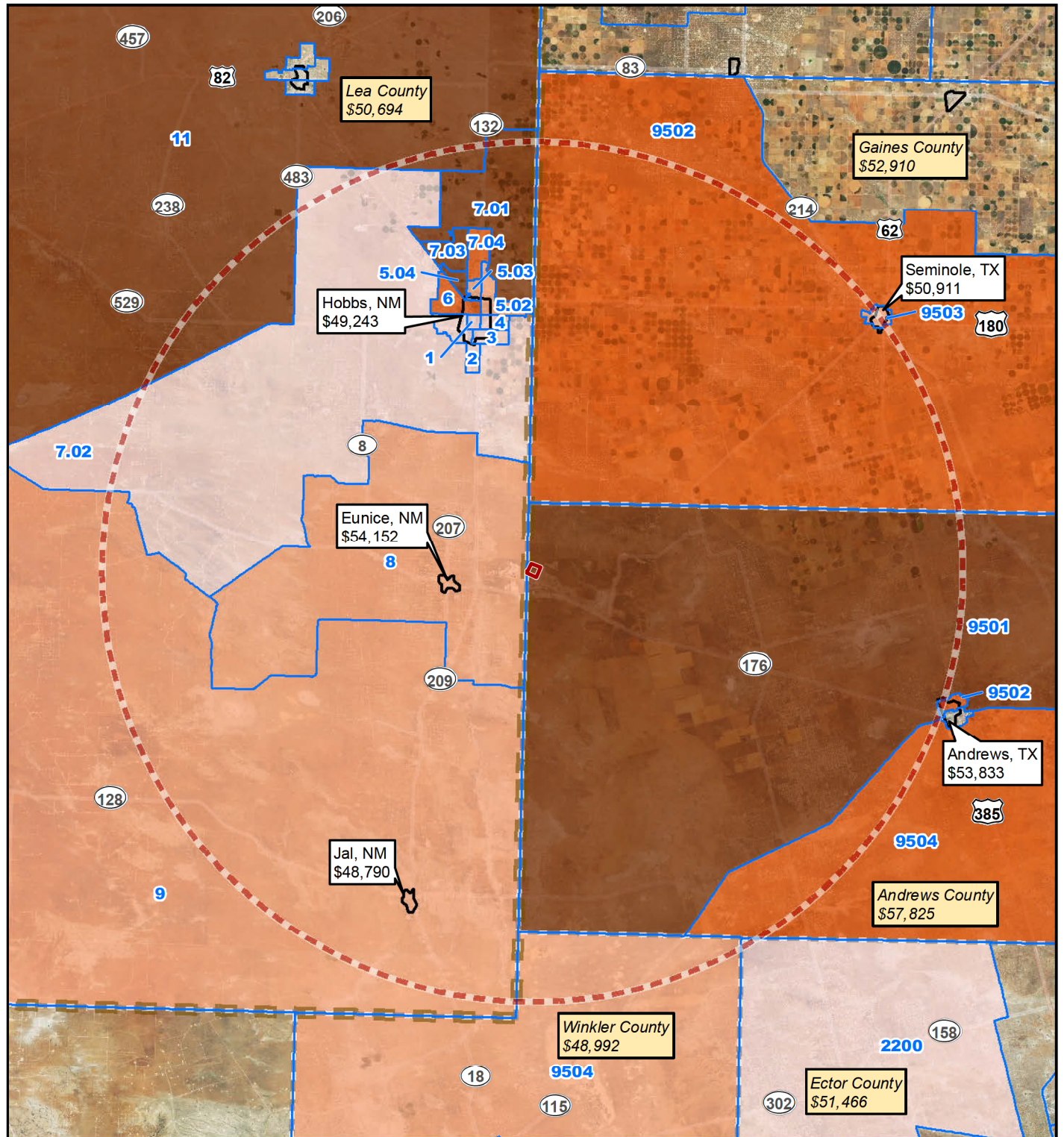


Note: no census tracts within the ROI have median household incomes below any of the 2014 Poverty Thresholds developed by the Census or the 2015 poverty guidelines developed by the Department of Health and Human Services

Data Source: US Census Bureau (2010)

Aerial Source: NAIP (2014)

G:\Projects\WCS\Figure 1.1-4_Income_20160404.mxd

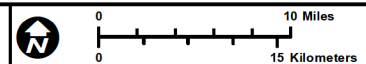


Figure 1.1-4
Median Household Income
in the Region of Interest
Proposed Consolidated Interim
Spent Fuel Storage Facility

COX | McLAIN
Environmental Consulting

Prepared for: WCS	1 in = 10 miles
Prepared by: SL	Scale: 1:633,600
	Date: 4/4/2016

1.1.7 Population in Poverty within ROI

As previously mentioned (see **Section 1.1.6**), no total population for any city or county within the ROI has median incomes that are within the poverty thresholds established by the U.S. Census Bureau or the Department of Health and Human Services. This section did identify there were percentages of families and individuals living below poverty levels, with highest percentages in Gaines County, Texas. A review of population data was performed to assess comparisons of this data and population data.

The population below poverty level within the ROI is summarized in **Table 1-23**. In Andrews, Texas, there are three census tracts totaling with 11,308 individuals within these tracts for whom poverty status was determined, 5.1 to 9.6 percent of the population in the past 12 months were below poverty level. In Ector County, Texas, 909 individuals in census tract 22 were below poverty level, approximately 27.5 percent of the population whom poverty status was determined. Seminole, Texas, contained two census tracts within the ROI and percentages of individuals below poverty level ranged between 12.6 and 18.0 percent. Of the 1,549 individuals in Winkler County, Texas, in CT 9504, 13.2 percent were determined to be below poverty level in the past 12 months. Within Jal in Lea County, New Mexico, there were 15 census tracts with 52,502 individuals whom poverty status was determined. Of these individuals, 7,084 individuals were below the poverty level and depending on the census tract, percentages ranged from 0.4 (CT 7.03) to 27.1 (CT 4) percent.

1.1.8 Employment and Unemployment Characteristics

Table 1-24 shows the employment status of persons over the age of 16 within the ROI. Within these populations, the employment rate ranges from the lowest of 50.6 percent in Jal, New Mexico, to the highest, 63.0 percent in Ector County, Texas. These employment rates are lower than the state employment percentage in New Mexico (54.4 percent) and higher than in Texas (59.4 percent). The unemployment percentages range from the highest (8.4 percent) in Lea County, New Mexico, to the lowest unemployment percentage of 3.5 in Winkler County, Texas. These rates are slightly better (lower) with the State of New Mexico's unemployment rate of 9.7 percent and considerably better (lower) than State of Texas' rate of 8.1 percent.

Within the ROI, the population with the highest percentage employed is Native Hawaiian/Other Pacific Islander (100%) in Gaines and Ector counties, and Seminole, Texas, however that is for a total of 35 persons in Ector County, and 48 persons in Gaines County and Seminole, Texas, which is a fraction of the total population of 104,044 (Ector County), 12,468 (Gaines County) and 5,080 (Seminole). In comparison, the population with the highest percentage of unemployed is Black and African American (100%) in Jal, New Mexico. As with the number of employed, the number of persons within this population (15) is relatively small as compared to the total population of 1,612.

Table 1-23: Population in Poverty (2009–2013)			
Census 2010 Geography	Total Population For Whom Poverty Status is Determined	Population with Income in the past 12 months below poverty level	Percent of Population with Income in the past 12 months below poverty level
Andrews County, TX	15,379	1,926	12.5%
Andrews, TX	11,537	1,613	14%
Census tract 9501	1,949	99	5.1%
Census tract 9502	6,584	620	9.4%
Census tract 9504	2,775	266	9.6%
Ector County, TX	138,967	22,080	15.9%
Census tract 22	3,309	909	27.5%
Gaines County, TX	17,907	3,000	16.8%
Seminole, TX	6,558	997	15.2%
Census tract 9502	8,660	1,561	18%
Census tract 9503	5,597	704	12.6%
Winkler County, TX	7,121	909	12.8%
Census tract 9504	1,549	204	13.2%
Lea County, NM	63,552	9,507	15%
Eunice, NM	2,973	303	10.2%
Hobbs, NM	33,228	5,542	16.7%
Jal, NM	2,056	163	7.9%
Census tract 1	2,506	543	21.7%
Census tract 2	3,321	756	22.8%
Census tract 3	3,823	949	24.8%
Census tract 4	3,641	987	27.1%
Census tract 5.02	6,203	977	15.8%
Census tract 5.03	3,823	539	14.1%
Census tract 5.04	3,587	318	8.9%
Census tract 6	6,589	521	7.9%
Census tract 7.01	1,726	247	14.3%
Census tract 7.02	1,984	199	10%
Census tract 7.03	2,227	9	0.4%
Census tract 7.04	2,901	246	8.5%
Census tract 8	3,210	329	10.2%
Census tract 9	2,158	194	9%
Census tract 11	4,803	270	5.6%

Source: U.S. Census Bureau, 2009–2013 American Community Survey, Table B17001.
ACS data are estimates; they are not counts.

Table 1-24: Employment Status by Race/Ethnicity in the Region of Interest (2009–2013)

Subject	Lea County, New Mexico	Eunice, New Mexico	Hobbs, New Mexico	Jal, New Mexico	Andrews County, Texas	Andrews, Texas	Gaines County, Texas	Seminole, Texas	Winkler County, Texas	Ector County, Texas	New Mexico	Texas
Population 16 years and over	48,357	2,332	25,092	1,612	11,457	8,535	12,468	5,080	5,352	104,044	1,612,730	19,468,136
<i>Percent of Persons Employed/Unemployment</i>	56.4%/8.4%	62.0%/5.8%	55.9%/7.9%	50.6%/4.6%	61.5%/5.9%	59.4%/4.9%	59.3%/5.8%	60.5%/6.8%	59.1%/3.5%	63.0%/6.2%	54.4%/9.7%	59.4%/8.1%
White alone, not Hispanic or Latino	22,628	1,225	10,850	978	5,765	4,251	7,560	2,933	2,465	46,040	711,032	9,444,102
<i>Percent of Persons Employed/Unemployment</i>	56.7%/6.8%	61.3%/6.6%	54.8%/7.0%	49.1%/5.0%	60.7%/4.4%	60.0%/3.8%	59.2%/5.2%	63.1%/5.2%	57.0%/4.9%	62.4%/4.7%	54.9%/7.0%	59.6%/6.4%
Black or African American	1,598	0	1,231	15	214	200	137	42	117	4,249	31,856	2,282,951
<i>Percent of Persons Employed/Unemployment</i>	55.3%/10.2%	-/-	55.5%/8.0%	0.0%/100.0%	54.7%/24.5%	51.5%/27.0%	20.4%/0.0%	9.5%/0.0%	53.8%/0.0%	51.1%/9.5%	52.9%/12.5%	55.5%/13.3%
American Indian and Alaska Native	481	0	363	11	290	268	181	125	43	671	139,355	98,684
<i>Percent of Persons Employed/Unemployment</i>	45.9%/12.6%	-/-	41.3%/17.1%	63.6%/0.0%	89.7%/0.0%	88.8%/0.0%	59.1%/1.8%	59.2%/0.0%	65.1%/26.3%	68.7%/0.0%	45.1%/16.2%	57.4%/10.8%
Asian	176	0	151	0	138	138	32	5	28	899	22,841	797,419
<i>Percent of Persons Employed/Unemployment</i>	67.6%/0.0%	-/-	78.8%/0.0%	-/-	69.6%/0.0%	69.6%/0.0%	0.0%/-	0.0%/-	67.9%/0.0%	66.1%/5.3%	61.8%/7.4%	62.9%/6.3%
Native Hawaiian and Other Pacific Islander	0	0	0	0	0	0	48	48	0	35	1,162	15,834
<i>Percent of Persons Employed/Unemployment</i>	-/-	-/-	-/-	-/-	-/-	-/-	100.0%/0.0%	100.0%/0.0%	-/-	100.0%/0.0%	59.0%/2.4%	56.2%/12.6%
Some other race	2,596	169	1,454	6	498	484	463	135	226	5,479	175,144	1,269,528
<i>Percent of Persons Employed/Unemployment</i>	65.8%/9.4%	60.4%/20.3%	62.7%/11.8%	50.0%/0.0%	41.2%/0.0%	41.7%/0.0%	67.0%/0.0%	71.1%/0.0%	56.2%/7.3%	59.5%/11.3%	56.8%/10.8%	62.5%/9.4%
Two or more races	1,110	42	568	53	159	121	246	157	148	2,287	37,715	337,241
<i>Percent of Persons Employed/Unemployment</i>	54.9%/6.9%	85.7%/0.0%	39.3%/16.8%	47.2%/0.0%	66.0%/8.7%	60.3%/8.8%	50.8%/12.6%	34.4%/0.0%	73.0%/2.7%	62.5%/7.2%	54.4%/12.1%	58.0%/11.0%
Hispanic or Latino origin (of any race)	22,739	1,059	12,211	567	5,355	3,990	4,541	2,010	2,707	51,513	697,273	6,697,763
<i>Percent of Persons Employed/Unemployment</i>	55.9%/10.1%	61.8%/5.2%	57.0%/8.7%	55.0%/1.9%	61.8%/7.5%	58.2%/6.3%	60.3%/6.6%	57.0%/9.6%	61.4%/2.5%	64.3%/7.4%	55.4%/11.3%	60.1%/8.9%

Source: ACS 2009–2013 Table S2301.

1.1.9 Employment by Industry Sector

Employment within all counties of the ROI is primarily within the industries of 1) educational services, and health care and social assistance (18.1%); 2) agriculture, forestry, fishing, hunting, and mining (16.4%); and 3) retail trade (10.1%) (see **Table 1-25**). The lowest percentage of persons employed is within the information industry (1.2%). The industry percentages are consistent between the counties and the states for wholesale trade, information, and other services, except public administration. Agriculture, forestry, fishing and hunting, and mining had the greatest variability (16.4% for the counties when compared to 4.4% for New Mexico and 3.1% for Texas) (ACS 2013).

Employment in Lea County, New Mexico, is primarily through the industries of 1) agriculture, forestry, fishing and hunting, and mining (21.2 percent); 2) educational services, and health care and social assistance (16.9%); and 3) retail trade (9.5 percent) (ACS 2013). The highest percentage of industry employment within Andrews, Gaines, and Winkler Counties, Texas, was agriculture, forestry, fishing and hunting, and mining (ranging from 21.4 to 27.6 percent) and Ector County industry employment being highest in educational services, health care and social assistance (18.2 percent). These percentages are higher than the state of Texas (3.1 percent). The percentage for all counties combined within the ROI for the agriculture, forestry, fishing and hunting, and mining industry is 16.4 percent. The information industry was 1.1 percent in Lea County, New Mexico, and ranged between 0.4 to 1.4 percent within Andrews, Ector, Gaines, and Winkler Counties, Texas. These percentages are comparable to their respective states and combined counties within the ROI (ACS 2013).

American Community Survey data from 2009 through 2013 contain unemployment information for the census tract level (see **Table 1-26**). In the ROI, there is some variation in the unemployment rate in the civilian labor force. The unemployment rate in Andrews, Texas, ranges from 1.9 percent (CT 9501) to 10.2 percent (CT 9504) with unemployment in Andrews, Texas, at 4.9 percent and 5.9 percent for Andrews County, Texas. Five armed forces personnel were within Andrews, Texas, and 3,195 individuals were not in the labor force. Andrews County, Texas, had 3,965 individuals not in the labor force.

Ector County, Texas, only had one census tract (CT 22) in the ROI with 5.3 percent unemployed in the civilian labor force, no armed forces personnel, and 1,013 individuals not in the labor force. Ector County, Texas, as a whole had 6.2 percent unemployment, 35 armed forces personnel, and 34,102 individuals not in the labor force.

Gaines County, Texas, has two census tracts within Seminole, Texas (CT 9502 and 9503). The rates in these areas ranged from 3.8 percent (CT 9502) to 9.1 percent (CT 9503) with Gaines County, Texas, at 5.8 percent. There were no armed forces personnel in either Gaines County, Texas, or Seminole, Texas, with individuals not in the labor force ranging from 1,666 individuals to 4,620 individuals.

Table 1-25: Employment by Industry Sector in the Region of Interest (2009–2013)													
INDUSTRY	Lea County, New Mexico	Eunice, New Mexico	Hobbs, New Mexico	Jal, New Mexico	Andrews County, Texas	Andrews, Texas	Gaines County, Texas	Seminole, Texas	Winkler County, Texas	Ector County, Texas	New Mexico	Texas	Counties Combined (New Mexico, Texas)
Civilian employed population 16 years and over	27,256	1,447	14,025	816	7,048	5,072	7,390	3,072	3,165	65,574	876,823	11,569,041	110,433
Agriculture, forestry, fishing and hunting, and mining	5,765	368	2,536	140	1,942	1,410	1,601	412	677	8,072	38,237	359,977	18,057
Percent of Total	21.2%	25.4%	18.1%	17.2%	27.6%	27.8%	21.7%	13.4%	21.4%	12.3%	4.4%	3.1%	16.4%
Construction	2,390	123	1,485	79	488	341	1,133	341	417	5,353	62,241	914,460	9,781
Percent of Total	8.8%	8.5%	10.6%	9.7%	6.9%	6.7%	15.3%	11.1%	13.2%	8.2%	7.1%	7.9%	8.9%
Manufacturing	1,378	79	622	69	455	374	335	131	89	5,978	44,362	1,083,079	8,235
Percent of Total	5.1%	5.5%	4.4%	8.5%	6.5%	7.4%	4.5%	4.3%	2.8%	9.1%	5.1%	9.4%	7.5%
Wholesale trade	1,053	67	407	15	208	116	155	99	102	2,913	18,578	347,982	4,431
Percent of Total	3.9%	4.6%	2.9%	1.8%	3%	2.3%	2.1%	3.2%	3.2%	4.4%	2.1%	3%	4.0%
Retail trade	2,593	71	1,559	84	375	269	734	272	253	7,145	98,496	1,345,939	11,100
Percent of Total	9.5%	4.9%	11.1%	10.3%	5.3%	5.3%	9.9%	8.9%	8%	10.9%	11.2%	11.6%	10.1%
Transportation and warehousing, and utilities	2,124	119	911	151	506	406	618	177	282	3,408	39,445	629,548	6,938
Percent of Total	7.8%	8.2%	6.5%	18.5%	7.2%	8%	8.4%	5.8%	8.9%	5.2%	4.5%	5.4%	6.3%
Information	293	0	185	8	51	29	32	9	13	908	14,651	213,097	1,297
Percent of Total	1.1%	0%	1.3%	1%	0.7%	0.6%	0.4%	0.3%	0.4%	1.4%	1.7%	1.8%	1.2%
Finance and insurance, and real estate and rental and leasing	963	34	535	16	123	63	121	21	112	2,903	40,799	769,050	4,222
Percent of Total	3.5%	2.3%	3.8%	2%	1.7%	1.2%	1.6%	0.7%	3.5%	4.4%	4.7%	6.6%	3.8%
Professional, scientific, and management, and administrative and waste management services	1,554	88	942	38	426	326	301	211	116	4,284	95,063	1,251,791	6,681
Percent of Total	5.7%	6.1%	6.7%	4.7%	6%	6.4%	4.1%	6.9%	3.7%	6.5%	10.8%	10.8%	6.1%
Educational services, and health care and social assistance	4,616	256	2,329	137	1,561	1,119	1,233	810	609	11,962	218,046	2,514,011	19,981
Percent of Total	16.9%	17.7%	16.6%	16.8%	22.1%	22.1%	16.7%	26.4%	19.2%	18.2%	24.9%	21.7%	18.1%
Arts, entertainment, and recreation, and accommodation and food services	1,830	118	1,108	4	491	306	402	276	244	6,633	94,257	1,001,258	9,600
Percent of Total	6.7%	8.2%	7.9%	0.5%	7%	6%	5.4%	9%	7.7%	10.1%	10.7%	8.7%	8.7%
Other services, except public administration	1,379	84	796	40	325	241	581	219	103	4,338	42,250	621,998	6,726
Percent of Total	5.1%	5.8%	5.7%	4.9%	4.6%	4.8%	7.9%	7.1%	3.3%	6.6%	4.8%	5.4%	6.1%
Public administration	1,318	40	610	35	97	72	144	94	148	1,677	70,398	516,851	3,384
Percent of Total	4.8%	2.8%	4.3%	4.3%	1.4%	1.4%	1.9%	3.1%	4.7%	2.6%	8%	4.5%	3.06%

Source: ACS 2009–2013 Table DP03.

Winkler County, Texas, has one census tract (CT 9504) within the ROI and had eight percent of the labor force as unemployed with no armed services personnel and 478 individuals not in the labor force. Within the county as a whole, there was 3.5 percent unemployed with 2,072 individuals not in the labor force.

Lea County, New Mexico, has 15 census tracts within the ROI, all within Jal, New Mexico. The percentage of unemployed in the civilian labor force ranged from the highest (18.5 percent in CT 7.02) to the lowest (4.2 percent in CT 7.03). Twenty armed services personnel were identified in CT 5.02 and five in CT 7.02, which constituted a majority of the armed services personnel in Lea County, New Mexico (34 individuals). The number of individuals not in the labor force ranged from 389 (CT 7.01) to 1,899 (CT 7.02). Eunice, New Mexico, had 89 individuals (5.8 percent) unemployed with no armed forces personnel, and 796 individuals not in the labor force. Hobbs, New Mexico, had 1,195 individuals (7.9 percent) unemployed, 20 armed services personnel, and 9,852 individuals not in the labor force. **Table 1-26** provides data regarding employment status within the ROI.

The top three industries in terms of employment in the Fourth Quarter of 2014 for Andrews County were 1) Natural Resources and Mining (2,055 employees); 2) Trade, Transport, and Utilities (1,527) and 3) Education and Health Services (1,143). Ector County top industries included 1) Trade, Transportation, and Utilities (18,235), 2) Education and Health Services (13,091) and 3) Natural Resources and Mining (12,429). Gaines County top industries includes 1) Natural Resources and Mining (2,239), 2) Trade, Transportation and Utilities (1,124) and 3) Construction (435). Winkler County top industries includes 1) Natural Resources and Mining (863), 2) Trade, Transportation and Utilities (555), and 3) Education and Health Services (496) (see **Table 1-27**) (TWC 2015).

There is general consistency when comparing employment industries between the recent Texas Workforce Commission 2014 information and the American Community Survey from 2009–2013. The primary industries within the ROI are agricultural and mining based. Educational and health-related industries are very prevalent, along with trade-related industries.

Table 1-26: Employment Status in the Region of Interest (2009–2013)								
Census 2010 Geography	Popula- tion 16 years and over	In Labor force	Civilian labor force (CLF)				Armed Forces	Not in labor force
			Civilian labor force	Employed in CLF	Unemployed in CLF	% Un- employed in CLF		
Andrews County, TX	11457	7492	7487	7048	439	5.9%	5	3965
Andrews, TX	8535	5340	5335	5072	263	4.9%	5	3195
Census tract 9501	1476	995	995	976	19	1.9%	0	481
Census tract 9502	5065	3052	3047	2962	85	2.8%	5	2013
Census tract 9504	2058	1596	1596	1433	163	10.2%	0	462
Ector County, TX	104044	69942	69907	65574	4333	6.2%	35	34102
Census tract 22	2466	1453	1453	1376	77	5.3%	0	1013
Gaines County, TX	12468	7848	7848	7390	458	5.8%	0	4620
Seminole, TX	5080	3295	3295	3072	223	6.8%	0	1785
Census tract 9502	5841	3748	3748	3604	144	3.8%	0	2093
Census tract 9503	4111	2445	2445	2222	223	9.1%	0	1666
Winkler County, TX	5352	3280	3280	3165	115	3.5%	0	2072
Census tract 9504	1277	799	799	735	64	8%	0	478
Lea County, NM	48357	29783	29749	27256	2493	8.4%	34	18574
Eunice, NM	2332	1536	1536	1447	89	5.8%	0	796
Hobbs, NM	25092	15240	15220	14025	1195	7.9%	20	9852
Jal, NM	1612	855	855	816	39	4.6%	0	757
Census tract 1	1915	1227	1227	1126	101	8.2%	0	688
Census tract 2	2507	1479	1479	1213	266	18%	0	1028
Census tract 3	2502	1416	1416	1266	150	10.6%	0	1086
Census tract 4	2358	1307	1307	1241	66	5%	0	1051
Census tract 5.02	4320	2844	2824	2658	166	5.9%	20	1476
Census tract 5.03	2824	1935	1935	1780	155	8%	0	889
Census tract 5.04	2797	2158	2158	1996	162	7.5%	0	639
Census tract 6	4922	3123	3123	2927	196	6.3%	0	1799
Census tract 7.01	1289	900	900	816	84	9.3%	0	389
Census tract 7.02	2818	919	914	745	169	18.5%	5	1899
Census tract 7.03	1918	1321	1321	1265	56	4.2%	0	597
Census tract 7.04	2336	1575	1575	1346	229	14.5%	0	761
Census tract 8	2536	1652	1652	1563	89	5.4%	0	884
Census tract 9	1714	916	916	877	39	4.3%	0	798
Census tract 11	3512	2322	2322	2175	147	6.3%	0	1190

Source: ACS 2009–2013 Table DP03.

Table 1-27: Employment by Industry for Texas Counties 2014 (Texas Workforce Commission)				
INDUSTRY	Andrews County, TX	Ector County, TX	Gaines County, TX	Winkler County, TX
Civilian employed population 16 years and over	7,879	79,051	4,964	2,818
Natural Resources and Mining	2,055	12,429	2,239	863
<i>Percent of Total</i>	<i>26.08%</i>	<i>15.72%</i>	<i>45.10%</i>	<i>30.62%</i>
Construction	872	7,591	435	399
<i>Percent of Total</i>	<i>11.07%</i>	<i>9.60%</i>	<i>8.76%</i>	<i>14.16%</i>
Manufacturing	348	5,958	149	0
<i>Percent of Total</i>	<i>4.42%</i>	<i>7.54%</i>	<i>3.00%</i>	<i>0.00%</i>
Trade, Transportation and Utilities	1,527	18,235	1,124	555
<i>Percent of Total</i>	<i>19.38%</i>	<i>23.07%</i>	<i>22.64%</i>	<i>19.69%</i>
Information	100	496	23	8
<i>Percent of Total</i>	<i>1.27%</i>	<i>0.63%</i>	<i>0.46%</i>	<i>0.28%</i>
Financial Activities	439	3,993	180	95
<i>Percent of Total</i>	<i>5.57%</i>	<i>5.05%</i>	<i>3.63%</i>	<i>3.37%</i>
Professional and Business Services	491	4,794	148	65
<i>Percent of Total</i>	<i>6.23%</i>	<i>6.06%</i>	<i>2.98%</i>	<i>2.31%</i>
Education and Health Services	1,143	13,091	142	496
<i>Percent of Total</i>	<i>14.51%</i>	<i>16.56%</i>	<i>2.86%</i>	<i>17.60%</i>
Leisure and Hospitality	470	7,886	393	132
<i>Percent of Total</i>	<i>5.97%</i>	<i>9.98%</i>	<i>7.92%</i>	<i>4.68%</i>
Other Services	238	3,166	131	65
<i>Percent of Total</i>	<i>3.02%</i>	<i>4.01%</i>	<i>2.64%</i>	<i>2.31%</i>
Public Administration	196	1,404	0	140
<i>Percent of Total</i>	<i>2.49%</i>	<i>1.78%</i>	<i>0.00%</i>	<i>4.97%</i>
Unclassified	0	8	0	0
<i>Percent of Total</i>	<i>0.00%</i>	<i>0.01%</i>	<i>0.00%</i>	<i>0.00%</i>

Source: Labor Market and Career Information, Texas Workforce Commission, 2015.

1.1.10 Environmental Justice

Executive Order 12898 “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations” requires each Federal agency to “make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority populations and low-income populations.”

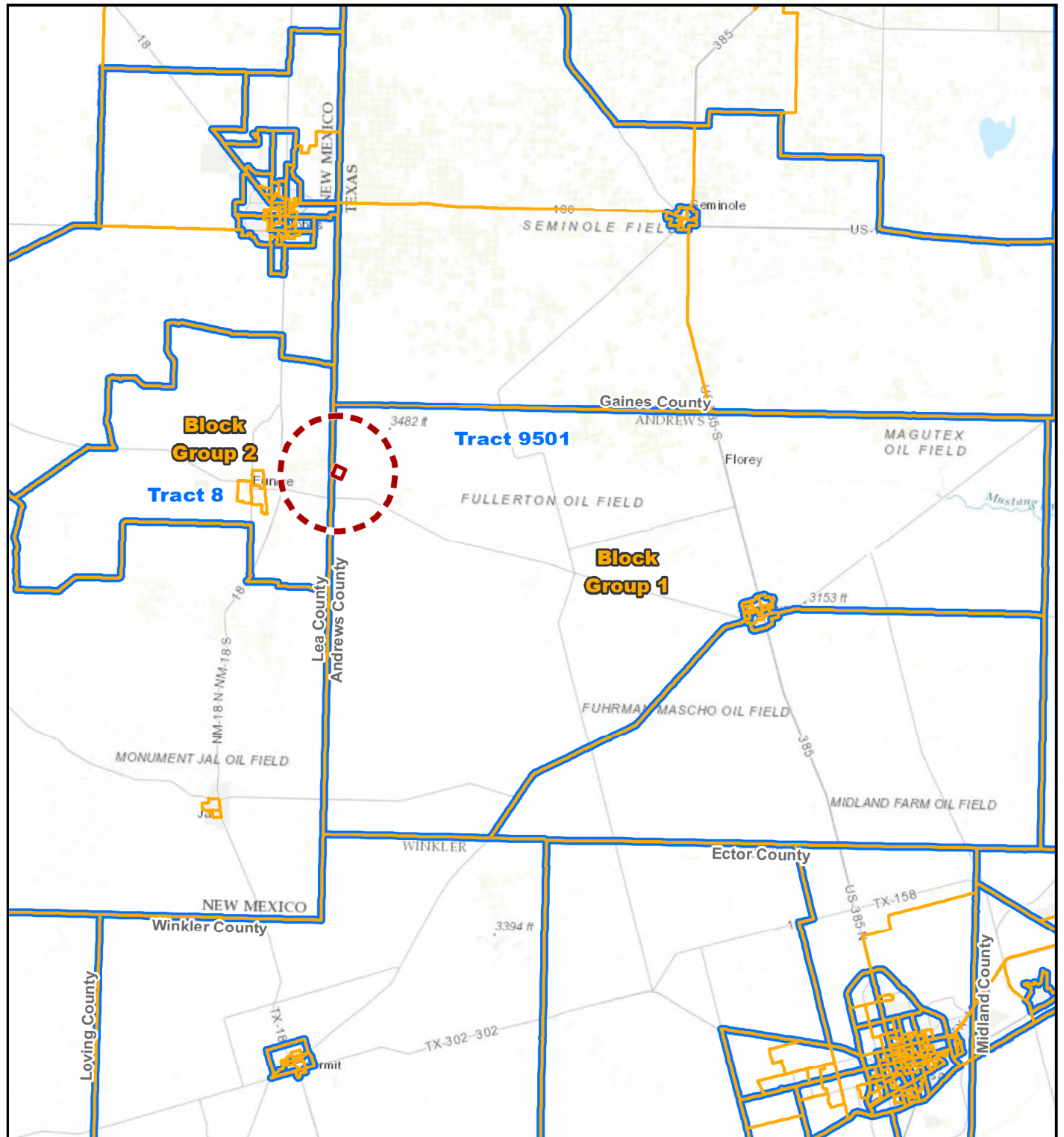
Appendix C (“Environmental Justice Procedures”) to NUREG-1748 “Environmental Review Guidance for Licensing Actions Associated with NMSS Programs” (2003) provides detailed guidance for environmental justice analyses. The appendix has a header noting that necessary updates will be made following the issuance of an Environmental Justice Policy Statement. The Final Policy Statement on the Treatment of Environmental Justice Matters in NRC Regulatory and Licensing Actions (2004) does not state that the interim guidance provided in Appendix C to NUREG-1748 has been superseded, and, in fact, continues to reference the appendix. Therefore, Appendix C was utilized as guidance for this analysis.

The first step in the environmental justice analysis is gathering demographic data for the area around the proposed facility as well as state and county data for comparison. Appendix C states that if a proposed facility is located outside city limits or in a rural area, a radius of four miles (50 square miles) should be used. The recommended geographic area for evaluating Census data is the block group. As the proposed facility would be located in a rural area outside of city limits, census data on race and income was collected for the block groups within a four-mile radius.

The four-mile radius intersects two block groups, according to the 2010 Census. One block group is within Andrews County, Texas, and the other is within Lea County, New Mexico. Therefore, comparison data was also collected for these counties and the states of Texas and New Mexico (see **Figure 1.1-5, Overview of Area – Census Geographies**, and **1.1-6, Census Geographies Within a Four-Mile Radius of the Site**). Although not required, data for census tracts and the city of Eunice (west of the four-mile study area) is included.

1.1.10.1 Identification of Environmental Justice Populations – Minority Populations

Based on the guidance in Appendix C, minority is defined as “individual(s) who are members of the following population groups: American Indian and Alaska Native; Asian; Native Hawaiian and Other Pacific Islander; African American (not of Hispanic or Latino origin); some other race; and Hispanic or Latino (of any race).” Anyone who identifies themselves as white and a minority will be counted as that minority group. The race and ethnicity characteristics for each geography from Census 2010 are presented below in **Table 1-28**. The “Minority” calculation was conservatively defined as all persons who do not identify themselves as “White Only.”



-  Project Location
-  4-mile Study Area
-  2010 Census Tract
-  2010 Census Block Group

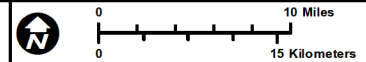


Figure 1.1-5
Overview of Area
Census Geographies
Proposed Consolidated Interim
Spent Fuel Storage Facility

 **COX | McLAIN**
 Environmental Consulting

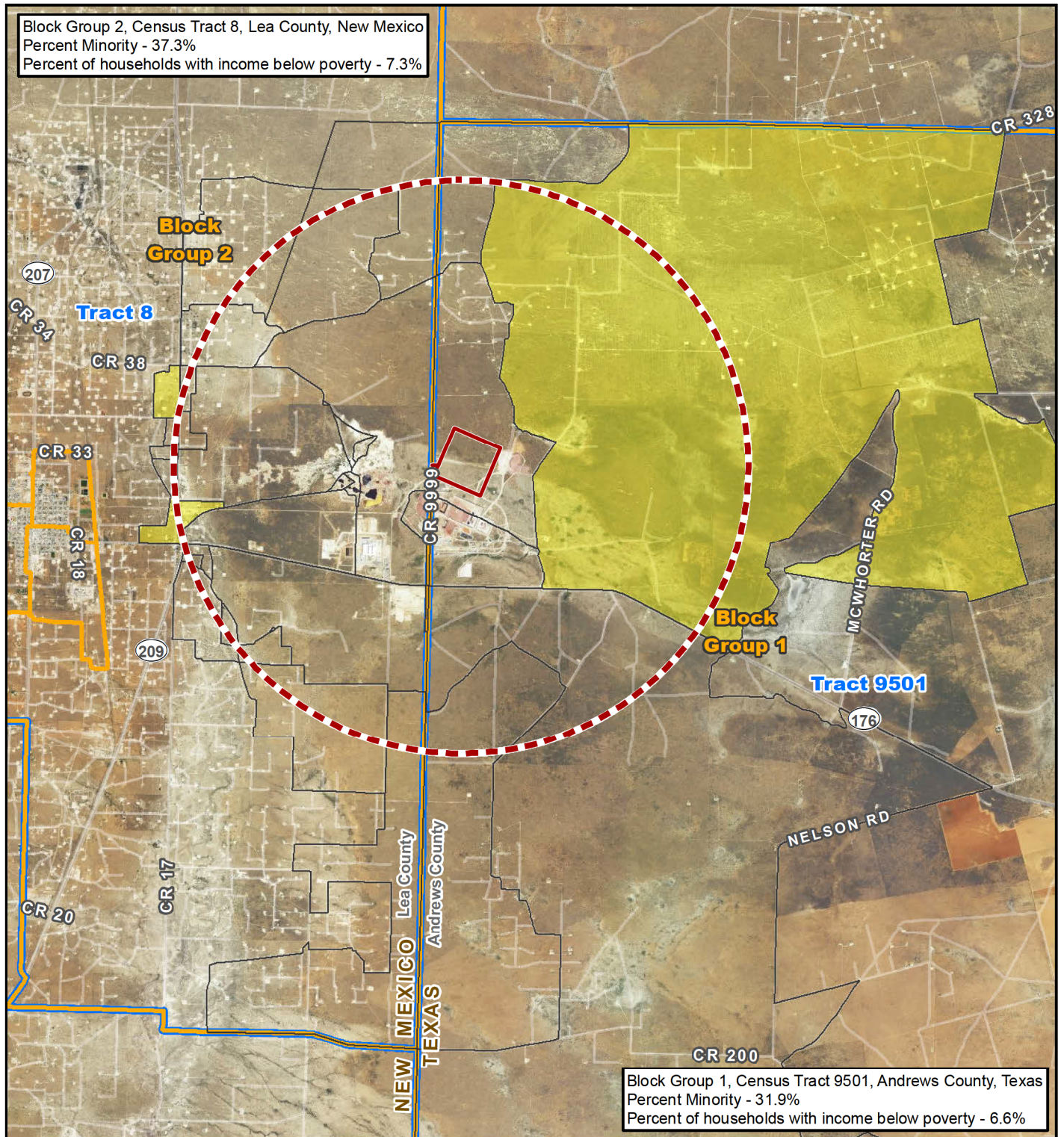
Prepared for: WCS	1 in = 10 miles
Scale: 1:633,600	
Prepared by: SL	Date: 4/4/2016

Data Source: US Census Bureau (2010)

Basemap Source: ESRI (2014)

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Block Group 2, Census Tract 8, Lea County, New Mexico
 Percent Minority - 37.3%
 Percent of households with income below poverty - 7.3%



Block Group 1, Census Tract 9501, Andrews County, Texas
 Percent Minority - 31.9%
 Percent of households with income below poverty - 6.6%

- Project Location
- 4-mile Study Area
- 2010 Census Tract
- 2010 Census Block Group
- 2010 Census Block
- Populated 2010 Census Block within the 4-mile Study Area

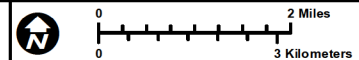


Figure 1.1-6
Census Geographies within
a 4-mile Radius of the Site
Proposed Consolidated Interim
Spent Fuel Storage Facility

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 Environmental Consulting

Prepared for: WCS	1 in = 2 miles
	Scale: 1:126,720
Prepared by: SL	Date: 4/4/2016

Data Source: US Census Bureau (2010)

Basemap Source: ESRI (2014)

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Table 1-28: Race and Ethnicity in the Four-Mile Radius and Comparison Geographies (2010)

Census 2010 Geography	Total Population	Not Hispanic														Hispanic**		Minority (non-White)	
		White		Black*		Indian*		Asian		Islander*		Other*		Two*					
		#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Texas																			
BG 1, CT 9501, Andrews County	1,678	1,142	68.1	6	0.4	5	0.3	26	1.5	0	0	2	0.1	14	0.8	483	28.8	536	31.9
CT 9501, Andrews County	1,678	1,142	68.1	6	0.4	5	0.3	26	1.5	0	0	2	0.1	14	0.8	483	28.8	536	31.9
Andrews County	14,786	7,083	47.9	199	1.3	95	0.6	85	0.6	1	0	17	0.1	111	0.8	7,195	48.7	7,703	52.1
Texas	25,145,561	11,397,345	45.3	2,886,825	11.5	80,586	0.3	948,426	3.8	17,920	0.1	33,980	0.1	319,558	1.3	9,460,921	37.6	13,748,216	54.7
New Mexico																			
BG 2, CT 8, Lea County	727	456	62.7	3	0.4	2	0.3	0	0	0	0	0	0	12	1.7	254	34.9	271	37.3
CT 8, Lea County	3,220	1,676	52	30	0.9	11	0.3	3	0.1	2	0.1	5	0.2	25	0.8	1,468	45.6	1,544	48.0
Lea County	64,727	27,845	43.0	2,399	3.7	468	0.7	302	0.5	18	0	51	0.1	581	0.9	33,063	51.1	36,882	57.0
Eunice	2,922	1,464	50.1	27	0.9	11	0.4	3	0.1	2	0.1	5	0.2	22	0.8	1,388	47.5	1,458	49.9
New Mexico	2,059,179	833,810	40.5	35,462	1.7	175,368	8.5	26,305	1.3	1,246	0.1	3,750	0.7	29,835	1.4	953,403	46.3	1,225,369	59.5

Source: 2010 Census Summary File 1—New Mexico[machine-readable data files]/prepared by the U.S. Census Bureau, 2011. Table P9.

Source: 2010 Census Summary File 1—Texas[machine-readable data files]/prepared by the U.S. Census Bureau, 2011. Table P9.

* The complete Census race descriptions are as follows: White alone; Black or African American alone; American Indian and Alaska Native alone; Asian alone; Native Hawaiian and Other Pacific Islander alone; Some Other Race alone; and Two or More Races. **Hispanic persons can be of any race.

As shown in **Table 1-28**, the percentages of the population considered to be minority for the two block groups within the four-mile radius are 37.3 percent and 31.9 percent. The guidance states that if the minority percentage in the relevant block groups exceeds 50 percent, or if the minority percentage in the relevant block groups is more than 20 percentage points greater than the state or county percentages, environmental justice should be considered in greater detail. As shown in **Table 1-28**, the minority percentages for the relevant block groups are below 50 percent and are also each lower than the respective county and state in which the block group is located.

1.1.10.2 Identification of Environmental Justice Populations – Low-income Populations

The guidance in Appendix C states that “low-income is defined as being below the poverty level as defined by the U.S. Census Bureau (e.g., the U.S. Census Bureau’s Current Population Reports, Series P-60 on Income and Poverty).” The 2014 Poverty Thresholds (the most recent data available) were obtained from the U.S. Census Bureau and compared to the median household income for the block groups within the four-mile radius, based on data from the 2009–2013 ACS. The median household income levels were conservatively compared to the highest Census poverty threshold (\$52,685), as the Census presents several thresholds for varying family sizes and characteristics.

As shown in **Table 1-29**, the median household incomes for the relevant block groups are above the *highest* 2014 Census poverty threshold. In 2014 dollars, these numbers would be even higher.

Table 1-29: Income in the Four-Mile Radius		
Census 2010 Geography	Total Households	Median Household Income (\$)
BG 1, CT 9501, Andrews Co., TX	639	88,250
BG 2, CT 8, Lea Co., NM	274	53,036

Source: U.S. Census Bureau, 2009–2013 American Community Survey, Tables B11001 and B19013.

ACS data are estimates; they are not counts. Income data is provided in 2013 inflation adjusted dollars.

Appendix C instructs analysts to determine whether the percentage of low-income households exceeds 50 percent of a given block group, or if the percentage of low-income households in the block groups are more than 20 percentage points greater than the reference area. To this end, data from the 2009–2013 ACS was collected regarding the percentage of households living below the poverty level in the relevant block groups and for the reference geographies.

As shown in **Table 1-30**, neither of the block groups have greater than 50 percent of the households with incomes below the poverty level. Furthermore, the percentages of households with incomes below the poverty level are lower in the block groups than in the reference geographies, and therefore do not exceed the 20 percent criterion.

Table 1-30: Poverty in the Four-Mile Radius and Comparison Geographies			
		Income below poverty level	
Geography	Total Households	Number	Percent
Block Group 1, Census Tract 9501, Andrews County, Texas	639	42	6.6%
Andrews County, Texas	5,217	668	12.8%
Texas	8,886,471	1,395,335	15.7%
Block Group 2, Census Tract 8, Lea County, New Mexico	274	20	7.3%
Lea County, New Mexico	21,126	2,911	13.8%
New Mexico	761,938	139,901	18.4%

Source: Table B17017, ACS 2009–2013 five-year estimates.

Furthermore, no minority or low-income populations were identified within the four-mile study area. Based on the foregoing, further environmental justice analysis is not necessary.

1.2 EXISTING FISCAL, GOVERNMENTAL, AND COMMUNITY SERVICES

1.2.1 Andrews County

Located in the oil-rich Permian Basin, Andrews County has produced over two billion barrels of oil since the 1920s. A substantial portion of the area's economy is supported through oil and gas production with over 1,600 laborers, approximately 27 percent of the total work force in this industry in 2011 (TWC 2015). According to the Texas Workforce Commission, the total labor force for Andrews County is 9,654 laborers in March 2015. Most of industry jobs are in natural resources and mining, education and health services, and trade/transport/utilities. Top manufacturers include Andrews Pump & Supply, BP America Production Company, Centrilift, Chevron Corporation, Kirby West Manufacturing, Sargent Industries Oil Well, and Superior Woodwork (Freese and Nichols 2013).

The City of Andrews has been in a period of large economic activity triggered by major industry investments, which have brought in hundreds of high-paying jobs and additional construction activity. There has been a renewed investment in the oil and gas industry, mainly related to the returns from new technology for oil and gas exploration and extraction (Freese and Nichols 2013). Recent examples of new infrastructure and investments include: Performance Center (Olympic sized natatorium for swimming and diving; 1,000-seat concert hall and 2,000-seat gymnasium); two new elementary schools and significant improvements and additions to every school campus in town; City of Andrews Business and Technology Center; a Senior Citizens Activity Center; a new 90-bed Residential Care Facility; two new business parks (energy industry driven); County Special Events Center; Andrews downtown streetscape improvements; and \$59 million campus for the Permian

Regional Medical Center approved in 2012. Approximately \$163 million in new construction and remodeling has occurred within the City (Freese and Nichols 2013). The City of Andrews is also home to a plant that assembles Kirby vacuum cleaners and a plant that manufactures fiberglass tanks. One library, two banks, three credit unions, and a biweekly newspaper serve the city of Andrews. Fraternal and civil organizations include the Lions Club, Rotary Club, United Way of Andrews, Knights of Columbus, and Girl Scouts of America. Local facilities serving the community of Andrews include 39 churches, a museum, a municipal swimming pool, a golf course, tennis courts, youth club/center/parks, and athletic fields.

Andrews County had a tax base (total certified net taxable value) in 2014 of over \$7.2 billion dollars, a general fund tax rate of 0.2936 per \$100, and a road and bridge tax rate of .00477 per \$100 (Andrews County Appraisal District 2015). The county tax levy in 2014 for all funds amounted to almost \$21,177,205. Total tax rates (per \$100) in 2014 for jurisdictions within the Andrews County Appraisal District include: Andrews Independent School District – a combined rate of \$1.17000; City of Andrews – \$0.18900; Andrews County – \$0.2936; and, Andrews Hospital District – \$0.29612.

1.2.2 Andrews Independent School District

Andrews Independent School District is the only public school district in Andrews County and comprises one high school, one middle school, three elementary schools, and the Andrews Education Center, with a 2014 student population of 3,758 (TEA 2014). Andrews High School offers a comprehensive curriculum including academic studies for the college bound with advanced courses in several areas, a variety of vocational courses, physical training, and extracurricular activities. The District participates in Class 4A University Interscholastic League competition. The district is in good financial condition. In 2014, certified total net taxable value in the District was over \$6.6 million. In 2011, voters approved a \$33-million rolling bond to be divided into three phases: one covering costs from 2011–2014, a second becoming available in 2015, and a third in 2019, each being \$10 million (KWES NewsWest9 2015). In November 2014, the Andrews ISD was considering seeking an additional rolling bond (CBS7 2014). The Andrews Business and Technology Center was completed in 2006 in conjunction with Odessa College and the University of Texas of the Permian Basin. Texas Tech University Health Sciences Center and Odessa College School of Nursing – Andrews Campus also have campuses in Andrews County (AEDC 2015).

1.2.3 Andrews ISD Education Foundation

The Andrews ISD Education Foundation (The Foundation) is a 501(c)(3) tax exempt, nonprofit corporation chartered in April 2000. It is a legal entity that is independent of the school district whose mission is to provide quality educational opportunities in order that all students may become successful and productive citizens. The Foundation operates independently of the Andrews Independent School District for the purpose of:

1. Facilitating student achievement and skill development.
2. Recognizing and promoting staff excellence.
3. Encouraging involvement from individuals, businesses, and civic organizations in the community.

The Foundation's goals are to:

1. Encourage all students to work toward reaching their highest potential.
2. Attract, support, and recognize teachers for innovative efforts and exemplary teaching.
3. Build public awareness and confidence in Andrews schools.
4. Involve the community in assuring a quality education for the leaders and works of tomorrow.

A volunteer Board of Directors with representative community membership governs The Foundation as it seeks funds and sets policy according to its bylaws. The Foundation cooperates with the Andrews ISD to enhance and enrich the educational opportunities of students and teachers of the school district. WCS contributed \$13,925.69 in 2014, and \$4,537.84 in 2015 as of April 1 to The Foundation.

1.2.4 Andrews County Hospital District

Andrews County Hospital District (ACHD) was formed through a public election in May 2001. The ACHD encompasses Andrews County and was organized under Chapter 286 of the Texas Health and Safety Code. The ACHD is governed by a seven-member elected Board of Directors, four of whom are elected based on the four local precincts, and three members elected at large. The Board of Directors is governed by the ACHD bylaws.

ACHD is composed of an 85-bed medical center (Permian Regional Medical Center [PRMC]) and a 90-bed nursing facility (Permian Residential Care Center [PRCC]), which opened in 2004. The PRMC also houses seven physician practices and a quick care clinic with one doctor, three nurse practitioners, and one per diem registered nurse (PRN) (Quick Care Clinic, personal communication 2015). The PRMC is a general acute care facility that provides a wide array of services including General Surgery, Obstetrics and Gynecology, Newborn Care, a Level IV trauma Emergency room, and three-bed intensive care unit. It also has the only nuclear medicine and magnetic resonance imaging (MRI) capability between the Odessa-Midland area and Lubbock.

In 2003 ACHD, with community support, identified a need to take over the provision of long-term care in the community. The district issued revenue bonds of \$5,755,000 to construct PRCC, a new 90-bed nursing home that is physically attached to the medical center on the east side of the building. The new facility opened in October 2004 and has been approved for occupancy.

ACHD is a taxing authority for Andrews County that for fiscal year 2014 had certified total net taxable values of \$6,748,528,780. ACHD's taxing authority allows a maximum tax rate of \$0.75 per \$100 valuation. ACHD's tax rate for fiscal year 2014 was set at \$0.29612 per \$100 valuation, which generated a 2014 tax levy of \$19,989,673 (ACAD 2014a and 2014b).

1.2.5 City of Andrews

Andrews County is unique in that it is among the few Texas counties that include only one incorporated city within its borders (the City of Andrews). Over 70 percent of the county's 14,786 residents live within the city limits of Andrews (US Census Bureau 2015a and 2015b).

The City of Andrews currently operates under a Council-Manager form of city government. City Council members are elected by cumulative vote. The Mayor is elected by single-vote majority. Each Council Member has one vote, with the Mayor breaking tie votes only. A general election to elect three council members was held on May 9, 2015.

The 2014–2015 City Budget reflects a continuing commitment of maintaining a high level of customer service, retaining a well-trained, experienced workforce, and investing in long-term infrastructure. The City remains committed to the fiduciary responsibility that it has in managing public resources. Depreciation is full-funded, and the City's only debt – certificates of obligation issued in 2011 for the construction of the Truck Reliever Route – is tied to a voter-approved, dedicated source of revenue (City of Andrews 2014). The City's overall cost of operating is among the lowest in the state and is reflected in a lower-than-average ratio of personnel costs to total operating expenses.

The City of Andrews is recognized for its financial strength, quality of services, and commitment to excellence. The approved FY 2014–2015 Budget, which has been posted on-line (http://www.cityofandrews.org/docs/2015_Budget_Introduction_and_Overview.pdf), provides for the efficient and effective delivery of municipal services.

The General Fund provides for public safety services (police, fire, emergency medical service [EMS], and animal control), public health, streets/traffic maintenance, recreational activities, as well as general finance and administration. The General Fund budget proposes operating revenues of \$6,869,358. The Utility Fund provides water production and distribution services as well as sewage collection and treatment for the citizens of Andrews. The 2014–2015 Utility Fund Budget proposes expenditures of \$3,065,614, along with \$1 million from a transfer to the Utility Capital Improvement Fund, to help finance capital projects benefiting the Utility Fund. Revenues, less operating expenditures and transfers, results in a decrease in the fund balance by \$690,167.

The Sanitation Fund provides garbage collection and disposal services. The Sanitation Fund budget has proposed operating expenditures of \$1,542,520.

The FY 2014–2015 City Budget also proposed an ambitious Capital Improvements Program with nearly \$8.1 million in capital expenditures. Major capital improvement expenditures identified in the FY 2014–2015 City Budget reflect that \$5,000,000 is being carried over from the FY 2014 budget for the construction of a water treatment facility, and \$500,000 is being carried over to line the wastewater lagoon. The City identified funds for the police car take-home program, coating for the interior of a water storage tank, replacement of 800 water meters, laying new water lines in southwest Andrews, and a new street sweeper.

The FY 2014–2015 City Budget provides for efficient and effective delivery of municipal services. Long-term needs are addressed through “pay-as-you-go” fiscal policies. The City maintains a very low tax rate (0.18900/\$100 valuation in 2014), and a lower-than-average ratio of personnel costs to operating expenses.

The Andrews Business & Technology Center opened its doors in 2006. The building is a state-of-the-art facility offering job training, continuing education, higher education courses, the latest in distance learning technology, and the development of numerous quality of life initiatives (AEDC 2015).

1.2.6 Andrews Chamber of Commerce, Andrews Industrial Foundation

Andrews County Chamber of Commerce was formed in the 1950s. It was a typical, traditional Chamber of Commerce that had voluntary membership of businesses, both retail and wholesale, in Andrews, Texas whose primary economy was based on oil and gas production. It has been in continuous operation ever since, and has a membership open to anyone in the community that is interested in promoting Andrews from a business, tourism, or cultural standpoint. The current membership is approximately 290 to 302 members (Andrews Chamber of Commerce 2015). The Chamber of Commerce has been supportive of various community initiatives and activities.

The Andrews Industrial Foundation (AIF) is a private foundation that was created in the mid-1960s to seek economic diversification. It has received support from the general business community, as well as from the City, County, school district, and local governments over the years, and has worked in conjunction with those governing bodies to bring new industry to Andrews. The President of the AIF in the 1970s, 1980s, and 1990s was James Roberts. In the 1990s, Mr. Roberts was approached about the possibility of locating a low-level hazardous waste site in Andrews County because of the arid climate and redbed clay geology. After that, there were visits with the community leaders about the proposal. A public information meeting was held by the AIF and thereafter WCS was formed. More information regarding the coordination with WCS and AIF, along with assistance with community activities historically, can be found in the 2008 Hicks & Company socioeconomic impact study.

WCS has been an active member of the Andrews Chamber of Commerce for many years and has had employees on the board of directors several times. WCS employees are also involved in other community groups, such as the local Rotary Club, Lions Club, Andrews Education Foundation, Hospital Board, United Way, Women’s Division of the Chamber of Commerce, American Cancer Relay

for Life, Faith in Action, Lea County Economic Development, Chamber Ambassadors, and other volunteer organizations. WCS's contribution to the community includes 160-full time jobs in Andrews County and \$13 million in annual payroll, which also adds \$4 million in revenue for Andrews County (WCS 2015).

1.2.7 Lea County

New Mexico's median property tax is perennially ranked among the eight lowest states in the nation; any change in taxes requires an amendment to the state constitution. One-third, or 33.3 percent, of the valuation of property's market value (assessment) is its taxable value. There are exemptions of \$2,000 for heads-of-households, and \$4,000 for veterans. The one-third taxable value on property excludes oil and gas properties. The tax applied is a composite of state, county, municipal, school district and other special district levies. Properties outside city limits are taxed at lower rates. Major facilities may be assessed by the New Mexico State Taxation and Revenue Department instead of by the county.

New Mexico communities can abate property taxes on a plant location or expansion for a maximum of 30 years, (usually 20 years in most communities), controlled by the community. The state also has a Gross Receipts Tax paid by product producers. This tax is imposed on businesses in New Mexico, but in almost every case it is passed on to the consumer. In that way, the gross receipts tax resembles a sales tax. The New Mexico Gross Receipts Tax for 2015 is 5.125 percent. The gross receipts tax for the Eunice area is 6.8125 percent, with areas outside of Eunice in the remainder of the county as 5.5 percent (New Mexico Taxation and Revenue Department 2015). Certain deductions may apply to this tax for plant equipment.

The Lea County community was initially agriculturally based, but the discovery of oil and gas in the mid-1920s has had a significant impact on the region. Today the county's agricultural heritage continues to have underlying influences on the county's development with an active dairy industry as well as farming and ranching. The oil and gas industry still has a strong effect on the local economy, and in addition, there is a growing manufacturing sector. Five libraries, nine financial institutions, and two daily newspapers serve Lea County. Cities in Lea County that are within the ROI include Hobbs, Eunice and Jal.

In Lea County, there are five public school districts and four private schools; the county has a total of 31 public schools with 15,011 students enrolled in pre-kindergarten through 12th grade during the 2014–2015 academic year (EDCLC 2015). The closest school district is in Eunice, located six miles to the west, with the other districts located in Hobbs, Jal, Lovington, and Tatum. The main campus of the University of the Southwest (USW) is located just north of Hobbs. The 2014 enrollment was approximately 312 students (Personal communication, Michelle Goar, 2015). New Mexico Junior College, located in Hobbs, has a current enrollment of 2,712 full and part time students (Personal communication, Connie Hanson, NMJC 2015). NMJC has a New Mexico Junior College Training and

Outreach Department, which provides workforce training programs throughout the county, including learning vocational skills in a variety of business and vocational-technical fields.

There are two hospitals in Lea County, New Mexico. The Lea Regional Medical Center is located in Hobbs, New Mexico about 20 miles north of the WCS facility. Lea Regional Medical Center is a 201-bed hospital providing complete care, including cardiac care, pediatrics, mental health, and outpatient surgery. The hospitals have 39 active physicians and 34 consulting physicians. In Lovington, New Mexico, 39 miles north-northwest of the facility, Covenant Medical Systems manages Nor-Lea Hospital, a 25-bed Medicare-certified Critical Access Hospital serving southeastern New Mexico. They manage medical clinics in Lovington, Tatum, and Hobbs, and offer a range of outpatient, specialty, image, and infusion services. These clinics include the Lovington Medical Clinic, Nor-Lea Evening Clinic, Family Health Center of Lea County, Tatum Clinic, and the Lovington Student Healthcare Center (Nor-Lea 2012).

1.2.8 City of Hobbs

The City of Hobbs FY 2015 Preliminary Budget reveals that the City is in good fiscal condition (City of Hobbs 2015). The Gross Receipts Tax (GRT) is the dominant revenue source in the City's General Fund, and totals approximately 87.5 percent of all General Fund Revenues. The GRT is collected by the New Mexico Taxation and Revenue Department, and is disbursed back to the cities with a lag time of about two months. The current GRT rate in the City of Hobbs is 6.8125 percent.

Cities of Eunice and Jal

The City of Eunice, New Mexico, located about six miles west of the processing and storage facilities, has a Mayor-Council form of municipal government and provides water, sewer, and EMS services. In 2014, its general fund expenditures was \$4,002,127, and all funds were \$10,264,108. The City employed 6 police officers, 2 full-time firefighters, and 21 part-time firefighters in 2012 (City-Data 2012). The City had a residential property tax rate of 28.244 per \$1,000 and a non-residential rate of 35.437 per \$1,000 within the city in 2014 (LCTAO 2014). The City's Gross Receipts Tax rate was 6.8125 percent within the City limits (NMTRD 2015).

The City of Jal, New Mexico, has a Mayor-Council form of municipal government and provides water, sewer, solid waste, and EMS services. In 2014, its general fund expenditures was \$1,514,950, and all funds were \$5,904,526. The City employed eight part-time police officers and nine other police staff, and was served by an all-volunteer fire department in 2012 (City-Data 2012). The City had a residential property tax mill rate of 23.784 and a non-residential mill rate of 30.110 within the city in 2014 (LCTAO 2014). The City's Gross Receipts Tax rate was 7.0625 percent within the City limits (NMTRD 2015).

1.2.9 Public Safety in Andrews and Lea Counties

Fire protection is provided from both Texas and New Mexico. The Andrews Volunteer Fire Department is staffed by a Fire Marshal and three companies, each led by a Fire Chief. The department has 44 active firemen. Equipment includes 23 trucks and one hazardous materials trailer. The trucks includes:

- Three pumper trucks
- One tanker
- Four booster trucks
- One foam application boom truck used primarily for fighting oilfield fires
- Two chief officers' trucks,
- One hazmat trailer; and
- One rescue truck

Lea County has three volunteer fire departments located in Knowles, Maljamar, and Monument. There are a total of nine fire departments in Lea County, with five being municipal fire departments. The Knowles Fire Department is a 30-member, totally volunteer, fire/EMS organization that has 13 firefighters/EMTs, 14 firefighters, and 3 dispatchers. The fire department has 3 Class A Engines with pump and roll capabilities, 2 water tankers, 2 wildland grass rigs, with a total rolling water capacity of 14,000 gallons. The Maljamar Fire Department has one station with 17 volunteer firefighters.

The City of Hobbs is staffed by 74 uniformed and 4 civilian employees. They have hazardous materials duties, emergency medical service and support, as well as fire prevention and suppression, provided at three fire station locations.

Mutual aid agreements are in place with Lea County and the City of Eunice. Fire and emergency support services for the Eunice area are provided by Eunice Fire and Rescue located approximately six miles from the processing and storage facility. Equipment at the Eunice Fire and Rescue includes three ambulances, three pumper fire trucks, three grass fire trucks, and one rescue truck. If additional fire equipment is needed, or if the Eunice Fire and Rescue is unavailable, the Central Dispatch will call the Hobbs Fire Department. In instances where radioactive/hazardous materials are involved, knowledgeable members of the WCS Emergency Response Organization (ERO) provide information and assistance to the responding off-site personnel.

The Andrews Sheriff's Department and Police Department are the primary law enforcement for Andrews County. The force consists of 15 police officers, including the chief, a school resource officer, administrative assistant, and an animal control officer. All officers are certified in emergency services as paramedics or EMTs. There are three shifts, with four officers assigned to each shift, with each shift having a police supervisor overseeing the 8-hour shift. A dispatcher in the County's Sheriff's Department dispatches officers, ambulance, and fire personnel. If additional resources are needed,

officers from mutual aid communities within Lea County, New Mexico, and the City of Eunice, can provide an additional level of response. The Eunice Police Department, with five full-time officers, provides local law enforcement. The Lea County Sheriff's Department also maintains a substation in the community of Eunice.

1.3 EXISTING SOCIAL STRUCTURE IN THE REGION OF INTEREST

This section assesses various characteristics of the project area to gain a basic understanding of social structure in the ROI. For a detailed analysis of social and cultural history in the project area focused on recent WCS licensing activities, including opinion surveys, see the Socioeconomic Impact Assessment for the Low-Level Waste Disposal Facility (2007) and License Renewal (2008) by Hicks & Company, according to the Texas Department of State Health Services licensing requirements.

1.3.1 Historical Summary

The 2008 WCS license application includes a detailed history of social attitudes in the Region of Interest. In summary, the residents of the ROI have generational experience with a cyclical resource extraction economy; a long history with risk-associated industries, including toxic and flammable chemicals and gases (such as hydrogen sulfide), and the transportation of these materials; an increasingly effective regulatory regime to protect the environment; a long-term desire to increase economic diversification and more stable growth of employment and income in the area; and prospects for a more diverse occupational and income structure. In general, the ROI population appears to have the common social objectives of good jobs for their children, maintenance of all age sectors within their populations, and more opportunities for college-educated residents. The populations of the ROI have experienced “boom-bust” cycles for more than 30 years and have benefited from the development of the waste and nuclear energy sectors within recent decades. Residents seek higher incomes and job opportunities for community residents. Basic sectors still dominate industry along with resource extraction, but the regional economy is anticipated to benefit from expansion of the growing waste disposal and related nuclear energy industry.

1.3.2 Social Stratification Analysis

In the context of the specific history of the area, there are numerous shared life experiences that indicate a commonality of interests. As discussed in detail in the WCS 2008 Socioeconomic Impact Assessment, the ROI shares a dependence upon the variable vitality of the petroleum industry and to a lesser extent, the hardships inherent in dry land agriculture. Both of these industries are highly dependent upon external events, such as the international price of oil, rainfall, and/or cattle demand. To a large extent, large corporations and/or governmental entities create the circumstances of work and income for workers in these industries, for workers in related and dependent businesses; these influences in turn affect the adequacy of community infrastructure, housing costs, and numerous other community effects. Increasingly, the job base created by the construction of the URENCO USA

facility and associated industry is benefitting economies in the ROI including infrastructure and community services.

1.3.2.1 Employment

As can be computed for the ROI from **Table 1-26**, the labor participation rate (the total persons in the labor force divided by total population 16 years and over) in the ROI (Ector, Andrews, Gaines, and Winkler Counties, Texas, and Lea County, New Mexico) was 65.1 percent (118,345 out of 181,678). This is essentially the same as for Texas but higher than the rate in New Mexico. There was an approximately 60.7 percent labor participation rate in New Mexico (979,565 participating out of 1,612,730 in the work force 16 and older) and approximately 65.2 percent in Texas (with 12,691,031 participating out of 19,468,136 persons over 16 in the work force). In Lea County, labor participation was 61.6 percent. In Eunice it was 65.9 percent and in Hobbs it was 60.7 percent. Jal had the lowest labor participation rate at 53.0 percent. In Andrews County, the labor participation rate was 65.4 and it was 62.9 percent in Gaines County. Approximately 62.6 percent of persons over 16 participated in the labor force in the City of Andrews and 64.9 participated in Seminole. In Ector County, the labor participation rate was 67.2 percent, and in Winkler County it was about 61.3 percent.

The rate of employment in basic labor sectors (defined for this area as agriculture and mining, manufacturing, construction and transportation) is significant. As shown in **Table 1-25**, the economic sector including agriculture and mining (which includes oil and mineral extraction) ranges from a low of 13.4 in Seminole to a high of 27.8 in the city of Andrews, with 25.4 percent in Eunice. In Lea and Andrews counties, 21.2 and 27.6 percent of persons work in these sectors compared to the states of New Mexico and Texas, where 4.4 percent and 3.1 percent respectively are employed in these sectors. When added together the basic sectors for all counties in the ROI make up 39.1 percent of employment compared to 25.8 percent in Texas and 21.0 percent in New Mexico.

In sectors that generally require higher educational attainment (e.g., information; finance, insurance, real estate; professional, scientific, administrative and waste management services); the counties within the ROI employ approximately 11.1 percent of their workers in these industries, compared to 19.2 percent in Texas or 17.2 percent in New Mexico. See **Table 1-11** for educational attainment in the ROI.

Similar rate of employment by sector were identified by the Texas Workforce Commission annual reports of Jobs. As shown in **Table 1-27**, the natural resources and mining sector was a major employer in the ROI, constituting 26.08 percent in Andrews, 45.10 percent in Gaines County, and 30.62 percent in Winkler County.

A review of **Table 1-31** indicates that in Lea County, 79.2 percent of workers 16 and over travel less than 25 minutes to work. Approximately 70 percent of Eunice residents travel less than 25 minutes to work. In Hobbs, 83.5 percent of persons travel less than 25 minutes to work, while 68.9 percent of Jal's commuters travel less than 25 minutes. In Andrews County, 65.2 percent of workers travel less than 25 minutes to work and 63.2 percent in Andrews City travel less than 25 minutes to work. In Gaines, 79.9 percent of workers travel 25 minutes or less compared 87.7 percent of Seminole workers. In Winkler County, 70.4 percent of workers travel less than 25 minutes to work, compared to 76.9 percent in Ector County. Overall in New Mexico, approximately 68.4 percent of workers travel 25 minutes or less while in Texas, 58.2 percent of workers travel that amount of time to work. The majority of workers in the ROI travel 25 minutes or less for work, indicating that they live and work in relatively close proximity.

With regard to employment versus unemployment by race, data can be found in **Table 1-24**. Note that data from the American Community Survey is based on statistical analysis estimates rather than 100 percent census data or counts, so it is accompanied by a margin of error. Within the ROI, the population with the highest percentage employed is Native Hawaiian/Other Pacific Islander (100%) in Gaines and Ector counties, and Seminole, Texas, however that is for a total of 35 persons in Ector County, and 48 persons in Gaines County and Seminole, Texas, which is a fraction of the total population of 104,044 (Ector County), 12,468 (Gaines County) and 5,080 (Seminole). In comparison, the population with the highest percentage of unemployed is Black and African American (100%) in Jal, New Mexico. As with the number of employed, the number of persons within this population (15) is relatively small as compared to the total population of 1,612. The Hispanic population constitutes the largest minority group in the ROI and unemployment rates range from a low of 1.9 percent in Jal, New Mexico, and a high of Winkler County to 10.1 percent in Lea County, New Mexico.

1.3.2.2 Labor Force Participation and Unemployment Distribution

The “boom-bust” cycle in the oil sector is best represented by longitudinal analysis of population, labor force participation and unemployment trends. Population analysis of data from 1920–2010 are shown in **Table 1-32**. As shown, after the discovery of oil in the 1920's, population grew rapidly in Lea, Andrews, and Ector counties through 1960. This growth also occurred to a lesser extent in Gaines, and Winkler counties (with Winkler County experiencing very large growth between 1920 and 1930). Andrews and Gaines counties grew more than 100 percent between 1940 and 1950, and between 1950 and 1960. Regional population after 1960 either declined or stabilized through 2000.

Table 1-31: Travel Time to Work in the Nation and Region of Interest (2009 – 2013)													
Travel Time	Lea County, New Mexico	Eunice, New Mexico	Hobbs, New Mexico	Jal, New Mexico	Andrews County, Texas	Andrews, Texas	Gaines County, Texas	Seminole, Texas	Winkler County, Texas	Ector County, Texas	New Mexico	Texas	United States
Total Workers 16 years and over	25,967	1,412	13,361	795	6,685	4,774	7,051	2,927	3,012	62,866	826,524	10,983,502	133,740,254
Did not work at home	25,259	1,377	12,989	783	6,490	4,632	6,903	2,912	2,942	61,368	784,111	10,521,990	127,693,869
Less than 5 minutes	1,762	178	830	100	659	502	1,102	406	543	2,647	35,443	333,493	4,308,933
<i>Percentage</i>	6.8%	12.6%	6.2%	12.6%	9.9%	10.5%	15.6%	13.9%	18%	4.2%	4.3%	3%	3.2%
5 to 9 minutes	5,022	310	2,545	228	1,691	1,271	1,982	1,129	860	8,478	109,113	1,105,605	13,714,706
<i>Percentage</i>	19.3%	22%	19%	28.7%	25.3%	26.6%	28.1%	38.6%	28.6%	13.5%	13.2%	10.1%	10.3%
10 to 14 minutes	6,545	198	4,209	161	1,025	708	991	582	334	13,627	144,373	1,569,957	19,150,654
<i>Percentage</i>	25.2%	14%	31.5%	20.3%	15.3%	14.8%	14.1%	19.9%	11.1%	21.7%	17.5%	14.3%	14.3%
15 to 19 minutes	4,518	75	2,641	34	837	487	991	323	288	14,085	152,151	1,761,760	20,753,054
<i>Percentage</i>	17.4%	5.3%	19.8%	4.3%	12.5%	10.2%	14.1%	11%	9.6%	22.4%	18.4%	16%	15.5%
20 to 24 minutes	2,726	227	933	24	149	53	563	127	93	9,501	123,775	1,626,711	19,796,414
<i>Percentage</i>	10.5%	16.1%	7%	3%	2.2%	1.1%	8%	4.3%	3.1%	15.1%	15%	14.8%	14.8%
25 to 29 minutes	808	119	393	24	102	97	224	41	34	2,003	41,705	640,387	8,189,640
<i>Percentage</i>	3.1%	8.4%	2.9%	3%	1.5%	2%	3.2%	1.4%	1.1%	3.2%	5%	5.8%	6.1%
30 to 34 minutes	2,233	134	871	64	592	457	601	93	205	5,695	99,121	1,644,071	18,220,851
<i>Percentage</i>	8.6%	9.5%	6.5%	8.1%	8.9%	9.6%	8.5%	3.2%	6.8%	9.1%	12%	15%	13.6%
35 to 39 minutes	155	0	51	14	205	169	18	14	20	629	14,188	289,616	3,673,571
<i>Percentage</i>	0.6%	0%	0.4%	1.8%	3.1%	3.5%	0.3%	0.5%	0.7%	1%	1.7%	2.6%	2.7%
40 to 44 minutes	224	30	64	25	195	195	49	33	13	942	19,798	382,174	4,920,004
<i>Percentage</i>	0.9%	2.1%	0.5%	3.1%	2.9%	4.1%	0.7%	1.1%	0.4%	1.5%	2.4%	3.5%	3.7%
45 to 59 minutes	379	40	122	48	588	376	182	20	200	1,671	43,747	851,111	10,154,523
<i>Percentage</i>	1.5%	2.8%	0.9%	6%	8.8%	7.9%	2.6%	0.7%	6.6%	2.7%	5.3%	7.7%	7.6%
60 to 89 minutes	976	76	354	73	350	258	203	91	231	1,696	27,692	555,552	7,488,235
<i>Percentage</i>	3.8%	5.4%	2.6%	9.2%	5.2%	5.4%	2.9%	3.1%	7.7%	2.7%	3.4%	5.1%	5.6%
90 or more minutes	619	25	348	0	292	201	145	68	191	1,892	15,418	223,065	3,369,669
<i>Percentage</i>	2.4%	1.8%	2.6%	0%	4.4%	4.2%	2.1%	2.3%	6.3%	3%	1.9%	2%	2.5%

Source: ACS 2009–2013 Table B99084 & B08303.

Table 1-32: Historic Population Trends in the Region of Interest							
Year	Lea County, NM	Andrews County, TX	Gaines County, TX	Winkler County, TX	Ector County, TX	New Mexico	Texas
1920	3,545	350	1,018	81	760	360,350	4,663,228
<i>Percent Change 1920-1930</i>	73.3%	110.3%	175%	8,375.3%	420.8%	17.5%	24.9%
1930	6,144	736	2,800	6,784	3,958	423,317	5,824,715
<i>Percent Change 1930-1940</i>	244.3%	73.5%	190.6%	-9.5%	280.3%	25.6%	10.1%
1940	21,154	1,277	8,136	6,141	15,051	531,818	6,414,824
<i>Percent Change 1940-1950</i>	45.2%	291.7%	9.5%	63.9%	179.7%	28.1%	20.2%
1950	30,717	5,002	8,909	10,064	42,102	681,187	7,711,194
<i>Percent Change 1950-1960</i>	73.9%	168.9%	37.7%	35.7%	116.1%	39.6%	24.2%
1960	53,429	13,450	12,267	13,652	90,995	951,023	9,579,677
<i>Percent Change 1960-1970</i>	-7.3%	-22.9%	-5.5%	-29.4%	0.9%	6.8%	16.9%
1970	49,554	10,372	11,593	9,640	91,805	1,016,000	11,196,730
<i>Percent Change 1970-1980</i>	13%	28.5%	13.4%	3.2%	25.7%	28.2%	27.1%
1980	55,993	13,323	13,150	9,944	115,374	1,302,894	14,229,191
<i>Percent Change 1980-1990</i>	-0.4%	7.6%	7.4%	-13.3%	3.1%	16.3%	19.4%
1990	55,765	14,338	14,123	8,626	118,934	1,515,069	16,986,510
<i>Percent Change 1990-2000</i>	-0.5%	-9.3%	2.4%	-16.8%	1.8%	20.1%	22.8%
2000	55,511	13,004	14,467	7,173	121,123	1,819,046	20,851,820
<i>Percent Change 2000-2010</i>	16.6%	13.7%	21.1%	-0.9%	13.2%	13.2%	20.6%
2010	64,727	14,786	17,526	7,110	137,130	2,059,179	25,145,561

Source: U.S. Census Bureau, Decennial Census; City and County Data Book (through 2000); U.S. Census for 2010 data because the data book was last published in 2007.

Between 2000 and 2010, growth occurred again in Lea, Andrews, Gaines, and Ector counties with a slight decline in Winkler County's population. Data from the mid-1980s, 1990, and 2000 from the City and County Data Book files (2000) were examined for patterns. The last published version of this document was 2007 so the 2010 census was used for 2010 data. Focusing on Lea County and Andrews County, as indicated in **Table 1-33**, after the resurgent oil economy of the late 1970s and early 1990s, there was a significant drop in oil prices followed by a reduction in oil production, some capping of wells, the closure of two oil company administrative offices in Andrews, and the loss of a natural gas industry administrative office in Jal. Population declined between 1980 and 1990 in Lea and Winkler Counties. With the decline in population, labor force participation increased, while unemployment actually decreased. Per capita income in constant dollars (accounting for inflation) decreased slightly and in current dollars grew at about half of the state rate of increase. Population increased and labor force participation increased; unemployed remained low; and per capital income actually increased. Between 1990 and 2000, population in Lea, Andrews, and Winkler Counties declined and population slightly increased in Gaines and Ector counties. During that same time period, overall population in New Mexico and Texas grew by more than 20 percent. The period between 2000 and 2008 includes the so-called "energy crisis" where prices for a barrel of oil steadily increased until they arguably peaked in 2008, with various impacts on the global economy. Oil and gas prices reached between 120 and 140 dollars a barrel, with very steep declines after that down into the 40s and below by 2009 (Phillips 2015). In Texas, the Permian Basis has anchored the ROI in oil and gas and related activities, such that populations again grew in the ROI between 2000 and 2010 for all counties in the ROI except Winkler County.

While this effect of steady or increasing labor force participation and decreased unemployment may seem contradictory, it has been found to be a common "boom-bust" effect of rapid industrialization. With a growing basic industry, more people move in than can be supported during the slowing of the boom. Following a boom, the oil-related tax revenues can be used to grow services and infrastructure and there is often a lag period between the extremes of growth, unemployment, out-migration, and a gradual increase in jobs for the people remaining, typically in lower paying sectors (Summers, et al. 1976).

In the ROI, it is likely that additional women entered the labor force in health, education, and retail trades to supplement family income, partly due to local economic conditions and also in alignment with national trends. To investigate this effect further, in- and out-migration data for the region from the 2010 census were examined for the 2008 to 2012 period. During this period, the oil industry was fluctuating. In-migration between 2008 and 2012 exceeded out-migration, primarily, as shown on **Table 1-34** with the highest example of in-migration from a different state being Lea County, New Mexico. Over this time period, net migration calculated by subtracting total out-migration from total in-migration was positive for Lea, Andrews, Winkler, and Ector Counties (with the highest net migration), with out-migration exceeding in-migration only for Gaines County, Texas.

Table 1-33: Selected Economic Trends in the Region of Interest				
Variables	Lea Co.	New Mexico	Andrews Co.	Texas
Population 1986	65,080	1,426,185	15,837	16,087,289
Population >14 yrs. 1986	45,490	1,061,080	15,837	12,176,078
Civilian Labor Force 1986	25,498	627,000	8,258	8,159,000
Labor Force Participation 1986	56.05%	59.09%	52.14%	67.01%
Percent Unemployment 1986	12.50%	9.20%	8.80%	8.00%
Per capita Income (Current \$) 1985	\$11,436	\$10,256	\$12,893	\$12,575
Population 1992	55,765	1,515,069	14,338	16,986,510
Population >16 yrs. 1990	37,251	1,068,124	9,377	12,145,355
Civilian Labor Force 1990	23,013	715,000	6,156	8,555,000
Labor Force Participation 1990	61.78%	66.94%	65.65%	70.44%
Percent Unemployment 1990	7.20%	6.90%	6.90%	6.60%
Per capita Income (Current \$) 1989	\$13,428	\$14,254	\$15,316	\$16,717
Population 2000	55,511	1,629,146	13,004	21,325,018
Population >16 yrs. 2000	38,824	1,320,572	8,900	19,238,259
Civilian Labor Force 2000	24,634	832,835	4,998	10,324,527
Labor Force Participation 2000	63.45%	63.07%	56.16%	53.67%
Percent Unemployment 2000	4.80%	4.90%	5.80%	4.20%
Per capita Income (Current \$) 1999	\$18,756	\$21,164	\$17,351	\$25,369
Population 2006	57,312	1,954,599	12,952	23,507,783
Population >15 years old	44,302	1,548,042	10,011	18,077,485
Civilian Labor Force	26,803	935,350	7,022	11,487,496
Labor Force Participation 2006	60.50%	60.40%	70.10%	63.50%
Percent Unemployment 2006	3.2%	4.2%	3.5%	4.9%
Per capita Income (Current \$) 2005	\$27,636	\$27,889	\$27,727	\$32,460

Source: City and County Data Book, 1988, 1994, 2000, and 2007.

Table 1-34: In-Migration and Out-Migration by County (2008–2012)

Geographic Area	Domestic In-Migration			Domestic Out-Migration			5-Year Net Migration (Total In-Migration minus Total Out-Migration)
	From Same State	From Different State	Total Migration	To Same State	To Different State	Total Migration	
Lea County	1,358	2,468	3,826	1,351	1,913	3,264	562
Andrews County	822	313	1,135	535	230	765	370
Gaines County	632	242	874	668	347	1,015	–141
Winkler County	448	133	581	313	-	313	268
Ector County	6,620	2,095	8,715	5,083	1,370	6,453	2,262

Source: ACS (2008–2012) Census Flow Mapper.
<http://flowsmapper.geo.census.gov/flowsmapper/flowsmapper.html>.

These gross effects of net out-migration are not borne equally by the ROI's population. As indicated in **Table 1-24**, Employment Status in the ROI, 2010, the unemployment rate for most races in most geographies was lower than for Texas or New Mexico. Note that the ACS data is statistical sampling which is not census data, so there is a margin of error associated with the data (and the percentages). Nonetheless, unemployment was lower than for Texas and New Mexico in the majority of races and geographies. The exceptions were that for all persons in Lea County, the unemployment rate was below New Mexico's rate but above the Texas rate. The unemployment rate for Black or African American persons; American Indian/Alaska Native; and Other Race in Lea County was lower than in the state of New Mexico but higher than in Texas. In Eunice, populations were too low to register statistically for some races, but unemployment was higher than in Texas or New Mexico for persons from Other races, but otherwise lower than state rates. In Hobbs, unemployment was lower than for the states for all persons, Black or African Americans, Asians, and Hispanics, but higher for American Indian/Alaska Natives, Other Races, and Two or More Races. In Jal, Andrews County and the City of Andrews, unemployment was lower than the states for all races except Black or African American. In Gaines County, unemployment was lower than the states for all races except Two or More Races. In Seminole, unemployment was lower than the states for all groups except Hispanics, and in Winkler unemployment was higher than the states for American Indian and Alaska Natives. In Ector County, unemployment rates for all races except for people of a race not listed were lower than for New Mexico and Texas.

1.3.2.3 Income

As shown in **Table 1-35**, median household income according to ACS ranges from approximately \$48,000 to nearly \$58,000 in the ROI. Income levels are highest for White persons, American Indian/Alaska Native, and Asians in some areas and lowest for Black or African American persons. Hispanic median household incomes range from \$44,000 to almost \$49,000, and are higher than for New Mexico or Texas. Given that this is statistical data, the data set is larger for Hispanic persons and therefore more consistent across geographies when compared to some smaller racial groups or geographies. In terms of poverty status, as shown in **Table 1-36**, according to ACS data the

Table 1-35: Income of Households by Race and Age in the Region of Interest (2009–2013)

Subject	Lea County, New Mexico	Eunice, New Mexico	Hobbs, New Mexico	Jal, New Mexico	Andrews County, Texas	Andrews, Texas	Gaines County, Texas	Seminole, Texas	Winkler County, Texas	Ector County, Texas	New Mexico	Texas
Median Households Income	50,694	54,152	49,243	48,790	57,825	53,833	52,910	50,911	48,992	51,466	44,927	51,900
White median income	55,240	75,875	53,103	49,479	60,929	58,608	55,230	52,917	55,444	55,654	54,334	63,924
Black or African American median income	39,203	-	32,098	-	36,645	36,908	29,028	-	33,958	35,379	41,214	38,156
American Indian/Alaska Native median income	62,216	-	68,125	-	93,185	93,185	86,438	-	-	41,125	32,136	45,161
Asian median income	18,450	-	-	-	135,435	135,435	-	-	-	81,042	57,457	71,259
Native Hawaiian/ Other Pacific Islander median income	-	-	-	-	-	-	-	-	-	-	32,071	59,276
Hispanic or Latino median income	46,805	48,542	46,927	45,139	49,034	44,190	47,536	48,018	45,147	48,723	36,851	39,629
Median Household Income by Age of Householder												
15 to 24 years	37,262	34,375	35,827	49,375	66,307	66,989	91,686	90,698	38,750	40,062	23,535	25,601
25 to 44 years	61,086	53,884	55,362	60,078	64,018	59,360	56,136	64,219	56,420	60,196	46,884	54,524
45 to 64 years	62,357	81,304	57,370	65,938	80,827	80,176	63,450	60,809	60,625	58,926	54,447	63,165
65 years and over	30,453	37,969	31,725	29,091	20,077	19,625	25,591	22,333	22,112	30,030	35,779	36,915

Source: ACS Survey Table S1903.

Table 1-36: Poverty Status of Families by Race in the Region of Interest (2009–2013)

	Lea County, New Mexico	Eunice, New Mexico	Hobbs, New Mexico	Jal, New Mexico	Andrews County, Texas	Andrews, Texas	Gaines County, Texas	Seminole, Texas	Winkler County, Texas	Ector County, Texas	New Mexico	Texas
Total Families	15,560	834	7,861	566	3,913	2,923	4,158	1,530	1,875	35,011	498,457	6,206,755
Families below poverty	12.0%	8.3%	13.8%	4.4%	9.5%	10.7%	14.7%	12.5%	7.8%	13.1%	15.6%	13.7%
Families with a householder who is:												
White below poverty level	6.7%	2.6%	8.7%	3.5%	6.7%	8.1%	12.3%	11.7%	4.1%	8.0%	7.3%	5.9%
Black or African American below poverty level	22.4%	-	27.8%	0.0%	3.0%	3.4%	0.0%	0.0%	0.0%	26.0%	22.5%	20.5%
American Indian/Alaska Native below poverty level	0.0%	-	0.0%	-	0.0%	0.0%	3.0%	0.0%	0.0%	13.5%	29.7%	18.5%
Asian below poverty level	-	-	-	-	0.0%	0.0%	-	-	0.0%	0.0%	11.0%	9.1%
Native Hawaiian/ Other Pacific Islander below poverty level	-	-	-	-	-	-	-	-	-	0.0%	36.6%	14.9%
Hispanic or Latino below poverty level	17.1%	14.1%	17.3%	6.4%	12.7%	13.3%	19.5%	14.0%	12.0%	16.7%	22.2%	23.7%

Source: ACS Survey Table S1702.

percentage in poverty are highest for Black or African American populations in Lea County and Hobbs, New Mexico, and Ector County, Texas. Percentages below poverty are consistent across the ROI for Hispanic persons, ranging from a low of six percent in Jal to a high of 19.5 percent in Gaines County. Overall, families in poverty constitute between 4 and 15 percent in the ROI, with just over 15 percent in New Mexico and just over 13 percent in Texas. Again, these are statistics rather than census data and are accompanied by a margin of error.

1.3.2.4 Housing

As indicated in **Tables 1-18** and **1-20**, housing within the ROI is less expensive than within the respective states, with median home values at less than \$100,000 in all components of the ROI compared to more than \$100,000 in Texas (\$128,900) and New Mexico (\$160,000). The lowest median home values were in Winkler County at \$45,100 and Jal, New Mexico, at \$63,900. Median rent asked in the ROI ranged from \$575/month in Winkler to \$863/month in Seminole compared to \$758/month in New Mexico and \$851/month in Texas. The number of owner-occupied units substantially exceeded renter-occupied units in the ROI by roughly double. From a race perspective, White and Hispanic owners and renters constituted a substantial portion of the residential populations in the ROI.

A database search of homes currently for sale revealed that in Eunice, the closest town to the proposed site, on May 6, 2015, there were five single family homes for sale ranging in price from \$99,000 to \$140,000. On the same day in Andrews, Texas, there were 175 homes or lots for sale ranging in price from more than \$4 million for 25 acres of land down to \$25,000 for one-quarter to one-half acre of land. Existing homes were listed for \$69,900 to \$1.6 million (www.realtor.com/realestateandhomes-search/).

1.3.2.5 General Summary of Stratification

Looking at selected economic trends over time in the ROI (Lea and Andrews Counties in particular), from 1986 to 2006 it appears that the labor force participation was lower than became equivalent between Lea County and New Mexico, and was lower and subsequently exceeded labor force participation in Andrews County compared to Texas. Unemployment rates were historically equivalent to or higher in the counties compared to the states, but by 2006 they were lower in the counties compared to the states. Per capita income levels used to be lower in counties compared to states but by 2006, they were equivalent to or near the state levels (see **Table 1-33**). More recent data shown in **Table 1-35** indicates that median household incomes for cities or counties in the ROI are generally higher than Texas and New Mexico.

There is still heavy reliance on basic sector employment in the ROI, and jobs requiring higher educational attainment constitute a lower percentage of employment in the ROI compared to the states. The primary industries within the ROI are agricultural and mining based. Educational and health-related industries are very prevalent, along with trade-related industries. There appears to be

a rural-urban differentiation, whereby in the ROI's larger cities there is more similarity in income and employment stratification to state averages. Housing is somewhat less expensive in the ROI than in Texas or New Mexico as a whole.

With some exceptions, the ROI is economically interdependent, with most residents working in or near their residence and evidently within the ROI, given that most travel 25 minutes or less for work. The public sector has benefited greatly by tax payments from oil and gas royalties and ad valorem taxes resulting in a greater level of educational resources, hospital availability, and emergency response resources than would exist in similar regional economies dependent upon less lucrative industries. As a result of WCS' investment in the Andrews County as the host community as well, the ROI has benefitted in terms of economics and related development of community resources and infrastructure.

1.4 HISTORIC, SCENIC, CULTURAL, AND ARCHEOLOGICAL RESOURCES

1.4.1 Historic Resources

Historic resources include buildings, structures, objects, and non-archeological sites and districts that are important in the history of a community, a region, a state, or the nation. The proposed licensing activities are regulated by the NRC; the project is therefore subject to Section 106 of the National Historic Preservation Act.

The Area of Potential Effect (APE) for direct impacts is the project footprint. Taking into consideration the height of the crane that would be required, the height of the potential above-ground facility, and the relatively flat surrounding terrain, the APE for indirect/visual impacts is a 1-mile radius from the proposed project footprint. WCS anticipates that the NRC will issue a Final Environmental Impact Statement and License by April 1, 2019. Therefore, a historic-age date of 1974 (45 years prior to 2019) is proposed. The direct effects APE is contained entirely within the state of Texas, while the indirect effects APE extends into New Mexico. Therefore, coordination is underway with the State Historic Preservation Office for both states.

Direct Effects

A search of the Texas Historic Sites Atlas maintained by the Texas Historical Commission (THC) was conducted for previously identified Official State Historical Markers (OSHM), Recorded Texas Historic Landmarks (RTHL), properties or districts listed on the National Register of Historic Places (NRHP), State Antiquities Landmarks (SALs), cemeteries, or other cultural resources that may have been previously recorded. No such resources were identified within the APE for direct effects. The nearest previously identified resource is the OSHM for Andrews County, located approximately 17 miles southeast of the project area. As the area containing the proposed project footprint is devoid of any standing structures, the proposed project would not result in a direct effect to any non-archeological historic resources.

Indirect Effects

A search of the THC Atlas indicates that there are also no previously identified historic-resources in Texas within the 1-mile APE for indirect effects. A search of the New Mexico Cultural Resources Information System (NMCRIS) database administered by the Archeological Records Management Section (ARMS) of the New Mexico Historic Preservation Division (NMHPD) will be undertaken and results will be provided at a future date.

The area is surrounded by a high density of oil wells to the west and some oil wells to the north; there is little development to the south and east, excluding portions of the existing WCS facility. The first development at the WCS facility was constructed in the late 1990s; none of the development is historic-age. Adjacent to the WCS facility to the west is a large uranium enrichment plant called the National Enrichment Facility, operated by URENCO. This facility was developed within the past 15 years. The proposed project area is located in a very remote area of Texas with little development aside from the non-historic age WCS and URENCO facilities. There do not appear to be any historic resources 45 years or older (dating to 1974 or earlier) within the 1-mile indirect effects APE.

The nearest developed area is Eunice, New Mexico, which is located approximately five miles west of the proposed site. There are two large visual obstructions between viewers in Eunice and the proposed crane at the site: red soil mounds approximately 100 feet in height on WCS property, and the URENCO facility. Based on information from WCS, the soil mounds will be in place indefinitely or potentially utilized as fill. Excluding the crane, the CISF storage facility would be approximately 30 feet above the surface and less visible from Eunice than existing features and structures.

On June 1, 2015, THC concurred with the recommendation that no further survey is required for historic resources and project may proceed (see Appendix D, Texas Historical Commission Coordination Letters and Archeological Survey Permit).

In addition, a coordination letter was submitted to New Mexico State Historic Preservation Office addressing historic and archeological resources in New Mexico. On August 12, 2015, the NMSHPO responded with concurrence that no additional cultural resources identification efforts were needed for the undertaking since all construction activities would be confined to Texas (see Appendix D).

1.4.2 Archeological Resources

A search of the *Texas Archeological Sites Atlas* (Atlas) maintained by the THC and the Texas Archeological Research Laboratory (TARL) was conducted in order to identify archeological sites, OSHMs, RTHLs, properties or districts listed on the NRHP, SALs, cemeteries, or other cultural resources that may have been previously recorded in or near the archeological APE, as well as previous surveys undertaken in the area. With the current APE defined as the proposed 140-acre construction footprint, no previously recorded resources were found in the APE or near it. The nearest known archeological site in Texas is over 3.7 miles away.

One previous survey was found in the records search. The southern half of the current APE appears to have been included in a 1994 archeological survey by Galván Eling Associates, Inc., with only minor finds (six pieces of burned caliche) that the THC agreed did not merit further work (Galván Eling Associates, Inc. 1994; THC 2015). In 2004, URS Corporation contacted the THC on behalf of WCS regarding development of a portion of the Galván Eling 1994 survey area that had not been developed between 1994 and 2004. The THC concurred that no further work was required on June 25, 2004.

Although the APE is located entirely within Texas, CMEC has also requested access to the NMCRIS database. Access to ARMS records is currently pending and the results of an ARMS search will be included in the background research section of draft and final archeological survey reports to be prepared in 2015 (see below).

Because of the ambiguity in older survey maps, the lack of full coverage under the previous survey, and the fact that the Galván Eling study was conducted over 20 years ago, prior to the THC's development of minimum survey standards, WCS elected to scope a survey of the entire new facility footprint. An intensive archeological survey meeting current THC standards was conducted, and the results were presented in a draft report to be submitted to WCS, Andrews County, and the THC. No sites were found. The draft archeological survey report under Texas Antiquities Permit 7277 was submitted to the THC on July 2, 2015. Following THC's 30-day review of the draft report, the final report incorporating regulatory comments was prepared and submitted to the THC, who concurred No Historic Properties Affected – Project May Proceed on July 29, 2015. Copies were prepared for submittal to designated state repositories to close the Antiquities Permit (see Appendix D, Texas Historical Commission Coordination Letters and Archeological Survey Permit).

1.4.3 Scenic Resources

According to the U.S. Department of Interior (DOI) – Bureau of Land Management (BLM) (1986), visual resources consist of landscape or visual character, and visual sensitivity and exposure. A study area's landscape features include landform, vegetation, water resource features, color, adjacent scenery, scarcity, and cultural modifications (that either add to or detract from visual quality). The overall impression of an area, composed of the elements above, is referred to as the "visual character." For this analysis, the visual character of the area is focused on the perspective of residents living in close proximity to the proposed facility who would be affected by the continued operations, and the perspective of the driving public (along roads within the visual resources study area). However, since the closest residence is approximately four miles away from the facility, the majority of the analysis is geared toward the driving public.

The environmental team analyzed whether the following features exist or are likely to exist within 10 miles of the facility:

- landform (elevated views, hilltops, vegetation (woodlands))
- water (stream crossings, bridges, wetlands, pastoral scenes, wildlife viewing potential)
- scarcity (known scarcity of wildlife habitat, vegetation, or cultural resource)
- cultural modifications (urbanized areas, historic structures, visual detractors)

In accordance with DOI and BLM guidance, a photo inventory of the scenic qualities of the WCS facility was conducted on April 7 and 8, 2015. This study included views from as far as 15 miles from the WCS project. Views were captured to illustrate several zones: foreground, middle ground, background, and seldom-seen. This inventory replicated photos taken for the WCS licensing efforts in 2007 and 2008 for the low-level hazardous waste disposal license. The study team was interested in learning what has changed in the landscape over the last seven years.

The Scenic Resources Inventory is located in **Appendix C, Figures C-1 and C-2, and photos 1–14**. Each photo is labeled with the direction in relation to the facility, whether it represents foreground, middle ground, background, or seldom-seen views, and approximate distance from the center point of the proposed CISF facility on the WCS property. The foreground and middle ground views are taken from locations less than three to five miles from the facility, with several mid-ground range photos just beyond the 5-mile radius. This zone includes the road cut for State Highway 176 (SH 176), which creates berms that intermittently obscure views beyond the roadway and then open up views to the various landfills in the vicinity and to the sole urbanized area of Eunice, approximately five miles to the west of the facility. The background zone includes views from locations between five and ten miles away (see **photos 11 and 13**). These views are from generally flatter terrain allowing broader views across the landscape. These broader views take in oil-extraction structures (pump jacks, tanks and fence lines) in the foreground and a combination of constructed landscape forms (i.e., landfill and extraction facility earth mound(s) and naturally occurring swales. The seldom-seen views were from locations that are farther than ten miles away or otherwise hidden from view (see **Photo 12**). The WCS facility is barely seen from this distance, with the most prominent features of the facility (the redbeds) hardly registering as more than an undulation in the horizon. Adjacent to the WCS facility to the west in New Mexico is a large uranium enrichment plant called the National Enrichment Facility, operated by URENCO. This facility was developed and constructed since the last visual resources inventory was conducted. This facility is the most substantial new structure on the visual landscape. The relationship of WCS to URENCO is shown on **Figure C-1**. Photo locations are shown on **Figure C-2** along with a 5-mile radius and a 10-mile radius around the site. The proposed CISF activities would take place beyond the existing railroad spur on the WCS property, farthest from SH 176 compared to other current activities at the site.

It was determined that the visual resources study area does not contain notable representations of any of the landscape features listed above, although the relative lack of visual obstructions to a vast view of this section of the West Texas/East New Mexico landscape could be considered the “visual character” of the area. Overall, the entire study area can be considered to have modest scenic quality that is pleasant to regard for its rural, undeveloped nature, but not dramatic, unique or rare. Facilities geared towards resources extraction, the Lea County Landfill, and oil well pump jacks exist in the project area, in addition to the URENCO facility, which have an equal or higher impact on the visual landscape compared to the proposed new CISF activities at the WCS facility.

1.4.4 Agricultural Production

1.4.4.1 Andrews County

The 2012 Census of Agriculture (USDA 2012) reports that Andrews County had 169 farms in 2012, down three percent from 175 farms in 2007. These farms amounted to 752,030 acres in 2012, and 808,474 acres in 2007, down seven percent. The average size farm in the county was 4,450 acres in 2012, and 4,620 acres in 2007.

The market value of agricultural production was \$12,578,000 in 2012, and \$15,919,000 in 2007, down 21 percent. Crop sales accounted for \$5,819,000 of the total value in 2012, while livestock sales accounted for \$6,758,000 of the total market value. Andrews County is not a leading agricultural producer in Texas, ranking 210 out of 254 counties in market value of agricultural products statewide in 2012.

Table 1-37 presents the agricultural data for the year 2012 from the USDA’s National Agricultural Statistics Service, Census of Agriculture, County Profile for Andrews County. No tobacco; nursery, greenhouse, floriculture, and sod; cut Christmas trees and short duration woody crops; aquaculture; or milk production was reported in the county in 2012.

Table 1-37: Value of Agricultural Products in Andrews County, 2012

Market Value of Agricultural Products Sold			
Item	Quantity (\$1,000)	State Rank	US Rank
Total value of agricultural products sold	12,578	210	2,585
Value of crops including nursery and greenhouse	5,819	174	2,356
Value of livestock, poultry, and their products	6,758	208	2,341
Value of Sales by commodity Group			
Item	Quantity (\$1,000)	State Rank	US Rank
Grains, oilseeds, dry beans, and dry peas	1,424	138	2,150
Cotton and cottonseed	2,241	90	358
Fruits, tree nuts, and berries	60	173	1,676
Other Crops and Hay	2,094	132	1,303
Cattle and Calves	6,240	194	1,656
Hogs and Pigs	*	*	*
Sheep, Goats and Their Products	422	56	395
Horses, Ponies, Mules, Burros, and Donkeys	75	204	2,046

Source: U.S. Department of Agriculture, National Agricultural Statistics Service. County Profile, Andrews County, Texas (2012).

*Withheld to avoid disclosing data for individual operators.

The top livestock inventory items in 2012 in Andrews County included 10,177 cattle and calves, 622 goats, 337 horses and ponies, and 146 sheep and lambs. Cotton was the leading crop in terms of acreage with 8,248 acres, followed by sorghum for grain with 3,856 acres, forage with 1,236 acres, and peanuts with 1,227 acres.

There is no agricultural activity within one mile of the existing WCS facility based on aerial interpretation and land use data. The majority of the land within five miles of the facility is grassland, pasture, and shrublands, with minor outparcels of barren, developed, and alfalfa production.

1.4.4.2 Lea County

The 2012 Census of Agriculture reports that Lea County, New Mexico, had 460 farms in 2012, down from 572 in 2007. The land in farms in the county was 1,981,988 acres in 2012, down from 2,365,168 acres in 2007. The average size farm in the county was 4,309 acres in 2012, compared to 4,135 acres in 2007.

The market value of agricultural production was \$188,926,000 in 2012 and \$93,644,000 in 2007, down 50 percent. Crop sales accounted for 22 percent of the total value in 2012, while livestock sales accounted for 78 percent of the total market value. Lea County ranked fifth out of 33 counties in New Mexico for the market value of agricultural products statewide in 2012.

Table 1-38 presents the agricultural data for the year 2012 from the USDA's, National Agricultural Statistics Service, Census of Agriculture, County Profile for Lea County. No tobacco, cut Christmas trees and short duration woody crops, or aquaculture was reported in the county in 2012.

Table 1-38: Value of Agricultural Products in Lea County, 2012			
Market Value of Agricultural Products Sold			
Item	Quantity (\$1,000)	State Rank	US Rank
Total value of agricultural products sold	188,926	5	582
Value of crops including nursery and greenhouse	40,738	5	1,280
Value of livestock, poultry, and their products	148,188	5	274
Value of Sales by commodity Group			
Item	Quantity (\$1,000)	State Rank	US Rank
Grains, oilseeds, dry beans, and dry peas	*	7	*
Cotton and cottonseed	14,805	1	120
Vegetables, melons, potatoes, and sweet potatoes	*	4	*
Fruits, tree nuts, and berries	793	8	548
Nursery, greenhouse, floriculture, and sod	411	11	1,444
Other Crops and Hay	9,812	7	295
Milk from cows	115,888	5	61
Poultry and eggs	*	*	*
Cattle and Calves	30,468	7	519
Hogs and Pigs	*	*	*
Sheep, Goats and Their Products	119	14	1,212
Horses, Ponies, Mules, Burros, and Donkeys	948	7	269
Other animals and other animal products	757	5	316

Source: U.S. Department of Agriculture, National Agricultural Statistics Service. County Profile, Lea County, Texas (2012).

* Withheld to avoid disclosing data for individual operators.

The top livestock inventory items in 2012 in Lea County included 84,950 cattle and calves, 1,952 horses and ponies, and 1,475 sheep and lambs. Cotton was the leading crop in terms of acreage with 19,589 acres, followed by forage with 16,892 acres, corn for silage with 9,738 acres and wheat for grain with 3,282 acres.

2.0 SOCIOECONOMIC IMPACT ANALYSIS

The characterization of the CISF's social, demographic and economic impacts on the ROI is based upon an economic impact analysis conducted for the WCS's CISF using the IMPLAN economic modeling tool, plus a discussion of anticipated employment during its construction and operations phase. (A summary of the transportation impact assessment is found in a separate report. The discussion of the potential cumulative impacts resulting from this facility and other operations on the WCS property is also in a separate technical report.)

2.1 BACKGROUND: GENERIC EIS FINDINGS

In September 2014, the NRC published a generic assessment of potential impacts of continued storage of spent nuclear fuel, *Generic Environmental Impact Statement for Continued Storage of Spent Nuclear Fuel (NUREG-2157)*. The document relied on the license issued by NRC to Private Fuel Storage, LLC (PFS) to construct and operate a facility on the Reservation of the Skull Valley Band of Goshute Indians in Tooele County, Utah. While the project has not moved forward, the NRC considers the PFS EIS to be a reasonable assessment of potential impacts of away-from-reactor storage of spent nuclear fuel.

For short-term storage activities, the GEIS determined that there would be incremental changes to offsite services to support construction activities. Additionally, relatively few workers would move to the area permanently given the short duration of the construction phase. Impacts to housing and public services would be considered minor. Direct employment impacts on the regional economy would occur as would indirect impacts, such as purchases of goods by workers in the local community. Indirect and induced jobs would likely be filled by local residents.

The GEIS discusses anticipated employment related to operations. Some of the workers employed to operate the CISF facility would be expected to move into the area with their families. According to the GEIS, (based on the PFS analysis), a relatively small number of operations workers would move into the area and the impact on housing, public services, and the local and regional economy would be considered minor. For the WCS spent nuclear fuel CISF, however, the analysis that follows provides modeling information that indicates a substantive impact on the economy of the analysis region.

With regard to impacts to local and state government, tax payments would be received from the CISF licensee. The impact would depend on many factors including the local economy. The magnitude of the tax impact would be relative to the size and overall health of the local and regional economy. In the case of PSF, the tax impacts would be significantly beneficial to the host community; the WCS facility would be constructed in an area with a more established economy and therefore would contribute a smaller overall percentage of government tax revenues.

For short-term storage, the GEIS discussed the PFS' conclusion that the socioeconomic impacts of construction and operation of an away-from-reactor CISF would have a small socioeconomic impact, especially given the sparse local population. NRC concluded that any away-from-reactor CISF would be similar to those described in the PFS EIS — potentially large beneficial economic impacts to rural communities with small adverse socioeconomic impacts due to increased demand for housing and public services.

The analysis that follows focuses on the three-county region used for IMPLAN modeling – Gaines and Andrews Counties, Texas, and Lea County, New Mexico to assess potential socioeconomic impacts of the spent nuclear fuel CISF.

2.2 IMPACT ANALYSIS METHODOLOGIES

This section will summarize the methodology used to conduct the economic impact assessment for the proposed facility. There have been two previous economic impact analyses conducted to permit two other facilities on the WCS property:

- Waste Control Specialists LLC, 2007. Socioeconomic Impacts of the Waste Control Specialists Proposed Low-Level Radioactive Waste Disposal Facility, Andrews County, Texas, March 16, 2007; and
- Waste Control Specialists LLC, 2008. Socioeconomic Impacts of the Waste Control Specialists Radioactive Material Storage and Processing Facility, Andrews County, Texas for the Renewal of License No. R04971, July 3, 2008.

The analysis in this section does not incorporate the economic impacts of the facilities listed above. Another difference with the previous studies is that this study does not utilize the RIMS II Economic Multipliers to assess the facility's direct, indirect, and final economic impacts during the initial construction period or during the ongoing operations phase.¹ The U.S. Bureau of Economic Analysis (BEA) has since discontinued supporting the RIMS II model, so this analysis was performed using the IMPLAN model. In addition to also being an input-output economic analysis tool, the IMPLAN model provides greater analytical detail and is more frequently updated. The IMPLAN model will be the tool that provides insight into how the proposed construction and operational activities may affect the ROI.

2.2.1 IMPLAN Economic Multipliers

IMPLAN stands for "IMPact analysis for PLANning" and consists of the data and software created by MIG, Inc. Originally developed for the U.S. Forest Service, IMPLAN is now privately owned and supported. IMPLAN uses input-output analysis in combination with region-specific social accounting matrices and multiplier models to determine the potential economic impacts of a defined activity on the regional economy. The data in the IMPLAN model contain county, state, zip code, and federal

¹ The resulting analyses from these two previous studies are on file with WCS and the licensing entities.

economic statistics that are specialized by region. The multiplier tools within IMPLAN can be used to estimate the secondary impacts, stemming from an economic change, such as investment of construction dollars or the outlay of the operational expenses.

There are three types of effects measured with a multiplier: the direct, the indirect, and the induced effects. IMPLAN provides the following definitions in its glossary of terms on the company website (https://implan.com/index.php?option=com_glossary&task=list&letter=F&Itemid=1866).

Table 2-1: Definitions of Economic Effects Based on Using the IMPLAN Model	
Direct effects	The set of expenditures applied to the predictive model (i.e., I/O multipliers) for impact analysis. It is a series (or single) of production changes or expenditures made by producers/consumers as a result of an activity or policy. These initial changes are determined by an analyst to be a result of this activity or policy. Applying these initial changes to the multipliers in an IMPLAN model will then display how the region will respond, economically to these initial changes.
Indirect effects	The impact of local industries buying goods and services from other local industries. The cycle of spending works its way backward through the supply chain until all money leaks from the local economy, either through imports or by payments to value added. The impacts are calculated by applying Direct Effects to the Type I Multipliers.
Induced effects	The response by an economy to an initial change (direct effect) that occurs through re-spending of income received by a component of value added. IMPLAN's default multiplier recognizes that labor income (employee compensation and proprietor income components of value added) is not a leakage to the regional economy. This money is recirculated through the household spending patterns causing further local economic activity.

For the CISF analysis, a regional model was built using data for Gaines and Andrews Counties in Texas and Lea County in New Mexico. The IMPLAN software combined these three geographies into a single region for the analysis.

The IMPLAN model's baseline characteristics for the three-county economic analysis region are summarized below in **Table 2-2**. The estimated population of the region was 103,782 residents organized into 34,734 households, with 60,170 workers. The region's land area is almost 7,400 square miles and it had a gross regional product that exceeded \$7 billion in 2013. The region's top industry for employment was *Support Activities for Oil and Gas Operations*, with more than 8,148 workers, who collectively earned more than \$645 million in labor income.² The *Education and Local Government* sector was the second largest employer with approximately 3,432 workers, followed by *Extraction of Natural Gas and Crude Petroleum*, which employed 3,093 persons during 2013.

Various components of these regional data are considered later in this discussion, in order to give additional perspective on the impact of the proposed facility on the analysis region.

² Note that in the IMPLAN model, according to their glossary of terms, labor income is defined as "All forms of employment income, including Employee Compensation (wages and benefits) and Proprietor Income."

Table 2-2: IMPLAN Model – Economic Overview for Three-county Economic Analysis Region

Table 2-2: IMPLAN Model – Economic Overview for Three-county Economic Analysis Region				
Model Information				
Model Year		2013	Value Added	
GRP		\$7,232,027,415	Employee Compensation	\$3,010,447,804
Total Personal Income		\$4,504,796,000	Proprietor Income	\$754,663,331
Total Employment		60,170	Other Property Type Income	\$2,771,458,698
			Tax on Production and Import	\$695,457,582
Number of Industries		209		
Land Area (Sq. Miles)		7,396	Total Value Added	\$7,232,027,415
Area Count		3		
			Final Demand	
Population		103,782	Households	\$3,222,299,071
Total Households		34,734	State/Local Government	\$720,826,071
Average Household Income		\$129,695	Federal Government	\$112,581,670
			Capital	\$1,941,911,573
Trade Flows Method	Trade Flows Model		Exports	\$6,923,006,334
Model Status	Multipliers		Imports	-\$5,480,401,477
			Institutional Sales	-\$208,195,829
Economic Indicators				
Shannon-Weaver Index		.66093	Total Final Demand:	\$7,232,027,413
Top Ten Industries				
Sector	Description	Employment	Labor Income	Output
38	Support activities for oil and gas operations	8,148	\$645,023,900	\$1,478,596,000
534	* Employment and payroll of local govt, education	3,432	\$199,053,200	\$224,903,800
20	Extraction of natural gas and crude petroleum	3,093	\$414,289,600	\$1,866,120,000
411	Truck transportation	2,661	\$191,987,300	\$439,832,800
395	Wholesale trade	2,083	\$147,388,600	\$448,128,000
533	* Employment and payroll of local govt, non-education	2,006	\$119,118,400	\$136,526,000
37	Drilling oil and gas wells	1,705	\$160,954,300	\$622,492,100
502	Limited-service restaurants	1,632	\$44,977,040	\$97,454,840
501	Full-service restaurants	1,108	\$19,444,230	\$48,600,760
464	Employment services	1,100	\$35,178,440	\$51,651,730
Areas In the Model				
Texas	Andrews County			
Texas	Gaines County			
New Mexico	Lea County			

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2.2.2 Socioeconomic Impact Analysis

The evaluation of the potential social impacts of the CISF considered residents and communities located within a 30-mile ROI (see **Figure 1**) and the three-county economic analysis region. The social impact analysis in this section relies largely on demographic data laid out in **Chapter 1**. Additionally, this section summarizes the results from the IMPLAN model for the construction phase and operations phase impacts.

To assess the relative magnitude of the impacts within the IMPLAN model's analysis region and the 30-mile ROI, the guidelines from the NRC (1996) and the DOE (1999) - documented in the URENCO Environmental Report - were used. These measures were used to assess the levels of socioeconomic impact:

- Employment/economic activity impacts (Geography analyzed: three-county economic analysis region)
 - Small = <0.1% increase in employment
 - Moderate = 0.1 – 1.0 percent increase in employment
 - Large = > 1.0 percent increase in employment
- Population/housing impacts (Geography analyzed: 30-mile ROI)
 - Small = <0.1 % increase in population growth and/or <20% of vacant housing units required to accommodate people moving to the area
 - Moderate = 0.1 – 1.0% increase in population growth and/or 20–50% of vacant housing units required to accommodate people moving to the area
 - Large = >1% increase in population growth and/or >50% of vacant housing units required to accommodate people moving to the area
- Public Revenue impacts (Geography analyzed: three-county economic analysis region)
 - Small = <0.1% increase in local revenues
 - Moderate = 1 - 5% increase in local revenues
 - Large = >5% increase in local revenues

2.3 IMPACTS OF FACILITY CONSTRUCTION

WCS has estimated the cost of the construction the first phase of the CISF to be approximately \$16.1 million (including all excavation and grading, fencing, and security system costs, plus building sufficient storage pads for the first 200 storage systems). Using this estimate, the IMPLAN model analyzed the economic impacts of construction (in nominal dollars) assuming all expenditures (\$16.1 million) occurred during 2018. The initial cost estimate is an approximate amount and the timing of the construction could cause the actual costs to vary. The economic activity sector from the IMPLAN model used for this analysis was *Sector 58 - Construction of Other Non-Residential Structures* (NAICS Code 23). There may be additional construction costs of up to \$40 million to install site infrastructure, utilities, a rail line, and support buildings including Administration, Radiation Safety, Security, and Offload/Transfer buildings. However, this additional investment was not included in the construction costs analyzed here. As proposed, Phase 1 could provide capacity for approximately five years of operations. If the demand exists, additional phases of the project will be constructed in the same five-year patterns for up to eight phases. For this analysis, only the initial investment of \$16.1 million was considered.

Table 2-3 provides an overview of the economic impacts generated by the \$16.1 million that will be spent on the facility's construction. Direct effects include 81.7 jobs, more than \$6,302,032 in labor income, and \$7,477,815 in value-added output.³ The indirect effects of the project's construction include almost 20 jobs, a labor income of more than \$1,087,601, and a value-added output of approximately \$2,002,337. Indirect effect output in 2018 is anticipated to be approximately \$3,615,613. Note that the IMPLAN model's estimate of value-added output means the difference between an industry's or an establishment's total output and the cost of intermediate inputs; it equals 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). The induced effect resulting from construction would include 20.5 person-years of employment, \$855,015 in labor income, approximately \$1,746,544 value added output, and \$2,982,770 in total output.

Table 2-3: Total Impact of Construction Phase (2018)				
CONSTRUCTION PHASE – 2018, 16M construction				
Impact Type	Person-Years Employment	Labor Income	Value Added	Output
Direct Effect	81.7	\$6,302,032	\$7,477,815	\$16,100,001
Indirect Effect	19.9	\$1,087,601	\$2,002,337	\$3,615,613
Induced Effect	20.5	\$855,015	\$1,746,544	\$2,982,770
Total Effect	122.1	\$8,244,648	\$11,226,696	\$22,698,384

Source: MIG, Inc. IMPLAN model – Gaines and Andrews Counties, Texas, and Lea County, New Mexico. CMEC utilizing inputs from WCS.

Table 2-4 shows the top ten industries benefiting from the project's construction in the modeled region by employment, labor income, value added, and output. By far (as would be expected), the largest employment gains from the \$16.1 million expenditure go to *Sector 58 - Construction of Other New Nonresidential Structures* (81.7 jobs) followed by *Sector 395 - Wholesale Trade*, and *Sector 406 - Retail-Miscellaneous Store Retailers*. The industry sector with the highest labor income gain is also *Sector 58*, with more than \$6 million in anticipated labor income, followed by *Wholesale Trade* sector and *Sector 441 - Truck Transportation*. The estimated value-added output is greatest for *Sector 58*, followed by *Wholesale Trade*, and *Sector 441 - Owner-Occupied Dwellings*. Total output is also highest in *Sector 58*, followed by *Wholesale Trade*, and *Owner-Occupied Dwellings*. Note that depending on the category of impact, the economic benefits of construction phase output affect the various economic sectors differently. Also note that, outside of Sector 58, the impacts of the construction are modest and spread broadly through the regional economy.

³ It is important for the reader to understand that the IMPLAN model's definition of a "job" is one person employed for one year or a "person-year" of employment. This definition of employment may include a person without a job, who is hired for a year, or a person with a job, who retains it for another year. The definition of a "job" in the IMPLAN model does not mean that one person finds continuous long-term employment. Thus, the estimated employment effect of constructing the WCS's CISF is a total of 122 person years of employment.

Table 2-4: Construction Phase (2018) – Top Ten by Category

Sector	Description	Employment	Labor Income	Value Added	Output
TOP TEN INDUSTRIES - EMPLOYMENT					
58	Construction of other new nonresidential structures	81.7	\$6,302,032	\$7,477,815	\$16,100,001
395	Wholesale trade	3.3	\$258,352	\$497,531	\$739,699
406	Retail - Miscellaneous store retailers	1.8	\$62,963	\$67,803	\$91,028
407	Retail - Nonstore retailers	1.7	\$27,087	\$87,162	\$165,181
411	Truck transportation	1.6	\$127,780	\$141,637	\$287,851
501	Full-service restaurants	1.6	\$30,664	\$36,150	\$77,696
502	Limited-service restaurants	1.6	\$48,113	\$68,551	\$105,679
405	Retail - General merchandise stores	1.5	\$48,181	\$73,881	\$112,026
440	Real estate	1.4	\$17,062	\$213,271	\$277,802
403	Retail - Clothing and clothing accessories stores	1.2	\$30,170	\$57,876	\$93,660
TOP TEN INDUSTRIES - LABOR INCOME					
58	Construction of other new nonresidential structures	81.7	\$6,302,032	\$7,477,815	\$16,100,001
395	Wholesale trade	3.3	\$258,352	\$497,531	\$739,699
411	Truck transportation	1.6	\$127,780	\$141,637	\$287,851
445	Commercial/ industrial machinery + equipment rental and leasing	0.6	\$79,280	\$191,880	\$245,751
20	Extraction of natural gas and crude petroleum	0.5	\$68,694	\$247,026	\$360,096
449	Architectural, engineering, and related services	0.9	\$66,512	\$65,131	\$125,827
482	Hospitals	0.9	\$64,532	\$73,817	\$139,363
406	Retail - Miscellaneous store retailers	1.8	\$62,963	\$67,803	\$91,028
396	Retail - Motor vehicle and parts dealers	0.6	\$48,392	\$75,042	\$93,220
405	Retail - General merchandise stores	1.5	\$48,181	\$73,881	\$112,026
TOP TEN INDUSTRIES - VALUE ADDED					
58	Construction of other new nonresidential structures	81.7	\$6,302,032	\$7,477,815	\$16,100,001
395	Wholesale trade	3.3	\$258,352	\$497,531	\$739,699
441	Owner-occupied dwellings	0	\$0	\$408,735	\$582,771
20	Extraction of natural gas and crude petroleum	0.5	\$68,694	\$247,026	\$360,096
440	Real estate	1.4	\$17,062	\$213,271	\$277,802
445	Commercial/ industrial machinery + equipment rental and leasing	0.6	\$79,280	\$191,880	\$245,751
411	Truck transportation	1.6	\$127,780	\$141,637	\$287,851
407	Retail - Nonstore retailers	1.7	\$27,087	\$87,162	\$165,181
433	Monetary authorities and depository credit intermediation	0.7	\$38,870	\$79,101	\$140,852
396	Retail - Motor vehicle and parts dealers	0.6	\$48,392	\$75,042	\$93,220

Table 2-4: Construction Phase (2018) – Top Ten by Category

Sector	Description	Employment	Labor Income	Value Added	Output
TOP TEN INDUSTRIES - OUTPUT					
58	Construction of other new nonresidential structures	81.7	\$6,302,032	\$7,477,815	\$16,100,001
395	Wholesale trade	3.3	\$258,352	\$497,531	\$739,699
441	Owner-occupied dwellings	0	\$0	\$408,735	\$582,771
156	Petroleum refineries	0.1	\$12,693	\$74,537	\$503,993
20	Extraction of natural gas and crude petroleum	0.5	\$68,694	\$247,026	\$360,096
411	Truck transportation	1.6	\$127,780	\$141,637	\$287,851
440	Real estate	1.4	\$17,062	\$213,271	\$277,802
445	Commercial/ industrial machinery + equipment rental and leasing	0.6	\$79,280	\$191,880	\$245,751
407	Retail - Nonstore retailers	1.7	\$27,087	\$87,162	\$165,181
49	Electric power transmission and distribution	0.1	\$12,531	\$29,523	\$146,549

Source: MIG, Inc. IMPLAN model – Gaines and Andrews Counties, Texas, and Lea County, New Mexico. CMEC utilizing inputs from WCS.

When the CISF facility expands its storage capacity over time (eight phases are planned in total), there will be additional construction activities to build these future phases. Even with this initial investment, the analysis of economic impacts shows the construction would be beneficial to the region from a direct, indirect, induced, and value-added output perspective.

The IMPLAN model estimates that 122 person-years of employment would be created through the construction project's direct, indirect, and induced effects. Total 2013 employment in the three-county analysis region is 60,170 jobs. Therefore, the 0.2% increase to regional employment represents a Moderate Effect, according to the previously discussed criteria. This may represent a maximum impact because in some cases, local construction workers may simply transfer to a new project within an existing firm, rather than represent a new hire.

With regard to wages, the Texas Labor Market Information website provides employment and wage information by quarter by industry. Data for total employment and income by county is available, but wage information by county by industry is not available (the Bureau of Labor Statistics was queried for quarterly wage information for the non-residential building construction sector in Andrews County but the information was non-disclosable). Looking at the construction sector (Sector 23) for Texas, based on the quarterly average weekly wage, a total average weekly wage for 2014 was determined. Assuming a 50-week work year, the average construction sector annual income in Texas for 2014 was \$56,400 (Texas Labor Market Information 2015).

According to the IMPLAN model, the region consisting of Andrews County, Gaines County, and Lea County (NM) had an average annual income (including wages and benefits) of \$77,136 in the construction sector (based on total labor income for the sector divided by the 82 direct jobs in the sector) during 2013.

2.4 IMPACTS OF FACILITY OPERATION

2.4.1 Employment Information for Current and Planned Operations

WCS provided information about employment based on current staff, as well as anticipated staffing needs to support CISF operations. As of spring 2015, on-site employment (at all WCS facilities) included the following positions:

- Accounting – 3 employees
- Administrative – 16 employees
- Business Development – 12 employees
- Canister Production Facility – 6 employees
- Engineering – 5 employees
- Environmental – 9 employees
- Field Administration – 15 employees
- Integrated Services – 12
- Laboratory – 3 employees
- Landfill – 7 employees
- Landfill CWF – 6 employees
- Landfill FWF – 12 employees
- Licensing – 4 employees
- Maintenance – 21 employees
- MWTF Treatment and Storage – 11 employees
- Quality Assurance – 4 employees
- Rad Safety – 27 employees
- Safety – 4 employees
- Security – 18 employees
- Various – 9 employees

The total number of employees working at the facility would be approximately 204, with 184 of those employees located at the site and the others being corporate employees. As of mid-2015, approximately 50 percent of the site employees lived in Texas and 50 percent lived in New Mexico. In Texas, most employees live in the city of Andrews and, in New Mexico, the workers are evenly split between residents of Hobbs and residents of Eunice. The average annual salary for WCS employees in 2015 dollars was \$80,334. Employees specifically assigned to the CISF site would be an estimated 20 trained security officers. For the purposes of this analysis, it was assumed that the new jobs created by the CISF operations would be limited to 20 security officer positions, which were incorporated into the input of the IMPLAN model for the operations phase.

2.4.2 Economic Impacts of Operations

WCS provided estimates of annual operating expenditures, not including transportation, professional services, or capital costs. The operating costs accounted for in the IMPLAN model consisted of the following: administration, the purchase of concrete overpacks, labor costs during loading and/or unloading, and labor costs during the caretaker period. Decommissioning costs for the facility are not included. The estimated annual operating costs total \$75.39 million per year. This total cost was disaggregated into two event categories for modelling purposes: operating costs for the *Sector 471 – Hazardous Waste Disposal*, estimated to be approximately \$23.4 million and operating costs associated with the concrete overpacks. These operating costs of \$52 million per year were modeled as an event under *Sector 56 - Construction of New Highways and Streets* (since these activities are expected to be less likely to resemble residential or commercial construction). Model inputs included assuming that the local purchase percentage of the operating costs related to concrete overpacks

would constitute approximately five percent (which assumes that they are manufactured outside of the three-county analysis region).

Once issued, the operating license for this facility would be valid for 20 years. To provide an overview of its regional economic impacts, the estimated annual operating expenditure was entered into the regional IMPLAN model. The activity or “event” year was set to 2019 for the first year of operations and the model was re-run for each event year over a ten-year period (2019-2028) which would represent the first ten years of the facility’s operations. During each year, the operations cost of \$75.39 million, including the purchase of \$52 million of concrete overpacks, and the employment estimates (20 person-years of employment by WCS), were identical. **Table 2-5** below shows the summary information of the economic impacts from the facility’s operations between 2019 and 2028. The total employment, labor income, value-added output, and total output impacts decline because it was assumed the expenditures were fixed in nominal dollars.

Table 2-5: Summary of Economic Impacts from Operations (2019–2028) in 2015 Dollars				
2019				
Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	29.3	\$7,338,445	\$12,421,597	\$24,256,100
Indirect Effect	39.1	\$2,105,162	\$3,629,120	\$6,623,560
Induced Effect	27.8	\$1,095,874	\$2,238,897	\$3,806,369
Total Effect	96.2	\$10,539,481	\$18,289,613	\$34,686,028
2020				
Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	29.3	\$7,200,770	\$12,188,558	\$23,839,021
Indirect Effect	38.4	\$2,068,912	\$3,566,403	\$6,508,737
Induced Effect	27.3	\$1,075,689	\$2,197,659	\$3,736,261
Total Effect	95.1	\$10,345,372	\$17,952,620	\$34,084,020
2021				
Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	29.3	\$7,058,170	\$11,973,099	\$23,429,235
Indirect Effect	37.8	\$2,033,298	\$3,504,790	\$6,395,944
Induced Effect	26.8	\$1,055,006	\$2,155,402	\$3,664,418
Total Effect	93.9	\$10,146,473	\$17,633,291	\$33,489,596
2022				
Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	29.3	\$6,922,098	\$11,755,026	\$23,026,604
Indirect Effect	37.1	\$1,998,306	\$3,444,261	\$6,285,141
Induced Effect	26.3	\$1,035,153	\$2,114,841	\$3,595,461
Total Effect	92.7	\$9,955,557	\$17,314,128	\$32,907,205

Table 2-5: Summary of Economic Impacts from Operations (2019–2028) in 2015 Dollars

2023				
Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	29.3	\$6,792,234	\$11,545,248	\$22,642,329
Indirect Effect	36.5	\$1,964,943	\$3,386,691	\$6,179,985
Induced Effect	25.8	\$1,016,209	\$2,076,139	\$3,529,662
Total Effect	91.6	\$9,773,386	\$17,008,079	\$32,351,976
2024				
Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	29.3	\$6,664,807	\$11,339,229	\$22,264,474
Indirect Effect	35.9	\$1,932,137	\$3,330,086	\$6,076,592
Induced Effect	25.3	\$997,613	\$2,038,146	\$3,465,071
Total Effect	90.6	\$9,594,557	\$16,707,461	\$31,806,136
2025				
Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	29.3	\$6,539,770	\$11,136,900	\$21,892,935
Indirect Effect	35.3	\$1,899,880	\$3,274,428	\$5,974,931
Induced Effect	24.9	\$979,358	\$2,000,851	\$3,401,664
Total Effect	89.5	\$9,419,008	\$16,412,179	\$31,269,531
2026				
Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	29.3	\$6,417,078	\$10,938,195	\$21,527,609
Indirect Effect	34.7	\$1,868,163	\$3,219,703	\$5,874,975
Induced Effect	24.4	\$961,438	\$1,964,239	\$3,339,421
Total Effect	88.4	\$9,246,679	\$16,122,138	\$30,742,005
2027				
Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	29.3	\$6,296,689	\$10,743,051	\$21,168,386
Indirect Effect	34.1	\$1,836,976	\$3,165,893	\$5,776,694
Induced Effect	24	\$943,847	\$1,928,300	\$3,278,319
Total Effect	87.4	\$9,077,512	\$15,837,244	\$30,223,400
2028				
Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	29.3	\$6,178,559	\$10,551,401	\$20,815,169
Indirect Effect	33.6	\$1,806,310	\$3,112,985	\$5,680,061
Induced Effect	23.5	\$926,578	\$1,893,019	\$3,218,339
Total Effect	86.4	\$8,911,447	\$15,557,405	\$29,713,568

Table 2-5: Summary of Economic Impacts from Operations (2019–2028) in 2015 Dollars				
Total of Totals: 2019 – 2028				
Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	293.0	\$67,408,620	\$114,592,304	\$224,861,862
Indirect Effect	362.5	\$19,514,087	\$33,634,360	\$61,376,620
Induced Effect	256.1	\$10,086,765	\$20,607,493	\$35,034,985
Total Effect	911.8	\$97,009,472	\$168,834,158	\$321,273,465

Source: MIG, Inc. IMPLAN model – Gaines and Andrews Counties, Texas, and Lea County, New Mexico. CMEC utilizing inputs from WCS.

Overall, the IMPLAN model estimates that the CISF will create 912 person-years of employment over a ten-year period through the direct, indirect, and induced effects of the facility's operations. Over the ten-year period, the average annual direct, indirect, and induced total employment was 91.2 person-years of employment. Total employment in the three-county region of analysis region was 60,170 in 2013. Therefore, the estimated 0.15% increase in employment represents a small positive effect.

According to the IMPLAN regional economic model for Andrews County, Gaines County, and Lea County (NM), the average annual income (wages and benefits) for the hazardous waste disposal facilities sector (based on total labor income for the sector divided by the 82 direct jobs in the sector) was \$74,822 (model year 2013). WCS stated that average income for WCS employees was \$80,334 (2015). It appears that wages and benefits associated with waste disposal activities at WCS and in the economic analysis region exceed the average income for the sector at the State level. Likewise, the wages at WCS exceeds the *Waste Management and Remediation Services* sector (NAICS 562) statewide, which paid an annual average income of \$55,920 during 2014 (Texas Labor Market Information 2015).

2.5 OTHER SOCIOECONOMIC IMPACTS

2.5.1 Competition for Labor and Wage Rates

The impacts of the CISF's operation on the regional labor market and wages can be assessed by relating its impact to regional employment characteristics. Taking Andrews County as representative of the local labor market conditions in the ROI, U.S. Census Bureau (ACS 2009–2013) data showed that out of 11,457 persons 16 years and over, approximately 5.9 percent were unemployed. In Gaines County, Texas, out of 12,468 persons, 5.8 percent were unemployed. These unemployment rates were much lower than the State of Texas' unemployment rate of 8.1 percent during the same period. In Lea County, New Mexico, out of 48,357 persons, approximately 8.4 percent were unemployed compared to 9.7 percent in New Mexico overall. See **Table 1-24** and **Table 1-26**. More recent information from the U.S. Bureau of Labor Statistics indicates that the unemployment rates in the economic analysis region were currently lower than the rates available from the American Community Survey. As of April 2015, in Andrews County, out of 9,625 persons in the civilian labor

force, approximately 274 (2.8 percent) were unemployed. In Gaines County during the same time period, out of 9,519 persons approximately 268 (2.8 percent) were unemployed. In Lea County, New Mexico, as of April 2015, out of 31,322 persons, there were 1,496 unemployed persons (approximately 4.8 percent).

WCS estimates there will be 204 persons working in association with the CISF activities, including current positions at the facility plus approximately 20 new positions specifically devoted to CISF activities. According to the IMPLAN projections, over the 10-year time period a total of 912 person-years of employment would be created through direct, indirect, and induced effects of operations.

2.5.2 Population and Housing

The population of the ROI, according to the 2010 decennial census and based on the total population of all counties with any portion of the county in the ROI, was 241,279 persons in Andrews, Ector, Gaines, and Winkler Counties in Texas and Lea County, New Mexico. The IMPLAN regional model's area of analysis (Andrews and Gaines Counties, Texas, and Lea County, New Mexico) estimated the region to have 103,782 persons, which may more accurately represent the ROI (see **Table 1-16**). (Ector County has only a small portion of its boundary within the 30-mile ROI and has a relatively large population of 137,130 residents). The majority of the employment impacts are expected to occur in Andrews County, Texas, and Lea County, New Mexico.

The WCS's June 2008 Socioeconomic Impact Assessment references an earlier study from 1996 that estimated approximately half of the future workers at the WCS facility would relocate to the region. Other jobs would be filled locally with trained and experienced workers. Indirect and induced jobs could be filled by workers already residing in the ROI. A similar breakdown could be anticipated for the proposed spent fuel CISF activities.

The construction employment impact is estimated at approximately 82 person-years of direct employment (2018) and each year employment impact from operation is estimated to be approximately 29 person-years of employment. Therefore a total of 111 person-years of employment could be created in the first couple years. Because these figures represent only direct employment, if half of those workers moved to the ROI, then that would mean approximately 55 people. The IMPLAN model indicates a population of 103,782 in the region. That number of people (excluding other family members) would constitute approximately 0.053 percent of the population or a small impact, based on the criteria in the URENCO study.

Lea County had 2,683 vacant housing units and Andrews County had 555 vacant housing units in 2010 (see **Table 1-19**). Assuming those figures represent available vacancies, then 55 households seeking to purchase or rent housing units out of 3,238 available units constitutes 1.7 percent of the vacant units. This potential housing need generated by the CISF facility would constitute a small impact on housing according to the criteria in the URENCO study.

Currently, according to WCS, approximately half their employees live in Texas and the other half live in New Mexico. Travel time to work was examined. According to the American Community Survey, over the years 2009–2013, more than 18 percent of commuters in Andrews County traveled more than 45 minutes to reach their job sites compared to 14.8 percent in Texas overall (see **Table 1-31**). More than seven percent of commuters travelled 45 minutes or more to their jobs in Gaines County and Lea County. These existing journey-to-work patterns suggest that some workers who live up to 45 minutes away from the CISF facility might choose to commute there, if they obtained a job at the facility, rather than choosing to move closer to the facility. This may indicate that substantial in-migration of population to the ROI would not be anticipated from the facility's operation-related job growth. Based on 2010 U.S. Census Bureau data, approximately 12.0 percent of total housing units were vacant in Lea County and 10.6 percent of housing units were vacant in Andrews County (see **Table 1-18**). It does not appear that there would be an unmet demand for housing in the ROI created by the new spent fuel CISF project.

2.5.3 Changes in Land Value and Uses

The WCS's spent fuel CISF is one component of a larger waste management plant that occupies 1,338 acres in the middle of approximately 14,400 acres owned by WCS in Andrews County, Texas. The land surrounding the facility is high plains scrub/brush land used for rangeland, limited dryland farming and oil and gas extraction. Since the continued operations at the processing and storage component of the facility would be entirely contained within the WCS property and adjacent uses are characterized by agricultural and resource extraction operations, no negative impacts on proximal property values are expected as a result of the new facility operation.

The small to moderate employment impact described above and the subsequent demographic impact described below further suggests that real estate values in and around the City of Andrews will not be impacted adversely. The closest community to the CISF is Eunice, New Mexico. Eunice was once a small town characterized by older residential and commercial structures, vacant lots, a nearby gasoline plant, active oil and gas wells, pipelines, and related facilities. However, following the construction of the Louisiana Energy Services URENCO plant, employment in the Eunice area has increased and the city has experienced a surge of new development, including a new Main Street landscaped boulevard, in addition to several new businesses and restaurants. The URENCO Environmental Report estimated approximately 400 new jobs (8-year average) in the region associated with the plant's construction. In fact, according to the U.S. Census Bureau, the population of Eunice rose from 2,922 residents during the decennial census to 3,147 residents in 2014 according to American Factfinder.

The construction employment impact is estimated at approximately 82 person-years of direct employment (2018) and each year employment impact from operation is estimated to be approximately 29 person-years of employment. Therefore a total of 111 person-years of employment could be directly created in the first couple years as a result of the WCS CISF. Indirect

employment during construction is estimated to be approximately 20 person-years of employment while induced effects would be approximately 21 person-years of employment. Over ten years from 2019–2028, total direct (293), indirect (363), and induced (256) person-years of employment associated with CISF operations are estimated to total 912 person-years of employment. Some indirect and induced employment would likely go to existing local residents rather than new workers moving into the area. The proposed WCS spent fuel CISF would likely have a positive effect on land values in the overall area, similar to the effects from construction of the URENCO facility.

2.5.4 Government Impacts to the Region of Interest

According to the IMPLAN model, various tax benefits would accrue to state and local governments, based on the economic activity associated with the construction phase of the spent nuclear fuel CISF facility. At the state and local level, tax revenues from employee compensation are estimated to be \$14,744 from the construction activities (**Table 2-6**). Taxes on production and imports would exceed \$500,000. Taxes generated by households would be approximately \$123,103 and corporations would generate \$16,769 in government revenue. At the federal level, employee compensation-generated tax revenues would exceed \$856,119, plus \$40,074 in proprietor income and \$112,035 of tax on production and imports. Households would generate \$549,782 in federal taxes and corporations would generate \$168,387 in federal taxes.

Table 2-6: Local, State, and Federal Estimated Tax Impacts of Construction (2018)				
CONSTRUCTION PHASE - 2018, 16M construction				
TAX IMPACT - STATE AND LOCAL				
Employee Compensation	Proprietor Income	Tax on Production and Imports	Households	Corporations
\$14,744	\$0	\$509,479	\$123,103	\$16,769
TAX IMPACT – FEDERAL				
Employee Compensation	Proprietor Income	Tax on Production and Imports	Households	Corporations
\$856,119	\$40,074	\$112,035	\$549,782	\$168,387

Source: MIG, Inc. IMPLAN model – Gaines and Andrews Counties, Texas, and Lea County, New Mexico. CMEC utilizing inputs from WCS.

Once the facility begins operations, additional state and local tax revenues would be generated on an ongoing basis. Approximately \$181,969 in employee compensation would be generated from the first ten years of operations, along with \$13,881,967 in taxes on production and imports (**Table 2-7**). Household taxes would be \$1,442,781 and corporations would generate \$389,927 in state and local taxes.

Table 2-7: Local and State Estimated Tax Impacts of Operations (2019–2028)					
Total State and Local Tax	Employee Compensation	Proprietor Income	Tax on Production and Imports	Households	Corporation
2019	\$19,773	\$0	\$1,497,611	\$156,747	\$42,077
2020	\$19,408	\$0	\$1,470,048	\$153,861	\$41,301
2021	\$19,034	\$0	\$1,446,930	\$150,903	\$40,646
2022	\$18,676	\$0	\$1,422,242	\$148,064	\$39,949
2023	\$18,333	\$0	\$1,398,328	\$145,355	\$39,276
2024	\$17,997	\$0	\$1,374,818	\$142,696	\$38,614
2025	\$17,667	\$0	\$1,351,703	\$140,086	\$37,964
2026	\$17,343	\$0	\$1,328,979	\$137,523	\$37,325
2027	\$17,025	\$0	\$1,306,637	\$135,008	\$36,696
2028	\$16,713	\$0	\$1,284,671	\$132,538	\$36,079
TOTAL	\$181,969	\$0	\$13,881,967	\$1,442,781	\$389,927

Source: MIG, Inc. IMPLAN model – Gaines and Andrews Counties, Texas, and Lea County, New Mexico. CMEC utilizing inputs from WCS.

From the federal perspective, employee compensation taxes would generate \$10,566,288 and proprietor income would generate \$301,707 (**Table 2-8**). Taxes on production and imports would be \$3,052,651. Households would generate approximately \$6,443,530, while corporations would pay approximately \$3,915,549. Overall, these revenues would generate a substantial benefit to the governments receiving the tax payments, as a result of the CISF's operations.

Table 2-8: Federal Estimated Tax Impacts of Operations (2019–2028)					
Total Federal Tax	Employee Compensation	Proprietor Income	Tax on Production and Imports	Households	Corporation
2019	\$1,148,133	\$32,720	\$329,325	\$700,041	\$422,527
2020	\$1,126,964	\$32,125	\$323,264	\$687,149	\$414,734
2021	\$1,105,244	\$31,526	\$318,181	\$673,941	\$408,154
2022	\$1,084,411	\$30,945	\$312,752	\$661,262	\$401,154
2023	\$1,064,531	\$30,392	\$307,493	\$649,164	\$394,399
2024	\$1,045,016	\$29,848	\$302,323	\$637,288	\$387,757
2025	\$1,025,860	\$29,315	\$297,240	\$625,629	\$381,227
2026	\$1,007,055	\$28,790	\$292,243	\$614,185	\$374,808
2027	\$988,597	\$28,276	\$287,330	\$602,950	\$368,497
2028	\$970,477	\$27,770	\$282,500	\$591,921	\$362,292
TOTAL	\$10,566,288	\$301,707	\$3,052,651	\$6,443,530	\$3,915,549

Source: MIG, Inc. IMPLAN model – Gaines and Andrews Counties, Texas, and Lea County, New Mexico. CMEC utilizing inputs from WCS.

The 2018 construction impact on state and local tax revenues according to the IMPLAN model would be approximately \$664,095 (see **Tables 2-6** and **2-8**). Federal taxes from construction would be \$1,726,397. For the first year of operations (2019), the IMPLAN model estimates the total local, state, and federal taxes generated to be approximately \$4,348,954. The state and local portion of that would be \$1,716,208.

Tax revenue information was collected for the counties in the economic model. These data may not include the same components and cannot be added together, but provide some perspective on the scale of county revenue. This information does not include any city-level revenue or federal revenue by county. In Lea County, FY 2014 actual revenues were \$29,894,635 for oil and gas taxes; \$4,530,672 for intergovernmental taxes; \$11,995,615 for property taxes; and \$14,142,022 for gross receipts taxes. These tax amounts totaled \$60,562,944 (Lea County Fiscal Budget 2014). According to the auditor's report, for the fiscal year ending September 30, 2014, tax revenues in Gaines County (property taxes levied for general purposes) totaled \$22,464,031 (Gaines County Fiscal Report 2014). Andrews County tax revenues totaled \$23,119,787 in the fiscal year ending September 30, 2014, according to the Comprehensive Annual Financial Report (Andrews County Annual Financial Report 2014).

The URENCO criteria cannot be precisely applied because the modeled data does not directly relate to the county level revenue data, especially given the varying components that go into that data depending on the county. Generally speaking however, it appears that anticipated state and local tax revenues that would result from the WCS CISF facility would have a small positive impact on the overall county tax revenues, based on recent data.

2.6 OTHER IMPACTS

2.6.1 Environmental Justice Impacts

As discussed in Section 1.1.10, based on Appendix C ("Environmental Justice Procedures") to NUREC-1748, the data on minority and low-income populations in the four-mile radius study area does not indicate the presence of an environmental justice community of concern.

No relocations or displacements would be required for the proposed CISF activities. Any noise or air quality considerations would be primarily limited to temporary impacts during the construction phase. Deliveries of storage casks would happen only a few times a week and transportation would be on rail cars, resulting in limited noise or air quality impacts. Economic impacts from construction and operations would result in small positive effects on the local and regional economy.

To achieve meaningful public involvement consistent with E.O. 12898 on Environmental Justice and E.O. 13166 on Limited English Proficiency, future public involvement activities would include populations within the ROI so that questions and concerns from those living within the larger ROI can be incorporated into the environmental process.

2.6.2 Historic Resources Impacts

As discussed in Section 1.4.1, coordination with the THC has been completed and no further work is required regarding historic resources. Coordination with NMSHPO is underway.

2.6.3 Archeological Resources Impacts

As discussed in Section 1.4.2, no impacts to archeological sites would occur as a result of the proposed project within the boundaries of the 2015 survey area. The archeological survey report is under review at THC. Coordination with NMSHPO is underway.

2.6.4 Scenic Resources Impacts

As discussed in Section 1.4.3, scenic resources in the project area are not considered to be dramatic, unique, or rare. The proposed facility would add to other existing industrial facilities in the area but would not have a substantial adverse effect on the current landscape for area viewers.

2.6.5 Agricultural Impacts

As discussed in Section 1.4.4, agriculture has been in decline as documented by the census of agriculture over the period from 2007 to 2012. Between 2007 and 2012, the acreage of land in farms and average farm size declined in Andrews County and Lea County, and the market value of agricultural production declined over that time period as well. Although these data are county-wide, it is assumed that these general trends toward land use development may continue. Though the proposed CISF project would not take land out of agricultural production, some areas surrounding the WCS facility may convert to developed uses over time as CISF activities are mobilized and with continued development of operations at the URENCO nuclear generation facility in New Mexico.

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