Texas A&M Transportation Institute

Oil and Gas Energy Developments and Changes in Pavement Conditions in Texas

Final report

PRC 14-35F

TRANSPORTATION
Policy Research CENTER

Oil and Gas Energy Developments and Changes in Pavement Conditions in Texas

Texas A&M Transportation Institute

PRC 14-35F

March 2015

Authors

Cesar Quiroga

Ioannis Tsapakis

Edgar Kraus

Jerry Le

Andrew Wimsatt

Table of Contents

List of Figures

List of Tables

Executive Summary

The Texas Legislature asked the Texas A&M Transportation Institute (TTI) to update a study completed in late 2011 documenting locations and trends of oil and gas energy developments in the state. The Texas Legislature also asked TTI to correlate oil and gas developments with changes in pavement condition data.

The research team gathered and processed data from the Railroad Commission of Texas to document locations and trends of oil and gas energy developments in the state. The outcome of this task was an updated geodatabase of oil and gas developments, which included geographic information system (GIS) files of oil and gas permit locations, drilling permit attribute data, production data, and injection well data. Part of the process involved determining counties to associate with major oil and gas regions in the state. For this report, the research team focused on three major regions of interest: the Barnett Shale region in North Texas (13 counties), the Eagle Ford Shale region in South Texas (29 counties), and the Permian Basin region in West Texas (37 counties).

The research team gathered and processed pavement condition data from the Texas Department of Transportation. Data elements of interest for this analysis were pavement distress, pavement ride, and pavement condition scores. Also of interest were maintenance expenditures. Using GIS linear event functions, the research team prepared a geodatabase that included pavement distress, ride, and condition score data for each highway segment. With this information, the research team developed aggregated pavement distress, ride, and condition score data, with a focus on the percentage of highway miles that had a below-good pavement score (i.e., 80 for distress, 3.0 for ride, and 70 for condition scores).

The research team contacted county and city government officials in the Eagle Ford and Permian Basin regions and requested reports and other documentation describing recent road assessment studies. In general, formal road assessments were not available. According to some officials, one of the reasons local jurisdictions had not conducted road assessment studies was the lack of financial resources to conduct those studies. Another reason was that energy developments occurred too quickly, forcing agencies to spend whatever limited resources they had to repair roads (in a reactive mode), which limited their capability to conduct baseline assessments prior to the energy developments taking place.

With the oil and gas development information and the pavement condition data, the research team conducted a series of analyses to identify trends and correlations. Because of the significance associated with the time when accelerated oil production started in the Eagle Ford Shale region and oil production in the Permian Basin region began to accelerate (2009), the research team decided to use the end of 2009 (or beginning of 2010) as the date to use for baseline and comparison purposes. The last year with reliable Railroad Commission data was 2013 (2014 data are still preliminary). In addition, the economic recession of 2008 caused significant volatility in the oil markets, which resulted in dramatic swings in prices, drilling, and

production. In order to reduce the impact of these variations, the research team aggregated and compared data using two four-year blocks: 2006–2009 and 2010–2013.

Table 1 provides a high-level summary of relative changes in the number of new wells, oil and gas production, volume of liquids disposed of into the ground, percentage of highway miles with below-good pavement condition scores, and maintenance expenditures, based on the analyses conducted in the research. The table shows summary trends for the Barnett Shale, Eagle Ford Shale, and Permian Basin regions, as well as summary trends for all remaining 175 counties and the entire state. Because changes were much more noticeable at the county level, as a reference, Table 1 includes summary trends observed in Karnes County, which is located in the Eagle Ford Shale region.

Table 1. Relative Changes in the Number of New Wells, Oil and Gas Production, Volume of Liquids Disposed of into the Ground, Pavement Scores, and Maintenance Expenditures from 2006–2009 to 2010–2013.

Region	Number of New Wells			Hydrocarbon Production		Liquids Disposed into Ground	Pavement Condition Scores	Maint. Expend.
	Horizontal Wells	Vertical Wells	Total	Oil	Gas			
Barnett Shale	-48%	-53%	-49%	63%	45%	44%	-3.1%	51%
Eagle Ford Shale	941%	-20%	131%	603%	33%	11%	1.3%	109%
Permian Basin	240%	49%	61%	27%	-33%	48%	0.2%	122%
Other	91%	-48%	-36%	13%	-11%	-7%	-0.6%	55%
Grand Total	**63%**	**-10%**	**8%**	**56%**	**5%**	**13%**	**-0.4%**	**64%**
Karnes County	4586%	32%	1964%	10060%	559%	341%	21.6%	403%

Note: For pavement score changes, green dots (representing a desirable trend) are associated with negative changes in the percentage of highway miles with below-good pavement scores. Red dots (representing an undesirable trend) are associated with positive changes in the percentage of highway miles with below-good pavement scores.

The research included a high-level analysis to identify long-term statistical correlations between all the metrics shown in Table 1, as well as other metrics of interest that were used to understand and document trends. Relevant results pertaining to pavement condition scores for the three energy regions of interest and other regions in the state include but are not limited to the following:

- In the Barnett Shale region, there is a strong correlation between the number of new horizontal wells and the volume of gas production, as well as a strong correlation between the number of new horizontal wells and the percentage of highway miles with below-good pavement condition scores.
- In the Eagle Ford Shale region, there is a very strong correlation between the number of new horizontal wells and oil production, as well as a moderate correlation between the number of new horizontal wells and the percentage of highway miles with below-good pavement condition scores.

- In the Permian Basin region, there is a strong correlation between the number of new vertical wells and the volume of oil production. However, there is a negligible correlation between the number of new horizontal or vertical wells and the percentage of highway miles with below-good pavement condition scores.
- In the remaining 175 counties in the state, there is a strong correlation between the number of new wells (particularly vertical wells) and the volume of gas production, as well as a negligible correlation between the number of new wells and the percentage of highway miles with below-good pavement condition scores.
- Pavement condition scores did not change significantly in areas of the state where oil and gas energy development activity did not play a major role. In comparison, pavement conditions worsened in most areas where oil and gas developments were particularly active (despite increased maintenance expenditures in these areas). These results confirm that the state is not keeping up with the degradation in pavement conditions in areas where energy development activity is significant.

Additional policy implications include, but are not limited to, the following:

- In general, as the number of new wells increases, pavement conditions deteriorate. The correlation level varies significantly from region to region. Pavement structures in the Eagle Ford Shale region have suffered the most, followed by pavement structures in the Permian Basin region. The number of new wells could be used as a predictor of changes in pavement conditions, which could facilitate the allocation of limited maintenance dollars depending on the anticipated need.
- The analysis should be extended to evaluate the impacts resulting from the collapse in oil prices during the second half of 2014. The price of oil has decreased to about $50/barrel. As the price of oil continues to decrease below certain thresholds, the number of drilling rig counts and contracts has started to decrease. The impact appears to be different in different regions, which could have important transportation infrastructure implications. For example, the reduction in the number of drilling rig contracts in recent weeks has been higher in West Texas compared to South Texas, probably due to lower profitability thresholds (i.e., the points where revenues cover operating costs) in the Eagle Ford Shale region than in the Permian Basin region.
- Senate Bill 1747, which was enacted in 2013, established an additive formula to allocate funds to counties for transportation infrastructure projects located in areas of the state affected by increased oil and gas production. This formula includes the following factors and weights for the allocation of funds: weight tolerance permits (20 percent), amount of oil and gas production taxes (20 percent), number of well completions (50 percent), and oil and gas waste injected (10 percent). The research did not address or analyze data pertaining to weight tolerance permits. It also did not address questions related to the

reasonableness of each of these weights (e.g., whether the weight for the number of well completions should be 50 percent or a different value). However, the research results do offer insight into potential strategies regarding the following formula factors and weights:

- **Amount of oil and gas production taxes (weight: 20 percent).** Because the volume of oil production is not a reliable predictor of the volume of gas production, it is important to keep both oil production and gas production in the allocation formula. However, the information gathered in this research was not enough to determine whether the weight for oil production should remain the same as or different from that for gas production.
- **Number of well completions (weight: 50 percent).** The allocation formula does not differentiate between horizontal wells and vertical wells. However, the relative impact of new horizontal wells on transportation infrastructure is much greater than that caused by new vertical wells. The weight for horizontal well completions should be much higher than that for vertical well completions. The information gathered in this research was not enough to determine how much higher the weight for horizontal well completions should be.
- **Oil and gas waste injected (weight: 10 percent).** The allocation formula ignores the mode of transportation used to transport the waste to the injection disposal facilities. Because there is a significant difference between the pavement impact depending on the mode of transportation used (i.e., truck versus pipeline), the allocation formula should consider each mode of transportation separately. The weight for the volume of liquids transported by truck should be much higher than the weight for the volume of liquids transported by pipeline. However, the information gathered in this research was not enough to determine how much higher the weight for the volume of liquids transported by truck should be.

Chapter 1. Introduction

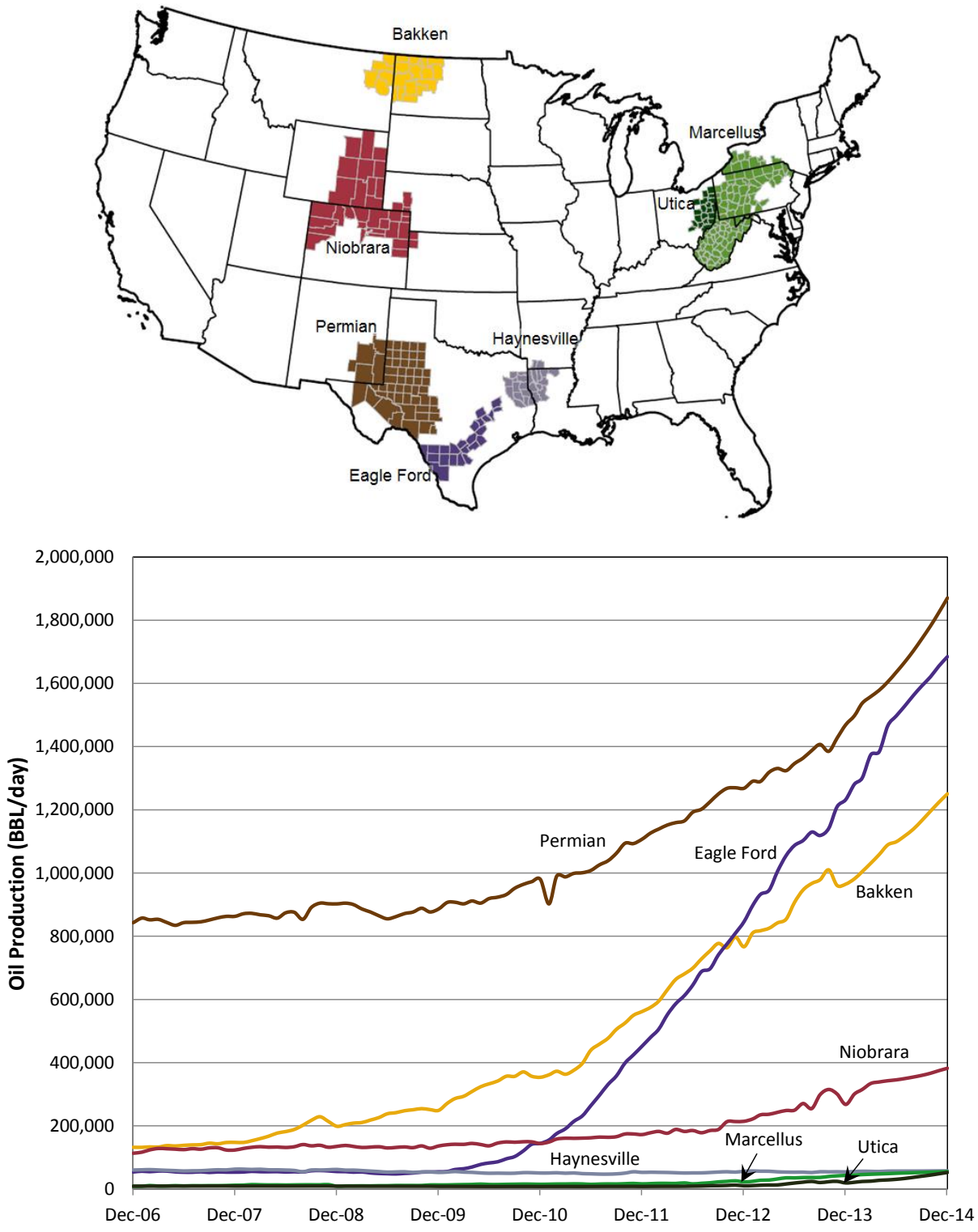
The Texas Legislature asked the Texas A&M Transportation Institute (TTI) to update a study completed in late 2011 documenting locations and trends of oil and gas energy developments in the state. The Texas Legislature also asked TTI to correlate oil and gas developments with changes in pavement condition data over the last few years.

As part of Research Project 0-6498 (conducted between September 2009 and August 2011), TTI prepared a geodatabase of energy developments and a high-level methodology to help forecast energy development locations (*1*). Research Project 0-6498 was performed in cooperation with the Texas Department of Transportation (TxDOT) and the Federal Highway Administration. The research involved an assessment of the potential impact on pavement structures along state highways resulting from the development of oil and gas wells using unconventional techniques such as horizontal drilling and hydraulic fracturing technologies, as well as an assessment of the corresponding cost to maintain or restore roads to their original condition. The estimated statewide economic impact on state highways was $280 million to $1 billion per year (depending on factors such as the size of the area of influence around each oil or gas well location). A subsequent analysis included county roads and took into consideration additional cost factors, resulting in a combined estimate for state and local roads of $1.6 to $2 billion per year (*2*).

The analysis completed as part of Research Project 0-6498 and subsequent activities was based on well permit data provided by the Railroad Commission of Texas (RRC) as of 2010. Since then, the number of wells permitted and completed has continued to increase. This is particularly true in the case of the Eagle Ford Shale region in South Texas, which had barely started development when Research Project 0-6498 took place but is quickly becoming one of the most active oil-producing regions in the world. Oil production is also accelerating in the Permian Basin region in West Texas, as shown in Figure 1.

The research team completed the following activities to document oil and gas energy development trends and to correlate this information with changes in pavement condition data:

- Request and process data from RRC.
- Process and overlay pavement condition data.
- Request information from counties and cities.
- Analyze data and prepare deliverables.



Note: The U.S. Energy Information Administration prepares hydrocarbon productivity statistics based on available historical data and projections based on factors such as energy infrastructure constraints, weather, environmental, or economic issues.

Figure 1. Oil Production in the Seven Most Productive Oil Regions in the United States (*3*).

Chapter 2. Oil and Gas Well and Hydrocarbon Production Data

Introduction

The research team gathered and processed data from RRC at a level of spatial and temporal detail needed to document locations and trends of oil and gas energy developments in the state. The outcome of this task was an updated geodatabase of oil and gas developments, which included geographic information system (GIS) files of oil and gas permit locations, drilling permit attribute data, production data, and injection well data.

Activities included gathering and processing oil and gas production Oracle® data, processing oil and gas master files, processing drilling permit master files, and processing underground injection control data. The research team scheduled a meeting with RRC officials to establish communication channels; discuss data needs, issues, and potentially useful datasets; discuss the data structures and collection procedures of various datasets; gather copies of forms used for data collections; and request up-to-date data from relevant datasets. Subsequently, research team members contacted RRC staff via email or phone as needed to discuss and clarify questions about RRC datasets.

Datasets

RRC groups oil and gas datasets into the following categories:

- Digital map data.
- Drilling permit data.
- Imaged records.
- Oil and gas field data.
- Oil and gas production data.
- Oil and gas regulatory data.
- Oil gas well data.
- Pipeline data.

Discussions with RRC staff helped the research team to identify which datasets would be needed to document locations and trends of oil and gas energy developments. Table 2 provides an overview of the various datasets received from RRC.

Table 2. Overview of Datasets Received from the Railroad Commission of Texas.

RRC Data Collection	RRC Dataset	Dataset Description	Date Range	Size	File Format
Digital Map Data	API Data	Oil and gas well attribute data	1900–12/2013	0.8 GB	*.dbf* and *.txt*
	Wells	Surface/bottom/directional oil and gas well locations	1977–9/2014	1.7 GB	*.shp* (and related)
	Spatial Pipeline Data	Location of inter- and intrastate pipelines	1990–12/2013	1.5 GB	*.shp* (and related)
Drilling Permit Data	Permit Master and Trailer and Lat./Long.	Data about drilling permits including location	3/1922–11/2013	1.0 GB	*.dat*
Oil and Gas Production Data	Production Data Query	Oracle dump of the production data	1/1993–10/2014	26 GB	*.dmp* (Oracle dump)
Oil and Gas Regulatory Data	Underground Injection Control	Information about underground injection wells: inventory, permit, monitoring pressure testing, and enforcement action data	10/1970–8/2014	2.6 GB	*.txt*

There is a lag between the timing of certain events and when the RRC database files are updated, which has an impact on the reliability of the data queried, particularly in the case of recent data. For example, there is a lag between the date that an operator completes a well, the date the operator submits the completion report to RRC, and the date the RRC database officially registers a well as completed and ready for production. Although RRC has allowed operators to submit completion reports online since February 2011, the completion date lag causes the inventory of completed wells to lag behind the actual number of completed wells in the field. Similarly, in the case of the underground injection control data, operators submit injection data annually using a two-year reporting cycle. For simplicity, the research team limited the data analysis to wells completed, production volumes, and injection volumes as of December 2013. However, some of the reported data results from 2013 may be incomplete and therefore are not as reliable as data from previous years.

The research team processed the raw RRC data to make it useful for the analysis. Data from the production query system required little processing, and the research team was able to import the data using the Oracle data structure included in the *.dmp* (Oracle dump) file. Processing the digital map data was relatively straightforward and involved creating geodatabases using merged shape file data. All other datasets required more time-consuming processing because the data were stored in a sequential, non-relational format using multiple data segments. The research

team wrote code to divide the raw data into the appropriate segments and added foreign key relationships to generate a relational data structure that the research team then imported into Oracle and Microsoft® SQL Server databases. The research team also converted data from the underground injection control system to American Standard Code for Information Interchange (ASCII) format and then imported the data into SQL Server.

Preliminary Analysis and Visualization

Based on the data gathered from RRC, the research team prepared a series of tables, figures, and maps to document locations and trends of oil and gas energy developments in the state. Part of the process involved determining counties to associate with major oil and gas regions in the state. For this report, the research team focused on three major regions of interest: the Barnett Shale region in North Texas, Eagle Ford Shale region in South Texas, and Permian Basin region in West Texas.

To determine which counties to associate with each region, the research team used several sources of information, including but not limited to the U.S. Energy Information Administration, TxDOT, and the Bureau of Economic Geology at the University of Texas. Each agency uses different criteria to determine region boundaries. Realizing that this process is largely subjective, and in the absence of a prescriptive mandate to select specific counties, the research team decided to associate the counties shown in Figure 2 with the corresponding Barnett Shale region (13 counties), Eagle Ford Shale region (29 counties), and Permian Basin region (37 counties), based on the location of major concentrations of new oil and gas well sites in recent years.

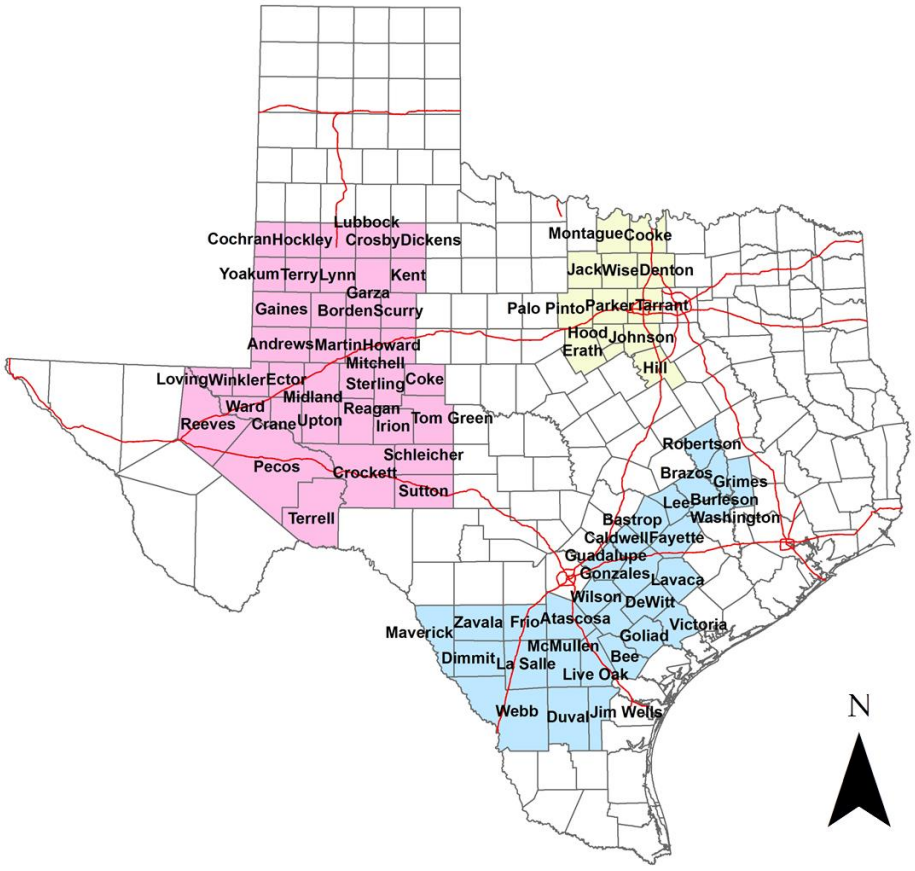


Figure 2. Counties Analyzed in the Barnett Shale, Eagle Ford Shale, and Permian Basin Regions.

Oil and Gas Well Locations

This section includes a small sample of maps that illustrate major trends in recent years. The appendix provides a more extensive sample of county-level tables that document oil and gas developments in the state. The research team also prepared PowerPoint® files that provide a more extensive sample of maps, tables, and figures.

The sample in this section includes the following maps:

- Figure 3 shows the location of 407,311 completed oil and gas wells in the state from 1977–2013. The figure also shows the location of 55,398 completed oil and gas wells from 2010–2013.
- Figure 4 shows the location of 16,486 uncompleted oil and gas wells with expired drilling permits from 2010–2013. On average, close to 30 percent of drilling permits are not completed throughout the state. The figure also shows the location of 32,578 uncompleted oil and gas wells with active drilling permits as of September 2014, which provides an indication of the locations where drilling is highly likely to occur in the near future. RRC normally issues drilling permits with a two-year expiration date. As

described in a subsequent section, most developers drill and complete their wells within just a few months after receiving the drilling permit.

- Figure 5 shows the location of wells that are used to inject liquids, air, or gas into non-productive zones. The map shows the location of active injection wells, permitted wells that have not been drilled yet, drilled but uncompleted wells, and other wells (e.g., abandoned wells, plugged wells, wells with canceled permits, or wells that were converted to production). Wells that inject liquids into non-productive zones (also called disposal wells) are of particular interest because they are used to dispose of unwanted fluids that result from the development or operation of active production wells.
- Figure 5 also shows the location of wells that are used to inject liquids, air, or gas into productive zones. In most cases, the purpose of injecting fluids into a field is to increase pressure that causes oil and gas to migrate toward adjacent active production wells.
- Figure 6 shows the number of completed oil and gas wells by county from 2005–2008.
- Figure 7 shows the number of completed oil and gas wells by county from 2009–2012.
- Figure 8 shows the cumulative number of oil and gas wells by county from 2009–2011.
- Figure 9 shows the cumulative number of oil and gas wells by county from 2009–2013.

The number of well locations described in this report corresponds to the location of surface wells. RRC differentiates between surface wells (which correspond to the X,Y locations of the wellheads) and bottom wells (which correspond to the X,Y locations of the bottom end of the wells). For vertical wells, there is usually a one-to-one relationship between the X,Y location of a surface well and its corresponding bottom well location. For horizontal wells, the horizontal distance between the surface well and the bottom well locations provides an estimate of the length of the horizontal component of the well. This report provides an account of the wellheads. Subsequent analyses could provide a tabulation and corresponding analysis for all the horizontal wells connected to the same wellhead.

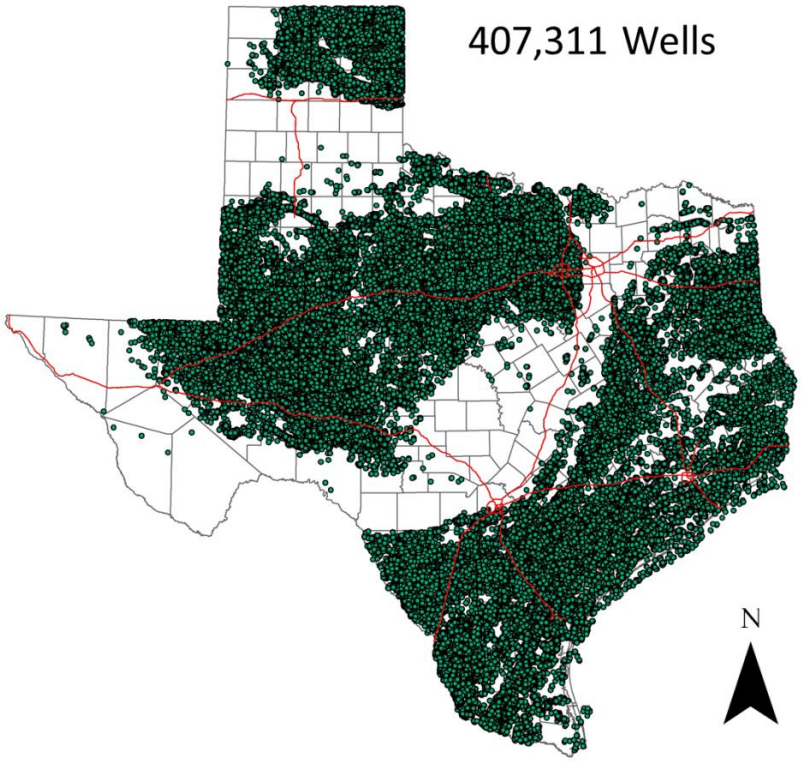
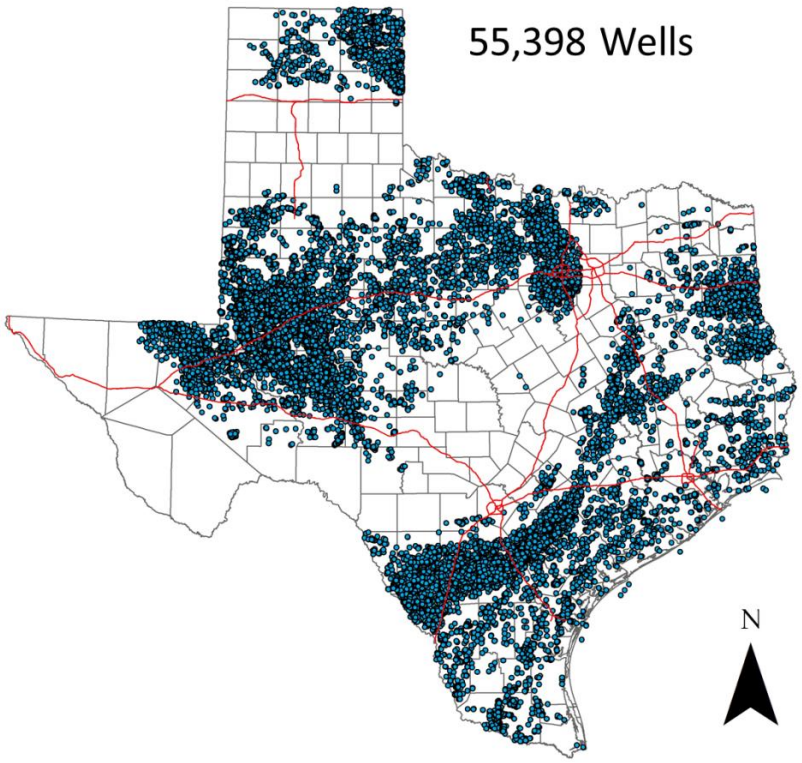
1977–2013	
2010–2013	

Figure 3. Completed Oil and Gas Wells in Texas (1977–2013).

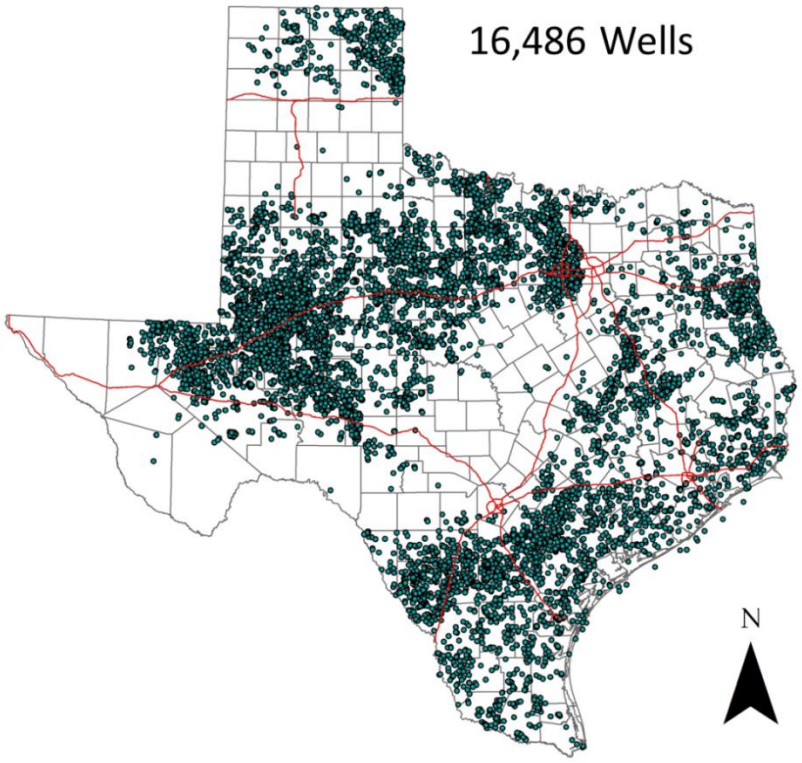
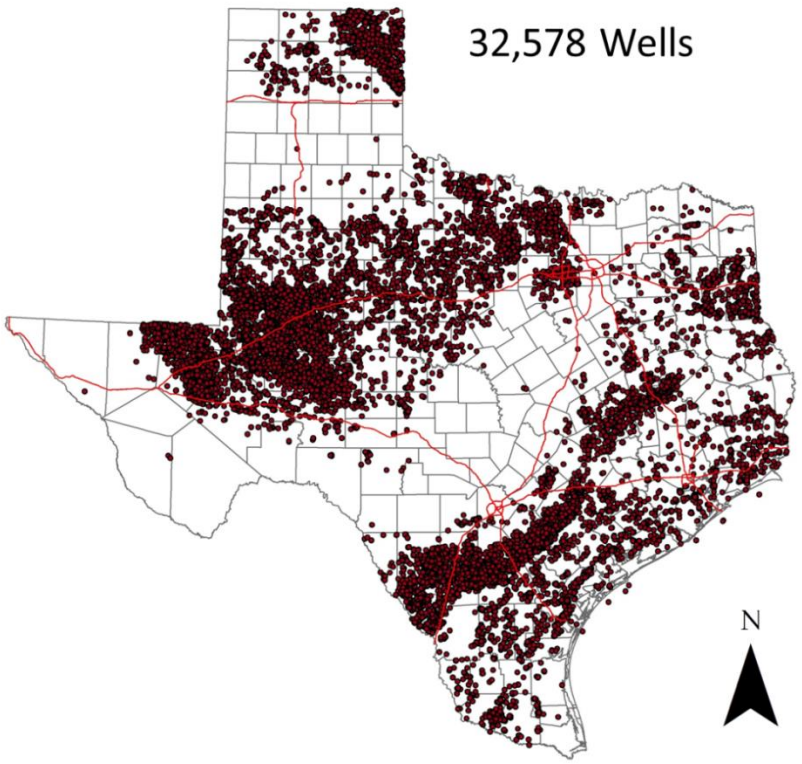
Expired Permits (2010–2013)	
Active Permits as of September 2014	

Figure 4. Uncompleted Oil and Gas Wells.

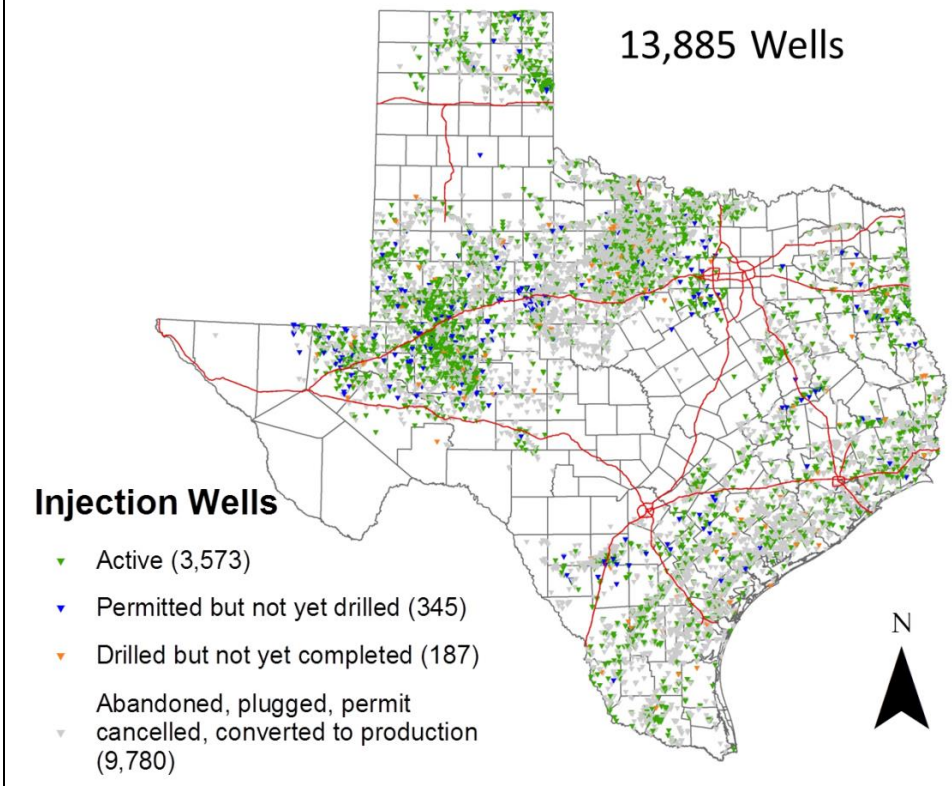
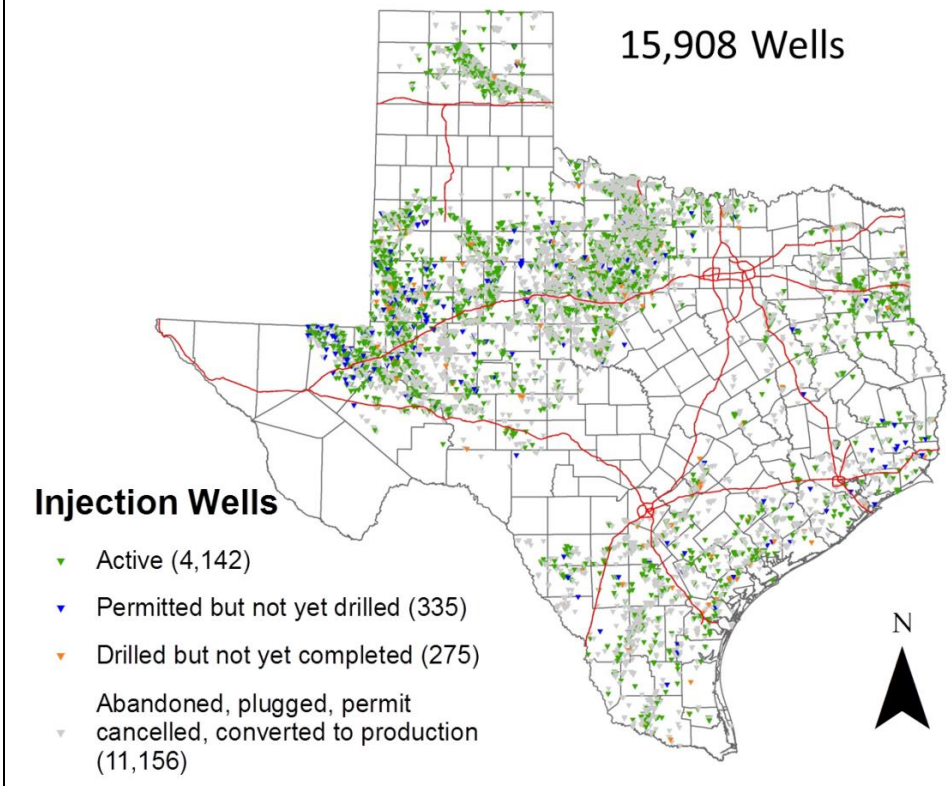
Injection Wells into Non-productive Zones	
Injection Wells into Productive Zones	

Figure 5. Wells Injecting Liquids, Air, or Gas (1983–September 2014).

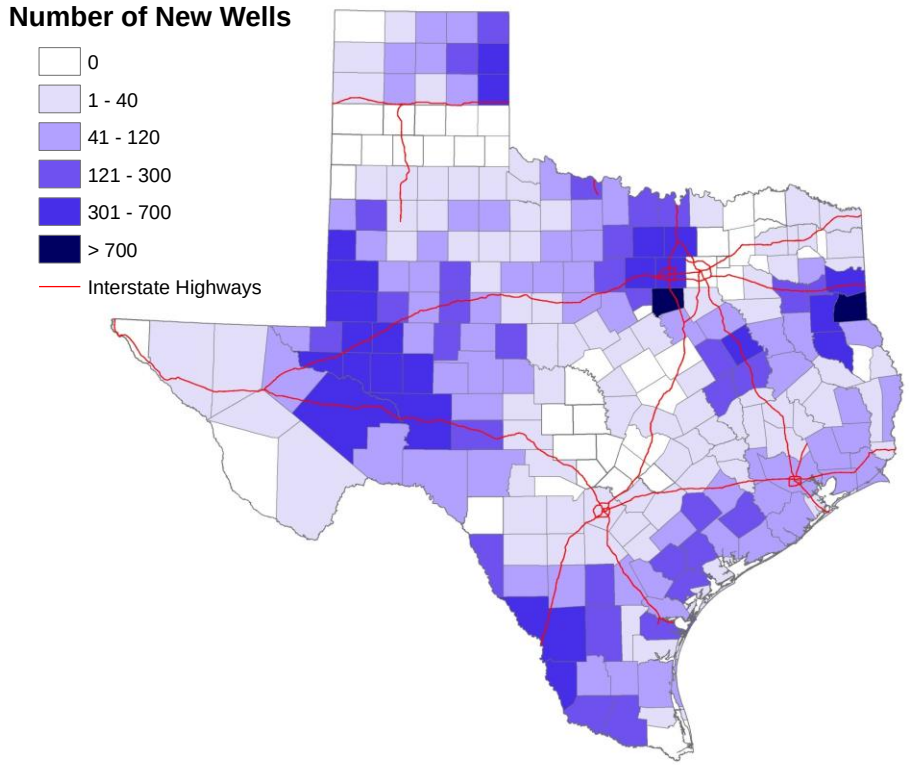
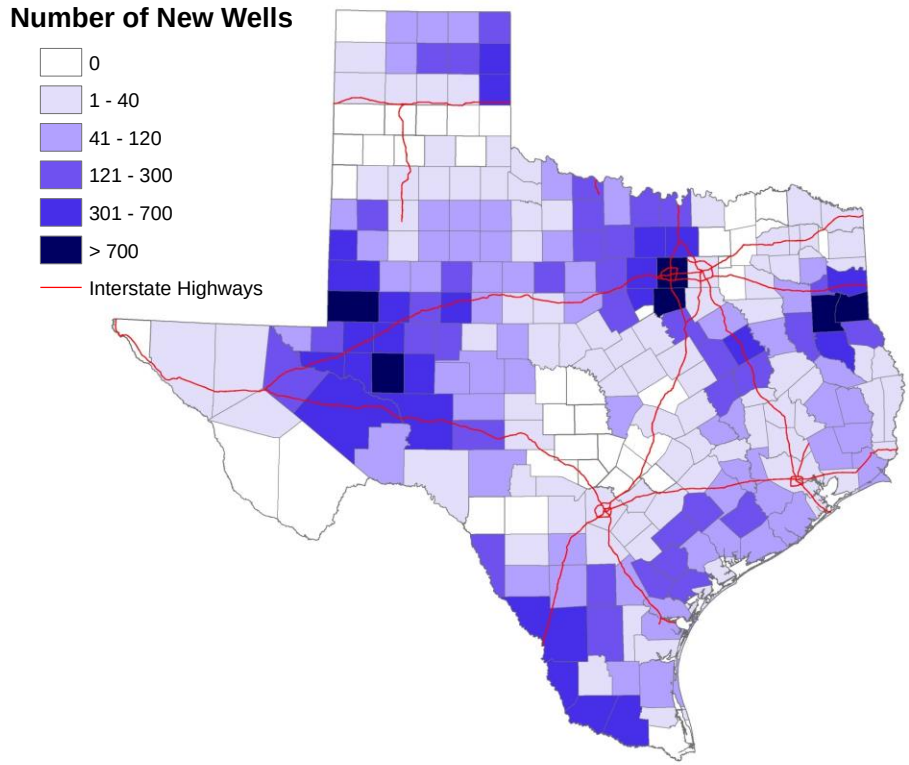
2005–2006	
2007–2008	

Figure 6. Completed Oil and Gas Wells (2005–2008).

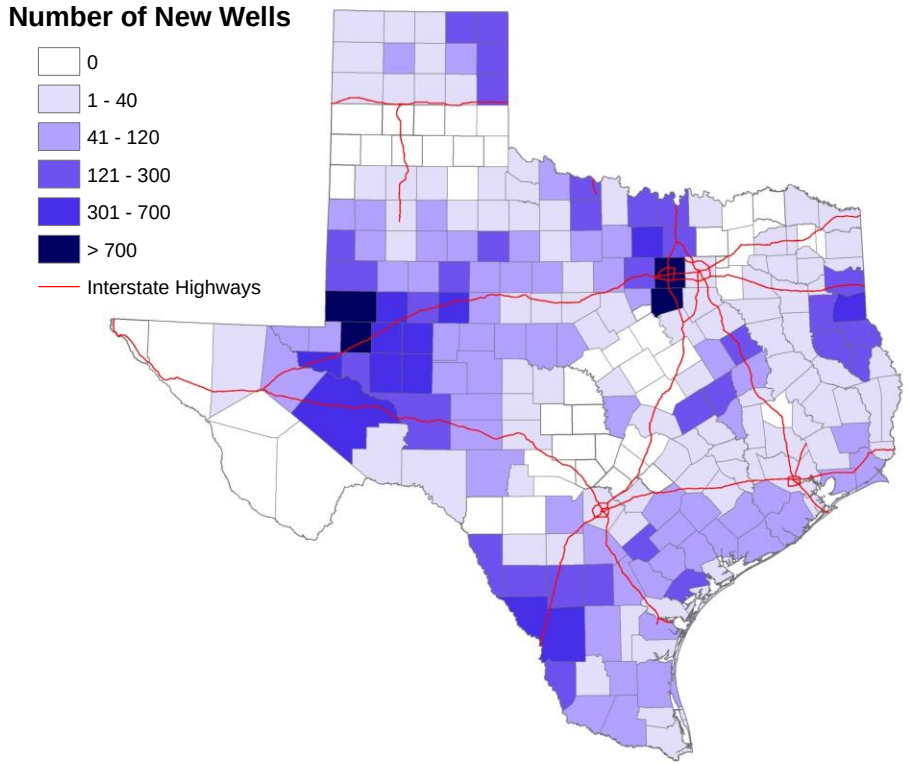
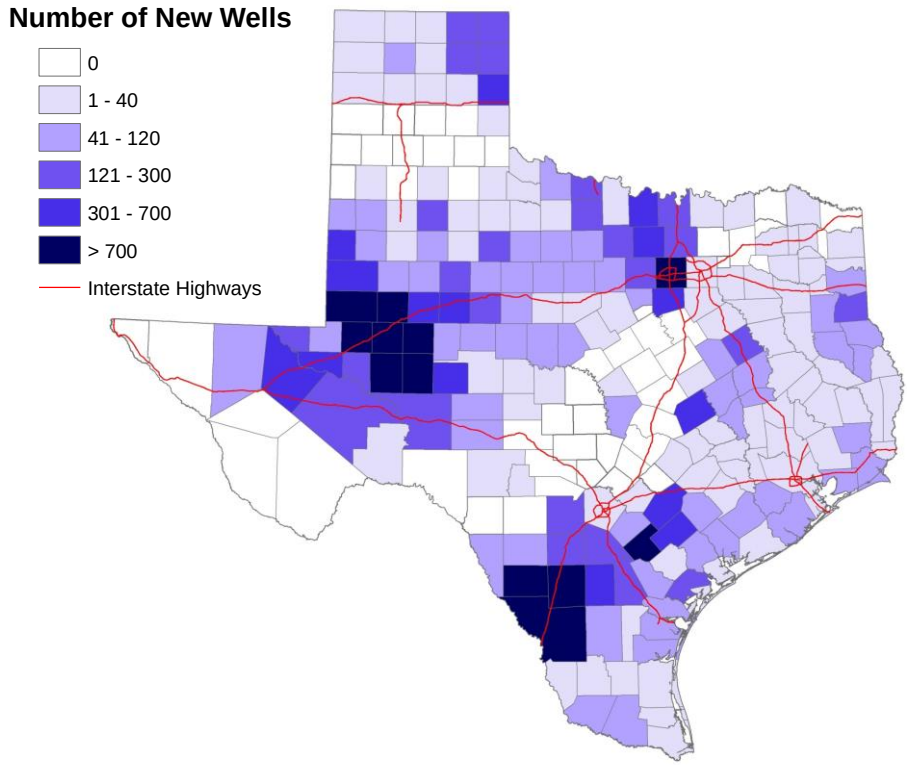
2009–2010	
2011–2012	

Figure 7. Completed Oil and Gas Wells (2009–2012).

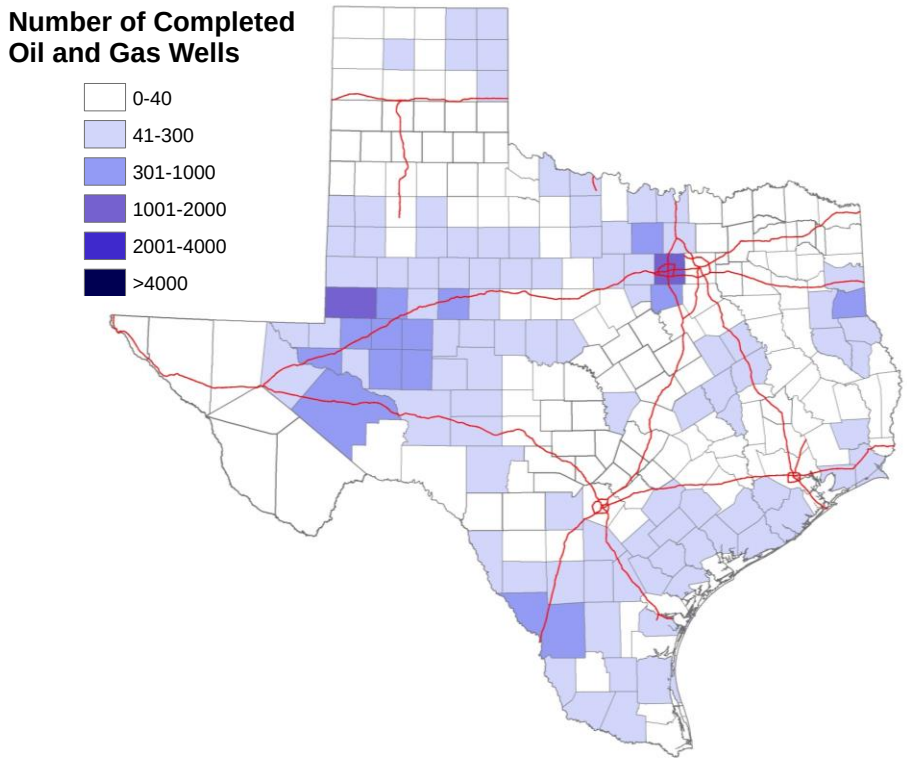
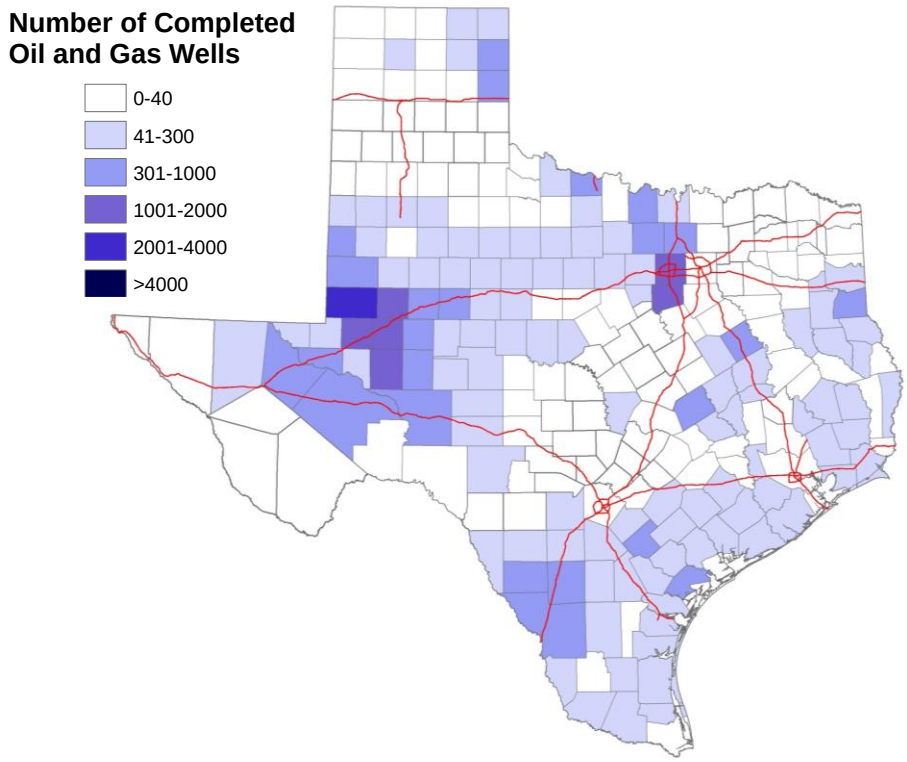
2009–2010	
2009–2011	

Figure 8. Cumulative Number of Oil and Gas Wells (2009–2011).

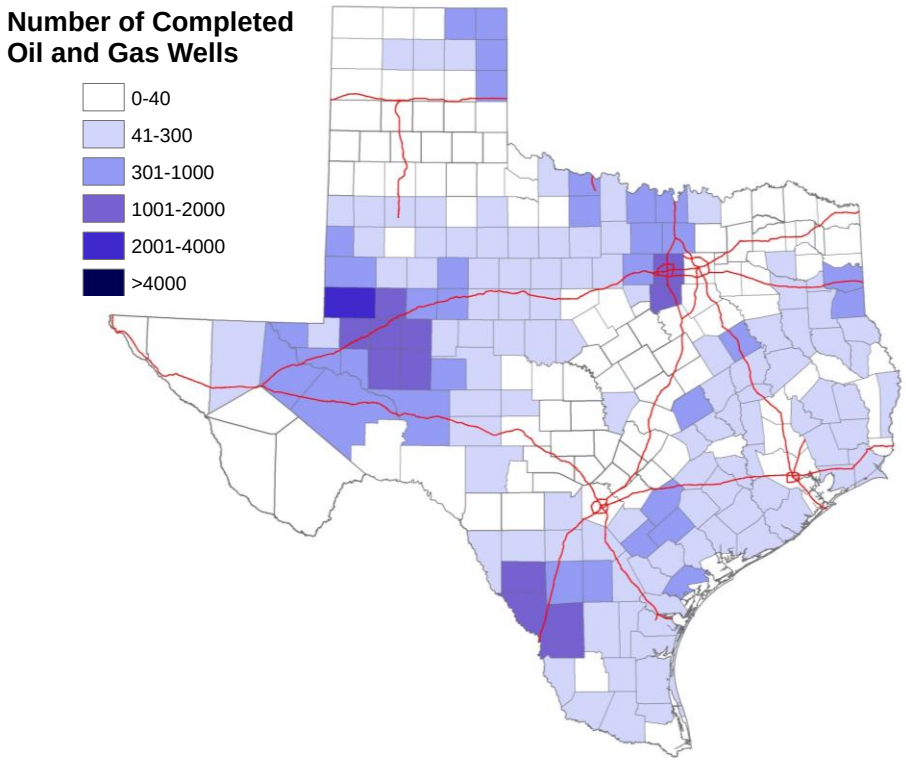
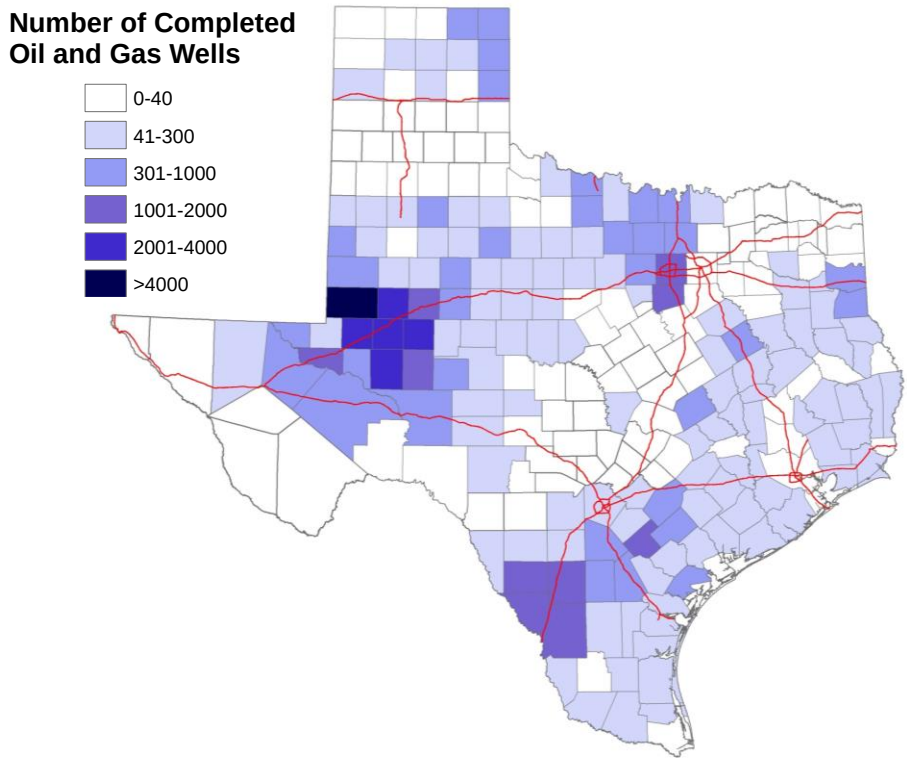
2009–2012	
2009–2013	

Figure 9. Cumulative Number of Oil and Gas Wells (2009–2013).

Historical Evolution of Oil and Gas Wells

Figure 10 shows the number of permitted oil and gas wells from 1977–2013. Figure 11 shows the number of oil and gas wells completed during the same period. The number of wells in the state peaked in the early 1980s at a time when oil prices were high due in part to instability in the oil supply that resulted from the Iranian Revolution of 1979 and the beginning of the Iraq-Iran War in 1980. High oil prices encouraged energy conservation, which in turn resulted in lower consumption. The resulting oversupply caused a significant reduction in oil prices in the mid-1980s, which caused a corresponding reduction in the number of wells drilled. The number of wells began to increase substantially again in the early to mid-2000s, thanks to increases in the price of oil and gas, as well as advancements in drilling technology, mainly in connection with the combined use of horizontal drilling and slickwater hydraulic fracturing. Slickwater fracturing uses enormous amounts of water in addition to sand, solvents, and other additives (*4*, *5*). As shown in Figure 10 and Figure 11, the number of horizontal wells in Texas started to increase significantly around 2003. Currently, the number of new horizontal wells is almost the same as the number of vertical wells completed at any given time. Industry insiders anticipate the number of horizontal wells to surpass the number of vertical wells in the near future.

As Figure 12 shows, the average depth of wells drilled in Texas is increasing. For vertical wells, the average depth has increased from about 5,000 feet in the late 1970s to about 8,000 feet nowadays. For horizontal wells, the average depth also seems to be increasing, although even in the mid-1980s it was not unusual to find horizontal wells that were more than 8,000 feet deep.

The amount of time needed to develop wells is increasing. As Figure 13 shows, the median duration between permit approval and well completion increased from about one month in 1977 to almost three months in 2013. The mean duration increased from a month and a half in 1977 to slightly more than four months in 2013. Figure 13 also shows the 10th and 90th percentile durations. In particular, the 90th percentile duration increased from approximately three months in 1977 to more than nine months in 2013. The volatility of this duration is probably associated with uncertainties that some individual operators experience, e.g., delays in drilling equipment deliveries or truck shortages. Interestingly, the mean duration from permit approval to well completion for vertical wells is similar to the mean duration for horizontal wells (Figure 14). Although the mean time from permit approval to well completion has increased over the years, the mean duration from the time that drilling starts to well completion has remained roughly the same: slightly less than a month for vertical wells and slightly more than a month for horizontal wells (Figure 15).

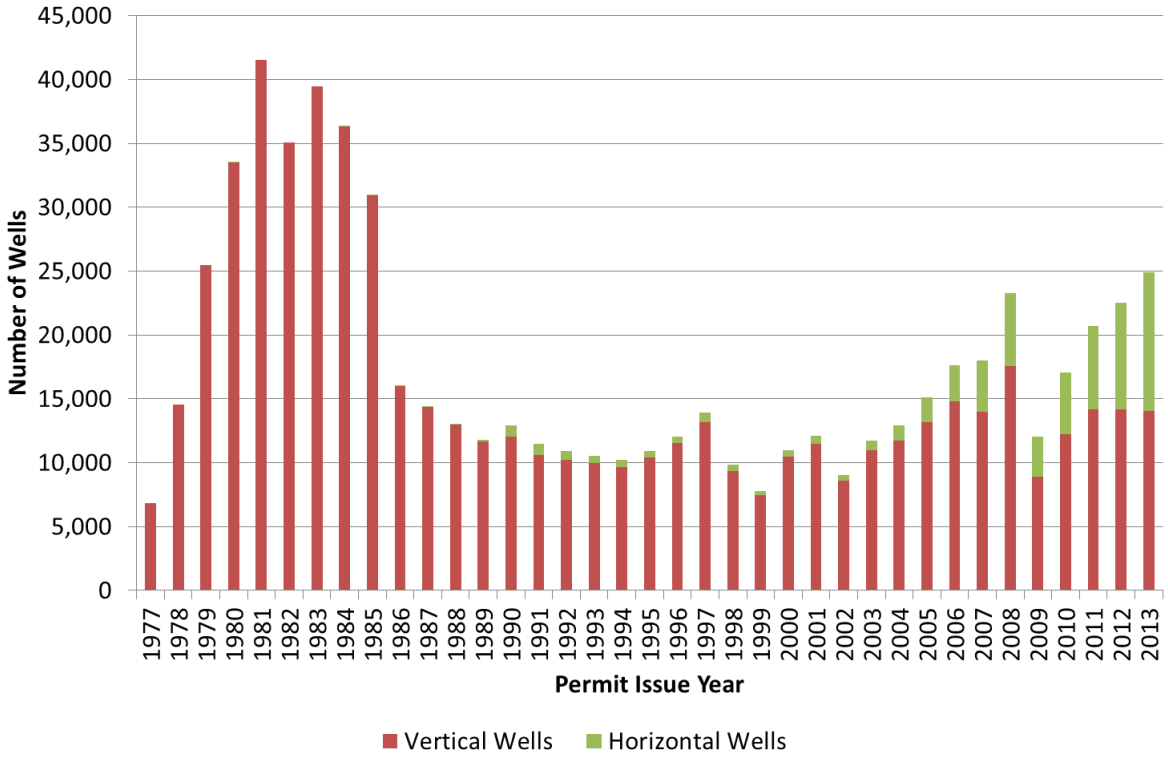


Figure 10. Oil and Gas Wells Permitted.

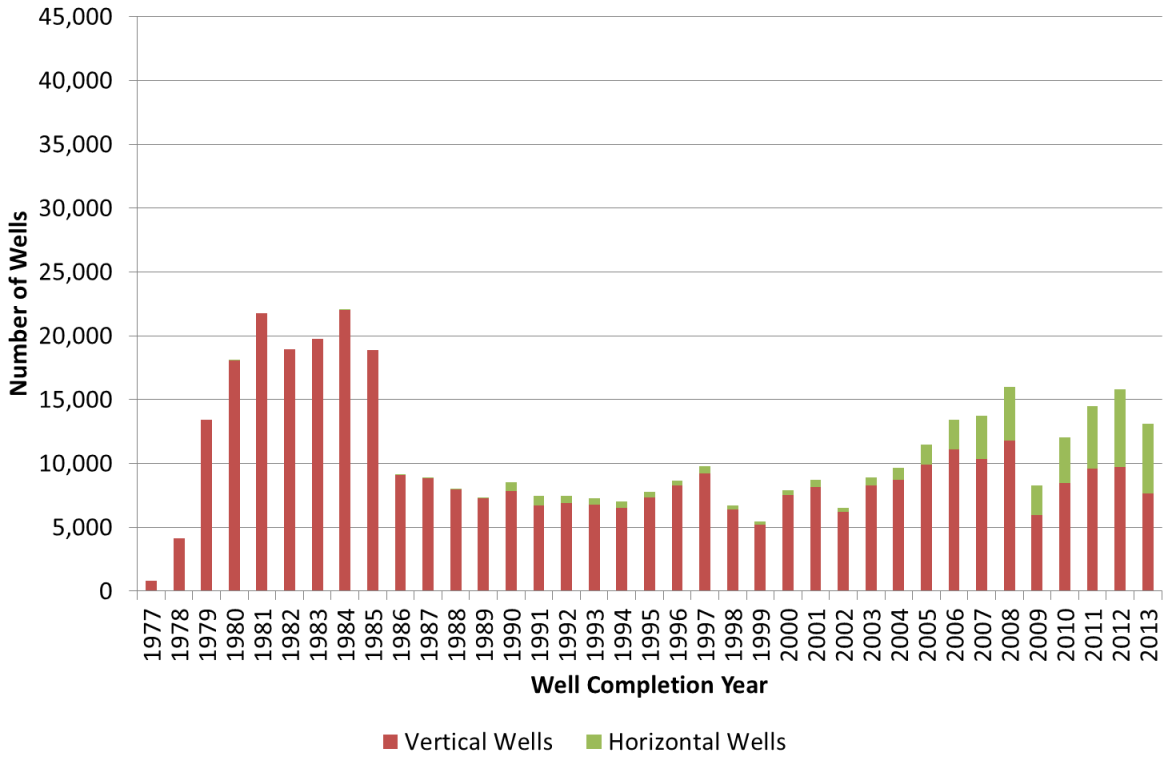


Figure 11. Oil and Gas Wells Completed.

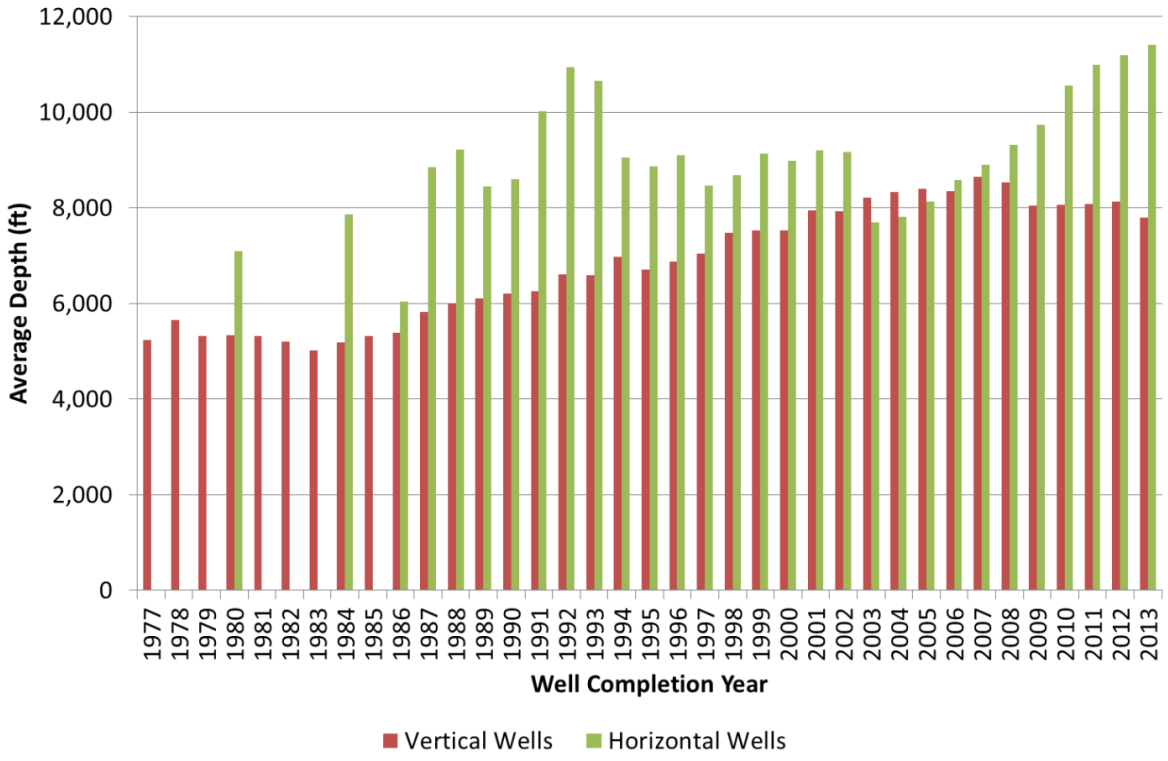


Figure 12. Average Depth of Oil and Gas Wells.

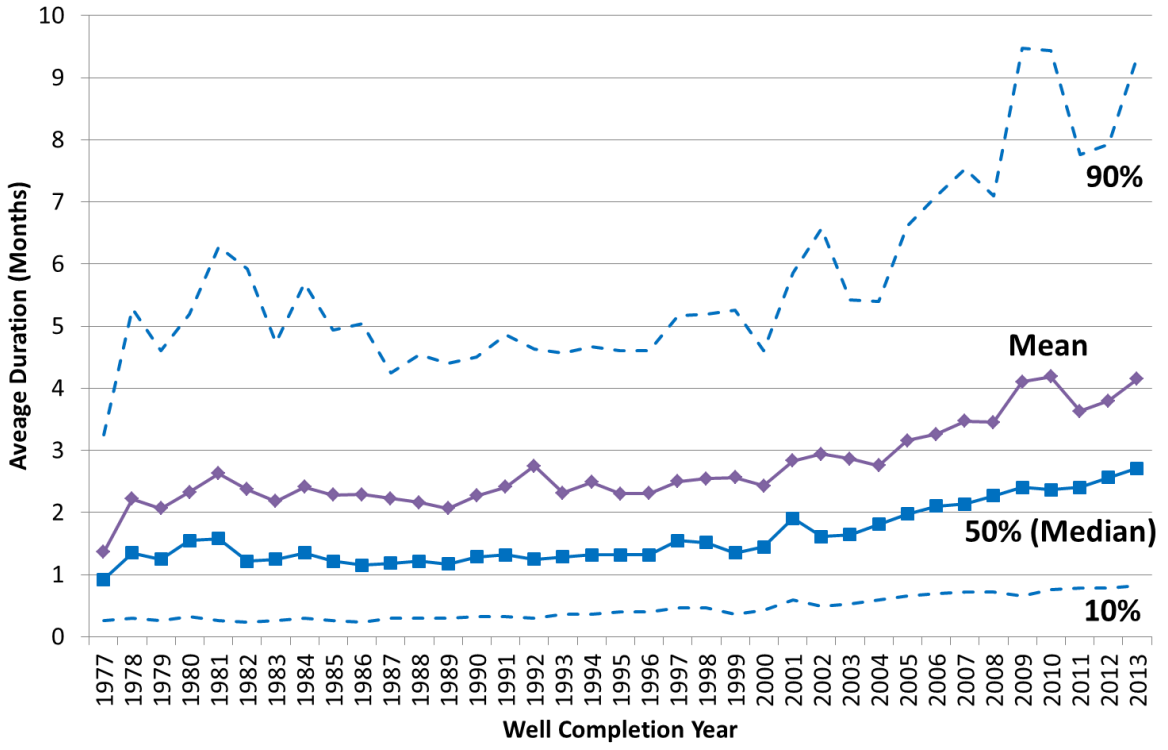


Figure 13. Duration between Permit Approval and Well Completion.

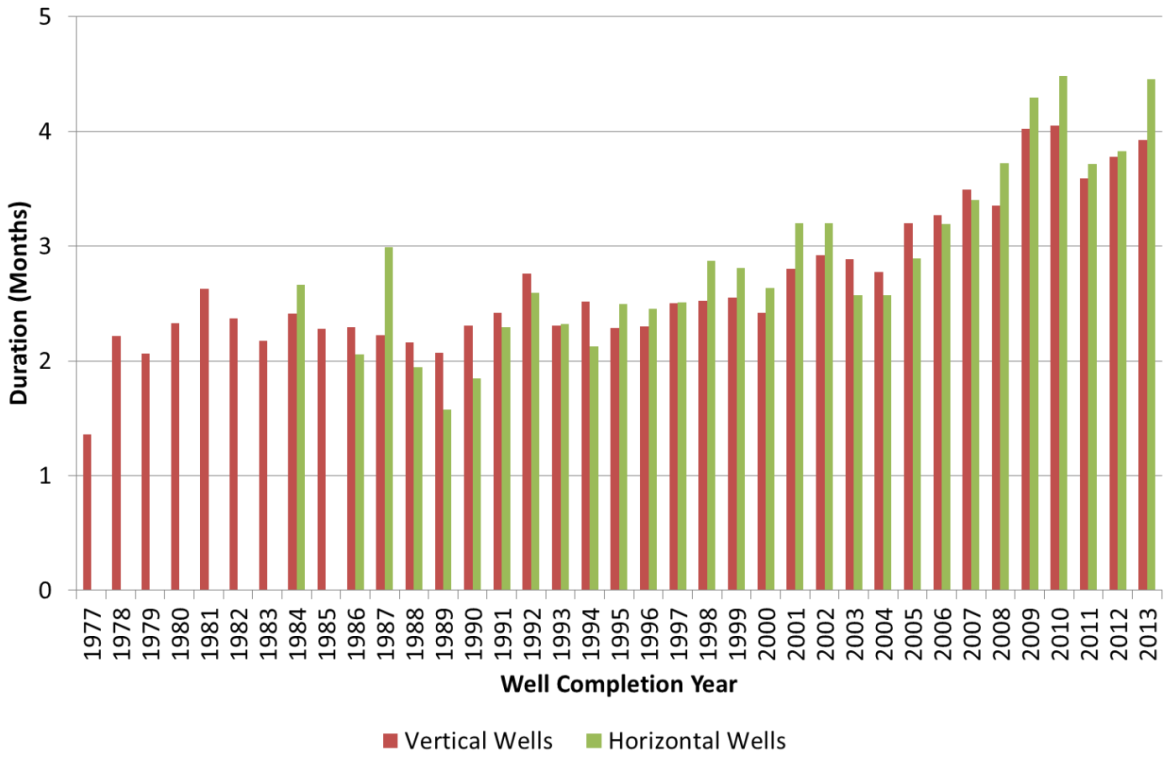


Figure 14. Duration (Mean) between Drilling Permit Approval and Well Completion.

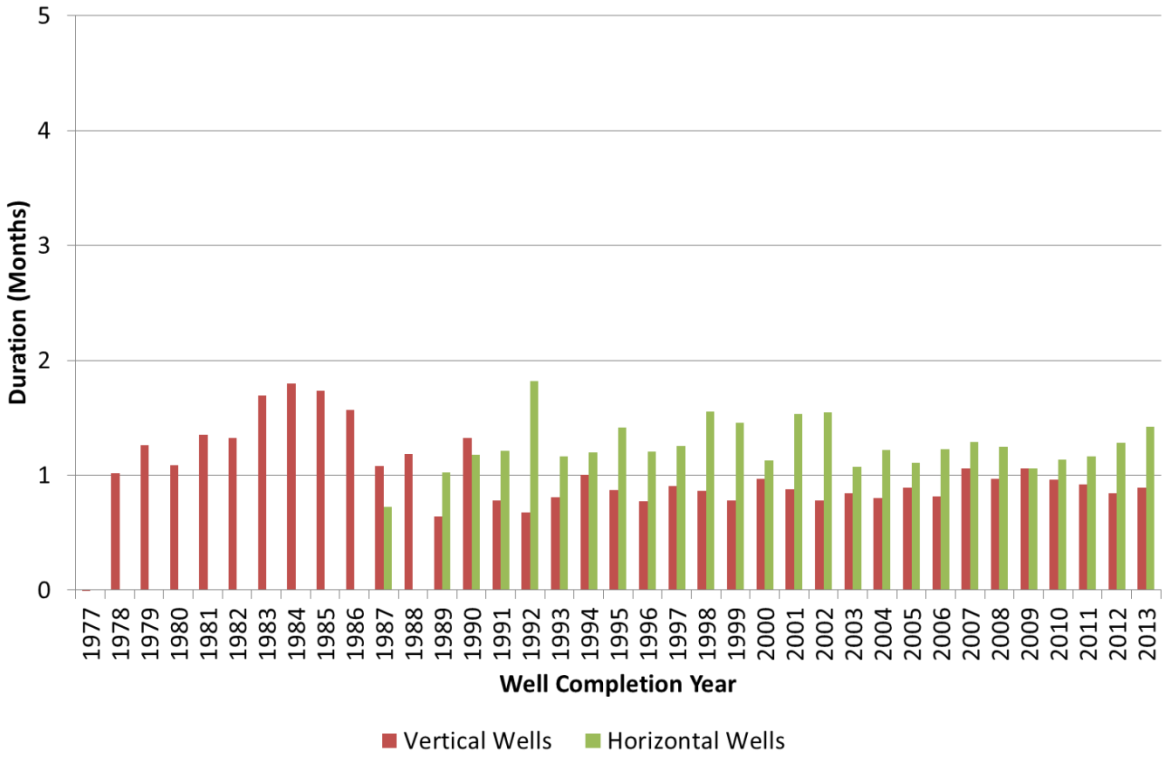


Figure 15. Duration (Mean) between Beginning of Drilling and Well Completion.

Oil and Gas Production

After it peaked in the early 1980s (when oil prices were high), oil production in Texas declined steadily until the early to mid-2000s (Figure 16). Oil production started to increase again in 2010 and has continued to grow since that time, thanks in part to the high price of oil in the world market (at least $80/barrel from the beginning of 2010 to October 2014, and $100/barrel or higher from the beginning of 2011 to June 2014). As of this writing, the price of oil has decreased to about $50/barrel. It is not clear for how long this trend will continue. As a result, it is not clear what the impact on domestic production could be. However, because the price of oil continues to remain low, the number of drilling rig counts and contracts has started to decrease.

As Figure 17 shows, gas production increased slightly through the 1990s and early 2000s. From 2003 to 2008, gas production accelerated, mainly because of the increased drilling and production activity in the Barnett Shale region in North Texas. After 2008, gas production declined, due in part to the dramatic reduction in the price of gas that resulted from an oversupply of gas and the economic recession.

Figure 18 and Figure 19 provide an account of the total volume of liquids, air, and gas injected into the ground. As Figure 18 shows, the total volume of liquids injected into the ground decreased rapidly in the mid-1980s, quickly rebounded in the late 1980s, remained essentially flat through 2003, and then began to grow quickly. Figure 18 shows a decrease in 2013, but this lower number is most likely related to the lag associated with the database update cycle at RRC (as described in Chapter 2). Currently, some 2 billion barrels are injected into non-productive zones (i.e., disposal wells), and 1.5 billion barrels are injected into productive zones.

As Figure 19 shows, most of the air and gas injected into the ground in Texas is associated with productive zones. Only a fraction of air and gas injected is associated with non-productive zones. The historical trend is somewhat similar to that associated with injected liquids, except that the amount of gas or air injected into productive zones seems to have accelerated at a faster rate since 2010.

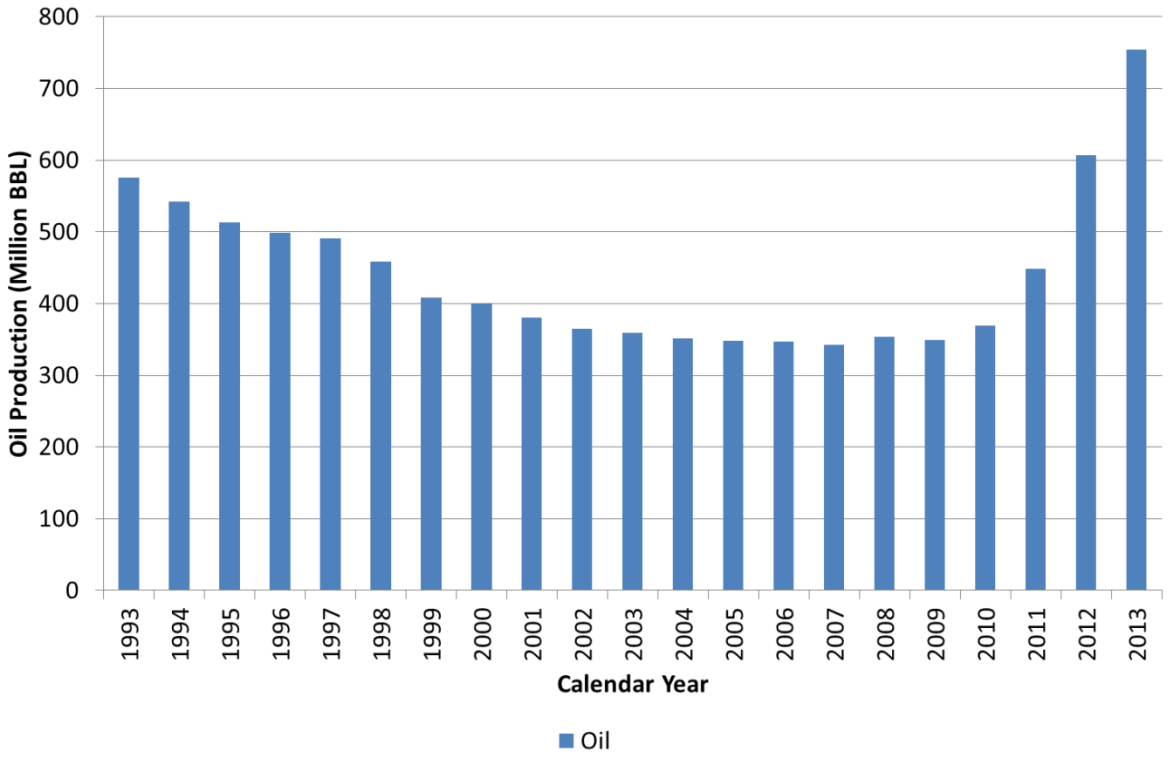


Figure 16. Oil Production in Texas.

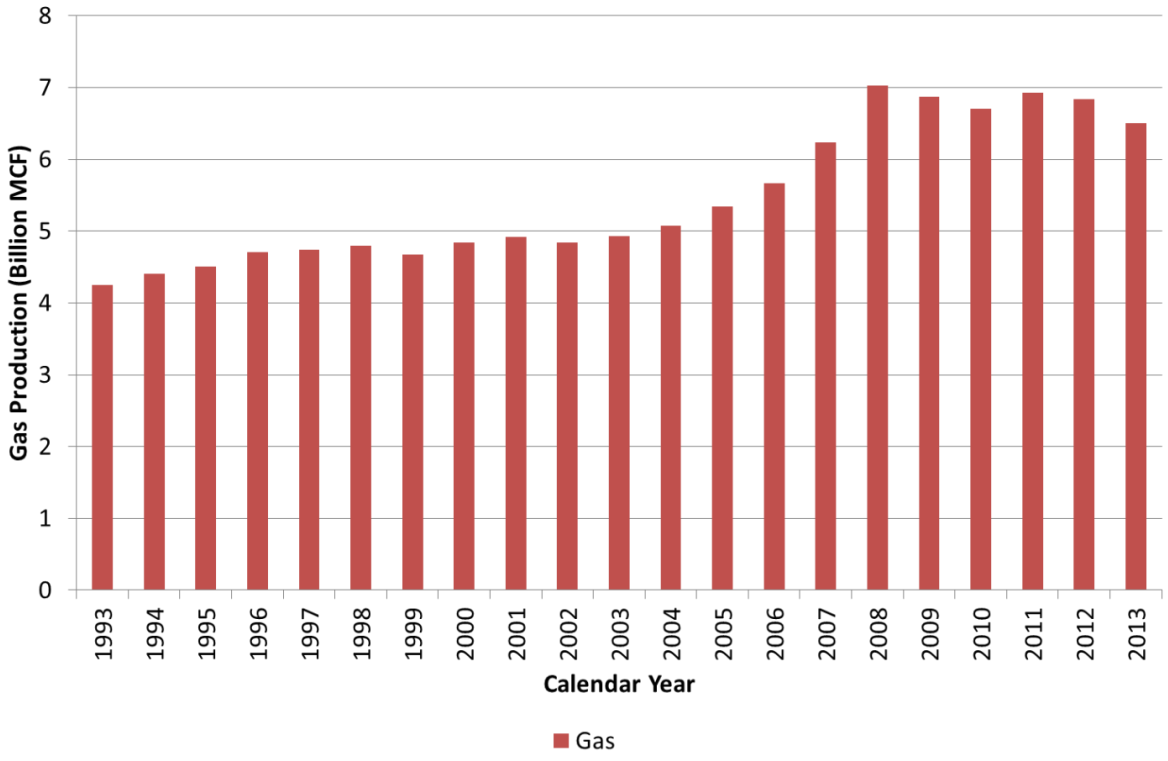


Figure 17. Gas Production in Texas.

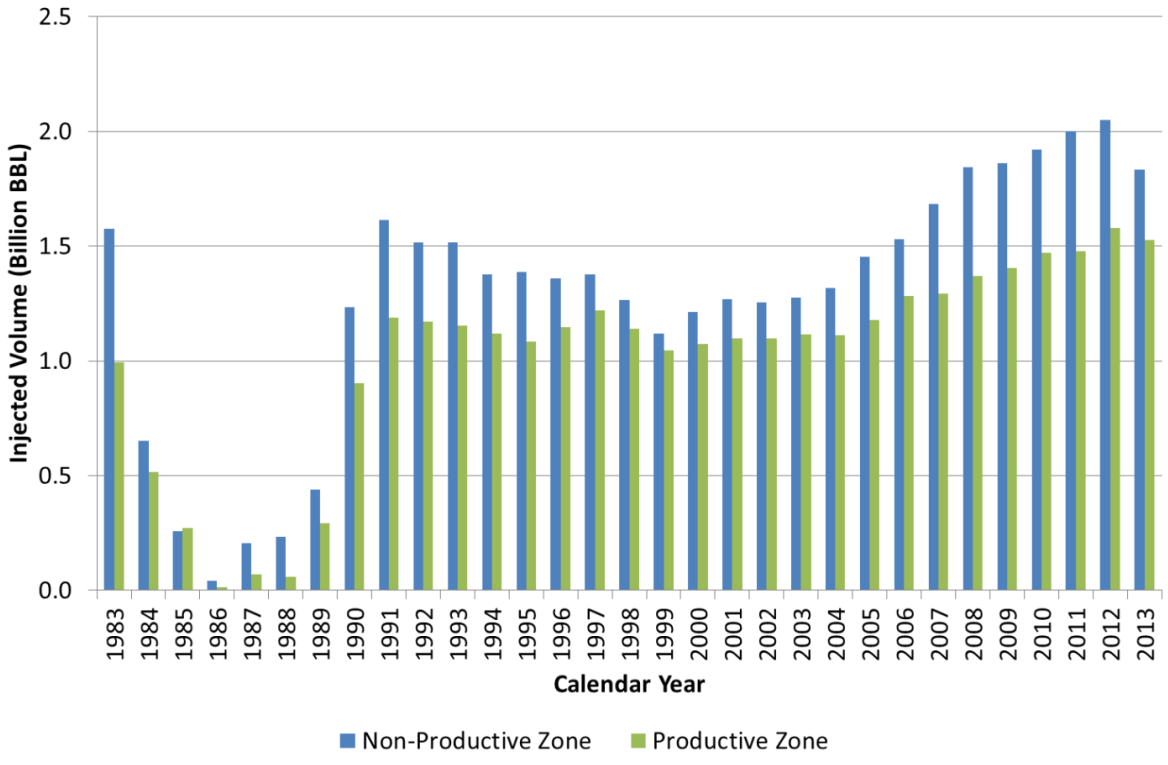


Figure 18. Total Volume of Liquids Injected into the Ground.

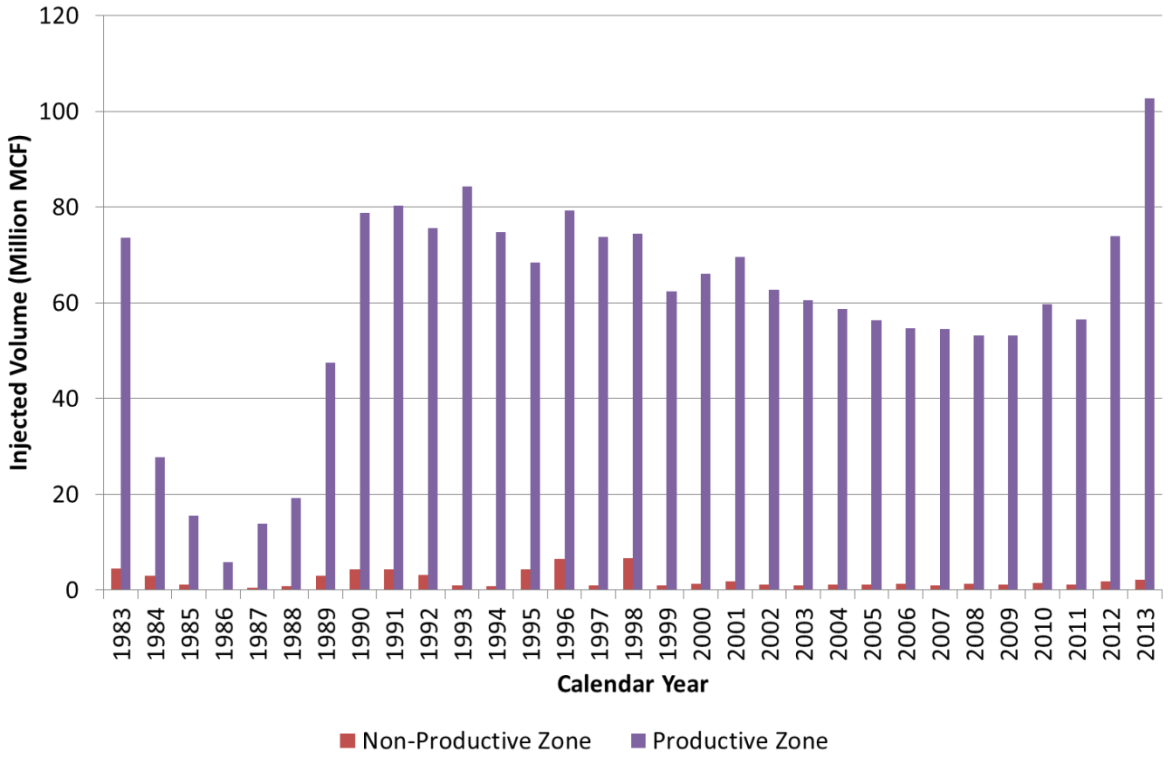


Figure 19. Total Volume of Air and Gas Injected into the Ground.

Chapter 3. Pavement Condition Data

Introduction

The research team gathered and processed pavement condition data at a level of spatial and temporal detail needed to overlay the data on the county-level geodatabase of oil and gas energy developments that was described in the previous chapter.

Only pavement data from the state highway network were available. As described in Chapter 4, most local jurisdictions in energy development regions have extremely limited resources to conduct formal assessments of the roadway network under their jurisdiction. TxDOT uses a GIS-based Pavement Management Information System (PMIS) that includes a large number of data elements the department uses to characterize pavement characteristics and operating conditions. Data elements of interest for this analysis were pavement distress, pavement ride, and pavement condition scores. Also of interest were maintenance expenditures.

Datasets

TTI receives yearly updates of the PMIS database as part of an ongoing agreement with TxDOT. For the analysis, the research team used PMIS data from 2003–2013. For each fiscal year, pavement data collection in the field takes place mostly in the fall of every year, which means that pavement condition data for a specific fiscal year tend to represent field conditions at the end of the previous calendar year. For example, 2013 PMIS data represent mostly pavement conditions during fall 2012. However, not all pavement condition data are collected in the fall. The PMIS data collection schedule includes collecting pavement distress data from September to December and ride and rut data from September to February of the following year.

For consistency with the oil and gas data discussed in Chapter 2 (which are based on calendar years), all references to PMIS data in this report correspond to PMIS database tables associated with the following fiscal year. As a result, the 2003–2013 PMIS data discussed in this chapter actually correspond to 2004–2014 PMIS database files.

The general process that TxDOT follows to obtain pavement condition data is as follows:

- Collect pavement distress data from visual roadside surveys completed by trained raters and from automated rutting measurements.
- Apply a utility factor to distress and rutting observations to obtain a combined distress score for each highway segment (which is nominally 0.5 miles long).
- Collect ride quality data from calibrated electronic equipment operated at highway speeds and obtain a ride score for each highway segment.

- Apply a utility factor to ride score values.
- Multiply the distress score by the ride utility factor to obtain a combined pavement condition score for each highway segment.

Table 3 shows the categories and thresholds for pavement distress, ride, and condition scores. In general, the goal is always to have pavement sections that are rated good or very good. This means at least 80 for distress, 3.0 for ride, and 70 for condition scores. Sometimes, TxDOT officials consider highway segments below these thresholds as failed segments.

Table 3. Categories and Thresholds for Distress, Ride, and Condition Scores.

Category	Distress Score	Ride Score	Condition Score
Very Good	90 to 100	4.0 to 5.0	90 to 100
Good	80 to 89	3.0 to 3.9	70 to 89
Fair	70 to 79	2.0 to 2.9	50 to 69
Poor	60 to 69	1.0 to 1.9	35 to 49
Very Poor	1 to 59	0.1 to 0.9	1 to 34

In the PMIS, pavement condition data are reported at (nominally) 0.5-mile increments. Several PMIS tables were of interest, including the following:

- **PMIS_CONDITION_SUMMARY**. This table contains summary pavement condition data for every roadway segment (nominally 0.5 miles long), including distress, ride, and condition scores.
- **PMIS_DATA_COLLECTION_SECTION**. This table includes basic data about each pavement segment, such as TxDOT district, county, pavement type, traffic information, and maintenance expenditures.
- **DFO_NE_MLOS**. This table contains distance from origin (DFO) data for each PMIS roadway segment.

Preliminary Analysis and Visualization

Using GIS linear event functions, the research team mapped PMIS data to the state highway network geodatabase. The result was a geodatabase (one feature class per year) that included pavement distress, ride, and condition score data for each highway segment. With this information, the research team developed aggregated pavement distress, ride, and condition score data at the county, region, and state levels.

At first, the research team calculated average pavement condition values at the county level using the following weighted-average formulation:

$$\overline{DE} = \frac{\sum_{i=1}^{n}(DE_i \times N_i \times L_i)}{\sum_{i=1}^{n}(N_i \times L_i)}$$

where:

$\overline{DE}$ = average weighted data element of interest (e.g., distress, ride, or condition score).

DE_i = data element of interest for the i^{th} PMIS data collection segment.

N_i = number of through lanes for the i^{th} PMIS data collection segment.

L_i = length of the i^{th} PMIS data collection segment, typically 0.5 miles long.

However, aggregated average pavement condition data had the effect of hiding or masking the influence of highway segments with low pavement condition values (essentially averaging out differences). To address this issue, the research team used a different metric, focusing instead on the percentage of highway miles per county that had a condition score below good (i.e., 80 for distress, 3.0 for ride, and 70 for condition scores).

This section includes a small sample of maps and tables that illustrate major trends in recent years. The appendix provides a sample of county-level tables that the research team developed to document pavement condition trends. The research team also prepared PowerPoint files that provide a more extensive sample of maps, tables, and figures.

The sample in this section includes the following maps:

- Figure 20 shows average pavement distress scores by county in 2009 and 2013.
- Figure 21 shows average pavement ride scores by county in 2009 and 2013.
- Figure 22 shows average pavement condition scores by county in 2009 and 2013.
- Figure 23 shows average maintenance expenditures per lane-mile.
- Figure 24 shows the percentage of highway miles per county with below-good pavement distress scores.
- Figure 25 shows the percentage of highway miles per county with below-good pavement ride scores.
- Figure 26 shows the percentage of highway miles per county with below-good pavement condition scores.

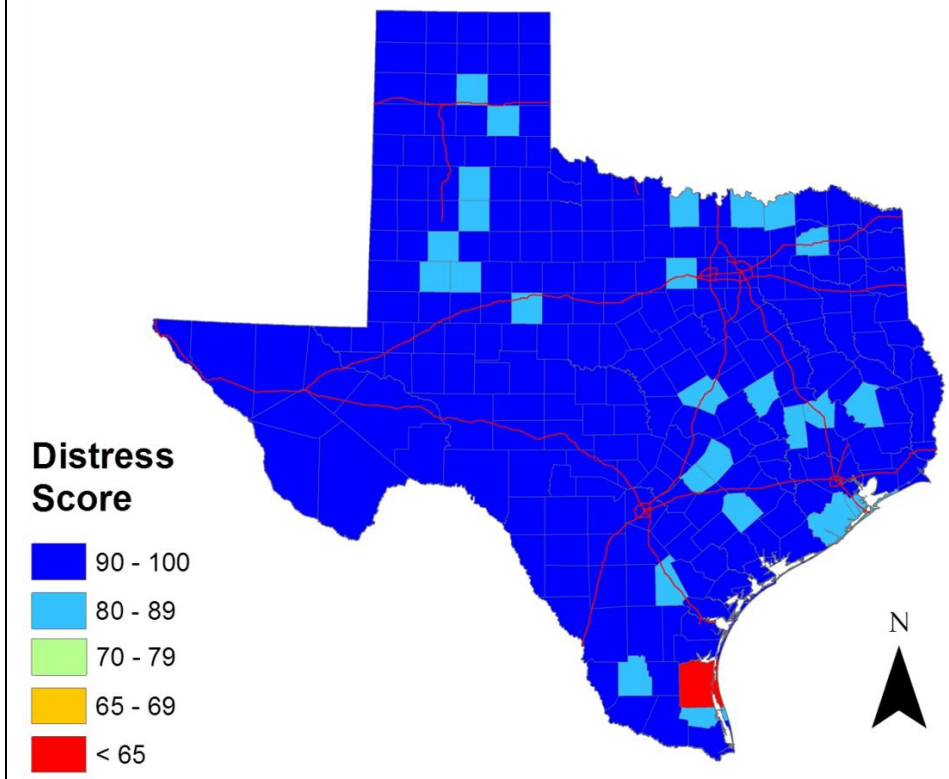
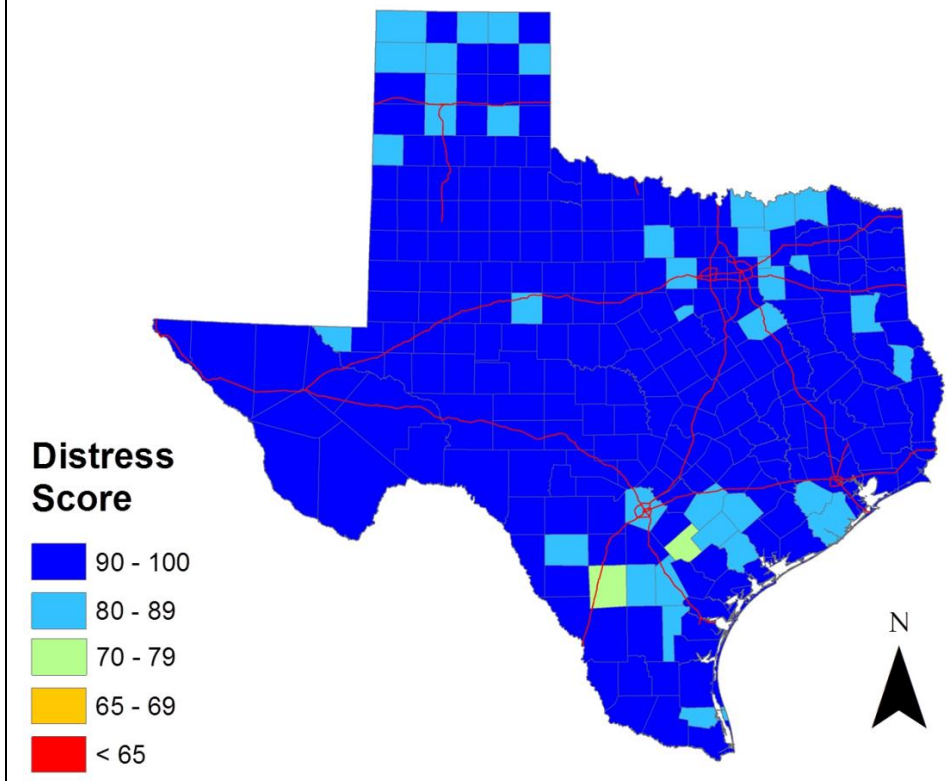
2009	
2013	

Figure 20. Average Pavement Distress Scores.

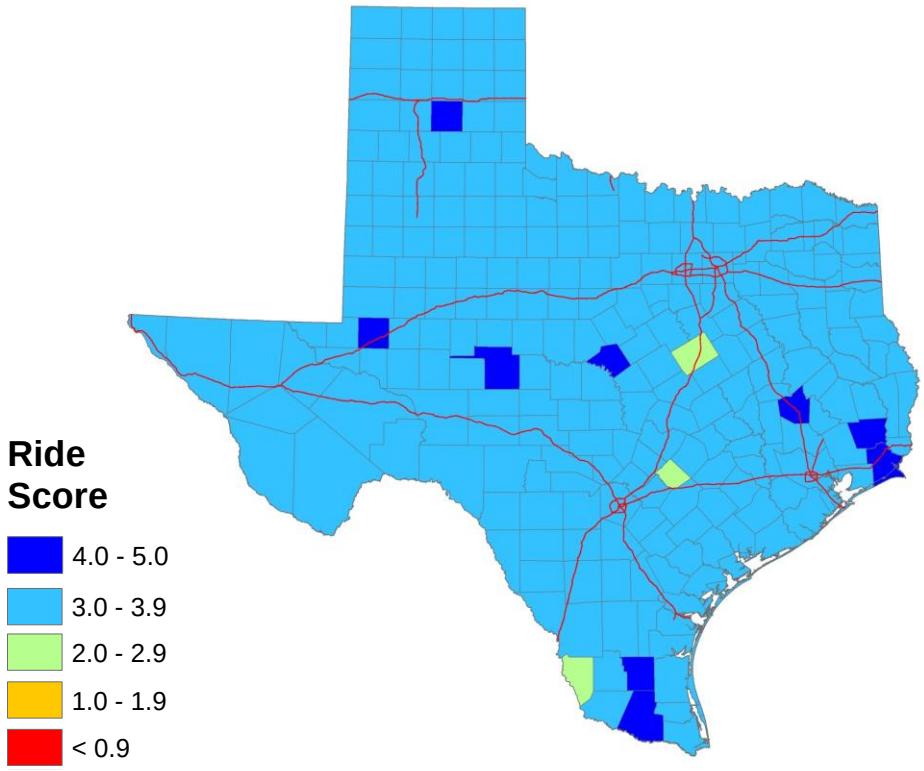
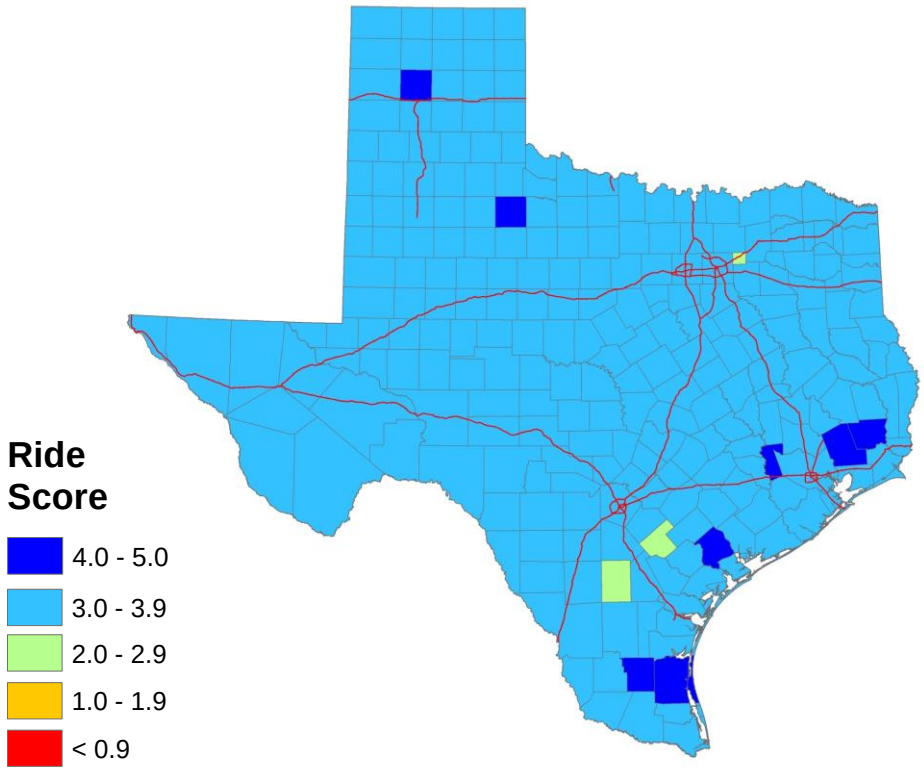
2009	
2013	

Figure 21. Average Pavement Ride Scores.

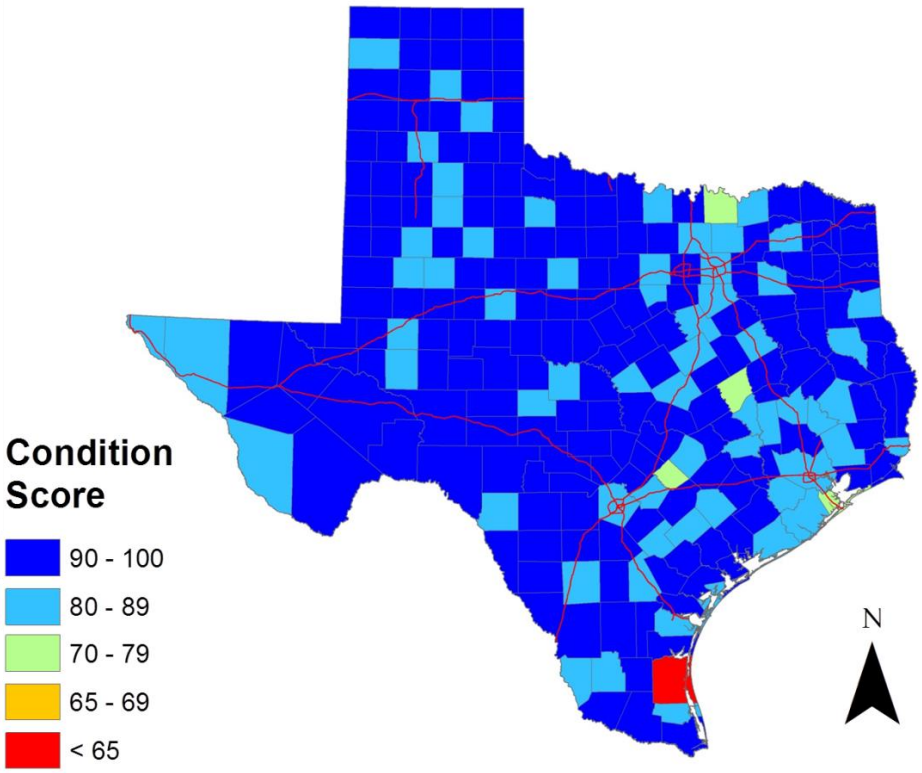
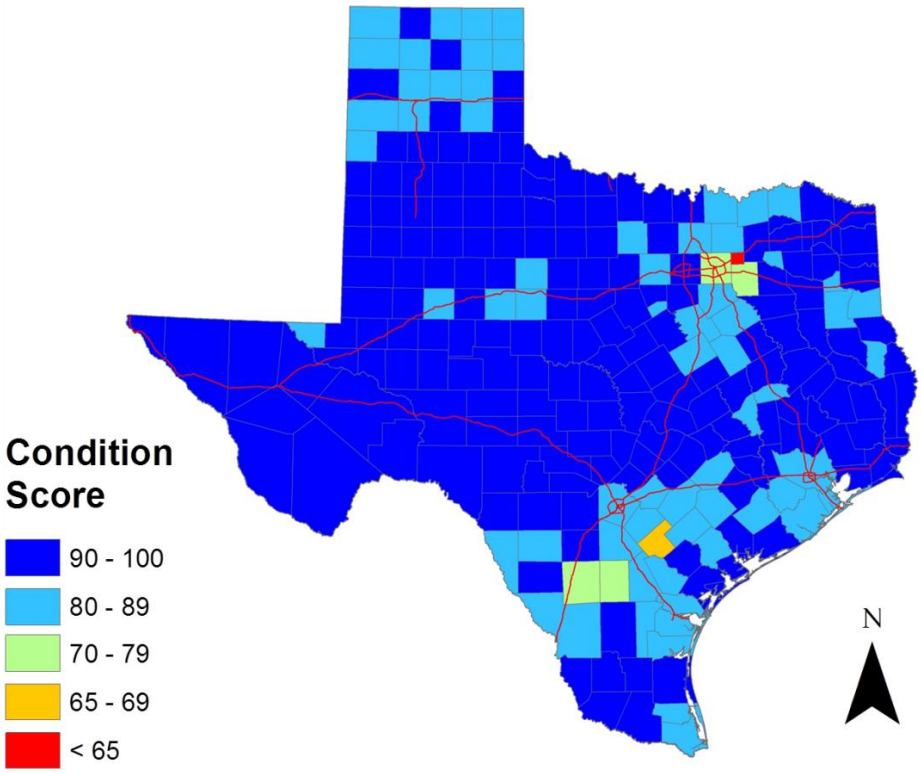
2009	
2013	

Figure 22. Average Pavement Condition Scores.

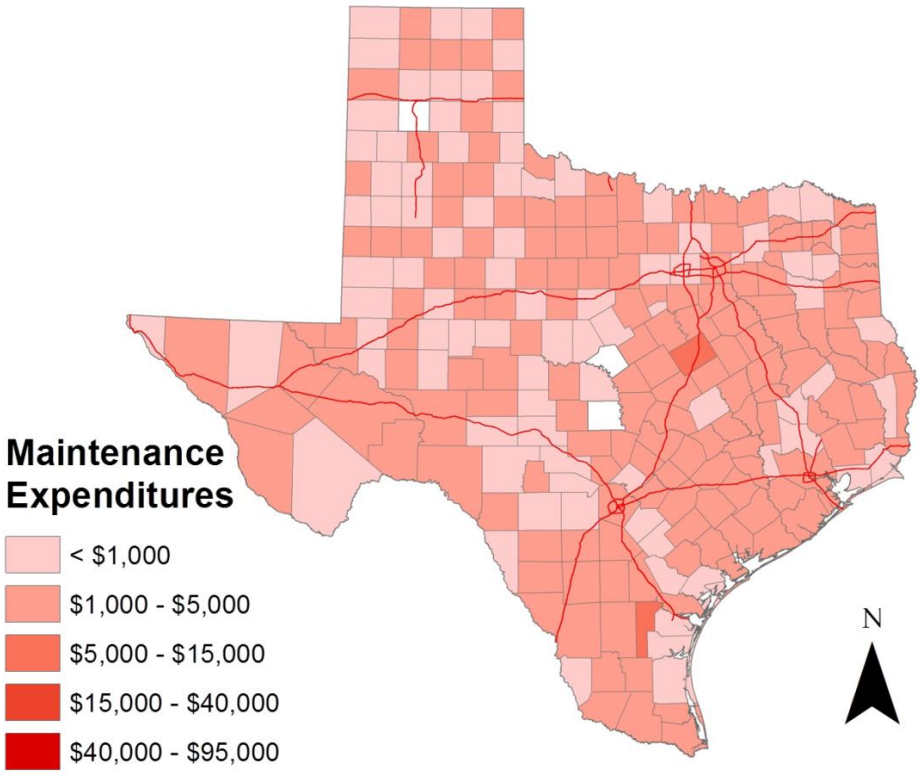
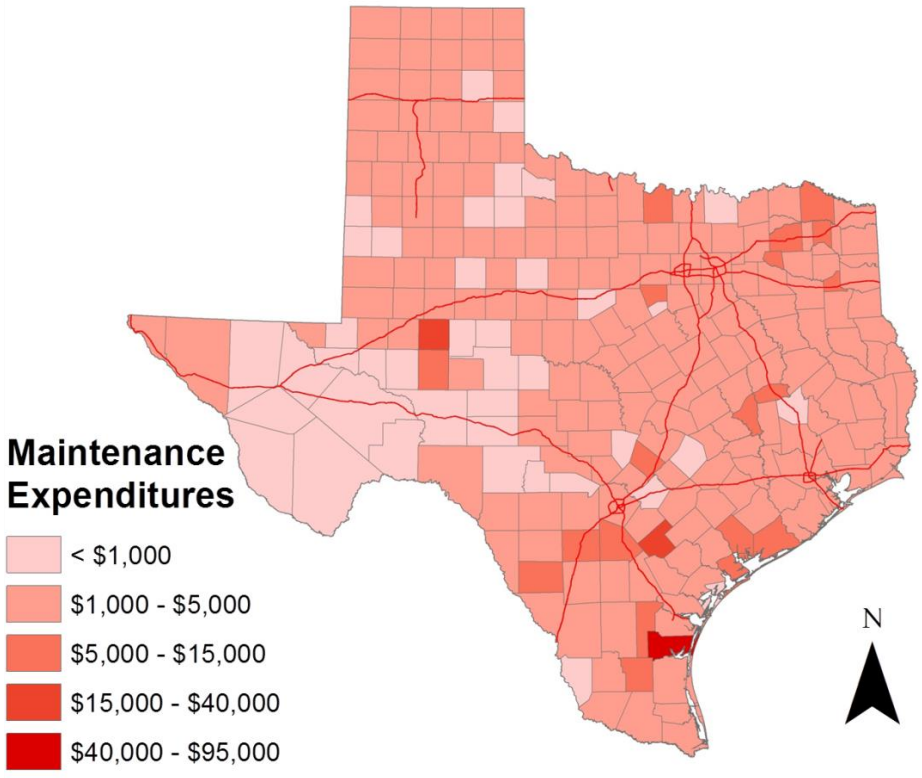
2009	
2013	

Figure 23. Average Maintenance Expenditures per Lane-Mile.

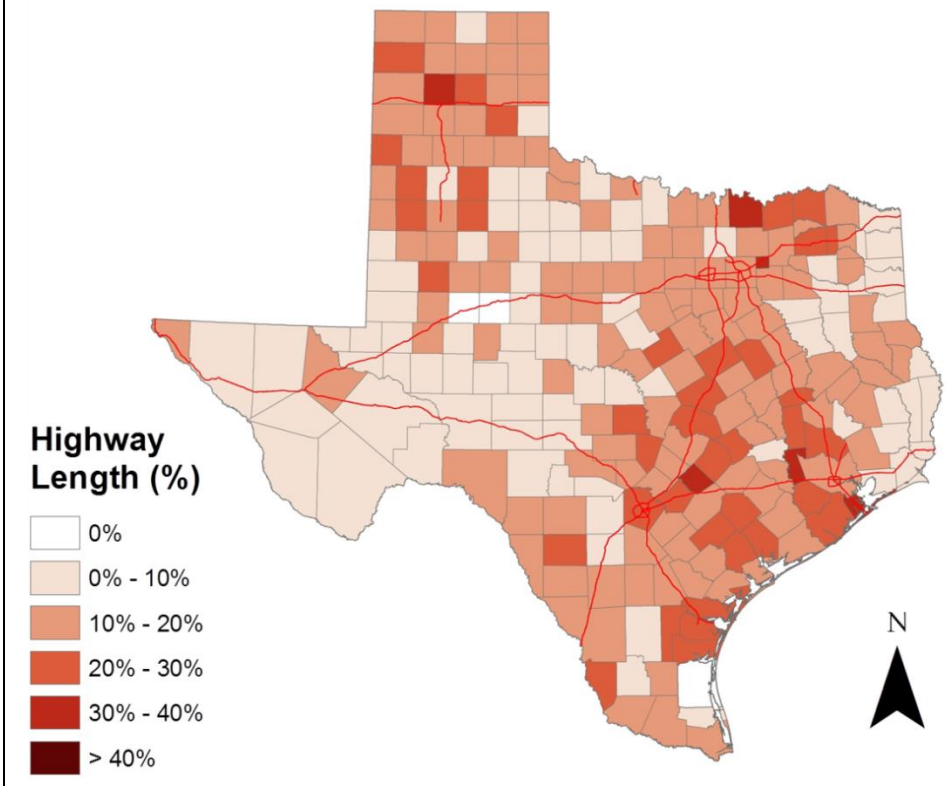
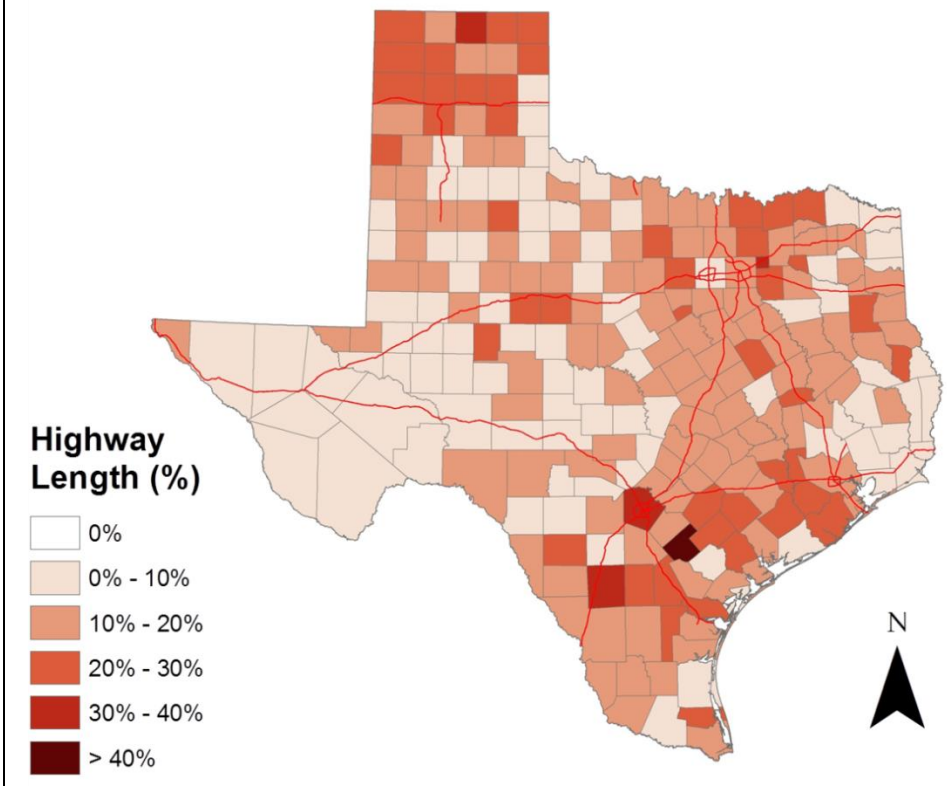
2009	
2013	

Figure 24. Percentage of Highway Miles with Below-Good Pavement Distress Scores.

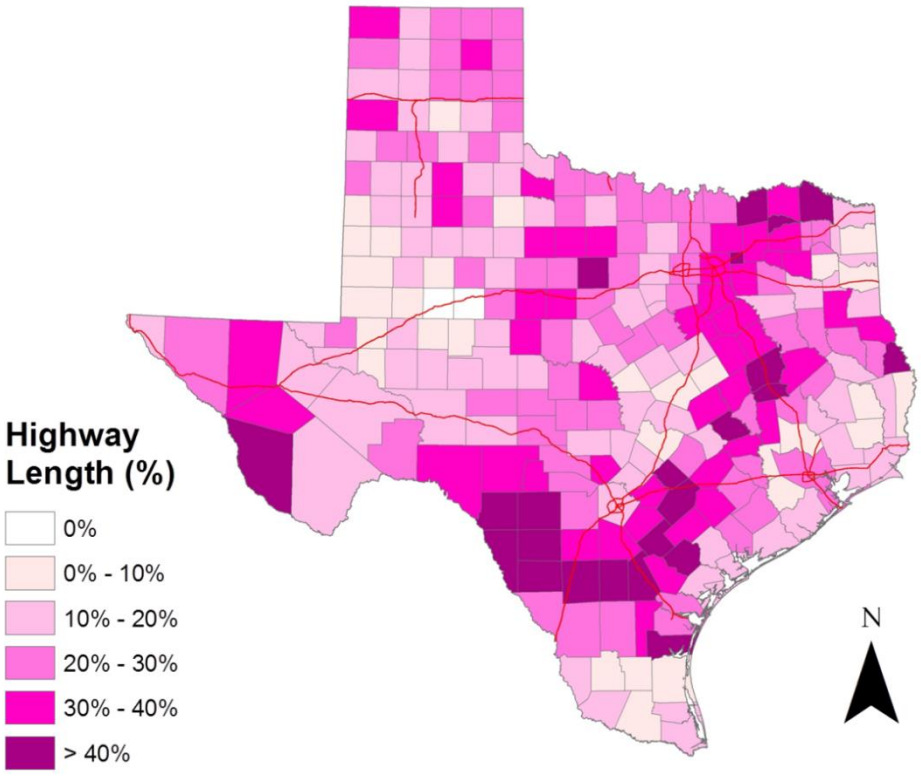
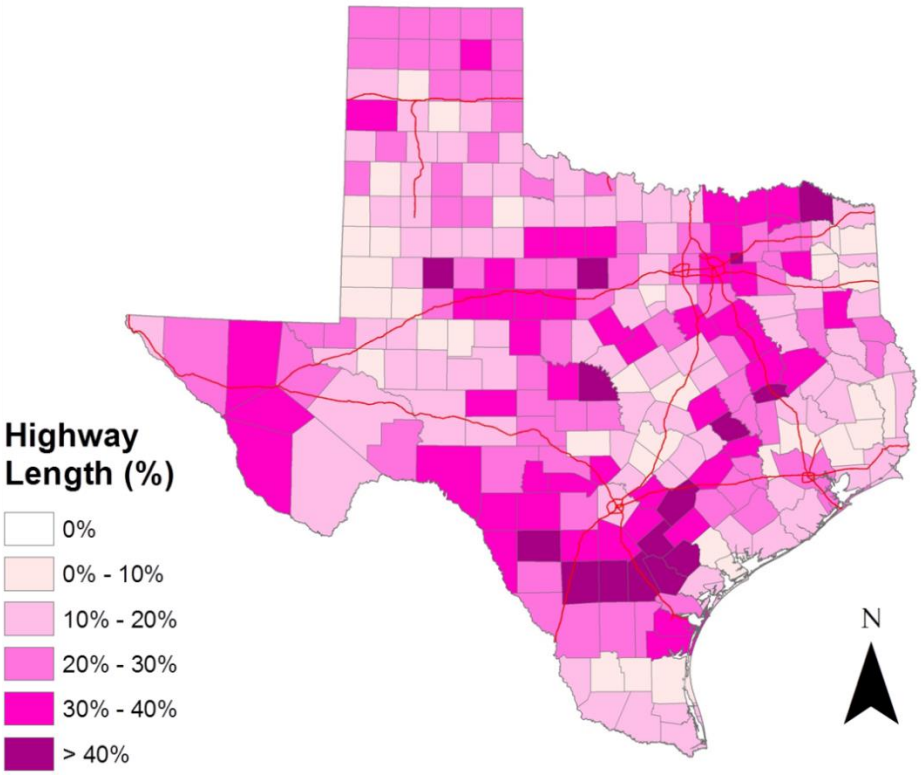
2009	
2013	

Figure 25. Percentage of Highway Miles with Below-Good Pavement Ride Scores.

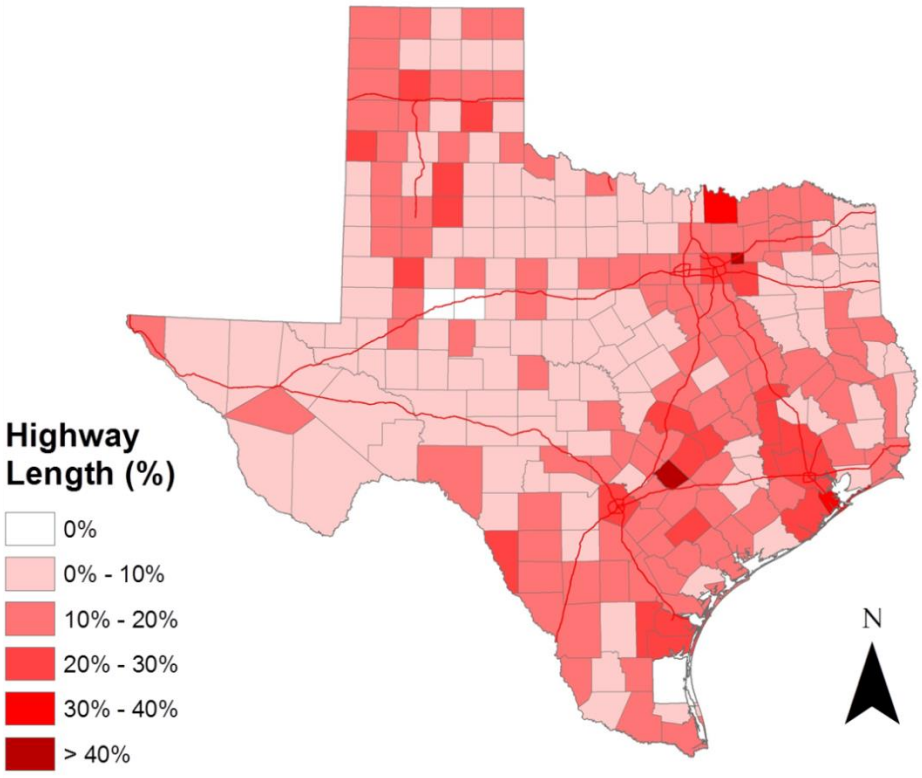
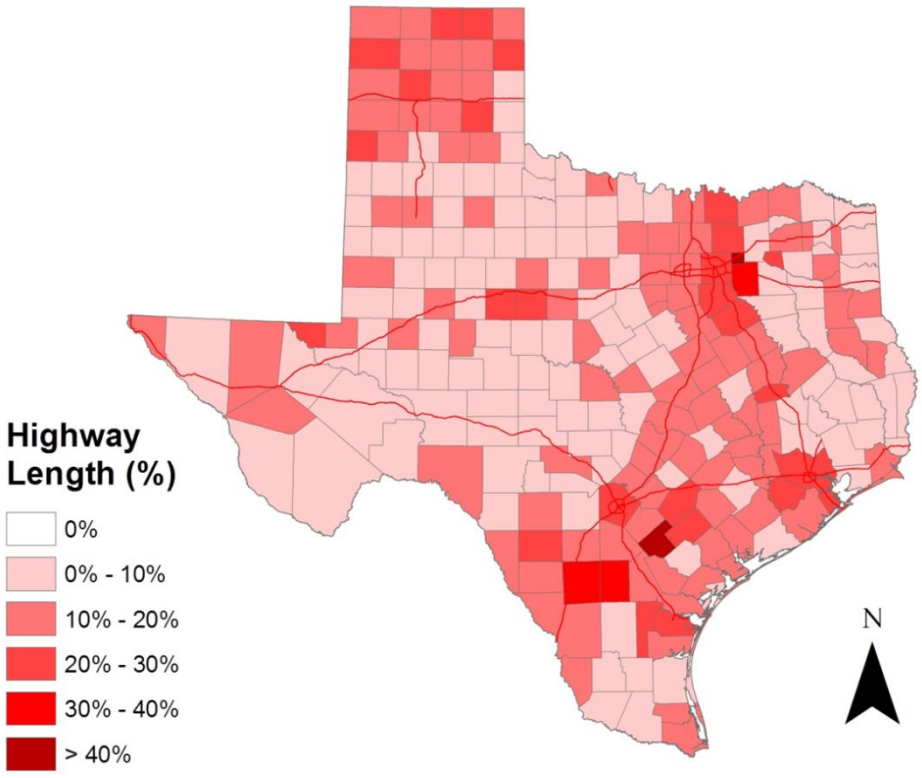
2009	
2013	

Figure 26. Percentage of Highway Miles with Below-Good Pavement Condition Scores.

Chapter 4. Data from Counties and Cities

The purpose of this task was to gather information from counties and cities where energy developments have taken place to develop an understanding of jurisdictions that might have conducted road condition assessments at the county or local levels. This activity was necessary because the PMIS data gathered from TxDOT only covered state-maintained roadways.

The research team contacted county and city government officials in the Eagle Ford Shale and Permian Basin regions and requested reports and other documentation describing recent road assessment studies. In general, the feedback received was that most jurisdictions had not conducted formal road assessments in recent years. According to some officials, one of the reasons local jurisdictions had not conducted road assessment studies was the lack of financial resources to conduct those studies. Another reason was that energy developments occurred too quickly, forcing agencies to spend whatever limited resources they had to repair roads (in a reactive mode), which limited their capability to conduct baseline assessments prior to the energy developments taking place.

Two counties where roadway assessments have taken place are DeWitt and Karnes Counties in South Texas. In 2012, DeWitt County conducted a study to evaluate the effect of oil field traffic on the county road system (*6*). The county maintains 342 miles of county roads within the Eagle Ford Shale Play. These roads consist mostly of 4–6 inches of sand-and-gravel base courses with asphalt surface treatments. These roads can support approximately 10,000 equivalent single-axle load (ESAL) applications over a typical 20-year pavement life, assuming a traffic mix that includes passenger cars, pickup trucks, and about two 18-wheel trucks (80,000 pounds gross vehicle weight) per week.

The study involved the classification of all county roads into three groups based on anticipated traffic volumes. The first group (some 45 miles) would experience little public and oil field traffic, requiring minimum maintenance, with an anticipated budget of $72 million. The second group (some 187 miles) would experience up to two well developments per year, requiring basic reconstruction, with an anticipated budget of $172 million. The third group (some 99 miles) would experience more than two well developments per year, requiring major reconstruction, with an anticipated budget of $188 million. The total anticipated budget was $432 million. Assuming 3,250 wells that would be accessed by county roads (based on 65 acres per well), the cost would be approximately $133,000 per well.

In 2012, nine councils of government within the Eagle Ford Shale region established the Eagle Ford Shale Councils of Government Alliance and executed a memorandum of understanding to collaborate on the identification of strategies to address the growth management and environmental issues associated with unconventional energy developments in the region. The nine councils of government were as follows:

- Alamo Area Council of Governments.
- Brazos Valley Council of Governments.
- Capital Area Council of Governments.
- Coastal Bend Council of Governments.
- Golden Crescent Regional Planning Commission.
- Houston-Galveston Area Council.
- Lower Rio Grande Valley Development Council.
- Middle Rio Grande Development Council.
- South Texas Development Council.

In early 2013, through the Alamo Area Development Corporation, the alliance completed a pilot study to assess road conditions in Karnes County (*7*). The study involved conducting pavement condition assessments on 43.5 miles of roads. The initial selection included 28.5 miles of paved county roads and city streets (Karnes City and Kenedy). Because of the limited number of paved county roads and in order to provide a baseline for comparison purposes, the assessment included 15 miles of TxDOT-maintained state highways: FM 887 from SH 123 to Spur 190, and SH 72 within Kenedy city limits. These two state highway corridors were selected because visually they appeared to be in good condition (although it was clear that they might not represent a true baseline condition because many heavy loading cycles had already been applied to those pavement structures).

The results showed that the state-maintained highway segments used for comparison were in much better condition than county or city road segments. All the state highway segments had very good distress scores, but only 10 percent of county road segments did. Approximately 22 percent of county road segments and 16 percent of city road segments had fair or poor distress scores. Likewise, 67 percent of county road segments and 84 percent of city street segments had very poor distress scores. Based on the road assessment analysis, the report estimated that the cost to upgrade 130 county or city miles to accommodate heavy tractor-trailer traffic could be approximately $234 million. For the 490 miles of unpaved county roads, the report did not conduct a field assessment but estimated that 20 percent of those roads served as primary access roads for energy developments. Upgrading these roads to accommodate heavy tractor-trailer traffic could cost approximately $180 million.

Prior to the studies in DeWitt and Karnes Counties, the City of Keller in North Texas conducted a study to estimate the cost of roadway distress and use attributable-to-natural-gas-well activities within the city of Keller (*8*). The study involved estimating the total number of heavy-truck trips needed to develop and operate a natural gas well over an estimated profitable life; estimating the total available ESALs on each of the city's road types; and calculating the estimated loss of road

life due to relevant activities. It also involved assigning costs associated with reconstructing the road types upon failure. The result of the methodology was a table showing road damage in dollars per lane-mile for eight different roadway types and four different roadway use case conditions.

Chapter 5. Analysis and Trends

Introduction

With the oil and gas development information (as described in Chapter 2) and the pavement condition data (as described in Chapter 3), the research team conducted a series of analyses to identify trends and correlations. Of specific interest was examining changes with respect to a predetermined baseline. The research team considered several baseline options, including the following:

- **End of the gas well development boom in the Barnett Shale region.** This occurred between 2008 and 2009. As the data in the appendix show, the number of new gas wells in North Texas decreased dramatically around that time.
- **Point in time when the oil price was the highest.** This occurred in July 2008, when the monthly average imported crude oil price reached $127.77/barrel ($139.28/barrel in December 2014 dollars) (Figure 27). A disadvantage of this approach was that five months later, oil prices had dramatically decreased to $35.59/barrel ($40.19/barrel in December 2014 dollars) because of the economic recession but then began to recover soon after that, raising the question of which point in time would be an appropriate reference.

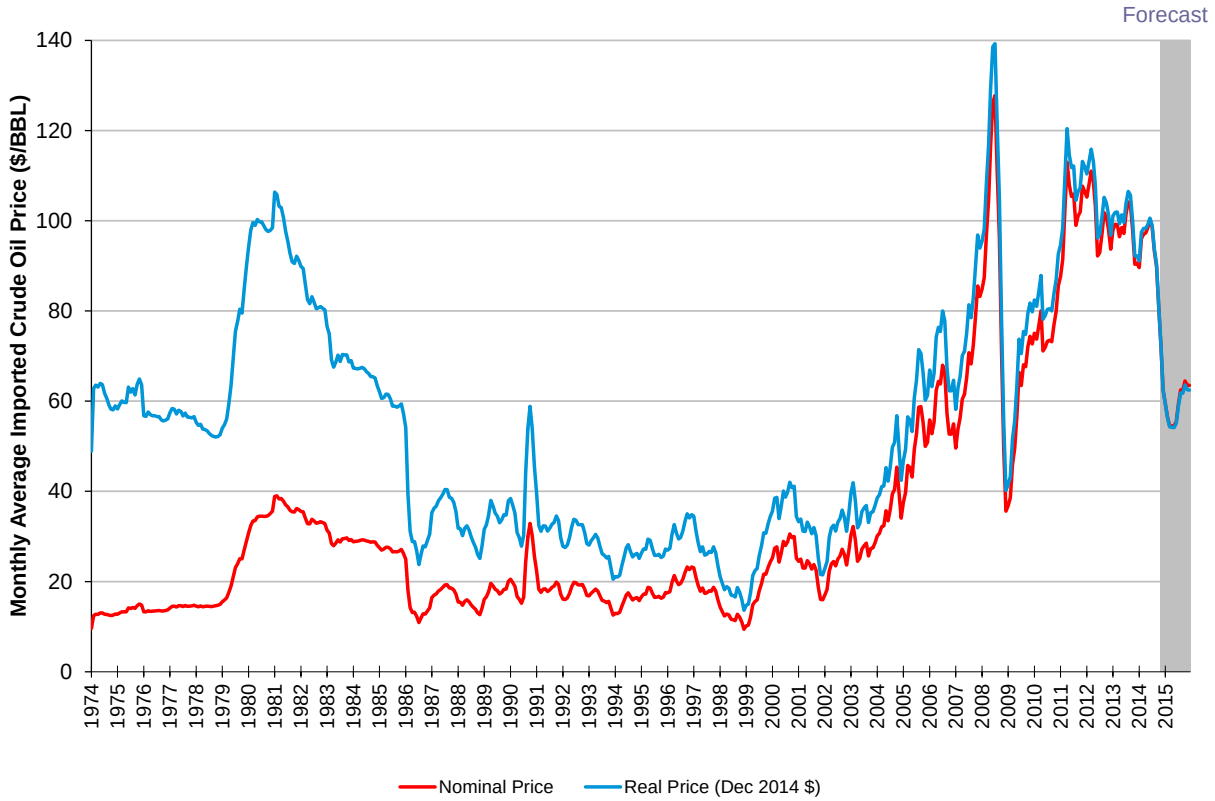


Figure 27. Nominal and Real Price of Average Imported Crude Oil (*9*).

- **Time when the first production well was drilled in the Eagle Ford Shale region.** This occurred in 2008. A disadvantage of this approach was that most active drilling in the region actually started in 2009.
- **Beginning of the accelerated oil production in the Eagle Ford Shale region.** As Figure 1 shows, this occurred in 2009. This was also when oil production in the Permian Basin began to accelerate. Because of the significance associated with these developments, the research team decided to use the end of 2009 (or beginning of 2010) as the date for baseline and comparison purposes.

The last year with reliable RRC data was 2013 (2014 data are still preliminary). In addition, the economic recession of 2008 caused significant volatility in the oil markets, which resulted in dramatic swings in prices, drilling, and production. In order to reduce the impact of these variations, the research team aggregated and compared data using two four-year blocks: 2006–2009 and 2010–2013.

Number of Completed Oil and Gas Wells

Table 4 summarizes changes in the number of new completed wells in the Barnett Shale, Eagle Ford Shale, and Permian Basin regions from 2006–2009 to 2010–2013. The table also shows the total number of wells completed in other areas throughout the state. Figure 28 shows the location of new completed wells from 2006–2013.

Table 4. Changes in the Number of New Completed Wells.

Region	Number of Horizontal Wells			Number of Vertical Wells			Total Number of Wells		
	2006-09	2010-13	Diff.	2006-09	2010-13	Diff.	2006-09	2010-13	Diff.
Barnett Shale	8,663	4,490	-48%	1,482	698	-53%	10,145	5,188	-49%
Eagle Ford Shale	854	8,886	941%	4,595	3,689	-20%	5,449	12,575	131%
Permian Basin	951	3,230	240%	14,381	21,396	49%	15,332	24,626	61%
Other	1,761	3,356	91%	18,706	9,653	-48%	20,467	13,009	-36%
Grand Total	**12,229**	**19,962**	**63%**	**39,164**	**35,436**	**-10%**	**51,393**	**55,398**	**8%**
Karnes County	28	1,312	4586%	38	50	32%	66	1,362	1964%

The total number of new wells increased from 51,393 during the four-year period of 2006–2009 to 55,398 during 2010–2013 (i.e., the total number of wells drilled increased by 8 percent). This growth was not uniform. While the total number of new horizontal wells increased by 63 percent, the total number of new vertical wells actually decreased by 10 percent. Geographically, there were huge differences. In the Barnett Shale region, the total number of new wells decreased by 49 percent, the number of new horizontal wells decreased by 48 percent, and the number of new vertical wells decreased by 53 percent. In the Eagle Ford Shale region, the total number of new wells increased by 131 percent, the number of new horizontal wells increased by 941 percent, and the number of new vertical wells decreased by 20 percent. In the Permian Basin region, the total number of new wells increased by 61 percent, the number of new

horizontal wells increased by 240 percent, and the number of new vertical wells increased by 49 percent.

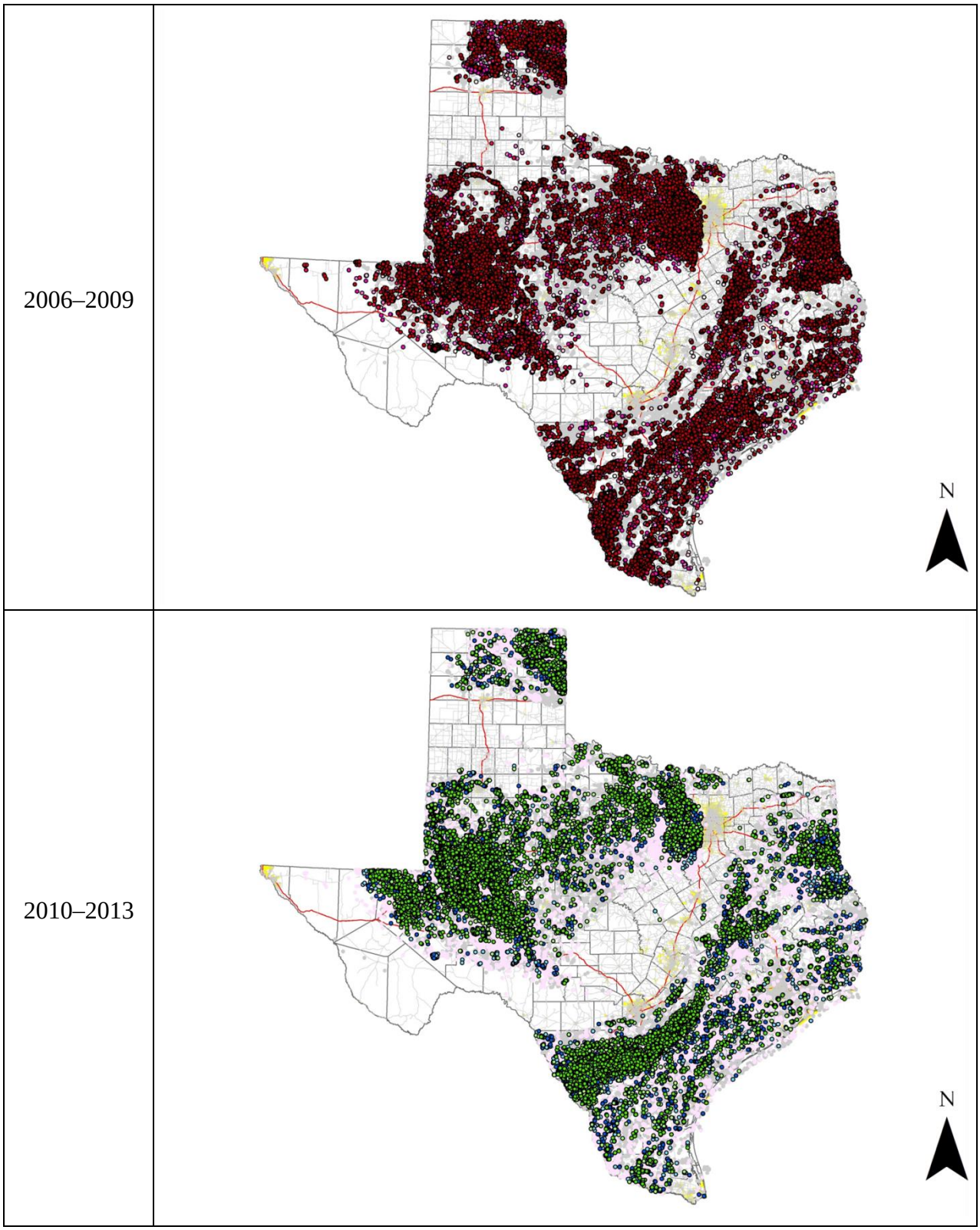


Figure 28. New Completed Wells in Texas (2006–2009 versus 2010–2013).

The geographic differences were more pronounced at the individual county level. As a reference, Table 4 shows the changes in the number of new completed wells in Karnes County, which is located in the Eagle Ford Shale region. General observations by region include the following:

- Table 5 summarizes the changes in the number of new completed wells by county within the Barnett Shale region. Most counties experienced a negative growth in the number of new completed wells. The exceptions were Cooke County, Montague County, and Jack County.

- Table 6 summarizes the changes in the number of new completed wells by county within the Eagle Ford Shale region. Most counties in the region experienced an increase in the number of new wells. Most of this growth was in the form of new horizontal wells. In most counties, the number of vertical wells decreased. In some cases, the growth was extremely rapid. This was particularly true in the following counties: Atascosa, DeWitt, Dimmit, Gonzales, Karnes, La Salle, Live Oak, Webb, and Wilson.

- Table 7 summarizes the changes in the number of new completed wells by county within the Permian Basin region. Most counties experienced an increase in the number of new wells. However, the growth was not uniform throughout the region. The growth was particularly significant in the following counties: Andrews, Crosby, Ector, Glasscock, Howard, Midland, Reagan, Reeves, and Upton. In most cases, the growth was less aggressive than the explosive growth in the Eagle Ford Shale region during the same period.

Table 5. Changes in the Number of New Completed Wells in the Barnett Shale Region.

County	Number of Horizontal Wells			Number of Vertical Wells			Total Number of Wells		
	2006-09	2010-13	Diff.	2006-09	2010-13	Diff.	2006-09	2010-13	Diff.
Cooke	12	201	1575%	252	123	-51%	264	324	23%
Denton	717	384	-46%	158	8	-95%	875	392	-55%
Erath	177	0	-100%	36	6	-83%	213	6	-97%
Hill	232	9	-96%	4	1	-75%	236	10	-96%
Hood	633	119	-81%	18	0	-100%	651	119	-82%
Jack	104	23	-78%	192	322	68%	296	345	17%
Johnson	2,665	714	-73%	30	1	-97%	2,695	715	-73%
Montague	110	629	472%	256	75	-71%	366	704	92%
Palo Pinto	120	20	-83%	206	119	-42%	326	139	-57%
Parker	920	338	-63%	49	7	-86%	969	345	-64%
Somervell	109	12	-89%	5	0	-100%	114	12	-89%
Tarrant	2,201	1,382	-37%	54	4	-93%	2,255	1,386	-39%
Wise	663	659	-1%	222	32	-86%	885	691	-22%
Total	**8,663**	**4,490**	**-48%**	**1,482**	**698**	**-53%**	**10,145**	**5,188**	**-49%**

Table 6. Changes in the Number of Wells in the Eagle Ford Shale Region.

County	Number of Horizontal Wells			Number of Vertical Wells			Total Number of Wells		
	2006-09	2010-13	Diff.	2006-09	2010-13	Diff.	2006-09	2010-13	Diff.
Atascosa	1	368	36700%	38	37	-3%	39	405	938%
Bastrop	7	4	-43%	17	8	-53%	24	12	-50%
Bee	34	23	-32%	202	119	-41%	236	142	-40%
Brazos	76	124	63%	12	5	-58%	88	129	47%
Burleson	32	54	69%	25	3	-88%	57	57	0%
Caldwell	18	76	322%	72	34	-53%	90	110	22%
DeWitt	52	804	1446%	142	32	-77%	194	836	331%
Dimmit	67	1,494	2130%	123	32	-74%	190	1526	703%
Duval	4	6	50%	244	118	-52%	248	124	-50%
Fayette	29	47	62%	13	15	15%	42	62	48%
Frio	24	203	746%	109	24	-78%	133	227	71%
Goliad	0	0	0%	255	54	-79%	255	54	-79%
Gonzales	8	852	10550%	13	22	69%	21	874	4062%
Grimes	30	36	20%	5	11	120%	35	47	34%
Guadalupe	10	27	170%	7	27	286%	17	54	218%
Jim Wells	0	0	0%	57	38	-33%	57	38	-33%
Karnes	28	1,312	4586%	38	50	32%	66	1362	1964%
La Salle	34	1,366	3918%	166	26	-84%	200	1392	596%
Lavaca	18	78	333%	272	80	-71%	290	158	-46%
Lee	25	42	68%	19	8	-58%	44	50	14%
Live Oak	31	337	987%	137	80	-42%	168	417	148%
Maverick	3	19	533%	619	2389	286%	622	2408	287%
McMullen	140	68	-51%	293	18	-94%	433	86	-80%
Robertson	29	68	134%	460	94	-80%	489	162	-67%
Victoria	0	1	100%	230	99	-57%	230	100	-57%
Washington	9	8	-11%	7	4	-43%	16	12	-25%
Webb	105	1,192	1035%	998	213	-79%	1103	1405	27%
Wilson	7	121	1629%	5	22	340%	12	143	1092%
Zavala	33	156	373%	17	27	59%	50	183	266%
Total	**854**	**8,886**	**941%**	**4,595**	**3,689**	**-20%**	**5,449**	**12,575**	**131%**

Table 7. Changes in the Number of New Completed Wells in the Permian Basin Region.

County	Number of Horizontal Wells			Number of Vertical Wells			Total Number of Wells		
	2006-09	2010-13	Diff.	2006-09	2010-13	Diff.	2006-09	2010-13	Diff.
Andrews	40	107	168%	1,491	3,600	141%	1,531	3,707	142%
Borden	11	26	136%	92	138	50%	103	164	59%
Cochran	7	15	114%	79	85	8%	86	100	16%
Coke	0	3	300%	85	120	41%	85	123	45%
Crane	15	158	953%	557	354	-36%	572	512	-10%
Crockett	18	280	1456%	952	318	-67%	970	598	-38%
Crosby	1	1	0%	86	368	328%	87	369	324%
Dawson	10	1	-90%	117	204	74%	127	205	61%
Dickens	0	0	0%	87	30	-66%	87	30	-66%
Ector	14	43	207%	856	2,169	153%	870	2,212	154%
Gaines	34	25	-26%	606	723	19%	640	748	17%
Garza	2	8	300%	177	103	-42%	179	111	-38%
Glasscock	2	68	3300%	312	1,957	527%	314	2,025	545%
Hockley	78	15	-81%	258	159	-38%	336	174	-48%
Howard	4	3	-25%	287	1,050	266%	291	1,053	262%
Irion	2	309	15350%	173	412	138%	175	721	312%
Kent	0	3	300%	93	93	0%	93	96	3%
Loving	9	219	2333%	158	145	-8%	167	364	118%
Lubbock	7	10	43%	42	28	-33%	49	38	-22%
Lynn	2	3	50%	12	25	108%	14	28	100%
Martin	15	825	5400%	228	85	-63%	243	910	274%
Midland	24	21	-13%	764	1,894	148%	788	1,915	143%
Mitchell	0	11	1100%	751	567	-25%	751	578	-23%
Pecos	337	183	-46%	744	318	-57%	1,081	501	-54%
Reagan	1	240	23900%	772	1,277	65%	773	1,517	96%
Reeves	53	146	175%	148	706	377%	201	852	324%
Schleicher	1	19	1800%	124	133	7%	125	152	22%
Scurry	29	10	-66%	333	298	-11%	362	308	-15%
Sterling	2	22	1000%	243	127	-48%	245	149	-39%
Sutton	1	2	100%	392	124	-68%	393	126	-68%
Terrell	18	0	-100%	134	11	-92%	152	11	-93%
Terry	29	13	-55%	152	90	-41%	181	103	-43%
Tom Green	0	0	0%	127	72	-43%	127	72	-43%
Upton	53	97	83%	1,175	2,079	77%	1,228	2,176	77%
Ward	97	301	210%	820	782	-5%	917	1,083	18%
Winkler	29	35	21%	384	130	-66%	413	165	-60%
Yoakum	6	8	33%	570	622	9%	576	630	9%
Total	**951**	**3,230**	**240%**	**14,381**	**21,396**	**49%**	**15,332**	**24,626**	**61%**

Production Levels

Table 8 summarizes changes in oil and gas production in the Barnett Shale, Eagle Ford Shale, and Permian Basin regions. The table also shows production levels in other areas throughout the state. Table 9 summarizes the changes in liquids disposed of into the ground in the Barnett Shale, Eagle Ford Shale, and Permian Basin regions. The table also shows liquid disposal levels in other areas throughout the state.

Table 8. Changes in Oil and Gas Production.

Region	Oil Production (BBL)			Gas Production (MCF)		
	2006-09	2010-13	Diff.	2006-09	2010-13	Diff.
Barnett Shale	21,249,731	34,576,341	63%	5,405,555,430	7,845,267,680	45%
Eagle Ford Shale	76,979,250	541,221,811	603%	3,550,292,226	4,706,967,631	33%
Permian Basin	997,383,412	1,268,827,453	27%	2,942,718,794	1,981,010,535	-33%
Other	296,920,612	334,041,944	13%	13,884,408,311	12,416,857,011	-11%
Grand Total	**1,392,533,005**	**2,178,667,549**	**56%**	**25,782,974,761**	**26,950,102,857**	**5%**
Karnes County	1,124,039	114,204,940	10060%	34,352,282	226,427,068	559%

Table 9. Changes in Volume of Liquids Disposed of into the Ground.

Region	Liquids (BBL) Disposed into the Ground		
	2006-09	2010-13	Diff.
Barnett Shale	697,396,323	1,000,917,551	44%
Eagle Ford Shale	1,949,556,636	2,171,974,843	11%
Permian Basin	1,184,755,125	1,752,394,208	48%
Other	3,088,383,567	2,873,346,893	-7%
Grand Total	**6,920,091,651**	**7,798,633,495**	**13%**
Karnes County	10,493,457	46,233,210	341%

As Table 8 shows, oil production in Texas increased by 56 percent from 2006–2009 to 2010–2013. This growth was not uniform throughout the state. In relative terms, the most aggressive growth (603 percent) was in the Eagle Ford Shale region. In comparison, oil production only increased by 27 percent in the Permian Basin region. In absolute terms, oil production in both regions grew significantly: 464 million barrels in the Eagle Ford Shale region and 271 million barrels in the Permian Basin region. Oil production increased by 13 percent in other regions.

Throughout the state, gas production increased by 5 percent. As in the case of oil production, this growth was not uniform. Gas production grew by 45 percent in the Barnett Shale region and by 33 percent in the Eagle Ford Shale region. However, it decreased by 33 percent in the Permian Basin region and by 11 percent in other regions.

As in the case of new completed wells, the geographic differences in oil and gas production were more pronounced at the individual county level. As a reference, Table 8 shows the changes in oil and gas production in Karnes County, which is located in the Eagle Ford Shale region.

The amount of liquids disposed of into the ground increased by 13 percent throughout the state: 44 percent in the Barnett Shale region, 11 percent in the Eagle Ford Shale region, and 48 percent in the Permian Basin region. In other parts of the state, the amount of liquids disposed of into the ground decreased by 7 percent. The amount of liquids disposed of into the ground was huge: roughly four times the volume of oil produced.

Pavement Conditions

Table 10 summarizes changes in average pavement distress scores, ride scores, and condition scores in the Barnett Shale, Eagle Ford Shale, and Permian Basin regions. The table also shows average pavement scores in other areas throughout the state. As mentioned, aggregated average pavement condition data had the effect of hiding or masking the influence of highway segments with low pavement condition values (essentially averaging out differences). This is the main reason that changes in pavement scores were negligible at the state level and were barely noticeable at the regional level. Changes were more noticeable at the county level but only if the changes were quite significant, as in the case of Karnes County (13 percent decrease in average distress scores, 1 percent decrease in average ride scores, and 16 percent decrease in average condition scores).

Table 10. Changes in Average Pavement Scores.

Region	Average Distress Score			Average Ride Score			Average Condition Score		
	2006-09	2010-13	Diff.	2006-09	2010-13	Diff.	2006-09	2010-13	Diff.
Barnett Shale	92	93	2%	3.4	3.4	0%	89	91	2%
Eagle Ford Shale	91	90	-1%	3.3	3.3	2%	88	87	-1%
Permian Basin	96	95	0%	3.6	3.5	-2%	95	94	-1%
Other	93	93	0%	3.4	3.5	1%	90	91	1%
Grand Total	**93**	**93**	**0%**	**3.4**	**3.5**	**0%**	**91**	**91**	**0%**
Karnes County	93	82	**-13%**	2.9	2.9	**-1%**	89	75	**-16%**

Table 11 summarizes the changes in the percentage of highway miles that had below-good pavement distress scores, ride scores, and condition scores in the Barnett Shale, Eagle Ford Shale, and Permian Basin regions. The table also shows the corresponding changes in other areas throughout the state. As mentioned, the threshold for below-good scores was 80 for distress, 3.0 for ride, and 70 for condition scores.

Somewhat similar to the case of using aggregated average pavement scores, as the geographic scale increased, differences in highway mile percentages with below-good scores were averaged. This is the reason that changes in highway mile percentages were barely noticeable (i.e., 0.2 percent increase in distress, 1.1 percent decrease in ride, and 0.4 percent decrease in condition scores). Changes were more noticeable at the regional level. In the Barnett Shale region, there was a 3.0 percent decrease in the percentage of highway miles with below-good distress scores, a 1.0 percent decrease in the percentage of highway miles with below-good ride scores, and a 3.1 percent decrease in the percentage of highway miles with below-good condition

scores. These changes indicate an improvement in roadway conditions. However, in the Eagle Ford Shale and Permian Basin regions, roadway conditions worsened. For example, in the Eagle Ford Shale region, there was a 1.9 percent increase in the case of distress and a 1.3 percent increase in the case of condition scores.

Table 11. Changes in the Percentage of Highway Miles with Below-Good Pavement Scores.

Region	Below-Good Distress Scores			Below-Good Ride Scores			Below-Good Cond. Scores		
	2006-09	2010-13	Diff.	2006-09	2010-13	Diff.	2006-09	2010-13	Diff.
Barnett Shale	15.1%	12.1%	-3.0%	23.1%	22.1%	-1.0%	15.9%	12.8%	-3.1%
Eagle Ford Shale	17.2%	19.2%	1.9%	36.5%	34.1%	-2.4%	16.5%	17.7%	1.3%
Permian Basin	8.8%	9.1%	0.2%	15.0%	17.1%	2.1%	7.4%	7.6%	0.2%
Other	14.3%	14.4%	0.1%	24.6%	23.1%	-1.5%	13.8%	13.2%	-0.6%
Grand Total	**14.0%**	**14.2%**	**0.2%**	**24.6%**	**23.6%**	**-1.1%**	**13.5%**	**13.0%**	**-0.4%**
Karnes County	12.8%	34.2%	21.4%	55.8%	54.8%	-1.1%	13.3%	34.9%	21.6%

Note: A negative change in the percentage of highway miles with below-good pavement scores is a desirable trend. A positive change in the percentage of highway miles with below-good pavement scores is an undesirable trend. For this reason, the table associates green dots with negative changes and red dots with positive changes.

At the county level, changes were even more noticeable. As Table 11 shows, in Karnes County, there was a 21.4 percent increase in the percentage of highway miles with below-good distress scores, a 1.1 percent decrease in the percentage of highway miles with below-good ride scores, and a 21.6 percent increase in the percentage of highway miles with below-good condition scores.

Pavement conditions worsened in the most active energy regions of the state (i.e., Eagle Ford Shale and Permian Basin regions) even though highway maintenance expenditures increased, clearly indicating that the funding allocated for highway maintenance and repair in those regions was insufficient. As a reference, Table 12 summarizes the changes in highway maintenance expenditures in the Barnett Shale, Eagle Ford Shale, and Permian Basin regions. Table 12 shows both total maintenance expenditures and maintenance expenditures per lane-mile. The table also shows the corresponding changes in other areas throughout the state. In the Barnett Shale region, the improvement in pavement conditions in recent years is an indication of the combined effect of less drilling activity in the region (Table 5) and increased expenditures on roadway maintenance and repair work (Table 12).

Table 12. Changes in Total Highway Maintenance Expenditures.

Region	Total Maintenance Expenditures			Maintenance Expend. per Lane-Mile		
	2006-09	2010-13	Diff.	2006-09	2010-13	Diff.
Barnett Shale	$ 129,529,342	$ 195,129,989	51%	$ 10,539	$ 15,877	51%
Eagle Ford Shale	$ 174,220,728	$ 363,893,844	109%	$ 7,133	$ 14,898	109%
Permian Basin	$ 60,366,852	$ 134,290,179	122%	$ 2,701	$ 6,010	122%
Other	$ 1,015,961,891	$ 1,570,940,664	55%	$ 6,625	$ 10,244	55%
Grand Total	**$ 1,380,078,812**	**$ 2,264,254,676**	**64%**	**$ 6,497**	**$ 10,660**	**64%**
Karnes County	$ 4,568,045	$ 22,958,450	403%	$ 7,980	$ 40,106	403%

Note: All dollar amounts are expressed in December 2014 dollars (*10*).

Pavement conditions in the Permian Basin region were better compared to those in the Barnett Shale and Eagle Ford Shale regions, as well as other areas of the state. As shown in Table 11, the percentage of highway miles with below-good distress scores, ride scores, and condition scores in the Permian Basin region was substantially lower than the corresponding scores in other parts of the state. This was the case throughout the analysis period (2006–2013), even though highway maintenance expenditures per lane-mile in the region were substantially lower and the number of completed wells was much higher than in other parts of the state (although most of those new wells were vertical wells).

Reasons that explain the better performance of pavement structures in the Permian Basin region include stronger soil conditions and less rain compared to other regions (*11*, *12*). Additional reasons include a much longer history of oil industry presence in the Permian Basin region, which over time may have caused TxDOT to design and build stronger pavement structures to sustain heavy-truck traffic more reliably. This might also explain in part why highway maintenance expenditures in the Permian Basin region tend to be lower than in other parts of the state. The reason is that stronger pavements (although they cost more on the front end) usually require less-expensive maintenance throughout their life cycle.

By comparing Table 4, Table 11, and Table 12, it is possible to make the following high-level observations regarding relative changes in the number of new wells, maintenance expenditures, and percentage of highway miles with below-good pavement scores (Table 13):

Table 13. Relative Changes in the Number of New Wells, Maintenance Expenditures, and Pavement Scores from 2006–2009 to 2010–2013.

Region	Number of New Wells			Hydrocarbon Production		Liquids Disposed into Ground	Pavement Condition Scores	Maint. Expend.
	Horizontal Wells	Vertical Wells	Total	Oil	Gas			
Barnett Shale	-48%	-53%	-49%	63%	45%	44%	-3.1%	51%
Eagle Ford Shale	941%	-20%	131%	603%	33%	11%	1.3%	109%
Permian Basin	240%	49%	61%	27%	-33%	48%	0.2%	122%
Other	91%	-48%	-36%	13%	-11%	-7%	-0.6%	55%
Grand Total	**63%**	**-10%**	**8%**	**56%**	**5%**	**13%**	**-0.4%**	**64%**
Karnes County	4586%	32%	1964%	10060%	559%	341%	21.6%	403%

Note: As in Table 11, for pavement score changes, green dots (representing a desirable trend) are associated with negative changes in the percentage of highway miles with below-good pavement condition scores. Red dots (representing an undesirable trend) are associated with positive changes in the percentage of highway miles with below-good pavement condition scores.

- **Barnett Shale region.** The total number of new wells decreased by 49 percent (new horizontal wells decreased by 48 percent, and new vertical wells decreased by 53 percent). Oil production increased by 63 percent, and gas production increased by 45 percent. There was a 44 percent increase in the volume of liquids disposed of into the ground. There was a 3.1 percent decrease in the percentage of highway miles with below-good pavement condition scores. There was a 51 percent increase in highway maintenance expenditures.

- **Eagle Ford Shale region.** The total number of new wells increased by 131 percent (new horizontal wells increased by 941 percent, and new vertical wells decreased by 20 percent). Oil production increased by 603 percent, and gas production increased by 33 percent. There was an 11 percent increase in the volume of liquids disposed of into the ground. There was a 1.3 percent increase in the percentage of highway miles with below-good condition scores. There was a 109 percent increase in highway maintenance expenditures.

- **Permian Basin region.** The total number of new wells increased by 61 percent (new horizontal wells increased by 240 percent, and new vertical wells increased by 49 percent). Oil production increased by 27 percent, and gas production decreased by 33 percent. There was a 48 percent increase in the volume of liquids disposed of into the ground. There was a 0.2 percent increase in the percentage of highway miles with below-good condition scores. There was a 122 percent increase in highway maintenance expenditures.

- **Other regions.** The total number of new wells decreased by 36 percent (new horizontal wells increased by 91 percent, and new vertical wells decreased by 48 percent). Oil production increased by 13 percent, and gas production decreased by 11 percent. There was a 7 percent decrease in the volume of liquids disposed of into the ground. There was

a 0.6 percent decrease in the percentage of highway miles with below-good condition scores. There was a 55 percent increase in highway maintenance expenditures.

- **Karnes County (as a reference).** The total number of new wells increased by 1964 percent (new horizontal wells increased by 4586 percent, and new vertical wells increased by 32 percent). Oil production increased by 10,060 percent, and gas production increased by 559 percent. There was a 341 percent increase in the volume of liquids disposed of into the ground. There was a 21.6 percent increase in the percentage of highway miles with below-good condition scores. There was a 403 percent increase in highway maintenance expenditures.

Correlations

The research team conducted a high-level analysis to identify potential long-term statistical correlations between specific metrics of interest. The research team used the Pearson product-moment correlation coefficient to compare pairs of metrics using historical data aggregated at the county level. As a reference, a Pearson coefficient of −1 between any two variables indicates total negative correlation, 0 indicates no correlation, and +1 indicates total positive correlation. As the absolute value of the Pearson coefficient increases, the linear correlation between the two variables increases. Table 14 provides a rudimentary way to interpret Pearson correlation coefficients. The literature contains a variety of threshold alternatives as well as statistical procedures to measure the significance of the Pearson coefficient.

Table 14. Rudimentary Thresholds to Interpret Pearson Correlation Coefficients.

From/To (Positive)	From/To (Negative)	Correlation Strength
+0.70 to +1.00	−0.70 to −1.00	Very strong
+0.40 to +0.69	−0.40 to −0.69	Strong
+0.30 to +0.39	−0.30 to −0.39	Moderate
+0.20 to +0.29	−0.20 to −0.29	Weak
0.00 to +0.19	0.00 to −0.19	No or negligible

The relevance of the Pearson correlation coefficients depends on the specific application. In some situations, a strong Pearson correlation coefficient could indicate a cause-effect relationship that might be used for policy making or infrastructure management purposes (e.g., if there is a strong correlation between the number of new wells and changes in the percentage of highway miles with below-good pavement condition scores). In this case, the number of new wells could be used as a predictor of changes in pavement conditions, which could facilitate the allocation of limited maintenance dollars depending on the anticipated need.

In other situations, a weak or negligible Pearson correlation coefficient could indicate linear independence between metrics, suggesting potential parameters to include in additive models or allocation formulas. For example, if the correlation between oil and gas production in a region were weak (which would suggest geographic production specialization), the amount of oil

production would not be a reliable predictor of the amount of gas production, providing a justification for including both parameters in an additive model or allocation formula to be used statewide. Likewise, if the correlation between new horizontal wells and new vertical wells in a region were weak, the number of new horizontal wells would not be a reliable predictor of the number of new vertical wells. In addition, because the impact of new horizontal wells on transportation infrastructure is different and much greater than that caused by new vertical wells, an additive model or allocation formula that includes well completions would need to consider each of these parameters separately.

Table 15 through Table 18 summarize the results of the analysis. In the tables, each cell represents the Pearson correlation coefficient between a pair of metrics. A row and corresponding column represent all the Pearson correlation coefficients between a metric and all other metrics of interest. For example, in Table 15, the Pearson correlation coefficient between the number of new horizontal wells and oil production in the Barnett Shale region is −0.15, indicating no or negligible correlation between both metrics (according to Table 14). In comparison, the Pearson correlation coefficient between the number of new horizontal wells and gas production is 0.66, indicating a strong correlation between both metrics.

Table 15 through Table 18 show the results for most metrics of interest for which correlations were generally moderate, strong, or very strong. With some exceptions, the tables do not show the results of the analysis for which the correlation was negligible or weak. Examples of correlations that are not shown include correlations between changes in the percentage of highway miles with below-good ride scores and all other metrics, as well as correlations between the volume of gas injected into the ground and other metrics. Furthermore, the results in Table 15 through Table 18 show correlations between metrics using data from 2004–2013. The results shed light on long-term correlations and trends as opposed to short-term correlations and trends, therefore complementing the results from previous sections.

Table 15. Pearson Correlation Coefficient—Barnett Shale Region.

	Number of New Horizontal Wells	Number of New Vertical Wells	Oil Production (BBL)	Gas Production (MCF)	Injected Volume (BBL)	% Hwy Miles with Below-Good Condition Scores	Maintenance Expenditures
Number of New Horizontal Wells		-0.18	-0.15	0.66	0.52	0.60	0.60
Number of New Vertical Wells			0.26	-0.18	-0.19	-0.09	-0.20
Oil Production (BBL)				-0.27	-0.01	-0.31	-0.08
Gas Production (MCF)					0.64	0.42	0.75
Injected Volume (BBL)						0.22	0.46
% Hwy Miles with Below-Good Condition Scores							0.32
Maintenance Expenditures							

Table 16. Pearson Correlation Coefficient—Eagle Ford Shale Region.

	Number of New Horizontal Wells	Number of New Vertical Wells	Oil Production (BBL)	Gas Production (MCF)	Injected Volume (BBL)	% Hwy Miles with Below-Good Condition Scores	Maintenance Expenditures
Number of New Horizontal Wells		-0.08	0.77	0.39	-0.06	0.37	0.40
Number of New Vertical Wells			-0.08	0.23	-0.09	0.01	-0.07
Oil Production (BBL)				0.13	-0.03	0.41	0.26
Gas Production (MCF)					-0.11	-0.02	0.19
Injected Volume (BBL)						0.05	0.02
% Hwy Miles with Below-Good Condition Scores							0.14
Maintenance Expenditures							

Table 17. Pearson Correlation Coefficient—Permian Basin Region.

	Number of New Horizontal Wells	Number of New Vertical Wells	Oil Production (BBL)	Gas Production (MCF)	Injected Volume (BBL)	% Hwy Miles with Below-Good Condition Scores	Maintenance Expenditures
Number of New Horizontal Wells		0.08	0.29	0.23	0.34	-0.09	0.12
Number of New Vertical Wells			0.62	0.07	0.59	-0.08	0.05
Oil Production (BBL)				-0.06	0.63	0.06	0.12
Gas Production (MCF)					0.00	-0.31	-0.11
Injected Volume (BBL)						0.04	0.09
% Hwy Miles with Below-Good Condition Scores							0.27
Maintenance Expenditures							

Table 18. Pearson Correlation Coefficient—Remaining 175 Counties in the State.

	Number of New Horizontal Wells	Number of New Vertical Wells	Oil Production (BBL)	Gas Production (MCF)	Injected Volume (BBL)	% Hwy Miles with Below-Good Condition Scores	Maintenance Expenditures
Number of New Horizontal Wells		0.07	0.25	0.43	0.15	0.03	0.01
Number of New Vertical Wells			0.24	0.62	0.29	0.02	0.03
Oil Production (BBL)				0.09	0.52	0.02	0.00
Gas Production (MCF)					0.35	0.09	0.03
Injected Volume (BBL)						0.10	0.05
% Hwy Miles with Below-Good Condition Scores							0.07
Maintenance Expenditures							

Table 15 shows the Pearson correlation coefficients for data from the Barnett Shale region. There is a strong correlation between the number of new horizontal wells and each of the following variables: volume of gas production, volume of liquids injected into the ground, and percentage of highway miles with below-good pavement condition scores. However, the correlation between the number of new horizontal wells and oil production is negligible, providing a confirmation of the relationship between the type of hydrocarbon production in the Barnett Shale region (i.e., essentially gas) and transportation infrastructure impacts in that part of the state. There is a strong correlation between gas production volumes and the volume of liquids injected into the ground.

Table 16 shows the Pearson correlation coefficients for data from the Eagle Ford Shale region. There is a very strong correlation between the number of new horizontal wells and oil production and a moderate correlation between the number of new horizontal wells and gas production, confirming the higher emphasis on the development of well sites for oil production purposes in that region. There is also a moderate correlation between the number of new horizontal wells and the percentage of highway miles with below-good pavement condition scores. There is a strong correlation between oil production and the percentage of highway miles with below-good pavement condition scores. The correlation between the volume of liquids injected into the ground and all other metrics is negligible.

Table 17 shows the Pearson correlation coefficients for data from the Permian Basin region. There is a strong correlation between the number of new vertical wells and each of the following variables: volume of oil production and volume of liquids injected into the ground. There is a moderate correlation between the number of new horizontal wells and oil production, gas production, and volume of liquids injected into the ground. There is also a negligible correlation between the percentage of highway miles with below-good pavement condition scores and all other metrics (except gas production, for which the correlation is moderate).

Table 18 shows the Pearson correlation coefficients for data from the remaining 175 counties in the state. There is a strong correlation between the number of new wells (particularly vertical wells) and the volume of gas production. There is also a weak to moderate correlation between the number of new wells and each of the following variables: volume of oil production and volume of liquids injected into the ground. All other correlations are weak or negligible.

Table 18 shows a negligible correlation between maintenance expenditures and the percentage of highway miles with below-good pavement condition scores in the remaining 175 counties in the state (i.e., mostly counties where oil and gas energy development activity is not significant). A plot of maintenance expenditures versus the percentage of highway miles with below-good pavement condition scores in those counties shows essentially no changes in pavement condition scores, which is a reflection of TxDOT's successful efforts to maintain the operational condition of the state highway infrastructure under budgetary constraints.

In comparison, Table 15, Table 16, and Table 17 show a weak to moderate *positive* correlation between maintenance expenditures and the percentage of highway miles with below-good

pavement condition scores in the Barnett Shale, Eagle Ford Shale, and Permian Basin regions. Maintenance expenditure levels at the individual county level vary from year to year and depend on a number of factors. However, a long-term positive correlation between maintenance expenditures and the percentage of highway miles with below-good pavement condition scores is an indication that the state is not keeping up with the degradation in pavement conditions in areas where energy development activity is significant. This is the case even in the Barnett Shale region, where despite a substantial reduction in the number of new wells and improvements in pavement scores in recent years (see Table 13), the correlation between maintenance expenditures and the percentage of highway miles with below-good pavement condition scores is still positive.

Some of the correlations in Table 15 through Table 18 could be used to develop forecasting tools, which may be useful in situations where other factors remain reasonably stable and there is a need for high-level estimates. For example, the following linear regression equations are based on county-level data relating the change in the percentage of highway miles with below-good pavement condition scores to the number of new horizontal wells.

Barnett Shale region:

$$Y = 0.0002X + 0.1047$$

$$(R^2 = 0.3614)$$

Eagle Ford Shale region:

$$Y = 0.0003X + 0.1595$$

$$(R^2 = 0.1371)$$

where:

X = number of new horizontal wells.

Y = proportion of highway miles with below-good pavement condition scores.

A similar equation for the Permian Basin would not be feasible because the correlation between the two variables is negligible.

Chapter 6. Findings

The Texas Legislature asked TTI to update a study completed in late 2011 documenting locations and trends of oil and gas energy developments in the state (*1*). The Texas Legislature also asked TTI to correlate oil and gas developments with changes in pavement condition data. To achieve this goal, the research team requested and processed data from RRC, processed and overlaid pavement condition data, requested information from counties and cities, analyzed data, and prepared deliverables.

This chapter replicates the summary tables from Chapter 5, which show changes in the Barnett Shale, Eagle Ford Shale, and Permian Basin regions from 2006–2009 to 2010–2013. These tables also show summary data for other areas as well as throughout the state. Changes were much more pronounced at the individual county level. For illustration purposes, the tables show changes associated with Karnes County, which is located in the Eagle Ford Shale region. The appendix and PowerPoint files provide detailed data at the county level.

The summary tables are as follows:

- Table 19 summarizes changes in the number of new completed wells.
- Table 20 summarizes changes in oil and gas production.
- Table 21 summarizes changes in liquids disposed of into the ground.
- Table 22 summarizes changes in the percentage of highway miles that had below-good pavement distress scores, ride scores, and condition scores.
- Table 23 summarizes changes in highway maintenance expenditures.

Table 19. Changes in the Number of New Completed Wells.

Region	Number of Horizontal Wells			Number of Vertical Wells			Total Number of Wells		
	2006-09	2010-13	Diff.	2006-09	2010-13	Diff.	2006-09	2010-13	Diff.
Barnett Shale	8,663	4,490	-48%	1,482	698	-53%	10,145	5,188	-49%
Eagle Ford Shale	854	8,886	941%	4,595	3,689	-20%	5,449	12,575	131%
Permian Basin	951	3,230	240%	14,381	21,396	49%	15,332	24,626	61%
Other	1,761	3,356	91%	18,706	9,653	-48%	20,467	13,009	-36%
Grand Total	**12,229**	**19,962**	**63%**	**39,164**	**35,436**	**-10%**	**51,393**	**55,398**	**8%**
Karnes County	28	1,312	4586%	38	50	32%	66	1,362	1964%

Table 20. Changes in Oil and Gas Production.

Region	Oil Production (BBL)			Gas Production (MCF)		
	2006-09	2010-13	Diff.	2006-09	2010-13	Diff.
Barnett Shale	21,249,731	34,576,341	63%	5,405,555,430	7,845,267,680	45%
Eagle Ford Shale	76,979,250	541,221,811	603%	3,550,292,226	4,706,967,631	33%
Permian Basin	997,383,412	1,268,827,453	27%	2,942,718,794	1,981,010,535	-33%
Other	296,920,612	334,041,944	13%	13,884,408,311	12,416,857,011	-11%
Grand Total	**1,392,533,005**	**2,178,667,549**	**56%**	**25,782,974,761**	**26,950,102,857**	**5%**
Karnes County	1,124,039	114,204,940	10060%	34,352,282	226,427,068	559%

Table 21. Changes in Liquids Disposed of into the Ground.

Region	Liquids (BBL) Disposed into the Ground		
	2006-09	2010-13	Diff.
Barnett Shale	697,396,323	1,000,917,551	44%
Eagle Ford Shale	1,949,556,636	2,171,974,843	11%
Permian Basin	1,184,755,125	1,752,394,208	48%
Other	3,088,383,567	2,873,346,893	-7%
Grand Total	**6,920,091,651**	**7,798,633,495**	**13%**
Karnes County	10,493,457	46,233,210	341%

Table 22. Changes in the Percentage of Highway Miles with Below-Good Pavement Scores.

Region	Below-Good Distress Scores			Below-Good Ride Scores			Below-Good Cond. Scores		
	2006-09	2010-13	Diff.	2006-09	2010-13	Diff.	2006-09	2010-13	Diff.
Barnett Shale	15.1%	12.1%	-3.0%	23.1%	22.1%	-1.0%	15.9%	12.8%	-3.1%
Eagle Ford Shale	17.2%	19.2%	1.9%	36.5%	34.1%	-2.4%	16.5%	17.7%	1.3%
Permian Basin	8.8%	9.1%	0.2%	15.0%	17.1%	2.1%	7.4%	7.6%	0.2%
Other	14.3%	14.4%	0.1%	24.6%	23.1%	-1.5%	13.8%	13.2%	-0.6%
Grand Total	**14.0%**	**14.2%**	**0.2%**	**24.6%**	**23.6%**	**-1.1%**	**13.5%**	**13.0%**	**-0.4%**
Karnes County	12.8%	34.2%	21.4%	55.8%	54.8%	-1.1%	13.3%	34.9%	21.6%

Note: A negative change in the percentage of highway miles with below-good pavement scores is a desirable trend. A positive change in the percentage of highway miles with below-good pavement scores is an undesirable trend. For this reason, the table associates green dots with negative changes and red dots with positive changes.

Table 23. Changes in Total Highway Maintenance Expenditures.

Region	Total Maintenance Expenditures			Maintenance Expend. per Lane-Mile		
	2006-09	2010-13	Diff.	2006-09	2010-13	Diff.
Barnett Shale	$ 129,529,342	$ 195,129,989	51%	$ 10,539	$ 15,877	51%
Eagle Ford Shale	$ 174,220,728	$ 363,893,844	109%	$ 7,133	$ 14,898	109%
Permian Basin	$ 60,366,852	$ 134,290,179	122%	$ 2,701	$ 6,010	122%
Other	$ 1,015,961,891	$ 1,570,940,664	55%	$ 6,625	$ 10,244	55%
Grand Total	**$ 1,380,078,812**	**$ 2,264,254,676**	**64%**	**$ 6,497**	**$ 10,660**	**64%**
Karnes County	$ 4,568,045	$ 22,958,450	403%	$ 7,980	$ 40,106	403%

Note: All dollar amounts are expressed in December 2014 dollars (*10*).

Table 24 provides a high-level summary of relative changes in the number of new wells, oil and gas production, volume of liquids disposed of into the ground, percentage of highway miles with below-good pavement condition scores, and maintenance expenditures, based on the results shown in Table 19 through Table 23.

Table 24. Relative Changes in the Number of New Wells, Oil and Gas Production, Liquids Disposed of into the Ground, Pavement Scores, and Maintenance Expenditures from 2006–2009 to 2010–2013.

Region	Number of New Wells			Hydrocarbon Production		Liquids Disposed into Ground	Pavement Condition Scores	Maint. Expend.
	Horizontal Wells	Vertical Wells	Total	Oil	Gas			
Barnett Shale	-48%	-53%	-49%	63%	45%	44%	-3.1%	51%
Eagle Ford Shale	941%	-20%	131%	603%	33%	11%	1.3%	109%
Permian Basin	240%	49%	61%	27%	-33%	48%	0.2%	122%
Other	91%	-48%	-36%	13%	-11%	-7%	-0.6%	55%
Grand Total	**63%**	**-10%**	**8%**	**56%**	**5%**	**13%**	**-0.4%**	**64%**
Karnes County	4586%	32%	1964%	10060%	559%	341%	21.6%	403%

Note: As in Table 22, for pavement score changes, green dots (representing a desirable trend) are associated with negative changes in the percentage of highway miles with below-good pavement scores. Red dots (representing an undesirable trend) are associated with positive changes in the percentage of highway miles with below-good pavement scores.

The trends in Table 24 indicate or confirm the following:

- The total number of new wells drilled during the four-year period from 2006–2009 to 2010–2013 increased by 8 percent. However, there were substantial variations in the type of wells drilled and by region. For example, the total number of new horizontal wells increased by 63 percent, but the total number of new vertical wells actually decreased by 10 percent. In the Barnett Shale region, the total number of new wells decreased by 49 percent. In the Eagle Ford Shale region, the total number of new wells increased by 131 percent. In the Permian Basin region, the total number of new wells increased by 61 percent.

- Oil production increased by 56 percent, and gas production increased by 5 percent. However, there were substantial variations by region. Oil production increased by 63 percent in the Barnett Shale region, by 603 percent in the Eagle Ford Shale region, and by 27 percent in the Permian Basin region. Gas production increased by 45 percent in the Barnett Shale region and by 33 percent in the Eagle Ford Shale region, but decreased by 11 percent in the Permian Basin region.

- The total volume of liquids disposed of into the ground increased by 13 percent. However, there were substantial variations by region. There was a 44 percent increase in the Barnett Shale region, an 11 percent increase in the Eagle Ford Shale region, and a 48 percent increase in the Permian Basin region.

- There was a 0.4 percent decrease in the percentage of highway miles with below-good pavement condition scores. Changes were more noticeable at the regional level. In the Barnett Shale region, there was a 3.1 percent decrease in the percentage of highway miles with below-good condition scores. These changes indicate an improvement in roadway conditions. In the Eagle Ford Shale and Permian Basin regions, roadway conditions worsened (1.3 percent increase and 0.2 percent increase, respectively, in the percentage of highway miles with below-good pavement condition scores). Conditions were even more noticeable at the county level. For example, in Karnes County, there was a 21.6 percent increase in the percentage of highway miles with below-good condition scores.

- The amount of maintenance expenditures increased by 64 percent. Maintenance expenditures increased by 51 percent in the Barnett Shale region, by 109 percent in the Eagle Ford Shale region, and by 122 percent in the Permian Basin region.

A high-level analysis to identify potential long-term statistical correlations between specific metrics of interest using the Pearson product-moment correlation coefficient produced the following results for the three energy regions of interest and other regions in the state:

- In the Barnett Shale region, there is a strong correlation between the number of new horizontal wells and each of the following variables: volume of gas production, volume of liquids injected into the ground, and percentage of highway miles with below-good pavement condition scores. However, the correlation between the number of new horizontal wells and oil production is negligible, providing a confirmation of the relationship between the type of hydrocarbon production in the Barnett Shale region (i.e., essentially gas) and transportation infrastructure impacts in that part of the state. There is a strong correlation between gas production volumes and volume of liquids injected into the ground.

- In the Eagle Ford Shale region, there is a very strong correlation between the number of new horizontal wells and oil production, and a moderate correlation between the number of new horizontal wells and gas production, confirming the higher emphasis on the development of well sites for oil production purposes in that region. There is also a moderate correlation between the number of new horizontal wells and the percentage of highway miles with below-good pavement condition scores. There is a strong correlation between oil production and the percentage of highway miles with below-good pavement condition scores. The correlation between the volume of liquids injected into the ground and all other metrics is negligible.

- In the Permian Basin region, there is a strong correlation between the number of new vertical wells and each of the following variables: volume of oil production and volume of liquids injected into the ground. There is a moderate correlation between the number of new horizontal wells and oil production, gas production, and volume of liquids

injected into the ground. There is also a negligible correlation between the percentage of highway miles with below-good pavement condition scores and all other metrics (except gas production, for which the correlation is moderate).

- In the remaining 175 counties in the state, there is a strong correlation between the number of new wells (particularly vertical wells) and the volume of gas production. There is also a weak to moderate correlation between the number of new wells and each of the following variables: volume of oil production and volume of liquids injected into the ground. All other correlations are weak or negligible.
- The correlation between maintenance expenditures and the percentage of highway miles with below-good pavement condition scores in the remaining 175 counties in the state (i.e., mostly counties where oil and gas energy development activity is not significant) was negligible, indicating no significant changes in pavement condition scores in those counties and providing a confirmation of TxDOT's successful efforts to maintain the operational condition of the state highway infrastructure. In comparison, there was a weak to moderate *positive* correlation between maintenance expenditures and the percentage of highway miles with below-good pavement condition scores in the Barnett Shale, Eagle Ford Shale, and Permian Basin regions. This positive correlation is an indication that the state is not keeping up with the degradation in pavement conditions in areas where energy development activity is significant.

The research results have a number of additional policy implications, including but not limited to the following:

- In general, as the number of new wells increases, pavement conditions deteriorate. The correlation level varies significantly from region to region. Pavement structures in the Eagle Ford Shale region have suffered the most, followed by pavement structures in the Permian Basin region. Pavement structures in the Barnett Shale region have begun to recover, although this is due in part to a reduction in the number of new wells in recent years. The number of new wells could be used as a predictor of changes in pavement conditions, which could facilitate the allocation of limited maintenance dollars depending on the anticipated need.
- Senate Bill 1747, which was enacted in 2013, established an additive formula to allocate funds to counties for transportation infrastructure projects located in areas of the state affected by increased oil and gas production (*13*). This formula includes the following factors and weights for the allocation of funds: weight tolerance permits (20 percent), amount of oil and gas production taxes (20 percent), number of well completions (50 percent), and oil and gas waste injected (10 percent). The research did not address or analyze data pertaining to weight tolerance permits. It also did not address questions related to the reasonableness of each of these weights (e.g., whether the weight for the number of well completions should be 50 percent or a different value). However, the

research results do offer insight into potential strategies regarding the following formula factors and weights:

- **Amount of oil and gas production taxes (weight: 20 percent).** One of the factors is the amount of oil and gas production taxes collected by the comptroller in the preceding fiscal year. Because the volume of oil production is not a reliable predictor of the volume of gas production, it will be important to keep both oil production and gas production in the allocation formula. The information gathered in this research was not enough to determine whether the weight for oil production should remain the same as or different from that for gas production. Some additional information is necessary to complete this analysis (e.g., how much truck traffic is typically generated to support oil production versus how much truck traffic is typically generated to support gas production).
- **Number of well completions (weight: 50 percent).** One of the factors is the number of well completions in the preceding fiscal year. The formula does not differentiate between horizontal wells and vertical wells. The relative impact of new horizontal wells on transportation infrastructure is much greater than that of new vertical wells. The allocation formula should therefore consider horizontal well completions separately from vertical well completions. More specifically, the weight for horizontal well completions should be much higher than that for vertical well completions. Through separate research efforts, TTI is compiling information to determine how much greater the impact of horizontal wells is compared to the impact of vertical wells. At the Texas Legislature's request, TTI could use these results to develop an aggregated estimate of the corresponding weights for horizontal and vertical wells.
- **Oil and gas waste injected (weight: 10 percent).** The correlation between the volume of liquids injected into the ground and the percentage of highway miles with below-good pavement condition scores is generally negligible to weak. Further, the correlation between the volume of gas injected into the ground and the percentage of highway miles with below-good pavement condition scores is negligible. These trends are consistent with the common case where liquid and gas that are injected into the ground are transported by pipeline, minimizing the impact on existing pavement structures. However, in counties where energy developments are recent, the pipeline infrastructure to transport liquid and gas waste does not necessarily exist, making it necessary to rely on trucks. Particularly in the case of liquid waste, the impact on pavement structures can be quite significant.

  The allocation formula ignores the mode of transportation used to transport the waste to the injection disposal facilities. Because there is a significant difference

between the pavement impact depending on the mode of transportation used (i.e., truck versus pipeline), the allocation formula should consider each mode of transportation separately. The weight for the volume of liquids transported by truck should be much higher than the weight for the volume of liquids transported by pipeline. Strictly speaking, the weight for the volume of liquids injected into the ground should be higher than the weight for the volume of gas injected into the ground. The information gathered in this research was not enough to determine how much higher the weight for the volume of liquids transported by truck should be. Some additional information is necessary to complete this analysis (e.g., by conducting a county-level survey of waste disposal practices or by requesting and analyzing additional information that might be available from RRC).

- As soon as possible, the analysis should be extended to evaluate the impacts resulting from the collapse in oil prices during the second half of 2014. The price of oil has decreased to about $50/barrel. As the price of oil continues to decrease below certain thresholds, the number of drilling rig counts and contracts has started to decrease. The impact appears to be different in different regions, which could have important transportation infrastructure implications. For example, the reduction in the number of drilling rig contracts in recent weeks has been higher in West Texas compared to that in South Texas, probably due to lower profitability thresholds in the Eagle Ford Shale region than in the Permian Basin region.

References

1. Quiroga, C., E. Fernando, and J. Oh. *Energy Developments and the Transportation Infrastructure in Texas: Impacts and Strategies*. Report FHWA/TX-12/0-6498-1. Texas A&M Transportation Institute, 2012.
2. Quiroga, C., E. Fernando, D. Newcomb, B. Stockton, A. Wimsatt, and J. Epps. *Estimation of Additional Investment Needed to Support Energy Industry Activity in Texas*. Report FHWA/TX-13/0-6581-TI-4. Texas A&M Transportation Institute, 2013.
3. U.S. Energy Information Administration. *Drilling Productivity Report*. December 9, 2014. http://www.eia.gov/petroleum/drilling/#tabs-summary-1. Accessed March 12, 2015.
4. Texas Administrative Code Title 16, Part 1, Chapter 3, Rule §3.29: Hydraulic Fracturing Chemical Disclosure Requirements. 2012. http://texreg.sos.state.tx.us/public/readtac$ext.TacPage?sl=T&app=9&p_dir=F&p_rloc=154595&p_tloc=14993&p_ploc=1&pg=6&p_tac=&ti=16&pt=1&ch=3&rl=30. Accessed March 12, 2015.
5. McFeeley, M. *State Hydraulic Fracturing Disclosure Rules and Enforcement: A Comparison*. Issue Brief 12-06-A. Natural Resources Defense Council, July 2012. http://www.nrdc.org/energy/files/fracking-disclosure-IB.pdf. Accessed March 12, 2015.
6. Naismith Engineering, Inc. *Road Damage Cost Allocation Study*. DeWitt County, Cuero, Texas, June 2012. http://eaglefordshale.com/wp-content/uploads/2012/07/DeWitt-County-Road-Damage-Cost-Allocation-Study.pdf. Accessed March 12, 2015.
7. Alamo Area Development Corporation. *Eagle Ford Shale: Economic Prosperity and Community Improvements Program.* Karnes County Pilot Study Report. March 2013. http://www.alamoareadc.org/DocumentCenter/View/15. Accessed March 12, 2015.
8. Belcheff & Associates, Inc. *Road Damage Fee Assessment Study*. City of Keller, Texas, August 2010. http://www.cityofkeller.com/modules/ShowDocument.aspx?documentid=5402. Accessed March 12, 2015.
9. U.S. Energy Information Administration. Real Prices Viewer. December 9, 2014. http://www.eia.gov/forecasts/steo/realprices/. Accessed December 22, 2014.
10. Mason, A. *Highway Cost Index (1997 Base): Index Report for March 2015*. Texas Department of Transportation, March 2015. http://ftp.dot.state.tx.us/pub/txdot-info/cst/hci-binder.pdf. Accessed March 12, 2015.
11. Fernando, E., J. Oh, D. Ryu, and S. Nazarian. *Consideration of Regional Variations in Climatic and Soil Conditions in the Modified Triaxial Design Method*. Report FHWA/TX-07/0-4519-2. Texas A&M Transportation Institute, 2008.
12. Gharaibeh, N., T. Freeman, S. Saliminejad, A. Wimsatt, C. Chang-Albitres, S. Nazarian, I. Abdallah, J. Weissmann, A. Weissmann, A. Papagiannakis, and C. Gurganus. *Evaluation and Development of Pavement Scores, Performance Models and Needs Estimates for the TxDOT Pavement Management Information System—Final Report*. Report FHWA/TX-12/0-6386-3. Texas A&M Transportation Institute, 2012.

13. Senate Bill 1747: Funding for County Energy Transportation Reinvestment Zones. 83rd Texas Legislature, Austin, Texas, June 2013. http://www.legis.state.tx.us/BillLookup/Text.aspx?LegSess=83R&Bill=SB1747. Accessed March 12, 2015.

Appendix. Sample Tables

This appendix includes a sample of county-level tables that the research team developed to document oil and gas developments in the state, as well as pavement condition scores on state-maintained highways from 2004–2013. The tables represent only a partial view of all the datasets that the research team gathered or compiled. The tables included in this appendix are as follows:

- Table 25 shows the total number of new oil and gas wells completed per county.
- Table 26 shows oil production (BBL) per county.
- Table 27 shows gas production (MCF) per county.
- Table 28 shows the volume of liquids (BBL) injected into non-productive zones.
- Table 29 shows the average condition scores per county.
- Table 30 shows the total maintenance expenditures per county.
- Table 31 shows the percentage of highway miles with below-good pavement condition scores.

Table 25. Total Number of New Oil and Gas Wells Completed per County.

County Name	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Anderson	14	23	25	26	38	21	6	7	10	8
Andrews	219	270	301	301	507	422	847	1160	1089	611
Angelina	2	8	21	35	31	12	2	2	3	0
Aransas	3	3	12	12	12	3	5	4	1	3
Archer	14	46	60	78	105	92	83	90	93	75
Armstrong	0	0	0	0	0	0	0	0	0	0
Atascosa	9	9	14	3	6	16	38	51	147	169
Austin	21	11	8	7	34	18	9	10	11	8
Bailey	0	0	0	0	0	0	0	0	0	0
Bandera	0	0	0	2	1	0	0	0	0	0
Bastrop	0	1	0	8	15	1	5	3	2	2
Baylor	4	5	3	3	6	1	1	5	12	11
Bee	41	42	65	64	70	37	46	25	41	30
Bell	0	0	0	0	0	0	0	0	0	0
Bexar	2	6	0	2	1	2	4	0	3	42
Blanco	0	0	0	0	0	0	0	0	0	0
Borden	38	36	24	47	23	9	33	39	44	48
Bosque	0	8	13	3	2	0	0	0	0	1
Bowie	0	1	1	1	1	1	1	0	0	0
Brazoria	43	28	22	27	35	10	34	37	50	22
Brazos	16	15	21	18	26	23	42	26	27	34
Brewster	0	0	1	0	0	0	0	0	0	0

County Name	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Briscoe	0	0	0	1	0	0	0	0	0	0
Brooks	49	50	33	27	51	14	29	23	17	13
Brown	6	14	7	17	12	5	45	41	7	3
Burleson	7	12	9	8	37	3	33	14	5	5
Burnet	0	0	0	0	0	0	0	0	0	0
Caldwell	5	10	15	43	17	15	30	42	30	8
Calhoun	28	12	11	12	10	7	4	2	3	2
Callahan	6	8	17	15	23	15	14	6	6	7
Cameron	0	0	0	0	0	1	1	3	0	0
Camp	0	0	0	1	0	1	1	0	1	3
Carson	7	5	3	5	7	5	0	15	17	10
Cass	5	4	1	0	1	4	2	5	4	5
Castro	0	0	0	0	0	0	0	0	0	0
Chambers	23	23	20	4	17	13	33	34	39	27
Cherokee	24	23	47	59	83	22	14	11	4	7
Childress	0	0	0	0	3	0	0	0	0	0
Clay	8	21	24	19	42	6	14	15	21	10
Cochran	40	31	15	9	41	21	21	43	11	25
Coke	9	13	33	16	22	14	30	33	36	24
Coleman	9	4	4	11	15	8	46	43	38	37
Collin	0	0	0	0	0	0	0	0	0	0
Collingsworth	0	0	0	0	0	0	0	0	4	0
Colorado	37	57	38	40	29	11	25	19	8	1
Comal	0	0	0	0	0	0	0	0	0	0
Comanche	3	5	3	4	2	2	2	3	1	3
Concho	17	26	20	24	27	7	4	12	5	4
Cooke	44	54	73	74	79	38	106	126	66	26
Coryell	0	0	0	3	3	0	0	0	0	0
Cottle	10	8	9	7	12	2	6	3	1	1
Crane	106	180	171	180	158	63	85	117	139	171
Crockett	266	303	298	290	316	66	168	94	143	193
Crosby	0	0	1	37	24	25	41	95	120	113
Culberson	16	6	9	9	10	8	18	45	38	46
Dallam	0	0	0	0	0	1	0	0	1	0
Dallas	0	0	0	7	10	8	9	1	2	3
Dawson	19	18	32	41	37	17	39	60	58	48
Deaf Smith	0	0	0	0	0	0	0	0	0	0
Delta	0	0	0	0	0	0	0	0	0	0
Denton	249	245	227	229	291	128	168	99	66	59
DeWitt	34	54	42	52	70	30	73	190	232	341
Dickens	21	16	26	25	25	11	11	10	4	5
Dimmit	21	37	61	43	56	30	140	338	594	454

County Name	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Donley	0	0	0	0	0	0	0	0	0	0
Duval	69	81	60	82	78	28	32	25	31	36
Eastland	18	20	24	53	12	7	4	5	3	3
Ector	267	147	232	156	228	254	491	504	663	554
Edwards	23	28	31	28	21	20	49	7	7	4
El Paso	0	0	0	0	0	0	0	0	0	0
Ellis	5	3	3	15	21	10	9	4	0	0
Erath	3	18	59	64	77	13	4	2	0	0
Falls	1	1	0	0	1	1	1	2	4	4
Fannin	0	0	0	0	0	0	0	0	2	0
Fayette	20	15	14	7	12	9	14	16	23	9
Fisher	2	11	12	18	38	22	31	38	39	43
Floyd	0	3	2	1	0	0	1	0	1	0
Foard	4	3	0	28	9	1	2	0	4	2
Fort Bend	51	34	44	35	34	25	38	60	42	36
Franklin	0	6	0	2	10	1	3	4	9	9
Freestone	262	246	241	255	227	168	128	97	46	14
Frio	7	4	17	55	42	19	21	77	75	54
Gaines	198	190	227	177	171	65	211	212	157	168
Galveston	13	12	14	13	9	1	7	8	8	2
Garza	23	40	46	43	51	39	29	27	28	27
Gillespie	0	0	0	0	0	0	0	0	0	0
Glasscock	17	33	76	86	80	72	235	610	728	452
Goliad	79	135	107	57	75	16	30	17	6	1
Gonzales	1	4	2	4	7	8	42	173	289	370
Gray	19	24	54	8	7	3	1	9	13	8
Grayson	12	15	12	9	5	7	14	16	19	13
Gregg	89	74	68	69	63	20	12	18	13	23
Grimes	4	12	7	8	11	9	10	10	20	7
Guadalupe	13	33	4	3	7	3	8	14	13	19
Hale	3	0	22	12	15	3	7	0	0	0
Hall	0	0	0	0	0	0	0	0	0	0
Hamilton	0	1	3	3	0	0	0	0	0	0
Hansford	28	29	26	17	33	18	4	7	7	2
Hardeman	9	20	11	8	10	3	5	8	10	6
Hardin	20	40	45	35	51	41	48	54	50	29
Harris	17	29	14	12	15	7	15	8	3	5
Harrison	133	207	281	311	301	131	98	64	45	28
Hartley	13	11	4	4	4	3	7	7	10	4
Haskell	5	3	9	7	10	16	26	40	36	19
Hays	0	0	0	0	0	0	0	0	0	0
Hemphill	256	267	276	259	296	115	124	132	112	76

County Name	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Henderson	9	19	15	15	20	11	6	3	4	5
Hidalgo	94	121	152	171	153	57	54	48	40	37
Hill	1	9	44	50	114	28	10	0	0	0
Hockley	73	84	116	95	86	39	59	50	31	34
Hood	9	60	144	269	200	38	25	42	47	5
Hopkins	1	3	0	1	0	1	0	1	3	1
Houston	14	32	18	24	12	6	10	18	18	15
Howard	47	49	44	78	98	71	147	227	305	374
Hudspeth	0	0	1	3	4	0	0	0	0	0
Hunt	0	0	0	0	0	0	0	0	0	0
Hutchinson	33	21	47	147	87	10	15	11	22	5
Irion	21	25	27	24	78	46	59	169	237	256
Jack	57	65	73	134	56	33	37	63	128	117
Jackson	46	80	39	36	64	32	23	18	23	15
Jasper	7	4	6	9	16	12	11	10	7	5
Jeff Davis	0	0	1	1	1	0	0	0	0	0
Jefferson	28	25	34	44	40	26	38	25	35	15
Jim Hogg	7	35	32	16	9	2	3	2	3	5
Jim Wells	27	21	7	11	27	12	19	8	6	5
Johnson	96	292	533	842	898	422	360	241	97	17
Jones	44	48	47	54	54	39	43	43	35	49
Karnes	14	13	10	15	23	18	111	277	491	483
Kaufman	0	0	0	0	0	0	0	0	1	1
Kendall	0	0	0	0	0	0	0	0	0	0
Kenedy	23	16	27	31	39	23	18	13	0	4
Kent	2	5	12	22	33	26	28	20	18	30
Kerr	0	1	0	0	0	0	0	0	0	0
Kimble	6	2	3	1	0	1	0	0	0	0
King	19	33	21	23	27	10	14	13	12	24
Kinney	0	0	0	0	0	0	0	0	0	0
Kleberg	12	19	19	23	16	5	14	31	21	14
Knox	4	2	3	4	8	2	1	5	8	2
La Salle	52	34	60	48	56	36	106	243	499	544
Lamar	0	0	0	0	0	0	0	0	0	0
Lamb	4	1	3	2	8	4	4	3	3	0
Lampasas	0	0	1	6	5	1	1	0	1	0
Lavaca	59	89	115	77	69	29	38	26	38	56
Lee	21	29	11	8	17	8	14	16	14	6
Leon	38	68	81	77	65	39	45	69	31	27
Liberty	33	39	42	38	34	13	19	17	14	12
Limestone	66	105	99	138	160	57	51	26	18	14
Lipscomb	92	106	125	99	148	55	67	115	99	39

County Name	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Live Oak	39	50	51	36	53	28	56	77	111	173
Llano	0	0	0	0	0	0	0	0	0	0
Loving	36	56	42	49	49	27	54	55	166	89
Lubbock	4	9	9	7	12	21	19	8	8	3
Lynn	1	4	2	5	4	3	3	11	9	5
Madison	0	6	1	0	0	3	0	0	1	1
Marion	0	0	0	2	3	0	0	0	0	0
Martin	46	82	54	62	87	40	85	148	303	374
Mason	9	9	13	5	13	7	19	25	32	35
Matagorda	10	15	13	6	12	1	4	3	8	6
Maverick	72	102	125	173	195	129	440	642	782	544
McCulloch	0	0	0	0	0	0	0	0	0	0
McLennan	38	58	48	44	62	25	28	18	13	8
McMullen	44	48	76	56	195	106	26	34	14	12
Medina	6	10	1	4	19	16	44	53	82	93
Menard	10	10	9	8	9	7	6	22	16	6
Midland	167	164	231	159	233	165	368	583	547	417
Milam	2	16	22	9	3	55	81	222	327	292
Mills	0	0	0	1	0	0	0	0	0	0
Mitchell	86	100	146	215	230	160	155	161	159	103
Montague	61	93	100	71	123	72	184	206	202	112
Montgomery	9	10	12	3	7	5	5	7	3	7
Moore	39	43	49	43	36	27	20	26	45	8
Morris	0	0	0	0	0	0	0	0	0	0
Motley	0	1	0	0	1	0	0	0	0	0
Nacogdoches	108	149	215	234	235	88	73	71	36	2
Navarro	10	15	37	14	28	10	10	6	12	6
Newton	8	18	26	6	9	12	15	14	6	2
Nolan	27	23	23	35	55	19	40	74	72	62
Nueces	86	78	49	62	48	37	30	36	13	12
Ochiltree	56	49	49	42	75	48	87	86	119	102
Oldham	3	2	3	2	6	2	8	10	12	20
Orange	12	6	14	11	6	4	11	6	10	4
Palo Pinto	78	91	85	64	111	66	30	13	33	63
Panola	333	400	399	389	354	183	159	120	127	141
Parker	122	168	353	292	240	84	63	105	135	42
Parmer	0	0	0	0	0	0	0	0	0	0
Pecos	199	221	235	288	389	169	209	112	92	88
Polk	22	11	13	23	32	14	18	15	17	10
Potter	53	34	39	3	6	2	13	16	1	3
Presidio	0	0	0	0	0	0	0	0	0	0
Rains	0	0	0	1	0	1	0	0	0	0

County Name	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Randall	0	0	0	0	0	0	0	0	0	0
Reagan	100	134	209	170	253	141	442	389	385	301
Real	2	1	0	0	1	1	0	0	2	0
Red River	1	1	0	0	1	1	0	2	1	1
Reeves	34	54	51	58	65	27	58	220	316	258
Refugio	148	155	136	137	113	112	111	95	73	61
Roberts	40	73	123	104	123	33	43	56	68	36
Robertson	102	98	104	118	168	99	54	43	38	27
Rockwall	0	0	0	0	0	0	0	0	0	0
Runnels	21	43	83	41	47	12	29	27	22	23
Rusk	101	270	417	438	331	96	53	40	51	42
Sabine	0	0	1	1	1	1	7	6	4	0
San Augustine	0	0	0	8	32	53	74	66	24	9
San Jacinto	12	5	4	19	10	16	15	16	9	3
San Patricio	26	39	35	28	23	8	14	26	18	17
San Saba	0	0	0	0	0	0	0	0	0	0
Schleicher	40	58	53	23	31	18	31	45	46	30
Scurry	85	88	107	59	110	86	74	88	64	82
Shackelford	41	52	42	50	84	50	60	50	42	49
Shelby	70	54	58	85	126	71	97	46	21	10
Sherman	25	17	18	15	79	10	4	8	10	8
Smith	148	156	107	53	20	14	11	11	10	11
Somervell	0	1	19	34	55	6	5	4	3	0
Starr	112	114	134	131	175	55	44	36	38	21
Stephens	40	38	34	39	60	13	25	51	40	42
Sterling	68	75	56	75	59	55	43	23	49	34
Stonewall	8	9	17	24	40	40	82	83	77	53
Sutton	189	76	168	61	124	40	59	28	26	13
Swisher	0	0	0	0	0	0	0	0	0	0
Tarrant	208	256	316	617	788	534	542	511	241	92
Taylor	11	12	15	18	15	18	7	22	19	28
Terrell	61	29	67	45	38	2	7	2	2	0
Terry	26	45	57	51	42	31	25	32	31	15
Throckmorton	17	32	21	22	26	10	16	17	33	52
Titus	23	8	7	0	2	0	0	1	5	5
Tom Green	16	25	30	28	22	47	16	16	24	16
Travis	0	0	0	0	0	0	0	0	0	0
Trinity	2	3	3	2	2	1	0	2	0	0
Tyler	16	19	27	30	27	19	14	16	10	9
Upshur	61	76	43	49	24	7	4	10	1	3
Upton	192	248	235	302	490	201	488	580	625	483
Uvalde	0	0	1	0	0	0	0	0	0	0

County Name	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Val Verde	27	27	16	8	1	9	0	0	0	0
Van Zandt	21	12	4	20	10	6	6	5	7	4
Victoria	95	88	69	50	66	45	39	21	22	18
Walker	0	10	6	0	3	0	0	0	2	5
Waller	42	49	32	36	27	16	18	7	5	5
Ward	27	114	350	214	245	108	233	281	300	269
Washington	4	10	7	4	3	2	3	1	2	6
Webb	275	349	290	249	356	208	338	390	439	238
Wharton	100	70	74	45	82	34	65	66	47	37
Wheeler	97	171	196	223	260	77	133	198	197	140
Wichita	101	84	111	127	160	138	116	158	120	129
Wilbarger	26	51	56	32	32	22	35	38	65	27
Willacy	21	14	16	19	21	18	17	9	8	5
Williamson	0	1	0	1	0	1	0	0	0	0
Wilson	5	4	5	2	2	3	11	46	38	48
Winkler	38	144	103	162	131	17	29	30	49	57
Wise	251	190	222	193	284	186	234	159	178	120
Wood	13	11	16	8	5	12	11	9	16	3
Yoakum	173	152	232	126	181	37	121	148	156	205
Young	31	25	41	58	84	36	50	45	68	59
Zapata	230	249	285	241	256	93	51	34	4	10
Zavala	13	11	17	16	8	9	11	47	70	55

Table 26. Oil Production (BBL) per County.

County	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Anderson	846,877	720,265	741,329	673,484	678,626	639,004	623,104	634,815	617,112	640,077
Andrews	23,348,254	23,970,611	24,443,695	24,171,024	24,362,476	23,607,670	25,781,259	28,807,886	33,184,827	33,668,078
Angelina	5,711	4,090	4,436	2,826	2,176	564	3,386	1,921	759	-
Aransas	76,659	75,617	72,660	82,931	83,362	67,238	50,489	98,878	108,074	73,153
Archer	1,114,139	1,056,422	1,090,099	1,046,251	1,093,922	1,037,676	1,043,754	1,106,736	1,155,166	1,234,003
Armstrong	-	-	-	-	-	-	-	-	-	-
Atascosa	779,337	731,014	904,875	617,557	571,358	561,703	927,723	2,877,564	7,535,658	13,120,429
Austin	157,895	265,346	220,748	222,423	295,251	420,547	731,849	647,664	522,574	510,588
Bailey	-	-	-	-	-	-	-	-	-	-
Bandera	1,495	1,524	2,607	1,811	1,737	1,925	1,692	1,907	1,488	867
Bastrop	103,919	94,179	90,200	181,138	553,621	303,821	147,611	111,420	93,467	133,119
Baylor	125,150	112,704	106,122	105,338	106,643	95,820	88,843	95,522	108,149	128,156
Bee	364,992	321,115	315,345	299,603	342,343	387,228	404,507	384,935	342,539	323,207
Bell	-	-	-	-	-	-	-	-	-	-
Bexar	134,799	125,035	125,558	119,787	118,509	119,866	109,462	109,671	119,303	127,199
Blanco	-	-	-	-	-	-	-	-	-	-
Borden	4,542,864	4,396,066	3,871,906	3,676,903	3,662,527	3,526,909	3,382,773	3,523,858	3,577,880	3,751,152
Bosque	-	-	-	-	-	-	-	-	-	-
Bowie	100,305	98,663	77,223	55,556	44,086	51,422	55,640	46,349	47,126	46,872
Brazoria	1,712,924	1,704,310	1,848,267	1,945,666	1,979,779	1,810,597	1,709,268	1,389,376	2,303,869	3,055,409
Brazos	2,150,881	1,972,504	1,756,735	1,533,794	1,513,202	1,714,755	2,196,678	1,999,518	2,597,327	3,493,438
Brewster	-	-	-	-	-	-	-	-	-	-
Briscoe	-	-	-	1,696	664	430	62	-	-	19
Brooks	288,039	355,645	361,963	304,231	232,510	173,975	127,620	150,803	192,966	145,188
Brown	112,194	103,901	116,014	111,099	105,392	104,646	130,813	152,726	136,008	125,132
Burleson	2,382,089	2,164,111	2,003,631	1,805,394	2,111,997	1,857,078	1,959,206	2,053,108	1,656,169	1,635,389
Burnet	916,843	928,625	946,720	889,089	938,159	965,840	1,153,013	1,528,025	1,776,763	1,595,637
Caldwell	-	-	-	-	-	-	-	-	-	-
Calhoun	465,572	372,483	348,741	297,517	224,769	160,257	166,945	149,136	156,775	166,687
Callahan	184,932	175,642	190,088	215,785	217,781	217,782	225,859	211,500	206,296	178,630
Cameron	761	831	661	537	633	700	610	425	67	-
Camp	253,747	230,684	260,881	253,530	240,985	204,223	195,402	178,631	177,163	193,403
Carson	349,578	339,661	300,413	283,234	279,064	261,975	245,472	230,846	216,377	198,006
Cass	324,032	300,569	288,027	276,652	247,672	267,343	259,520	256,885	261,205	278,582
Castro	-	-	-	-	-	-	-	-	-	-
Chambers	1,113,842	922,323	945,450	917,801	746,990	729,043	993,993	1,150,553	1,745,446	3,080,349
Cherokee	200,204	208,653	184,743	185,435	175,437	173,506	167,736	150,728	211,416	269,446
Childress	42,607	32,647	29,515	22,817	44,267	31,876	23,610	19,224	15,649	10,543
Clay	732,028	699,564	677,440	614,439	621,436	606,463	551,276	539,013	549,625	518,222
Cochran	3,887,365	3,825,926	3,863,347	3,874,962	3,807,138	3,702,547	3,624,033	3,686,425	3,615,936	3,336,974
Coke	469,441	466,327	475,817	474,535	561,681	662,859	799,900	703,436	783,911	721,126
Coleman	301,987	277,782	274,712	243,886	273,971	246,449	244,143	281,832	298,532	295,744
Collin	-	-	-	-	-	-	-	-	-	-
Collingsworth	2,127	2,325	1,705	2,250	2,053	1,718	1,194	3,552	8,156	14,045
Colorado	227,962	195,645	196,811	199,565	192,582	150,078	146,662	148,978	146,287	141,647
Comal	-	-	-	-	-	-	-	-	-	-
Comanche	10,710	7,022	8,613	7,528	7,580	5,508	10,674	30,994	31,715	36,273
Concho	489,971	433,919	423,634	436,264	404,374	372,048	388,384	348,326	321,135	308,341
Cooke	1,640,073	1,582,686	1,652,708	2,010,556	2,292,988	2,024,202	2,822,005	4,687,651	3,336,241	2,284,718
Coryell	-	-	-	-	1	-	-	-	-	-

County	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Cottle	62,251	60,807	47,781	58,771	65,327	54,086	46,267	88,184	100,051	92,222
Crane	10,159,578	9,888,846	9,437,547	9,355,381	9,457,099	8,901,706	8,845,393	8,745,364	9,024,555	10,028,027
Crockett	3,695,574	4,139,496	5,349,050	5,399,928	5,412,959	4,942,182	4,809,571	5,063,597	6,107,450	8,176,978
Crosby	555,809	540,496	543,860	516,913	560,145	606,457	638,782	739,973	831,292	1,095,648
Culberson	130,451	118,293	110,974	100,919	96,139	92,879	153,996	307,244	878,520	1,452,357
Dallam	-	-	-	-	-	-	-	-	-	-
Dallas	-	-	-	-	-	-	-	-	-	-
Dawson	4,880,375	4,566,699	4,352,090	4,439,336	4,218,261	3,923,610	3,752,519	3,706,057	3,846,280	4,148,088
Deaf Smith	-	-	-	-	-	-	-	-	-	-
Delta	-	-	-	-	-	-	-	-	-	-
Denton	36,138	30,124	21,555	46,278	81,173	83,892	56,036	42,304	30,705	36,613
DeWitt	86,813	63,625	63,052	58,445	103,729	161,027	516,821	5,074,517	17,162,082	32,030,046
Dickens	1,660,849	1,539,554	1,372,910	1,340,537	1,286,611	1,111,976	1,010,706	861,007	782,951	679,821
Dimmit	659,104	968,100	1,321,332	1,090,798	935,954	808,082	1,621,854	4,467,153	13,287,461	25,800,067
Donley	-	-	-	-	-	-	-	-	-	-
Duval	1,052,906	1,084,961	1,036,770	1,007,562	988,588	933,611	864,497	844,679	878,231	1,027,488
Eastland	272,678	278,796	296,428	269,463	275,835	257,130	225,567	214,610	240,536	222,298
Ector	20,089,513	19,194,897	18,338,466	17,908,565	19,927,931	20,325,814	22,288,669	23,787,856	25,895,171	27,985,544
Edwards	2,303	2,092	2,716	2,164	2,770	4,095	17,036	22,205	7,644	2,554
El Paso	-	-	-	-	-	-	-	-	-	-
Ellis	158	15	119	12	268	1,056	847	519	536	392
Erath	2,816	2,655	3,739	3,793	5,606	6,005	3,356	2,343	1,978	1,531
Falls	4,326	1,929	2,503	1,541	3,162	2,416	4,996	7,381	6,339	5,695
Fannin	-	-	-	-	-	-	-	-	73	1
Fayette	1,835,635	1,438,676	1,377,544	1,262,112	1,086,035	947,560	1,105,086	1,289,659	1,845,326	2,693,877
Fisher	637,694	568,758	583,865	592,642	805,149	776,972	792,963	812,056	825,730	931,643
Floyd	1,606	1,628	1,720	1,182	1,550	1,885	1,930	1,588	1,666	1,006
Foard	136,525	107,552	95,615	89,381	103,670	99,886	107,767	101,710	120,760	109,603
Fort Bend	2,069,297	1,817,960	1,842,098	1,647,187	1,656,577	1,540,434	1,644,083	1,658,656	1,622,530	1,622,396
Franklin	412,200	387,828	338,608	307,624	343,073	342,624	299,630	266,908	476,628	653,096
Freestone	77,157	70,876	62,774	68,527	64,311	52,709	96,889	60,531	65,046	46,291
Frio	623,031	545,417	569,944	524,523	608,510	547,793	851,479	2,114,860	3,568,003	3,556,952
Gaines	29,655,926	29,005,138	27,815,447	26,924,276	25,487,942	24,616,302	24,625,300	24,727,300	24,860,246	23,675,507
Galveston	822,993	687,251	678,406	652,577	538,071	468,745	547,557	530,684	457,679	390,163
Garza	4,301,114	4,090,845	3,894,779	3,657,726	3,667,795	3,455,325	3,180,731	3,088,632	3,003,414	2,870,223
Gillespie	-	-	-	-	-	-	-	-	-	-
Glasscock	3,979,328	3,665,919	3,600,997	3,745,664	3,662,021	3,944,914	5,028,310	9,151,023	15,340,275	18,120,456
Goliad	257,392	338,849	350,352	285,740	254,109	235,064	207,472	219,962	261,850	216,998
Gonzales	210,832	214,113	221,158	217,769	221,683	196,423	1,223,681	9,002,395	23,949,847	41,689,670
Gray	1,379,195	1,291,342	1,211,442	1,174,159	1,156,316	1,059,878	1,056,072	1,050,084	1,057,952	1,041,242
Grayson	1,323,589	1,465,626	1,360,418	1,157,916	1,143,374	1,030,855	1,018,501	1,344,430	1,722,392	1,580,791
Gregg	2,827,197	2,743,152	2,706,714	2,512,437	2,434,518	2,253,771	2,231,600	2,271,651	2,227,888	2,240,718
Grimes	198,542	122,461	103,236	99,212	116,991	129,564	233,316	538,988	773,025	905,953
Guadalupe	1,054,386	1,489,239	1,417,201	1,209,594	1,147,352	1,055,462	998,786	988,561	994,309	966,646
Hale	2,975,071	2,792,260	2,088,353	2,799,959	2,806,339	2,510,105	2,346,528	2,185,795	1,936,924	1,702,868
Hall	-	-	-	-	-	-	-	-	-	-
Hamilton	294	1,353	700	389	370	907	1,383	883	819	972
Hansford	165,470	141,729	134,122	134,750	207,855	312,496	315,483	258,202	257,240	190,627
Hardeman	2,080,157	1,832,337	1,486,012	1,252,722	1,205,321	1,026,018	906,065	821,096	882,491	848,826
Hardin	1,335,469	1,251,500	1,304,157	1,327,812	1,551,035	1,220,432	1,184,977	1,094,339	1,262,425	1,300,066
Harris	1,654,802	1,620,619	1,603,839	1,508,740	1,409,343	1,302,468	1,178,701	1,161,882	1,226,139	1,204,077
Harrison	465,617	460,813	455,113	405,805	373,509	333,108	322,072	314,733	322,551	325,032

County	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Hartley	229,971	212,585	174,568	207,034	212,169	224,788	388,920	350,157	324,161	356,434
Haskell	399,973	350,044	328,340	311,158	306,941	313,832	366,110	396,484	461,027	514,452
Hays	-	-	-	-	-	-	-	-	-	-
Hemphill	185,573	175,056	164,529	220,613	236,578	165,046	208,578	346,072	713,446	982,716
Henderson	693,515	576,748	445,190	397,781	315,710	280,374	261,970	243,615	225,108	225,331
Hidalgo	48,160	58,971	56,402	102,280	76,997	68,711	51,189	36,329	21,018	26,957
Hill	54	2	-	-	474	1,253	1,351	1,132	649	44
Hockley	20,675,978	20,025,211	19,597,778	18,991,981	18,417,641	17,473,817	16,499,105	15,876,866	15,434,565	14,908,132
Hood	-	-	1,013	670	695	2,854	401	78	33	269
Hopkins	400,898	361,805	290,423	255,521	220,129	263,862	279,850	253,434	258,306	227,099
Houston	648,088	745,478	710,812	716,386	712,465	755,495	680,902	757,887	967,694	934,047
Howard	6,319,541	6,061,156	5,686,849	5,524,116	5,495,763	5,497,993	6,120,701	7,708,796	9,677,240	11,172,447
Hudspeth	-	-	-	-	-	-	-	-	-	-
Hunt	-	-	-	-	-	-	-	-	-	123
Hutchinson	887,524	845,933	775,894	830,642	848,799	808,321	767,111	738,649	741,060	695,990
Irion	1,467,254	1,436,439	1,578,957	1,944,470	2,500,813	2,382,823	2,434,098	3,487,535	6,218,645	10,045,908
Jack	616,800	575,015	556,372	616,383	707,033	689,631	767,293	924,365	1,511,303	1,365,966
Jackson	874,558	772,366	754,298	674,408	730,550	693,162	702,867	675,100	661,115	721,171
Jasper	280,395	188,818	244,444	302,226	367,853	539,189	391,737	247,368	211,367	181,442
Jeff Davis	-	-	-	-	-	-	-	-	-	-
Jefferson	713,771	845,467	841,452	1,091,536	898,918	893,564	893,841	827,061	782,859	859,783
Jim Hogg	59,456	59,177	56,734	48,498	44,063	33,745	27,033	26,688	28,653	31,167
Jim Wells	152,025	156,072	128,064	120,739	138,578	143,347	126,621	103,360	105,108	121,672
Johnson	-	-	-	-	-	-	-	-	-	-
Jones	749,704	847,408	880,289	769,718	765,969	759,006	713,782	706,080	697,661	688,187
Karnes	269,465	288,215	286,035	275,144	243,888	318,972	1,913,101	13,052,383	39,951,583	59,287,873
Kaufman	63,016	55,729	68,091	60,955	62,897	91,549	99,773	87,947	97,774	97,333
Kendall	-	-	-	-	-	-	-	-	-	-
Kenedy	122,357	104,937	97,699	79,237	60,211	54,730	72,751	51,808	60,605	72,753
Kent	6,059,412	4,940,322	4,537,768	4,377,012	4,017,331	3,989,926	4,287,308	4,396,536	4,136,384	3,953,585
Kerr	646	1,039	-	-	-	-	-	-	-	-
Kimble	543	477	455	400	340	358	371	352	288	264
King	2,209,993	2,055,985	2,243,357	2,040,080	1,959,367	1,847,583	1,547,202	1,405,274	1,373,907	1,301,509
Kinney	-	-	-	-	-	-	-	-	-	-
Kleberg	51,432	54,192	37,518	36,843	40,079	95,705	159,181	323,920	364,724	239,192
Knox	275,333	237,393	231,107	222,528	223,425	195,135	183,105	182,173	204,544	281,790
La Salle	119,748	125,615	154,863	149,025	165,351	117,298	675,199	6,373,979	21,875,921	43,734,671
Lamar	-	-	-	-	-	-	-	-	-	-
Lamb	1,393,641	858,831	673,503	575,142	684,145	564,608	457,315	437,838	386,744	336,539
Lampasas	-	-	-	-	-	-	-	-	-	-
Lavaca	152,343	140,952	147,097	153,671	171,588	143,391	107,374	402,472	1,727,226	3,906,595
Lee	1,486,338	1,635,132	1,376,393	1,141,156	1,126,861	1,114,402	1,062,116	1,027,985	1,204,338	1,067,954
Leon	844,465	959,823	911,554	766,453	627,646	551,242	505,079	847,052	1,535,287	1,501,488
Liberty	1,470,098	1,435,292	2,043,723	2,092,813	1,647,965	1,452,962	1,381,059	1,289,906	1,221,178	1,249,841
Limestone	100,925	91,436	90,399	88,502	89,999	86,894	84,068	82,313	85,053	82,432
Lipscomb	316,041	413,300	884,129	1,177,334	1,584,096	1,525,731	1,446,958	2,109,282	2,728,573	2,203,473
Live Oak	397,232	441,122	492,302	522,363	481,500	418,649	407,857	3,875,142	6,432,274	8,758,980
Llano	-	-	-	-	-	-	-	-	-	-
Loving	1,020,815	997,809	1,074,491	1,200,728	1,403,057	1,374,566	1,677,691	2,582,483	4,631,760	5,775,349
Lubbock	1,608,702	1,580,653	1,919,233	1,458,502	1,414,422	1,449,474	1,505,116	1,478,917	1,434,221	1,381,157
Lynn	152,567	190,448	192,428	263,430	268,476	266,713	253,245	366,381	604,625	705,678
Madison	397,892	500,004	529,976	526,659	471,334	602,569	1,067,254	1,760,529	3,024,561	2,857,125

County	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Marion	128,657	123,976	129,340	125,611	142,180	108,369	105,386	109,445	112,825	107,134
Martin	4,847,056	5,173,566	5,541,039	6,437,468	9,199,412	10,525,574	12,555,699	17,307,372	22,801,484	26,865,396
Mason	-	-	-	-	-	-	-	-	-	-
Matagorda	619,513	527,464	451,802	374,046	347,868	331,112	401,385	365,531	331,247	253,484
Maverick	1,019,893	1,183,976	1,771,669	1,727,186	1,952,546	1,477,017	1,091,225	1,032,934	898,813	860,420
McCulloch	125,209	91,626	75,194	67,747	61,602	67,259	59,891	53,449	48,838	47,500
McLennan	1,891	1,858	1,379	1,230	1,444	1,297	1,008	1,357	1,370	821
McMullen	978,835	1,071,514	1,149,438	1,216,416	1,398,193	1,356,838	1,656,595	3,792,660	12,956,123	26,634,138
Medina	82,469	85,587	90,168	85,696	86,911	100,012	99,964	105,969	129,303	150,391
Menard	137,686	123,382	111,300	115,059	147,853	143,692	143,566	197,568	231,282	191,773
Midland	10,777,957	10,292,589	10,371,355	10,803,919	11,180,606	12,873,086	14,515,578	18,279,061	22,409,465	23,880,064
Milam	566,568	511,592	426,704	411,406	404,094	362,158	399,742	454,553	667,031	673,772
Mills	-	-	-	-	-	-	-	-	-	-
Mitchell	2,977,659	3,171,403	3,264,629	3,367,605	3,754,752	3,874,784	3,984,873	4,023,969	4,160,125	4,183,986
Montague	1,519,854	1,458,047	1,556,999	1,675,647	1,988,577	2,065,210	2,899,877	4,954,953	3,688,448	2,547,574
Montgomery	861,757	756,271	742,523	862,229	1,121,522	1,176,480	1,069,870	1,082,539	1,002,756	984,329
Moore	245,834	313,898	278,862	321,268	335,746	310,843	276,111	270,974	301,140	284,157
Morris	2,154	2,218	2,012	1,747	1,887	1,778	1,399	1,555	1,385	1,292
Motley	59,269	45,187	39,953	31,201	29,124	30,623	31,285	28,080	23,390	18,658
Nacogdoches	3,852	4,502	6,725	8,627	8,148	7,837	6,278	5,063	4,756	4,173
Navarro	313,404	267,070	296,933	311,009	356,788	353,391	306,711	319,028	331,084	305,713
Newton	636,423	615,837	926,088	834,785	723,376	595,098	539,557	534,783	504,574	474,009
Nolan	1,396,910	1,313,766	1,177,138	1,162,336	1,304,179	1,146,114	1,170,796	1,531,920	1,714,889	1,799,233
Nueces	577,729	533,282	512,538	423,101	448,745	464,101	496,395	522,369	432,529	374,185
Ochiltree	822,984	846,034	939,168	1,198,999	1,619,984	1,951,965	3,268,418	4,549,735	5,724,965	6,004,148
Oldham	87,808	70,749	70,949	150,214	225,456	212,783	213,481	190,432	795,319	1,723,327
Orange	372,948	335,962	368,080	629,123	505,324	464,103	471,983	552,721	599,869	560,153
Palo Pinto	389,704	229,093	170,356	155,003	422,887	557,253	379,466	272,375	276,126	461,036
Panola	425,205	384,780	421,886	377,772	359,059	332,397	301,616	300,826	460,781	459,596
Parker	5,282	15,745	12,523	10,399	17,323	12,739	8,173	5,602	5,441	5,201
Parmer	-	-	-	-	-	-	-	-	-	-
Pecos	9,570,873	11,113,842	11,636,627	11,953,764	12,249,344	11,775,695	10,825,745	9,918,241	9,681,997	9,598,552
Polk	598,411	547,816	535,941	476,084	517,473	544,622	530,204	579,464	673,545	684,941
Potter	150,566	146,315	179,481	186,590	208,385	168,752	152,254	163,159	178,701	188,861
Presidio	-	-	-	-	-	-	-	-	-	-
Rains	-	-	-	-	-	-	-	-	-	-
Randall	-	-	-	-	-	-	-	-	-	-
Reagan	4,958,802	5,128,601	5,437,817	5,629,376	5,995,142	6,322,776	7,965,877	9,161,840	11,313,931	15,064,555
Real	9,292	3,644	2,756	1,723	1,193	202	466	333	550	353
Red River	205,728	167,655	142,288	137,239	137,235	114,535	96,716	104,838	108,963	114,003
Reeves	718,147	808,429	863,947	862,940	985,872	1,107,606	1,557,652	3,760,329	7,796,802	9,420,833
Refugio	5,396,283	4,904,959	4,292,988	3,700,009	3,375,232	3,511,328	3,736,683	3,516,086	3,299,097	3,271,660
Roberts	382,249	545,988	687,387	550,620	649,938	608,902	631,247	988,691	1,695,842	2,054,651
Robertson	1,279,063	1,097,705	957,497	912,170	1,407,566	1,246,736	1,185,502	1,240,558	1,554,314	1,971,238
Rockwall	-	-	-	-	-	-	-	-	-	-
Runnels	448,562	467,412	681,471	678,099	675,238	570,805	525,645	487,083	509,873	535,457
Rusk	2,570,560	2,376,668	2,192,162	2,192,953	2,136,426	2,015,700	1,894,604	1,855,553	1,884,110	1,934,686
Sabine	8,066	5,246	9,271	5,985	5,015	4,137	12,151	5,240	7,143	5,677
San Augustine	10,843	5,693	6,467	8,725	51,433	32,401	76,430	67,184	30,712	18,347
San Jacinto	49,297	39,639	37,014	38,740	29,683	32,524	38,923	85,616	138,358	133,505
San Patricio	471,322	458,599	429,701	435,422	404,877	360,739	405,412	446,914	415,957	425,775
San Saba	-	-	-	-	-	-	-	-	-	-

County	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Schleicher	410,500	360,900	340,149	376,358	387,729	389,041	374,646	404,410	429,950	429,503
Scurry	14,507,838	16,299,908	15,777,260	14,767,804	14,907,793	15,410,569	14,702,277	14,535,345	15,040,999	15,553,740
Shackelford	787,682	713,718	670,661	670,037	701,749	709,318	687,272	682,621	638,765	613,887
Shelby	56,189	64,144	89,331	141,799	142,520	380,508	408,263	132,367	75,666	58,865
Sherman	111,768	103,727	100,396	92,571	94,491	76,275	63,362	54,135	54,958	62,686
Smith	1,327,764	1,210,834	1,247,558	1,238,759	1,203,137	1,157,648	1,163,723	1,082,103	1,310,300	1,302,568
Somervell	-	-	-	-	-	-	-	-	-	-
Starr	595,050	611,862	524,205	462,798	392,963	347,229	332,883	366,583	348,962	316,842
Stephens	2,293,602	2,286,886	2,236,717	2,255,864	2,292,677	2,208,886	2,117,300	2,116,803	2,101,240	2,156,021
Sterling	985,198	1,178,957	1,111,554	1,169,085	1,044,792	1,145,195	1,054,006	1,050,351	1,182,979	1,236,028
Stonewall	1,199,438	1,037,139	1,004,557	895,362	967,315	999,962	1,069,876	1,199,214	1,694,316	1,821,239
Sutton	12,701	15,254	14,285	12,845	13,266	16,084	34,002	42,864	140,320	105,622
Swisher	-	-	-	-	-	-	-	-	-	-
Tarrant	-	-	-	-	-	-	-	-	-	-
Taylor	555,723	535,902	509,696	479,961	456,968	393,693	409,441	413,952	393,589	412,005
Terrell	25,468	31,829	21,475	17,106	15,564	15,719	13,570	11,168	9,143	5,721
Terry	4,372,891	4,182,640	4,085,105	4,009,524	4,275,362	4,298,098	4,470,402	4,273,616	4,187,842	4,374,674
Throckmorton	917,688	849,655	796,323	705,923	666,119	586,921	551,900	575,370	634,628	746,066
Titus	501,834	503,931	489,633	453,910	483,075	453,356	442,757	438,205	466,555	557,237
Tom Green	413,247	488,610	589,867	612,449	630,877	665,924	525,947	451,481	458,875	453,438
Travis	866	1,450	1,773	1,881	1,909	1,814	2,061	4,177	3,403	2,999
Trinity	80,392	88,376	83,045	61,033	72,175	73,472	65,166	67,053	56,226	48,892
Tyler	289,384	298,807	310,387	265,302	303,288	303,715	310,355	323,281	386,196	506,282
Upshur	153,940	150,026	152,307	156,005	139,765	133,846	130,039	131,383	126,265	123,306
Upton	7,550,607	9,491,563	10,161,210	11,638,346	14,175,179	14,986,478	16,464,920	19,109,326	23,343,568	25,883,463
Uvalde	-	-	-	-	-	-	-	-	-	-
Val Verde	142	1,497	1,732	1,173	1,128	939	829	850	663	1,583
Van Zandt	1,008,150	936,981	827,760	764,062	713,736	637,845	564,226	508,040	505,483	546,770
Victoria	708,436	653,783	674,831	650,547	738,643	649,678	617,857	564,468	534,660	584,360
Walker	2,991	3,084	3,082	1,967	1,801	1,731	1,650	1,677	2,227	65,923
Waller	1,446,763	1,136,987	980,172	787,053	589,260	471,371	469,283	404,031	451,895	395,078
Ward	4,413,186	4,679,176	5,305,854	5,847,319	7,585,404	8,783,148	10,377,496	13,753,740	19,030,166	20,908,020
Washington	544,434	465,604	409,505	379,045	338,925	288,732	319,548	286,915	287,625	299,025
Webb	158,045	162,130	149,447	126,237	123,443	116,787	113,782	122,296	245,275	342,493
Wharton	1,249,529	1,253,897	1,215,704	1,181,711	1,110,055	1,057,560	1,001,585	1,080,559	1,151,439	1,306,956
Wheeler	343,623	355,081	355,314	331,951	465,880	1,220,316	1,559,597	2,798,371	4,885,937	3,862,910
Wichita	2,157,374	2,141,426	2,123,375	2,052,621	2,128,379	2,252,077	2,280,389	2,192,897	2,177,753	2,085,308
Wilbarger	637,542	744,924	807,046	731,526	705,767	655,437	668,539	790,379	749,591	788,344
Willacy	556,583	489,836	425,933	445,880	392,828	382,714	339,712	338,318	306,100	292,466
Williamson	7,881	8,966	8,415	8,186	14,985	10,216	9,648	9,442	7,662	11,335
Wilson	282,438	284,579	292,076	273,776	283,177	233,273	297,236	1,342,474	2,597,423	3,858,109
Winkler	3,578,601	3,598,532	4,256,235	3,895,870	3,688,984	3,546,616	3,230,329	3,240,035	3,668,903	4,254,139
Wise	350,425	398,312	435,788	445,433	500,791	413,930	329,582	282,287	264,416	317,419
Wood	4,585,311	4,345,030	4,281,556	3,924,316	3,562,633	3,136,424	3,339,081	3,219,922	3,495,377	3,456,922
Yoakum	25,209,340	25,505,871	25,039,907	23,730,647	23,555,303	22,501,822	22,280,157	21,329,030	21,342,027	21,799,145
Young	1,342,443	1,260,297	1,274,764	1,236,565	1,349,366	1,287,711	1,213,591	1,160,460	1,233,750	1,243,490
Zapata	34,470	34,061	37,229	45,336	34,043	18,882	22,309	27,285	34,661	95,098
Zavala	581,352	866,139	782,355	1,061,133	721,072	463,360	432,191	818,902	2,930,063	4,686,196

Table 27. Gas Production (MCF) per County.

County	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Anderson	7,197,649	7,381,273	7,288,546	8,443,961	7,190,167	6,431,379	4,996,766	5,020,880	3,830,452	3,035,990
Andrews	1,682,591	1,525,041	1,709,325	1,676,288	1,527,775	1,905,578	1,847,036	1,375,745	949,512	716,799
Angelina	1,068,995	1,382,589	3,653,654	7,651,838	13,946,279	15,670,088	10,873,387	7,996,797	11,309,595	9,134,648
Aransas	7,930,110	5,333,140	8,354,928	13,769,922	11,650,062	10,886,436	6,757,334	5,269,523	5,046,435	5,409,744
Archer	-	-	14,914	18,910	22,444	20,790	17,057	16,000	13,915	10,413
Armstrong	-	-	-	-	-	-	-	-	-	-
Atascosa	6,272,003	5,787,756	6,406,015	6,435,328	5,975,387	5,569,848	5,109,896	3,921,756	3,534,824	3,765,265
Austin	16,199,561	13,653,064	10,874,223	9,360,075	7,915,511	6,651,169	5,946,314	5,385,110	4,351,065	3,790,278
Bailey	-	-	-	-	-	-	-	-	-	-
Bandera	-	-	-	-	-	-	153,703	71,204	51,063	33,637
Bastrop	231,116	196,070	186,597	172,993	158,153	139,046	130,746	120,284	116,499	100,201
Baylor	-	-	-	-	-	-	-	-	-	-
Bee	33,020,046	36,282,115	34,593,787	38,990,787	39,751,358	32,587,860	26,853,353	25,324,937	22,305,289	20,906,358
Bell	-	-	-	-	-	-	-	-	-	-
Bexar	20	-	-	-	-	-	-	-	-	-
Blanco	-	-	-	-	-	-	-	-	-	-
Borden	91	-	-	-	-	-	-	-	-	-
Bosque	-	-	38,015	183,693	233,853	345,161	172,989	81,361	4,358	-
Bowie	280,858	248,848	216,378	124,141	137,807	133,008	118,563	127,884	100,703	101,506
Brazoria	46,503,613	43,315,732	31,334,965	27,563,140	29,780,925	25,861,083	26,393,515	20,666,543	14,899,078	12,144,015
Brazos	7,353,609	6,490,506	6,949,970	6,990,544	5,681,359	5,670,106	5,164,814	3,359,148	2,522,705	2,237,045
Brewster	-	-	-	-	-	-	-	-	-	-
Briscoe	-	-	-	-	-	-	-	-	-	-
Brooks	88,633,100	79,484,848	66,704,191	57,273,045	50,397,016	46,181,585	38,139,291	36,055,051	30,382,134	27,539,240
Brown	1,253,137	1,202,116	1,079,827	1,072,323	1,055,437	1,012,913	984,277	914,400	837,256	779,784
Burleson	2,934,801	3,457,146	3,290,926	3,218,579	2,663,236	2,336,315	2,051,279	1,776,703	1,528,942	1,230,437
Burnet	16,089	10,192	9,739	11,950	11,206	10,614	11,158	10,008	11,093	9,516
Caldwell	-	-	-	-	-	-	-	-	-	-
Calhoun	9,547,720	10,866,298	10,082,254	12,069,105	12,756,714	10,153,671	6,557,176	4,922,773	4,281,149	4,318,560
Callahan	672,594	651,222	637,245	702,318	836,183	894,403	845,722	698,798	611,387	557,229
Cameron	273,368	189,060	167,117	102,645	101,298	133,773	133,086	1,025,290	993,125	463,122
Camp	896,592	918,450	1,031,781	862,945	691,569	549,638	328,315	504,399	337,690	506,723
Carson	20,836,784	17,662,353	16,372,853	15,629,421	14,950,058	13,356,913	11,517,303	12,098,447	12,024,263	11,539,423
Cass	3,643,819	3,106,673	2,241,137	2,028,319	1,472,554	1,166,418	743,253	697,870	556,439	726,008
Castro	-	-	-	-	-	-	-	-	-	-
Chambers	24,366,025	18,817,503	16,465,629	10,813,333	9,079,570	8,681,537	8,800,664	4,492,492	4,093,219	3,748,417
Cherokee	14,479,038	14,671,236	15,774,125	20,417,884	28,212,323	31,054,049	25,496,341	22,835,851	19,948,308	17,401,684
Childress	-	-	-	-	-	-	-	-	-	-
Clay	257,098	288,028	283,441	265,054	283,921	342,371	344,524	262,676	138,667	108,697
Cochran	274,255	242,604	232,528	257,555	246,317	220,488	210,133	204,276	202,857	145,950
Coke	793,412	785,817	777,486	703,962	634,350	578,796	388,538	308,703	250,905	229,733
Coleman	1,347,717	1,312,843	1,238,453	1,081,660	963,903	863,120	862,132	792,257	721,831	663,356
Collin	-	-	-	-	-	-	-	-	-	-
Collingsworth	1,381,419	1,296,818	1,281,584	1,250,794	1,297,071	1,207,605	1,207,894	1,208,750	1,169,963	1,134,582
Colorado	20,654,543	22,805,014	30,253,901	26,871,184	22,694,629	20,132,320	17,450,873	18,057,269	15,940,343	14,001,141
Comal	-	-	-	-	-	-	-	-	-	-
Comanche	649,508	644,434	627,147	573,659	572,232	500,455	543,361	490,506	539,522	488,070
Concho	567,001	602,863	818,973	1,082,124	900,494	684,177	569,648	461,469	381,857	327,134
Cooke	364,987	663,326	857,331	425,098	537,141	623,002	1,070,801	2,998,566	6,257,544	9,266,455
Coryell	-	-	-	-	-	-	-	-	-	-

County	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Cottle	4,629,302	4,929,499	5,588,788	6,479,894	6,877,754	6,383,289	4,883,658	3,622,776	3,829,431	3,546,254
Crane	12,188,097	12,231,989	12,485,500	12,831,176	12,410,884	10,832,637	9,302,128	9,288,539	8,440,872	6,151,161
Crockett	112,679,888	113,267,266	109,539,760	102,357,885	102,689,623	98,075,694	89,849,865	78,748,381	69,556,113	62,834,697
Crosby	-	-	-	-	-	-	-	-	-	-
Culberson	1,267,460	1,616,667	1,287,255	1,331,489	4,244,342	5,589,279	4,249,582	4,766,550	9,645,754	17,305,110
Dallam	-	-	-	-	-	-	-	-	-	-
Dallas	-	-	-	-	3,285,453	4,443,049	6,313,239	11,525,104	7,205,063	6,968,268
Dawson	-	-	-	-	-	-	-	-	-	-
Deaf Smith	-	-	-	-	-	-	-	-	-	-
Delta	-	-	-	-	-	-	-	-	-	-
Denton	142,151,436	153,234,903	163,359,966	177,254,956	211,284,122	234,325,596	230,408,729	260,057,199	251,237,160	225,778,180
DeWitt	17,879,782	30,027,340	38,236,179	38,586,032	51,113,399	53,274,983	45,349,850	88,835,015	140,632,102	128,820,753
Dickens	-	-	-	-	-	-	-	-	-	-
Dimmit	2,816,429	2,571,372	2,640,637	2,716,886	2,767,248	2,979,786	11,621,556	39,488,942	86,152,300	148,704,383
Donley	17,526	16,774	16,868	18,429	15,253	14,243	14,669	14,285	12,232	11,406
Duval	75,473,312	66,646,418	58,737,749	70,027,558	71,364,078	52,907,701	40,794,562	28,389,817	20,978,737	17,523,799
Eastland	3,820,411	3,879,055	3,844,434	4,288,997	4,442,200	3,883,438	3,550,934	3,203,054	2,916,973	2,631,642
Ector	18,328,990	14,215,564	12,347,992	10,541,403	9,332,192	8,056,178	7,171,988	6,429,651	5,497,809	4,386,915
Edwards	17,875,265	18,372,891	19,221,272	17,200,731	16,793,798	13,611,108	12,709,062	10,932,254	9,686,828	8,553,584
El Paso	-	-	-	-	-	-	-	-	-	-
Ellis	-	51,310	50,741	2,505,381	5,938,923	7,355,645	11,628,227	9,880,878	8,704,686	6,188,362
Erath	1,971,400	2,040,633	3,962,251	5,702,060	9,872,147	10,381,411	8,006,642	6,852,032	6,034,996	5,062,735
Falls	101	-	-	-	-	-	-	-	-	-
Fannin	-	-	-	-	-	-	-	-	-	-
Fayette	15,839,342	13,300,314	11,814,289	10,736,622	10,227,835	9,696,881	9,300,417	8,390,804	8,970,160	11,147,267
Fisher	67,780	62,536	78,758	243,866	222,908	172,082	171,580	112,645	89,403	73,977
Floyd	-	-	-	-	-	-	-	-	-	-
Foard	1,227,201	916,222	740,516	812,418	427,274	111,832	121,795	211,560	153,070	144,982
Fort Bend	48,172,504	43,937,022	33,507,944	29,163,095	21,763,589	15,297,992	12,202,146	11,136,441	10,725,872	9,601,811
Franklin	3,708,653	3,347,911	3,325,887	3,174,842	3,148,373	2,661,850	1,321,795	1,527,032	2,012,740	1,880,317
Freestone	281,850,599	276,498,476	273,580,825	268,974,502	287,654,115	284,112,494	264,518,212	240,246,971	206,579,206	174,148,692
Frio	807,993	791,569	779,153	834,767	1,162,643	1,236,933	1,272,894	1,418,184	1,358,906	2,538,733
Gaines	12,866,794	12,473,429	15,860,601	14,791,131	14,934,475	13,846,904	12,027,278	9,492,146	7,756,406	6,712,296
Galveston	18,605,459	12,991,701	11,700,160	13,793,925	13,939,075	12,615,288	8,328,118	5,968,316	5,098,985	3,925,496
Garza	-	-	-	-	-	-	-	-	-	-
Gillespie	-	-	-	-	-	-	-	-	-	-
Glasscock	1,934,847	1,744,314	1,682,838	1,601,891	1,389,514	1,238,947	1,001,480	802,756	715,614	853,930
Goliad	48,357,851	71,364,674	83,882,407	64,331,611	51,686,730	35,952,474	28,208,944	21,914,510	15,336,925	11,028,551
Gonzales	1,368,959	1,096,736	1,079,842	1,011,772	924,601	800,134	739,107	716,016	653,162	496,727
Gray	11,689,412	10,430,417	10,840,414	10,699,230	9,693,538	8,958,547	8,105,592	7,794,721	7,353,256	6,811,174
Grayson	2,337,676	1,914,122	1,774,719	1,656,549	1,629,470	1,681,050	2,074,892	2,084,522	2,490,428	2,028,676
Gregg	60,916,542	65,370,510	58,679,361	56,616,182	56,853,598	51,869,422	46,750,609	39,439,529	36,568,364	32,533,287
Grimes	21,509,022	20,022,451	19,254,450	18,888,111	24,957,406	23,277,595	18,100,066	15,133,217	13,783,754	10,575,714
Guadalupe	11,047	9,719	10,593	11,736	10,286	5,489	84	-	-	-
Hale	-	-	-	-	-	-	-	-	-	-
Hall	-	-	-	-	-	-	-	-	-	-
Hamilton	157,576	166,955	158,483	160,433	157,595	167,428	135,107	142,606	143,209	114,841
Hansford	28,252,432	25,175,604	25,284,375	22,074,635	21,261,881	20,042,576	18,083,419	15,815,029	14,701,918	13,126,010
Hardeman	107,416	50,662	24,153	15,612	28,220	2,736	59	-	-	-
Hardin	11,403,865	8,847,854	12,125,001	13,517,185	18,441,834	16,971,639	12,130,862	9,364,124	10,596,252	7,682,462
Harris	33,707,515	31,163,312	23,716,549	21,933,067	23,360,192	24,563,059	21,578,327	19,537,879	16,282,451	14,475,957
Harrison	63,014,857	76,828,526	97,786,719	124,473,451	144,458,362	155,075,963	173,500,484	179,037,998	154,956,742	136,548,998

County	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Hartley	2,514,309	2,392,328	2,541,730	2,277,749	2,147,925	1,999,345	1,922,687	1,807,114	1,659,425	1,525,815
Haskell	327	171	-	-	-	-	-	-	-	-
Hays	-	-	-	-	-	-	-	-	-	-
Hemphill	94,480,287	107,840,121	118,374,634	124,410,329	143,595,173	151,884,250	144,740,380	185,681,723	179,766,912	155,457,269
Henderson	18,151,178	23,391,447	23,109,579	21,639,228	22,116,115	22,107,947	18,291,305	15,570,571	13,486,509	11,454,454
Hidalgo	237,280,204	213,367,267	210,604,601	249,385,154	248,108,466	188,569,533	154,604,139	124,380,792	105,574,064	99,062,096
Hill	-	3,624	3,832,004	10,744,805	24,116,870	31,072,335	26,625,003	24,209,267	18,984,989	15,733,447
Hockley	128,518	117,056	104,713	97,384	94,383	74,239	79,847	89,380	80,799	55,069
Hood	779,602	5,693,050	17,050,097	39,517,651	65,781,373	69,747,083	62,983,078	58,101,713	54,583,248	50,453,806
Hopkins	1,234,282	1,087,310	845,908	344,385	421,332	326,756	184,321	225,318	196,619	184,186
Houston	4,731,430	11,582,141	9,735,558	11,248,907	10,095,520	8,680,313	7,377,588	6,792,308	6,763,505	6,835,017
Howard	1,099,774	846,110	805,984	639,363	545,925	498,046	413,729	382,780	359,025	300,513
Hudspeth	-	-	19,587	25,262	2,676	-	-	-	-	-
Hunt	-	-	-	-	-	-	-	-	-	-
Hutchinson	10,556,716	10,329,775	10,854,968	10,005,650	10,070,093	9,632,626	8,757,940	7,997,895	7,322,998	6,384,696
Irion	2,968,250	3,447,265	5,586,495	6,622,242	4,599,299	3,429,774	2,977,444	2,583,720	2,250,687	2,397,145
Jack	12,553,564	12,724,483	14,130,433	17,900,231	18,155,465	15,866,010	13,821,179	12,845,642	11,880,960	11,619,512
Jackson	21,279,568	25,507,011	28,408,270	18,884,186	17,494,724	17,292,274	13,075,198	9,228,040	6,912,943	6,304,433
Jasper	11,149,487	8,570,155	6,017,627	10,360,973	15,155,302	19,564,263	17,586,075	22,400,978	20,381,705	11,025,014
Jeff Davis	-	-	-	-	-	-	-	-	-	-
Jefferson	29,466,732	42,130,750	41,900,051	61,411,318	62,112,443	70,067,522	115,500,962	59,140,932	40,984,976	25,384,285
Jim Hogg	28,276,507	27,685,912	30,133,215	22,376,320	18,265,738	14,800,412	12,589,884	10,162,887	8,883,252	7,733,419
Jim Wells	9,597,862	9,104,564	7,478,886	6,227,234	6,462,459	6,282,278	5,749,030	4,413,081	3,861,474	3,919,405
Johnson	14,919,046	65,650,054	172,222,980	331,142,275	513,666,325	555,636,493	530,660,116	534,236,000	476,697,556	391,407,215
Jones	23,820	41,929	24,175	19,222	24,101	19,076	15,961	13,884	53,723	37,881
Karnes	9,309,573	7,945,040	6,089,080	7,426,244	10,530,395	10,306,563	17,184,358	38,601,328	65,406,044	105,235,338
Kaufman	-	-	-	-	-	-	-	-	-	-
Kendall	-	-	-	-	-	-	-	-	-	-
Kenedy	68,762,511	49,599,321	45,096,577	50,216,109	51,152,035	53,365,922	47,380,132	38,826,506	27,896,975	20,416,259
Kent	-	-	-	-	-	-	-	-	-	-
Kerr	-	-	-	-	-	-	-	-	-	-
Kimble	496,429	320,242	163,521	136,276	90,816	72,759	61,229	52,678	48,560	34,948
King	2,054,394	2,050,383	1,340,201	1,199,192	768,809	486,238	459,820	567,565	438,203	368,189
Kinney	-	-	-	-	-	-	-	-	-	-
Kleberg	34,520,307	28,567,343	31,590,779	34,627,960	37,357,380	24,171,721	17,504,565	18,860,184	17,833,799	15,069,202
Knox	-	-	-	-	-	-	-	-	-	-
La Salle	12,417,477	14,257,128	14,980,030	14,664,591	13,885,440	23,363,584	39,447,278	61,134,120	93,698,950	125,625,381
Lamar	-	-	-	-	-	-	-	-	-	-
Lamb	-	-	-	-	-	-	-	-	-	-
Lampasas	-	-	580	843	-	-	-	-	42,115	6,922
Lavaca	86,846,220	66,198,497	67,725,556	71,695,320	68,317,499	51,345,250	41,149,321	33,824,807	28,389,243	26,019,755
Lee	3,005,796	3,311,986	3,011,905	2,450,807	2,236,789	1,913,967	1,726,701	1,509,431	1,340,746	1,176,062
Leon	25,634,931	43,264,526	55,384,168	65,354,714	78,106,126	88,813,829	123,336,626	120,548,472	85,730,056	77,446,909
Liberty	59,624,926	69,900,494	66,666,700	49,434,836	45,510,622	33,891,210	29,147,854	30,411,043	24,972,919	19,936,726
Limestone	60,424,097	73,818,510	79,746,471	93,944,621	103,395,280	101,476,642	90,907,945	92,456,795	75,885,840	61,458,692
Lipscomb	39,057,024	47,150,149	51,052,816	56,850,181	62,686,090	63,762,469	53,755,091	56,033,919	55,485,576	47,168,974
Live Oak	25,622,174	22,861,009	23,203,803	23,567,131	24,063,589	23,155,036	33,100,030	39,263,102	57,981,012	77,836,663
Llano	-	-	-	-	-	-	-	-	-	-
Loving	34,631,981	64,098,730	91,166,685	122,576,048	105,749,384	103,131,145	77,450,201	53,344,422	41,295,677	44,014,240
Lubbock	-	-	-	-	-	-	-	-	-	-
Lynn	-	-	-	-	-	-	-	-	-	-
Madison	8,692,676	7,600,918	7,733,898	7,847,494	5,930,450	5,020,871	4,377,455	3,777,815	4,842,387	3,769,715

County	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Marion	4,796,210	4,838,906	4,485,976	3,767,446	3,553,117	4,044,011	3,355,066	3,210,843	2,644,166	2,325,485
Martin	51,806	28,827	25,060	30,078	26,234	23,688	21,247	20,299	18,723	14,295
Mason	-	-	-	-	-	-	-	-	-	-
Matagorda	26,106,080	30,236,264	39,996,640	36,290,028	45,864,806	39,938,139	28,662,252	25,692,770	22,220,065	19,561,790
Maverick	5,754,220	4,932,442	3,462,383	2,909,732	2,866,576	2,298,235	2,867,815	3,180,145	3,072,460	3,484,562
McCulloch	47,700	21,210	20,771	10,360	8,265	4,338	4,139	1,479	48	-
McLennan	-	-	-	-	-	-	-	-	-	-
McMullen	46,159,794	56,215,615	38,450,722	25,931,603	20,889,692	20,811,124	26,078,038	46,969,197	65,361,688	87,644,947
Medina	-	10,501	94,959	159,769	137,994	141,393	93,114	76,845	62,007	52,133
Menard	24,527	72,968	56,511	42,293	25,882	16,879	10,890	96,473	96,434	131,613
Midland	19,678,115	18,084,759	15,300,282	15,134,477	13,078,233	12,395,022	10,182,405	9,985,971	8,262,900	7,187,019
Milam	25,708	32,313	24,047	16,440	13,835	73,783	79,325	66,050	99,687	58,745
Mills	16,382	15,959	8,710	7,972	8,179	7,435	8,211	6,440	3,278	4,244
Mitchell	-	-	-	-	-	-	-	-	-	-
Montague	292,597	289,314	304,584	264,702	362,520	512,981	1,694,184	8,513,488	23,337,793	34,330,386
Montgomery	12,768,939	10,651,124	10,091,777	8,471,761	6,561,413	7,132,004	6,482,994	5,447,320	4,893,822	4,655,221
Moore	46,043,763	40,897,372	39,720,060	35,713,809	35,302,119	32,390,510	29,848,737	28,056,365	29,837,341	27,745,220
Morris	-	-	-	-	-	-	-	-	-	-
Motley	-	-	-	-	-	-	-	-	-	-
Nacogdoches	48,136,088	66,879,611	82,954,425	101,274,203	126,360,525	120,823,923	120,645,080	164,252,790	189,637,665	127,496,015
Navarro	426,936	529,596	517,578	866,830	753,034	630,323	527,445	1,155,097	808,999	455,900
Newton	1,404,424	1,817,675	3,687,790	2,996,681	1,774,848	2,713,134	7,297,522	11,612,919	8,617,008	5,649,357
Nolan	489,804	506,037	482,408	493,607	439,850	408,204	391,972	399,227	464,235	422,641
Nueces	68,519,461	61,403,674	47,372,799	45,048,279	38,608,858	28,427,154	28,279,336	30,944,704	24,300,483	16,629,452
Ochiltree	22,617,383	24,909,748	23,741,331	23,630,985	23,452,732	21,752,941	18,356,418	16,966,326	16,409,632	16,808,986
Oldham	198,271	221,351	188,215	161,250	134,535	129,635	130,127	114,744	103,206	78,263
Orange	18,014,676	14,125,353	10,928,383	9,327,074	8,306,769	9,708,186	11,699,153	11,187,856	11,640,652	9,031,782
Palo Pinto	12,546,344	13,144,407	14,220,300	12,934,768	17,331,819	15,653,478	14,508,255	12,808,773	11,594,409	10,862,104
Panola	251,647,677	267,010,941	280,477,266	287,377,560	294,900,632	282,520,863	293,851,548	283,412,906	293,863,145	329,565,649
Parker	11,140,347	21,559,711	45,290,537	96,635,918	118,824,836	109,973,782	101,265,091	96,396,001	108,538,962	114,238,443
Parmer	-	-	-	-	-	-	-	-	-	-
Pecos	143,816,708	133,717,706	134,112,798	148,539,361	194,082,204	209,218,427	182,834,253	140,022,125	106,613,946	89,203,109
Polk	32,649,448	23,129,589	26,618,070	29,895,113	31,447,695	26,243,624	21,661,843	23,036,434	21,594,024	18,475,956
Potter	19,242,968	16,202,126	17,849,377	16,462,682	14,946,670	13,260,941	12,129,122	11,295,118	10,347,713	9,196,256
Presidio	-	-	-	-	-	-	-	-	-	-
Rains	6,001,643	5,792,483	5,067,169	4,568,194	4,681,607	4,112,676	2,031,875	2,980,452	3,285,770	2,875,821
Randall	-	-	-	-	-	-	-	-	-	-
Reagan	2,184,109	2,275,676	2,165,065	1,821,120	1,784,600	1,448,930	1,446,420	2,017,721	2,012,134	1,942,954
Real	97,557	432,545	133,737	89,167	69,269	114,049	83,000	39,083	54,165	47,040
Red River	-	-	-	-	-	-	-	-	-	-
Reeves	29,484,450	25,291,453	23,492,107	24,814,963	27,970,400	29,132,649	29,223,778	24,605,206	21,644,171	26,360,248
Refugio	17,552,630	25,329,021	24,359,112	18,307,859	16,009,024	10,585,127	7,993,267	5,830,377	3,950,660	2,835,368
Roberts	25,475,662	32,201,086	41,645,647	47,415,323	53,013,162	50,810,727	54,419,199	59,301,494	63,658,539	60,122,351
Robertson	74,548,142	116,862,338	146,742,166	207,433,659	280,368,109	276,814,306	240,191,680	189,705,757	137,978,992	134,373,420
Rockwall	-	-	-	-	-	-	-	-	-	-
Runnels	233,835	224,387	316,242	534,216	272,166	242,737	276,756	321,076	260,580	333,424
Rusk	78,501,941	94,029,763	115,076,803	136,112,412	159,628,086	145,801,469	125,336,692	109,045,952	111,022,036	117,770,312
Sabine	-	-	-	-	-	-	313,436	6,145,252	10,980,522	4,033,132
San Augustine	36,401	29,759	47,260	1,336,774	13,741,754	31,237,565	67,523,689	145,491,638	128,554,155	85,530,099
San Jacinto	6,640,615	6,205,539	6,695,185	8,986,057	14,068,949	10,633,940	9,967,698	8,376,405	7,318,861	6,163,626
San Patricio	27,145,131	30,519,581	28,104,438	22,018,816	18,897,686	26,891,038	17,112,627	11,005,445	8,814,427	12,475,383
San Saba	-	-	-	-	-	-	-	-	-	-

County	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Schleicher	9,549,525	11,487,705	14,456,498	13,347,415	12,086,577	11,755,254	12,354,467	13,622,513	11,136,126	8,490,281
Scurry	-	-	-	-	-	-	-	-	-	-
Shackelford	2,709,880	2,353,351	2,492,420	2,945,863	2,703,140	2,175,747	1,907,134	1,990,012	1,711,164	1,513,524
Shelby	40,051,570	39,730,989	36,092,818	44,457,509	64,665,209	68,583,783	78,941,870	120,443,282	105,260,237	92,590,811
Sherman	23,391,901	22,247,530	22,041,698	22,428,995	23,446,406	23,219,556	20,839,978	19,497,437	17,882,142	17,633,860
Smith	39,905,362	51,698,332	59,009,214	48,957,130	41,461,936	33,609,079	27,920,679	23,500,483	19,883,936	17,760,294
Somervell	-	-	-	-	-	-	-	-	-	-
Starr	143,154,687	130,046,490	121,423,485	123,055,007	131,442,969	119,501,806	96,118,875	83,086,251	77,188,493	63,820,511
Stephens	9,829,745	9,577,571	10,194,242	10,968,455	11,965,980	11,443,053	10,395,122	10,415,600	10,586,958	10,106,151
Sterling	7,699,909	6,949,969	6,430,780	5,771,323	5,152,858	4,641,161	4,117,543	3,589,771	3,408,588	3,115,044
Stonewall	-	-	-	-	-	-	-	-	-	-
Sutton	83,808,835	84,602,657	89,076,122	89,096,516	83,309,245	69,621,596	59,975,591	51,977,598	45,465,861	38,276,487
Swisher	-	-	-	-	-	-	-	-	-	-
Tarrant	75,283,248	123,633,307	183,779,481	280,278,470	461,326,761	548,423,486	646,710,262	756,697,895	821,753,282	771,582,597
Taylor	52,097	29,629	20,823	23,866	20,911	121,255	102,124	79,179	71,635	46,512
Terrell	67,140,393	67,097,929	78,638,528	73,832,158	64,762,982	57,062,333	49,211,874	41,423,508	36,831,747	33,217,451
Terry	379,635	286,238	27,723	-	-	-	-	-	6,150	166,707
Throckmorton	315,769	281,805	283,174	268,398	243,749	244,975	235,490	192,936	188,545	180,548
Titus	-	-	-	-	-	-	-	-	-	-
Tom Green	984,670	1,000,328	1,090,582	1,448,966	1,560,048	1,589,987	1,571,765	1,372,385	737,112	1,194,198
Travis	-	-	-	-	-	-	-	-	-	-
Trinity	134,437	67,201	81,907	371,087	359,505	131,758	149,789	197,914	363,990	249,219
Tyler	9,928,300	19,681,240	28,653,435	34,420,142	35,652,667	31,561,080	29,734,238	24,230,246	19,656,179	15,978,746
Upshur	54,270,241	54,363,979	52,569,536	48,729,734	46,595,942	40,603,659	36,177,024	33,329,970	29,814,371	26,720,214
Upton	46,503,460	49,005,905	43,751,534	40,391,225	38,822,283	38,838,670	33,515,330	27,916,930	24,622,079	21,105,747
Uvalde	725	1,029	2,991	8,190	2,513	-	4,663	5,103	1,129	-
Val Verde	19,342,733	18,737,762	16,311,767	15,697,292	14,747,563	12,408,643	10,620,240	9,163,554	7,721,925	6,996,985
Van Zandt	8,020,363	6,279,447	5,356,366	5,242,613	4,457,797	4,379,064	2,925,517	3,582,322	3,861,301	3,967,452
Victoria	25,353,391	19,820,476	16,200,610	13,798,998	17,122,131	11,708,198	8,944,692	7,721,595	5,931,576	5,247,022
Walker	1,388,938	1,170,869	1,360,875	1,025,080	839,204	812,293	739,826	642,365	605,065	1,153,737
Waller	6,867,340	5,167,830	6,032,415	8,707,598	9,050,806	7,250,290	5,041,593	4,011,296	2,720,714	3,172,246
Ward	43,982,599	36,694,696	32,840,654	30,232,606	30,060,973	27,808,188	25,689,524	22,499,788	20,496,782	17,429,288
Washington	27,384,051	25,403,680	19,678,713	17,195,424	15,341,317	13,252,269	11,946,396	11,596,624	10,056,434	9,317,797
Webb	243,146,818	245,096,205	237,448,143	221,962,672	215,576,958	202,775,664	233,014,212	360,990,916	505,137,287	575,808,922
Wharton	56,769,434	60,116,580	53,268,183	39,135,029	48,489,721	54,916,631	46,806,142	36,217,698	28,539,749	23,074,387
Wheeler	38,165,102	63,734,902	95,751,942	123,154,328	156,743,561	156,158,719	202,288,359	254,283,604	258,616,316	239,928,434
Wichita	-	-	-	-	-	-	-	-	-	-
Wilbarger	6,630	6,609	4,864	6,376	6,908	6,825	6,563	4,366	5,288	1,256
Willacy	27,468,631	28,252,506	24,524,696	28,111,446	25,529,806	24,202,035	24,152,477	17,588,165	11,551,665	8,244,304
Williamson	-	1,151	6,110	2,386	-	-	-	-	-	-
Wilson	2,405	4,102	10,320	11,050	27,589	22,664	21,920	16,523	12,546	13,140
Winkler	30,044,859	25,754,045	23,421,842	24,421,175	24,371,048	21,551,194	20,194,062	17,354,688	16,318,785	15,183,000
Wise	175,090,239	171,863,359	165,364,545	185,925,820	211,923,294	217,055,837	230,789,576	252,726,917	253,659,366	265,386,126
Wood	9,788,171	9,182,384	8,417,090	6,398,396	7,015,306	5,963,096	4,955,761	4,967,857	4,980,419	6,657,056
Yoakum	2,023,632	1,563,521	1,176,576	977,025	962,453	698,216	652,199	514,483	374,545	336,724
Young	1,649,611	1,482,349	1,543,440	1,517,323	1,428,030	1,390,835	1,277,398	1,342,935	1,318,261	1,261,606
Zapata	311,596,035	316,140,786	324,683,648	329,227,147	331,267,095	273,880,048	227,434,143	186,434,166	150,990,099	121,871,199
Zavala	1,313,487	1,094,119	884,467	836,281	703,350	678,875	688,270	586,853	499,789	477,317

Table 28. Volume of Liquids (BBL) Injected into Non-productive Zones.

County	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Anderson	5,635,514	4,380,693	5,312,712	6,092,167	6,898,768	5,123,389	2,710,780	2,521,083	2,184,786	1,878,255
Andrews	23,546,463	26,544,157	24,432,588	25,121,347	26,796,649	24,637,592	28,773,081	36,636,952	45,095,476	36,639,845
Angelina	122,377	-	-	59,351	3,278,852	2,838,656	1,907,646	1,624,129	1,422,002	1,117,185
Aransas	599,676	658,474	621,103	1,072,086	736,100	811,594	713,015	267,739	237,886	379,903
Archer	1,729,411	1,486,758	1,106,931	997,252	968,189	818,742	921,773	813,990	725,817	890,197
Armstrong	-	-	-	-	-	-	-	-	-	-
Atascosa	1,134,604	1,610,494	1,984,541	1,939,091	1,619,176	1,790,726	1,788,583	793,138	530,221	5,214,460
Austin	4,097,551	4,442,837	3,634,838	3,254,604	3,938,510	3,512,648	4,412,595	4,792,491	5,037,903	4,436,255
Bailey	-	-	-	-	-	-	-	-	-	-
Bandera	-	-	-	-	-	-	-	-	-	-
Bastrop	97,938	97,714	54,599	43,850	48,255	43,188	42,627	75,497	60,371	24,920
Baylor	237,803	214,708	234,221	287,010	308,116	306,301	294,704	311,400	372,227	342,009
Bee	4,769,348	4,843,264	3,734,098	3,480,341	3,816,668	3,668,381	3,428,504	3,295,802	3,219,207	2,508,366
Bell	-	-	-	-	-	-	-	-	-	-
Bexar	7,150	-	-	-	-	-	-	-	-	-
Blanco	-	-	-	-	-	-	-	-	-	-
Borden	6,638,458	6,929,164	6,664,058	6,263,434	8,194,365	8,206,614	8,010,415	8,589,567	8,329,556	4,786,966
Bosque	-	-	-	-	-	-	-	-	-	-
Bowie	388,808	399,841	449,866	352,883	361,179	300,624	333,212	278,685	340,325	396,385
Brazoria	70,231,557	57,607,436	45,974,279	73,488,735	68,580,390	52,711,176	42,364,658	29,877,855	28,278,705	15,014,319
Brazos	5,758,766	5,769,949	5,180,980	5,037,098	5,335,091	5,172,617	5,172,827	4,818,099	3,696,724	4,442,571
Brewster	-	-	-	-	-	-	-	-	-	-
Briscoe	-	-	-	-	-	-	-	-	-	-
Brooks	1,860,011	1,734,124	1,598,696	2,174,558	1,997,324	1,608,967	1,556,637	1,380,484	1,297,255	1,062,490
Brown	213,125	204,291	187,711	193,096	150,474	135,896	179,004	178,273	176,841	143,276
Burleson	8,000,451	7,377,873	7,093,633	6,924,910	7,861,102	7,148,287	7,528,891	7,313,622	7,211,732	6,575,215
Burnet	-	-	-	-	-	-	-	-	-	-
Caldwell	102,528,913	113,922,861	117,960,738	125,951,219	132,653,322	132,319,371	137,264,552	150,810,206	150,409,872	117,225,597
Calhoun	4,212,970	4,071,959	2,837,894	2,527,709	3,235,948	3,767,084	3,802,035	3,357,983	2,653,912	1,569,928
Callahan	336,282	308,425	305,615	286,803	275,129	284,631	169,866	182,489	156,894	124,042
Cameron	-	-	-	-	-	-	-	-	246,929	352,589
Camp	1,178,239	833,294	451,201	953,659	1,821,337	1,667,113	1,650,602	1,288,392	1,259,354	1,678,442
Carson	33,052	51,885	44,789	42,790	55,478	60,342	72,201	54,688	50,166	30,099
Cass	1,016,165	1,074,497	1,220,972	1,148,433	1,022,716	1,187,691	1,646,272	601,956	549,549	630,196
Castro	-	-	-	-	-	-	-	-	-	-
Chambers	22,529,321	25,407,162	24,505,537	21,976,761	19,525,614	20,778,816	22,852,730	19,793,390	32,523,064	38,563,231
Cherokee	9,350,561	8,767,429	10,943,776	10,300,391	9,233,047	8,880,670	8,937,844	14,341,350	9,827,691	12,100,622
Childress	99,853	172,108	203,828	292,869	278,332	407,484	399,246	410,517	386,216	174,710
Clay	1,778,340	1,955,434	1,918,578	1,697,705	1,707,488	1,381,676	1,316,566	1,334,229	1,377,684	1,224,758
Cochran	618,096	874,280	916,422	840,393	756,451	678,522	661,636	626,458	759,070	592,407
Coke	1,390,421	1,039,110	1,155,503	1,549,898	1,378,623	884,693	886,890	863,550	821,861	919,415
Coleman	135,652	85,322	120,914	146,931	124,367	153,390	103,244	76,604	69,367	79,856
Collin	-	-	-	-	-	-	-	-	-	-
Collingsworth	-	-	2,400	2,400	2,400	2,400	1,395	1,440	1,560	1,560
Colorado	3,008,603	2,696,170	2,995,326	2,228,190	2,450,067	2,666,166	2,352,702	2,317,102	2,427,269	2,857,114
Comal	-	-	-	-	-	-	-	-	-	-
Comanche	-	-	-	-	-	-	-	-	-	-
Concho	130,466	138,589	142,527	92,731	78,326	84,849	81,933	50,163	63,882	64,517
Cooke	2,499,518	3,306,051	5,229,447	6,058,907	8,170,702	6,943,523	9,253,158	10,053,949	8,832,541	5,674,682
Coryell	-	-	-	-	-	-	-	-	-	-

County	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Cottle	192,053	307,521	300,744	291,696	232,449	225,188	209,773	202,241	291,052	205,574
Crane	489,859	3,337,152	4,606,330	5,802,202	6,460,715	6,133,062	6,506,452	5,326,997	7,641,831	12,159,664
Crockett	5,008,982	10,411,052	16,225,680	18,473,074	19,918,508	19,153,524	18,389,730	17,488,612	16,640,518	16,854,695
Crosby	113,409	115,985	174,288	212,062	219,634	172,131	80,763	100,748	164,808	95,782
Culberson	99,572	95,849	104,359	66,562	71,978	79,647	61,926	71,682	2,069,044	5,109,127
Dallam	-	-	-	-	-	-	-	-	-	-
Dallas	-	-	-	-	-	-	-	-	-	-
Dawson	2,737,949	3,161,314	3,025,274	3,549,842	4,708,070	4,794,164	4,247,013	5,267,435	9,492,724	5,858,313
Deaf Smith	-	-	-	-	-	-	-	-	-	-
Delta	-	-	-	-	-	-	-	-	-	-
Denton	518,562	35,148	197,667	1,285,946	3,816,297	3,821,514	4,045,300	6,738,738	5,909,895	4,098,856
DeWitt	2,104,096	2,344,578	1,227,360	1,279,735	1,320,228	903,340	1,112,254	2,039,595	1,923,879	3,978,296
Dickens	50,225	16,055	-	60,327	345,886	602,101	532,560	332,222	368,602	499,048
Dimmit	673,453	739,249	1,002,153	318,947	184,432	184,148	93,421	2,297,630	5,233,404	6,023,140
Donley	-	-	-	-	-	-	-	-	-	-
Duval	15,031,854	15,908,082	14,675,102	14,758,886	13,071,981	13,437,433	14,739,544	13,486,802	19,996,340	13,912,419
Eastland	1,652,610	1,792,205	1,939,330	1,754,982	2,268,253	3,411,151	3,089,542	2,519,730	2,235,779	1,702,543
Ector	3,627,469	3,487,811	3,669,419	3,294,386	5,336,802	5,175,336	7,099,689	10,002,846	11,528,691	12,970,778
Edwards	109,752	234,558	613,479	662,260	667,687	590,220	561,189	528,280	479,715	359,221
El Paso	-	-	-	-	-	-	-	-	-	-
Ellis	-	-	-	-	-	-	-	-	-	-
Erath	301,400	319,931	1,066,107	869,132	1,897,817	1,020,277	285,491	384,806	404,875	311,446
Falls	-	-	-	-	-	-	-	-	-	651
Fannin	-	-	-	-	-	-	-	-	-	-
Fayette	4,125,780	4,398,329	3,505,159	3,421,710	3,785,782	3,320,291	3,812,513	4,196,263	6,494,476	8,167,522
Fisher	6,237,061	3,822,198	1,377,120	3,369,157	3,162,366	3,225,967	4,552,987	4,321,039	4,522,864	3,425,952
Floyd	-	-	-	-	-	-	-	-	-	-
Foard	-	-	-	-	-	-	-	50,947	435,984	388,286
Fort Bend	27,764,954	27,617,571	21,988,018	20,148,775	19,485,771	21,689,205	18,068,545	16,257,229	14,860,316	17,283,257
Franklin	16,525,200	20,010,090	17,308,851	17,482,718	17,119,732	16,239,867	14,906,751	10,990,929	11,306,267	13,986,263
Freestone	20,732,285	24,310,780	21,522,266	30,513,813	31,844,942	27,354,518	31,067,665	29,148,187	26,365,964	19,510,795
Frio	2,520,992	2,589,039	3,145,380	4,232,862	3,295,978	3,103,481	4,117,192	5,941,955	6,972,419	8,534,412
Gaines	28,087,723	29,093,506	27,281,197	25,943,649	24,272,172	37,904,778	43,421,999	38,424,802	35,660,297	26,794,672
Galveston	6,365,210	5,333,062	4,946,608	5,417,757	4,356,176	5,799,800	7,537,823	6,373,102	5,809,300	4,459,571
Garza	5,227,891	5,059,749	4,678,916	4,570,409	5,286,427	6,287,517	5,719,391	5,498,937	4,967,697	4,321,097
Gillespie	-	-	-	-	-	-	-	-	-	-
Glasscock	5,267,367	6,037,264	6,182,799	6,605,362	6,862,271	7,190,095	8,212,448	15,961,759	23,874,520	25,240,018
Goliad	5,126,921	3,761,818	4,049,633	3,540,984	3,830,371	3,515,171	3,000,770	2,870,384	2,101,264	1,437,348
Gonzales	416,587	519,063	529,851	482,494	818,014	547,388	856,476	3,619,685	8,548,205	16,430,731
Gray	444,522	437,366	370,676	440,298	483,014	443,189	364,719	333,530	312,580	611,938
Grayson	577,235	637,946	645,722	705,218	679,688	685,963	744,634	748,307	744,127	544,296
Gregg	1,465,179	2,769,413	4,267,343	3,931,670	4,328,499	3,776,351	3,100,034	2,517,958	2,714,383	1,866,161
Grimes	1,767,601	1,421,071	1,501,311	1,869,930	1,333,089	1,982,271	1,543,902	1,788,553	2,291,357	4,282,929
Guadalupe	146,236,877	199,105,887	243,368,951	276,150,782	283,369,282	294,293,842	307,883,251	307,557,370	304,748,336	247,784,511
Hale	-	-	496,391	479,243	33,389	7,496	139,957	161,191	161,085	646,142
Hall	-	-	-	-	-	-	-	-	-	-
Hamilton	-	-	-	-	-	-	-	-	-	-
Hansford	1,763,433	2,238,328	2,696,225	1,970,768	2,090,229	1,896,248	2,027,921	2,310,013	2,039,245	1,861,159
Hardeman	1,446,882	1,632,468	1,412,438	1,304,732	1,216,720	660,281	626,303	757,245	769,687	807,115
Hardin	17,215,234	15,414,376	18,010,323	17,447,134	16,492,703	16,342,533	15,657,817	17,669,150	13,627,941	12,813,406
Harris	31,255,271	34,058,838	30,787,741	31,192,826	29,062,423	32,280,913	28,358,954	23,672,030	22,087,602	13,696,079
Harrison	6,598,314	7,335,034	6,421,850	8,835,647	9,586,545	11,785,357	9,448,692	9,617,079	8,818,409	7,751,530

County	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Hartley	454,620	459,354	425,946	423,252	365,931	197,645	246,812	718,238	673,178	579,080
Haskell	769,023	752,450	697,253	713,341	904,794	808,661	790,074	762,778	875,040	902,238
Hays	-	-	-	-	-	-	-	-	-	-
Hemphill	5,923,405	11,309,403	15,943,711	18,305,194	23,281,567	19,599,003	19,966,915	19,532,398	17,126,263	18,341,316
Henderson	8,572,861	6,802,272	6,975,477	7,030,646	6,400,135	7,803,212	6,500,085	7,308,681	6,913,763	5,520,782
Hidalgo	11,984,120	14,725,120	14,974,183	14,986,022	16,698,607	14,579,645	11,885,688	10,193,949	8,934,952	7,113,034
Hill	-	-	-	1,093,990	4,563,841	3,771,273	1,691,761	2,181,376	2,207,658	1,268,916
Hockley	1,078,774	1,477,665	1,534,703	1,297,745	1,538,399	1,933,141	4,484,631	3,398,585	3,384,675	2,526,684
Hood	553,663	4,597,970	9,115,035	12,690,522	15,049,771	17,630,812	18,832,415	19,649,805	15,101,458	9,172,531
Hopkins	2,562,986	2,521,112	2,466,553	1,902,723	1,653,261	1,064,235	1,524,068	1,673,482	2,247,876	1,430,333
Houston	1,610,765	1,920,895	1,986,705	1,439,108	1,471,723	1,841,067	2,874,592	3,067,243	3,788,798	6,786,441
Howard	8,945,526	9,045,047	10,052,790	10,944,587	11,785,757	9,750,396	10,647,869	13,949,818	20,632,356	25,639,085
Hudspeth	-	-	-	-	-	-	-	-	-	-
Hunt	-	-	-	-	-	-	-	-	-	-
Hutchinson	2,597,716	2,717,562	2,985,161	3,254,898	3,334,221	2,813,804	2,423,471	1,887,917	1,903,767	1,406,771
Irion	418,328	670,765	843,183	2,876,122	3,177,262	2,614,294	3,156,225	2,285,341	4,064,213	3,833,718
Jack	3,744,508	5,408,327	5,884,272	8,881,702	7,228,883	7,764,058	7,285,814	10,529,184	15,136,927	15,892,820
Jackson	39,343,907	48,171,318	44,413,922	34,374,068	37,526,382	26,154,660	17,553,530	25,192,309	26,358,869	33,353,104
Jasper	2,868,545	2,905,032	3,927,643	3,714,618	4,848,050	6,143,165	6,424,793	4,807,701	2,784,275	3,034,629
Jeff Davis	-	-	-	-	-	-	-	-	-	-
Jefferson	23,676,981	27,384,051	27,558,758	24,643,029	25,516,158	28,903,269	25,267,406	31,376,487	37,593,963	31,307,500
Jim Hogg	711,023	671,486	594,277	562,054	530,847	512,699	217,634	160,107	178,502	152,617
Jim Wells	2,559,397	2,090,046	1,395,242	1,213,533	1,150,501	1,075,135	896,164	1,205,292	813,282	636,396
Johnson	1,989,417	9,150,323	25,732,937	65,750,533	94,240,367	85,745,750	90,902,562	100,152,186	93,085,495	62,793,231
Jones	1,135,221	995,717	1,099,584	1,058,074	1,421,217	1,433,141	1,579,591	1,324,950	1,023,256	756,463
Karnes	1,957,563	2,695,839	2,615,903	2,456,339	2,249,301	3,171,914	2,726,888	4,499,077	11,293,073	27,714,172
Kaufman	859,064	1,170,647	1,285,987	1,102,611	1,450,400	1,989,595	2,417,345	2,568,473	2,407,694	988,836
Kendall	-	-	-	-	-	-	-	-	-	-
Kenedy	2,009,457	2,298,966	2,129,114	2,672,068	2,498,787	2,819,557	2,484,317	2,273,441	2,133,287	1,526,360
Kent	4,787,157	2,027,711	2,963,857	3,221,618	1,919,271	1,557,080	2,167,534	4,449,696	3,225,344	3,876,993
Kerr	-	-	-	-	-	-	-	-	-	-
Kimble	-	-	-	-	-	-	-	-	-	-
King	1,444,381	1,385,280	1,642,432	1,709,638	1,646,814	1,241,297	945,725	839,043	651,762	536,096
Kinney	-	-	-	-	-	-	-	-	-	-
Kleberg	1,460,909	1,311,893	1,263,423	860,377	468,174	791,155	810,693	812,339	805,222	1,137,571
Knox	72,680	67,050	34,087	-	17,050	36,040	30,500	40,920	40,560	35,180
La Salle	-	-	-	-	-	-	-	-	-	-
Lamar	200,398	126,040	114,111	125,203	145,098	129,699	580,012	2,613,650	3,382,187	12,024,670
Lamb	-	-	-	-	-	-	-	-	-	-
Lampasas	308,185	74,883	-	-	-	-	-	-	-	-
Lavaca	1,878,317	2,260,537	1,810,735	2,543,965	1,951,092	1,805,178	2,217,415	2,442,402	2,186,666	1,711,510
Lee	1,906,306	1,813,516	3,037,676	3,518,533	3,559,326	2,993,192	3,189,131	2,800,081	3,223,949	3,636,367
Leon	2,655,511	2,157,785	3,795,869	3,460,263	2,612,035	4,336,666	4,512,443	1,955,841	2,969,235	2,963,807
Liberty	20,055,721	36,789,538	40,049,773	32,187,457	26,339,767	51,490,022	56,940,886	45,639,591	31,486,004	15,605,860
Limestone	3,982,628	3,597,098	4,344,333	2,791,052	2,870,126	1,644,895	1,944,507	2,038,407	1,795,130	1,707,115
Lipscomb	1,391,602	1,469,700	1,500,130	1,880,917	2,001,257	1,809,676	2,458,827	2,442,631	2,158,907	2,322,422
Live Oak	6,187,018	5,294,000	5,542,549	6,194,971	7,742,632	6,741,645	5,952,943	6,510,253	8,219,941	6,125,258
Llano	-	-	-	-	-	-	-	-	-	-
Loving	2,688,375	3,216,788	3,324,522	5,306,630	6,080,231	5,762,913	5,800,909	7,810,936	14,136,022	14,071,090
Lubbock	1,137,112	1,097,506	1,225,742	1,015,484	783,030	912,025	894,176	887,116	796,178	786,590
Lynn	-	22,640	49,811	46,875	38,517	126,337	134,090	116,948	70,092	122,494
Madison	1,405,922	2,448,130	3,096,625	2,564,573	2,584,427	2,888,438	2,956,935	3,291,420	4,573,015	5,323,960

County	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Marion	1,623,415	1,555,090	1,703,231	1,647,255	1,919,793	1,910,344	1,821,810	2,002,599	2,230,652	2,140,780
Martin	10,095,755	11,916,731	12,840,333	14,837,989	16,799,704	21,762,059	23,635,444	27,592,518	42,482,431	51,689,714
Mason	-	-	-	-	-	-	-	-	-	-
Matagorda	8,142,251	9,684,179	8,270,197	6,848,793	9,581,477	9,320,771	10,309,735	8,569,287	8,416,487	6,535,483
Maverick	-	-	-	-	-	-	-	-	-	-
McCulloch	-	-	-	-	-	-	-	-	-	-
McLennan	-	-	-	-	-	-	-	-	-	-
McMullen	1,229,248	1,750,747	997,419	1,124,792	1,210,262	1,024,270	1,104,801	707,749	2,648,857	7,199,425
Medina	-	-	-	-	-	-	-	-	-	-
Menard	55,989	71,640	75,276	67,727	63,012	61,725	46,585	46,529	56,131	64,359
Midland	31,583,298	30,463,732	30,944,173	31,409,713	31,603,618	32,693,104	38,156,770	40,210,252	50,608,072	54,748,091
Milam	220,269	233,742	363,831	629,847	119,416	8,060	6,200	7,285	278,592	256,162
Mills	-	-	-	-	-	-	-	-	-	-
Mitchell	452,607	265,926	312,308	818,787	1,748,147	3,011,090	3,845,176	3,829,955	3,748,854	3,886,157
Montague	7,331,025	10,562,147	12,099,490	13,550,157	13,597,373	12,551,998	17,462,297	29,954,249	34,985,930	23,360,374
Montgomery	6,195,282	7,242,622	7,108,695	8,201,594	11,720,671	8,212,806	10,758,087	12,064,027	14,953,985	14,378,274
Moore	948,408	942,616	908,108	927,402	1,194,515	1,121,406	1,035,978	933,145	916,075	673,560
Morris	-	-	-	-	-	-	-	-	-	-
Motley	656,859	495,000	735,000	735,000	736,000	744,000	744,000	272,000	507,000	735,000
Nacogdoches	562,853	729,538	5,307,637	6,390,757	8,988,826	7,323,542	6,493,340	5,664,154	6,676,437	4,648,866
Navarro	945,135	1,964,957	1,841,737	2,460,430	534,700	475,350	364,143	464,615	502,240	412,555
Newton	3,931,164	3,708,807	4,753,696	5,250,100	5,426,942	5,266,062	6,967,026	10,187,087	8,969,405	12,229,107
Nolan	2,680,050	2,847,351	2,843,799	2,741,184	2,613,047	2,480,387	2,761,795	2,797,347	2,703,354	3,207,433
Nueces	5,686,627	5,987,926	7,187,372	6,625,286	7,952,898	5,757,497	4,700,233	4,469,569	4,862,579	4,618,436
Ochiltree	1,721,713	2,166,590	2,219,962	2,923,929	3,415,179	3,009,539	5,777,402	6,058,923	6,803,636	8,003,966
Oldham	1,999,952	2,599,477	1,644,038	1,397,192	1,195,838	2,231,903	2,389,313	1,709,516	2,074,933	2,233,743
Orange	7,720,286	5,530,904	4,182,286	5,062,856	2,528,068	3,811,204	3,484,694	3,667,345	3,308,339	3,684,670
Palo Pinto	1,735,940	1,710,149	2,342,177	5,360,065	8,501,546	6,964,556	6,980,383	5,350,932	4,882,126	4,944,402
Panola	9,074,612	12,634,941	13,914,962	15,015,252	24,674,415	28,997,205	35,605,156	24,543,747	21,240,158	19,713,249
Parker	98,023	89,808	1,145,069	6,844,866	27,567,168	32,387,525	32,168,856	29,155,079	31,001,438	21,158,278
Parmer	-	-	-	-	-	-	-	-	-	-
Pecos	6,961,458	6,551,397	7,300,620	8,770,972	8,758,344	8,424,015	7,998,708	7,287,164	9,460,380	6,725,013
Polk	3,334,912	2,903,662	3,127,163	4,264,942	5,334,857	5,066,473	5,188,268	5,357,024	4,413,572	4,526,830
Potter	469	466	465	272	192	267	-	-	-	-
Presidio	-	-	-	-	-	-	-	-	-	-
Rains	-	-	-	-	-	-	-	-	-	-
Randall	-	-	-	-	-	-	-	-	-	-
Reagan	30,526,693	32,591,583	32,142,036	31,295,030	32,262,152	21,038,089	39,766,593	51,525,281	53,241,656	65,502,665
Real	-	-	-	-	-	-	-	-	-	-
Red River	-	-	-	-	-	-	-	-	-	-
Reeves	5,035,755	4,064,736	4,680,733	4,095,804	5,087,701	6,662,012	6,324,217	10,882,410	18,186,095	23,284,554
Refugio	51,156,510	56,885,668	59,337,121	57,386,348	55,890,685	54,681,940	52,352,192	51,118,638	48,540,025	38,803,634
Roberts	1,244,275	1,465,853	897,917	1,718,127	1,669,595	971,708	852,107	1,426,453	1,702,928	2,389,875
Robertson	3,390,875	3,426,029	4,714,127	6,313,524	6,303,461	5,529,557	5,536,705	5,485,907	4,668,737	4,053,814
Rockwall	-	-	-	-	-	-	-	-	-	-
Runnels	2,723,012	3,178,450	4,756,663	3,777,903	2,276,476	1,096,712	2,890,538	3,385,830	3,172,786	3,646,850
Rusk	3,562,344	5,792,219	6,959,045	6,612,552	10,750,791	9,495,230	9,427,795	6,933,112	7,039,541	5,532,005
Sabine	-	-	-	-	-	-	-	-	-	-
San Augustine	251,000	52,432	74,541	42,189	399,741	1,650,575	5,035,281	5,406,995	5,631,679	3,472,070
San Jacinto	397,605	525,335	599,767	753,508	1,311,265	1,648,683	2,376,172	3,465,894	4,521,553	4,063,457
San Patricio	14,576,480	14,041,377	14,832,033	15,611,799	13,687,857	13,410,127	11,793,528	11,010,442	10,662,507	9,255,631
San Saba	-	-	-	-	-	-	-	-	-	-

County	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Schleicher	579,527	486,152	490,255	492,596	518,060	567,496	481,098	416,665	488,969	377,604
Scurry	4,472,939	5,385,947	5,501,976	4,146,543	4,666,255	4,812,866	4,809,750	4,404,700	4,408,938	4,095,242
Shackelford	744,206	1,139,296	1,146,908	921,450	872,116	943,131	766,097	842,247	776,310	688,730
Shelby	3,793,557	6,667,823	6,831,482	10,046,882	15,316,607	15,593,037	18,468,706	21,545,329	24,563,956	14,301,662
Sherman	551,956	633,547	795,910	831,443	755,267	665,124	498,430	553,436	534,085	342,923
Smith	4,144,712	4,465,806	3,983,976	3,649,159	3,675,084	2,961,774	2,140,544	2,248,905	1,962,377	1,908,539
Somervell	-	-	1,317,132	9,712,692	14,067,613	10,661,021	5,956,703	6,318,956	4,700,338	4,156,559
Starr	5,293,939	5,202,703	5,308,917	3,890,644	4,532,245	4,686,667	4,584,250	4,032,843	4,324,495	2,871,211
Stephens	3,724,949	4,335,852	4,664,175	4,773,794	5,216,852	4,391,273	4,386,444	5,071,557	4,394,715	4,963,957
Sterling	764,025	505,320	300,414	349,930	389,595	361,404	418,207	435,388	801,657	2,607,365
Stonewall	1,724,717	1,705,542	1,928,996	1,685,633	1,510,931	1,729,556	995,678	1,241,402	1,159,208	1,768,642
Sutton	3,765,525	4,105,400	5,763,417	6,756,832	6,462,471	5,050,809	4,727,911	4,597,539	4,755,017	2,571,864
Swisher	-	-	-	-	-	-	-	-	-	-
Tarrant	-	238,010	2,604,401	5,014,342	15,894,002	19,913,145	31,331,002	32,554,932	29,883,906	24,628,615
Taylor	1,300,038	1,013,841	838,907	823,565	776,919	738,169	1,062,768	544,895	392,799	195,544
Terrell	-	-	-	-	-	-	-	-	-	-
Terry	9,188,171	7,074,189	8,312,064	9,839,885	8,764,186	11,555,296	12,185,568	14,642,511	12,478,455	7,580,645
Throckmorton	1,252,579	1,248,099	1,392,982	1,368,935	1,374,014	1,343,708	1,266,481	1,176,304	1,131,151	2,384,534
Titus	20,309,967	22,305,160	22,112,100	22,528,686	22,792,944	18,721,819	21,292,448	21,511,499	20,500,762	17,379,923
Tom Green	741,851	573,335	642,432	748,997	1,515,994	1,876,807	2,260,909	2,343,108	2,462,922	1,807,131
Travis	-	-	-	-	-	-	-	-	-	-
Trinity	-	-	-	-	-	-	-	-	-	-
Tyler	3,262,490	3,293,748	3,532,227	1,552,880	2,808,875	3,082,539	3,113,024	3,374,320	3,327,872	3,504,754
Upshur	2,444,165	2,989,542	2,671,838	3,117,818	2,535,844	2,023,603	1,685,263	1,760,650	1,579,781	1,248,573
Upton	9,268,752	8,506,689	10,001,598	12,680,959	17,494,373	17,550,990	21,072,414	29,327,087	27,113,012	28,556,934
Uvalde	-	-	-	-	-	-	-	-	-	-
Val Verde	-	-	-	-	-	-	-	-	-	-
Van Zandt	8,937,403	12,737,867	9,628,116	11,859,520	10,367,833	7,055,349	7,270,875	7,015,158	5,256,957	1,781,156
Victoria	8,687,418	8,408,000	9,218,228	8,878,663	9,227,354	9,298,584	8,413,515	9,333,878	7,340,014	6,440,254
Walker	-	2,250	-	-	-	-	-	-	-	-
Waller	3,847,694	4,707,793	5,351,780	5,817,947	5,403,504	5,314,942	4,966,648	3,793,255	3,436,660	3,254,802
Ward	6,605,375	6,044,524	5,560,758	6,491,589	7,685,047	7,005,907	7,958,578	12,889,635	11,673,661	9,528,864
Washington	2,044,806	1,623,698	1,400,448	1,097,193	1,203,045	1,117,147	925,552	977,564	483,952	362,631
Webb	6,648,568	4,808,602	5,572,865	5,690,078	5,984,933	5,448,841	6,017,954	7,861,521	7,067,436	6,703,983
Wharton	23,742,904	20,352,178	18,985,304	23,887,142	23,988,155	65,968,194	42,821,675	28,814,252	16,658,509	12,662,458
Wheeler	896,515	3,708,222	9,168,530	17,736,720	23,891,273	18,979,543	20,365,310	30,530,535	30,723,673	29,947,845
Wichita	2,930,721	3,057,067	3,130,691	2,921,137	3,077,647	3,349,807	3,639,172	3,663,213	3,145,784	3,060,574
Wilbarger	2,474,128	2,212,310	2,308,627	2,722,704	2,844,780	2,824,792	3,064,026	2,381,186	2,451,350	2,725,180
Willacy	4,763,389	4,750,750	4,700,680	3,537,706	2,922,935	1,912,528	944,185	1,895,145	3,633,043	3,246,184
Williamson	-	-	-	-	-	-	-	-	-	-
Wilson	444,777	370,710	331,450	382,493	436,315	561,771	976,200	1,477,481	1,480,014	1,049,130
Winkler	25,597,077	18,015,847	9,708,302	8,645,027	20,022,335	11,743,170	7,669,305	5,491,600	3,936,290	3,135,361
Wise	14,063,192	14,486,553	16,685,569	15,647,668	18,724,717	18,720,949	22,915,457	30,431,421	26,733,461	18,023,981
Wood	42,728,546	41,695,009	37,662,102	33,928,473	35,628,347	33,190,567	31,801,671	32,685,701	32,985,552	22,357,918
Yoakum	15,057,828	13,420,896	14,609,600	13,993,346	20,130,804	15,908,324	19,656,113	27,503,546	28,423,787	19,589,977
Young	2,586,853	3,068,234	3,272,500	2,538,902	2,526,805	1,788,541	1,734,064	2,325,168	2,948,541	2,634,355
Zapata	5,537,275	5,460,403	5,483,118	4,819,218	4,939,525	5,436,821	6,184,149	4,941,731	4,634,781	4,048,539
Zavala	652,106	830,462	741,633	514,451	187,711	57,625	19,175	100,905	1,448,275	819,002

Table 29. Average Condition Scores per County.

County	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Anderson	94.8	93.5	90.8	92.4	93.6	94.9	95.2	95.0	95.1	90.3
Andrews	99.3	98.5	98.5	94.9	96.3	94.9	96.2	96.4	96.8	96.8
Angelina	91.9	92.2	93.1	91.4	91.2	91.8	91.5	91.6	94.2	93.2
Aransas	92.5	93.1	93.0	90.7	90.9	86.7	86.2	79.4	93.0	92.6
Archer	95.6	94.1	94.3	95.1	95.6	96.2	96.0	94.8	94.2	94.3
Armstrong	85.5	87.7	87.9	85.5	87.3	94.6	91.3	89.5	91.5	91.5
Atascosa	85.5	89.4	86.1	89.4	87.2	90.0	92.6	86.1	86.6	84.8
Austin	94.6	89.2	91.0	89.0	89.4	91.7	90.0	89.2	93.4	89.1
Bailey	95.2	96.0	94.3	90.0	93.0	93.4	91.8	93.1	92.9	93.2
Bandera	93.2	95.6	87.5	96.6	93.9	95.8	93.4	95.7	98.3	91.4
Bastrop	89.7	87.7	85.5	84.9	87.6	84.9	88.1	88.5	92.0	90.3
Baylor	94.6	94.7	95.8	98.0	96.7	95.1	95.4	94.8	94.8	92.5
Bee	85.7	84.9	85.1	89.4	89.6	90.2	91.7	91.0	89.3	86.5
Bell	92.8	92.9	91.2	92.0	87.2	86.8	89.7	88.6	92.5	92.2
Bexar	85.9	87.4	85.8	88.3	85.3	86.0	86.7	86.4	85.6	80.2
Blanco	95.0	96.4	93.7	91.0	91.4	89.9	89.0	90.2	92.9	95.9
Borden	95.3	96.4	96.3	96.0	96.4	87.7	89.6	90.7	96.0	93.4
Bosque	97.0	95.6	96.0	95.5	94.6	93.1	93.2	92.5	92.5	91.2
Bowie	93.8	94.4	90.2	93.0	93.4	93.3	93.4	91.0	89.8	92.0
Brazoria	81.3	82.3	84.9	83.0	82.2	82.0	82.4	83.5	87.8	85.2
Brazos	88.0	88.5	87.0	83.8	88.3	88.5	87.9	88.0	88.3	86.1
Brewster	97.1	95.1	96.1	97.3	95.2	97.2	96.5	96.9	97.0	95.3
Briscoe	94.5	89.9	94.1	95.4	93.1	91.0	88.4	94.2	95.1	91.6
Brooks	95.4	93.8	91.1	90.6	94.2	91.5	85.9	92.8	92.1	92.6
Brown	90.5	94.1	92.5	94.3	94.8	94.2	94.5	91.5	91.6	92.7
Burleson	93.2	91.5	90.9	90.4	89.7	90.1	90.9	85.4	90.0	89.0
Burnet	93.1	93.3	90.6	90.1	90.3	92.5	92.1	92.4	93.9	92.7
Caldwell	90.7	94.4	89.7	88.4	83.2	70.9	88.1	82.5	91.9	91.4
Calhoun	93.0	86.5	89.7	90.0	90.4	91.3	93.2	91.6	92.8	92.0
Callahan	91.2	93.2	90.8	91.4	88.7	91.8	92.1	89.2	91.3	90.2
Cameron	89.3	91.0	89.9	89.0	88.7	89.8	87.0	88.1	88.3	87.4
Camp	91.7	95.7	89.3	93.2	93.9	90.1	92.9	91.5	95.3	95.2
Carson	91.7	91.0	88.1	86.4	87.3	87.0	91.5	91.2	90.7	87.8
Cass	96.0	97.6	94.6	98.1	96.2	96.6	93.5	94.1	96.1	96.5
Castro	93.2	92.8	94.3	89.6	88.2	92.5	90.6	91.6	93.8	92.4
Chambers	91.2	90.3	92.1	88.7	92.3	93.2	92.3	92.8	94.9	93.4
Cherokee	95.7	93.2	94.3	92.4	95.3	94.8	95.5	94.9	93.6	90.0
Childress	94.4	91.7	94.2	91.3	89.9	89.5	90.4	92.7	96.0	92.4
Clay	95.2	94.7	95.8	95.9	96.0	96.7	95.9	95.0	93.4	93.0
Cochran	97.4	97.4	97.4	96.4	96.5	95.0	92.4	92.5	96.8	97.5
Coke	95.8	97.8	96.6	96.6	96.7	96.2	95.0	94.1	95.6	95.4
Coleman	96.5	94.0	94.2	94.6	93.1	95.7	96.9	93.8	94.9	94.3
Collin	91.3	85.2	82.4	84.8	83.6	87.4	84.6	84.8	85.5	80.5
Collingsworth	96.1	94.4	96.4	95.7	94.2	94.7	93.8	94.3	96.9	97.0

County	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Colorado	92.9	89.7	91.3	89.8	92.8	93.0	94.5	92.2	91.9	91.3
Comal	89.6	92.4	91.5	92.3	91.1	91.6	90.8	88.3	90.0	90.4
Comanche	93.8	95.4	93.8	94.9	94.0	94.8	96.7	96.3	96.1	95.9
Concho	97.5	98.4	96.5	95.0	92.7	93.1	95.3	95.8	97.0	96.8
Cooke	91.2	86.2	88.8	92.9	91.3	92.0	91.7	93.3	92.5	90.0
Coryell	94.9	95.8	94.6	92.9	93.4	91.4	89.4	88.8	89.7	92.6
Cottle	96.5	93.7	95.8	96.5	96.7	97.3	95.5	93.9	97.0	96.7
Crane	99.5	99.2	99.1	96.3	96.2	98.1	98.8	99.0	98.4	98.6
Crockett	96.1	95.4	94.1	94.7	95.0	97.5	97.4	96.9	97.7	96.8
Crosby	90.9	87.4	90.9	92.6	86.9	87.3	91.9	94.4	94.6	93.6
Culberson	90.1	86.6	92.4	85.3	92.6	94.1	93.9	92.7	93.3	90.4
Dallam	89.3	84.6	90.4	90.6	91.0	90.2	90.0	93.6	88.0	86.1
Dallas	76.4	71.0	75.4	71.0	76.2	80.6	78.4	77.0	79.6	78.3
Dawson	91.4	90.8	90.9	89.8	88.0	87.2	88.0	87.8	88.3	92.2
Deaf Smith	95.5	90.7	93.2	92.3	92.1	90.5	90.7	88.6	90.7	87.8
Delta	90.7	91.9	83.2	84.3	84.1	89.4	89.8	87.2	89.2	90.3
Denton	89.1	85.7	86.0	84.7	85.0	87.8	85.9	87.4	85.4	85.6
DeWitt	93.3	91.8	84.9	91.0	91.1	87.8	90.0	90.2	87.7	85.6
Dickens	94.8	95.6	96.3	94.5	95.9	95.3	92.8	93.8	93.7	90.5
Dimmit	79.1	84.9	90.0	87.8	89.5	89.4	78.3	87.8	83.0	91.7
Donley	89.1	90.2	91.3	90.6	90.4	87.2	88.3	92.6	93.5	86.2
Duval	90.8	92.7	92.7	91.3	94.0	94.7	85.3	86.9	93.0	92.0
Eastland	93.9	94.3	94.4	94.1	93.0	94.2	95.3	94.2	95.7	96.0
Ector	94.7	94.1	93.5	93.4	93.8	95.3	95.3	94.6	96.0	95.3
Edwards	96.2	97.1	92.7	95.7	95.4	96.0	94.3	95.0	95.4	93.4
El Paso	78.3	80.4	88.9	84.9	83.8	86.0	90.2	89.3	89.6	89.7
Ellis	81.9	81.5	86.3	85.2	86.1	87.1	86.3	86.0	86.1	85.9
Erath	94.4	95.5	94.2	92.7	90.4	92.2	93.5	95.1	95.8	91.0
Falls	96.3	96.1	95.9	94.1	95.5	94.3	91.9	89.6	90.8	90.6
Fannin	89.5	84.5	83.7	79.3	79.9	87.1	87.9	85.1	89.5	85.1
Fayette	88.8	83.4	81.6	87.8	88.1	91.0	92.6	89.5	90.8	88.3
Fisher	97.0	97.4	97.9	97.7	96.5	97.1	95.3	94.6	94.5	92.5
Floyd	90.0	92.4	91.5	89.7	86.6	86.9	87.8	91.7	93.0	96.9
Foard	92.6	93.3	94.3	96.1	91.3	93.6	91.4	95.7	93.6	93.0
Fort Bend	84.8	86.7	88.3	87.7	87.6	86.9	84.7	85.5	86.6	83.3
Franklin	94.5	91.3	87.7	86.4	88.8	89.2	91.2	91.5	92.5	89.5
Freestone	82.3	76.1	85.9	84.3	87.2	86.1	86.7	86.4	86.5	90.6
Frio	89.0	90.3	89.2	92.7	92.9	94.2	94.4	90.5	90.4	90.6
Gaines	91.0	93.5	93.6	95.3	93.8	95.1	93.8	94.2	93.1	93.1
Galveston	82.2	81.0	85.6	82.5	81.3	77.8	80.7	83.1	84.6	84.6
Garza	97.2	97.1	98.1	97.7	97.0	95.7	94.9	94.8	96.4	95.4
Gillespie	91.6	92.3	88.5	92.7	91.8	91.9	91.4	92.9	94.1	92.0
Glasscock	96.0	96.2	96.7	97.3	97.7	96.4	91.9	93.0	92.2	93.6
Goliad	88.8	88.2	81.6	85.7	87.3	90.5	91.9	93.4	93.7	91.0
Gonzales	88.5	85.0	82.2	85.9	88.0	90.2	88.5	87.8	83.8	80.2

County	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Gray	91.9	87.9	92.6	90.5	90.4	91.5	89.8	88.5	89.9	87.2
Grayson	85.8	82.9	80.1	70.2	78.5	77.0	82.5	84.1	85.3	83.5
Gregg	87.6	87.5	88.4	87.0	90.7	90.7	92.2	90.6	91.9	88.4
Grimes	85.6	84.3	92.6	89.1	88.7	86.6	87.7	86.9	88.6	89.3
Guadalupe	84.6	86.3	82.6	88.4	84.0	85.8	87.1	86.1	88.8	87.5
Hale	95.1	92.5	94.5	94.9	93.0	93.3	90.3	91.9	94.1	93.8
Hall	93.9	94.6	93.9	94.6	96.0	94.3	93.8	95.2	95.6	91.3
Hamilton	96.3	95.7	94.1	93.6	92.1	91.0	88.6	88.0	92.2	93.1
Hansford	95.2	94.6	96.5	95.6	96.2	96.7	94.0	91.9	84.2	86.6
Hardeman	93.7	92.6	93.5	93.7	91.9	90.8	87.9	92.2	92.0	95.1
Hardin	89.2	93.3	95.3	92.8	94.8	96.6	96.0	95.4	96.5	96.1
Harris	82.8	82.8	81.6	83.0	82.1	83.9	81.7	83.3	85.4	83.8
Harrison	94.4	95.7	91.1	94.5	94.5	94.4	94.4	93.3	93.3	90.5
Hartley	90.6	86.9	92.2	92.8	87.6	86.8	92.2	86.2	81.4	85.4
Haskell	91.7	94.9	95.1	96.2	92.6	94.3	94.5	93.0	93.6	92.0
Hays	91.4	90.5	90.0	88.9	89.0	89.8	90.1	88.5	92.0	89.8
Hemphill	86.1	84.9	93.0	89.5	88.1	90.5	89.3	87.7	85.1	84.7
Henderson	91.1	87.1	89.8	83.4	90.0	94.5	95.0	95.0	95.9	93.1
Hidalgo	90.7	90.6	88.9	88.3	86.3	90.2	88.7	88.6	91.7	91.2
Hill	91.0	90.7	91.1	88.1	84.5	87.3	89.1	87.2	89.8	88.1
Hockley	92.8	90.5	91.5	93.5	88.2	89.7	90.7	89.8	90.0	90.0
Hood	93.3	94.9	90.4	91.4	85.0	87.3	96.4	95.0	93.2	89.0
Hopkins	87.0	88.2	83.4	82.5	84.2	85.8	87.5	86.5	89.1	89.5
Houston	89.2	89.8	87.1	84.5	86.7	90.4	89.2	89.3	91.1	89.1
Howard	92.4	93.2	93.8	92.4	90.7	N/A	90.1	90.3	90.2	87.6
Hudspeth	91.4	90.5	94.1	93.6	93.2	93.0	91.4	91.7	93.8	93.3
Hunt	90.6	91.6	85.1	83.7	83.4	86.5	84.5	85.2	90.7	90.4
Hutchinson	93.1	84.7	89.2	90.4	87.7	92.1	93.7	92.1	90.1	89.0
Irion	98.6	97.7	97.8	95.5	95.2	95.2	94.5	96.7	96.3	93.9
Jack	93.8	92.7	91.8	92.0	92.9	90.4	93.6	93.3	93.3	85.6
Jackson	92.5	90.0	88.9	89.2	89.5	89.0	88.7	89.4	90.8	92.2
Jasper	89.5	91.7	93.1	91.6	92.9	93.1	95.2	94.7	95.5	94.6
Jeff Davis	90.1	89.7	90.5	90.0	90.6	90.8	88.9	88.6	91.6	90.9
Jefferson	77.1	78.0	84.3	84.2	81.1	89.5	87.4	87.0	89.9	89.4
Jim Hogg	98.5	99.3	94.1	92.0	96.4	96.8	91.5	95.3	92.1	94.0
Jim Wells	76.5	84.7	81.7	79.3	84.5	81.7	85.7	82.8	81.9	81.9
Johnson	85.1	84.7	80.5	81.3	83.6	89.7	84.8	86.5	90.1	90.0
Jones	92.6	92.7	91.5	92.1	91.9	89.9	91.3	88.2	90.0	88.7
Karnes	88.0	90.0	86.8	91.9	89.1	89.8	85.8	76.5	71.6	68.0
Kaufman	81.0	78.9	79.8	75.9	78.3	82.2	80.6	81.4	80.3	76.9
Kendall	93.1	91.8	86.0	88.9	87.0	89.2	90.9	87.9	92.8	91.6
Kenedy	80.2	76.3	58.1	61.5	58.8	58.7	83.3	91.6	92.2	96.8
Kent	96.9	97.0	97.0	95.8	95.7	94.6	93.5	94.2	93.7	91.8
Kerr	89.9	91.3	90.4	91.8	89.3	88.9	90.6	89.5	92.5	90.5
Kimble	98.3	97.6	96.8	97.3	96.4	97.8	97.9	97.0	97.4	95.2

County	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
King	97.9	98.1	97.2	94.7	93.1	96.0	94.2	95.8	98.8	97.8
Kinney	92.6	94.1	90.5	94.9	95.0	93.7	91.1	92.7	94.7	94.3
Kleberg	89.3	89.3	84.4	84.9	87.7	84.9	88.2	89.0	90.6	86.3
Knox	92.7	93.2	96.9	95.7	95.6	95.6	94.4	94.8	95.0	94.3
La Salle	86.1	87.2	89.5	87.9	86.4	88.9	79.2	79.7	71.8	74.4
Lamar	90.4	89.2	80.6	83.8	83.4	87.4	90.8	87.1	91.5	87.0
Lamb	94.0	93.2	91.9	89.5	85.4	90.7	87.1	89.6	92.4	94.3
Lampasas	94.2	94.5	93.3	95.3	94.9	96.1	96.0	94.3	96.5	94.0
Lavaca	92.2	87.4	84.0	89.1	86.8	87.5	89.5	89.9	88.4	86.1
Lee	89.8	90.5	84.4	87.7	86.3	86.3	89.7	86.7	89.8	92.0
Leon	90.0	89.2	88.0	86.7	90.4	90.6	89.5	89.7	90.4	90.7
Liberty	86.7	87.4	90.9	87.7	92.4	91.9	93.1	91.5	93.7	94.0
Limestone	93.6	94.3	93.4	88.7	90.6	87.7	84.9	85.5	89.3	88.0
Lipscomb	91.5	88.4	90.7	85.4	85.6	90.2	90.2	90.8	85.0	88.2
Live Oak	89.0	91.4	87.8	88.0	88.0	90.2	88.7	86.7	84.8	84.4
Llano	96.1	97.2	92.1	92.5	89.3	87.1	88.8	89.2	96.9	93.1
Loving	99.4	99.0	98.1	97.1	98.9	96.5	97.1	96.7	96.7	85.9
Lubbock	89.8	91.5	92.5	92.2	91.1	91.7	91.6	92.2	92.2	91.3
Lynn	95.4	95.1	93.2	94.2	91.3	92.6	89.9	95.6	95.1	95.1
Madison	91.3	85.6	86.6	87.6	88.3	81.8	86.9	80.4	82.8	84.5
Marion	95.3	97.2	91.5	97.3	96.4	95.0	96.8	97.0	95.5	93.7
Martin	98.0	95.8	96.0	91.4	90.8	93.7	96.4	92.5	93.3	96.1
Mason	93.9	93.7	93.3	92.2	91.7	92.1	90.4	91.9	93.7	94.4
Matagorda	89.9	86.7	87.4	90.2	91.7	92.7	92.6	92.6	94.8	93.4
Maverick	81.6	78.6	79.9	80.1	77.7	84.1	82.2	82.2	88.4	88.4
McCulloch	95.5	95.5	95.7	95.9	94.3	96.1	95.8	93.9	94.5	95.0
McLennan	87.6	89.7	87.9	89.8	86.0	88.3	87.5	87.1	86.9	88.5
McMullen	86.2	90.0	83.8	85.0	85.1	87.9	89.3	88.9	83.2	75.0
Medina	88.3	85.3	87.0	92.3	91.9	95.9	94.6	94.2	94.8	91.8
Menard	97.5	98.0	96.9	96.8	95.4	98.2	96.9	93.6	96.4	94.6
Midland	94.4	93.0	94.9	90.5	90.2	88.1	89.6	92.8	87.0	89.7
Milam	92.5	89.4	91.8	91.5	90.8	88.5	90.6	88.4	88.2	89.1
Mills	93.6	95.0	95.3	95.9	95.1	95.0	95.9	95.1	97.3	97.0
Mitchell	96.6	96.9	94.1	91.6	92.3	100.0	91.7	92.1	95.3	93.8
Montague	94.9	92.3	92.0	92.9	92.1	93.3	90.8	91.4	92.6	92.8
Montgomery	90.7	90.5	94.6	94.2	88.5	86.9	88.1	91.2	95.3	93.4
Moore	91.3	85.3	88.2	94.4	93.4	94.1	91.9	90.7	90.9	85.2
Morris	95.6	96.8	97.1	96.2	97.8	95.8	90.2	89.7	93.4	90.8
Motley	96.0	94.4	98.1	97.7	96.5	95.9	90.7	91.6	97.6	99.0
Nacogdoches	91.9	91.6	90.8	90.5	91.6	90.0	89.1	91.9	92.7	89.5
Navarro	89.5	87.1	86.6	83.2	88.7	88.3	88.0	86.9	84.9	83.4
Newton	95.9	96.4	94.9	96.9	97.0	97.1	95.3	96.7	98.5	95.7
Nolan	92.6	93.5	91.3	93.6	91.8	92.9	91.1	88.7	90.2	85.4
Nueces	84.6	84.3	84.4	86.0	88.6	82.5	83.1	76.1	84.6	83.6
Ochiltree	87.5	82.1	83.1	84.8	82.4	88.6	81.0	84.6	86.1	83.8

County	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Oldham	88.5	85.0	91.7	89.5	94.0	92.1	91.5	91.0	91.0	89.2
Orange	79.6	79.1	82.8	82.7	83.7	89.5	86.1	92.2	92.9	92.7
Palo Pinto	93.4	92.8	92.5	93.8	92.8	88.7	93.0	89.8	91.4	90.7
Panola	95.1	93.3	94.3	96.4	96.0	94.0	93.4	89.5	90.5	88.3
Parker	91.3	91.9	87.7	87.1	83.5	87.8	89.2	91.2	90.7	86.3
Parmer	94.1	93.1	93.6	85.9	86.2	88.1	87.6	90.1	86.4	86.4
Pecos	97.7	98.0	98.9	99.0	98.5	97.3	98.3	97.3	97.8	97.9
Polk	90.9	93.4	90.5	90.0	87.9	91.3	91.6	91.8	93.0	91.6
Potter	88.1	86.0	83.1	82.8	88.2	81.8	85.7	87.4	84.9	83.8
Presidio	91.0	92.1	91.1	92.9	92.7	94.0	92.8	92.1	93.2	93.0
Rains	87.7	88.0	83.4	76.2	84.8	88.7	91.3	89.3	89.3	86.1
Randall	87.3	88.3	86.7	89.9	93.1	90.4	90.0	88.0	89.4	85.8
Reagan	99.3	99.2	98.9	98.6	98.2	99.0	94.1	93.3	95.1	93.2
Real	84.2	90.8	92.8	94.8	93.7	94.6	94.2	93.6	94.2	93.7
Red River	92.7	92.8	88.1	90.6	91.2	92.6	92.5	90.4	92.4	93.4
Reeves	94.6	95.2	94.6	91.4	94.4	92.9	93.3	94.4	93.9	92.6
Refugio	90.3	93.6	91.4	90.3	90.3	92.6	92.0	90.0	89.9	90.4
Roberts	96.3	88.3	95.0	95.0	93.1	92.1	94.4	94.5	88.3	88.5
Robertson	88.7	80.7	89.7	85.5	90.6	89.8	92.8	92.6	94.5	93.4
Rockwall	83.6	74.2	69.8	63.7	70.5	70.1	59.6	64.5	70.3	64.6
Runnels	93.6	94.3	90.4	94.1	95.1	95.0	95.1	94.9	94.6	93.9
Rusk	85.7	84.0	88.6	87.7	90.5	90.5	92.5	91.6	92.1	85.2
Sabine	84.6	86.2	85.9	87.3	91.4	93.0	94.1	91.4	93.3	94.1
San Augustine	94.9	91.0	87.3	89.7	93.2	92.7	93.0	94.3	94.2	87.8
San Jacinto	91.4	90.5	92.9	95.7	97.3	96.9	96.6	95.0	97.1	95.7
San Patricio	75.7	79.5	82.8	83.4	85.1	87.6	88.0	89.7	89.2	87.2
San Saba	95.4	92.6	91.0	90.4	89.3	94.0	95.2	92.0	92.6	90.8
Schleicher	95.4	97.3	95.9	95.1	95.7	97.7	95.7	96.0	96.2	94.1
Scurry	93.6	94.9	95.3	94.3	93.9	92.5	90.8	91.7	93.8	92.5
Shackelford	90.6	92.5	92.5	95.0	89.2	91.6	94.1	90.2	93.7	93.4
Shelby	87.0	89.5	91.3	90.6	90.6	88.4	87.7	86.7	90.7	90.4
Sherman	90.7	92.2	93.5	92.1	90.9	89.4	84.3	85.8	85.4	93.2
Smith	91.9	90.1	91.8	86.7	93.5	93.3	94.5	94.6	95.5	92.8
Somervell	94.5	98.6	92.0	94.2	89.0	90.8	94.5	91.1	92.0	87.0
Starr	95.3	95.4	89.7	89.9	87.6	93.3	86.3	88.4	92.4	91.6
Stephens	89.4	87.0	89.0	88.6	85.2	92.2	94.1	92.7	92.1	91.4
Sterling	98.1	96.5	97.6	96.9	93.5	92.4	93.4	91.4	91.0	90.0
Stonewall	96.4	96.2	95.9	93.9	95.5	96.5	97.4	97.4	94.5	94.4
Sutton	97.3	96.9	95.5	94.4	94.6	98.0	96.3	95.5	96.1	94.6
Swisher	94.8	94.0	96.4	93.8	94.1	93.9	90.6	89.5	89.9	93.6
Tarrant	83.9	83.4	83.6	83.6	84.7	85.1	86.3	87.4	88.7	89.4
Taylor	86.3	89.3	90.8	90.0	88.6	90.1	88.6	84.4	87.0	85.5
Terrell	97.1	97.8	98.1	97.4	96.9	96.6	98.6	98.3	99.0	99.1
Terry	91.2	92.5	94.8	91.4	91.8	93.1	92.8	92.6	90.6	92.6
Throckmorton	97.5	97.6	95.5	96.1	95.3	94.5	96.3	94.2	96.2	92.9

County	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Titus	92.5	94.6	93.2	94.1	90.8	92.4	91.9	91.7	91.4	92.1
Tom Green	94.6	95.2	94.5	93.0	93.7	94.3	95.7	94.5	93.6	92.2
Travis	92.0	88.1	86.7	86.8	89.4	91.1	90.7	88.2	91.6	90.1
Trinity	92.4	94.8	93.0	89.7	91.6	93.0	95.1	93.0	95.5	93.5
Tyler	90.5	91.6	91.0	92.7	93.2	98.3	97.7	97.8	96.5	93.4
Upshur	95.5	96.2	94.7	92.0	95.3	94.1	97.3	93.1	94.2	92.2
Upton	98.9	98.9	98.8	96.0	97.6	96.8	98.4	97.6	97.3	96.9
Uvalde	78.9	85.2	81.6	88.4	85.4	87.5	85.4	89.5	89.9	92.0
Val Verde	93.5	92.5	93.1	92.4	91.5	90.9	90.5	91.1	92.7	90.3
Van Zandt	91.0	85.5	89.0	87.9	91.6	91.9	93.1	91.9	93.8	90.9
Victoria	95.5	89.9	88.8	90.8	89.2	88.8	88.4	89.1	89.9	87.3
Walker	89.8	89.8	92.3	89.6	93.3	90.8	91.3	89.9	91.6	91.9
Waller	91.5	93.9	93.2	90.3	86.7	85.9	87.1	90.5	90.2	89.5
Ward	92.6	93.6	98.7	96.5	97.1	95.1	96.6	96.4	96.6	95.9
Washington	89.7	88.7	91.5	92.0	93.4	92.4	93.6	86.8	88.4	89.5
Webb	89.8	90.2	87.9	88.2	90.2	87.5	80.1	88.3	88.3	88.3
Wharton	90.5	89.3	88.3	88.5	90.0	89.8	89.4	89.3	90.5	88.9
Wheeler	92.9	91.1	91.9	89.8	93.2	89.1	88.7	91.1	95.8	93.6
Wichita	88.1	87.1	88.6	89.0	88.1	90.5	88.4	89.7	91.2	89.1
Wilbarger	94.3	94.2	94.6	95.2	94.8	96.0	96.3	95.1	96.4	95.1
Willacy	90.4	88.9	91.3	92.3	92.4	93.5	83.6	89.1	91.7	87.7
Williamson	89.8	88.8	82.7	82.0	83.6	85.3	84.2	82.6	88.9	89.4
Wilson	90.8	94.3	87.7	92.4	89.0	90.3	91.5	91.8	91.4	89.0
Winkler	99.0	97.0	96.6	90.4	93.9	94.7	96.9	96.1	91.6	90.9
Wise	90.2	91.3	90.9	88.6	87.4	91.7	92.6	92.1	93.1	90.2
Wood	92.7	87.6	90.0	87.3	91.5	91.0	92.8	92.1	91.8	90.9
Yoakum	93.6	96.6	96.8	92.7	95.0	96.1	93.6	95.5	95.5	97.8
Young	95.9	96.8	97.3	96.8	94.8	94.3	95.0	90.8	91.2	92.1
Zapata	93.9	89.2	83.8	78.5	86.0	89.4	85.8	93.5	91.8	89.7
Zavala	85.3	86.9	90.2	86.5	85.9	85.7	76.7	79.5	73.6	81.5

Table 30. Total Maintenance Expenditures per County (Expressed in Their Respective Year Dollars).

County	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Anderson	$1,414,255	$1,457,396	$1,327,824	$1,561,218	$2,457,490	$3,047,343	$1,513,630	$1,860,470	$4,412,656	$1,233,323
Andrews	$184,748	$166,233	$104,713	$144,171	$169,650	$106,270	$127,854	$139,477	$213,268	$1,739,237
Angelina	$1,345,838	$1,159,658	$1,258,064	$1,436,695	$2,309,239	$1,784,794	$2,104,430	$2,837,798	$2,289,969	$1,424,545
Aransas	$110,707	$70,272	$59,083	$87,051	$98,951	$111,391	$292,562	$792,499	$432,021	$97,845
Archer	$469,907	$624,226	$837,702	$728,983	$840,183	$640,994	$406,936	$895,284	$779,820	$1,259,709
Armstrong	$177,674	$192,310	$173,083	$182,871	$181,048	$332,510	$428,991	$519,045	$587,342	$605,381
Atascosa	$1,244,334	$1,054,179	$1,275,005	$1,414,746	$2,235,505	$2,886,284	$3,431,616	$1,407,790	$1,161,346	$6,407,824
Austin	$786,345	$907,181	$1,241,909	$792,143	$839,128	$1,259,706	$1,956,876	$1,479,066	$1,943,236	$1,353,718
Bailey	$436,249	$332,797	$303,157	$132,068	$142,257	$602,067	$534,058	$865,147	$664,500	$877,207
Bandera	$411,705	$330,695	$359,407	$257,073	$575,057	$278,190	$334,779	$561,218	$531,748	$377,387
Bastrop	$588,496	$714,135	$1,116,659	$807,619	$1,139,372	$1,362,467	$3,339,660	$3,332,826	$2,147,940	$739,401
Baylor	$309,676	$458,648	$480,071	$764,128	$523,315	$541,207	$499,435	$491,783	$632,060	$990,321
Bee	$344,972	$1,330,890	$803,640	$761,597	$979,605	$327,327	$2,096,584	$1,254,633	$1,381,694	$833,593
Bell	$2,110,546	$2,057,632	$2,126,324	$2,073,184	$1,821,962	$565,785	$2,704,730	$3,762,772	$5,098,332	$4,372,915
Bexar	$1,691,728	$2,298,670	$2,706,282	$4,070,558	$4,086,168	$6,193,164	$6,424,660	$14,314,740	$8,096,357	$9,652,777
Blanco	$147,910	$492,558	$623,037	$334,535	$1,023,151	$481,891	$1,011,739	$743,800	$988,450	$331,859
Borden	$211,933	$145,539	$218,919	$329,074	$248,229	$69,936	$188,734	$529,081	$854,111	$711,857
Bosque	$840,308	$832,555	$1,193,469	$1,338,120	$1,585,513	$933,438	$888,919	$728,046	$1,035,197	$1,552,062
Bowie	$2,655,613	$2,296,889	$1,509,350	$2,265,047	$1,665,693	$2,488,587	$2,504,377	$1,528,113	$4,202,321	$2,248,562
Brazoria	$1,311,018	$1,036,184	$1,509,232	$1,657,997	$1,428,188	$1,620,680	$1,477,872	$2,303,905	$4,940,861	$7,609,976
Brazos	$406,292	$1,070,523	$853,033	$647,864	$1,044,883	$1,590,224	$963,789	$1,988,923	$3,894,973	$9,526,667
Brewster	$145,934	$117,150	$162,941	$152,584	$128,760	$154,943	$61,449	$159,796	$211,018	$242,721
Briscoe	$587,809	$347,539	$127,883	$136,068	$367,471	$316,959	$213,921	$725,885	$907,560	$705,511
Brooks	$656,979	$281,737	$252,126	$258,497	$89,495	$498,381	$426,016	$1,427,737	$438,036	$3,001,080
Brown	$1,050,576	$1,195,085	$640,548	$763,966	$1,320,369	$684,420	$1,368,201	$1,176,377	$1,485,721	$1,045,460
Burleson	$1,433,474	$1,079,633	$834,514	$598,670	$1,207,201	$748,451	$1,799,413	$1,564,521	$2,294,038	$5,040,205
Burnet	$155,262	$444,476	$833,317	$399,781	$608,980	$1,038,718	$1,095,794	$1,832,117	$1,987,508	$1,361,811
Caldwell	$972,657	$796,369	$1,062,692	$1,082,825	$859,879	$865,255	$1,792,015	$1,585,033	$3,405,556	$998,112
Calhoun	$382,634	$546,111	$722,910	$511,515	$645,917	$1,083,564	$1,537,766	$2,628,284	$1,178,044	$1,853,779
Callahan	$1,230,500	$571,373	$796,572	$1,128,488	$912,636	$1,307,467	$747,814	$1,445,544	$2,765,621	$1,603,994
Cameron	$1,758,022	$1,370,719	$1,257,847	$1,695,440	$1,222,828	$1,848,522	$1,478,044	$2,304,063	$3,619,026	$1,218,876
Camp	$374,117	$978,162	$621,516	$137,837	$919,923	$256,654	$642,529	$1,730,036	$1,223,121	$959,699
Carson	$737,055	$523,774	$332,766	$445,074	$673,508	$671,601	$684,638	$1,784,254	$1,265,318	$1,296,875
Cass	$1,234,732	$3,016,698	$1,998,769	$1,709,639	$1,231,976	$1,802,877	$1,486,422	$1,361,557	$3,257,811	$2,042,236
Castro	$368,143	$318,575	$397,173	$100,052	$569,183	$363,651	$437,407	$247,472	$1,136,218	$735,765
Chambers	$357,416	$293,204	$632,807	$364,990	$396,537	$491,879	$1,063,597	$2,857,002	$3,448,927	$1,941,696
Cherokee	$1,993,858	$2,319,301	$1,834,876	$1,928,475	$1,805,141	$2,409,602	$3,939,506	$2,512,372	$5,147,198	$2,669,497
Childress	$349,826	$115,396	$87,892	$177,210	$329,429	$321,801	$416,714	$499,311	$807,094	$994,621
Clay	$910,197	$1,169,933	$586,196	$628,988	$1,150,841	$965,365	$880,755	$2,320,821	$1,283,153	$1,378,391
Cochran	$187,661	$270,261	$293,184	$299,821	$428,478	$400,244	$341,483	$612,866	$1,206,225	$479,807
Coke	$139,677	$156,605	$51,952	$127,007	$37,067	$110,560	$150,214	$76,537	$320,641	$231,746
Coleman	$489,081	$558,711	$632,862	$450,011	$608,053	$396,382	$1,572,688	$1,086,661	$2,415,022	$1,064,962
Collin	$2,602,990	$4,390,229	$1,774,087	$4,728,209	$1,787,763	$1,806,455	$1,727,857	$1,976,812	$2,482,489	$1,414,556
Collingsworth	$231,755	$269,854	$124,194	$204,018	$310,449	$291,318	$232,076	$477,256	$657,917	$253,763
Colorado	$691,753	$736,297	$839,815	$750,307	$1,695,098	$1,041,278	$1,348,851	$1,638,859	$2,457,892	$979,112
Comal	$511,237	$1,155,039	$494,946	$375,668	$631,078	$506,282	$556,486	$1,646,253	$1,499,747	$1,353,022
Comanche	$381,321	$411,071	$465,137	$263,860	$420,999	$423,411	$1,208,547	$1,286,924	$2,241,031	$3,548,953
Concho	$254,474	$262,024	$221,121	$281,242	$254,553	$81,922	$216,652	$516,420	$872,611	$495,455
Cooke	$1,074,356	$1,102,321	$1,220,077	$1,869,668	$1,639,167	$1,218,975	$1,015,159	$2,731,612	$4,269,290	$2,573,781
Coryell	$602,335	$734,896	$769,758	$646,258	$717,297	$402,025	$677,548	$952,394	$1,271,804	$1,627,884

County	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Cottle	$201,930	$207,793	$113,869	$139,833	$186,077	$228,856	$187,661	$575,132	$593,818	$252,144
Crane	$101,517	$44,702	$32,885	$47,427	$143,704	$51,434	$168,942	$705,878	$258,885	$84,589
Crockett	$120,634	$164,109	$184,637	$305,155	$154,882	$1,322,162	$137,546	$212,626	$1,017,169	$98,315
Crosby	$383,409	$414,053	$365,366	$407,492	$238,434	$618,028	$436,183	$1,149,846	$1,249,876	$557,921
Culberson	$161,672	$147,802	$125,793	$208,856	$82,141	$107,760	$146,055	$55,130	$360,079	$207,265
Dallam	$375,779	$382,864	$307,981	$425,072	$230,922	$315,476	$322,917	$946,988	$647,234	$808,855
Dallas	$2,089,515	$4,987,127	$1,706,874	$2,318,735	$2,402,739	$3,795,965	$5,035,411	$6,529,725	$12,990,540	$9,650,660
Dawson	$511,131	$597,209	$231,883	$556,654	$693,809	$390,756	$427,884	$593,953	$905,238	$1,461,941
Deaf Smith	$324,573	$428,615	$378,210	$275,537	$888,538	$347,012	$657,374	$721,579	$3,227,141	$991,930
Delta	$625,772	$479,866	$1,517,329	$624,420	$441,386	$684,687	$990,891	$1,873,508	$1,915,703	$1,540,755
Denton	$787,699	$3,819,976	$1,071,854	$416,849	$763,302	$515,931	$1,256,907	$1,905,811	$3,315,162	$4,596,032
DeWitt	$592,872	$690,367	$1,034,820	$914,903	$1,228,316	$1,239,515	$1,198,092	$2,703,541	$2,651,388	$1,280,207
Dickens	$211,679	$286,460	$214,215	$184,734	$311,304	$284,627	$332,487	$577,433	$608,742	$316,736
Dimmit	$1,400,176	$1,050,185	$1,947,192	$1,135,254	$474,763	$700,976	$2,372,173	$2,047,306	$11,219,898	$2,890,609
Donley	$261,446	$212,280	$284,362	$246,064	$344,396	$834,028	$494,888	$733,818	$1,445,666	$1,772,941
Duval	$192,216	$994,690	$221,936	$1,660,424	$1,657,329	$1,079,479	$6,398,879	$2,422,888	$1,344,105	$1,407,325
Eastland	$481,529	$642,700	$609,416	$354,972	$455,809	$337,133	$791,988	$1,097,632	$2,732,003	$928,955
Ector	$174,180	$135,774	$90,054	$110,327	$236,001	$106,935	$179,498	$525,014	$1,327,693	$2,698,652
Edwards	$41,902	$74,068	$161,341	$51,248	$86,130	$111,921	$230,256	$880,127	$2,789,792	$319,474
El Paso	$760,267	$946,761	$223,382	$3,018,248	$581,802	$257,942	$343,882	$340,391	$1,532,426	$2,724,038
Ellis	$4,214,006	$3,412,303	$6,846,339	$2,850,354	$4,055,289	$1,849,743	$2,966,995	$3,591,789	$5,198,101	$3,285,862
Erath	$928,869	$605,296	$756,706	$587,990	$1,120,699	$1,573,135	$1,314,086	$1,828,172	$3,982,909	$1,094,507
Falls	$946,494	$1,155,880	$1,261,077	$1,374,627	$1,712,750	$461,150	$2,645,015	$1,610,571	$3,837,928	$2,402,009
Fannin	$761,873	$2,196,968	$958,267	$2,368,783	$1,293,049	$3,140,109	$1,798,064	$3,504,386	$5,239,383	$3,547,089
Fayette	$844,162	$1,602,061	$1,198,143	$1,158,513	$1,398,622	$2,226,223	$3,531,041	$3,019,814	$952,260	$1,164,392
Fisher	$363,969	$597,305	$226,977	$604,099	$537,234	$27,619	$375,458	$986,855	$1,186,986	$922,761
Floyd	$440,635	$359,093	$256,363	$197,956	$934,997	$732,948	$695,570	$1,004,269	$399,641	$682,359
Foard	$211,840	$182,851	$110,569	$102,489	$213,872	$162,117	$157,911	$281,764	$3,093,244	$249,831
Fort Bend	$786,061	$1,056,807	$691,534	$780,817	$999,499	$1,010,920	$1,218,419	$1,789,488	$745,145	$8,601,089
Franklin	$369,919	$1,291,620	$536,610	$651,453	$999,184	$876,264	$696,285	$1,346,332	$4,135,741	$1,678,139
Freestone	$1,254,050	$2,040,732	$2,252,765	$761,339	$1,714,953	$3,490,794	$2,056,464	$2,923,022	$1,068,307	$7,457,928
Frio	$707,121	$1,653,533	$1,052,583	$913,205	$2,243,058	$1,182,425	$882,539	$2,749,865	$572,041	$4,871,678
Gaines	$515,238	$293,471	$286,199	$398,068	$263,605	$404,405	$647,904	$593,748	$1,865,949	$1,017,428
Galveston	$442,070	$773,718	$678,890	$943,733	$951,574	$870,746	$806,420	$1,040,195	$1,033,105	$3,839,227
Garza	$1,551,530	$183,352	$250,807	$296,305	$335,592	$175,736	$249,794	$381,406	$934,500	$1,071,831
Gillespie	$303,697	$446,358	$449,282	$737,426	$981,267	$660,504	$1,183,649	$696,839	$503,348	$1,078,659
Glasscock	$99,506	$133,459	$122,432	$146,927	$76,665	$39,117	$177,459	$334,506	$1,392,186	$4,442,828
Goliad	$438,221	$834,304	$359,049	$977,798	$990,274	$901,310	$777,098	$1,975,825	$5,047,654	$1,027,223
Gonzales	$845,462	$1,424,171	$868,191	$1,032,047	$1,247,823	$2,092,526	$2,153,200	$3,260,862	$785,276	$3,189,919
Gray	$593,227	$430,123	$547,061	$383,705	$331,664	$437,213	$504,276	$1,384,520	$3,186,850	$459,923
Grayson	$2,942,217	$2,489,975	$1,445,452	$1,385,505	$2,274,595	$473,024	$2,835,536	$4,359,442	$3,037,309	$1,067,648
Gregg	$1,556,140	$1,180,698	$855,147	$863,424	$850,414	$1,077,936	$2,033,900	$1,630,907	$1,875,141	$2,869,454
Grimes	$1,346,958	$1,632,207	$2,879,367	$882,509	$1,464,683	$830,724	$1,923,899	$3,321,812	$1,874,958	$5,270,841
Guadalupe	$931,342	$1,546,125	$820,147	$1,654,962	$1,331,309	$1,496,850	$1,570,463	$5,347,968	$2,038,930	$829,653
Hale	$663,205	$819,189	$644,608	$463,388	$554,380	$412,911	$810,825	$1,272,978	$423,550	$1,288,329
Hall	$343,905	$411,109	$124,613	$77,023	$323,131	$493,392	$359,471	$822,827	$1,034,084	$588,390
Hamilton	$609,671	$535,221	$625,625	$853,525	$863,648	$868,050	$793,415	$1,115,768	$913,221	$1,391,456
Hansford	$472,582	$367,178	$265,083	$243,702	$253,404	$350,849	$433,482	$1,605,774	$676,608	$779,359
Hardeman	$315,103	$123,940	$82,056	$64,705	$205,727	$399,504	$258,137	$512,699	$1,778,380	$1,077,695
Hardin	$2,383,071	$776,680	$266,987	$230,325	$1,302,462	$617,070	$1,078,158	$2,500,078	$7,199,170	$873,317
Harris	$2,224,408	$2,309,214	$3,217,289	$3,124,153	$3,381,401	$3,309,357	$3,732,754	$6,430,775	$4,370,001	$25,208,185
Harrison	$1,322,603	$1,194,203	$1,253,624	$2,661,457	$2,982,997	$3,722,551	$2,941,937	$2,003,633	$939,598	$1,754,412

County	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Hartley	$579,897	$470,635	$616,636	$528,710	$379,953	$275,770	$520,011	$639,653	$1,374,421	$974,859
Haskell	$361,050	$283,586	$761,039	$514,486	$449,293	$488,490	$606,708	$1,079,047	$2,090,518	$1,904,740
Hays	$397,201	$282,076	$571,368	$684,740	$739,204	$776,760	$1,066,149	$3,522,595	$1,094,288	$5,040,911
Hemphill	$195,528	$868,993	$527,174	$263,016	$241,318	$347,732	$839,349	$542,585	$4,344,056	$523,125
Henderson	$1,714,297	$1,804,181	$2,185,013	$1,857,656	$1,913,565	$2,350,166	$3,005,199	$3,564,660	$6,459,151	$1,746,875
Hidalgo	$1,593,983	$1,541,148	$1,337,908	$1,768,002	$1,568,602	$2,295,552	$7,359,032	$6,409,731	$3,701,721	$2,663,932
Hill	$2,194,974	$1,694,963	$3,004,061	$2,834,214	$4,178,414	$3,501,403	$2,504,193	$1,897,485	$1,051,595	$4,694,249
Hockley	$513,848	$466,791	$460,910	$394,571	$545,015	$537,047	$719,941	$939,389	$387,952	$1,592,440
Hood	$615,893	$677,951	$404,304	$531,581	$1,278,933	$1,481,603	$1,025,821	$1,388,105	$5,354,730	$2,960,213
Hopkins	$2,422,091	$1,572,351	$1,631,048	$2,319,151	$3,654,487	$3,320,658	$2,243,872	$3,489,536	$2,830,215	$4,766,279
Houston	$1,292,501	$1,660,370	$1,092,155	$1,078,716	$1,632,242	$1,769,870	$2,230,092	$2,374,956	$1,595,155	$3,068,242
Howard	$614,566	$614,334	$1,022,111	$401,717	$806,461	N/A	$1,247,751	$894,605	$332,413	$947,490
Hudspeth	$170,577	$233,854	$287,821	$367,883	$291,497	$293,596	$359,792	$359,895	$6,424,453	$1,711,258
Hunt	$3,652,209	$852,270	$2,364,048	$1,225,572	$1,844,881	$2,150,889	$1,621,660	$5,443,115	$1,239,658	$1,701,704
Hutchinson	$200,257	$195,138	$270,290	$167,934	$52,161	$102,707	$294,150	$432,484	$128,794	$566,122
Irion	$37,124	$75,616	$257,855	$129,198	$160,274	$393,443	$132,779	$428,629	$1,304,226	$313,285
Jack	$412,907	$621,394	$558,980	$597,870	$845,073	$977,842	$972,501	$1,484,632	$2,557,027	$1,994,156
Jackson	$704,174	$1,235,861	$1,146,936	$937,604	$1,378,204	$1,578,693	$1,746,167	$2,972,720	$1,249,813	$4,580,204
Jasper	$690,240	$374,395	$632,527	$683,830	$1,633,201	$1,277,211	$1,656,976	$1,428,512	$597,669	$2,197,436
Jeff Davis	$66,881	$74,538	$115,217	$64,224	$105,994	$143,903	$1,430,803	$1,155,459	$3,030,491	$108,467
Jefferson	$3,732,029	$1,186,497	$2,430,502	$817,517	$3,276,403	$1,637,603	$1,847,061	$2,250,299	$515,688	$3,077,397
Jim Hogg	$201,633	$185,094	$356,718	$244,921	$310,794	$73,544	$135,692	$136,714	$2,167,038	$751,400
Jim Wells	$2,155,722	$813,043	$1,102,243	$785,507	$1,349,381	$1,985,961	$1,942,776	$5,136,239	$7,125,062	$4,527,211
Johnson	$620,709	$907,362	$2,280,978	$2,548,352	$14,606,724	$6,659,914	$4,030,595	$5,197,624	$2,311,716	$4,537,049
Jones	$616,051	$678,585	$831,658	$1,045,350	$1,947,138	$1,010,044	$1,371,123	$2,461,283	$6,921,372	$508,414
Karnes	$530,356	$845,106	$761,431	$981,785	$954,450	$987,063	$2,447,648	$3,493,802	$4,744,920	$8,982,281
Kaufman	$3,550,458	$4,974,174	$1,562,046	$2,332,024	$2,983,708	$1,043,869	$1,344,573	$2,768,906	$640,532	$3,350,449
Kendall	$81,963	$142,784	$494,588	$451,733	$523,284	$542,733	$1,108,282	$1,263,558	$1,985,488	$578,702
Kenedy	$19,318	$10,843	$40,382	$3,406	$26,654	$162,860	$185,004	$41,809	$2,013,157	$537,980
Kent	$284,163	$241,562	$228,322	$349,595	$416,702	$417,373	$396,910	$928,956	$804,136	$516,154
Kerr	$167,124	$271,349	$222,931	$261,676	$353,019	$758,430	$812,218	$710,231	$2,566,623	$913,481
Kimble	$162,287	$37,388	$153,607	$170,541	$122,152	$481,837	$784,272	$653,124	$485,945	$839,989
King	$75,370	$32,994	$5,365	$90,638	$61,482	$140,293	$135,710	$158,923	$128,586	$123,741
Kinney	$104,068	$94,760	$242,203	$161,894	$227,366	$465,063	$719,232	$1,309,682	$811,354	$1,029,529
Kleberg	$293,503	$569,295	$356,083	$625,254	$839,769	$1,045,516	$760,452	$1,706,353	$689,491	$13,567,558
Knox	$116,507	$301,039	$114,966	$81,282	$271,635	$393,318	$238,304	$308,453	$470,624	$627,237
La Salle	$424,983	$1,021,824	$717,279	$429,469	$2,594,487	$2,996,928	$1,600,195	$2,698,703	$966,716	$2,637,152
Lamar	$1,908,863	$1,436,723	$3,683,852	$1,317,707	$2,727,434	$2,879,209	$2,431,015	$4,215,909	$2,322,934	$2,768,995
Lamb	$359,576	$786,404	$678,784	$362,360	$660,797	$733,079	$1,310,344	$1,096,595	$3,952,691	$1,495,666
Lampasas	$448,814	$502,188	$326,603	$263,986	$749,143	$204,541	$407,864	$1,267,937	$2,262,264	$472,589
Lavaca	$782,623	$787,608	$1,212,895	$1,076,273	$1,336,901	$1,519,584	$2,161,557	$2,757,829	$2,357,257	$1,550,114
Lee	$577,060	$138,209	$607,145	$1,029,172	$879,475	$613,763	$1,507,794	$1,192,911	$1,469,590	$1,126,888
Leon	$899,097	$1,350,827	$1,955,323	$2,166,543	$1,623,130	$2,309,382	$2,306,967	$5,584,168	$2,259,011	$10,006,799
Liberty	$737,087	$426,360	$366,212	$793,137	$530,377	$818,440	$2,297,462	$1,758,006	$3,256,120	$2,296,509
Limestone	$955,588	$1,123,998	$2,259,989	$1,368,234	$2,474,029	$485,192	$1,801,978	$3,425,979	$3,845,397	$1,632,482
Lipscomb	$265,815	$688,356	$313,598	$360,329	$424,413	$492,866	$591,992	$530,158	$1,429,675	$447,600
Live Oak	$675,202	$1,021,424	$885,830	$1,129,707	$1,444,899	$1,235,643	$932,474	$1,881,308	$2,709,227	$2,741,864
Llano	$40,417	$224,162	$392,391	$182,489	$426,751	$777,558	$1,279,028	$1,120,450	$1,129,635	$1,299,378
Loving	$16,998	$14,101	$14,519	$3,533	$11,638	$1,671	$54,167	$390,158	$38,227	$76,917
Lubbock	$1,022,411	$1,253,272	$1,362,166	$961,260	$1,687,979	$1,531,113	$1,484,153	$3,505,676	$3,907,195	$1,867,723
Lynn	$841,481	$545,081	$707,635	$693,720	$580,855	$523,972	$1,031,596	$1,570,510	$707,352	$1,078,389
Madison	$449,449	$616,481	$1,165,593	$2,040,110	$1,217,764	$609,100	$1,060,848	$2,858,588	$1,906,254	$6,702,683

County	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Marion	$488,163	$786,119	$420,969	$221,907	$203,899	$991,611	$976,974	$866,285	$446,828	$560,650
Martin	$74,291	$257,800	$195,774	$385,328	$219,896	$1,059,731	$342,305	$436,908	$363,844	$1,703,817
Mason	$51,444	$445,576	$510,159	$223,606	$406,415	$505,580	$1,164,170	$1,421,214	$1,043,887	$1,428,734
Matagorda	$591,003	$870,900	$1,314,723	$985,704	$1,106,575	$1,397,124	$1,051,608	$3,115,044	$4,937,258	$4,126,228
Maverick	$620,082	$725,015	$1,357,621	$386,298	$1,438,046	$1,427,167	$2,252,411	$1,711,321	$1,092,342	$1,484,958
McCulloch	$310,590	$396,982	$449,830	$279,565	$786,887	$531,856	$459,315	$2,198,855	$1,257,039	$1,098,753
McLennan	$2,565,542	$2,911,229	$2,847,923	$147,559,839	$3,949,819	$1,674,072	$3,293,515	$3,418,853	$4,406,551	$4,332,389
McMullen	$776,250	$468,859	$807,621	$463,609	$652,614	$1,708,410	$637,377	$1,510,641	$514,955	$742,730
Medina	$1,305,874	$1,282,675	$1,634,252	$870,665	$1,329,016	$1,342,647	$995,791	$1,176,947	$1,127,703	$947,818
Menard	$61,030	$74,622	$106,160	$212,977	$89,232	$319,369	$23,400	$101,407	$2,405,976	$874,145
Midland	$250,105	$278,808	$232,127	$202,222	$244,181	$245,417	$503,754	$2,016,019	$1,576,930	$1,999,535
Milam	$1,232,939	$1,874,491	$1,536,000	$977,775	$2,000,168	$1,857,254	$1,726,818	$2,707,112	$2,520,917	$2,573,266
Mills	$262,074	$221,518	$265,637	$151,136	$423,564	$282,602	$598,113	$1,276,367	$1,164,626	$1,690,788
Mitchell	$504,331	$482,464	$424,981	$938,647	$719,128	-	$885,232	$986,046	$1,125,246	$768,757
Montague	$781,976	$1,684,892	$1,113,643	$891,427	$1,352,365	$1,079,276	$3,255,176	$2,477,306	$2,325,332	$4,736,248
Montgomery	$331,284	$390,653	$373,659	$636,344	$418,611	$523,584	$677,740	$2,754,889	$1,293,441	$3,049,813
Moore	$373,939	$187,553	$518,014	$342,496	$236,547	$288,677	$455,821	$538,338	$736,586	$707,255
Morris	$1,507,915	$1,193,665	$447,900	$364,915	$434,375	$562,826	$315,820	$1,301,669	$1,595,174	$971,283
Motley	$83,405	$44,566	$77,781	$141,685	$152,585	$151,334	$234,275	$173,142	$386,244	$495,386
Nacogdoches	$1,978,070	$1,628,914	$1,704,989	$1,892,570	$2,924,247	$1,942,781	$3,022,274	$4,113,675	$4,094,848	$2,506,703
Navarro	$1,290,215	$1,211,042	$1,341,496	$736,100	$1,731,383	$1,379,005	$1,140,037	$2,772,521	$2,691,392	$1,626,244
Newton	$822,511	$654,147	$475,412	$498,591	$635,713	$656,316	$4,291,594	$1,722,968	$2,205,293	$1,644,486
Nolan	$483,512	$515,231	$743,965	$525,315	$383,080	$819,677	$397,287	$1,215,699	$974,783	$958,117
Nueces	$1,712,442	$1,713,230	$1,482,324	$1,048,797	$3,516,956	$2,869,510	$2,145,141	$5,340,692	$4,433,529	$4,540,194
Ochiltree	$300,137	$264,896	$259,721	$516,983	$108,771	$314,954	$552,554	$1,140,325	$1,155,701	$556,977
Oldham	$318,310	$510,622	$289,726	$246,279	$447,992	$179,824	$546,814	$1,984,432	$2,592,510	$1,505,721
Orange	$732,930	$347,352	$766,593	$344,177	$473,584	$630,937	$1,934,226	$1,279,630	$2,441,140	$1,380,609
Palo Pinto	$880,867	$830,636	$823,768	$986,688	$868,113	$1,167,222	$2,472,430	$1,826,719	$3,096,489	$1,370,031
Panola	$2,442,789	$1,425,167	$2,506,713	$1,271,133	$1,644,029	$1,589,346	$1,546,315	$1,727,554	$2,955,850	$2,635,099
Parker	$767,962	$3,186,643	$1,055,282	$968,890	$1,424,956	$2,837,491	$1,624,597	$2,499,277	$1,746,089	$3,628,902
Parmer	$192,908	$764,208	$338,256	$556,111	$363,371	$343,597	$776,935	$996,395	$888,389	$750,883
Pecos	$396,722	$447,942	$400,660	$326,591	$382,883	$670,006	$578,519	$2,427,551	$1,488,587	$648,980
Polk	$1,670,457	$1,381,053	$1,712,922	$1,762,432	$2,236,542	$1,768,449	$1,913,994	$2,604,226	$2,505,095	$2,380,623
Potter	$817,502	$799,009	$1,046,004	$1,108,262	$1,215,245	$859,193	$1,433,473	$1,490,379	$2,151,661	$1,486,163
Presidio	$81,000	$102,514	$159,962	$101,835	$337,829	$193,609	$151,075	$293,595	$121,266	$109,147
Rains	$653,811	$268,244	$219,843	$1,085,021	$1,140,055	$380,817	$1,251,608	$665,439	$838,546	$1,858,996
Randall	$855,659	$1,142,257	$852,295	$873,933	$1,054,450	$989,403	$1,000,473	$1,927,300	$1,903,799	$2,180,140
Reagan	$4,916	$94,418	$31,888	$50,450	$164,963	$15,491	$42,985	$70,927	$746,060	$2,274,256
Real	$24,686	$120,153	$148,780	$70,989	$123,743	$215,513	$326,009	$806,418	$502,445	$168,751
Red River	$623,278	$1,919,578	$1,208,522	$993,777	$1,051,048	$1,658,102	$1,945,433	$2,316,910	$2,439,286	$4,242,634
Reeves	$254,961	$835,884	$355,081	$337,382	$662,681	$430,092	$435,367	$1,584,388	$553,084	$829,315
Refugio	$467,964	$810,719	$528,682	$626,670	$896,485	$485,373	$1,296,403	$525,577	$1,134,698	$778,021
Roberts	$293,327	$346,183	$374,270	$213,882	$124,955	$89,755	$217,908	$324,972	$471,651	$380,387
Robertson	$1,490,995	$1,531,646	$1,023,798	$1,358,176	$3,584,760	$3,027,261	$1,812,249	$2,103,653	$5,316,153	$3,655,921
Rockwall	$398,370	$1,674,177	$900,939	$1,690,579	$1,413,453	$982,026	$775,953	$992,315	$911,613	$764,558
Runnels	$368,332	$493,051	$341,004	$289,303	$420,769	$400,223	$458,283	$858,274	$617,940	$1,478,569
Rusk	$1,601,389	$2,641,372	$2,074,826	$3,017,657	$2,483,633	$1,666,776	$2,449,556	$3,403,578	$6,507,483	$4,501,553
Sabine	$1,503,829	$1,130,004	$1,111,222	$1,129,318	$1,712,764	$1,282,253	$1,889,090	$2,274,176	$3,064,491	$2,188,229
San Augustine	$912,852	$941,435	$1,068,057	$1,198,608	$1,366,765	$1,289,207	$1,920,203	$2,392,658	$3,328,877	$1,660,997
San Jacinto	$2,054,970	$2,241,983	$1,815,161	$1,843,954	$1,963,548	$1,893,933	$3,082,520	$2,758,496	$3,291,193	$2,681,135
San Patricio	$722,009	$1,377,663	$1,250,060	$1,385,074	$2,192,361	$2,505,668	$2,058,800	$3,279,786	$2,275,488	$2,312,542
San Saba	$424,241	$372,874	$429,036	$356,843	$509,083	$537,938	$622,129	$1,344,617	$1,240,832	$1,025,563

County	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Schleicher	$169,318	$105,752	$242,400	$243,079	$135,867	$130,206	$287,790	$985,271	$360,244	$82,592
Scurry	$180,201	$453,785	$466,727	$358,404	$942,905	$413,549	$1,032,305	$1,027,372	$1,211,181	$575,620
Shackelford	$228,837	$192,639	$365,273	$349,793	$595,397	$698,059	$617,907	$1,129,706	$1,412,397	$556,497
Shelby	$2,275,222	$1,391,645	$1,643,133	$1,896,867	$2,590,067	$2,210,488	$2,340,112	$2,985,744	$4,449,588	$3,028,233
Sherman	$290,251	$158,253	$125,874	$240,386	$263,430	$152,598	$380,951	$363,512	$418,796	$903,301
Smith	$2,134,619	$2,809,459	$2,355,328	$3,200,035	$2,773,571	$2,880,469	$4,262,089	$1,528,972	$4,422,357	$3,471,994
Somervell	$94,727	$36,020	$60,727	$114,866	$221,439	$64,145	$294,028	$1,035,318	$1,635,425	$156,016
Starr	$480,348	$264,963	$709,938	$711,159	$974,805	$396,897	$518,564	$5,749,263	$2,886,763	$917,081
Stephens	$550,436	$513,365	$488,235	$447,650	$572,168	$606,416	$743,413	$711,930	$1,825,973	$791,772
Sterling	$31,290	$25,665	$23,842	$74,762	$161,335	$410,650	$488,407	$15,568	$94,326	$17,573
Stonewall	$185,109	$128,400	$448,305	$163,342	$382,059	$245,066	$286,841	$596,231	$849,061	$496,031
Sutton	$127,084	$139,192	$153,698	$149,847	$305,020	$38,710	$60,681	$521,604	$647,743	$354,916
Swisher	$665,585	$731,997	$664,816	$444,750	$777,385	$539,983	$831,939	$1,329,690	$1,226,522	$1,601,966
Tarrant	$3,368,479	$6,130,017	$6,095,706	$5,425,159	$7,479,327	$6,283,751	$9,530,973	$10,671,309	$13,980,401	$8,378,904
Taylor	$1,499,747	$1,208,054	$715,381	$705,738	$798,390	$1,087,727	$1,702,705	$2,063,841	$2,748,874	$1,280,295
Terrell	$254,788	$73,977	$90,028	$36,893	$59,209	$56,157	$41,116	$100,760	$42,398	$209,416
Terry	$398,494	$377,343	$478,568	$535,760	$600,503	$656,440	$658,426	$404,155	$768,829	$620,413
Throckmorton	$430,849	$490,273	$325,122	$513,252	$411,830	$507,540	$654,370	$466,638	$1,380,782	$815,344
Titus	$3,093,960	$1,472,498	$913,098	$2,239,553	$1,898,464	$1,357,967	$1,323,132	$1,495,532	$2,324,329	$2,485,708
Tom Green	$88,966	$433,489	$654,205	$455,318	$337,206	$826,174	$690,737	$671,140	$2,073,306	$497,212
Travis	$545,190	$1,335,678	$2,051,760	$1,292,030	$1,518,390	$1,918,355	$3,040,804	$3,975,834	$3,578,786	$6,018,201
Trinity	$931,456	$442,834	$850,373	$799,798	$1,178,759	$1,089,767	$1,071,174	$1,517,695	$1,456,641	$458,343
Tyler	$795,858	$936,223	$299,530	$765,435	$867,786	$430,673	$1,640,516	$2,312,296	$2,016,078	$2,088,299
Upshur	$1,185,547	$1,149,531	$1,494,425	$941,487	$1,835,463	$1,266,697	$1,871,624	$1,681,082	$1,796,846	$861,424
Upton	$91,891	$112,628	$204,093	$224,694	$228,817	$130,170	$259,896	$460,374	$717,981	$217,111
Uvalde	$537,527	$703,178	$486,275	$1,035,883	$1,650,069	$1,074,743	$580,267	$925,691	$1,057,012	$949,347
Val Verde	$233,162	$199,679	$413,834	$291,431	$407,067	$520,015	$1,000,850	$1,277,824	$764,484	$974,068
Van Zandt	$1,848,259	$2,294,821	$2,680,964	$2,480,996	$3,636,408	$3,386,441	$3,299,447	$3,778,760	$6,493,114	$2,987,936
Victoria	$723,483	$1,120,231	$1,010,882	$827,343	$1,784,120	$2,378,361	$1,248,696	$3,279,433	$2,733,698	$2,251,783
Walker	$1,118,425	$1,637,595	$1,081,098	$1,496,909	$607,613	$1,030,785	$1,901,214	$1,719,913	$2,436,762	$1,132,492
Waller	$746,761	$674,794	$553,266	$527,870	$566,114	$540,250	$1,197,052	$1,218,595	$1,809,505	$3,236,881
Ward	$280,470	$181,401	$382,877	$161,345	$169,966	$172,746	$248,148	$1,389,789	$2,041,978	$280,364
Washington	$970,324	$1,441,298	$693,105	$1,562,110	$1,180,137	$1,450,333	$1,156,121	$2,317,440	$1,933,309	$2,028,775
Webb	$2,092,119	$973,810	$349,410	$575,669	$2,467,072	$2,559,217	$2,030,526	$6,781,971	$4,598,763	$1,926,876
Wharton	$3,225,074	$2,600,622	$1,643,996	$1,026,046	$1,121,543	$3,869,827	$2,905,325	$3,588,277	$4,911,010	$1,949,916
Wheeler	$298,716	$272,571	$265,478	$342,631	$590,353	$808,827	$513,113	$931,454	$957,511	$953,207
Wichita	$1,008,939	$901,746	$704,342	$1,512,933	$1,396,575	$1,261,604	$1,643,390	$2,083,234	$2,710,364	$2,505,270
Wilbarger	$621,081	$819,076	$1,149,446	$1,077,724	$761,906	$848,542	$619,247	$650,004	$1,385,364	$1,113,250
Willacy	$443,199	$387,071	$326,401	$556,228	$474,841	$227,806	$464,844	$828,269	$1,859,812	$1,131,262
Williamson	$635,246	$770,170	$1,344,673	$844,351	$2,444,151	$1,915,922	$2,540,840	$4,407,528	$5,208,227	$3,363,093
Wilson	$740,270	$1,072,764	$806,377	$528,322	$889,415	$718,619	$1,068,005	$959,572	$6,642,614	$1,144,946
Winkler	$68,088	$58,003	$49,868	$115,868	$95,759	$85,607	$167,001	$639,118	$153,506	$121,929
Wise	$905,011	$1,069,673	$777,547	$1,456,716	$1,343,515	$2,386,054	$2,076,155	$3,420,393	$2,293,087	$2,111,107
Wood	$1,180,924	$865,321	$1,099,597	$1,372,386	$1,667,571	$1,883,551	$2,883,414	$1,701,718	$1,476,003	$1,851,193
Yoakum	$342,671	$310,526	$319,237	$242,816	$204,748	$410,150	$331,637	$266,272	$575,229	$276,730
Young	$738,270	$891,085	$1,085,661	$800,851	$871,049	$1,032,856	$960,901	$1,126,766	$2,052,369	$1,556,639
Zapata	$399,125	$308,065	$80,436	$286,574	$364,276	$829,051	$2,265,756	$1,139,817	$296,339	$158,463
Zavala	$1,021,895	$1,462,146	$2,238,380	$591,001	$414,249	$474,977	$2,490,873	$1,006,350	$1,331,171	$2,248,797

Table 31. Percentage of Highway Miles with Below-Good Pavement Condition Scores.

County	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Anderson	2.66%	2.66%	9.53%	6.05%	3.86%	2.83%	2.90%	3.56%	3.07%	6.05%
Andrews	0.87%	0.87%	1.39%	3.72%	3.69%	2.86%	4.06%	3.16%	2.96%	2.85%
Angelina	9.62%	9.62%	9.00%	10.55%	11.77%	11.24%	11.67%	11.33%	7.19%	7.46%
Aransas	10.65%	10.42%	9.58%	10.54%	10.09%	19.58%	15.93%	34.00%	9.03%	4.89%
Archer	1.72%	1.85%	5.63%	6.00%	4.79%	2.94%	2.30%	3.90%	6.39%	3.00%
Armstrong	27.51%	29.21%	19.29%	25.02%	20.84%	8.28%	13.37%	16.91%	10.08%	13.86%
Atascosa	22.61%	22.60%	21.45%	15.00%	19.17%	14.37%	9.77%	20.84%	17.27%	18.70%
Austin	5.66%	5.64%	12.39%	12.16%	14.67%	8.32%	9.60%	14.80%	7.32%	14.41%
Bailey	7.63%	7.64%	7.09%	15.41%	8.27%	9.09%	9.78%	9.69%	10.63%	9.16%
Bandera	8.17%	8.17%	9.32%	2.21%	4.84%	3.67%	7.27%	4.04%	0.48%	9.49%
Bastrop	15.51%	13.04%	19.39%	23.03%	17.55%	24.93%	16.20%	15.73%	10.46%	11.77%
Baylor	7.76%	7.78%	4.86%	1.52%	2.90%	8.67%	7.69%	8.06%	7.53%	6.80%
Bee	19.95%	21.50%	19.56%	12.72%	13.63%	14.21%	10.95%	12.30%	14.73%	17.50%
Bell	8.38%	8.33%	9.91%	9.73%	18.42%	18.88%	14.99%	14.80%	8.80%	10.17%
Bexar	19.00%	18.78%	19.76%	15.18%	20.09%	20.82%	16.67%	18.83%	19.15%	29.18%
Blanco	4.02%	4.02%	4.29%	9.74%	9.62%	14.38%	16.38%	14.38%	10.65%	2.80%
Borden	4.22%	4.23%	3.30%	4.27%	3.64%	6.57%	7.68%	7.97%	3.30%	4.96%
Bosque	3.16%	2.96%	3.16%	3.11%	3.07%	3.87%	5.42%	6.43%	6.56%	8.12%
Bowie	6.36%	6.19%	7.66%	7.75%	7.36%	7.06%	8.58%	10.66%	9.88%	8.54%
Brazoria	29.76%	30.41%	21.57%	24.69%	25.81%	26.97%	26.12%	19.82%	13.66%	19.77%
Brazos	17.31%	16.72%	18.00%	19.25%	16.86%	15.84%	16.62%	16.57%	15.21%	19.41%
Brewster	3.40%	3.45%	2.96%	2.34%	4.35%	2.11%	2.74%	2.15%	2.45%	4.07%
Briscoe	7.51%	7.52%	7.98%	4.33%	8.62%	11.46%	13.22%	8.22%	6.64%	10.24%
Brooks	5.03%	4.82%	16.38%	15.19%	8.00%	15.23%	23.63%	6.53%	12.25%	8.48%
Brown	11.59%	11.66%	11.07%	6.79%	5.54%	7.33%	6.32%	11.97%	9.70%	10.15%
Burleson	7.26%	7.55%	11.02%	9.07%	10.93%	12.03%	10.87%	22.72%	12.05%	14.22%
Burnet	5.98%	5.95%	12.18%	12.92%	11.39%	9.30%	9.45%	9.88%	6.57%	7.05%
Caldwell	12.70%	12.65%	12.51%	16.74%	26.05%	43.90%	15.93%	28.17%	10.75%	9.24%
Calhoun	7.85%	7.57%	17.24%	12.83%	14.02%	10.70%	10.31%	11.12%	7.98%	10.66%
Callahan	10.73%	10.77%	12.91%	11.75%	14.75%	9.86%	10.56%	13.54%	9.89%	12.21%
Cameron	14.31%	14.35%	13.75%	15.39%	15.24%	15.22%	17.62%	15.76%	14.77%	15.52%
Camp	8.78%	8.64%	10.32%	9.90%	5.63%	14.26%	5.01%	13.36%	3.29%	4.51%
Carson	11.57%	11.63%	15.30%	16.17%	16.72%	18.87%	11.31%	12.12%	13.72%	18.57%
Cass	4.55%	4.65%	1.95%	1.19%	2.98%	4.03%	9.63%	9.15%	3.98%	2.27%
Castro	7.86%	7.51%	7.19%	17.38%	17.72%	11.16%	19.18%	17.54%	10.57%	15.65%
Chambers	11.57%	11.78%	11.34%	18.18%	9.11%	9.49%	11.13%	9.30%	6.60%	7.37%
Cherokee	2.36%	2.19%	4.01%	5.68%	3.09%	2.55%	2.42%	3.78%	3.59%	6.64%
Childress	8.13%	8.15%	7.89%	13.67%	15.67%	14.42%	13.39%	10.65%	5.13%	9.67%
Clay	3.27%	3.30%	4.47%	4.82%	2.73%	2.70%	3.15%	4.04%	7.68%	7.10%
Cochran	4.33%	4.33%	3.24%	4.18%	4.45%	4.70%	9.21%	11.97%	2.38%	1.31%
Coke	2.13%	2.17%	2.32%	2.60%	2.21%	3.72%	4.89%	6.77%	3.77%	3.89%
Coleman	2.13%	2.09%	3.98%	4.28%	7.64%	4.40%	3.26%	7.91%	4.16%	6.20%
Collin	10.43%	10.42%	22.88%	18.90%	21.17%	13.97%	18.98%	21.07%	19.03%	27.25%
Collingsworth	5.07%	5.14%	4.87%	5.71%	8.28%	5.99%	7.95%	9.89%	5.16%	2.60%

County	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Colorado	5.71%	5.58%	11.52%	13.25%	9.15%	7.66%	3.67%	9.42%	8.05%	8.74%
Comal	9.91%	9.95%	9.83%	10.51%	11.38%	9.15%	10.46%	16.13%	10.29%	10.60%
Comanche	5.48%	5.70%	7.69%	6.70%	8.81%	7.31%	3.72%	4.03%	4.03%	4.22%
Concho	1.89%	1.94%	4.34%	7.36%	12.79%	12.75%	5.53%	4.62%	1.91%	0.90%
Cooke	10.13%	10.00%	15.25%	8.57%	8.73%	9.63%	9.04%	7.02%	6.90%	10.60%
Coryell	5.56%	5.61%	4.45%	5.42%	4.89%	3.37%	10.95%	11.25%	11.67%	7.29%
Cottle	3.25%	3.25%	4.83%	2.87%	1.72%	1.99%	3.55%	4.91%	2.42%	4.29%
Crane	0.00%	0.00%	0.04%	0.36%	1.03%	1.57%	1.02%	0.45%	1.64%	1.13%
Crockett	4.45%	4.67%	7.12%	6.39%	6.74%	2.69%	3.16%	2.70%	2.68%	3.80%
Crosby	14.65%	14.76%	13.71%	10.39%	23.67%	21.87%	11.99%	7.96%	7.74%	8.45%
Culberson	11.89%	12.17%	7.91%	14.34%	8.53%	6.88%	7.16%	8.86%	6.68%	10.75%
Dallam	17.29%	17.58%	13.62%	12.74%	11.31%	14.73%	13.25%	9.24%	18.49%	19.70%
Dallas	31.45%	30.32%	32.70%	40.51%	31.77%	25.62%	29.09%	30.37%	26.70%	29.48%
Dawson	13.75%	15.13%	14.43%	16.17%	20.03%	21.58%	16.18%	16.34%	16.45%	7.07%
Deaf Smith	4.44%	3.29%	10.19%	9.41%	9.48%	12.28%	12.62%	18.38%	12.75%	13.70%
Delta	10.71%	11.26%	27.22%	23.40%	24.67%	15.13%	12.41%	19.26%	14.11%	8.37%
Denton	14.12%	13.99%	18.65%	19.32%	19.09%	16.39%	18.74%	17.00%	19.07%	19.27%
DeWitt	7.14%	6.57%	21.22%	11.43%	12.60%	20.22%	14.68%	15.04%	17.40%	21.17%
Dickens	7.28%	7.28%	3.07%	6.66%	5.77%	7.60%	10.38%	7.83%	8.33%	10.24%
Dimmit	31.67%	32.04%	12.52%	16.85%	16.09%	15.54%	30.63%	16.64%	27.31%	10.11%
Donley	16.17%	14.89%	13.29%	16.04%	17.34%	21.15%	19.29%	12.25%	11.36%	21.22%
Duval	9.52%	9.41%	6.37%	11.91%	6.40%	6.57%	22.63%	14.34%	6.44%	5.66%
Eastland	6.14%	6.01%	5.82%	7.09%	7.93%	7.90%	5.12%	6.58%	4.15%	4.25%
Ector	6.35%	6.51%	9.75%	8.46%	10.35%	6.05%	6.46%	6.82%	4.13%	5.24%
Edwards	3.67%	3.70%	8.16%	3.40%	4.04%	2.98%	5.96%	3.94%	3.45%	5.23%
El Paso	30.50%	33.97%	13.92%	19.54%	21.54%	19.16%	12.15%	12.44%	11.75%	11.64%
Ellis	25.78%	26.55%	19.36%	20.20%	18.03%	17.32%	19.34%	19.84%	20.12%	20.06%
Erath	5.92%	6.09%	6.09%	8.52%	12.34%	9.08%	8.54%	5.21%	3.55%	7.92%
Falls	3.43%	3.50%	5.40%	4.41%	4.51%	6.88%	9.57%	13.10%	11.73%	13.07%
Fannin	15.03%	15.64%	23.62%	36.55%	37.17%	19.98%	18.67%	21.03%	13.38%	19.11%
Fayette	14.06%	13.81%	24.53%	15.47%	16.58%	10.19%	9.29%	13.45%	10.39%	15.18%
Fisher	4.03%	4.06%	1.81%	1.29%	3.98%	0.99%	4.45%	6.99%	6.89%	8.41%
Floyd	15.99%	16.20%	11.98%	13.83%	22.39%	20.31%	19.60%	14.48%	10.78%	3.40%
Foard	11.38%	11.39%	9.42%	1.92%	9.14%	6.09%	10.25%	3.31%	8.84%	9.52%
Fort Bend	23.14%	21.58%	16.67%	16.11%	18.52%	19.20%	22.79%	18.76%	16.69%	24.22%
Franklin	4.39%	4.60%	15.97%	21.12%	17.31%	15.00%	10.40%	9.79%	8.80%	10.95%
Freestone	25.92%	25.51%	15.99%	21.75%	17.19%	15.33%	16.23%	17.89%	17.30%	10.40%
Frio	13.03%	13.09%	11.98%	7.06%	8.41%	6.79%	7.78%	12.51%	10.99%	10.95%
Gaines	15.25%	16.17%	8.53%	5.94%	7.15%	7.78%	8.25%	9.61%	11.71%	11.57%
Galveston	27.56%	27.67%	18.68%	26.24%	29.05%	33.73%	28.50%	22.95%	19.96%	21.79%
Garza	3.61%	2.87%	1.46%	1.66%	3.42%	4.48%	4.94%	5.78%	4.22%	3.99%
Gillespie	9.39%	9.38%	11.30%	9.92%	9.64%	9.89%	11.19%	5.72%	3.72%	7.31%
Glasscock	2.84%	2.62%	3.08%	3.63%	1.68%	5.21%	12.71%	7.93%	10.73%	6.51%
Goliad	14.81%	14.76%	23.86%	18.83%	16.83%	14.81%	10.42%	5.95%	4.62%	7.89%
Gonzales	15.45%	15.01%	26.24%	21.91%	16.73%	11.82%	16.65%	18.00%	23.49%	28.51%

County	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Gray	6.97%	5.39%	9.66%	10.88%	11.39%	12.74%	14.58%	15.54%	13.80%	16.59%
Grayson	20.29%	19.18%	26.89%	43.40%	32.39%	32.57%	24.86%	20.82%	19.37%	23.13%
Gregg	16.54%	15.92%	14.50%	16.79%	11.48%	9.49%	8.36%	11.69%	9.15%	13.19%
Grimes	23.31%	24.24%	7.36%	11.63%	14.76%	20.14%	19.60%	21.05%	16.60%	14.96%
Guadalupe	21.69%	21.98%	23.59%	15.26%	22.99%	19.82%	16.11%	17.44%	14.07%	15.30%
Hale	5.11%	5.14%	6.73%	6.43%	8.93%	8.82%	12.34%	11.31%	7.74%	7.53%
Hall	4.25%	4.23%	9.69%	7.82%	5.29%	7.50%	7.28%	4.38%	2.37%	10.90%
Hamilton	2.49%	2.36%	5.23%	2.70%	7.07%	8.58%	12.54%	14.68%	7.77%	5.48%
Hansford	2.87%	2.87%	1.61%	3.09%	3.54%	4.22%	4.02%	10.65%	25.92%	24.81%
Hardeman	9.01%	8.99%	9.79%	10.19%	12.97%	15.26%	20.78%	12.70%	13.85%	5.41%
Hardin	16.76%	17.04%	5.92%	10.31%	6.15%	4.14%	4.06%	5.01%	3.78%	4.01%
Harris	22.67%	23.26%	25.21%	22.87%	24.88%	22.26%	25.70%	22.47%	18.64%	21.41%
Harrison	5.02%	5.00%	8.53%	5.29%	5.59%	6.34%	7.24%	8.37%	9.73%	9.27%
Hartley	12.89%	13.03%	11.94%	9.81%	15.31%	19.15%	9.99%	20.73%	29.13%	24.46%
Haskell	16.51%	17.06%	5.88%	4.83%	9.30%	4.30%	5.11%	7.06%	8.16%	9.61%
Hays	9.39%	9.26%	12.49%	14.90%	15.63%	13.80%	13.31%	16.37%	8.35%	13.09%
Hemphill	21.94%	22.38%	9.93%	10.89%	13.71%	9.99%	12.23%	16.89%	21.00%	22.39%
Henderson	6.56%	6.51%	10.82%	21.62%	9.54%	3.97%	3.06%	3.13%	2.13%	3.57%
Hidalgo	12.92%	12.03%	15.81%	17.92%	21.11%	14.87%	15.20%	14.04%	10.21%	9.37%
Hill	11.55%	11.84%	10.45%	12.97%	21.43%	16.83%	14.51%	17.83%	11.24%	14.77%
Hockley	9.56%	9.36%	9.85%	9.78%	15.20%	15.97%	13.84%	14.40%	14.14%	13.08%
Hood	11.01%	9.60%	15.90%	12.99%	25.97%	18.25%	4.28%	6.00%	5.34%	15.75%
Hopkins	18.23%	21.19%	22.84%	22.41%	22.20%	18.01%	17.25%	18.15%	13.82%	11.92%
Houston	14.52%	14.28%	17.02%	16.66%	17.52%	10.85%	13.82%	12.89%	11.47%	14.46%
Howard	9.95%	9.92%	6.69%	9.66%	11.69%	0.00%	14.42%	13.23%	15.85%	18.55%
Hudspeth	11.33%	11.35%	8.07%	8.42%	9.63%	8.59%	9.86%	10.28%	6.39%	8.13%
Hunt	12.96%	13.88%	20.20%	21.28%	21.66%	17.22%	23.05%	21.38%	10.35%	8.65%
Hutchinson	7.38%	7.34%	13.66%	10.09%	12.54%	7.95%	6.70%	8.64%	10.36%	11.67%
Irion	0.52%	0.50%	1.73%	6.42%	5.63%	5.89%	5.60%	3.51%	3.60%	6.95%
Jack	6.99%	7.00%	9.77%	9.37%	8.89%	7.49%	7.25%	7.17%	8.59%	16.61%
Jackson	8.93%	8.95%	12.42%	14.55%	14.33%	13.28%	16.21%	16.08%	13.31%	10.75%
Jasper	15.56%	15.15%	9.19%	12.03%	8.15%	11.01%	5.70%	6.74%	5.47%	5.35%
Jeff Davis	11.60%	12.98%	12.12%	13.23%	11.90%	11.37%	14.10%	14.37%	10.43%	11.58%
Jefferson	31.17%	32.71%	21.63%	20.77%	26.26%	12.75%	16.20%	16.43%	11.51%	12.44%
Jim Hogg	1.46%	1.46%	10.96%	12.34%	4.22%	3.39%	10.99%	6.48%	9.24%	9.25%
Jim Wells	37.83%	39.65%	24.96%	31.59%	23.60%	27.45%	21.22%	25.07%	26.19%	25.47%
Johnson	22.17%	22.69%	26.99%	25.05%	23.65%	11.76%	21.68%	16.67%	10.96%	11.71%
Jones	11.38%	11.35%	10.93%	10.69%	11.81%	15.95%	13.76%	18.59%	16.23%	16.54%
Karnes	14.59%	14.59%	17.15%	8.30%	14.39%	13.29%	16.49%	35.50%	42.06%	47.58%
Kaufman	27.35%	25.97%	27.42%	33.43%	30.04%	25.62%	24.98%	26.22%	26.94%	31.21%
Kendall	7.58%	7.73%	16.87%	13.23%	17.36%	12.36%	10.33%	12.95%	7.21%	9.00%
Kenedy	25.87%	25.87%	98.86%	91.72%	100.00%	100.00%	35.29%	10.94%	7.97%	1.89%
Kent	3.78%	3.77%	2.32%	4.02%	4.56%	4.18%	7.68%	8.38%	7.70%	9.96%
Kerr	10.81%	10.97%	11.58%	9.72%	14.42%	16.86%	13.35%	13.23%	9.56%	12.20%
Kimble	1.14%	1.01%	2.90%	2.33%	3.30%	2.50%	0.95%	1.98%	2.29%	3.77%

County	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
King	1.53%	1.53%	1.51%	6.78%	6.89%	5.96%	11.48%	7.34%	1.23%	1.07%
Kinney	8.71%	8.72%	11.07%	5.90%	5.96%	6.40%	10.83%	4.75%	3.42%	2.77%
Kleberg	13.30%	12.94%	20.39%	23.10%	15.45%	25.42%	17.19%	14.93%	13.46%	18.34%
Knox	9.99%	10.03%	3.74%	6.08%	5.49%	7.36%	7.12%	7.10%	6.42%	5.98%
La Salle	18.73%	19.03%	13.35%	17.08%	21.00%	14.14%	31.54%	30.05%	41.44%	36.80%
Lamar	13.02%	14.01%	27.95%	23.78%	26.71%	19.58%	12.69%	18.60%	9.49%	16.66%
Lamb	8.92%	8.93%	13.84%	17.51%	23.77%	16.45%	21.41%	18.77%	12.29%	8.10%
Lampasas	3.63%	3.66%	5.02%	4.48%	5.13%	3.15%	4.45%	8.79%	3.85%	11.30%
Lavaca	6.89%	6.95%	24.04%	13.29%	20.11%	18.33%	14.17%	12.37%	15.97%	18.88%
Lee	15.49%	15.12%	26.13%	18.91%	21.29%	21.21%	14.59%	20.06%	13.48%	8.63%
Leon	13.77%	15.25%	17.87%	13.75%	11.42%	11.04%	11.95%	10.75%	8.85%	10.03%
Liberty	17.96%	18.74%	9.77%	16.57%	9.36%	10.12%	9.66%	11.02%	7.49%	7.14%
Limestone	5.44%	5.24%	9.20%	12.32%	12.06%	16.10%	20.20%	20.86%	13.35%	16.02%
Lipscomb	9.62%	9.63%	10.39%	16.55%	18.63%	11.51%	12.03%	8.83%	22.74%	15.32%
Live Oak	15.46%	15.19%	14.78%	15.51%	15.66%	14.34%	15.98%	19.28%	20.43%	16.41%
Llano	2.83%	2.83%	7.04%	7.67%	12.10%	16.36%	13.72%	13.51%	2.03%	6.88%
Loving	0.00%	0.00%	3.44%	5.59%	1.24%	4.64%	4.71%	4.44%	2.82%	21.84%
Lubbock	13.64%	14.45%	9.56%	10.27%	11.43%	11.51%	10.18%	9.59%	10.63%	11.65%
Lynn	7.71%	8.15%	10.80%	8.25%	14.54%	13.49%	15.25%	6.27%	6.57%	6.08%
Madison	13.19%	13.80%	17.29%	15.67%	14.74%	23.42%	16.94%	27.98%	22.52%	20.98%
Marion	3.05%	3.06%	9.42%	2.55%	3.18%	5.15%	4.25%	4.43%	5.00%	4.17%
Martin	1.51%	1.51%	5.83%	11.33%	14.21%	11.28%	5.26%	10.47%	7.78%	5.47%
Mason	5.00%	5.00%	6.47%	9.83%	9.77%	9.04%	14.22%	8.33%	6.40%	2.49%
Matagorda	12.00%	10.87%	15.17%	12.57%	9.75%	8.63%	8.42%	8.38%	5.14%	6.05%
Maverick	25.77%	25.69%	28.54%	25.70%	32.09%	21.38%	24.28%	23.24%	16.82%	13.23%
McCulloch	3.77%	3.77%	4.38%	4.09%	6.16%	4.46%	2.80%	6.75%	4.33%	5.95%
McLennan	15.88%	15.95%	14.75%	12.91%	18.45%	16.39%	17.87%	17.96%	18.01%	13.50%
McMullen	17.61%	17.66%	19.30%	21.15%	19.41%	16.02%	15.25%	12.99%	22.14%	35.26%
Medina	16.62%	16.72%	19.10%	9.17%	10.77%	4.41%	6.43%	7.19%	5.88%	9.05%
Menard	1.16%	1.16%	2.30%	2.77%	4.74%	1.29%	4.00%	7.28%	3.04%	3.18%
Midland	6.39%	6.43%	5.94%	10.42%	14.17%	17.29%	18.03%	7.62%	17.85%	15.47%
Milam	9.77%	9.97%	10.44%	9.29%	10.69%	12.81%	9.70%	13.66%	14.82%	12.20%
Mills	2.13%	2.17%	2.32%	2.92%	4.34%	6.99%	3.14%	4.54%	1.94%	2.03%
Mitchell	3.94%	3.93%	8.35%	12.80%	11.29%	0.00%	13.34%	8.19%	4.77%	6.37%
Montague	5.07%	5.17%	10.65%	7.36%	9.18%	8.21%	12.40%	11.07%	8.85%	6.50%
Montgomery	11.84%	12.39%	6.29%	6.92%	19.46%	22.93%	19.29%	11.75%	3.83%	7.63%
Moore	12.86%	13.24%	18.09%	7.02%	9.37%	9.01%	12.41%	13.44%	12.67%	18.94%
Morris	3.86%	3.99%	0.89%	3.60%	2.14%	5.08%	19.18%	20.56%	9.49%	13.83%
Motley	5.70%	5.67%	2.43%	2.08%	3.45%	6.41%	14.60%	11.17%	1.99%	0.70%
Nacogdoches	9.90%	9.61%	11.34%	10.39%	9.81%	13.13%	14.48%	10.54%	8.78%	12.46%
Navarro	14.04%	13.95%	16.37%	22.15%	13.77%	15.10%	15.78%	16.97%	20.35%	22.88%
Newton	5.05%	4.99%	2.29%	3.11%	2.78%	3.36%	6.54%	3.28%	1.37%	2.46%
Nolan	10.03%	10.20%	11.77%	8.35%	9.81%	8.00%	12.76%	15.42%	13.34%	20.00%
Nueces	20.89%	17.61%	20.42%	18.87%	14.82%	23.10%	21.77%	32.74%	20.38%	20.20%
Ochiltree	17.65%	16.86%	29.70%	19.10%	24.83%	15.70%	32.70%	24.18%	24.04%	21.78%

County	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Oldham	17.75%	16.51%	11.66%	14.62%	4.45%	10.63%	11.81%	12.61%	11.91%	15.94%
Orange	28.42%	30.30%	24.72%	25.13%	23.22%	14.14%	18.66%	9.68%	10.35%	8.66%
Palo Pinto	7.17%	7.33%	9.96%	7.56%	9.66%	15.46%	8.88%	13.93%	10.62%	9.54%
Panola	7.25%	7.23%	9.77%	5.08%	4.29%	6.23%	9.23%	18.40%	17.58%	14.60%
Parker	12.31%	11.77%	14.84%	17.52%	21.78%	14.09%	10.44%	8.78%	9.16%	18.61%
Parmer	9.26%	9.75%	10.90%	24.16%	22.87%	20.05%	22.44%	17.31%	24.43%	22.37%
Pecos	3.05%	3.05%	0.66%	0.82%	1.29%	2.13%	1.44%	1.93%	0.88%	1.42%
Polk	12.32%	12.22%	11.23%	11.37%	18.53%	11.76%	10.33%	9.53%	8.09%	9.27%
Potter	16.35%	16.23%	25.31%	23.95%	15.68%	29.47%	21.72%	19.01%	24.28%	23.09%
Presidio	10.61%	10.74%	9.54%	8.75%	7.98%	5.95%	8.48%	6.52%	8.00%	7.18%
Rains	15.69%	16.23%	24.11%	36.91%	20.39%	14.89%	12.07%	13.89%	12.43%	20.44%
Randall	17.88%	17.26%	19.63%	11.86%	7.53%	12.59%	12.84%	17.89%	15.66%	18.83%
Reagan	0.33%	0.30%	0.78%	1.24%	1.22%	0.64%	8.24%	10.12%	6.36%	8.85%
Real	22.52%	23.58%	10.33%	6.77%	8.10%	5.84%	7.14%	7.54%	5.57%	7.01%
Red River	8.98%	8.97%	13.25%	11.25%	10.00%	10.92%	8.33%	12.85%	10.16%	5.76%
Reeves	6.58%	6.24%	6.12%	9.45%	7.77%	9.57%	10.05%	6.44%	7.15%	9.69%
Refugio	15.81%	15.81%	11.18%	13.09%	8.40%	9.06%	10.26%	16.26%	18.61%	14.70%
Roberts	2.65%	3.00%	7.08%	3.61%	11.57%	8.22%	3.13%	3.71%	16.96%	15.66%
Robertson	16.20%	16.57%	14.63%	18.72%	13.92%	12.73%	10.11%	9.03%	6.11%	5.81%
Rockwall	23.99%	23.94%	41.74%	53.15%	42.67%	43.09%	55.49%	51.74%	40.79%	46.91%
Runnels	6.70%	6.25%	10.86%	5.75%	4.14%	5.24%	4.52%	4.18%	5.44%	5.09%
Rusk	16.85%	16.31%	12.16%	16.09%	11.91%	11.00%	7.02%	7.85%	7.54%	15.54%
Sabine	23.45%	22.88%	15.65%	12.74%	9.81%	5.79%	6.13%	10.37%	6.76%	6.14%
San Augustine	6.20%	6.72%	13.49%	9.98%	8.17%	8.42%	7.75%	5.96%	6.07%	13.37%
San Jacinto	10.85%	10.49%	6.38%	2.63%	2.59%	2.73%	4.13%	5.67%	3.33%	3.36%
San Patricio	35.33%	35.18%	23.89%	22.51%	22.64%	18.61%	17.23%	14.73%	15.38%	18.17%
San Saba	2.78%	2.78%	8.71%	10.72%	13.11%	6.09%	3.49%	8.16%	8.58%	10.67%
Schleicher	3.28%	3.15%	3.28%	5.43%	5.90%	1.63%	3.57%	3.05%	3.23%	6.63%
Scurry	7.89%	7.91%	5.28%	7.67%	8.15%	10.64%	13.19%	11.81%	7.44%	7.33%
Shackelford	18.41%	18.41%	9.71%	4.05%	14.35%	8.29%	6.39%	10.94%	6.45%	5.29%
Shelby	17.16%	16.88%	10.58%	10.02%	11.72%	14.87%	18.14%	18.00%	9.25%	9.03%
Sherman	13.66%	13.68%	12.62%	7.44%	12.46%	13.52%	26.40%	25.85%	28.00%	10.22%
Smith	9.42%	9.31%	8.67%	16.78%	7.09%	6.05%	5.94%	5.47%	5.31%	7.39%
Somervell	8.35%	8.14%	10.19%	5.53%	16.53%	13.48%	3.11%	9.78%	6.82%	18.48%
Starr	7.34%	7.28%	16.53%	14.98%	20.74%	8.95%	17.76%	17.75%	8.68%	7.50%
Stephens	11.46%	11.40%	10.46%	14.06%	22.38%	10.77%	7.87%	8.75%	11.45%	12.03%
Sterling	2.18%	2.15%	3.06%	4.46%	8.77%	12.65%	10.10%	13.09%	14.28%	14.26%
Stonewall	5.27%	5.29%	3.14%	5.51%	6.00%	3.63%	1.83%	1.19%	6.17%	3.75%
Sutton	2.17%	2.16%	3.26%	7.04%	4.14%	2.03%	3.00%	1.22%	2.95%	2.79%
Swisher	6.69%	6.76%	3.03%	6.92%	6.04%	6.91%	15.24%	15.55%	16.75%	7.15%
Tarrant	21.78%	21.76%	21.28%	21.48%	20.77%	19.49%	17.37%	15.45%	13.68%	13.88%
Taylor	19.78%	20.87%	11.05%	12.78%	16.11%	12.08%	15.88%	23.16%	18.20%	21.89%
Terrell	3.51%	3.56%	2.12%	3.38%	3.51%	1.58%	0.67%	0.34%	0.27%	0.04%
Terry	13.86%	14.88%	4.96%	12.63%	12.20%	11.41%	9.64%	9.52%	11.84%	9.19%
Throckmorton	1.34%	1.40%	1.76%	3.68%	3.56%	5.38%	2.36%	3.91%	2.48%	3.23%

County	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Titus	10.08%	10.10%	7.29%	6.71%	12.82%	9.02%	13.76%	13.13%	8.69%	8.31%
Tom Green	5.98%	4.38%	5.94%	9.77%	6.95%	7.46%	4.55%	5.37%	5.97%	7.20%
Travis	9.50%	8.75%	18.09%	19.25%	14.17%	12.42%	13.00%	17.36%	9.62%	13.19%
Trinity	11.13%	11.01%	9.37%	11.75%	12.44%	10.31%	5.62%	8.97%	5.68%	6.66%
Tyler	11.44%	11.33%	11.97%	9.59%	8.41%	0.85%	1.65%	1.40%	4.16%	5.73%
Upshur	5.04%	5.16%	3.75%	8.74%	6.44%	7.16%	2.91%	9.02%	6.54%	10.39%
Upton	0.51%	0.51%	0.85%	2.55%	2.96%	3.32%	1.12%	1.56%	3.43%	3.71%
Uvalde	28.06%	29.01%	28.40%	15.53%	20.78%	17.84%	23.71%	16.05%	13.27%	11.01%
Val Verde	7.30%	7.27%	7.21%	8.22%	8.77%	11.63%	12.23%	11.85%	8.67%	11.03%
Van Zandt	12.44%	12.36%	12.80%	13.30%	8.68%	7.48%	6.27%	8.59%	6.67%	7.95%
Victoria	3.99%	3.93%	14.96%	10.41%	11.75%	11.97%	13.32%	13.94%	12.93%	18.42%
Walker	13.81%	13.90%	7.29%	8.20%	5.44%	6.92%	5.78%	10.35%	7.53%	8.52%
Waller	12.66%	12.55%	8.12%	13.89%	24.07%	23.35%	22.55%	12.09%	12.18%	13.70%
Ward	10.95%	10.85%	1.05%	2.61%	3.39%	5.17%	4.30%	2.61%	2.95%	5.40%
Washington	13.40%	12.81%	10.05%	9.58%	8.10%	7.74%	6.63%	17.09%	14.83%	12.57%
Webb	14.36%	13.57%	15.51%	14.98%	12.06%	17.06%	32.10%	15.36%	16.51%	14.82%
Wharton	11.97%	12.01%	14.88%	14.08%	12.91%	13.04%	13.42%	12.98%	11.80%	14.31%
Wheeler	8.41%	8.40%	10.03%	13.11%	8.03%	16.08%	16.00%	10.51%	2.86%	6.75%
Wichita	14.98%	15.77%	13.59%	12.48%	13.95%	11.07%	13.47%	12.40%	9.21%	12.08%
Wilbarger	7.71%	7.87%	6.69%	5.30%	5.29%	4.23%	3.58%	4.29%	1.87%	2.77%
Willacy	9.71%	9.73%	6.06%	7.37%	7.94%	5.01%	16.43%	11.70%	8.00%	13.83%
Williamson	14.25%	14.78%	24.76%	24.69%	21.98%	20.29%	21.29%	26.56%	15.23%	14.10%
Wilson	10.48%	10.32%	14.04%	9.13%	15.70%	14.16%	10.87%	9.01%	9.83%	12.18%
Winkler	0.00%	0.00%	3.14%	7.75%	7.82%	2.94%	3.98%	1.94%	13.41%	10.97%
Wise	14.39%	14.62%	11.42%	16.34%	19.07%	9.91%	10.28%	11.27%	8.06%	13.82%
Wood	5.11%	5.07%	9.28%	12.93%	6.34%	5.02%	5.57%	7.07%	8.35%	6.89%
Yoakum	10.04%	10.05%	2.06%	11.05%	5.62%	5.68%	8.86%	7.25%	6.72%	0.82%
Young	3.46%	3.32%	2.28%	2.55%	3.81%	4.54%	4.18%	7.98%	6.43%	6.57%
Zapata	3.37%	3.35%	30.14%	38.56%	25.03%	18.03%	22.80%	5.48%	8.13%	12.10%
Zavala	22.16%	22.84%	12.78%	17.55%	20.30%	20.00%	36.30%	28.93%	38.14%	26.18%