	33.669005	-96.611151	Southbound
King Buffet	Sherman	Accommodation and Food Services	N	65 x 100	33.669005	-96.611151	Southbound
Air Force/Navy Recruitment Office	Sherman	Public Administration	N	65 x 100	33.669005	-96.611151	Southbound
The Emergency Center of North Texas	Sherman	Health Care and Social Assistance	Y	50 x 130	33.601535	-96.610148	Southbound
N/A	Sherman	None	Y	70 x 90	33.668763	-96.609633	Northbound
Texoma Pulmonary & Sleep Specialists	Denison	Health Care and Social Assistance	N	60 x 105	33.755949	-96.585989	Southbound
Philipps 66	Van Alstyne	Retail Trade	N	70 x 90	33.420947	-96.589167	Southbound
McDonalds	Van Alstyne	Accommodation and Food Services	N	70 x 90	33.420947	-96.589167	Southbound
Grayson Collin Communications	Van Alstyne	Information	N	100 x 60	33.424745	-96.590066	Northbound
Star Auto Body Alignments	Howe	Other Services	N	100x 60	33.510312	-96.616706	Northbound
Quality Home Healthcare	Sherman	Health Care and Social Assistance	N	60 x 100	33.619536	-96.610122	Northbound
Burger King	Sherman	Accommodation and Food Services	N	120 x 50	33.646478	-96.612219	Northbound
Chili's Bar and Grill	Sherman	Accommodation and Food Services	N	60 x 100	33.667301	-96.609893	Northbound
Cotton Patch Cafe	Denison	Accommodation and Food Services	N	75 x 80	33.76117	-96.583804	Northbound
Inside Out TX	Van Alstyne	Agriculture; Forestry; Fishing and Hunting	N	60 x 100	33.44843	-96.604117	Southbound
Texas Steel Industries	Van Alstyne	Retail Trade	N	120 x 50	33.445758	-96.602687	Southbound
Auto-Works	Van Alstyne	Retail Trade	N	50 x 120	33.434749	-96.596592	Southbound
SONIC	Howe	Accommodation and Food Services		45 x 130	33.507785	-96.617278	Northbound
Verizon	Sherman	Retail Trade	N	65 x 90	33.671927	-96.609094	Northbound
Stanton Optical	Sherman	Health Care and Social Assistance	N	65 x 90	33.671927	-96.609094	Northbound

Name	City	NAICS Category	Vacant	Size Estimate	Latitude	Longitude	Direction
Exxon	Sherman	Retail Trade	N	130 x 45	33.669568	-96.611049	Southbound
Adams Automotive & Towing	Van Alstyne	Other Services	N	140x40	33.450895	-96.60345	Northbound
Apple Recovery Health Care Inc	Sherman	Health Care and Social Assistance	N	80 x 70	33.569894	-96.601812	Northbound
Christis Fireworks	Van Alstyne	90 x 60				-96.611414	Northbound
Hutchins Plumbing	Sherman	Other Services		130 x 40	33.621749	-96.611093	Northbound
Farmers Insurance—Kelley Johnson	Sherman	Finance and Insurance	N	85 x 60	33.65813	-96.610015	Northbound
Armortek Custom Armored	Van Alstyne	Manufacturing	N	50 x100	33.417591	-96.58608	Northbound
Auto Body by Fisher	Van Alstyne	Other Services	N	100 x 50	33.417819	-96.586185	Northbound
Lake Texoma Dental Care & Wellness	Denison	Health Care and Social Assistance	Y	100 x 50	33.762759	-96.586118	Southbound
Panera Bread	Sherman	Accommodation and Food Services	N	50 x 100	33.6815	-96.609421	Southbound
Texas Diesel Co	Van Alstyne	Other Services	N	100 x 50	33.435122	-96.596781	Southbound
Texas Star Bank	Van Alstyne	Finance and Insurance	N	120 x 40	33.424078	-96.588447	Northbound
ABO AUDA Cardiovascular Services	Denison	Health Care and Social Assistance	N	50 x 95	33.7564	-96.585989	Southbound
Lester W. Vance LLC; Attorneys	Sherman	Professional; Scientific; and Technical Services	N	60 x 75	33.647732	-96.61166	Northbound
KFC/Taco Bell	Sherman	Accommodation and Food Services	N	50 x 90	33.6838	-96.608348	Southbound
Classic of Texoma	Sherman	Retail Trade	Y	90 x 50	33.656193	-96.613471	Southbound
Mattress Firm	Sherman	Retail Trade	N	55 x 80	33.680235	-96.609233	Southbound
Ross Dress for Less	Sherman	Retail Trade	N	55 x 80	33.680235	-96.609233	Southbound
Game Stop	Sherman	Retail Trade	N	55 x 80	33.680235	-96.609233	Southbound
L. Feway Christian Store	Sherman	Retail Trade	N	55 x 80	33.680235	-96.609233	Southbound
Chic-fil-a	Sherman	Accommodation and Food Services	N	40 x 110	33.676697	-96.610021	Southbound
Tate Rehmet Law	Sherman	Professional; Scientific; and Technical Services	N	35 x 125	33.666699	-96.611722	Southbound
Cowboy Club/Sandy's Grill	Van Alstyne	Accommodation and Food Services	N	65 x 65	33.451519	-96.605806	Southbound
Husse Schwedergan Heater Air	Sherman	Construction	N	70 x 60	33.625236	-96.612171	Northbound
McAlister's Deli	Sherman	Accommodation and Food Services	N	60 x 70	33.677365	-96.608001	Northbound
Texoma Foot and Ankle Specialists	Denison	Health Care and Social Assistance	N	60 x 70	33.756527	-96.586429	Southbound
Butch Fire Realtors	Sherman	Real Estate Rental and Leasing	N	60 x 70	33.639709	-96.617145	Southbound
IHOP	Denison	Accommodation and Food Services	N	66 x 62	33.763364	-96.586458	Southbound

Name	City	NAICS Category	Vacant	Size Estimate	Latitude	Longitude	Direction
Braums Ice Cream Burger Restaurant	Van Alstyne	Accommodation and Food Services	N	50 x 80	33.418277	-96.386061	Northbound
Scally Marine	Denison	Retail Trade	N	50 x 80	33.79361	-96.555881	Northbound
N/A (no sign)	Denison	None	N	50 x 80	33.720314	-96.58784	Southbound
Howe Family Dentistry	Howe	Health Care and Social Assistance	N	50 x 80	33.506765	-96.618841	Southbound
Keel Recovery	Van Alstyne	Administrative and Support and Waste Management and Remediation Services	N	100 x 40	33.437158	-96.597896	Southbound
Big Tex Trailer World	Van Alstyne	Retail Trade	N	40 x 100	33.434205	-96.596287	Southbound
FedEx	Sherman	Transportation and Warehousing	N	50 x 75	33.677767	-96.60716	Northbound
Mattress Firm	Sherman	Retail Trade	N	50 x 75	33.677767	-96.60716	Northbound
Leslie's Pool Supplies	Sherman	Retail Trade	N	50 x 75	33.677767	-96.60716	Northbound
T-Mobile	Sherman	Retail Trade	N	50 x 75	33.677767	-96.60716	Northbound
Freddy's Frozen Custard	Denison	Accommodation and Food Services	N	50 x 75	33.758128	-96.586013	Southbound
Butch's Transmissions	Sherman	Retail Trade	N	40 x 90	33.599021	-96.605785	Northbound
Rib Crib BBQ & Grill	Sherman	Accommodation and Food Services	N	45 x 80	33.672728	-96.608968	Northbound
Aspen Dental	Sherman	Accommodation and Food Services	N	45 x 80	33.672728	-96.608968	Northbound
Whataburger	Sherman	Accommodation and Food Services	N	40 x 90	33.676005	-96.608479	Northbound
Wendy's	Sherman	Accommodation and Food Services	N	40 x 90	33.682	-96.608	Southbound
Home Instead Senior Care	Sherman	Health Care and Social Assistance		50 x 70	33.624443	-96.611924	Northbound
Lakes Regional MHMR Center	Sherman	Health Care and Social Assistance	N	70 x 50	33.63951	-96.615659	Northbound
Lonestar Food Store/Exxon	Denison	Retail Trade	N	70 x 50	33.777253	-96.582422	Northbound
Athletic Cheer Force	Howe	Arts; Entertainment; and Recreation		40 x 85	33.505028	-96.617873	Northbound
Shell	Sherman	Retail Trade	N	65 x 50	33.671222	-96.611329	Southbound
Jack in the Box	Van Alstyne	Accommodation and Food Services	N	75 x40	#VALUE!	-96.587749	Northbound
Property Roofing	Sherman	Construction	N	60 x 50	33.60018	-96.606015	Northbound
Quick Track	Sherman	Retail Trade	Y	40 x 75	33.632646	-96.61491	Northbound
Wing Stop	Sherman	Accommodation and Food Services	N	30 x 100	33.679717	-96.606993	Northbound
Sleep Experts	Sherman	Retail Trade	N	30 x 100	33.679717	-96.606993	Northbound
Texoma Quick Care	Sherman	Health Care and Social Assistance	N	30 x 100	33.679717	-96.606993	Northbound

Name	City	NAICS Category	Vacant	Size Estimate	Latitude	Longitude	Direction
Express Employment	Sherman	Health Care and Social Assistance	N	30 x 100	33.679717	-96.606993	Northbound
Hunkle Auto	Van Alstyne	Retail Trade		60 x 50	33.435511	-96.597014	Southbound
Dollar General	Van Alstyne	Retail Trade	N	70 x 40	33.424456	-96.587071	Northbound
Taco Cabana	Sherman	Accommodation and Food Services	N	70 x 40	33.677224	-96.608033	Northbound
Shell	Denison	Retail Trade	N	70 x 40	33.762245	-96.584094	Northbound
Panda Express	Sherman	Accommodation and Food Services	N	40 x 70	33.680235	-96.609233	Southbound
H&M Motors	Sherman			52 x 52		-96.614706	Southbound
Lucky Stop	Sherman	Retail Trade	N	45 x 60	33.639933	-96.615511	Northbound
Arby's	Denison	Accommodation and Food Services	N	30 x 90	33.761785	-96.586631	Southbound
Circle K	Sherman	Retail Trade	N	75 x 35	33.595546	-96.604275	Northbound
WannaBurger	Sherman	Accommodation and Food Services	N	50 x 50	33.634942	-96.61724	Southbound
Jack in the Box	Sherman	Accommodation and Food Services	Y	50 x 50	33.594817	-96.60674	Southbound
Shell	Sherman	Retail Trade	Y	50 x 50	33.594817	-96.60674	Southbound
Sparks Trailers	Howe	Retail Trade	N	40 x 60	33.5065361	-96.617302	Northbound
Exxon	Howe	Retail Trade		120 x 20	33.506727	-96.617151	Northbound
LPL Financial	Sherman	Finance and Insurance	N	60 x 40	33.629975	-96.613621	Northbound
Chipotle Mexican Grill	Sherman	Accommodation and Food Services	N	40 x 60	33.682425	-96.608785	Southbound
Hughs Discount TV	Howe	Other Services	Y	60 x 40	33.501331	-96.619812	Southbound
North Texas Suppliers	Sherman	Retail Trade	N	75 x 30	33.625124	-96.612125	Northbound
Sonic Drive In	Sherman	Accommodation and Food Services	N	25 x 90	33.675732	-96.609958	Southbound
Golden Chick	Van Alstyne	Accommodation and Food Services	N	70 x 30	33.419319	-96.587027	Northbound
Hughs Discount TV	Howe	Other Services	Y	70 x 30	33.501331	-96.619812	Southbound
Hot N Creamy Donuts	Sherman	Accommodation and Food Services	N	45 x 45	33.63405	-96.617575	Southbound
Shell	Van Alstyne	Retail Trade	N	50 x 40	33.421978	-96.587679	Northbound
U Haul Neighborhood Dealer	Van Alstyne	Real Estate Rental and Leasing		50 x 40	33.452	-96.605496	Northbound
Air Evacuation Lifeteam-65	Sherman	Health Care and Social Assistance	N	50 x 40	33.541339	-96.608604	Northbound
Hogans Jiffy Labe	Sherman	Other Services	N	50 x 40	33.624002	-96.611802	Northbound
Exxon	Sherman	Retail Trade	N	50 x 40	33.634359	-96.615362	Northbound
Dickie's Barbeque	Sherman	Accommodation and Food Services	N	50 x 40	33.634359	-96.615362	Northbound
Shell	Sherman	Retail Trade	N	50 x 40	33.661912	-96.61264	Southbound
N/A	Van Alstyne	None	N	50 x 40	33.422706	-96.590122	Southbound

Name	City	NAICS Category	Vacant	Size Estimate	Latitude	Longitude	Direction
N/A	Sherman	None	N	65 x 30	33.625518	-96.612256	Northbound
Shell	Sherman	Retail Trade	N	60 x 30	33.634037	-96.615541	Northbound
Valero	Howe	Retail Trade	N	60 x 30	33.507087	-96.618619	Southbound
Torque Plumbing	Howe	Construction	N	30 x 60	33.506178	-96.618813	Southbound
Girls Next Door Beauty Salon	Howe	Other Services	N	30 x 60	33.506178	-96.618813	Southbound
Animal Damage Control Services	Van Alstyne	Administrative and Support and Waste Management and Remediation Services	N	60 x 25	33.442173	-96.601048	Southbound
Starbucks	Sherman	Accommodation and Food Services	N	20 x 70	33.669005	-96.611151	Southbound
Cricket	Sherman	Retail Trade	N	20 x 70	33.669005	-96.611151	Southbound
Papa Johns	Sherman	Accommodation and Food Services	N	20 x 70	33.669005	-96.611151	Southbound
Results Environmental Pest Management	Sherman	Administrative and Support and Waste Management and Remediation Services	N	25 x 50	33.629997	-96.614567	Southbound
N/A	Van Alstyne	Retail Trade	Y	50 x 25	33.422075	-96.589801	Southbound
Northern Lights	Sherman	Retail Trade	N	35 x 35	33.618251	-96.610892	Southbound
Sherman Super Wash	Sherman	Other Services	N	30 x 40	33.655095	-96.614153	Southbound
Allied Fence Co of Sherman	Sherman	Wholesale Trade		20 x 60	33.628191	-96.614014	Southbound
Silverado Auto Sales	Sherman	Retail Trade	N	35 x 30	33.678878	-96.609977	Northbound
Rudy's Kitchen	Van Alstyne	Accommodation and Food Services	N	45 x 20	33.422566	-96.588819	Northbound
North Texas Precious Metal Exchange	Van Alstyne	Retail Trade	N	30 x 25	33.446024	-96.60181	Northbound
Fruit Stand	Van Alstyne	Accommodation and Food Services	Y	20 x 25	33.417362	-96.585948	Northbound
Winslows Portable Buildings	Howe	Manufacturing	N	25 x 20	33.527236	-96.612142	Northbound
Alpha Laptop	Sherman	Other Services		25 x 15	33.635053	-96.617215	Southbound
ATM	Sherman	Finance and Insurance	N	10 x 10	33.615292	-96.6090441	Northbound

Source: Collected by GRAM NTX, 2019. Analyzed by Cambridge Systematics.



## Appendix C. Interview Notes

### C.1 Denison Development Alliance, April 16, 2019

Attendees: Tony Kaai, Clay Barnett, Lizzie Welch.

1. Businesses moving in and out.
  - a. Denison has not had any major businesses moving out of Denison for the last 10 years. The businesses that have moved in over that same 10 years are food processing (Ruiz Foods) and metal fabrication.
  - b. Moving forward, they would like to attract more high-paying manufacturing jobs. Basic manufacturing has been good for them, but they would like to raise the quality of life.
2. Areas developing or redeveloping.
  - a. North Pointe development will be aimed at more technology development.
  - b. 45 acres are shovel ready at Foundation Park.
  - c. Farther away from U.S. 75, North Texas Regional Airport has 200 acres west of the airport that fronts SH 289. Transportation connections between the corridors will be important.
3. Future expectations.
  - a. Area around FM 691/U.S. 75 expecting large traffic change. All four corners are now developed and businesses filling in. Expect increased traffic in two to three years in general (passenger and freight).
  - b. Area north of FM 84 on both U.S. 75 and U.S. 69 has developable area and good transportation access. Topography may be an issue in some locations.
  - c. Around SH 91/FM 84 there is a lot of interest, and property at this location may be looking at a 10- to 15-year horizon for development.
4. Additional freight transportation concerns.
  - a. Union Pacific currently is not stopping for local traffic or serving local businesses. Rail access is not advertised as an asset for Denison.
  - b. Low overpasses on U.S. 75 are a freight challenge; this area also has been mentioned during FAC meetings. Southbound traffic routed on SH 91 to U.S. 69.
  - c. U.S. 75 is an asset, not a deal breaker for potential businesses.

## C.2 Sherman Economic Development Corporation, May 24, 2019

Attendees: Kent Sharp, Stacey Jones, Clay Barnett, Lizzie Welch.

1. Businesses moving in and out.
  - a. V-cell Capital is growing significantly.
  - b. JP Hart has several truckloads per day.
  - c. Emerson has added new products and is shipping more and getting new inputs as a result.
  - d. Presco also is expanding into new products.
2. Developing or redeveloping
  - a. An industrial area just outside of city limits on SH 56 (toward Southmayd) is a possible location. There are vacant buildings that could be appropriate.
  - b. Modular Power Systems (MPS) is expanding. 180,000-square-foot expansion to building large electrical units. They currently are located near Fallon Drive.
  - c. Another company is potentially moving in around the same area, producing large industrial batteries.
3. Additional freight transportation concerns.
  - a. Kent opened with a question about U.S. 75 as a premium shipping route. A business had discussed using the regional interstates, but not wanting to pay extra to ship on U.S. 75. Unclear what the cause was, the company was possibly building in congestion cost.
  - b. There have been a lot of rail-related inquiries recently.
    - i. Rail in, truck out request for cold rolled steel (50 trucks in/out, wanted 25 spaces for parking).
    - ii. Progress Park at FM 1417 and U.S. 75 has rail access.
    - iii. Potential addition of a rail intermodal facility will not happen at this time. Topography at other sites in the county is not compatible. Likely commodities were aggregates and some warehousing.
    - iv. There is an existing logistics chain from Port Houston, onto a truck, on to train to Fort Worth Alliance, then South Main to around 289 in Grayson County.
  - c. Traffic near FM 1417 and U.S. 75 has increased, and there is a new high school nearby. They are increasing the width of FM 1417 and improving the West Travis bridge to help.
  - d. Commuter traffic to/from Finisar is mostly coming from the south/Collin County.
    - i. They are adding 650 jobs, only about 10 percent of employees are living in Grayson County.
  - e. Similarly, Tyson workers are coming from Lewisville and Oklahoma, only 34 percent of 1,700 jobs live in Grayson County.

## C.3 Howe Development Alliance, April 16, 2019

Attendees: Monte Walker, Clay Barnett, Lizzie Welch.

### 1. Businesses moving in and out.

- a. Magnifab is moving out at the end of the month after a long decline. The facility is being replaced by similar industry and is expected to have a lot more activity.
  - i. 250,000 square feet.
  - ii. Location: near FM 902 and U.S. 75.
    1. Northbound on U.S. 75 at the FM 902 exit, by Haning Street.
    2. Southbound on U.S. 75 at the Shepherd exit, before 902 interchange.

### 2. Developing or redeveloping.

- a. Premier Truck Group of North Texas (near FM 902 and U.S. 75).
  - i. Facility is expanding. They are expected to purchase an adjacent vacant building (50,000 square feet at same location).
  - ii. This also is the location of a narrow bridge crossing over U.S. 75, which can be a problem for trucks.
  - iii. Interchange has jug handles which are challenging for trucks; putting U.S. 75 over the crossroad (rather than under) would improve the situation here.
- b. General trends.
  - i. There is a lot of residential development throughout the area. Howe is growing to the west quickly and it also is growing at the southern end (Farmington/Blithe Roads).
  - ii. Water and sewer are not available everywhere west of U.S. 75, so that is an impediment to growth.
  - iii. Long term, the next logical location is to the south.
  - iv. Eventually, there will need to be a flyover from Hall Cemetery to L.B. Kirby (\$11 million project, not funded).
  - v. The FM 902 interchange also is a priority with current and future growth.

### 3. Additional freight transportation concerns.

- a. Eastbound FM 902 coming into Howe is a major concern in the corridor. FM 902 is discontinuous at U.S. 75. There is ever-increasing truck traffic at this location.
- b. Trucks currently travel FM 902E—SH 5—U.S. 75—FM 902W to continue on FM 902.
- c. Upgrading Ponderosa (curving north instead of south from the westbound direction) would be preferred. This project is funded for 2022. Howe is providing right-of-way and local match.

## C.4 City of Van Alstyne, May 2, 2019

Attendees: Len McManus, Clay Barnett, Lizzie Welch.

1. Businesses moving in and out.
  - a. 90 percent of recent development has been residential.
  - b. The city is not yet big enough to attract large amounts of support retail.
  - c. Land adjacent to U.S. 75 is zoned for large retailers.
2. Developing or redeveloping.
  - a. Major development on the south end of town near County Line Road. This also is where the most truck traffic currently is.
    - i. Transportation access: planning to go to six lanes and full-jug handle to U.S. 75. This is included in the Master Thoroughfare Plan.
    - ii. Two major tenants off of FM 3133
      1. Foxford-Gailbrath Lumber and Building Materials has 15 to 20 trucks per day
      2. Beverage and supplement company has two to three trucks per day and is interested in expanding.
  - b. Industrial park is interested in adding 100 to 200 acres.
  - c. Utility District building out on southern end.
    - i. From a quarter-mile north of County Line Road to Collin County Road 370.
    - ii. Includes land on both sides of U.S. 75.
    - iii. Tenants currently are unknown.
3. Additional freight transportation concerns.
  - a. Right now, the city is not hearing any transportation concerns, but they are expecting a population wave as seen in Anna and Melissa recently which could change that.
  - b. The industrial park does have a rail spur. Dallas, Garland, and Northeastern Railroad uses Dallas Area Rapid Transit-owned line through town which makes two runs a day to gravel pits in McKinney.
  - c. The city is working with Sherman-Denison Metropolitan Planning Organization (MPO) and TxDOT to get an extra lane and one-way frontage roads.
  - d. A third overpass at Spencer will be needed once one-way frontage road is complete.
  - e. The MPO is asking the Texas Transportation Commission for \$30 million for fiscal year 2024 from County Line Road to FM 902.

4. General trends.

- a. The school district has purchased 100 acres near Grayson College, FM 121/Cartwright, to build a new high school. Development along FM 121 has been residential so far, but a 300- to 400-foot depth on either side of the corridor is zoned commercial for future development.
- b. The north, east, and west parts of town are all developing residential for now.
- c. There has been a big boom in population. The last Census reported population of 3,940 and the city is expected to grow to 11,000 in the next 5 years.



## Appendix D. 2019 Freight Advisory Committee

Attendees: Judge Bill Magers (Grayson County), Brad Douglass (Douglass Distributing), Clint Philpott (City of Sherman), Loren Bradford (Genesee & Wyoming), Georgi Ann Jasenovec (Federal Highway Administration (FHWA)), Barbara Maley (FHWA-TX), Tony Kaai (Denison Development Alliance), Tyson Moeller (UP), Gil Faber (ACS Manufacturing), Barry Tally (Champion Cooler Corporation), Aaron Bloom (TxDOT), Michael Hutchins (Herald Democrat).

Presenting: Clay Barnett (Sherman-Denison MPO), Lizzie Welch (Cambridge Systematics), Elaine McKenzie (Cambridge Systematics), Sherry Pifer (TxDOT).

### D.1 Verifying Findings on U.S. 75

- Remarks from Judge Magers:
  - The region has been advocating for funding for U.S. 75, including making a request for discretionary funding from the Texas Transportation Commission. There is a project request to widen from County Line Road to FM 902 to a six-lane road. Half of the funding is from TxDOT and the other half is from allocated dollars from TxDOT, MPO funds, and local match. He anticipates we will be able to let 2024. The goal is to widen to six-lane divided to U.S. 82 in the next four to six years. Van Alstyne has a small industrial site south of downtown near FM 3356. If they do an acquisition that will be another access from FM 3376 to U.S. 75.
- Half of industry in Grayson County is located within a half mile of U.S. 75 and two-thirds are within one mile of U.S. 75.
- Members confirmed that the traffic levels are slightly lower, but pavement quality is worse in Grayson County than in other regional comparison locations.
- However, traffic levels and truck traffic on U.S. 75 are similar to I-35 and I-30, so it is handling Interstate traffic already.
- Expected growth areas:
  - Huge mixed-use development west side of U.S. 75 (commercial and residential).
  - Development on east side over on U.S. 82 at Midway Park—Another distribution center.
  - Area near Fallon Drive could be, but issue transitioning over to U.S. 75 limits attractiveness of location. FedEx Ground moving from there to FM 1417.
- There are existing issues that need to be repaired before or as the highway is improved. For example, between SH 91 and FM 84 the service road cannot carry permitted oversize/overweight (OS/OW) loads.
  - Service roads also are addressed in plans.
  - Area where roadway washed out will be repaired more quickly; timeframe is six to seven months though construction has not started yet.

- Spur 503 will also start soon; anticipated in July following rain delays.
- The FAC ranked projects on U.S. 75 and had the opportunity to list additional projects either on or off of the highway.

## D.2 Truck Parking in Collaboration with TxDOT

- Context of truck parking includes short breaks (30 to 60 minutes), long breaks (10 hours), and staging (time varies, located near shippers and receivers or outside of OS/OW curfew areas). Long-term storage (days or months) is a lesser focus.
- Staging is a big issue for local distributors; it is a common reason to need to find parking.
- From an economic development perspective, it may be a private-sector issue, but it causes public impacts in terms of safety and congestion for the traveling public.
- Key issues in Grayson County:
  - One-fourth mile south of the TxDOT District Office, you will see an entire street of trucks on Hal Drive. There is staging by Tyson, Sunny D, and a window manufacturer. The City of Sherman and SEDCO built an extra lane so that they could park on pavement.
  - There is a lot of parking in jug handle of County Line Road and by FM 121. There are bare spots where the trucks park in the grass and you see people parking every night.
  - There is a lot of parking at the Walmart, especially the Denison Walmart. Gil Faber noted the Lowes in Sherman.
  - There is not a full-service truck stop in Grayson County. There is one rumored to be planned for Bells just off of U.S. 69.
  - Staging can be hard to plan before because it is variable based on the day.
  - Oversize freight has a harder time loaded and unloaded trying to find space, getting in and out of somewhere when the vehicle is 140-foot-long bumper to bumper.
    - » Are there examples of well-designed parking for oversize? No, this group has not seen anything.
  - Dry freight has need for a lot of parking, both for hours-of-service breaks and waiting for dispatch or waiting for the backhaul. That parking need can be anywhere from 30 minutes to 12 hours.
  - An area outside of Tom Bean has trucks staging there; there are two trucks full of sod sitting out there. Methane extractors have now gone through there twice and it takes a good three to four hours to navigate through the town.
  - Long-haul parking demand is probably high based on the truck counts. If there were a place to park, there are potentially a lot of people who would be interested in parking in Grayson County. Gil noted that the scale house at the visitor's center is overflowing. The rest area also is usually full.



- Some cities, including Dallas, have curfews that prevent OS/OW movement during peak travel periods. Trucks need to just outside of these areas in order to time their trip correctly. A place for those trucks would also help regional OS/OW with parking.
- Strategies for Grayson County.
  - More capacity is needed in the County.
  - Local businesses are pursuing some of their own strategies. For example, ACS is building a new route out of their property to reduce the need for escorts in and out.
  - Who builds truck parking locations? TxDOT builds rest areas and some cities have developed staging lots for industrial areas or ports. Private companies such as Love’s build truck stops, and there have been some public-private partnerships around the country.
  - Barriers to construction: liability, negative perception of the industry. As you get closer to metro areas, there are additional challenges with zoning, anti-idling laws, etc. that are a barrier for the private sector as well.
  - TxDOT also has heard that RVs take up the truck spots in rest areas.
  - How close does staging parking need to be to be efficient? Five miles would be ideal, but right now trucks are parking in Anna, Durant, and other locations that are about 20 miles away.
    - » Some local companies send trucks to the Love’s in Oklahoma to wait.
    - » Are there staging areas on U.S. 82? There are none really close.
  - Is there a model for turning a piece of dirt into a truck parking location?
    - » There are public-private partnerships, but also a model that works is you buy some gas or pay for space/facilities.
    - » There’s a whole host of services that only the truck stops offer beyond parking.
    - » There is a PPP on the east coast (Carolinas) that is multiuse: dog runs, video equipment, hiking trails, etc. On the weekends it is mostly for the local community.
    - » Truck parking could be similar to airports in that you could have a captive market and a need for services for people who are there for a period of time.
    - » Additionally, pavement and cleanliness are important. Trucks can be like drivers’ houses and they do not want to track in mud or dirt from an unpaved lot. Services and waste disposal also are needed.
  - The entire industry is changing to the “bring it to me” model, which means more trucks and shipping.
  - The cost of diesel/cost competitiveness of shipping is an important factor for shipping by truck, and therefore truck volume.

## D.3 Freight Infrastructure Design in Collaboration with TxDOT

- TxDOT is conducting a Freight Infrastructure Design Considerations project to identify what the design needs of the freight community are.
- What are the key factors and recommendations that TxDOT should pay attention to?
  - More direct routes for permitted loads are needed. Currently, they travel on and off of the highways, take many turns, and end up with travel that takes two to three times as long as the ideal route.
    - » Texas is one of the better States with regard to this issue, but it still needs improvement.
  - Liquid loads, such as gasoline, will have product surge when going around curves, creating a higher chance of rollover. For example, Loop 12 in Dallas has this problem.
    - » Newer trailers have baffles to reduce product surge, but often those hauling diesel for truck stops or diesel for West Texas do not have these.
    - » Banking of curves (superelevation) can prevent this, but there should be a higher standard where liquid loads are common.
  - Grade differences create uncertainty for drivers, especially near intersections (e.g., U.S. 75 near FM 84). The load pitches and visibility are poor.
  - Do current standards result in the same load ratings along a corridor or within a region? No; truck percentages are used to calculate what is necessary. However, it can vary significantly. For example, U.S. 75 in Grayson County varies from 10 to 17 inches.
  - Dedicated truck lanes.
    - » The TransTexas Corridor is an example of dedicated freight facilities, but never took off. Are there other truck- or freight-specific corridors? None implemented at this time.
    - » Trucks want the leftmost lane when they are only passing through a city, so they do not have to deal with drivers entering and exiting the highway.
    - » I-94 had truck-only lanes between Milwaukee and Chicago, but those were a pilot project.
    - » New Jersey tried truck-only lanes, but cars used it to go faster.
    - » Some places do not allow trucks in the left lane. San Antonio is an example where this is enforced.
  - Changes in truck design are more durable, but harder on the roadway. For example, higher tire pressures, lower-resistant tires last longer, but they are tougher on the road. Disc brakes stop in shorter distances but accelerate road wear more than in the past.
- Where should freight-specific design considerations be applied? It should depend on truck traffic, regardless of highway functional classification. Locations with the most trucks will have the most need.

- Closing takeaways and thoughts from the committee
  - Reliable freight corridors are more important than ever due to parking shortages, just-in-time delivery, and growth in freight.
  - U.S. 75 is carrying interstate levels of traffic and truck traffic.
  - We also should consider how technology will change freight, in terms of new modes (e.g., drones) and new ways to send information to drivers.
  - Railroads have been getting more inquiries for small transload operations (one to two cars per month). There are not a lot of facilities that can accommodate this now, but as demand grows and development creeps north, this will be more of a factor.
  - Development such as Midway Industrial Park are going to increase the need for good freight planning and consideration.