

Sulphur River Basin

Socio-Economic Assessment

Prepared for:

Fort Worth District
U.S. Army Corps of Engineers (USACE)

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of Engineers®**
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TABLE OF CONTENTS

1.0	Sulphur River Basin Socioeconomic Characterization	1
1.1	Population	2
1.1.1	Existing Population.....	2
1.1.2	Projected Population Change	2
1.2	Demographics.....	5
1.2.1	Bowie County Demographics.....	8
1.2.2	Cass County Demographics.....	9
1.2.3	Delta County Demographics	11
1.2.4	Fannin County Demographics.....	12
1.2.5	Franklin County Demographics.....	12
1.2.6	Hopkins County Demographics.....	13
1.2.7	Hunt County Demographics.....	15
1.2.8	Lamar County Demographics.....	16
1.2.9	Morris County Demographics.....	17
1.2.10	Red River County Demographics	18
1.2.11	Titus County Demographics.....	19
1.3	Labor	21
1.3.1	Civilian Labor Force	21
1.3.2	Employment.....	21
1.3.3	Unemployment	22
1.4	Earnings	23
1.4.1	Per Capita Personal Income	24
1.4.2	Total Industry Compensation	25
1.4.3	Bowie County, Compensation by Industry	27
1.4.4	Cass County, Compensation by Industry	28
1.4.5	Delta County, Compensation by Industry	30
1.4.6	Fannin County, Compensation by Industry	31
1.4.7	Franklin County, Compensation by Industry	32
1.4.8	Hopkins County, Compensation by Industry	33
1.4.9	Hunt County, Compensation by Industry	34
1.4.10	Lamar County, Compensation by Industry	35
1.4.11	Morris County, Compensation by Industry	36
1.4.12	Red River County, Compensation by Industry.....	37
1.4.13	Titus County, Compensation by Industry	38
1.5	Public Finance	39
1.5.1	Property Taxation	39
1.5.2	Retail Sales Taxation	41
1.5.3	Taxable Sales and Local Sales Dollars Returned	43
1.6	School Districts	44
2.0	Regional Input/Output Model	47

2.1	Study Area for Scenarios	48
2.2	Cost Estimates	49
2.2.1	Construction Costs – Reservoir	49
2.2.2	Construction Costs – Transmission	54
2.2.3	Operations Costs – Reservoir	54
2.2.4	Operations Cost – Transmission	54
2.3	Model Inputs.....	54
2.4	Model Results	56
2.4.1	Wright Patman Reservoir Scenarios	56
2.4.2	Marvin Nichols Reservoir Scenarios	57
2.4.3	Talco Reservoir Scenarios	58
2.4.4	Parkhouse Reservoir Scenarios	59
2.4.5	State and Local Taxes.....	60
2.5	Analysis of Results	61
2.6	Additional Considerations	64

Table of Figures

Figure 1-1	Population Projection Scenarios Sulphur Basin Counties	5
Figure 1-2	Sulphur River Basin Age Distribution, 2010.....	6
Figure 1-3	Texas Age Distribution, 2010	7
Figure 1-4	Sulphur River Basin Ethnicity, 2010	7
Figure 1-5	Texas Ethnicity, 2010	8
Figure 1-6	Bowie County Age Distribution, 2010	9
Figure 1-7	Bowie County Ethnicity.....	9
Figure 1-8	Cass County Age Distribution, 2010	10
Figure 1-9	Cass County Ethnicity, 2010.....	10
Figure 1-10	Delta County Age Distribution, 2010.....	11
Figure 1-11	Delta County Ethnicity, 2010	11
Figure 1-12	Fannin County Age Distribution, 2010.....	12
Figure 1-13	Fannin County Ethnicity, 2010.....	12
Figure 1-14	Franklin County Age Distribution	13
Figure 1-15	Franklin County Ethnicity, 2010.....	13
Figure 1-16	Hopkins County Age Distribution, 2010	14
Figure 1-17	Hopkins County Ethnicity, 2010.....	15
Figure 1-18	Hunt County Age Distribution, 2010	15
Figure 1-19	Hunt County Ethnicity, 2010.....	16
Figure 1-20	Lamar County Age Distribution, 2010	16
Figure 1-21	Lamar County Ethnicity, 2010.....	17
Figure 1-22	Morris County Age Distribution, 2010.....	17

Figure 1-23 Morris County Ethnicity, 2010	18
Figure 1-24 Red River County Age Distribution, 2010	19
Figure 1-25 Red river County Ethnicity, 2010	19
Figure 1-26 Titus County Age Distribution, 2010.....	20
Figure 1-27 Titus County Ethnicity, 2010.....	20
Figure 1-28 Annual Unemployment Rates 2000-2012	23
Figure 2-1	62
Figure 2-2	62
Figure 2-3	63
Figure 2-4	63

Table of Tables

Table 1-1 Population Change 2000-2013	1
Table 1-2 Projected County and Texas Populations, 2020-2070.....	3
Table 1-3 Projected percentage change in population 2013-2070	4
Table 1-4 Annual Labor Force Size 2000-2010	21
Table 1-5 Annual Employment 2000-2010	22
Table 1-6 Annual Per Capita Income (in dollars)	25
Table 1-7 Total Compensation of Employees (in \$1000s)	26
Table 1-8 Compensation of Employees by industry in Bowie County (in \$1,000s).....	27
Table 1-9 Compensation of Employees by Industry in Cass County (in 1,000s).....	28
Table 1-10 Compensation of Employees by Industry in Delta County (in 1,000s)	30
Table 1-11 Compensation of Employees by Industry in Fannin County (in \$1000s).....	31
Table 1-12 Compensation of Employees by Industry in Franklin County (in 1,000s).....	32
Table 1-13 Compensation of Employees by Industry in Hopkins County (in 1,000s).....	33
Table 1-14 Compensation of Employees by Industry in Hunt County (in 1,000s).....	34
Table 1-15 Compensation of Employees by Industry in Lamar County (in 1,000s).....	35
Table 1-16 Compensation of Employees by Industry in Morris County (in 1,000s)	36
Table 1-17 Compensation of Employees by Industry in Red River County (in 1,000s)	37
Table 1-18 Compensation of Employees by Industry in Titus County (in 1,000s)	38
Table 1-19 Total County Property Tax Rates 2000-2008	40
Table 1-20 Total Appraised Property Value, 2011.....	40
Table 1-21 Retail Sales Tax Rates.....	41
Table 1-22 Taxable Sales (in 1,000s)	43
Table 1-23 Local Sales Taxes Returned to The County by Texas State Comptroller's Office (in dollars)	44
Table 1-24 Sulphur Basin School Districts.....	45
Table 2-1 IMPLAN Definitions	48
Table 2-2 Cost Estimates for Construction Activities.....	51
Table 2-3 Cost Estimates for Operations and Maintenance Activities	54

Table 2-4 Activities and Sectors Applied in IMPLAN.....	55
Table 2-5 IMPLAN Input Values by Sector for Construction Activities	55
Table 2-6 IMPLAN Input Values by Sector for Operations Activities	55
Table 2-7 Model Results for Construction of the Wright Patman Reservoir Scenarios	56
Table 2-8 Model Results for Operation of the Wright Patman Reservoir Scenarios.....	57
Table 2-9 Model Results for Construction of the Marvin Nichols Reservoir Scenarios.....	57
Table 2-10 Model Results for Operation of the Marvin Nichols Reservoir Scenarios	58
Table 2-11 Model Results for Construction of the Talco Reservoir Scenarios	58
Table 2-12 Model Results for Operation of the Talco Reservoir Scenarios.....	59
Table 2-13 Model Results for Construction of the Parkhouse Reservoir Scenarios.....	59
Table 2-14 Model Results for Operation of the Parkhouse Reservoir Scenarios	60
Table 2-15 State and Local Taxes for Construction Activities.....	60
Table 2-16 State and Local Taxes for Operations Activities	61

1.0 SULPHUR RIVER BASIN SOCIOECONOMIC CHARACTERIZATION

The analysis of socioeconomic resources identifies those aspects of the social and economic environment that are sensitive to change and that may be affected by actions associated with the development of water resources in the Sulphur Basin. The assessment specifically considers how these actions might affect the social and economic systems of the Sulfur River Basin, and the state of Texas as a whole. This section addresses the socioeconomic conditions that may be affected by implementation of the proposed actions and any potential sources of impact.

The Sulphur River basin encompasses some 3,558 square miles in Northeast Texas. (Figure 1-1) Included in the basin are all or part of 11 Texas counties (Fannin, Lamar, Red River, Bowie, Hunt, Delta, Hopkins, Franklin, Titus, Morris, and Cass.) From the eastern state line of Texas, the Sulphur River flows into Arkansas and joins with the Red River, a tributary of the Mississippi River. (The portion of the Sulphur River drainage within Arkansas is not addressed in detail within this study.) The South and North Sulphur Rivers originate in southern Fannin County and flow eastward approximately 50 miles to their confluence near the eastern boundary of Delta and Lamar counties. The Middle Sulphur converges with the South Sulphur at Jim Chapman Lake. White Oak Creek, the largest tributary of the Sulphur River, drains approximately 500 square miles and joins the main stem of the Sulphur River further downstream in Cass County. These tributaries all converge and flow eastward into Wright Patman Lake and exit Texas south of the City of Texarkana.

Table 1-1 Population Change 2000-2013

County	Population Estimates			
	2000 Census	July 1, 2013 Estimate	Numeric Change	Percent Change
Bowie	89,306	93,487	4,181	4.7%
Cass	30,438	30,331	-107	-0.4%
Delta	5,327	5,238	-89	-1.7%
Fannin	31,242	33,659	2,417	7.7%
Franklin	9,458	10,660	1,202	12.7%
Hopkins	31,960	35,565	3,605	11.3%
Hunt	76,596	87,048	10,452	13.6%
Lamar	48,499	49,426	927	1.9%
Morris	13,048	12,834	-214	-1.6%
Red River	14,314	12,470	-1,844	-12.9%
Titus	28,118	32,581	4,463	15.9%

Total	378,306	403,299	24,993	6.6%
Texas	20,851,820	26,448,193	5,596,373	26.8%

Source: Census Bureau, 2000 and 2013

<http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>

1.1 POPULATION

1.1.1 Existing Population

The July 1, 2013 estimated combined population of Bowie, Cass, Delta, Fannin, Franklin, Hopkins, Hunt, Lamar, Morris, Red River, and Titus counties is 403,299, a net increase of 24,993 or 6.4 percent from the 2000 Census population of 378,306. As shown in Table 1-1, Bowie County has the largest population of any of the counties in the basin (93,487) and experienced modest growth since 2000 -on 4.7 percent as compared to Texas' 26.8 percent population growth. Titus County experienced the greatest percent change (15.9 percent) but this was still significantly less than that of the state as a whole. Cass, Delta, Morris, and Red River counties experienced negative population changes during this period.

Statewide, the population grew from 20,851,820 in the 2000 Census to 26,488,193 in the 2013 estimate, a net increase of 5,596,373 or 26.8 percent. All eleven county populations grew at rates slower than that of the state of Texas.

1.1.2 Projected Population Change

The Texas Water Development Board (TWDB) has defined 16 Regional Water Planning Groups in the state of Texas. The Sulphur River Basin is almost entirely located in Region D, with only a small portion of Fannin County located in Region C. Every five years, each region updates their regional plan based on the TWDB projected population and water demands over a fifty year planning horizon. Currently, the 2016 Regional Plans are under development, but the population projections are complete and published. The TWDB partners with the Texas State Data Center (SDC)/Office of the State Demographer to develop the county-level population projections. The projections are based on recent and projected demographic trends, including the birth rates, survival rates, and net migration rates of population groups defined by age, gender and race/ethnicity. For most counties in the state, the SDC uses the "half migration scenario" which bases future long term growth on a sustained growth rate of half that between 2000 and 2010. Collectively this methodology is known as the cohort component method¹. Table 1-2 displays the TWDB

adopted population projections from 2020-2070 for the 2016 regional water plans, while percentage population growth is depicted in Table 1-3.

As seen in Table 1-2, the population of Texas is expected to increase from the 2000 US Census level of 20,851,820 to 51 million by 2070 (Census, 2000; TWDB, 2013). The counties within the Sulphur River Basin as a whole are expected to grow 115.46% by 2070, which is more than the 92.98% growth expected for the state of Texas. However, the majority of the growth is centered in two counties, Hunt and Fannin, which border the Dallas Fort-Worth Metroplex and represent the projected expansion of that metropolis. Hunt County is projected to add nearly 300,000 to its not-yet one hundred thousand current population. This represents a 335.68% growth rate for Hunt County from 2013-2070. Fannin county is expected to grow nearly as quickly with a 311.5% growth rate over the fifty seven year period. The other nine counties are projected to grow at a significantly slower rate than statewide growth.

Table 1-2 Projected County and Texas Populations, 2020-2070

County	Actual	Projected Population					
	2013 Estimate	2020	2030	2040	2050	2060	2070
Bowie	93,487	95,703	98,413	99,263	99,263	99,263	99,263
Cass	30,331	31,016	31,229	31,229	31,229	31,229	31,229
Delta	5,238	5,320	5,376	5,376	5,376	5,376	5,376
Fannin	33,659	38,346	43,391	52,743	69,221	101,915	138,497
Franklin	10,660	11,124	11,627	11,930	12,226	12,447	12,622
Hopkins	35,565	37,978	40,895	43,555	46,610	49,556	52,517
Hunt	87,048	104,894	130,351	164,886	212,575	280,518	379,250
Lamar	49,426	52,170	54,189	55,683	57,037	58,092	58,943
Morris	12,834	13,364	13,612	13,886	14,293	14,618	14,942
Red River	12,470	12,976	12,976	12,976	12,976	12,976	12,976
Titus	32,581	36,643	41,381	46,283	51,665	57,330	63,315
Total	403,299	439,534	483,440	537,810	612,471	723,320	868,930
Texas	26,448,193	29,510,184	33,628,653	37,736,338	41,928,264	46,354,818	51,040,173

Sources: Census and TWDB, 2014

<http://www.twdb.state.tx.us/waterplanning/data/projections/2017/popproj.asp>

<http://quickfacts.census.gov/qfd/states/48000.html>

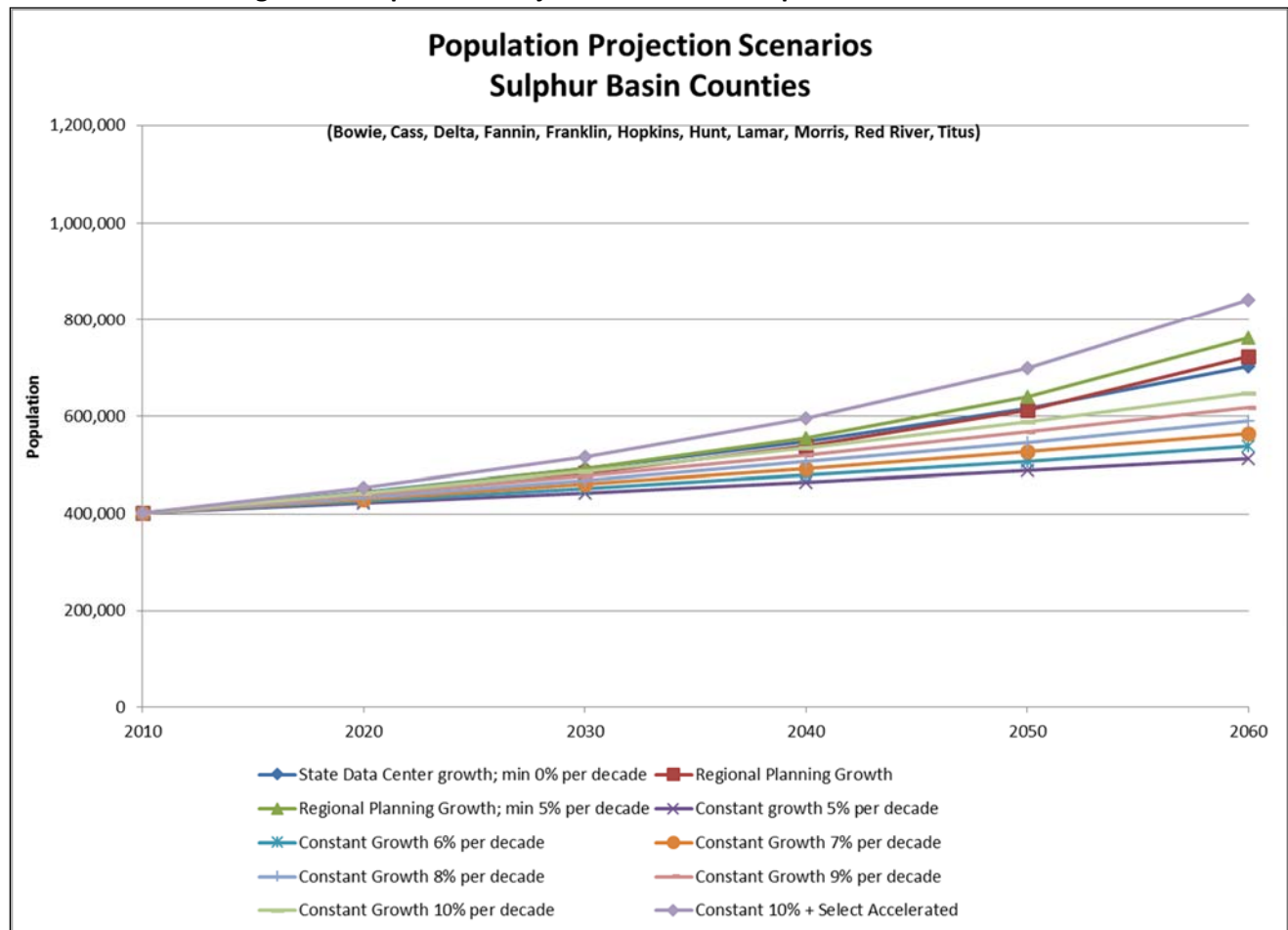
Table 1-3 Projected percentage change in population 2013-2070

County	Projected percentage change in population						
	2013-2020	2020-2030	2030-2040	2040-2050	2050-2060	2060-2070	2013-2070
Bowie	2.37%	2.83%	0.86%	0.00%	0.00%	0.00%	6.18%
Cass	2.26%	0.69%	0.00%	0.00%	0.00%	0.00%	2.96%
Delta	1.57%	1.05%	0.00%	0.00%	0.00%	0.00%	2.63%
Fannin	13.92%	13.16%	21.55%	31.24%	47.23%	35.89%	311.47%
Franklin	4.35%	4.52%	2.61%	2.48%	1.81%	1.41%	18.41%
Hopkins	6.78%	7.68%	6.50%	7.01%	6.32%	5.98%	47.66%
Hunt	20.50%	24.27%	26.49%	28.92%	31.96%	35.20%	335.68%
Lamar	5.55%	3.87%	2.76%	2.43%	1.85%	1.46%	19.26%
Morris	4.13%	1.86%	2.01%	2.93%	2.27%	2.22%	16.43%
Red River	4.06%	0.00%	0.00%	0.00%	0.00%	0.00%	4.06%
Titus	12.47%	12.93%	11.85%	11.63%	10.96%	10.44%	94.33%
Total	8.98%	9.99%	11.25%	13.88%	18.10%	20.13%	115.46%
Texas	11.58%	13.96%	12.21%	11.11%	10.56%	10.11%	92.98%

The regional water planning population projections are constrained by the cohort component methodology described previously, and represent only one possible outcome. To accommodate the uncertainty associated with projecting population 50 years into the future, a variety of growth scenarios were developed.

Each scenario uses 2010 county level census data as the starting point. Growth rates from available State Data Center and TWDB Regional Planning Groups were used in these scenarios, except that any decline in population projected by the State Data Center or Regional Water Planning groups was disregarded. Six additional scenarios were developed using constant growth percentages for each decade, ranging from 5% growth per decade to 10% growth per decade. One last scenario was developed using a growth rate of 10% per decade with select counties anticipating accelerated growth in some decades. Figure 1-3 shows the population projections developed for this study, which by 2070 range from around 540,000 people to a little over one million people. Note that the population scenarios shown in Figure 1-4 differ slightly from a similar graphic developed by FNI in 2012. These scenarios use newly-available population projections for the 2016 Regional Plans whereas the previous work is based on projections from the 2011 Plan. These projections also represent the entire population of all 11 counties in the Basin, not just portion of the population within the geographic boundary of the Sulphur River Basin.

Figure 1-1 Population Projection Scenarios Sulphur Basin Counties



1.2 DEMOGRAPHICS

In 2010, the population of the eleven counties comprising the Sulphur River Basin was 401,991. Figure 1-3 shows the age distribution for the Sulphur River Basin. **Error! Reference source not found.**4 displays the age distribution for the population of the state of Texas as a whole. In 2010, about 27.3 percent of the Sulphur River Basin population was 19 years or younger. Those between the ages of 40 and 60 represented 27.1 percent of the basin population and those over 60 represented 21.5 percent of the basin population. When compared to the state of Texas, the population in the Sulphur River Basin is older. In Texas in 2010, 30.4 percent of the population was under 19 years and only 15.1% was above the age of 60. The majority of the basin's population is white (72 percent). African-Americans represent approximately 13 percent of the basin; Hispanics represent 12 percent (**Error! Reference source not**

found.7). For comparison, the state of Texas is 45 percent white, 12 percent African American and 38 percent Hispanic. (Figure 1-7)

Figure 1-2 Sulphur River Basin Age Distribution, 2010

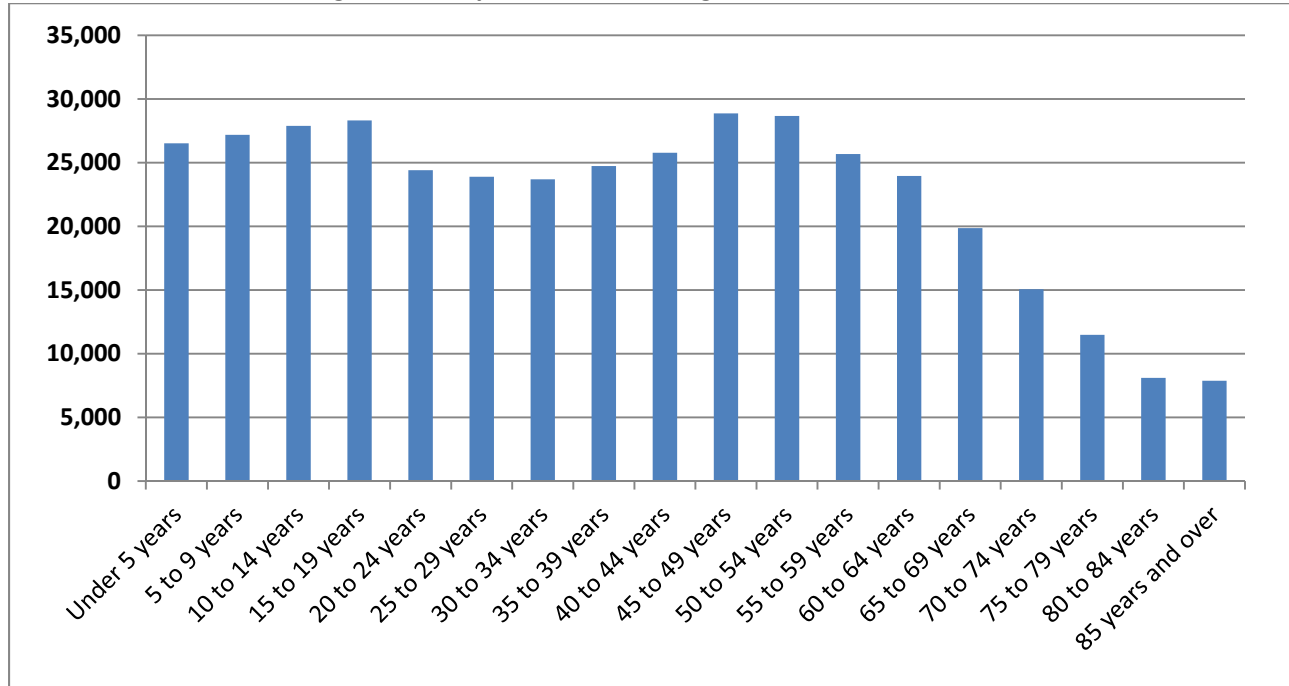


Figure 1-3 Texas Age Distribution, 2010

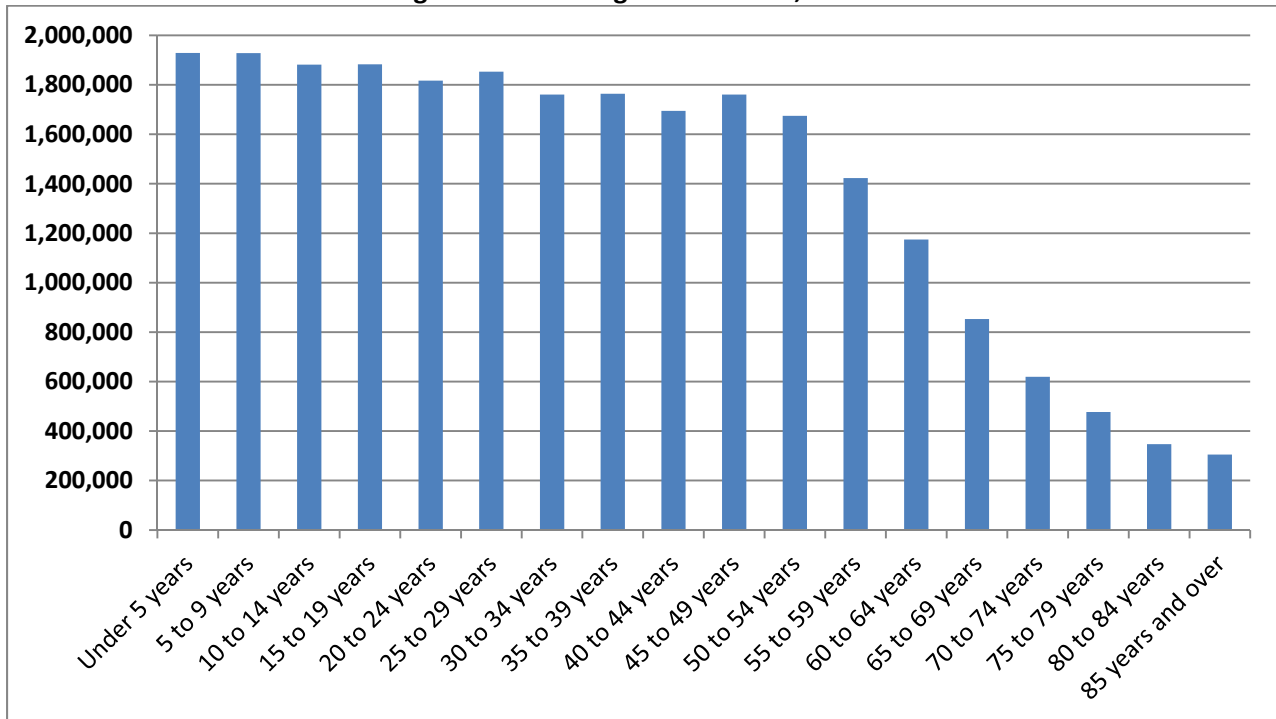


Figure 1-4 Sulphur River Basin Ethnicity, 2010

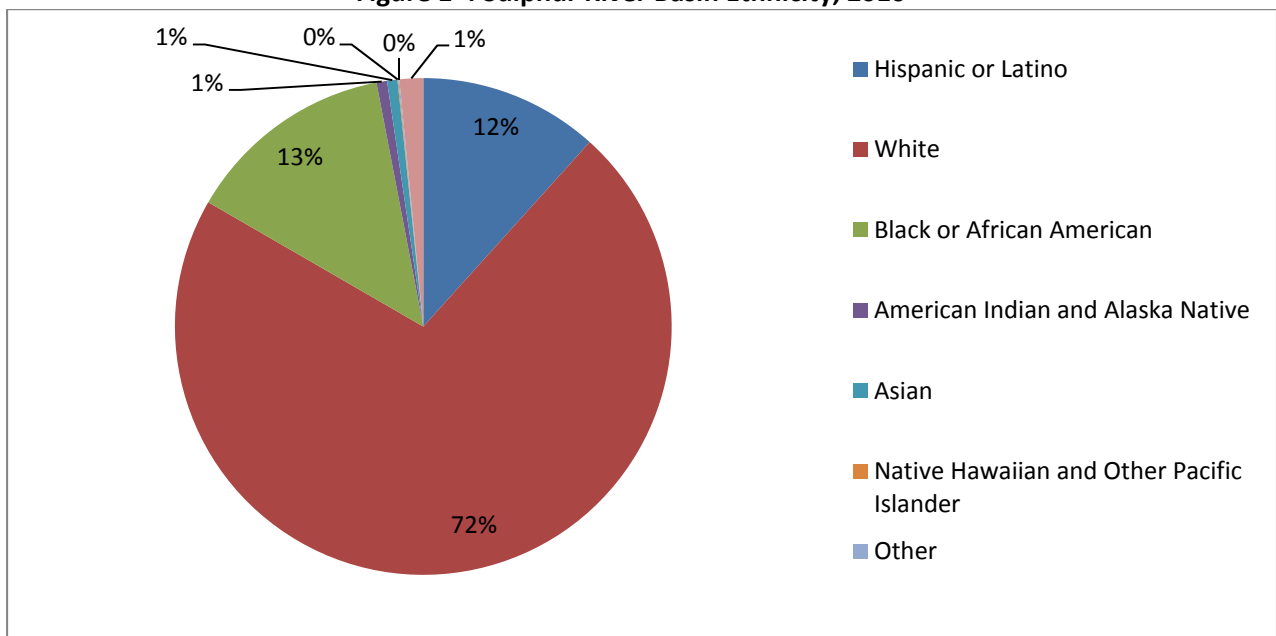
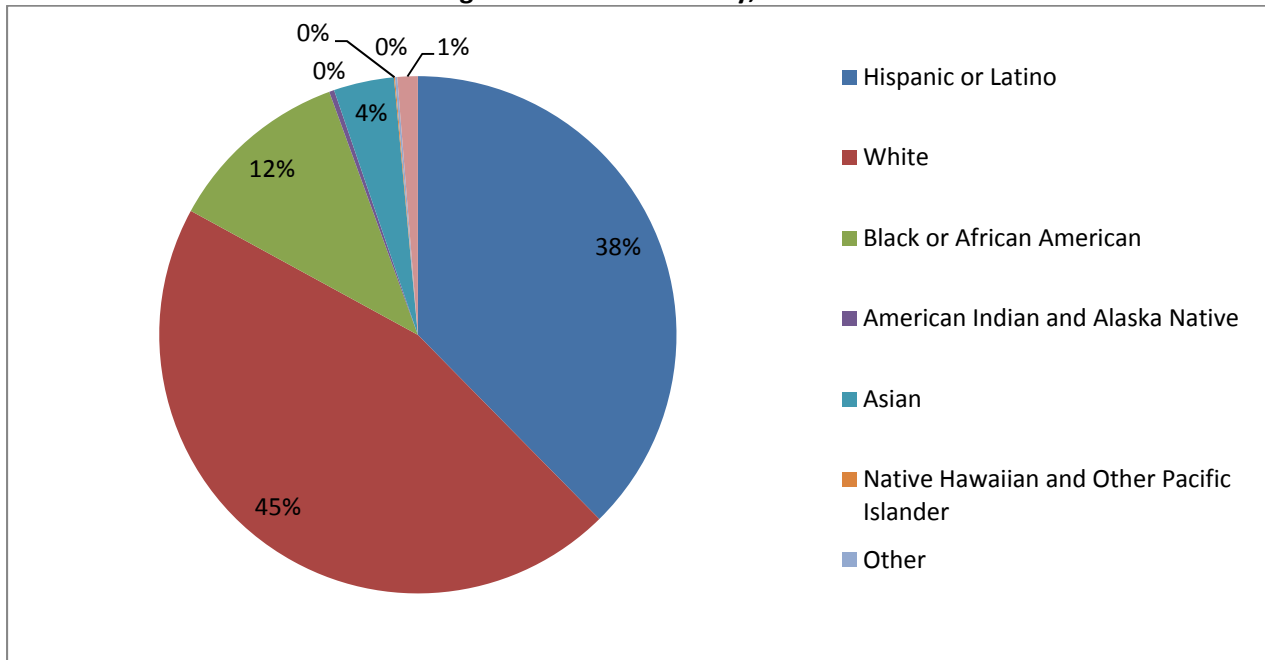


Figure 1-5 Texas Ethnicity, 2010



1.2.1 Bowie County Demographics

The total population of Bowie County in 2010 was 92,565. As seen in **Error! Reference source not found.9**, the population in Bowie County is fairly well distributed between age brackets. The smallest portion of the population is those above 60, or about 19.8 percent which is nearly 5 percent higher than the state population above 60. Ethnicity in Bowie County is displayed in in Figure 1-10. The county is about 66 percent white and nearly a quarter African American. Hispanics represent six percent of the population.

Figure 1-6 Bowie County Age Distribution, 2010

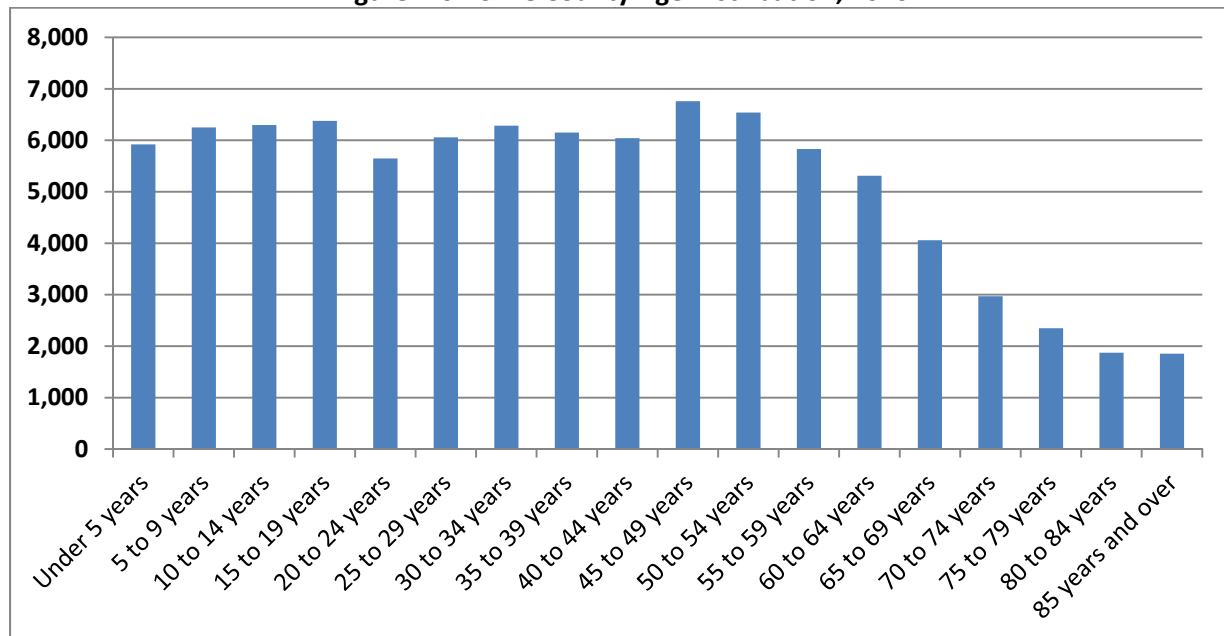
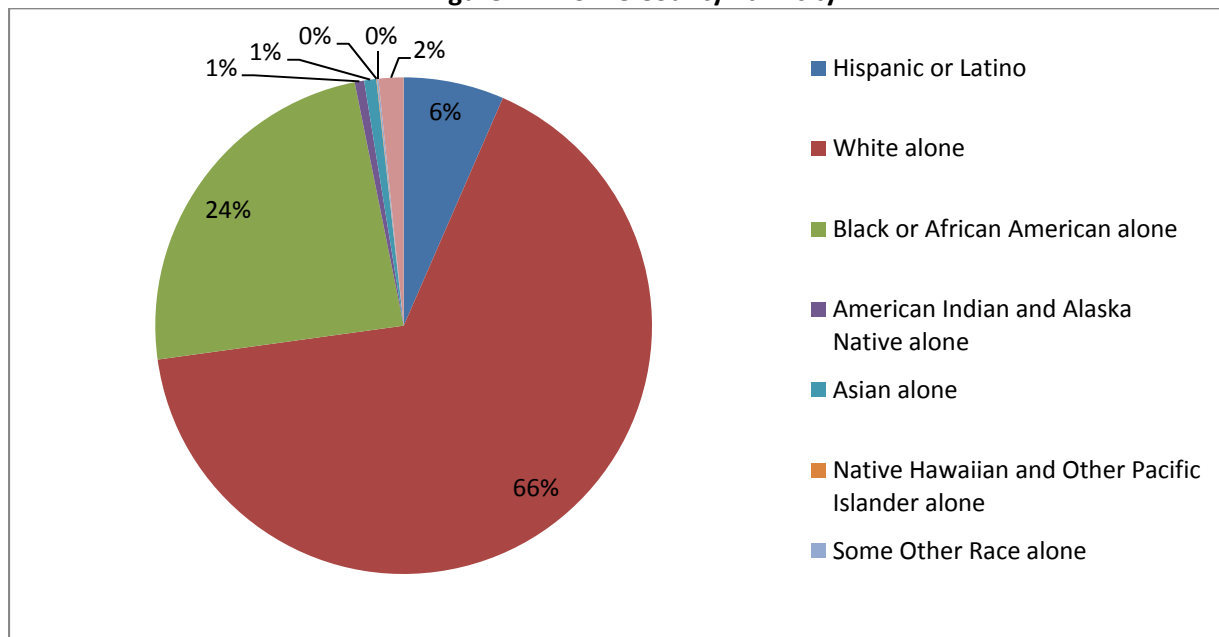


Figure 1-7 Bowie County Ethnicity



1.2.2 Cass County Demographics

Figures 1-9 and 1-10 display the age distribution and ethnicity of Cass County. The population of Cass County in 2010 equaled 30,464. In the same year, over half the population (53.8 percent) was above 40 years of age; less than 21 percent was between the ages of 20 and 40; only 25.5 percent was under 19. This is compared to state averages of 41.2 percent above age 40; 28.6 between 20 and 40; and 30.4

percent under 19. About 77 percent of the population is white. The next largest ethnic group is African-American who make up about 17 percent of the county. The Hispanic population accounts for only 4 percent of the county population.

Figure 1-8 Cass County Age Distribution, 2010

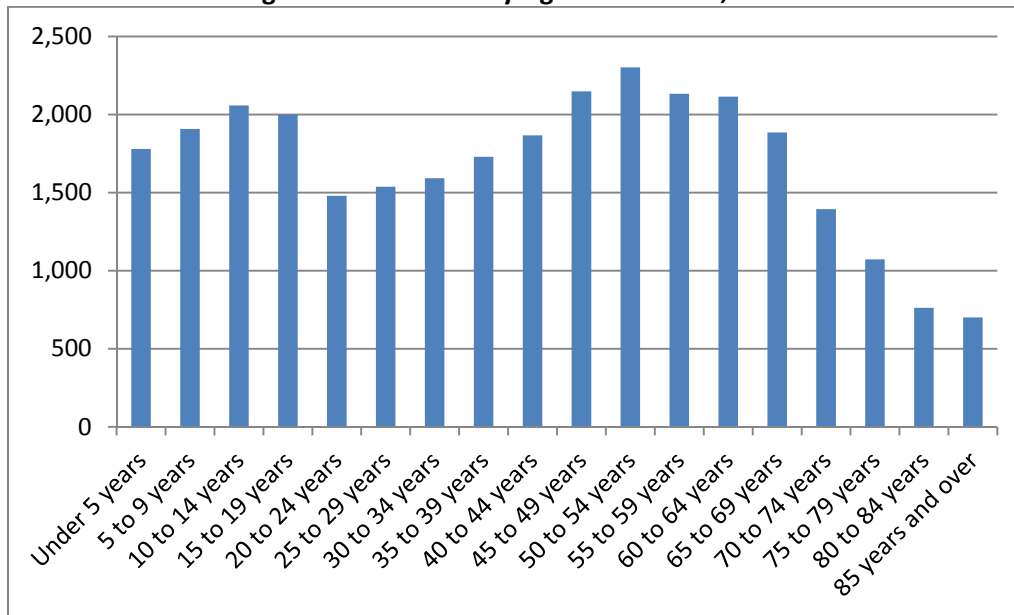
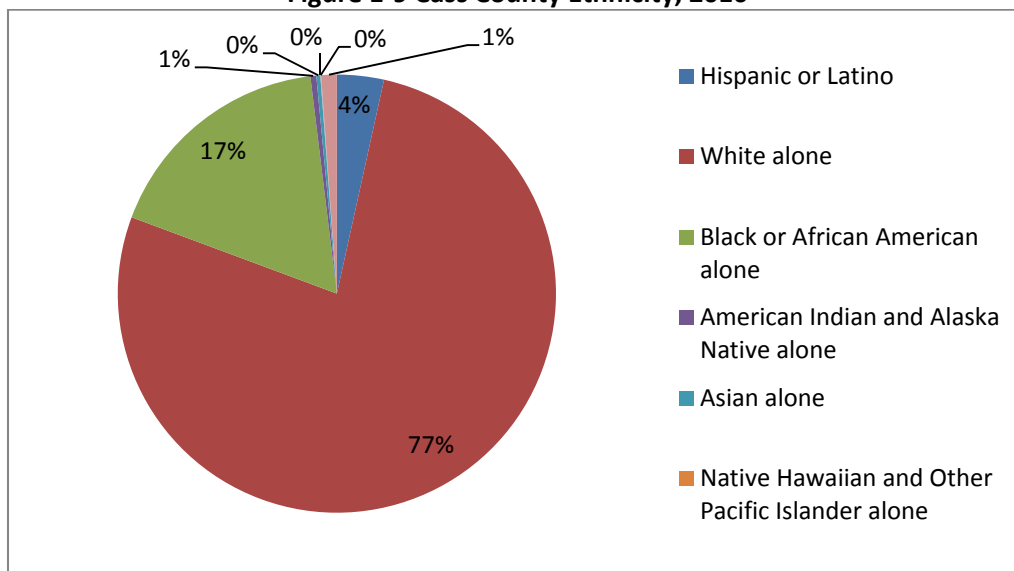


Figure 1-9 Cass County Ethnicity, 2010



1.2.3 Delta County Demographics

Delta County is the least populous in the Sulphur River Basin with only 5,231 people in 2010. Figure 1-10 portrays the age distribution in Delta County. The population of the county is aging, with nearly 55 percent of the county above age 40 in 2010. Ethnicity of Delta County residents is depicted in Figure 1-11 eighty - three percent of the county is reported as white and 7 percent African-American. The other and two or more races categories comprise about 3 percent of the population respectively.

Figure 1-10 Delta County Age Distribution, 2010

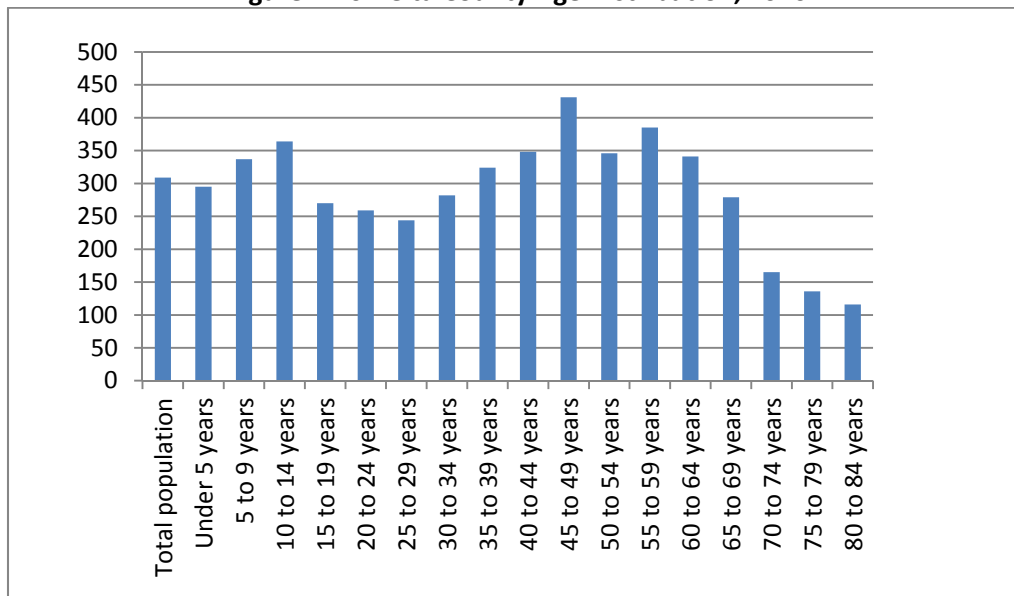
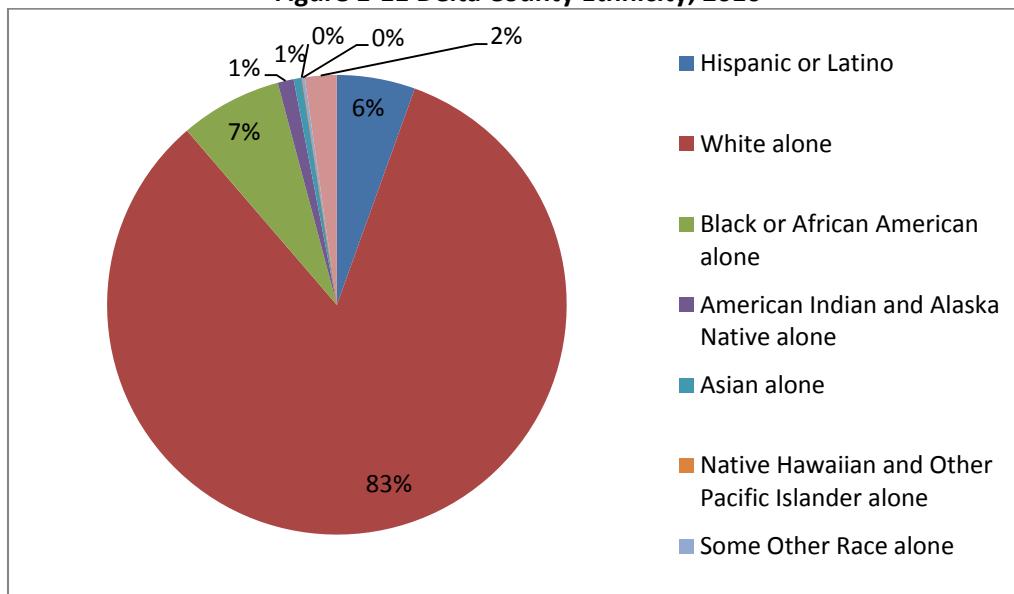


Figure 1-11 Delta County Ethnicity, 2010



1.2.4 Fannin County Demographics

As shown in Figures 1-12 and 1-13, Fannin County follows the trends of the Sulphur River Basin with an aging and mostly white population. In 2010, the county was home to 33,915 people. The largest age group for the county is those between the ages of 40 and 60 (28.2 percent). Eighty one percent of the county is white. Hispanics make up nine percent, while African-Americans make up seven percent of the population.

Figure 1-12 Fannin County Age Distribution, 2010

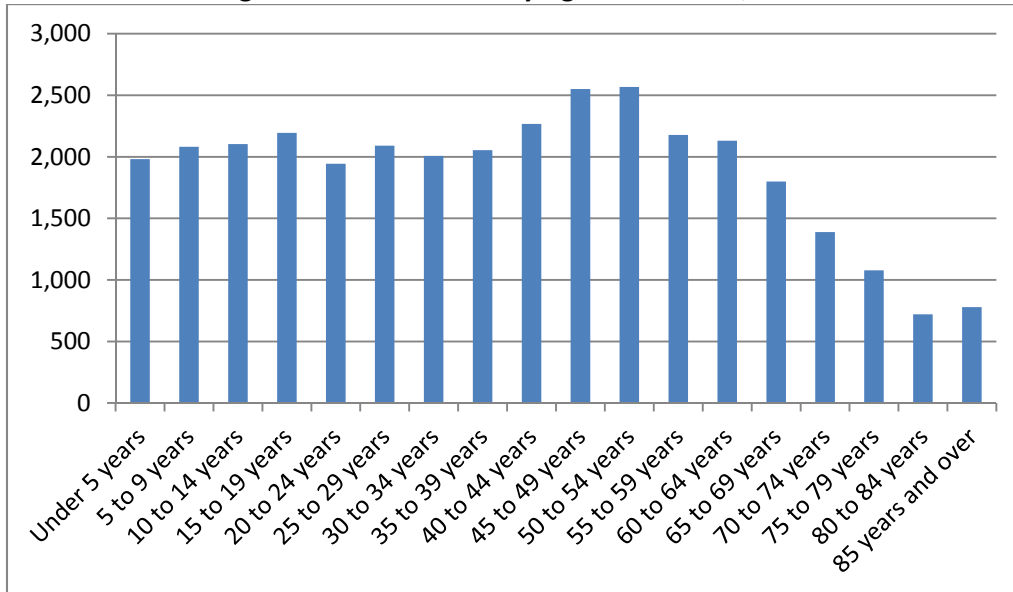
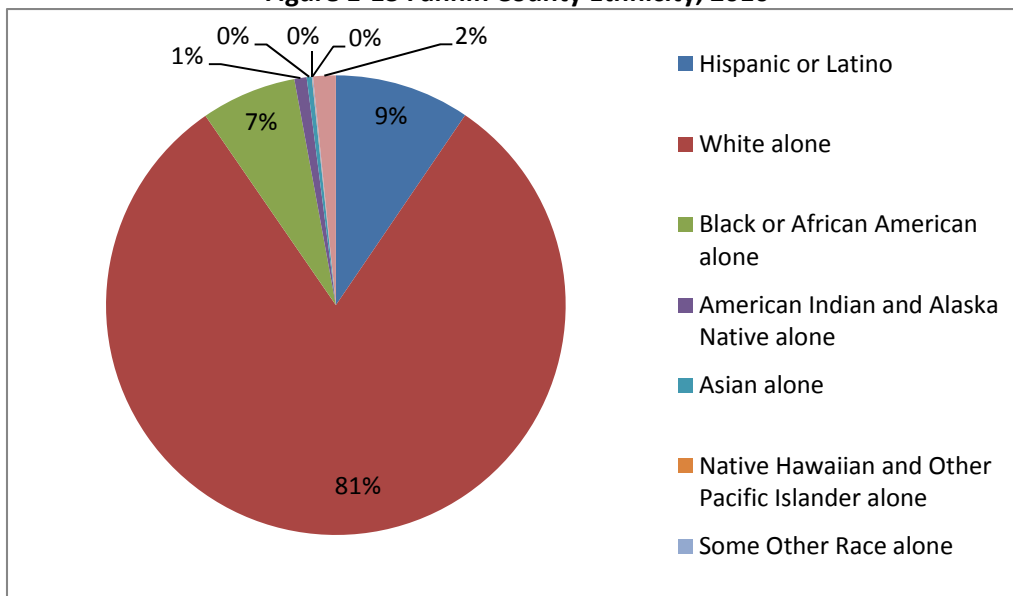


Figure 1-13 Fannin County Ethnicity, 2010



1.2.5 Franklin County Demographics

Franklin County accounted for 10,605 people in the 2010 census. **Error! Reference source not found.**14 displays the age distribution for the population of Franklin County in the same year. The population over age 60 comprised about 10 percent more of the county's population than the statewide average. Ethnically, the county is fairly homogenous with 81 percent of its residents reported as white, as shown in Figure 1-15. Thirteen percent were Hispanic or Latino and four percent were African American.

Figure 1-14 Franklin County Age Distribution

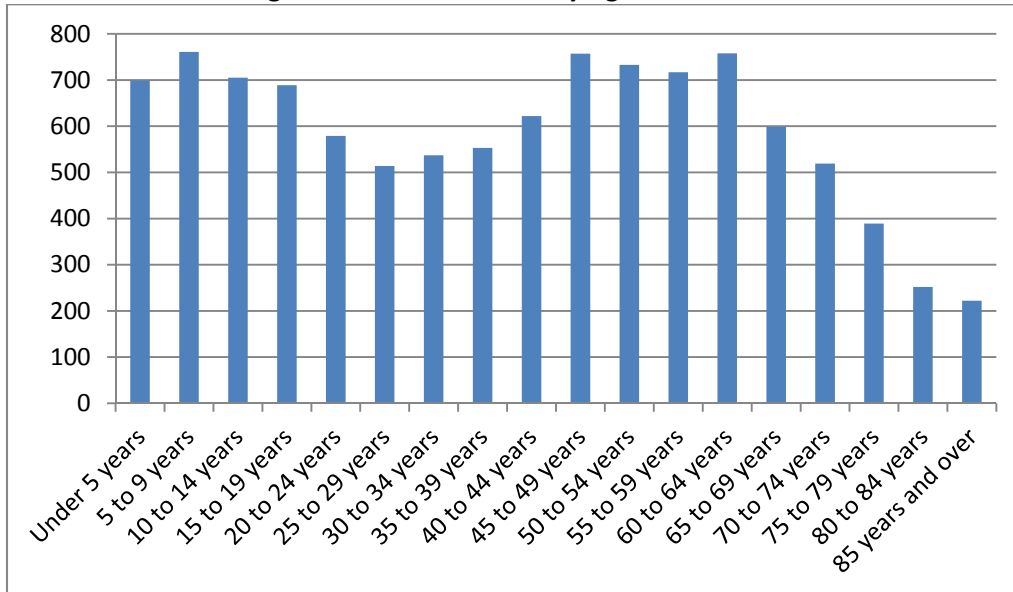
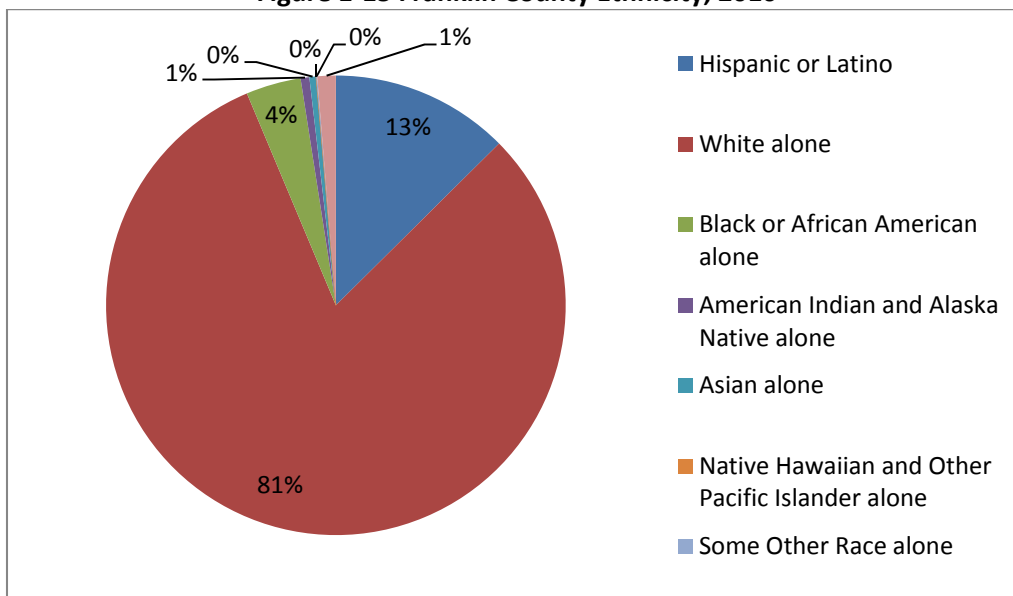


Figure 1-15 Franklin County Ethnicity, 2010



1.2.6 Hopkins County Demographics

The population of Hopkins County in 2010 was 35,161. Age distribution and ethnicity are shown in Figures 1-16 and 1-17. A substantial percentage of this county's population was under age 19. This age bracket represented 28.2 percent of the population which was still lower than the state wide percentage of 30.4 but was significantly closer than the other counties in the Sulphur River Basin. However, the county did have a higher percentage of those over the age of 60 (about 21.5 percent) when compared to the state's 15.1 percent. Three quarters of the county's population was white, 15 percent was Latino and seven percent was African-American.

Figure 1-16 Hopkins County Age Distribution, 2010

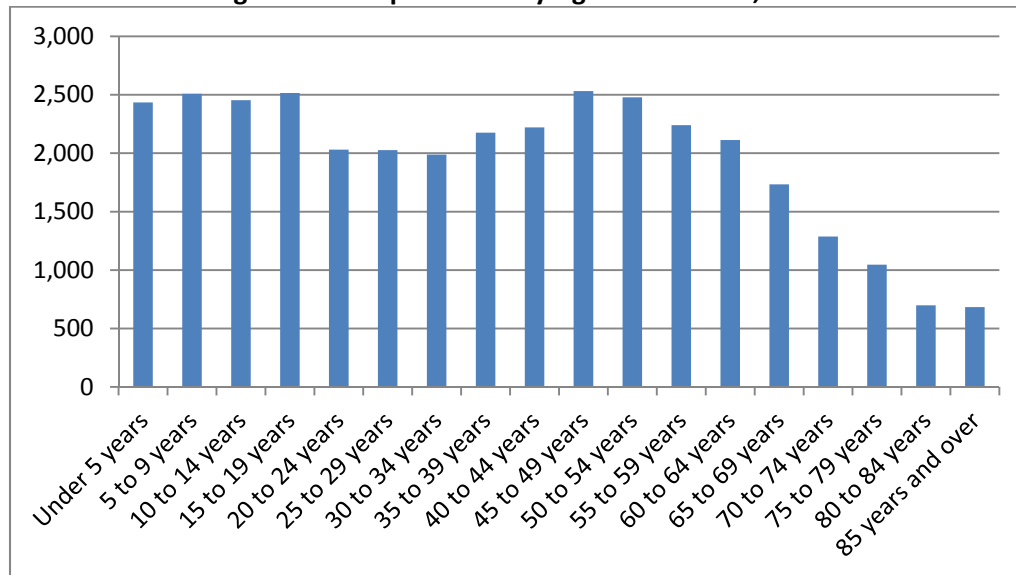
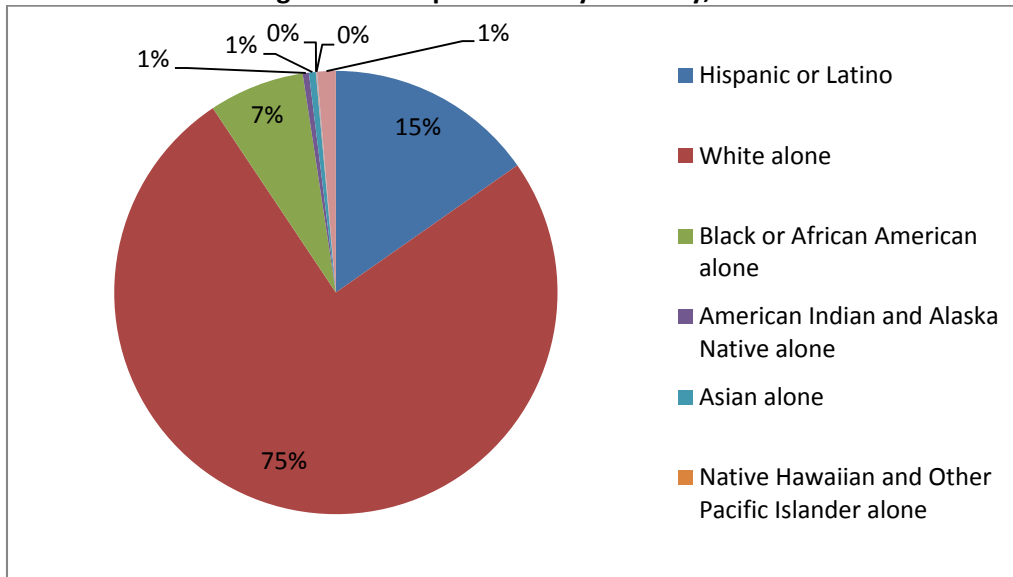


Figure 1-17 Hopkins County Ethnicity, 2010



1.2.7 Hunt County Demographics

Hunt County was the most populous county in the Sulphur River Basin with 86,129 residents in 2010. The distribution of ages depicted in Figure 1-18 for Hunt County was much closer to statewide percentages than the other counties in the region. The amount of people over the age of 60 was still somewhat higher than the state as a whole, comprising of about 19.5 percent as compared to 15.1 percent. Figure 1-19 shows the ethnicity of county residents, approximately about three quarters white with small amounts of Hispanics or Latinos and African-Americans.

Figure 1-18 Hunt County Age Distribution, 2010

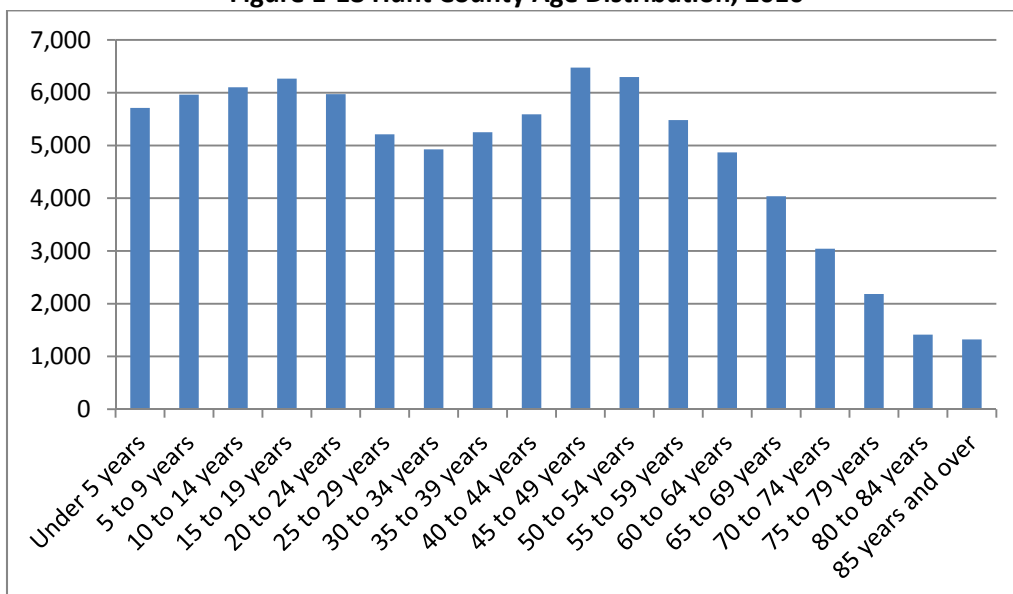
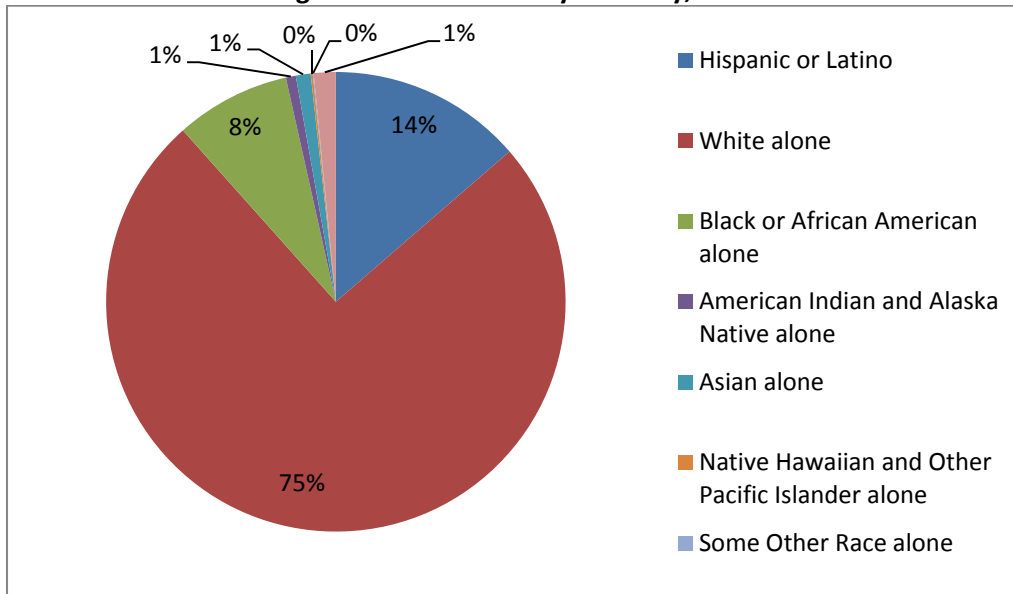


Figure 1-19 Hunt County Ethnicity, 2010



1.2.8 Lamar County Demographics

In 2010, the population of Lamar County was just under 50,000. **Error! Reference source not found.** displays the age distribution plot for the county in the same year. Ethnically, Lamar County is typical for the Sulphur Basin (Figure 2-21) with a higher proportion of white population than that of the state. Thirteen percent of the county was African American and seven percent Hispanic or Latino.

Figure 1-20 Lamar County Age Distribution, 2010

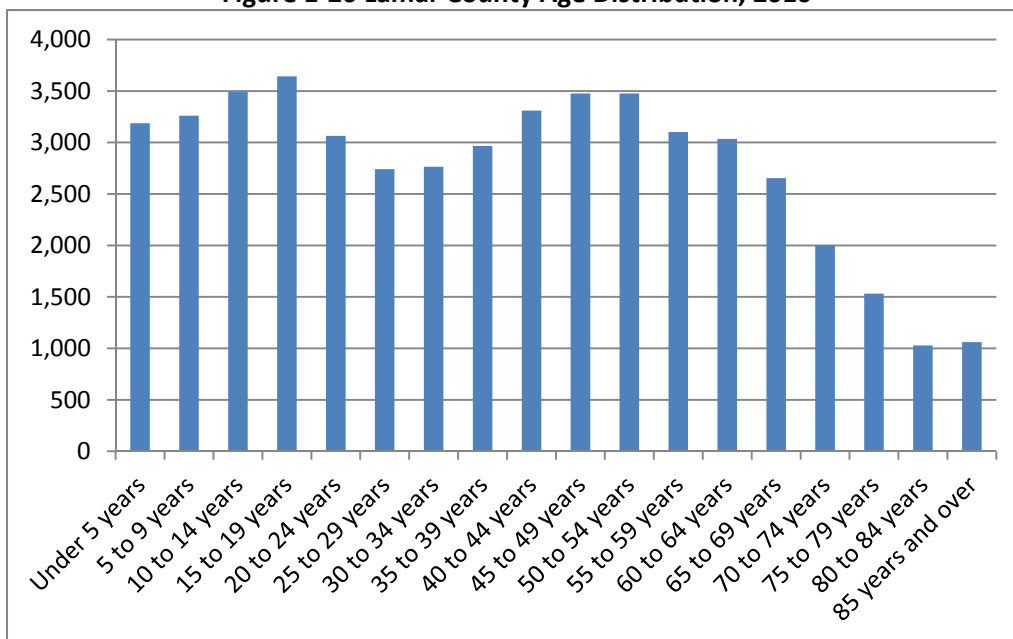
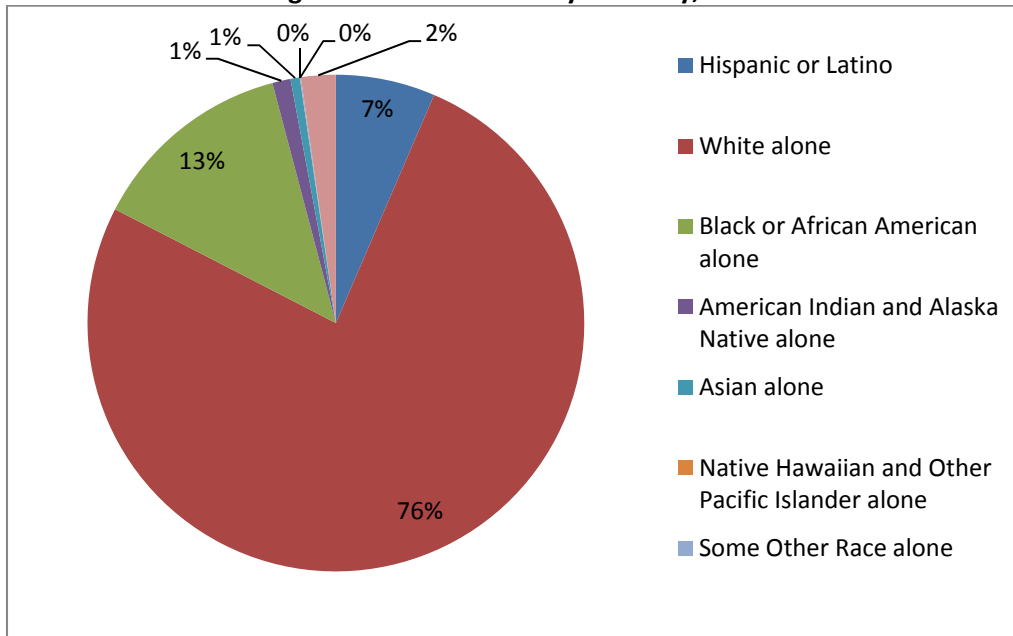


Figure 1-21 Lamar County Ethnicity, 2010



1.2.9 Morris County Demographics

Morris County's population reached 12,934 in the 2010 census. The population is aging, with 25.7 percent of the county over age 60. The county is mostly white but has significant African American population accounting for 23 percent of the county. Hispanics represent 8 percent.

Figure 1-22 Morris County Age Distribution, 2010

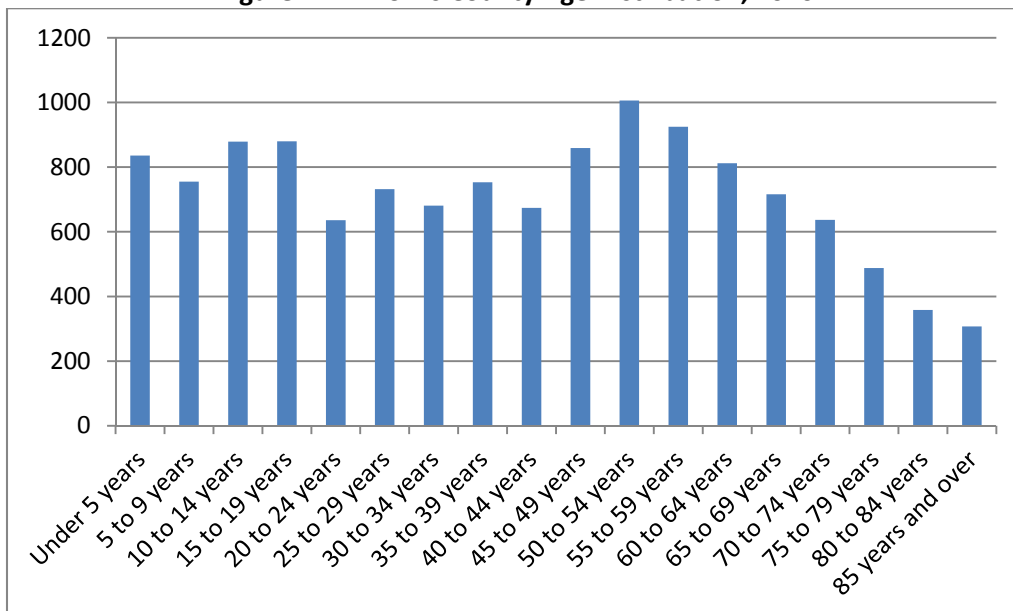
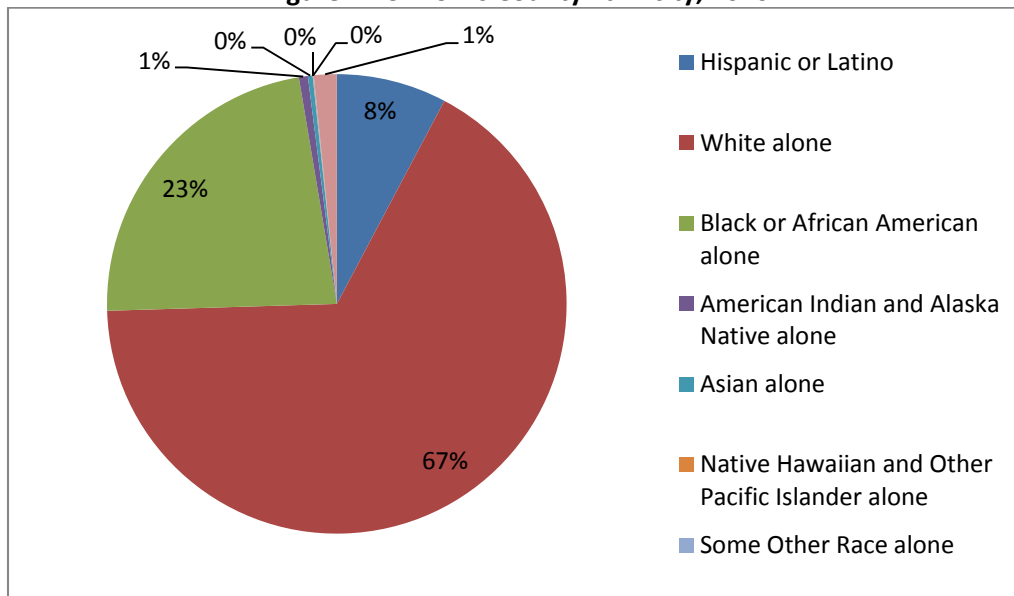


Figure 1-23 Morris County Ethnicity, 2010



1.2.10 Red River County Demographics

The age distribution and ethnic composition of Red River County is shown in Figures 1-24 and 1-25. The total population of Red River County in 2010 was 12,860. The county has the oldest population in the Sulphur River Basin with 56.1 percent of the county over age 40 and 28.1 percent of the county over age 60. This is higher than that of the state of Texas whose population over the age 40 only represents 41.2 percent and the population over 60 represents only 15.1 percent. The county is 74 percent white, 17 percent black and seven percent Hispanic or Latino.

Figure 1-24 Red River County Age Distribution, 2010

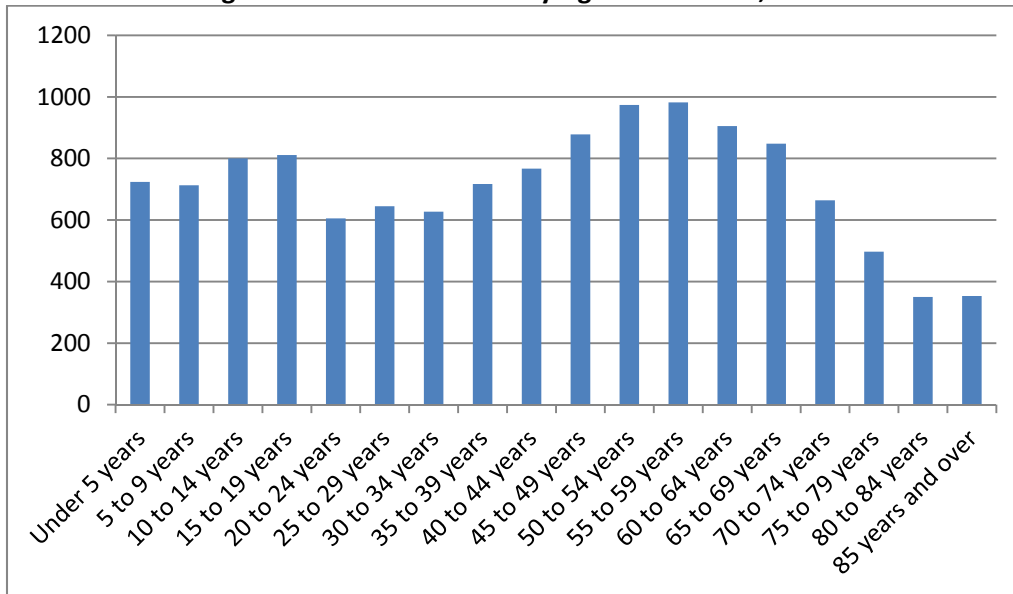
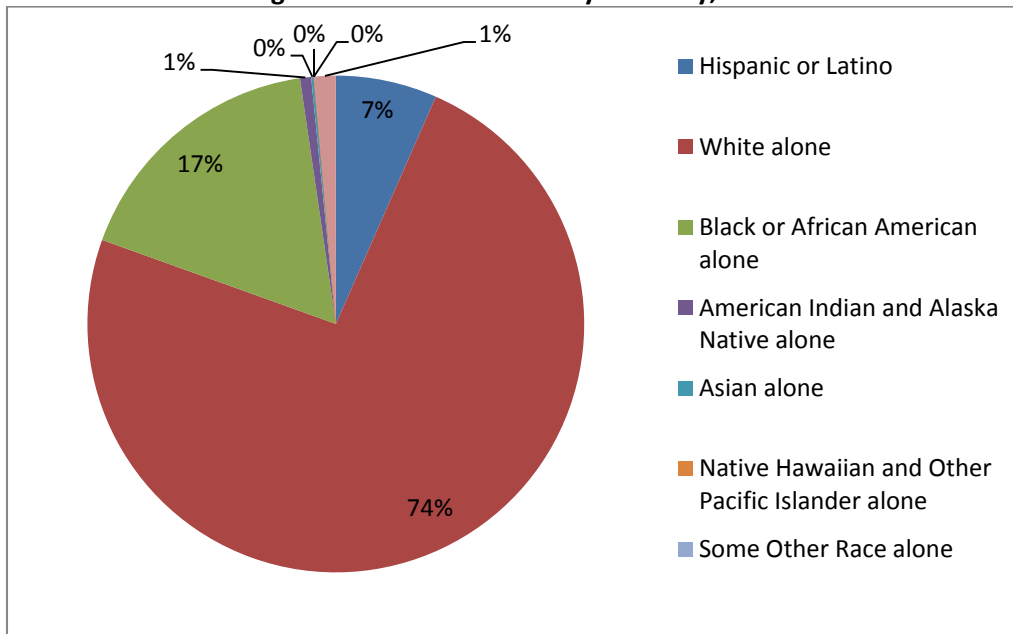


Figure 1-25 Red river County Ethnicity, 2010



1.2.11 Titus County Demographics

Titus County was home to 32,334 people during the 2010 census. Unlike the other ten counties that comprise the Sulphur River Basin, Titus County's population is younger than the state of Texas'. This is shown in Figure 1-26. Thirty-three percent of the county is under the age of 19 as compared to the 30.4 percent of the state that is under age 19. Also, the percentage of people over 60 is only slightly higher in Titus County than in the state as a whole (16.3 and 15.1 percent respectively). The distribution of ethnicity

is also much more comparable to state of Texas as a whole (Figure 1-27). Forty -nine 49 percent of the population was white, 40 percent was Hispanic or Latino, and 9 percent was African American. Titus County is significantly younger and more ethnically diverse than the rest of the Sulphur River Basin; likely due to the Pilgrim's Pride chicken processing plant which is a major employer of Hispanic workers in the town of Mount Pleasant. Mount Pleasant is also the county seat and contains about half of the county's population.

Figure 1-26 Titus County Age Distribution, 2010

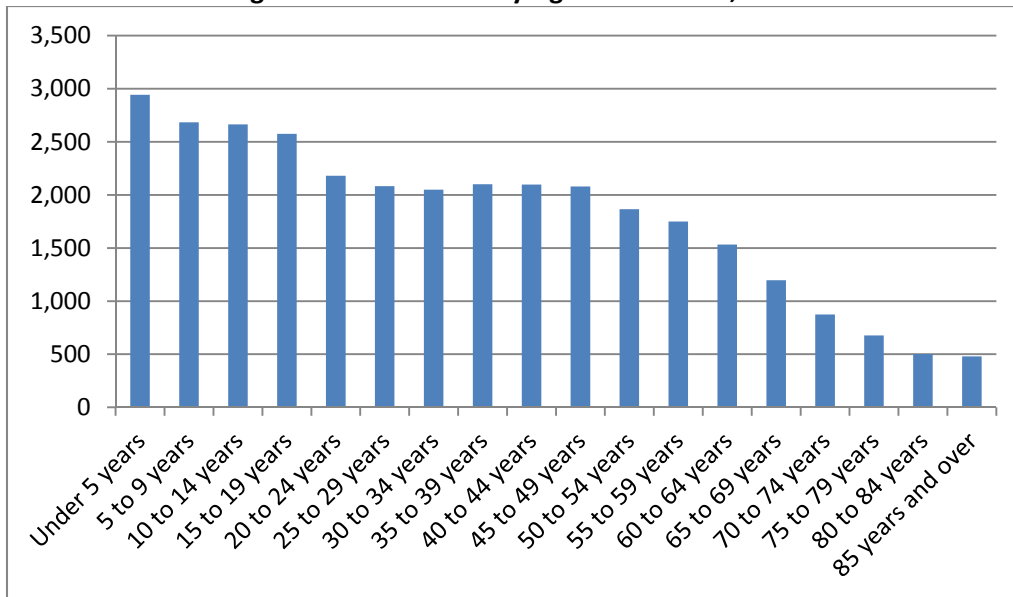
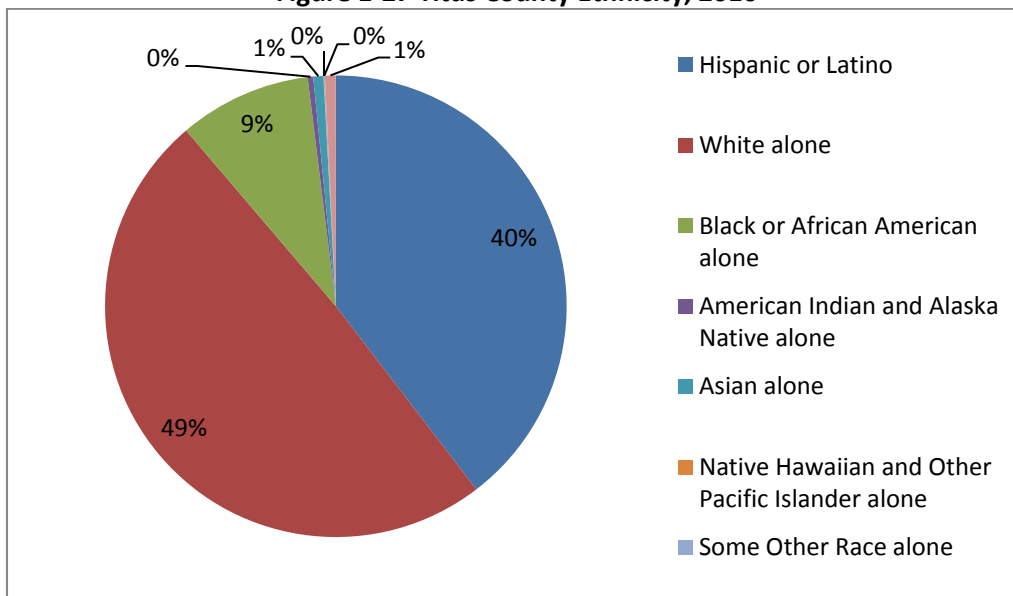


Figure 1-27 Titus County Ethnicity, 2010



1.3 LABOR

1.3.1 Civilian Labor Force

The size of a county's labor force is measured as the sum total of those currently employed and those actively seeking employment. As can be seen in Table 1-4, from 2000 through 2010 only the Franklin labor force percent change surpassed the statewide percent change of 19 percent. This may be attributable to the Monticello Winfield Coal mine and power plant which is located in Franklin and Titus counties, the two counties in the Basin with the highest labor force growth.

Table 1-4 Annual Labor Force Size 2000-2010

County	Annual Civilian Labor Force			
	2000	2005	2010	Percent Change 2000-2010
Bowie	40,394	42,269	45,678	13
Cass	13,513	13,371	13,608	1
Delta	2,563	2,418	2,285	-11
Fannin	13,916	13,836	14,005	1
Franklin	4,424	5,149	5,455	23
Hopkins	16,356	17,492	18,157	11
Hunt	38,797	38,608	39,708	2
Lamar	23,024	23,034	24,112	5
Morris	5,937	6,107	6,232	5
Red River	5,774	6,276	6,020	4
Titus	12,742	14,726	14,675	15
Total	117,440	183,286	189,935	7
Texas	10,347,847	11,150,684	12,269,727	19

Source: TWC, 2013

<http://www.tracer2.com/cgi/dataanalysis/labForceReport.asp?menuchoice=LABFORCE>

1.3.2 Employment

Table 1-5 exhibits the annual employment levels in the eleven counties for the years 2000, 2005, and 2010. Bowie County has the largest number of employed with 41,928 in 2010, representing a 9 percent increase from the 38,389 employed in 2000. Franklin County experienced the largest growth rate of 19 percent during the decade. Red River County's employment dropped 17 percent.

Table 1-5 Annual Employment 2000-2010

County	Number in Employment			
	2000	2005	2010	Percent Change 2000-2010
Bowie	38,389	39,992	41,928	9
Cass	12,712	12,546	12,101	-5
Delta	2,432	2,285	2,082	-14
Fannin	13,238	12,957	12,698	-4
Franklin	4,235	4,901	5,043	19
Hopkins	15,692	16,695	16,914	8
Hunt	37,149	36,510	36,365	-2
Lamar	21,880	21,610	21,942	0
Morris	5,556	5,738	5,433	-2
Red River	6,441	5,891	5,359	-17
Titus	12,176	14,035	13,486	11
Total	169,900	173,160	173,351	2
Texas	9,896,002	10,551,547	11,264,748	14

Source: Texas Workforce Commission, 2013

Accessed January 18, 2013

<http://www.tracer2.com/cgi/dataanalysis/labForceReport.asp?menuchoice=LABFORCE>

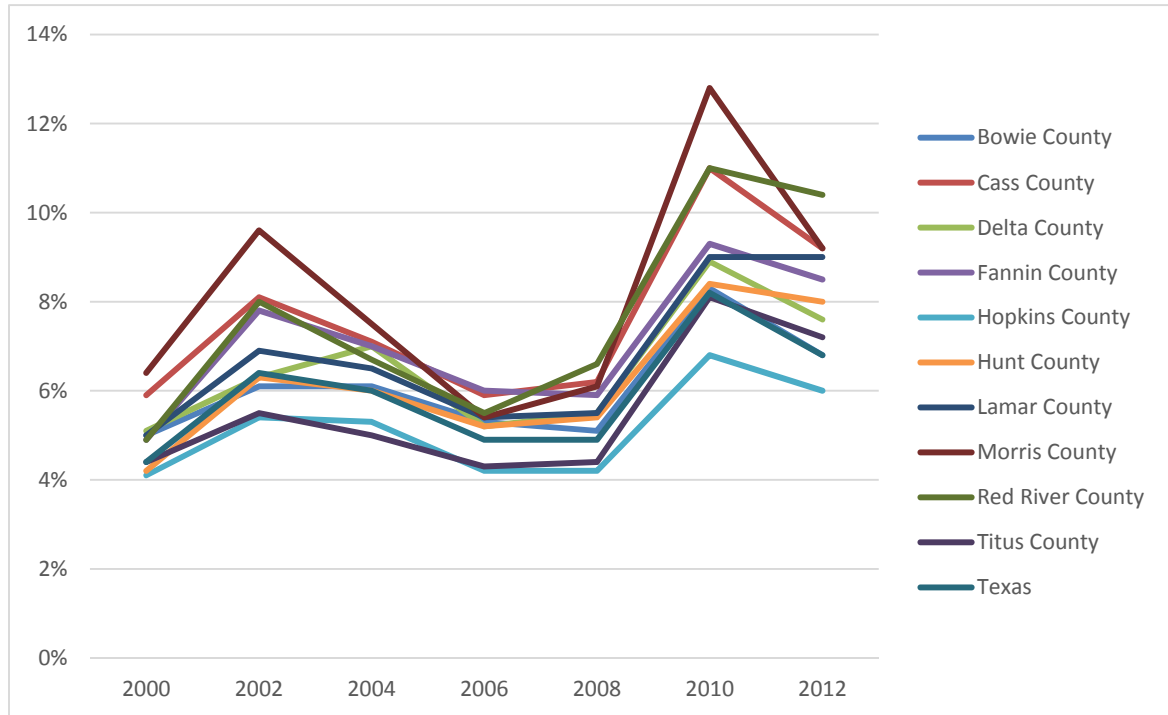
Major employers in the Sulphur River Basin are primarily in the manufacturing sector. A major employer in the lower Sulphur Basin is the Red River Army Depot in Texarkana. The depot focuses on repair, overhaul, remanufacture, and conversion of combat systems and tactical vehicles for the Department of Defense and employs a workforce of over 6,000 government civilians and contractors.² Cooper Tire & Rubber is another major Texarkana employer (Texarkana, Arkansas), employing over 1600 persons³. St. Christus Micheal Health System (health care sector) also employs approximately 1600 in Texarkana. The middle Sulphur Basins' major employers include the Pilgrim's Pride poultry facility, which employs nearly 4,000, the school district which employs more than 1,110, and a farm equipment manufacturer, Priefert Manufacturing, Inc which employs about 775. Ocean Spray also has facility in Sulphur Springs which employs 159. The basin is also home to International Paper which employs nearly 800 workers in Queen City, south of Texarkana. The Domtar Pulp and Paper mill in Ashdown, Arkansas is located outside the Sulphur River Basin but employs many Sulphur Basin residents.

1.3.3 Unemployment

Unemployment rates in all of the Sulphur Basin counties spiked between 2008 and 2010 due to the recession. However, every county shows recovery beginning by 2012. Morris County reached a peak unemployment rate of 12.8% in 2010 but it has since fallen to 9.2% in 2012. Hopkins County has

historically had one of the lowest unemployment rates in the region. In 2012, Hopkins County shows 6% unemployment which is lower than the state average of 6.8%.

Figure 1-28 Annual Unemployment Rates 2000-2012



Source: TWC, 2014

<http://www.tracer2.com/cgi/dataanalysis/labForceReport.asp?menuchoice=LABFORCE>

1.4 EARNINGS

Several measures are used to discuss earnings, including per capita personal income, total industry income, and compensation by industry. Personal income data are measured and reported for the county of the place of residence. Per capita personal income, then, is the personal income for the county divided by population in the county. Compensation data, however, are measured and reported for the county of work location, and are typically reported on a per job basis. Total compensation includes wages and salaries as well as employer contribution for employee retirement funds, social security, health insurance, and life insurance.

1.4.1 Per Capita Personal Income

Personal income is the income received by all persons from all sources, or the sum of net earnings by a place of residence, property income, and personal current transfer receipts (USDOC, 2013). This includes earnings from work received during the period. It also includes interest and dividends received, as well as government transfer payments, such as social security checks. It is measured before the deduction of personal income taxes and other personal taxes and is reported in current dollars.

Error! Reference source not found. contains per capita personal income for the eleven affected counties and Texas for the years 2000, 2005, 2010, and 2011. All dollar estimates are in current dollars (not adjusted for inflation). For 2011, of the eleven counties, Bowie (\$35,360) had had the highest personal income per capita. Morris (\$34,904), Franklin (\$33,141), and Lamar (\$33,092) followed; with Titus (\$28,542) and Fannin (\$29,708) having the smallest per capita personal incomes. All eleven counties had a per capita income smaller than that for the statewide average.

Red River County experienced the largest percentage change in per capita income from 2000 to 2011 with an increase of 75.8 percent despite a decline in employment and population. This may be explained by the declining economy in Red River County prompting the unemployed to move outside the county to find work, which has in turn increased the per capita income of the remaining population. This explanation is consistent with the changes in employment and population experienced by Red River County during the period of analysis. All but Franklin, Hunt, and Titus Counties had a percentage increases greater than the increase statewide. Titus County experienced the lowest percentage change in per capita income over the period with only a 32.9 percent increase.

Table 1-6 Annual Per Capita Income (in dollars)

County	Income				
	2000	2005	2010	2011	Percent Change 2000-2011
Bowie	22,980	28,272	34,131	35,360	53.9
Cass	20,718	24,736	31,482	32,899	58.8
Delta	19,071	21,092	27,973	31,187	63.5
Fannin	20,150	23,281	28,390	29,708	47.4
Franklin	24,128	28,299	32,315	33,141	37.4
Hopkins	23,050	25,660	31,452	32,766	42.2
Hunt	23,055	26,888	30,552	31,736	37.7
Lamar	22,217	25,268	31,780	33,092	48.9
Morris	21,625	25,724	33,221	34,904	61.4
Red River	18,007	22,082	30,183	31,664	75.8
Titus	21,479	26,330	28,202	28,542	32.9
Texas	28,506	33,220	38,222	40,147	40.8

Note: not adjusted for inflation

Source: USDOC, 2013

<http://www.bea.gov/iTable/iTable.cfm?ReqID=70&step=1>

1.4.2 Total Industry Compensation

Total industry compensation provides a good picture of the relative sizes of market related economic activity, or business activity, performed in the various counties (Table 1-7). Within the Sulphur River Basin, Bowie County dominates in economic activity, with Hunt County coming in second.

Table 1-7 Total Compensation of Employees (in \$1000s)

County	2001	2005	2010	2011
Bowie	1,324,165	1,723,832	2,100,756	2,154,310
Cass	282,009	301,512	337,381	348,715
Delta	34,546	29,786	42,060	47,025
Fannin	270,405	291,801	315,475	314,093
Franklin	76,997	98,469	126,865	129,700
Hopkins	347,861	415,669	517,566	543,198
Hunt	899,538	1,178,016	1,524,661	1,571,982
Lamar	685,189	742,817	868,274	895,970
Morris	194,620	245,364	256,697	290,512
Red River	88,746	94,833	106,421	103,959
Titus	529,710	628,209	681,698	671,713

Source: USDOC, 2013

<http://www.bea.gov/iTable/iTable.cfm?ReqID=70&step=1>

Income is generated by economic activity in the local area counties through a variety of sectors, including various types of business as well as government. This income is not always received by a person in the county, for a person from neighboring counties may cross county lines to go to work. The employee compensation by industry, however, is a measure of economic activity generated in the counties, regardless of where the employee resides.

The average compensation per job for 2011 for the counties examined, are: Bowie, \$48,177; Cass, \$42,982; Delta, \$31,968; Fannin, \$43,715; Franklin, 39,920; Hopkins, 42,651; Hunt, 52,499; Lamar, 43,843; Morris, 61,432; Red River, 35,663 and Titus, \$40,683. The 2009 statewide average compensation per job is \$55,579.

Two major sources of economic activity in the Sulphur River Basin are the Government and Government Enterprises and the Health Care and Social Assistance sectors. The Government and Government Enterprises sector incorporates all levels of government including federal civilian, military, state and local. Government Enterprises encompasses government agencies that have separate accounts but still serve the public. The Health Services and Social Assistance sector includes all services provided by a healthcare professional or social worker. Often times, the sector is defined based on the educational degree held by the practitioner in the industry. This sector does not include nonmedical diet and weight reducing centers, personal and laundry services, or amusement, gambling a recreation industries.

The sources of economic activity in the eleven counties are individually discussed below. At times, a (D) is displayed in lieu of data. This represents data that was withheld because there was only a single business in that sector and the publishing of the data would disclose confidential information about the business. However, in some cases, that individual company may be still be significant source of economic activity in the County.

1.4.3 Bowie County, Compensation by Industry

Table 1-8 displays the compensation of employees by industry for Bowie County in 2001, 2005, 2010, and 2011. Government and Government Enterprises represent the largest generator of employee compensation for 2001, 2005, 2010, and 2011. Health Care and Social Assistance sector is the second largest in annual compensation. The largest employer in the Sulphur River Basin is the Red River Army Depot in Bowie County, employing more than 4,500 civilian and military personnel (Red River Today, 2012). The Texas A&M University System has recently established a new campus in Texarkana, employing nearly 200 faculty and staff and having a current student population of over 1,600 (Find the Best, 2010).

Table 1-8 Compensation of Employees by industry in Bowie County (in \$1,000s)

Sector	2001	2005	2010	2011
Farm	2,682	2,724	2,756	3,262
Forestry, Fishing, Related Activities	1,320	(D)	1,577	1,468
Mining	2,296	(D)	580	694
Construction	55,928	53,582	60,389	55,072
Manufacturing	111,643	135,855	81,680	85,862
Transportation and Warehousing	41,242	90,887	89,332	75,344
Utilities	8,038	7,875	11,087	10,435
Wholesale Trade	75,522	98,387	117,526	121,149
Retail Trade	144,918	149,727	173,555	179,043
Information	20,846	13,400	19,336	22,084
Real Estate & Rental & Leasing	15,775	17,378	18,995	19,621
Finance & Insurance	52,330	78,130	108,573	120,639
Professional, Scientific, and Technical Services	(D)	(D)	37,802	38,422
Management of Companies	(D)	(D)	18,711	23,168
Administrative and Waste Services	21,881	25,370	39,737	47,532
Educational Services	2,510	3,239	1,949	2,075

Sector	2001	2005	2010	2011
Health Care and Social Assistance	262,125	312,871	389,557	395,043
Arts, Entertainment, Recreation	3,397	4,797	5,326	5,017
Accommodation & Food Services	39,729	52,201	67,657	70,811
Other Services Except Public Adm.	40,680	46,501	61,768	61,095
Government and Gov't Enterprises	394,990	584,878	792,863	816,474

Source: USDOC, 2013; (D) Not shown to avoid disclosure of individual confidential information
<http://www.bea.gov/iTable/iTable.cfm?ReqID=70&step=1>

1.4.4 Cass County, Compensation by Industry

Table 1-9 below displays the compensation of employees by industry for Cass County in 2001, 2005, 2010, and 2011. In 2001, the manufacturing sector was the leader, providing \$100 million in employee compensation. Significant industrial activities in the basin include the large International Paper plant in Cass County. Government and Government Enterprises is a close second in employee compensation with retail trade as a distant third.

Table 1-9 Compensation of Employees by Industry in Cass County (in 1,000s)

Sector	2001	2005	2010	2011
Farm	1,135	1,377	1,594	1,887
Forestry, Fishing, Related Activities	8,699	12,618	12,233	12,616
Mining	1,980	1,623	1,594	2,102
Construction	19,969	9,278	16,657	16,223
Manufacturing	88,004	94,069	92,709	100,599
Transportation and Warehousing	4,439	7,239	6,895	7,163
Utilities	8,535	7,052	(D)	(D)
Wholesale Trade	3,801	4,439	(D)	(D)
Retail Trade	21,891	21,155	22,212	23,093
Information	1,550	1,430	1,071	824
Real Estate & Rental & Leasing	983	1,624	2,664	2,840
Finance & Insurance	6,874	8,880	17,882	18,904
Professional, Scientific, and Technical Services	3,946	(D)	6,451	6,572

Sector	2001	2005	2010	2011
Management of Companies	0	(D)	(D)	(D)
Administrative and Waste Services	2,923	3,509	(D)	(D)
Educational Services	(D)	(D)	(D)	(D)
Health Care and Social Assistance	(D)	(D)	(D)	(D)
Arts, Entertainment, Recreation	259	233	(D)	(D)
Accommodation & Food Services	6,023	4,760	(D)	(D)
Other Services Except Public Adm.	10,679	13,387	13,338	13,739
Government and Gov't Enterprises	70,040	81,029	90,432	90,237

Source: USDOC, 2013; (D) Not shown to avoid disclosure of individual confidential information

1.4.5 Delta County, Compensation by Industry

As shown in Table 1-10, the largest generators of compensation for employees in Delta County are the Wholesale Trade and Government and government enterprises sectors. The two sectors together account for more than 57 percent of the employee compensation generated in the county.

Table 1-10 Compensation of Employees by Industry in Delta County (in 1,000s)

Sector	2001	2005	2010	2011
Farm	489	710	956	1,137
Forestry, Fishing, Related Activities	(D)	(D)	(D)	(D)
Mining	0	0	0	0
Construction	1,380	769	(D)	(D)
Manufacturing	(D)	237	(D)	(D)
Transportation and Warehousing	(D)	(D)	(D)	(D)
Utilities	(D)	(D)	(D)	(D)
Wholesale Trade	3,635	940	9,586	12,953
Retail Trade	978	1,416	694	711
Information	(D)	(D)	(D)	(D)
Real Estate & Rental & Leasing	(D)	455	(D)	304
Finance & Insurance	(D)	906	(D)	1,071
Professional, Scientific, and Technical Services	(D)	2,513	(D)	(D)
Management of Companies	0	(D)	(D)	(D)
Administrative and Waste Services	(D)	(D)	(D)	1,479
Educational Services	0	0	0	0
Health Care and Social Assistance	4,781	5,864	10,546	10,869
Arts, Entertainment, Recreation	(D)	(D)	(D)	(D)
Accommodation & Food Services	(D)	(D)	(D)	(D)
Other Services Except Public Adm.	1,735	1,735	(D)	(D)
Government and Gov't Enterprises	10,953	12,321	14,373	14,159

Source: USDOC, 2013; (D) Not shown to avoid disclosure of individual confidential information

1.4.6 Fannin County, Compensation by Industry

As can be seen in Table 1-11, Government and Government Services account for a total of \$144.5 million of the annual compensation of employees in 2011. The city of Bonham – the county seat - is home to Red River Regional Hospital that serves the area, and operates a branch of Grayson County College. The Red River Regional Hospital would fall under the Health Care and Social Assistance sector. The Grayson County College branch would be considered Educational Services. However, data for both these sectors was withheld by the reporting entity to avoid the disclosure of confidential information.

Table 1-11 Compensation of Employees by Industry in Fannin County (in \$1000s)

Sector	2001	2005	2010	2011
Farm	4,051	4,514	4,599	5,497
Forestry, Fishing, Related Activities	(D)	(D)	1,933	2,064
Mining	(D)	(D)	2,295	2,339
Construction	9,885	10,572	7,697	9,539
Manufacturing	54,788	31,016	23,157	21,760
Transportation and Warehousing	3,171	4,986	6,997	7,470
Utilities	5,665	4,906	6,269	6,037
Wholesale Trade	9,597	13,596	14,270	14,952
Retail Trade	29,333	27,000	29,550	29,536
Information	1,282	1,442	1,680	1,406
Real Estate & Rental & Leasing	812	1,266	1,586	1,408
Finance & Insurance	15,724	19,585	10,555	10,665
Professional, Scientific, and Technical Services	4,788	(D)	5,063	4,521
Management of Companies	0	(D)	(D)	0
Administrative and Waste Services	1,346	(D)	(D)	1,389
Educational Services	(D)	(D)	(D)	(D)
Health Care and Social Assistance	(D)	(D)	(D)	(D)
Arts, Entertainment, Recreation	(D)	468	608	777
Accommodation & Food Services	(D)	5,820	6,328	5,515
Other Services Except Public Adm.	9,150	10,489	13,062	13,259

Sector	2001	2005	2010	2011
Government and Gov't Enterprises	94,473	118,730	147,433	144,449

Source: USDOC, 2013; (D) Not shown to avoid disclosure of individual confidential information

1.4.7 Franklin County, Compensation by Industry

Table 1-12 displays the compensation of employees by industry for Franklin County in 2001, 2005, 2010, and 2011. The Government and Government Enterprises sector generates more employee compensation than any other. Health Care and Social Assistance represent the second largest provider of employee compensation.

Table 1-12 Compensation of Employees by Industry in Franklin County (in 1,000s)

Sector	2001	2005	2010	2011
Farm	2,581	2,645	2,771	3,256
Forestry, Fishing, Related Activities	(D)	(D)	(D)	(D)
Mining	5,276	0	(D)	(D)
Construction	3,348	2,373	3,296	3,596
Manufacturing	3,583	(D)	(D)	(D)
Transportation and Warehousing	(D)	3,042	(D)	(D)
Utilities	(D)	0	0	0
Wholesale Trade	1,333	1,044	(D)	(D)
Retail Trade	20,408	32,238	6,349	6,856
Information	(D)	336	(D)	(D)
Real Estate & Rental & Leasing	598	355	(D)	523
Finance & Insurance	2,914	4,775	3,391	5,783
Professional, Scientific, and Technical Services	1,235	1,424	1,913	1,634
Management of Companies	0	0	0	0
Administrative and Waste Services	744	1,137	2,101	3,291
Educational Services	0	0	0	0
Health Care and Social Assistance	11,763	23,402	34,806	33,921
Arts, Entertainment, Recreation	(D)	(D)	(D)	(D)
Accommodation & Food Services	(D)	(D)	(D)	(D)

Sector	2001	2005	2010	2011
Other Services Except Public Adm.	3,712	4,371	5,555	5,324
Government and Gov't Enterprises	14,246	16,559	20,668	20,970

Source: USDOC, 2013; (D) Not shown to avoid disclosure of individual confidential information

1.4.8 Hopkins County, Compensation by Industry

Table 1-13 displays the compensation of employees by industry in Hopkins County in 2001, 2005, 2010, and 2011. Government and Government Enterprises represent the largest portion of compensation in the country at \$100 million. The manufacturing sector provided \$74 million in compensation in 2011. Sulphur Springs the county seat of Hopkins Country is home to Ocean Spray Cranberries.

Table 1-13 Compensation of Employees by Industry in Hopkins County (in 1,000s)

Sector	2001	2005	2010	2011
Farm	7,271	9,240	10,893	12,885
Forestry, Fishing, Related Activities	(D)	(D)	(D)	(D)
Mining	8,705	(D)	16,199	17,091
Construction	19,021	31,912	35,508	44,726
Manufacturing	62,554	59,241	72,481	74,061
Transportation and Warehousing	16,981	24,294	20,252	19,759
Utilities	2,955	4,126	6,957	6,866
Wholesale Trade	35,766	41,459	61,849	69,982
Retail Trade	37,822	44,475	51,010	51,037
Information	5,862	7,256	7,364	7,528
Real Estate & Rental & Leasing	1,677	2,355	2,570	2,783
Finance & Insurance	14,021	17,364	22,363	21,859
Professional, Scientific, and Technical Services	(D)	12,574	15,602	14,173
Management of Companies	(D)	2,764	1,045	955
Administrative and Waste Services	5,377	6,510	13,099	15,292
Educational Services	(D)	746	(D)	(D)
Health Care and Social Assistance	(D)	18,289	31,677	(D)
Arts, Entertainment, Recreation	1,087	484	574	631

Sector	2001	2005	2010	2011
Accommodation & Food Services	13,676	13,231	14,935	15,362
Other Services Except Public Adm.	11,948	15,540	19,481	20,230
Government and Gov't Enterprises	72,441	91,445	110,647	110,124

Source: USDOC, 2013; (D) Not shown to avoid disclosure of individual confidential information

1.4.9 Hunt County, Compensation by Industry

Table 1-14 below displays the compensation of employees by industry for Hunt County in 2001, 2005, 2010, and 2011. In 2011 the manufacturing sector, primarily of wood products, generated more employee compensation than did other sectors. Government and Government Enterprises, Health Care and Social Assistance, are the second and third sources of employee compensation. The City of Greenville contains the Greenville Municipal Airport, and Hunt Regional Healthcare serves the county.

Table 1-14 Compensation of Employees by Industry in Hunt County (in 1,000s)

Sector	2001	2005	2010	2011
Farm	1,985	3,117	4,054	4,783
Forestry, Fishing, Related Activities	(D)	(D)	(D)	(D)
Mining	(D)	(D)	(D)	(D)
Construction	37,208	38,840	39,161	43,065
Manufacturing	324,403	455,549	642,304	652,910
Transportation and Warehousing	22,830	34,353	35,482	37,825
Utilities	9,791	11,455	14,292	14,147
Wholesale Trade	26,421	46,191	41,910	51,718
Retail Trade	70,587	82,393	95,228	97,226
Information	16,034	10,608	11,997	12,383
Real Estate & Rental & Leasing	6,500	10,913	9,451	8,430
Finance & Insurance	21,431	28,394	31,647	31,769
Professional, Scientific, and Technical Services	16,645	27,055	42,087	44,189
Management of Companies	0	(D)	(D)	693
Administrative and Waste Services	10,635	(D)	(D)	19,262
Educational Services	2,247	2,924	4,518	4,757
Health Care and Social Assistance	50,754	73,292	116,786	117,900

Sector	2001	2005	2010	2011
Arts, Entertainment, Recreation	1,481	2,519	1,980	2,017
Accommodation & Food Services	24,442	27,694	34,432	36,396
Other Services Except Public Adm.	26,026	30,377	39,420	40,568
Government and Gov't Enterprises	228,232	280,254	340,716	349,805

Source: USDOC, 2013; (D) Not shown to avoid disclosure of individual confidential information

1.4.10 Lamar County, Compensation by Industry

In 2011 the manufacturing sector, especially of durable goods, was the leader in employee compensation, reaching \$269.9 million in total compensation. The Health Care and Social Assistance and Government and government enterprises are close second and third sources for employee compensation. Paris has one major hospital divided into two campuses: Paris Regional Medical Center South (formerly St. Joseph's Hospital) and Paris Regional Medical Center North (formerly McCuiston Regional Medical Center). It serves as center for healthcare for much of Northeast Texas and Southeast Oklahoma. Both campuses are now operated jointly under the name of the Paris Regional Medical Center, a division of Essent Healthcare. The health network is the largest employer in the Paris area.

Table 1-15 Compensation of Employees by Industry in Lamar County (in 1,000s)

Sector	2001	2005	2010	2011
Farm	2,349	2,703	2,926	3,473
Forestry, Fishing, Related Activities	(D)	(D)	(D)	(D)
Mining	(D)	(D)	(D)	(D)
Construction	22,108	29,723	57,624	57,234
Manufacturing	250,642	235,286	261,497	269,962
Transportation and Warehousing	13,824	21,154	18,191	18,279
Utilities	11,085	19,859	18,298	18,796
Wholesale Trade	17,137	19,138	16,341	17,675
Retail Trade	57,415	64,506	71,086	74,013
Information	7,240	8,285	6,885	6,685
Real Estate & Rental & Leasing	2,685	3,477	4,058	5,277
Finance & Insurance	20,979	24,843	33,605	36,189

Sector	2001	2005	2010	2011
Professional, Scientific, and Technical Services	(D)	(D)	(D)	10,295
Management of Companies	(D)	(D)	(D)	1,192
Administrative and Waste Services	13,174	15,659	22,046	24,863
Educational Services	478	631	1,177	1,257
Health Care and Social Assistance	103,086	114,375	128,089	136,450
Arts, Entertainment, Recreation	1,814	1,328	4,737	5,413
Accommodation & Food Services	19,131	19,545	25,616	25,915
Other Services Except Public Adm.	19,485	23,503	26,313	28,035
Government and Gov't Enterprises	112,136	127,275	151,877	153,348

Source: USDOC, 2013; (D) Not shown to avoid disclosure of individual confidential information

1.4.11 Morris County, Compensation by Industry

As seen in Table 1-16, manufacturing is by far the largest sector of employee compensation at \$171 million. Manufacturing alone represents 58.9 percent of total compensation in the county. Government and Government Enterprises is a distant second at 31.6 million.

Table 1-16 Compensation of Employees by Industry in Morris County (in 1,000s)

Sector	2001	2005	2010	2011
Farm	747	1,085	1,300	1,512
Forestry, Fishing, Related Activities	(D)	(D)	(D)	(D)
Mining	(D)	(D)	(D)	(D)
Construction	4,952	4,759	3,934	5,304
Manufacturing	111,043	150,490	144,094	171,285
Transportation and Warehousing	13,732	18,589	(D)	19,098
Utilities	(D)	(D)	(D)	(D)
Wholesale Trade	(D)	(D)	17,900	(D)
Retail Trade	6,966	5,749	6,391	6,760
Information	284	920	1,637	1,718
Real Estate & Rental & Leasing	93	147	421	512
Finance & Insurance	4,201	5,904	5,944	5,334

Sector	2001	2005	2010	2011
Professional, Scientific, and Technical Services	5,371	4,299	(D)	(D)
Management of Companies	0	0	0	0
Administrative and Waste Services	384	546	(D)	(D)
Educational Services	0	0	0	0
Health Care and Social Assistance	6,276	6,619	9,456	8,740
Arts, Entertainment, Recreation	(D)	(D)	(D)	(D)
Accommodation & Food Services	(D)	(D)	(D)	(D)
Other Services Except Public Adm.	5,870	6,936	6,018	6,145
Government and Gov't Enterprises	25,127	27,795	32,477	31,625

Source: USDOC, 2013; (D) Not shown to avoid disclosure of individual confidential information

1.4.12 Red River County, Compensation by Industry

The largest sources of employee compensation in Red River County in 2011 were Government and Government Enterprises, Health Care and Social Assistance, and Manufacturing, respectively. Red River County experienced a sharp decline of about 50 percent in manufacturing compensation between 2005 and 2010. This may be attributable to the closure of Philips Products, a window and door manufacturing operation, in 2009⁴.

Table 1-17 Compensation of Employees by Industry in Red River County (in 1,000s)

Sector	2001	2005	2010	2011
Farm	2,766	3,055	3,201	3,801
Forestry, Fishing, Related Activities	(D)	(D)	2,226	2,775
Mining	(D)	(D)	2,791	2,396
Construction	3,479	4,296	8,595	8,536
Manufacturing	21,582	21,933	11,382	10,757
Transportation and Warehousing	2,063	876	1,211	1,074
Utilities	1,270	1,044	1,022	1,031
Wholesale Trade	1,441	617	1,998	1,950
Retail Trade	7,850	5,936	5,242	5,147
Information	(D)	(D)	688	761

Sector	2001	2005	2010	2011
Real Estate & Rental & Leasing	516	666	425	547
Finance & Insurance	1,911	2,764	4,290	4,484
Professional, Scientific, and Technical Services	297	(D)	(D)	1,318
Management of Companies	0	0	0	0
Administrative and Waste Services	(D)	(D)	(D)	113
Educational Services	716	0	0	0
Health Care and Social Assistance	11,280	15,360	19,919	19,741
Arts, Entertainment, Recreation	96	108	(D)	(D)
Accommodation & Food Services	819	1,051	(D)	(D)
Other Services Except Public Adm.	4,301	4,485	4,833	4,661
Government and Gov't Enterprises	25,511	30,905	35,997	33,795

Source: USDOC, 2013; (D) Not shown to avoid disclosure of individual confidential information

1.4.13 Titus County, Compensation by Industry

Table 1-18 displays the compensation of employees in Titus County in 2011, 2005, 2010, and 2011. In 2011, manufacturing was the largest sector in Titus County, providing \$230.8 million in compensation. Primary businesses in the area include poultry production by Pilgrim's Pride Corporation and agri-business products produced by Priefert Manufacturing (<http://www.mpedc.org/>). Government and Government Enterprises is the next largest sector with \$152 million of employee compensation. Retail Trade, Health Care and Social Assistance, and Utilities are the next highest contributors.

Table 1-18 Compensation of Employees by Industry in Titus County (in 1,000s)

Sector	2001	2005	2010	2011
Farm	1,744	2,222	2,571	3,058
Forestry, Fishing, Related Activities	(D)	640	666	(D)
Mining	36,699	26,572	24,769	25,677
Construction	13,381	12,031	20,278	14,530
Manufacturing	224,347	267,443	235,767	230,836
Transportation and Warehousing	2,713	3,042	4,644	5,701

Sector	2001	2005	2010	2011
Utilities	24,218	29,588	36,272	35,872
Wholesale Trade	9,964	15,271	11,885	10,719
Retail Trade	35,202	47,112	53,896	54,072
Information	6,775	9,121	5,293	5,221
Real Estate & Rental & Leasing	812	1,533	2,388	2,529
Finance & Insurance	9,863	14,136	18,899	20,198
Professional, Scientific, and Technical Services	(D)	5,080	8,690	8,376
Management of Companies	(D)	751	3,572	2,505
Administrative and Waste Services	3,799	6,292	8,400	10,211
Educational Services	(D)	(D)	(D)	(D)
Health Care and Social Assistance	(D)	(D)	(D)	48,609
Arts, Entertainment, Recreation	738	978	816	860
Accommodation & Food Services	10,842	13,953	18,089	19,668
Other Services Except Public Adm.	10,474	13,371	20,569	19,536
Government and Gov't Enterprises	98,790	121,308	155,549	152,189

Source: USDOC, 2013; (D) Not shown to avoid disclosure of individual confidential information

1.5 PUBLIC FINANCE

The primary non-federal taxation in the local area is of property and retail sales. Property taxes are dependent upon the appraised value of the property for taxation purposes and on the property tax rates. Retail sales that are qualified for taxation are taxes at a state sales tax plus potential county and city tax rates. Part of these taxes helps fund schools in the local area.

1.5.1 Property Taxation

Error! Reference source not found. represents the property tax rates for the eleven-county study area between 2000 and 2008. Delta County has the highest property tax rate, with a rate of \$0.93317 of tax per \$100 of a property's assessed value. Next highest is Red River County, with a rate of \$0.74193 per \$100; which is more than \$0.19 less per \$100 in assessed property value compared to Delta. Fannin

County assesses taxable values for agricultural land according to the nature of the land, the use of the land, and irrigation status.

Table 1-19 Total County Property Tax Rates 2000-2008

County	2000	2001	2002	2003	2004	2005	2006	2007	2008
Bowie	0.2726	0.2869	0.3175	0.3141	0.3141	0.309	0.319	0.317	0.327
Cass	0.504	0.51592	0.54096	0.536229	0.55953	0.55953	0.516669	0.516669	0.49281
Delta	1.05799	1.02099	0.97025	0.94161	0.830665	0.886799	0.932296	0.857432	0.93317
Fannin	0.57567	0.57567	0.6205	0.60011	0.5747	0.5702	0.5889	0.62	0.611
Franklin	0.55838	0.51017	0.523763	0.52	0.507579	0.502007	0.475096	0.474752	0.468792
Hopkins	0.5	0.495	0.533	0.5425	0.5425	0.5425	0.5362	0.5425	0.56
Hunt	0.587742	0.586789	0.586789	0.579436	0.572534	0.567534	0.567534	0.557534	0.507534
Lamar	0.3536	0.3706	0.3817	0.389	0.4113	0.4354	0.4429	0.4429	0.4329
Morris	0.27731	0.23983	0.28747	0.31811	0.331377	0.320493	0.252541	0.22556	0.247212
Red River	0.63072	0.66643	0.69192	0.66869	0.69588	0.67166	0.70473	0.73121	0.74193
Titus	0.2307	0.2195	0.245	0.26	0.2675	0.265	0.341833	0.33928	0.339

Morris County has a the lowest rate with \$0.247212 of tax per \$100, which is more than \$0.68 less per \$100 in assessed property value than in Delta County.

Source: TAC, 2013; in dollars per \$100 of assessed property value

<http://www.county.org/about-texas-counties/county-data/Documents/tax-rates.html>

Table 1-20 Total Appraised Property Value, 2011

County	Total Appraised Value Available for County Taxation	Total County Property Tax Rate
Bowie	\$4,135,364,258	\$0.326200
Cass	\$1,525,555,730	\$0.498639
Delta	\$196,181,709	\$0.929929
Fannin	\$1,455,547,677	\$0.608100
Franklin	\$984,140,890	\$0.472857
Hopkins	\$1,573,838,337	\$0.560570
Hunt	\$4,190,637,510	\$0.507534
Lamar	\$2,722,893,370	\$0.419200
Morris	\$1,025,517,583	\$0.232642
Red River	\$430,563,210	\$0.748010
Titus	\$2,817,281,297	\$0.387200

Source: TAC, 2013

Accessed January 17, 2013

<http://www.txcip.org/tac/census/CountyProfiles.php>

1.5.2 Retail Sales Taxation

The State of Texas retail sales tax stands at 6.25%. Local sales taxes vary by county and by city. As displayed in Table 1-21, most counties in the local area have a retail sales tax of 0.5%; however, Cass County has none. In addition, as is common in Texas, most cities and towns in the local area impose additional tax rates on retail sales of 1-2%.

Table 1-21 Retail Sales Tax Rates

County	City	Retail Sales Tax Rate	Total
Bowie		0.5%	
	De Kalb	1.5%	8.25%
	Hooks	1.5%	8.25%
	Leary	1.0%	7.75%
	Maud	1.5%	8.25%
	Nash	1.5%	8.25%
	New Boston	1.5%	8.25%
	Redwater	1.5%	8.25%
	Texarkana	1.5%	8.25%
	Wake Village	1.5%	8.25%
Cass		0.0%	
	Atlanta	2.0%	8.25%
	Avinger	1.5%	7.75%
	Bloomburg	1.0%	7.25%
	Domino	2.0%	8.25%
	Douglassville	0.25%	6.5%
	Hughes Springs	1.5%	7.75%
	Linden	2.0%	8.25%
	Queen City	1.75%	8.00%
Delta		0.5 %	
	Cooper (? Emergency Area)	1.0%	8.25%
	Pecan Gap (?)	1.0%	8.25%
Fannin		0.5%	
	Bailey	1.0%	7.75%
	Bonham	1.5%	8.25%
	Dodd	1.0%	7.75%
	Ector	1.0%	7.75%
	Honey Grove	1.5%	8.25%
	Ladonia	1.0%	7.75%
	Leonard	1.5%	8.25%
	Ravenna	1.0%	7.75%
	Savoy	1.5%	8.25%
	Trenton	1.5%	8.25%

County	City	Retail Sales Tax Rate	Total
Franklin	Windom	1.0%	7.75%
		0.5%	
	Mount Vernon	1.5%	8.25%
Hopkins	Winnsboro	1.5%	8.25%
		0.5%	
	Como	1.0%	7.75%
Hunt	Cumby	1.5%	8.25%
	Sulphur Springs	1.5%	8.25%
		0.5%	
	Caddo Mills	1.5%	8.25%
	Campbell	1.25%	8.00%
	Celeste	1.25%	8.00%
	Commerce	1.5%	8.25%
	Greenville	1.5%	8.25%
	Hawk Cove	1.0%	7.75%
	Lone Oak	1.25%	8.00%
	Neylandville	1.0%	7.75%
	Quinlan	1.5%	8.25%
	Royse City	2.0%	8.25%
	Union Valley	1.0%	7.75%
	West Tawakoni	1.5%	8.25%
	Wolfe City	1.5%	8.25%
		0.5%	
Lamar	Blossom	1.25%	8.00%
	Deport	1.0%	7.75%
	Paris	1.5%	8.25%
	Reno	1.0%	8.25%
	Roxton	1.0%	7.75%
	Sun Valley	1.0%	7.75%
	Toco	1.0%	7.75%
		0.5%	
	Daingerfield	1.5%	8.25%
Morris	Hughes Springs	1.5%	8.25%
	Lone Star	1.0%	7.75%
	Naples	1.5%	8.25%
	Omaha	1.5%	8.25%
		0.5%	
Red River	Annona	1.0%	7.75%
	Avery	1.0%	7.75%
	Bogata	1.0%	8.25%
	Clarksville	1.5%	8.25%

County	City	Retail Sales Tax Rate	Total
	Deport	1.0%	7.75%
	Detroit	1.0%	7.75%
Titus		0.5%	
	Millers Cove	1.0%	7.75%
	Mount Pleasant	1.5%	8.25%
	Talco	1.0%	7.75%
	Winfield	1.25%	8.00%

Source: TCPA, 2013 Accessed January 16, 2013

<http://www.window.state.tx.us/taxinfo/local/jan13rates.pdf>

1.5.3 Taxable Sales and Local Sales Dollars Returned

Table 1-22 shows taxable sales in the local area from 2008-2011 and Quarter 1 and 2 in 2012. Bowie County leads the way in sales that are subject to state and local sales taxes, with \$959,505,706 in such sales in 2008. The next highest amount of taxable sales is \$595,792,583 in Titus County in 2008 and \$ 548,405,514 in Hunt County in 2011.

Table 1-22 Taxable Sales (in 1,000s)

County	2008	2009	2010	2011	2012 (Quarter 1&2)
Bowie	959,505	915,624	924,504	959,446	488,044
Cass	120,349	118,897	122,402	124,242	64,174
Delta	6,162	6,230	6,657	6,780	3,562
Fannin	113,708	109,828	109,400	109,400	59,360
Franklin	36,500	36,528	36,661	37,504	20,110
Hopkins	255,014	249,158	253,422	283,450	143,363
Hunt	533,400	536,954	539,852	548,405	287,161
Lamar	420,033	404,880	406,941	419,500	107,399
Morris	88,570	57,264	77,995	102,268	50,143
Red River	22,597	22,924	23,162	24,647	13,304
Titus	595,792	522,996	505,197	443,512	220,265

Source: TCPA, 2013

<https://ourcpa.cpa.state.tx.us/allocation/HistSales.jsp>

The allocation historical summary in Table 1-23 show the total dollars returned to a local sales taxing city, county, special purpose district or transit authority by the Comptroller's office for their local sales tax collection. Cass County does not impose a county sales tax, while its individual cities do levy sales taxes.

Table 1-23 Local Sales Taxes Returned to The County by Texas State Comptroller's Office (in dollars)

County	2008	2009	2010	2011	2012
Bowie	5,259,079.73	5,199,599.93	5,184,151.95	5,381,788.53	5,570,297.19
Cass*	0.00	0.00	0.00	0.00	0.00
Delta	49,662.76	56,593.91	56,238.81	45,782.58	65,154.33
Fannin	944,226.77	782,322.47	708,672.94	777,248.56	793,155.32
Franklin	330,281.12	467,680.76	341,742.44	343,526.80	398,697.70
Hopkins	1,603,009.11	1,591,382.49	1,544,705.19	1,613,469.81	1,747,532.52
Hunt	2,945,433.90	2,909,476.85	2,991,815.64	2,987,496.46	3,136,046.53
Lamar	2,830,631.68	3,199,651.74	2,517,828.59	2,485,709.00	2,593,398.73
Morris	1,094,916.11	782,455.04	771,860.96	884,430.46	972,033.48
Red River	175,801.76	185,319.67	165,028.53	179,585.51	202,731.67
Titus	1,903,268.10	1,977,331.63	1,685,074.30	1,726,323.34	1,957,761.94

*Cass County does not impose a sales tax.

Source: TCPA, 2013 Accessed January 17, 2013

<https://ourcpa.cpa.state.tx.us/allocation/AllocHist.jsp>

1.6 SCHOOL DISTRICTS

The Texas Education Agency ranks schools districts according to standardized test scores as Exemplary, Recognized, Acceptable, or Unacceptable

(<http://ritter.tea.state.tx.us/perfreport/account/2011/statesummary.html>).

1-24 displays the region's school districts, number of students enrolled, the amount of spending per student and the state academic rating of each district in 2010. Mount Pleasant Independent School District (ISD) in Titus County was the largest district with 5,278 students. While Leary ISD of Bowie County was the smallest with only 114 students. Honey Grove ISD in Fannin County led the way in spending per student both for instruction and total spending (\$8,322 and \$13,675 respectively). Red Lick ISD in Bowie County spent the least per student; only \$3,485 per child for instruction and \$5,416 per child total. Despite Red Lick ISD's low spending, the district achieved an Exemplary academic rating. Bowie County had two other districts rated Exemplary, Hubbard ISD and Malta ISD. Dodd City ISD in Fannin County and Lone Oak ISD in Hunt County also reached Exemplary status. Greenville ISD in Hunt County and Winfield ISD in Titus County were the only two districts in the county to receive an unacceptable rating. The other districts in the region achieved Acceptable or Recognized academic ratings.

Table 1-24 Sulphur Basin School Districts

County	No. of Students	Spending per Student (Instruction)	Spending per Student (Total)	Rating
Bowie County				
Dekalb ISD	810	\$5,702	\$8,771	Acceptable
Hooks ISD	1,023	\$5,399	\$9,095	Acceptable
Hubbard Independent School District	123	\$6,776	\$9,445	Exemplary
Leary ISD	114	\$5,923	\$10,108	Recognized
Liberty-Eylau ISD	2,891	\$5,216	\$8,654	Acceptable
Malta ISD	114	\$5,779	\$8,619	Exemplary
New Boston ISD	1,397	\$6,642	\$10,158	Acceptable
Pleasant Grove ISD	1,969	\$4,864	\$7,958	Recognized
Red Lick ISD	433	\$3,485	\$5,416	Exemplary
Redwater ISD	1,101	\$5,283	\$8,678	Recognized
Simms ISD	578	\$4,901	\$8,108	Recognized
Texarkana ISD	7,121	\$4,820	\$8,150	Acceptable
Cass County				
Atlanta ISD	1,810	\$5,652	\$9,719	Acceptable
Avinger ISD	129	\$7,862	\$13,400	Recognized
Bloomburg ISD	282	\$5,460	\$9,480	Recognized
Hughes Springs ISD	1,096	\$4,667	\$8,042	Acceptable
Linden-Kidare Consolidated ISD	797	\$5,813	\$9,230	Acceptable
McLeod ISD	436	\$5,209	\$9,207	Acceptable
Queen City ISD	1,088	\$4,612	\$8,128	Acceptable
Delta County				
Cooper ISD	851	\$4,907	\$8,581	Acceptable
Fannin County				
Bonham ISD	1,952	\$4,519	\$7,973	Acceptable
Dodd City ISD	318	\$5,331	\$8,713	Exemplary
Ector ISD	251	\$5,577	\$9,744	Recognized
Fannindel ISD	196	\$4,895	\$9,458	Acceptable
Honey Grove ISD	609	\$8,322	\$13,675	Acceptable
Leonard ISD	895	\$4,708	\$8,285	Acceptable
Sam Rayburn ISD	428	\$5,553	\$8,614	Recognized
Savoy ISD	302	\$4,915	\$8,955	Acceptable
Trenton ISD	574	\$4,940	\$8,688	Recognized
Franklin County				
Mount Vernon ISD	1,536	\$4,959	\$8,117	Recognized

County	No. of Students	Spending per Student (Instruction)	Spending per Student (Total)	Rating
Hopkins County				
Como-Pickton CISD	824	\$5,266	\$8,515	Acceptable
Cumby ISD	450	\$5,960	\$10,190	Acceptable
Miller Grove ISD	259	\$4,698	\$7,904	Acceptable
North Hopkins ISD	457	\$6,310	\$10,038	Acceptable
Saltillo ISD	256	\$6,270	\$10,874	Recognized
Sulphur Bluff ISD	233	\$5,400	\$10,315	Recognized
Sulphur Springs ISD	4,121	\$4,734	\$7,931	Acceptable
Hunt County				
Bland ISD	591	\$4,626	\$8,640	Recognized
Boles ISD	529	\$5,318	\$9,020	Recognized
Caddo Mills ISD	1,458	\$4,475	\$7,994	Recognized
Campbell ISD	392	\$5,678	\$10,675	Acceptable
Celeste ISD	511	\$5,327	\$9,108	Recognized
Commerce ISD	1,628	\$5,283	\$10,116	Acceptable
Greenville ISD	4,915	\$4,791	\$8,120	Unacceptable
Lone Oak ISD	923	\$5,008	\$8,920	Exemplary
Pheonix Charter School	448	\$5,102	\$7,602	Acceptable
Quinlan ISD	2,531	\$4,495	\$8,227	Acceptable
Wolfe City ISD	640	\$5,026	\$9,094	Recognized
Lamar County				
Chisum ISD	853	\$5,013	\$8,620	Recognized
North Lamar ISD	2,963	\$5,065	\$8,369	Recognized
Paris ISD	3,704	\$4,871	\$8,407	Acceptable
Prairiland ISD	1,216	\$4,248	\$7,439	Recognized
Roxton ISD	215	\$5,738	\$9,728	Recognized
Morris County				
Daingerfield-Lone Star ISD	1,316	\$5,495	\$10,528	Acceptable
Pewitt CISD	999	\$5,191	\$8,748	Acceptable
Red River County				
Avery ISD	414	\$4,955	\$8,808	Recognized
Clarksville ISD	745	\$7,077	\$13,550	Acceptable
Detroit ISD	497	\$6,904	\$11,177	Acceptable
Rivercrest ISD	729	\$4,963	\$8,350	Recognized
Titus County				
Chapel Hill ISD	907	\$5,052	\$8,461	Recognized
Harts Bluff ISD	449	\$4,893	\$8,070	Recognized

County	No. of Students	Spending per Student (Instruction)	Spending per Student (Total)	Rating
Mount Pleasant ISD	5,278	\$5,779	\$9,197	Acceptable
Reg 8 Education Service Center	*	*	*	*
Winfield ISD	165	\$6,015	\$10,553	Unacceptable

*Information unavailable

Source: Texas Tribune, 2013

<http://www.texastribune.org/public-ed/explore>

2.0 REGIONAL INPUT/OUTPUT MODEL

An important consideration in evaluating and screening potential water supply alternatives is the effect of the project on the local and regional economies. The following section addresses the comparative economic impacts of reservoir construction (or in the case of Wright Patman, the effects of construction activities associated with a reallocation action) as well as the construction of related pipeline infrastructure for each stand-alone alternative being evaluated in the Sulphur River Basin Feasibility Study. Also addressed are the economic effects of project operations and maintenance (O&M) activities. Not included in the scope of this study is an assessment of any decrease in economic activity associated with loss of timberland/farm land or a reduction in oil and gas activities associated with the inundation caused by reservoir creation or expansion. Detailed studies of this nature are envisioned once the number of alternatives is reduced allowing for focus on a more precise set of geographic locations.

The regional economic development (RED) effects were estimated using the MIG, Inc. IMPLAN modeling software for the construction and operation of the reservoir scenarios. IMPLAN uses direct effects of an action to estimate the indirect and induced effects of a change on the local economy. All costs and impacts are expressed in 2014 dollars. As defined in IMPLAN, direct effects are production of expenditure changes made by producers/consumers as a result of an activity or policy, indirect effects are the impact of local industries buying goods and services from other local industries, and induced effects are the response to a direct effect that occurs when an addition or subtraction of income causes re-spending or reduced spending. In other words, induced effects refer to the effects on households in the study area. These distinctions are summarized in Table 2-1 below.

Table 2-1 IMPLAN Definitions

Effect	Definition
Direct	Determined by the magnitude of the project expenditures
Indirect	Economic activity generated from spending within the study area by local industries receiving direct expenditure payments
Induced	Estimates of the portion of the indirect effect that is re-spent within the study area by households

IMPLAN calculates estimates for employment, labor income, value added and output for an activity's direct, indirect, and induced impacts. *Employment* is the number jobs that would be created, which is the annual average of monthly jobs and can be either full-time or part-time. *Labor income* represents all forms of employment income, including employee compensation (wages and benefits) and proprietor income. *Value added* is the gross output (sales or receipts and other operating income, plus inventory change) minus intermediate inputs (consumption of goods and services purchased from other industries or imported), which consists of compensation of employees, taxes on production and imports less subsidies, and gross operating surplus. *Output* represents the value of industry production.

IMPLAN also estimates the impact that a change to the local economy would have on taxes. IMPLAN displays the tax effect of a change in a local economy by showing the amount of revenue generated for the government from 1) employee compensation, 2) proprietor income, 3) taxes on production and imports, 4) households taxes, and 5) corporate taxes. *Employee compensation* is the total cost paid by an employer for an employee, including the wage or salary, all benefits, and payroll taxes. *Proprietor income* is the income received from self-employed individuals. The tax on *production and imports* includes sales and excise taxes, customs duties, property taxes, motor vehicle licenses, severance taxes, other taxes, and special assessments. Government revenue also includes revenues generated from taxes on *households* and *corporations*.

2.1 STUDY AREA FOR SCENARIOS

The study area for each reservoir scenario is the counties that would be affected by an increase in construction and operation and maintenance (O&M) spending. For this analysis, the businesses and residents of the counties adjacent to each of the reservoirs would benefit most from the economic activity. Below is a list of the proposed reservoirs and the adjacent counties that were used to define the study area for each:

- Wright Patman: Bowie, Cass, Morris, Red River

- Marvin Nichols: Bowie, Cass, Franklin, Hopkins, Lamar, Morris, Red River, Titus
- Talco: Bowie, Cass, Franklin, Hopkins, Lamar, Morris, Red River, Titus
- Parkhouse I and II: Fannin, Franklin, Hopkins, Hunt, Lamar, Red River

While the majority of the impacts from construction and operation of a reservoir would occur within the associated study area, some of the impacts would occur outside of the local economy. Each type of impact (direct, indirect, and induced) would generate “leakage” that would be spent outside of the study area.

2.2 COST ESTIMATES

The components (e.g., dam and spillway, land, conflicts) of the cost estimates for construction and operations for each reservoir scenario were evaluated to identify how each would be addressed in the regional input/output modeling. Table 1 contains the cost estimates by component for construction activities, and Table 2 provides the costs by component for operations. These estimates formed the basis for the inputs to IMPLAN.

2.2.1 Construction Costs – Reservoir

The costs presented in Table 2-2 for the dam and spillway would be the costs for the physical construction of the dam. Development of these cost estimates is discussed in detail in *Sulphur Basin Comparative Analysis – Draft Cost Report* (FNI, 2014) and in its companion document, the *Sulphur River Basin Cost Rollup Report* (SBG, 2014). In general, cost estimates for the new reservoir projects, conflicts, mitigation, and construction of the transmission system were developed by Freese and Nichols, Inc. and MTG Engineers, while the estimates for Wright Patman reallocation scenarios (except for the conflicts estimates) were developed by the Corps of Engineers. A three year construction period is assumed. These construction costs would have a positive economic impact on their respective study areas for the 3-year construction period. These costs were considered direct economic impacts to the region. The costs for conflicts are for relocating facilities such as roads, bridges, pipelines, and cemeteries that would be inundated by the new (or larger) reservoir. These costs were considered direct economic impacts to the region.

The total cost for each of the reservoir scenarios includes money that would be spent to compensate property owners for the **land** that would be consumed by the reservoir and the additional acreage that would be set aside for environmental **mitigation**. (Mitigation costs were estimated based on the amount of affected resources within the footprint of each alternative and simplistic assumptions relative to

mitigation ratios and land costs. These assumptions are discussed in detail in the *Cost Rollup* report referenced above.) These payments to land owners would represent a transfer of income to the local economy

Table 2-2 Cost Estimates for Construction Activities

Alternati ve ID	Alternative Description		CAPITAL COSTS											
			Reservoir							Transmission				Total Capital Cost
		Dam and spillway	Land	Conflicts	Mitigation	Permitting	Storage Contract	Total	Total Incl IDC	Pipelines	Pump Stations	Total	Total incl IDC	
1	Patman 232.5	\$5,000,000	\$9,400,000	\$34,443,510	\$158,816,600	\$400,000	\$46,071,739	\$254,131,849	\$285,052,071	\$1,444,112,000	\$385,704,000	\$1,829,816,000	\$2,272,028,000	\$2,557,080,071
2	Patman 242.5	\$40,000,000	\$27,800,000	\$67,155,445	\$260,860,200	\$3,200,000	\$160,905,480	\$559,921,125	\$628,046,728	\$2,683,930,000	\$630,111,000	\$3,314,041,000	\$4,114,945,000	\$4,742,991,728
3	Patman 252.5	\$65,000,000	\$61,500,000	\$104,941,725	\$428,969,800	\$5,200,000	\$330,395,791	\$996,007,316	\$1,117,191,526	\$3,689,963,000	\$791,872,000	\$4,481,835,000	\$5,564,960,000	\$6,682,151,526
4	MN296.5	\$177,177,000	\$34,784,863	\$24,531,767	\$161,286,100	\$14,174,160	N/A	\$411,953,890	\$462,076,320	\$884,629,000	\$260,152,000	\$1,144,781,000	\$1,421,440,000	\$1,883,516,320
5	MN313.5	\$236,023,000	\$59,189,455	\$61,007,031	\$270,203,900	\$18,881,840	N/A	\$645,305,226	\$723,819,513	\$1,406,061,000	\$377,709,000	\$1,783,770,000	\$2,214,854,000	\$2,938,673,513
6	MN328	\$304,790,000	\$116,124,687	\$142,850,609	\$336,972,050	\$24,383,200	N/A	\$925,120,546	\$1,037,679,963	\$2,111,305,000	\$473,890,000	\$2,585,195,000	\$3,209,959,000	\$4,247,638,963
7	Talco 350/config1	\$156,781,000	\$89,675,768	\$92,825,199	\$121,451,300	\$12,542,480	N/A	\$473,275,747	\$530,859,207	\$701,704,000	\$236,846,000	\$938,550,000	\$1,165,369,000	\$1,696,228,207
8	Talco 350/config2	\$156,781,000	\$89,675,768	\$92,825,199	\$121,451,300	\$12,542,480	N/A	\$473,275,747	\$530,859,207	\$953,931,000	\$323,174,000	\$1,277,105,000	\$1,585,739,000	\$2,116,598,207
9	Talco 370/config1	\$369,503,000	\$151,256,931	\$249,940,034	\$184,528,470	\$29,560,240	N/A	\$984,788,675	\$1,104,607,913	\$950,422,000	\$291,548,000	\$1,241,970,000	\$1,542,117,000	\$2,646,724,913
10	Talco 370/config2	\$369,503,000	\$151,256,931	\$249,940,034	\$184,528,470	\$29,560,240	N/A	\$984,788,675	\$1,104,607,913	\$1,441,065,000	\$443,107,000	\$1,884,172,000	\$2,339,520,000	\$3,444,127,913
11	PH1	\$188,596,000	\$51,690,376	\$43,617,108	\$98,687,300	\$15,087,680	N/A	\$397,678,464	\$446,064,003	\$516,137,000	\$183,404,000	\$699,541,000	\$868,599,000	\$1,314,663,003
12	PH2	\$210,659,000	\$17,142,338	\$44,918,739	\$41,572,700	\$16,852,720	N/A	\$331,145,497	\$371,435,970	\$514,206,000	\$181,963,000	\$696,169,000	\$864,412,000	\$1,235,847,970

Similar to the previous impact study conducted for the Sulphur River Basin Authority by Weinstein and Clower in 2003, this analysis assumed that 50 percent of the compensation would go to owners residing in the study area, and these owners would spend about 20 percent of their income gains. Therefore, approximately 10 percent of the costs for lands and mitigation would be spent in the project area over the 3-year construction period, with the remaining being spent outside of the study area or saved.

Permitting, and **interest during construction (IDC)**, and **storage contract** would mostly be supported by activities conducted outside of the region, and the costs would not represent spending within the local economy. Therefore, estimated costs for permitting, and IDC, and storage contract were not included in the regional input/output analysis.

2.2.2 Construction Costs – Transmission

The costs presented in Table 1 for **pipelines** and **pump stations** would be the costs for construction of the pipeline to transport water to where it is needed. These construction costs would have a positive economic impact on their respective study areas for the 3-year construction period. These costs were considered direct economic impacts to the region.

IDC would be supported by activities conducted outside of the region, and the costs would not represent spending within the local economy. Therefore, estimated costs for IDC were not included in the regional input/output analysis.

2.2.3 Operations Costs – Reservoir

The costs presented in Table 2-3 for **O&M** would be the costs for general maintenance of the facility, including periodic rehabilitation or replacement of large components. These costs would have a positive economic impact on their respective study areas over the 50 years of operation. These costs were considered direct economic impacts to the region.

Debt service would be supported by users in the Dallas/Fort Worth area, and the costs would not represent spending in the study area. Therefore, estimated costs for debt service were not included in the regional input/output analysis.

Table 2-3 Cost Estimates for Operations and Maintenance Activities

Alternative ID	Alternative Description	Reservoir		Transmission		Total Annual Cost	
		Debt Service	O&M	Debt Service	O&M	During Debt Service	After Debt Service
1	Patman 232.5	\$17,765,000	\$90,000	\$141,593,000	\$21,465,000	\$215,761,000	\$56,403,000
2	Patman 242.5	\$39,140,000	\$720,000	\$256,445,000	\$38,110,000	\$406,638,000	\$111,053,000
3	Patman 252.5	\$69,624,000	\$1,170,000	\$346,811,000	\$50,851,000	\$567,383,000	\$150,948,000
4	MN296.5	\$28,797,000	\$3,189,186	\$88,584,000	\$13,620,000	\$155,783,186	\$38,402,186
5	MN313.5	\$45,109,000	\$4,248,414	\$138,030,000	\$20,981,000	\$247,247,414	\$64,108,414
6	MN328	\$64,669,000	\$5,486,220	\$200,045,000	\$29,495,000	\$354,898,220	\$90,184,220
7	Talco 350/config1	\$33,083,000	\$2,822,058	\$72,626,000	\$11,448,000	\$138,381,058	\$32,672,058
8	Talco 350/config2	\$33,083,000	\$2,822,058	\$98,825,000	\$15,650,000	\$177,032,058	\$45,124,058
9	Talco 370/config1	\$68,840,000	\$6,651,054	\$96,105,000	\$14,929,000	\$212,828,054	\$47,883,054
10	Talco 370/config2	\$68,840,000	\$6,651,054	\$145,800,000	\$22,743,000	\$289,346,054	\$74,706,054
11	PH1	\$27,799,000	\$3,394,728	\$54,131,000	\$8,590,000	\$107,354,728	\$25,424,728
12	PH2	\$23,148,000	\$3,791,862	\$53,869,000	\$8,542,000	\$102,680,862	\$25,663,862

2.2.4 Operations Cost – Transmission

The costs presented in Table 2-3 for **O&M** would be the costs for general maintenance of the facility, including periodic rehabilitation or replacement of large components. These costs would have a positive economic impact on their respective study areas over the 50 years of operation. These costs were considered direct economic impacts to the region.

Debt service would be supported by users in the Dallas/Fort Worth area and the costs would not represent spending in the study area. It was assumed that the cost for **electricity** would be paid to providers throughout the multi-state region; therefore, these costs would largely leave the region, and estimated costs for debt service and electricity were not included in the regional input/output analysis.

2.3 MODEL INPUTS

The estimated costs were incorporated into IMPLAN based on the “activity” and “sector”, Activity and sector are defined by IMPLAN as:

- Activity - A grouping of one or more events that represents a related spending change within the study area. Six types of activities are available, falling into three main categories: production by industry (industry, construction, retail), production of goods & services (commodity), and institutional spending. (household, labor income).
- Sector - In the national economic accounts, the institutional units that make up the total economy: business, households and institutions, and general government. In the North American Industry Classification System (NAICS), one of the 20 major areas of economic activity. The sectors are generally the two-digit NAICS level—though manufacturing, retail, and transportation and warehousing span several two-digit codes.

Since the costs associated with construction and operation of the reservoirs are primarily construction and industry related, the industry change category was selected for the activity. The sector categories were selected based on the type of work that the cost estimate was based on. For example, since the dam and spillway are nonresidential structure, the sector was categorized as ‘construction of other new nonresidential structures’. Likewise, payments for land are typically income to private individuals and represent income in the “private household operations” sector. Table 2-4 lists the activity and sector assigned for each of the cost categories. The assignments were reviewed and found to be appropriate by representatives from IMPLAN.

Table 2-4 Activities and Sectors Applied in IMPLAN

Cost Category	Activity	Sector
Dam and spillway	Industry change	Construction of other new nonresidential structures
Conflicts	Industry change	Construction of other new nonresidential structures
Land (Reservoir/Mitigation)	Industry change	Private household operations
Pipelines	Industry change	Construction of other new nonresidential structures
Pump Stations	Industry change	Construction of other new nonresidential structures
O&M	Industry change	Water, sewer, and other treatment and delivery systems

Table 2-5 provides the input values for construction activities used in the IMPLAN model for each reservoir scenario.

Table 2-5 IMPLAN Input Values by Sector for Construction Activities

Alternative ID	Alternative Description	Sector	
		Construction of other new nonresidential structures	Private household operations
1	Patman 232.5	\$623,100,000	\$5,600,000
2	Patman 242.5	\$1,140,400,000	\$9,600,000
3	Patman 252.5	\$1,550,600,000	\$16,300,000
4	MN296.5	\$448,900,000	\$6,500,000
5	MN313.5	\$693,600,000	\$11,000,000
6	MN328	\$1,010,900,000	\$15,100,000
7	Talco 350/config1	\$396,000,000	\$7,000,000
8	Talco 350/config2	\$508,900,000	\$7,000,000
9	Talco 370/config1	\$620,500,000	\$11,200,000
10	Talco 370/config2	\$834,500,000	\$11,200,000
11	PH1	\$310,500,000	\$5,000,000
12	PH2	\$317,300,000	\$2,000,000

Table 2-6 shows the input values for operation activities used in the IMPLAN model for each reservoir scenario.

Table 2-6 IMPLAN Input Values by Sector for Operations Activities

Alternative ID	Alternative Description	Sector
		Water, sewer, and other treatment and delivery systems
1	Patman 232.5	\$21,600,000
2	Patman 242.5	\$38,800,000
3	Patman 252.5	\$52,000,000
4	MN296.5	\$16,800,000
5	MN313.5	\$25,200,000
6	MN328	\$35,000,000
7	Talco 350/config1	\$14,300,000
8	Talco 350/config2	\$18,500,000
9	Talco 370/config1	\$21,600,000
10	Talco 370/config2	\$29,400,000
11	PH1	\$12,000,000
12	PH2	\$12,300,000

2.4 MODEL RESULTS

2.4.1 Wright Patman Reservoir Scenarios

Three scenarios were evaluated for the construction and operation of the Wright Patman Reservoir. For the construction phase, it was estimated that the scenarios would produce between 6,900 and 17,500 direct, indirect, and induced jobs in the study area throughout the 3-year period of construction (Table 2-7).

Table 2-7 Model Results for Construction of the Wright Patman Reservoir Scenarios

Impact Type	Employment	Labor Income	Value Added	Output
Patman 232.5				
Direct Effect	4,845	\$185,104,000	\$219,593,000	\$628,700,000
Indirect Effect	1,114	\$49,103,000	\$84,995,000	\$149,295,000
Induced Effect	982	\$37,646,000	\$75,955,000	\$116,743,000
Total Effect	6,941	\$271,853,000	\$380,543,000	\$894,738,000
Patman 242.5				
Direct Effect	8,799	\$338,132,000	\$401,254,000	\$1,150,000,000
Indirect Effect	2,040	\$89,868,000	\$155,558,000	\$273,241,000
Induced Effect	1,794	\$68,798,000	\$138,808,000	\$213,347,000
Total Effect	12,633	\$496,799,000	\$695,620,000	\$1,636,587,000
Patman 252.5				
Direct Effect	12,301	\$462,987,000	\$548,812,000	\$1,566,900,000
Indirect Effect	2,773	\$122,194,000	\$211,512,000	\$371,525,000
Induced Effect	2,453	\$94,057,000	\$189,768,000	\$291,672,000
Total Effect	17,527	\$679,238,000	\$950,093,000	\$2,230,097,000

For the operation phase, it was estimated that the scenarios would produce between 170 and 410 direct, indirect, and induced jobs in the study area throughout the 50-year period of operation (Table 2-8). Note that under a reallocation scenario, the lake would still be operated and maintained by the Corps of Engineer, and it is not expected that a higher lake level would, in and of itself, engender additional O&M costs. The model results shown in Table 2-8 below result from the operation and maintenance of the very large transmission system needed for the Wright Patman scenarios.

Table 2-8 Model Results for Operation of the Wright Patman Reservoir Scenarios

Impact Type	Employment	Labor Income	Value Added	Output
Patman 232.5				
Direct Effect	104	\$4,906,000	\$12,491,000	\$21,600,000
Indirect Effect	39	\$1,785,000	\$3,002,000	\$5,352,000
Induced Effect	28	\$1,072,000	\$2,162,000	\$3,322,000
Total Effect	171	\$7,764,000	\$17,655,000	\$30,274,000
Patman 242.5				
Direct Effect	186	\$8,813,000	\$22,437,000	\$38,800,000
Indirect Effect	70	\$3,207,000	\$5,393,000	\$9,614,000
Induced Effect	50	\$1,926,000	\$3,883,000	\$5,968,000
Total Effect	307	\$13,946,000	\$31,713,000	\$54,382,000
Patman 252.5				
Direct Effect	250	\$11,811,000	\$30,071,000	\$52,000,000
Indirect Effect	94	\$4,298,000	\$7,228,000	\$12,884,000
Induced Effect	67	\$2,581,000	\$5,204,000	\$7,998,000
Total Effect	411	\$18,690,000	\$42,502,000	\$72,883,000

2.4.2 Marvin Nichols Reservoir Scenarios

Three scenarios were evaluated for the construction and operation of the Marvin Nichols Reservoir. For the construction phase, it was estimated that the scenarios would produce between 5,500 and 12,400 direct, indirect, and induced jobs in the study area throughout the 3-year period of construction (Table 2-9).

Table 2-9 Model Results for Construction of the Marvin Nichols Reservoir Scenarios

Impact Type	Employment	Labor Income	Value Added	Output
MN296.5				
Direct Effect	3,881	\$138,710,000	\$163,336,000	\$455,400,000
Indirect Effect	827	\$34,217,000	\$60,479,000	\$107,214,000
Induced Effect	764	\$28,116,000	\$57,270,000	\$90,073,000
Total Effect	5,472	\$201,044,000	\$281,085,000	\$652,687,000
MN313.5				
Direct Effect	6,119	\$215,274,000	\$253,323,000	\$704,600,000
Indirect Effect	1,278	\$52,869,000	\$93,447,000	\$165,657,000
Induced Effect	1,185	\$43,595,000	\$88,799,000	\$139,660,000
Total Effect	8,582	\$311,738,000	\$435,569,000	\$1,009,918,000
MN328				
Direct Effect	8,799	\$312,828,000	\$368,284,000	\$1,026,000,000
Indirect Effect	1,863	\$77,055,000	\$136,196,000	\$241,440,000
Induced Effect	1,723	\$63,390,000	\$129,119,000	\$203,075,000
Total Effect	12,384	\$453,273,000	\$633,600,000	\$1,470,516,000

For the operation phase, it was estimated that the scenarios would produce between 150 and 310 direct, indirect, and induced jobs in the study area throughout the 50-year period of operation (Table 2-10).

Table 2-10 Model Results for Operation of the Marvin Nichols Reservoir Scenarios

Impact Type	Employment	Labor Income	Value Added	Output
MN296.5				
Direct Effect	83	\$3,493,000	\$9,540,000	\$16,800,000
Indirect Effect	41	\$1,743,000	\$2,895,000	\$5,378,000
Induced Effect	23	\$847,000	\$1,723,000	\$2,711,000
Total Effect	147	\$6,083,000	\$14,157,000	\$24,888,000
MN313.5				
Direct Effect	124	\$5,240,000	\$14,310,000	\$25,200,000
Indirect Effect	62	\$2,614,000	\$4,342,000	\$8,067,000
Induced Effect	35	\$1,270,000	\$2,585,000	\$4,066,000
Total Effect	220	\$9,125,000	\$21,236,000	\$37,333,000
MN328				
Direct Effect	172	\$7,278,000	\$19,874,000	\$35,000,000
Indirect Effect	86	\$3,631,000	\$6,030,000	\$11,204,000
Induced Effect	48	\$1,764,000	\$3,590,000	\$5,647,000
Total Effect	306	\$12,673,000	\$29,495,000	\$51,851,000

2.4.3 Talco Reservoir Scenarios

Four scenarios were evaluated for the construction and operation of the Talco Reservoir. For the construction phase, it was estimated that the scenarios would produce between 5,000 and 10,100 direct, indirect, and induced jobs in the study area throughout the 3-year period of construction (Table 2-11).

Table 2-11 Model Results for Construction of the Talco Reservoir Scenarios

Impact Type	Employment	Labor Income	Value Added	Output
Talco 350/config1				
Direct Effect	3,586	\$123,623,000	\$145,347,000	\$403,000,000
Indirect Effect	730	\$30,185,000	\$53,352,000	\$94,579,000
Induced Effect	680	\$25,005,000	\$50,931,000	\$80,104,000
Total Effect	4,995	\$178,813,000	\$249,630,000	\$577,683,000
Talco 350/config2				
Direct Effect	4,352	\$156,884,000	\$184,801,000	\$515,900,000
Indirect Effect	938	\$38,791,000	\$68,563,000	\$121,544,000
Induced Effect	865	\$31,815,000	\$64,805,000	\$101,924,000
Total Effect	6,154	\$227,490,000	\$318,169,000	\$739,368,000
Talco 370/config1				
Direct Effect	5,649	\$193,937,000	\$227,977,000	\$631,700,000
Indirect Effect	1,143	\$47,297,000	\$83,599,000	\$148,198,000
Induced Effect	1,066	\$39,217,000	\$79,880,000	\$125,634,000
Total Effect	7,858	\$280,452,000	\$391,456,000	\$905,533,000
Talco 370/config2				
Direct Effect	7,101	\$256,983,000	\$302,761,000	\$845,700,000
Indirect Effect	1,538	\$63,609,000	\$112,430,000	\$199,309,000
Induced Effect	1,417	\$52,126,000	\$106,178,000	\$166,994,000
Total Effect	10,055	\$372,719,000	\$521,370,000	\$1,212,004,000

For the operation phase, it was estimated that the scenarios would produce between 120 and 260 direct, indirect, and induced jobs in the study area throughout the 50 year period of operation (Table 2-12).

Table 2-12 Model Results for Operation of the Talco Reservoir Scenarios

Impact Type	Employment	Labor Income	Value Added	Output
Talco 350/config1				
Direct Effect	70	\$2,974,000	\$8,120,000	\$14,300,000
Indirect Effect	35	\$1,483,000	\$2,464,000	\$4,578,000
Induced Effect	20	\$721,000	\$1,467,000	\$2,307,000
Total Effect	125	\$5,178,000	\$12,051,000	\$21,185,000
Talco 350/config2				
Direct Effect	91	\$3,847,000	\$10,505,000	\$18,500,000
Indirect Effect	45	\$1,919,000	\$3,187,000	\$5,922,000
Induced Effect	25	\$933,000	\$1,898,000	\$2,985,000
Total Effect	162	\$6,699,000	\$15,590,000	\$27,407,000
Talco 370/config1				
Direct Effect	106	\$4,492,000	\$12,265,000	\$21,600,000
Indirect Effect	53	\$2,241,000	\$3,722,000	\$6,914,000
Induced Effect	30	\$1,089,000	\$2,216,000	\$3,485,000
Total Effect	189	\$7,821,000	\$18,202,000	\$31,999,000
Talco 370/config2				
Direct Effect	145	\$6,114,000	\$16,694,000	\$29,400,000
Indirect Effect	72	\$3,050,000	\$5,065,000	\$9,411,000
Induced Effect	40	\$1,482,000	\$3,016,000	\$4,744,000
Total Effect	257	\$10,645,000	\$24,776,000	\$43,555,000

2.4.4 Parkhouse Reservoir Scenarios

Two scenarios were evaluated for the construction and operation of the Parkhouse Reservoir. For the construction phase, it was estimated that the scenarios would produce between 3,700 and 4,200 direct, indirect, and induced jobs in the study area throughout the 3-year period of construction (Table 2-13).

Table 2-13 Model Results for Construction of the Parkhouse Reservoir Scenarios

Impact Type	Employment	Labor Income	Value Added	Output
PH1				
Direct Effect	3,145	\$84,459,000	\$102,404,000	\$315,500,000
Indirect Effect	603	\$25,546,000	\$41,348,000	\$71,924,000
Induced Effect	428	\$13,764,000	\$30,797,000	\$48,275,000
Total Effect	4,176	\$123,768,000	\$174,550,000	\$435,699,000
PH2				
Direct Effect	2,638	\$83,217,000	\$101,555,000	\$319,300,000
Indirect Effect	616	\$26,105,000	\$42,254,000	\$73,499,000
Induced Effect	425	\$13,680,000	\$30,611,000	\$47,983,000
Total Effect	3,679	\$123,002,000	\$174,420,000	\$440,782,000

For the operation phase, it was estimated that the scenarios would produce between 110 and 120 direct, indirect, and induced jobs in the study area throughout the 50-year period of operation (Table 2-14).

Table 2-14 Model Results for Operation of the Parkhouse Reservoir Scenarios

Impact Type	Employment	Labor Income	Value Added	Output
PH1				
Direct Effect	60	\$2,358,000	\$6,739,000	\$12,000,000
Indirect Effect	38	\$1,335,000	\$2,232,000	\$4,492,000
Induced Effect	14	\$461,000	\$1,032,000	\$1,617,000
Total Effect	112	\$4,154,000	\$10,003,000	\$18,109,000
PH2				
Direct Effect	61	\$2,416,000	\$6,908,000	\$12,300,000
Indirect Effect	39	\$1,368,000	\$2,288,000	\$4,604,000
Induced Effect	15	\$473,000	\$1,057,000	\$1,658,000
Total Effect	115	\$4,257,000	\$10,253,000	\$18,562,000

2.4.5 State and Local Taxes

As noted previously, the increase in employment and payroll activity resulting from the project would generate additional income and sales tax revenues. Table 2-15 shows the estimated revenue from state and local taxes for each year of the 3-year construction period. Table 2-16 shows the estimated revenue from state and local taxes for each year of the 50-year operation period. The results shown are the total tax impact from direct, indirect, and induced effects. Note that these estimates do not include any estimates for the loss of tax revenues associated with any reduced farming or timber activities attributable to any of the alternatives.

Table 2-15 State and Local Taxes for Construction Activities

Alt. ID	Alternative Description	Employee Compensation	Proprietor Income	Production and Imports	Households	Corporations
1	Patman 232.5	\$285,000	\$0	\$17,105,000	\$1,338,000	\$24,000
2	Patman 242.5	\$521,000	\$0	\$31,287,000	\$2,445,000	\$44,000
3	Patman 252.5	\$714,000	\$0	\$42,635,000	\$3,343,000	\$60,000
4	MN296.5	\$211,000	\$0	\$12,754,000	\$987,000	\$18,000
5	MN313.5	\$328,000	\$0	\$19,736,000	\$1,530,000	\$27,000
6	MN328	\$477,000	\$0	\$28,736,000	\$2,225,000	\$40,000
7	Talco 350/config1	\$189,000	\$0	\$11,290,000	\$878,000	\$16,000
8	Talco 350/config2	\$239,000	\$0	\$14,448,000	\$1,117,000	\$20,000
9	Talco 370/config1	\$296,000	\$0	\$17,697,000	\$1,376,000	\$24,000
10	Talco 370/config2	\$391,000	\$0	\$23,683,000	\$1,830,000	\$33,000
11	PH1	\$169,000	\$0	\$8,044,000	\$614,000	\$11,000
12	PH2	\$166,000	\$0	\$8,132,000	\$611,000	\$11,000

Table 2-16 State and Local Taxes for Operations Activities

Alt. ID	Alternative Description	Employee Compensation	Proprietor Income	Production and Imports	Households	Corporations
1	Patman 232.5	\$9,000	\$0	\$1,264,000	\$38,000	\$2,000
2	Patman 242.5	\$16,000	\$0	\$2,271,000	\$68,000	\$4,000
3	Patman 252.5	\$22,000	\$0	\$3,044,000	\$91,000	\$5,000
4	MN296.5	\$8,000	\$0	\$1,033,000	\$29,000	\$2,000
5	MN313.5	\$12,000	\$0	\$1,549,000	\$44,000	\$3,000
6	MN328	\$16,000	\$0	\$2,152,000	\$61,000	\$4,000
7	Talco 350/config1	\$7,000	\$0	\$879,000	\$25,000	\$2,000
8	Talco 350/config2	\$9,000	\$0	\$1,137,000	\$32,000	\$2,000
9	Talco 370/config1	\$10,000	\$0	\$1,328,000	\$38,000	\$2,000
10	Talco 370/config2	\$14,000	\$0	\$1,807,000	\$51,000	\$3,000
11	PH1	\$7,000	\$0	\$755,000	\$20,000	\$1,000
12	PH2	\$7,000	\$0	\$774,000	\$21,000	\$1,000

The effect on property taxes would be expected to be mixed. Land would be taken off the property tax rolls as a result of a project; however, payments-in-lieu of taxes are typically made by the project sponsors to local taxing jurisdictions to compensate for this impact. Increases in property tax values from any reservoir-induced development would be expected to further compensate for any losses.

2.5 ANALYSIS OF RESULTS

The total number of employees in the study areas for the proposed reservoirs currently ranges from 76,000 to 150,000 persons (IMPLAN, 2014). In general, the top industry sectors categories for employment in the study areas are federal, state, and local agencies; wholesale trade; food services and drinking places; healthcare-related industries; ranching and farming; and retail. While construction-related industries were not the top employers in any of the study areas, the sectors are present.

The model results indicate that the construction of the reservoirs could increase direct, indirect, and induced employment by 3,700 to 17,500 persons, depending on the scenario. Figures 2-1 through 2-4 compare the employment and labor income predicted to result from the construction and operations phases of each alternative.

Figure 2-1

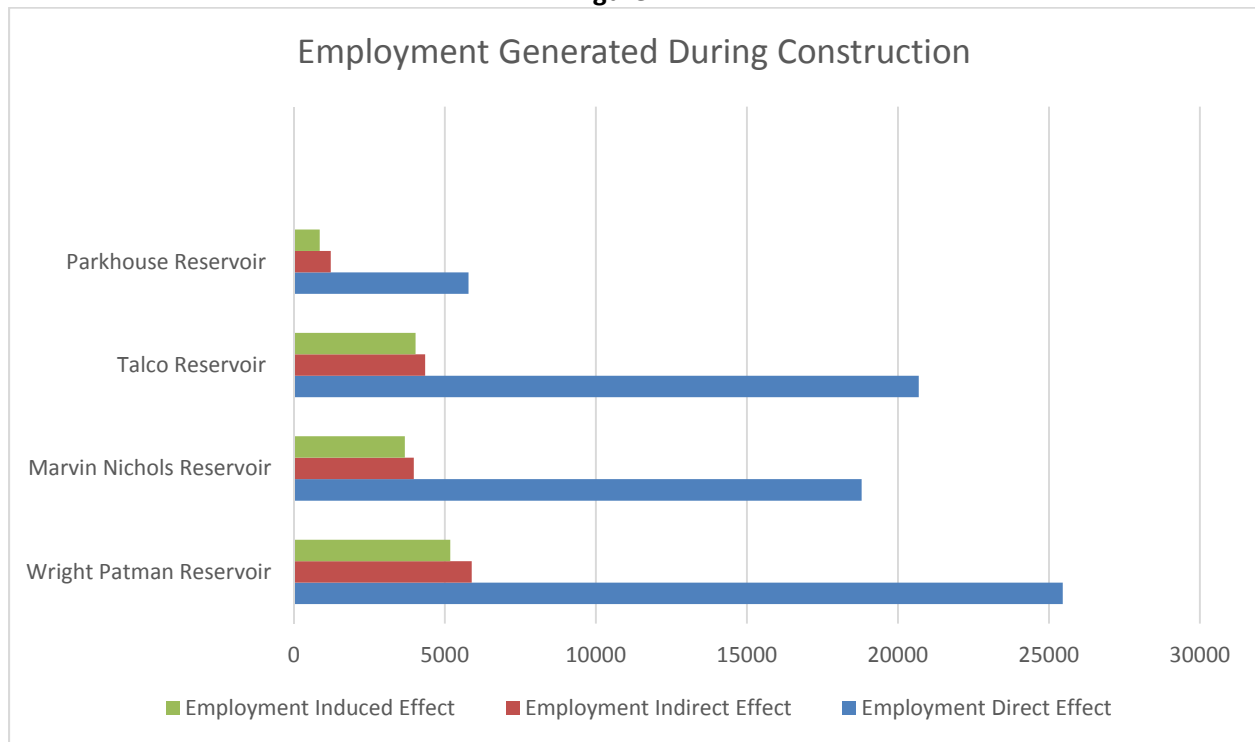


Figure 2-2

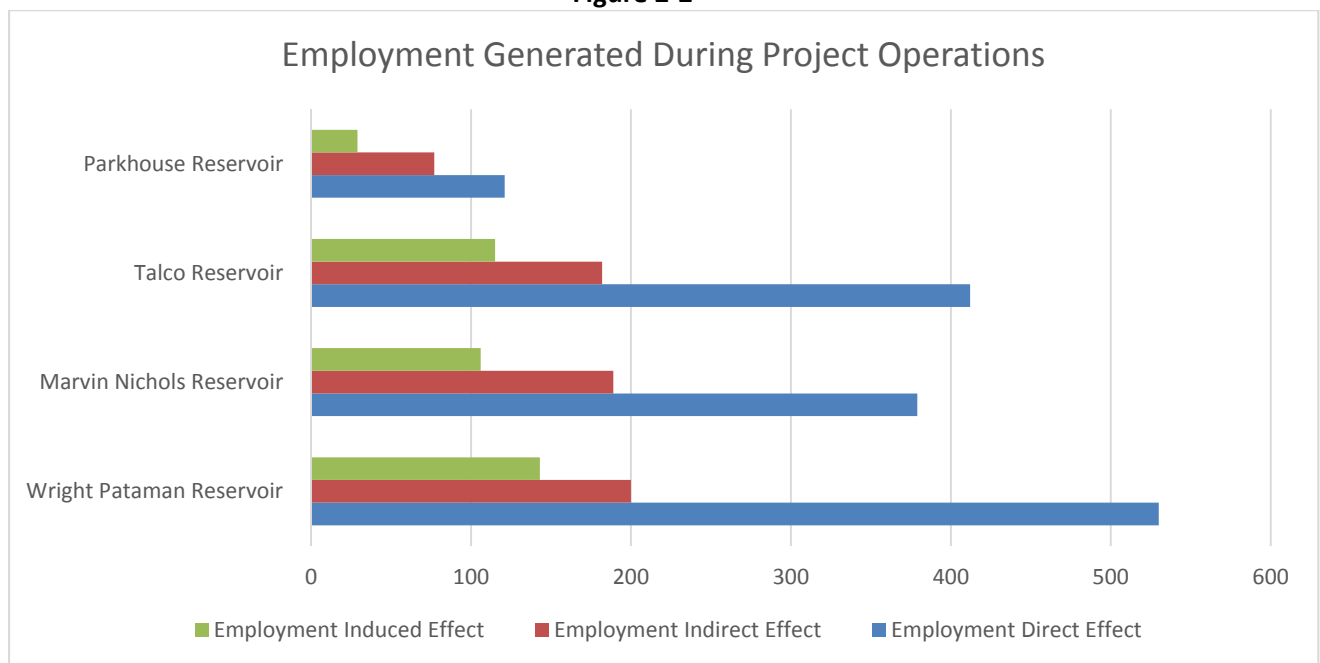


Figure 2-3

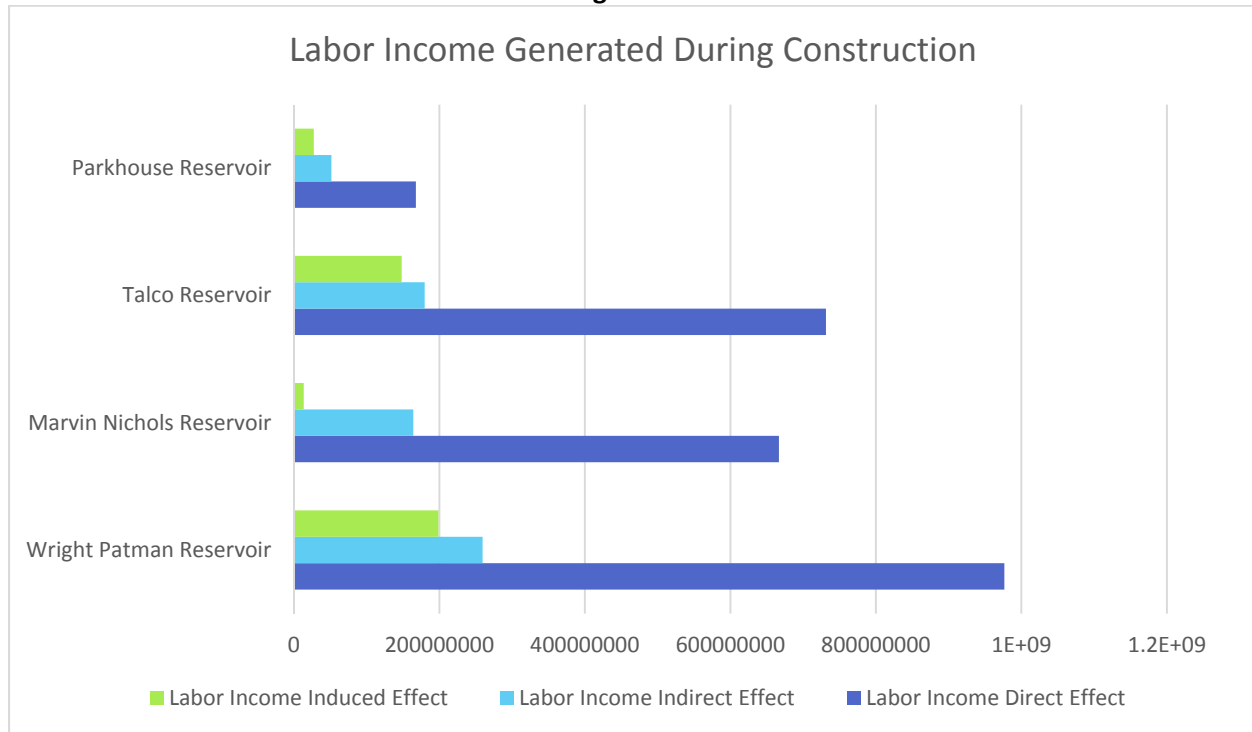
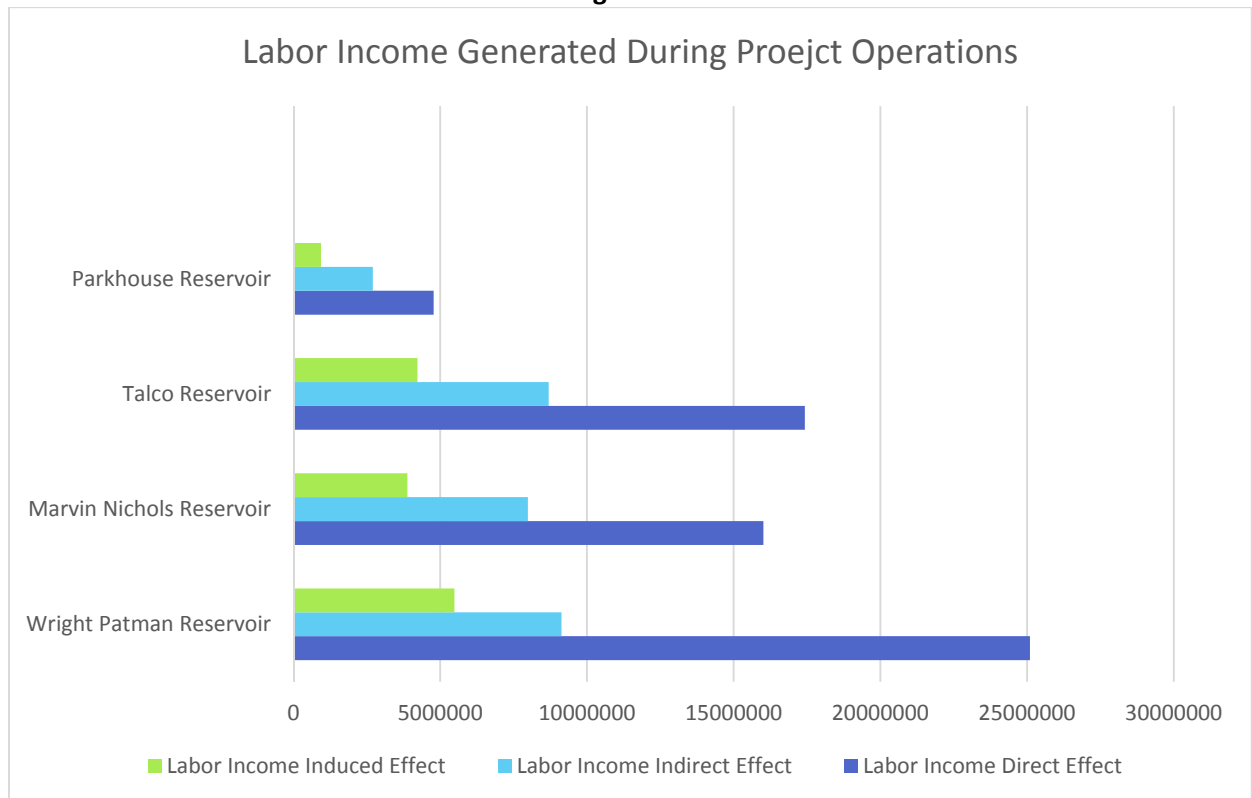


Figure 2-4



This is a wide range for the number of potential workers. While the lower number could be mostly supported from the labor pool within the study area, it would be more difficult for the study area to support the higher number of employees, and more construction workers would be anticipated to commute from outside the study area or relocate to the area to take advantage of the employment opportunities. Workers with special skill sets who would not be involved throughout the entire construction period would be more likely to commute from outside of the study area or temporarily relocate than workers involved through the construction period. Distance from major population centers would also be expected to impact the proportion of construction workers who move into the study area rather than commuting on a daily basis. While, there would be some leakage of wages outside of the study areas during the construction period, workers commuting to the job site would contribute to the local economy through local purchases.

For the operation phase of the project, it is anticipated that most of the workers would live in the study area.

2.6 ADDITIONAL CONSIDERATIONS

In addition to the substantial economic activity that would be generated by the multi-year construction and operation of any of the reservoir scenarios, the reservoir would provide a more reliable source of water, which is a necessary condition for the stimulation of industry and residential development in the area. In addition, the reservoirs would provide recreational opportunities to residents in the study areas, as well as a destination for those living outside of the study areas. This induced development would increase economic activity in the study area and provide a positive contribution to the region. All of these effects would benefit the region and help diversify the local economy. However, these factors were not included in the analysis, so the analysis should be considered a conservative estimate of the potential impacts to the region.

One other important consideration is that, while there would be additional employment from construction and operations activities, there could be a decrease in employment in the farm and timber sectors because land would be consumed by the reservoir. According to local agricultural representatives, much of the farmland in the study area consists of pasture and hay, with some corn, wheat, and soybeans. However, while some agricultural employment could be lost with the creation of the reservoirs, other agricultural practices in the region may intensify from increased availability of irrigation water. Timber is an important industry in the study area, especially in the eastern portion of the basin. It can be anticipated

that construction of the proposed reservoirs would reduce land available for timber and lead to a decrease in employment in the timber industry.

Reference End Notes

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- ¹https://www.twdb.texas.gov/waterplanning/rwp/planningdocu/2016/doc/current_docs/project_docs/20130430_Pop_Dmd_Projections.pdf
<https://www.twdb.texas.gov/waterplanning/data/projections/methodology/doc/2017methodology.pdf>
- ² <https://www.redriver.army.mil/rrpages/pg2.htm>
- ³ http://www.texarkana.org/Economic_Development/Trade%20Area%20Reports/Major%20Employers%20List%202013%20b2.pdf
- ⁴ <http://windowanddoor.com/news-item/companies/philips-products-be-closed>