APPENDIX A
SOCIOECONOMIC IMPACT ANALYSIS

SOCIOECONOMIC IMPACTS OF THE PROPOSED SPENT NUCLEAR FUEL CONSOLIDATED INTERIM STORAGE FACILITY ANDREWS COUNTY, TEXAS

WASTE CONTROL SPECIALISTS LLC
DOCKET NO. 72-1050, MAY 2015

Prepared by:

Cox|McLain Environmental Consulting, Inc.
6010 Balcones Drive
Suite 210
Austin, Texas 78731

December 2015

Revision 3

Contents

Page

Appendices:

Figures

Tables

Tables, cont'd

Acronyms and Abbreviations

ACS	American Community Survey
AIF	Andrews Industrial Foundation
APE	Area of Potential Effects
ARMS	Archeological Records Management Section
BLM	Bureau of Land Management
CISF	Consolidated Interim Spent Fuel Storage Facility
DHHS	U.S. Department of Health and Human Services
DOI	Department of Interior
EDCLC	Economic Development Corporation of Lea County
EJ	Environmental Justice
ISFS	Interim Spent Fuel Storage Facility
LEP	Limited English Proficiency
NCHS	National Center for Health Statistics
NHPA	National Historic Preservation Act
NMCRIS	New Mexico Cultural Resources Information System
NMDH	New Mexico Department of Health
NM-EPHT	New Mexico's Environmental Public Health Tracking Network
NMHPD	New Mexico Historic Preservation Division
NM-IBIS	New Mexico Indicator-Based Information System
NRC	Nuclear Regulatory Commission
NRHP	National Register of Historic Places
PRCC	Permian Residential Care Center
ROI	Region of Interest
RTHL	Recorded Texas Historic Landmarks
SAL	State Antiquities Landmark
SHPO	State Historic Preservation Officer
TARL	Texas Archeological Research Laboratory
THC	Texas Historical Commission
USDA	U.S. Department of Agriculture
WCS	Waste Control Specialists LLC

Introduction and Background

Introduction

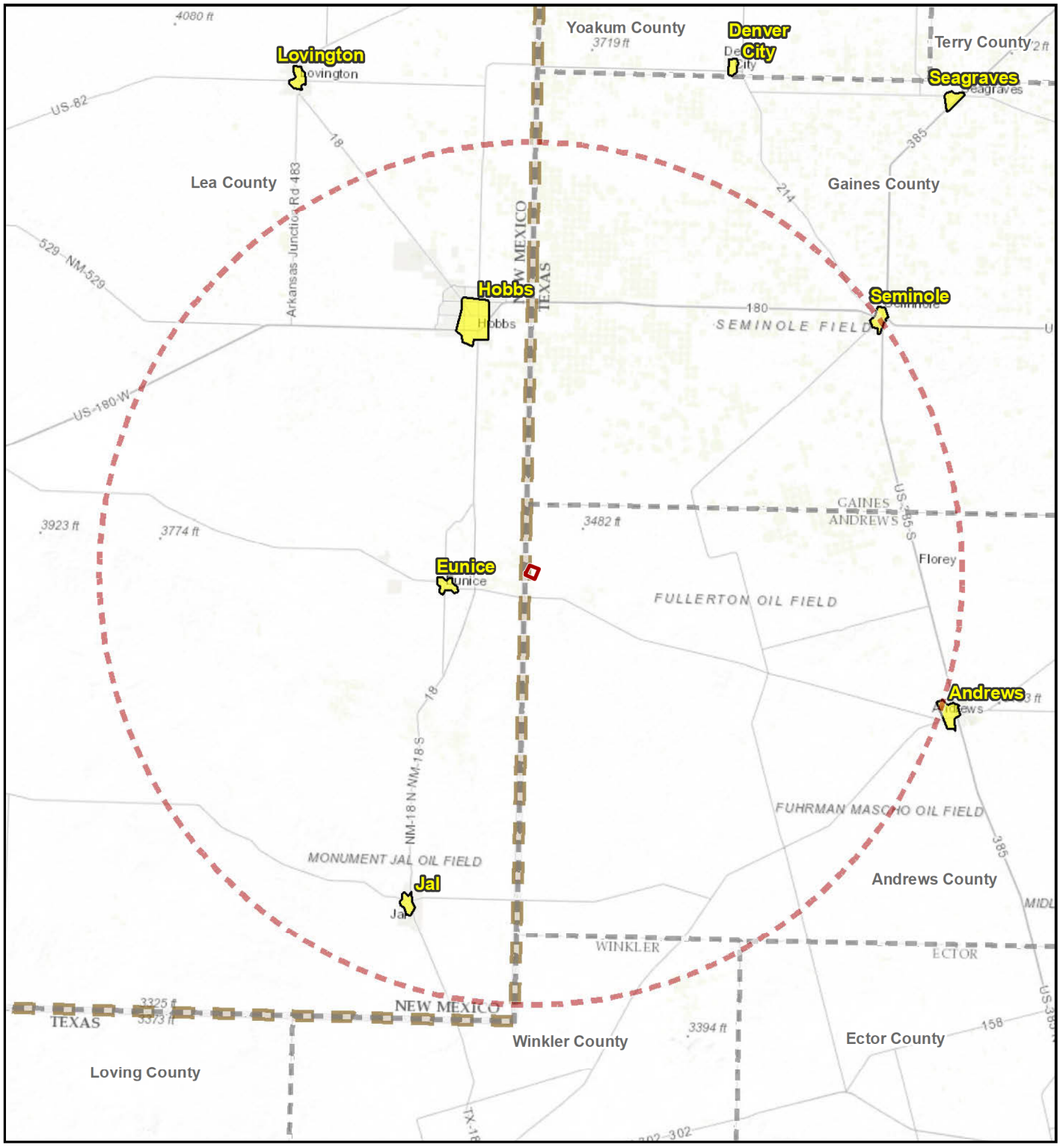
Waste Control Specialists LLC (WCS) has an existing waste disposal facility with various licenses in Andrews County, Texas, near the border of Lea County, New Mexico, on State Highway 176. The site is approximately 30 miles northwest of the county seat of the city of Andrews (see **Figure 1a, Project Location Road Base,** and **Figure 1b, Project Location Aerial Base)**. Photographs of the current facility and proposed project site are in **Appendix A.**

Background

Since 1997, WCS has been licensed and authorized to store, process, and dispose of certain types of radioactive materials at its facilities located in Andrews County, Texas. WCS is authorized to dispose of Class A, B, and C Low-Level Radioactive Waste at the Texas Compact Waste Disposal Facility and the Federal Waste Disposal Facility. WCS is also authorized to dispose of 11e (2) byproduct materials at its Byproduct Material Disposal Facility. These activities are regulated by the Texas Commission on Environmental Quality (TCEQ) governed by regulations determined to be compatible, pursuant to Section 274 of the Atomic Energy Act of 1954, as amended in NUREG-0980 wherein the Nuclear Regulatory Commission (NRC) could delegate some licensing authority to the state level.

In January 20I0, President Barack Obama established the Blue Ribbon Commission on America's Nuclear Future. They were directed by the Secretary of Energy to conduct a comprehensive review of policies for managing the back end of the nuclear fuel cycle and recommend a new strategy. On January 26, 2012, the Blue Ribbon Commission issued a final report making recommendations consisting of eight key elements. Of paramount importance to this licensing action was the Blue Ribbon Commission's recommendation to adopt a new consent-based approach to siting future nuclear waste management facilities in order to initiate prompt efforts to develop one or more consolidated storage facilities (Blue Ribbon Commission 2012).

Development of a spent nuclear fuel Consolidated Interim Storage Facility (CISF) has strong support from the state, regional, and local communities located in West Texas. In April 2014, Texas Governor Rick Perry called for a Texas solution for spent nuclear fuel generated at two reactor sites located in the state. On September 19, 2014, the Texas Radiation Advisory Board also issued a position stating it is in the state's best interest to request that the Federal Government consider Texas as a CISF site. On January 20, 2015, the Andrews County Commissioners unanimously approved a resolution in support of establishing a site in Andrews County, Texas, for the consolidated interim storage of spent nuclear fuel and high level radioactive waste (see **Appendix B**).

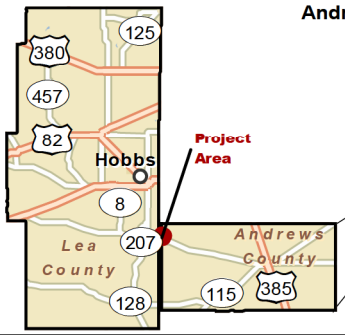


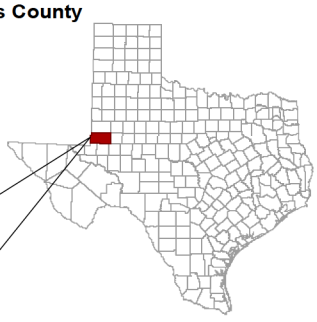
Project Location

30-mile Region of Interest

State Boundary

County Boundary





Data Source: US Census Bureau (2010)
Basemap Source: ESRI (2014)

G:\Projects\WCS\Figure 1a_Project Location_20160404.mxd

0 10 Miles
0 15 Kilometers

Figure 1a

Project Location - Road Base

Proposed Consolidated Interim Spent Fuel Storage Facility

COX | McLAIN
Environmental Consulting

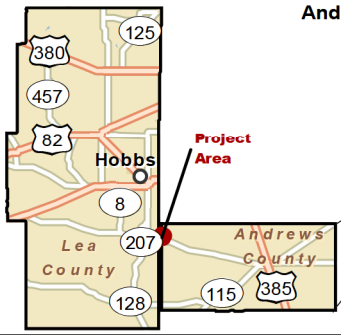
Prepared for: WCS	1 in = 10 miles
	Scale: 1:633,600
Prepared by: SL	Date: 4/4/2016

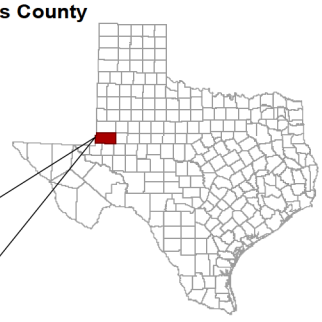
Project Location

30-mile Region of Interest

State Boundary

County Boundary





0 10 Miles

0 15 Kilometers

Figure 1b

Project Location - Aerial Base

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)
Aerial Source: NAIP (2014)

G:\Projects\WCS\Figure 1b_Project Location_aerial_20160404.mxd

Approach

WCS has prepared an Environmental Report (to which this document is attached) to evaluate the radiological and non-radiological impacts associated with the construction and operation of a CISF for spent nuclear fuel in Andrews County, Texas. This Environmental Report was prepared to support a License Application for review and approval by the NRC pursuant to the requirements specified in Title 10 of the *Code of Federal Regulations* (CFR), Part 72, Licensing Requirements for the Independent Storage of Spent Nuclear Fuel, High-Level Radioactive Waste, and Reactor-Related Greater Than Class C Waste.

WCS prepared the Environmental Report consistent with the guidance provided in:

- Regulatory Guide 3.50, Standard Format and Content for A Specific License Application for an Independent Spent Fuel Storage Installation or Monitored Retrievable Storage Facility;
- NUREG-1748, Environmental Review Guidance for Licensing Actions Associated with Nuclear Material Safety and Safeguards (NMSS) Programs; and
- The National Environmental Policy Act (NEPA) (42 U.S. Code [U.S.C.] Sections 4321–4375) and implementing regulations promulgated by the Council on Environmental Quality (CEQ, 40 Code of Federal Regulations [CFR] Part 1500).

Other documents were reviewed in the development of this report:

- NUREG-1790, Louisiana Energy Services National Enrichment Facility License Application – Environmental Report (Revision 5, 2005);
- 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.

WCS is in the process of submitting the license application to construct and operate a CISF. WCS anticipates that the NRC may issue the Final Environmental Impact Statement and License within the next five years. WCS is planning for receipt and storage of spent nuclear fuel until the expiration of the license. Moreover, WCS anticipates continued storage for approximately up to 60 years or until a final geologic repository is licensed and operating in accordance with the Nuclear Waste Policy Act of 1982, as amended.

WCS has hired Cox|McLain Environmental Consulting, Inc. (CMEC) to conduct a socioeconomic impact assessment of the proposed CISF activities at the existing WCS facility. This assessment includes (1) background demographic, social, economic, and cultural resources information about the Region of Interest (ROI); (2) a focused assessment within a four-mile radius around the proposed

facility for Environmental Justice analysis; and (3) a social and economic impact assessment including sections on potential impacts from transportation and cumulative impacts.

CMEC utilized two general study areas for this analysis: a 30-mile ROI radius centered on the proposed site within the WCS property and a four-mile radius for the Environmental Justice Analysis. Study areas are discussed in the NRC's Environmental Justice Policy Statement (2003). Whereas NUREG-1748 uses 0.6 mile for analysis if the center of the site is in an urban area, and whereas the Office of Nuclear Reactor Regulation (NRR) uses an analysis area of a 50-mile radius for regulatory actions involving power reactors, the current analysis includes 30 miles since it encompasses both the nearby community of Eunice, New Mexico and the county seat and center of many business operations related to the WCS activities in the city of Andrews, Texas. In the comment and response period on the NRC's proposed policy statement (2003) on Environmental Justice, NRC stated that "this policy statement does not address site-specific concerns. In accordance with NEPA, and consistent with Commission practice, the geographic area assessed for NEPA purposes will be commensurate with the potential impact area of the proposed activity" and "should include a sample of the surrounding population because the goal is to evaluate the communities, neighborhoods, and areas that may be disproportionately impacted." Therefore, the 30-mile ROI includes census geographies and political geographies such as county boundaries in order to provide a clear picture of the communities that would host the proposed disposal activities, and that would house workers who may be involved with construction or operation phases of the proposed CISF activities. The four-mile study area directly addresses the recommended analysis area for Environmental Justice considerations.

Project Description

WCS is requesting authorization to construct and operate a CISF in Andrews County, Texas. The CISF will be located on approximately 100 acres of land (owner-controlled area) just north and adjacent to the WCS Low-Level Radioactive Waste Disposal facilities licensed by the TCEQ in accordance with Texas Radioactive Material License (RML) No. R04100.

Additionally, WCS is requesting authorization to store up to 40,000 metric tons of uranium (MTU). Approval to store up to 40,000 MTU at the CISF will not only accommodate complete decommissioning of the ten shutdown commercial reactors, but also provide a regulatory path forward to ultimately allow a transition for storing additional spent nuclear fuel from other reactors that may initiate decommissioning in the future.

WCS will use existing dry cask storage systems currently used at several operating commercial nuclear power plants in the United States and abroad. These dry cask storage systems store spent nuclear fuel inside of sealed canisters as opposed to a spent fuel pool. These dry cask storage systems are safe and confine radioactive materials thereby, minimizing the potential for the release of radioactive contamination into the environment. More information on the disposal methods can be found in the full license application.

The CISF project will consist of a total of eight phases with capacity for 500 metric tons of waste in each phase. Construction on Phase 1 is expected to start in 2018 and is scheduled to be completed by the end of 2020. Phase 1 construction will consist of: the first storage pad, site infrastructure, utilities, a rail line, and support buildings, including Administration, Radiation Safety, Security, and Offload/ Transfer buildings. Phase 1 is expected to provide capacity for approximately five years of operations. Phase 2 construction will begin so that it will come online just before Phase 1 reaches full capacity. The remaining phases are expected to follow the same 5-year pattern (see **Figure 1c, Conceptual Layout** and **Figure 1d, Potential Storage Facility Site Design Renderings**).

Social and Economic Background of the Region

The site for the proposed CISF is located in Andrews County, Texas, which is in the northwestern portion of the state, bordered on the north by Gaines County; on the east by Martin County; on the south by Winkler, Ector and Midland Counties; and on the west by the State of New Mexico (Lea County). The CISF will be located in the High Plains region, which is part of the central Great Plains. The nearest neighbor to the WCS facility is approximately 3.8 miles west along State Highway 176 toward Eunice, New Mexico. The surrounding land is primarily used for stock grazing and supports an active oil and natural gas industry.

Outside of the WCS footprint, industries include gravel and caliche mining, oil and gas production, landfill operations, cattle and ranching. Louisiana Energy Services (LES) operates the National Enrichment Facility as URENCO, USA, about one mile southwest of the site, under license by the Nuclear Regulatory Commission. The majority of the land within five miles of the Site is used for grazing and ranching activities. Other businesses in proximity to the WCS property include Wallach Quarry, Sundance, Inc., and DD Landfarm located about one mile northwest and west of the proposed CISF. The remaining land in the vicinity of the proposed CISF is used for livestock grazing, oil and gas production or is unused land. The Lea County, New Mexico Landfill occupies approximately 40 acres and is located about 1.25 miles south southwest of the proposed CISF.

The ROI (defined as a 30-mile radius around the WCS facility) is entirely situated within the southern part of the Llano Estacado of Texas and New Mexico. The Llano Estacado (Staked Plains), the southern extension of the High Plains of North America, lies south of the Canadian River in northwest Texas and east New Mexico.

According to the WCS Socioeconomic Impact Assessment completed for the Byproduct Materials License (2008), social and economic development of the Llano Estacado did not begin until the 1870s. By the end of 1886, the area and adjacent lands had at least 30 large ranches recognized by name and cattle brand, grazing thousands of cattle on free grass and water on mostly unappropriated public lands. Some of the larger ranches were the Quarter Circle T, JA, Rocking Chair, LX, Turkey Track, T Anchor, Shoe Bar, Frying Pan, and Matador. Most of the largest ranches

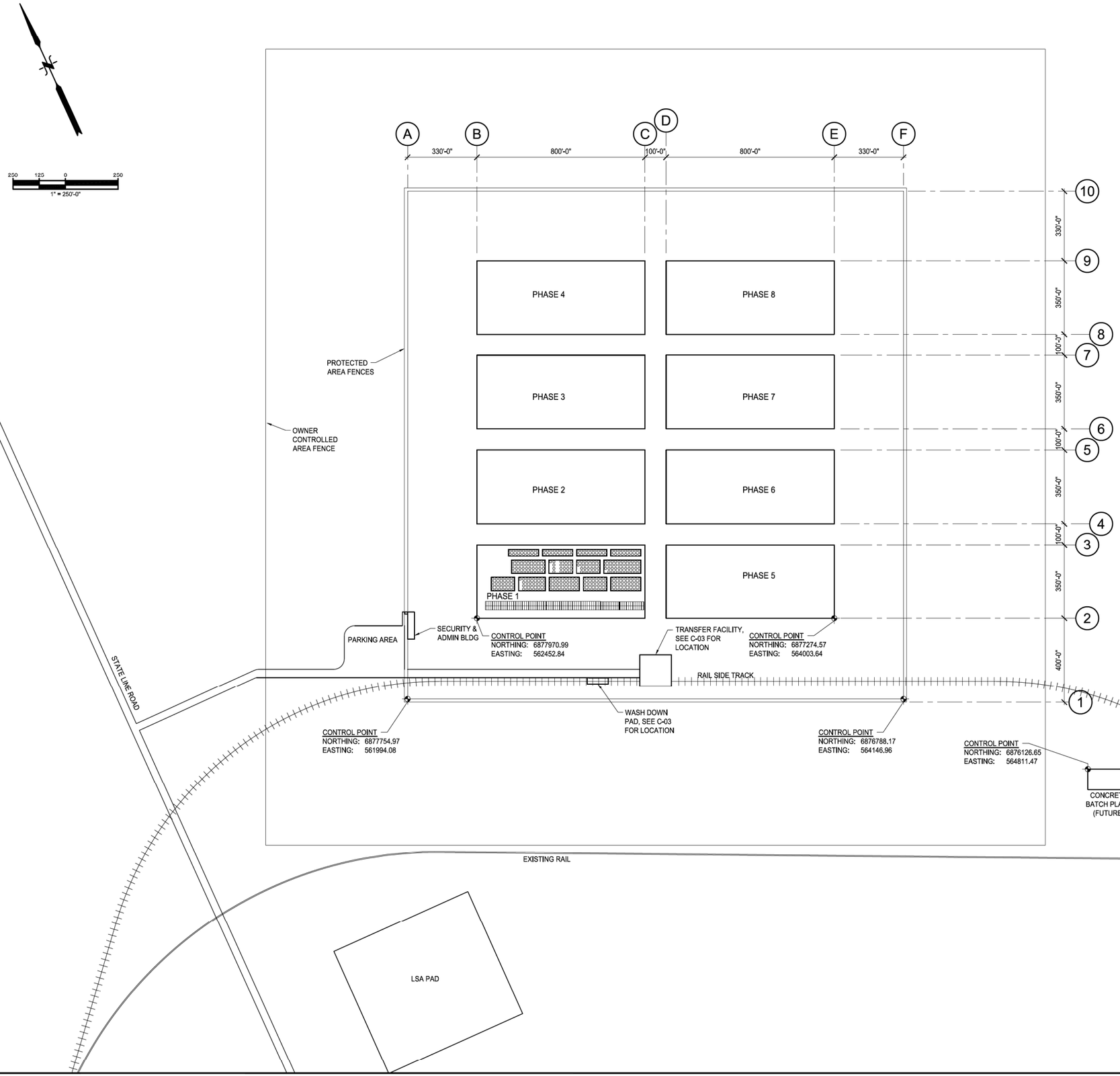


Figure 1c
Conceptual Site Plan

DRAWING RECORD

REV.	DESCRIPTION	DATE	DRAWN	CHECK
A	ISSUED FOR REVIEW		GWH	DHO

AMERICAS NUCLEAR SOLUTION
9998 W. STATE HWY. 176, ANDREWS, TEXAS 79714
Ph.(432) 525-8500 WWW.WCSTEXAS.COM

WCS CISF
WASTE CONTROL SPECIALISTS, ANDREWS TEXAS
CONCEPTUAL SITE PLAN

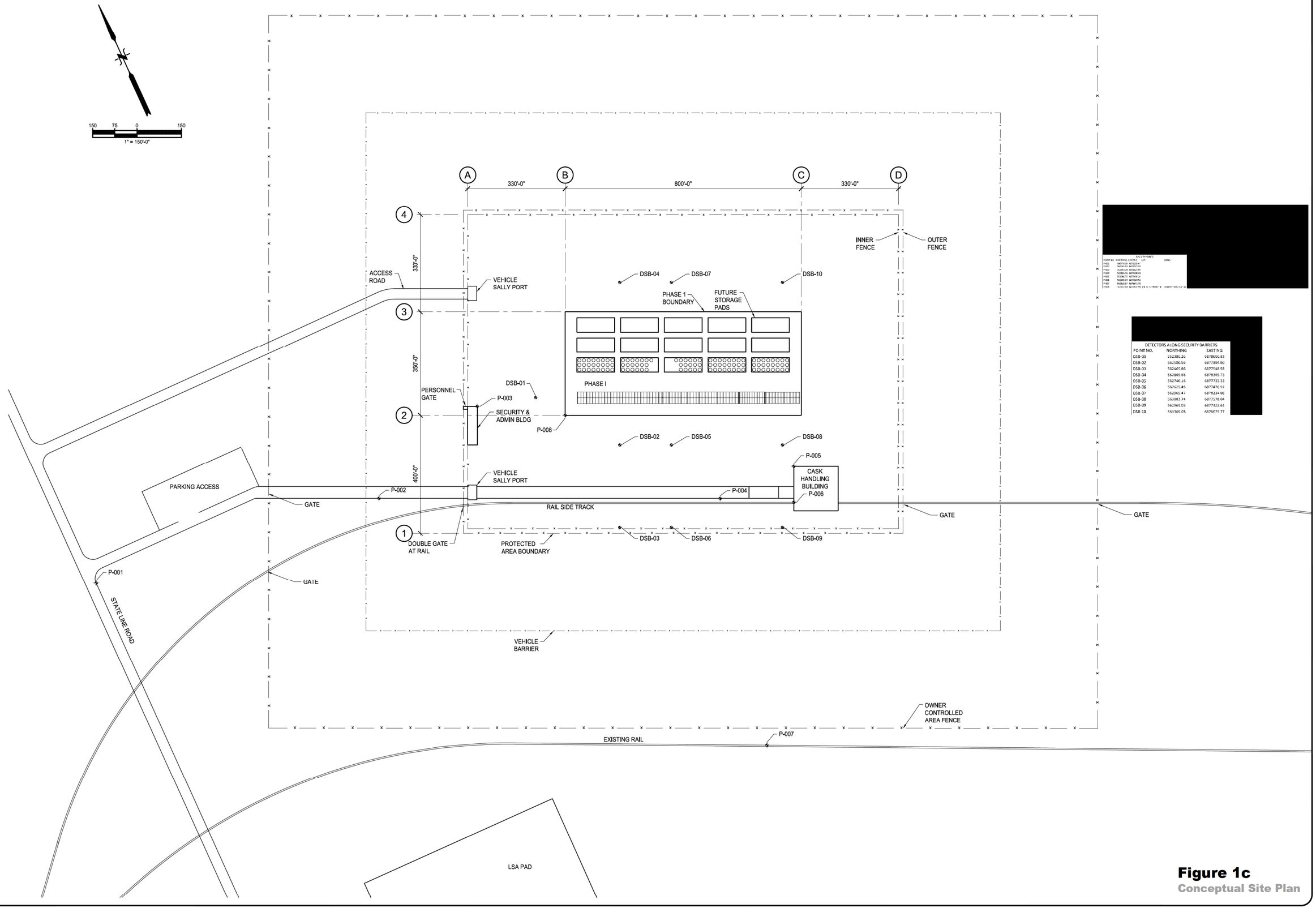
141101

DESIGNED BY: D.OWEN
DRAWN BY: G.HAMBLIN
CHECKED BY: D.OWEN
PROJ. ENG. MGR.
PROJ. MANAGER

DOCUMENT CONTROL No.:
CONTROL COPY No.:
DWG. SCALE: 1" = 250'-0"

SHEET NUMBER:
C-02

F:\Lone Rock Design\Completed Projects\2014\141101 - WCS 500 acre Layout\141101-C-002.dwg Jul 15, 2015 12:57pm



[redacted]

[redacted]

DETECTORS ALONG SECURITY BARRIERS

POINT NO.	NORTHING	EASTING
DSB-01	562386.26	6878066.83
DSB-02	562580.56	6877894.90
DSB-03	562465.86	6877548.58
DSB-04	562805.88	6878395.73
DSB-05	562740.16	6877732.33
DSB-06	562625.45	6877476.91
DSB-07	562965.47	6878224.06
DSB-08	563083.74	6877978.04
DSB-09	562969.03	6877822.61
DSB-10	563309.05	6878079.77

Figure 1c
Conceptual Site Plan

DRAWING RECORD

REV.	DESCRIPTION	DATE	DRAWN	CHECK.
A	ISSUED FOR REVIEW		GWH	DHD

AMERICAS NUCLEAR SOLUTION
9998 W. STATE HWY. 176, ANDREWS, TEXAS 79714
Ph.(432) 525-8500 WWW.WCSTEXAS.COM

WCS CISF
WASTE CONTROL SPECIALISTS, ANDREWS TEXAS
CONCEPTUAL SITE PLAN

141101

DESIGNED BY:	D.OWEN
DRAWN BY:	G.HAMBLEN
CHECKED BY:	D.OWEN
PROJ. ENG. MGR.	
PROJECT MGR.	
DOCUMENT CONTROL No.:	
CONTROL COPY No.:	
DWG. SCALE:	1" = 150'-0"
SHEET NUMBER:	C-03

F:\Lone Rock Design\141101 - WCS 500 acre Layout\141101-C-003a.dwg Feb 05, 2016 6:48am

Figure 1c
Conceptual Site Plan

SHEET NUMBER: C-05	DESIGNED BY: D.OWEN DRAWN BY: G.HAMBLIN CHECKED BY: D.OWEN PROJ. ENG. MGR. ENG DIRECTOR DOCUMENT CONTROL No.: CONTROL COPY No.: DWG. SCALE: 1" = 250'-0"	DATE

WCS CISF

WASTE CONTROL SPECIALISTS, ANDREWS TEXAS

CONCEPTUAL SITE PLAN

AMERICA'S NUCLEAR SOLUTION
9998 W. STATE HWY. 176, ANDREWS, TEXAS 79714
Ph.(432) 525-8500 WWW.WCSTEXAS.COM

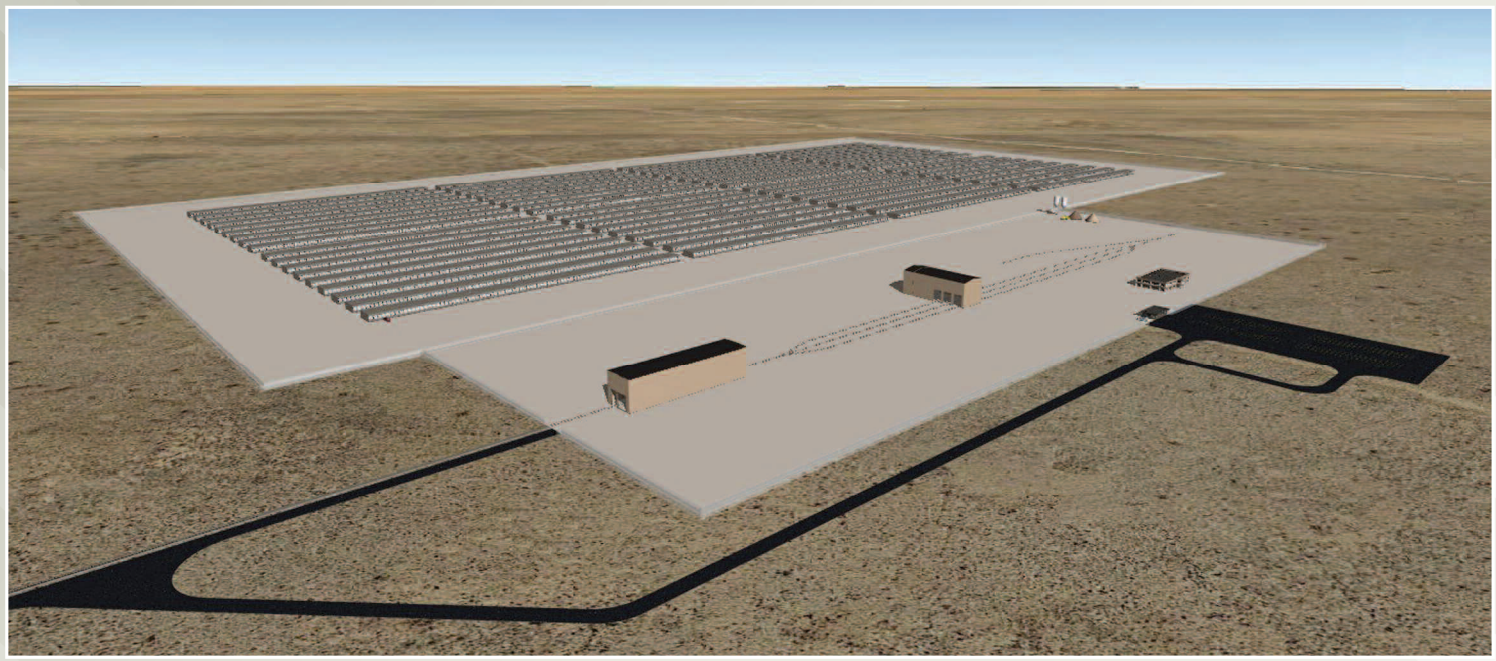
DRAWING RECORD

REV.	DESCRIPTION	DATE	DRAWN	CHECK
1	ISSUED FOR REVIEW		GWH	DHO
2				
3				
4				
5				

F:\Lone Rock Design\141101 - WCS 500 acre Layout\141101-C-005.dwg Dec 08, 2015 5:39pm

AMERICA'S NUCLEAR SOLUTION

POTENTUAL ISFSI SITE RENDERINGS



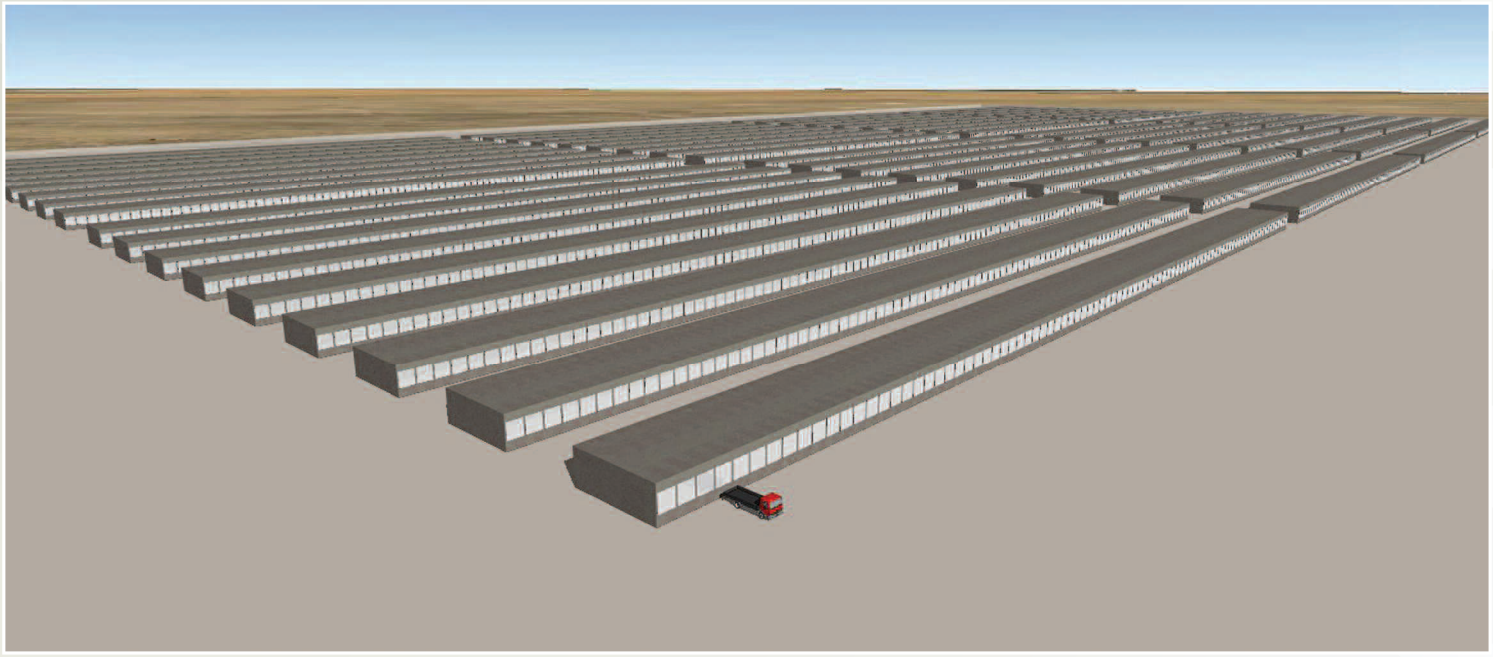


Figure 1d

Potential Storage Facility Site Design Renderings

were broken up by 1920, and much of the land came under the control of land developers and speculators who promoted active and successful campaigns to bring new settlers to West Texas. Innovative farmers learned techniques to make the rich, dry land productive; they also drilled into the Ogallala Aquifer. Development of animal, windmill, and engine-powered pumps led to massive irrigation programs. Cotton, corn, wheat, sorghum, and a great variety of melons and vegetables are now grown on the Llano Estacado.

Natural gas was discovered in Potter County in 1917 and oil in Carson County in 1921. These initial discoveries led to the development of the vast West Texas oilfields, which by 1981 had yielded approximately 46.7 billion barrels of crude oil. The discovery and development of the oil and gas fields brought large-scale industry to the Llano area in the 1930s. Thus within a relatively short period the Llano witnessed the most rapid development of any section of the state, progressing from an economy based on unfenced public grazing land to a modern industrial economy within half a century (WCS 2008).

The Permian Basin is a large oil and natural gas producing area largely contained in west Texas. It is so named because it has one of the world's thickest deposits of rocks from the Permian geologic period. Ranching, both sheep and cattle, was the mainstay of the economy in this region of the Permian Basin from the mid-1880's through 1927. During this forty-year period, the basic entities of the community were formed. Churches were founded almost immediately with congregations being served by the circuit preachers and laymen. Services were held at the courthouse, in homes or under the trees. Schools, social organizations, commercial businesses and political clubs soon followed (WCS 2008).

Subsurface petroleum product exploration and production have been conducted in the area of the Central Basin Platform for over 75 years. The local area has been heavily explored for oil and gas reserves over the last 35 years. Most of the oil wells in the vicinity of the CISF site have been abandoned. The absence of oil wells on the site supports the absence of favorable conditions for oil production. Oil and gas wells are also located to the west in New Mexico and to the north in Texas, XTO is currently drilling a well two miles north of the current permitted area.

Residents of the ROI's communities take pride that their society and economy have been able to withstand the "boom" and "bust" cycles throughout its history, including the period in the 2000s during which the "peak oil" debate was occurring. Periodic fluctuations in the price of oil and resulting variability in the ROI's output, employment and income, however, have given rise to the belief that the ROI needs to continue diversifying its economic base beyond oil and natural gas production and processing. As demonstrated through their cooperative relationship, both WCS and the local community are aligned in their goal to address the national problem of locating a safe interim disposal site for spent fuel until a permanent location is identified. Lea and Eddy Counties in New Mexico have formed an alliance to pursue an interim storage site approximately 40 miles west of the site outside the ROL.

Current Social and Economic Conditions, Including Baseline Socioeconomic Data for the Region of Interest

This section describes the current social and economic characteristics of the ROI surrounding the WCS complex. Information is provided on population, including minority and low-income areas, economic trends, housing, and community services in the areas of education, health, public safety, and transportation.

The primary labor markets for the operation of the processing and storage facility will be Andrews County, Texas, and Lea County, New Mexico. The Andrews County seat is located in the City of Andrews, about 30 miles east- southeast of the facility. There are no population centers in Andrews County closer to the processing and storage facility. The surrounding area is very rural and semi-arid, with commerce in livestock production, agriculture (cotton, sorghum), and substantial oil and gas production, which represents most of the county's wealth and income. Andrews County ranked sixth in oil producing counties in Texas in April 2014 (Railroad Commission of Texas 2015 http://www.rrc.state.tx.us/oil-gas/research-and-statistics/). Andrews County covers 1,501 square miles and in 2010 its population density was 9.9 persons per square mile compared to Texas, which had 96.3 persons per square mile.

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. Recent examples of new infrastructure and investments include (among others): Performance Center; two new elementary schools; 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 a new campus for the Permian Regional Medical Center. 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 municipal swimming pool, golf course, tennis courts, youth club/center/parks, and athletic fields.

The current socioeconomic conditions for Lea County are similar in most respects to Andrews County. Lea County is relatively large, covering 4,391 square miles in southeastern New Mexico. The county population density is 14.7 persons per square mile compared to 17 persons per square mile in New Mexico. 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 farming and ranching. The oil and gas industry still has a strong effect on the local economy, in addition to 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 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) and New Mexico Junior College (NMJC) are located in and near Hobbs, New Mexico. NMJC's Training and Outreach Facility provides workforce training, online courses, and a center for legal studies.

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. 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.

1.0 CURRENT SOCIAL AND ECONOMIC CONDITIONS, INCLUDING BASELINE SOCIOECONOMIC DATA FOR THE REGION OF INTEREST

1.1 DEMOGRAPHIC PROFILE IN THE REGION OF INTEREST (ROI)

The existing WCS processing, storage, and disposal facility is in Andrews County, Texas, near the border of Lea County, New Mexico. The cities of Andrews, Texas, and Eunice, New Mexico, are the closest population centers to the site at distances of approximately 32 miles southeast and six miles west, respectively. Other population centers are at distances from the site as follows (see **Figure 1a**):

- Hobbs, Lea County, New Mexico: 20 miles north;
- Jal, Lea County, New Mexico: 23 miles south;
- Lovington, Lea County, New Mexico: 39 miles north-northwest;
- Seminole, Gaines County, Texas: 32 miles east-northeast; and
- Denver City, Gaines County, Texas: 40 miles north-northeast.

Population and Population Projections in the Region of Interest

Aside from these communities, the population density around the site is low. A majority of the ROI is in Andrews and Gaines Counties, Texas, with a large portion in Lea County, New Mexico. Small portions of the ROI fall in Winkler County and Ector County, Texas, so they are also included in this analysis.

Table 1-1 shows the historical population of Texas and New Mexico Counties in the ROI from 1970 to 2010. All counties grew between 1970 and 2010 with the exception of Winkler County, which experienced population decline (26 percent) over the 40-year period. Andrews County grew by 43 percent between 1970 and 2010, while Gaines County grew 51 percent and Ector County (though the county's largest population center, Odessa, does not fall in the ROI) grew by 49 percent. The population in Lea County, New Mexico, grew by 22 percent.

Table 1-1: Historical Population of Counties in the Region of Interest, 1970–2010

Year	Andrews Co., TX	Gaines Co., TX	Winkler Co., TX	Ector Co., TX	Lea Co., NM*
1970	10,372	11,593	9,640	91,805	49,554
1980	13,323	13,150	9,944	115,374	55,993
1990	14,338	14,123	8,626	118,934	55,765
2000	13,004	14,467	7,173	121,125	55,511
2010	14,786	17,526	7,110	137,130	60,702
Percent change 1970 to 2010	43%	51%	-26%	49%	22%

Source: Texas Almanac, Population of Texas Counties 1850–2010.

*Lea County, New Mexico, data from U.S. Census (from WCS Socioeconomic Impact Assessment, 2008).

Population projections are available from the Texas Water Development Board for Texas counties from 2020 to 2070. In this 50-year timeframe, all Texas counties in the ROI are expected to grow by varying degrees. Andrews is projected to grow by 107.3 percent, while Gaines is expected to grow by 120 percent. Winkler is expected to experience the least population growth (39.2 percent) and Ector would grow by 68.6 percent. Together, the Texas counties in the ROI are expected to grow by 56.3 percent, slightly less as a region than the state of Texas, which is projected to grow by 73.0 percent. These data are shown in **Table 1-2**.

Table 1-2: Texas Water Board Population Projections for Texas Counties in the Region of Interest

Year	Andrews	Gaines	Winkler	Ector	Texas Counties in the Region of Interest	Texas
2020	19,089	21,316	8,033	156,957	247,322	29,510,184
2030	22,847	25,746	8,817	177,157	274,737	33,628,653
2040	26,246	30,997	9,459	198,446	302,648	37,736,338
2050	30,111	36,654	10,147	220,268	330,815	41,928,264
2060	34,526	41,666	10,702	242,371	358,485	46,354,818
2070	39,574	46,886	11,181	264,646	386,459	51,040,173
Percent change 2020 - 2070	107.3%	120.0%	39.2%	68.6%	56.3%	73.0%

Source: Texas Water Development Board, 2016 Regional Water Plan Projections for 2020–2070.

The Texas Water Development Board projections utilize estimates from the Texas State Data Center (TSDC). The TSDC projections utilize the "0.5" growth rate scenario, one of several scenarios developed by the TSDC to project population growth in Texas. This scenario assumes rates of net migration one-half of those of the 1990s; the TSDC believes that many counties in the state are unlikely to continue to experience the overall levels of relatively extensive growth of the 1990s. The TSDC considers the 0.5 scenario to be the most appropriate scenario for most counties for use in long-term planning.

Population projections by race for Andrews County show that between 2010 and 2050, the total population is expected to grow by 60.1 percent with the Anglo population growing by four percent, the Black population remaining the same, the Hispanic population growing 116.1 percent, and Other races growing by 82.8 percent (**Table 1-3**).

As shown in **Table 1-4**, population projections by race for Gaines County show that between 2010 and 2050, the total population is expected to grow by 89.1 percent, with the Anglo population growing by 82.4 percent, the Black population growing by 14.6 percent, the Hispanic population growing 104.3 percent, and Other races growing by 60.7 percent.

Table 1-3: Projected Populations 2010–2050 by Race/Ethnicity for Andrews County					
Year	Total	Anglo	Black	Hispanic	Other
2010	14,786	7,083	199	7,195	309
2015	15,875	7,197	202	8,137	339
2020	16,987	7,288	208	9,118	373
2025	18,123	7,357	217	10,136	413
2030	19,224	7,398	220	11,155	451
2035	20,369	7,455	222	12,216	476
2040	21,482	7,464	214	13,305	499
2045	22,585	7,425	207	14,413	540
2050	23,676	7,364	199	15,548	565
Percent Change 2010–2050	60.1%	4%	0%	116.1%	82.8%

Source: Texas Data Center 2014 projections at 1/2 Migration Rate (2000–2010) for all ages.

Table 1-4: Projected Populations 2010–2050 by Race/Ethnicity for Gaines County					
Year	Total	Anglo	Black	Hispanic	Other
2010	17,526	10,628	261	6,413	224
2015	19,120	11,461	274	7,143	242
2020	20,805	12,340	287	7,911	267
2025	22,611	13,308	290	8,718	295
2030	24,602	14,459	298	9,526	319
2035	26,754	15,759	312	10,336	347
2040	28,832	16,959	316	11,203	354
2045	30,943	18,150	313	12,124	356
2050	33,144	19,384	299	13,101	360
Percent Change 2010–2050	89.1%	82.4%	14.6%	104.3%	60.7%

Source: Texas Data Center 2014 projections at 1/2 Migration Rate (2000–2010) for all ages.

Population projections by race for Winkler County (**Table 1-5**) show that between 2010 and 2050, the total population is expected to grow by 43.6 percent, with the Anglo population declining by 0.6 percent, the Black population growing by 4.7 percent, the Hispanic population growing 79.8 percent, and Other races growing by 45.1 percent.

Table 1-5: Projected Populations 2010–2050 by Race/Ethnicity for Winkler County					
Year	Total	Anglo	Black	Hispanic	Other
2010	7,110	3,024	129	3,824	133
2015	7,567	3,093	129	4,208	137
2020	8,039	3,140	134	4,618	147
2025	8,486	3,151	141	5,036	158
2030	8,857	3,130	146	5,414	167
2035	9,213	3,104	149	5,782	178
2040	9,528	3,061	145	6,136	186
2045	9,858	3,038	141	6,489	190
2050	10,209	3,005	135	6,876	193
Percent Change 2010–2050	43.6%	-0.6%	4.7%	79.8%	45.1%

Source: Texas Data Center 2014 projections at 1/2 Migration Rate (2000–2010) for all ages.

For Ector County, population projections by race show that between 2010 and 2050, the total population is expected to grow by 60.4 percent, with the Anglo population declining by 21.9 percent, the Black population growing by 33.6 percent, the Hispanic population growing 125.5 percent, and Other races growing by 87.2 percent (**Table 1-6**).

Table 1-6: Projected Populations 2010–2050 by Race/Ethnicity for Ector County					
Year	Total	Anglo	Black	Hispanic	Other
2010	137,130	56,306	5,596	72,331	2,897
2015	147,179	56,021	5,918	82,030	3,210
2020	157,045	55,117	6,155	92,259	3,514
2025	167,067	53,771	6,378	103,066	3,852
2030	177,335	52,089	6,636	114,416	4,194
2035	187,862	50,317	6,896	126,130	4,519
2040	198,503	48,343	7,145	138,175	4,840
2045	209,095	46,189	7,304	150,468	5,134
2050	220,012	43,979	7,475	163,135	5,423
Percent Change 2010–2050	60.4%	-21.9%	33.6%	125.5%	87.2%

Source: Texas Data Center 2014 projections at 1/2 Migration Rate (2000–2010) for all ages.

Data for the State of Texas (**Table 1-7**) show that there are similarities for projections by race within the ROI, especially with regard to the substantial anticipated growth of the Hispanic population. Statewide, the total population is expected to grow by 61.1 percent between 2010 and 2050, with the Anglo population declining by 1.2 percent; the Black population expected to grow by 40.8 percent; the Hispanic population projected to grow by 127.4 percent and the Other population to increase by 161 percent.

Table 1-7: Projected Populations 2010–2050 by Race/Ethnicity for Texas					
Year	Total	Anglo	Black	Hispanic	Other
2010	25,145,561	11,397,345	2,886,825	9,460,921	1,400,470
2015	26,947,116	11,585,146	3,083,970	10,659,352	1,618,648
2020	28,813,282	11,723,184	3,274,738	11,963,951	1,851,409
2025	30,734,321	11,796,414	3,454,116	13,384,050	2,099,741
2030	32,680,217	11,792,588	3,616,745	14,900,906	2,369,978
2035	34,616,890	11,717,771	3,757,614	16,475,644	2,665,861
2040	36,550,595	11,593,202	3,876,830	18,095,574	2,984,989
2045	38,499,538	11,434,587	3,977,772	19,769,879	3,317,300
2050	40,502,749	11,265,371	4,065,757	21,516,362	3,655,259
Percent Change 2010–2050	61.1%	-1.2%	40.8%	127.4%	161%

Source: Texas Data Center 2014 projections at 1/2 Migration Rate (2000–2010) for all ages.

Data were not available for population projections by race in Lea County or New Mexico. Overall, the population in Lea County is projected to grow by 71 percent between 2010 and 2040 (**Table 1-8**). The population in New Mexico is projected to grow by 36.9 percent between 2010 and 2040 (**Table 1-9**).

Table 1-8: Projected Lea County Populations: 2010–2040								
Population	2010	2015	2020	2025	2030	2035	2040	Percent Change 2010–2040
Lea County	64,727	71,465	78,407	85,773	93,712	102,090	110,661	71%

Source: New Mexico County Population Projections July 1, 2010, to July 1, 2040, Geospatial and Population Studies Group, University of New Mexico. Released November 2012.

Table 1-9: Projected New Mexico State Populations: 2010–2040								
Population	2010	2015	2020	2025	2030	2035	2040	Percent Change 2010–2040
New Mexico	2,065,826	2,208,450	2,351,724	2,487,227	2,613,332	2,727,118	2,827,692	36.9%

Source: New Mexico County Population Projections July 1, 2010, to July 1, 2040, Geospatial and Population Studies Group, University of New Mexico. Released November 2012.

Age Distribution

The various counties within the ROI vary substantially in terms of total population, with Ector County (only a small portion of which falls within the ROI) having approximately 137,130 persons compared to Winkler County, which has only 7,110 persons. Lea County, New Mexico, has 64,727 persons and Andrews County has 14,786 persons. Nonetheless, there are numerous similarities regarding the breakdown of males and females within various age groups, and the largest population sectors in terms of age. The data for the ROI are similar to the data for Texas and New Mexico in terms of percentages. The percentage of individuals aged 20 to 44 years within the ROI (33.7 percent) is very similar to that of the states of Texas (35.3 percent) and New Mexico (32 percent). For all age groups except over 65 years, males and females each make up approximately half the population (with males and females typically making up between 49 and 51 percent of the population depending on the geographic area, with minor exceptions). For populations over 65, the number of females typically exceeds the number of males, with female population percentages ranging from 54 to 57 percent and males ranging from 43 to 46 percent of the population. Within the ROI, females over 65 constitute 56 percent of the population and males constituting 44 percent of the population. This distribution is the same as the state of Texas as a whole; in New Mexico, 55 percent of persons over 65 were female and 45 percent were male (**Table 1-10**).

1.1.1 Education Levels

The most common level of educational attainment for the cities and counties in the ROI is a high school diploma (26.7 to 30.3 percent of the population), followed by persons who had some college and no degree (ranging from 14.3 to 25.5 percent of the population). The least common level of educational attainment for the ROI is graduate or professional degrees, which have been earned by 2.4 to 4.9 percent of the population (**Table 1-11**).

1.1.2 Health Characteristics by Race/Ethnicity, Income, Including Births, Deaths, Average Life Span, Infant Mortality Rate, Child Mortality Rate, Morbidity, and Mortality by Type of Disease

According to the Texas Department of State Health Services, the average life span for Texas residents is 78.3 years. The number of births in Texas for 2012 was 382,438 with Hispanics or Latinos having the most births (182,855 or 47.8 percent of all births) (see **Table 1-12**). The number of births for the White population was 132,288 or 34.6 percent followed by the Black or African American population with 43,100 births and other races with 24,195 births.

Based on data shown in **Table 1-12**, the number of deaths in Texas in 2012 was 173,935 of which 115,089 or 66.2 percent were within the White population. Hispanic or Latino deaths were 34,756 or 20.0 percent, followed by Black or African American deaths (20,560) and other races (3,530 deaths).

Table 1-10: Age in the Region of Interest (2010)																
Age	**Lea County, NM**	***% M or F w/in age group***	**Andrews County, TX**	***% M or F w/in age group***	**Ector County, TX**	***% M or F w/in age group***	**Gaines County, TX**	***% M or F w/in age group***	**Winkler County, TX**	***% M or F w/in age group***	**Region of Interest**	***% M or F w/in age group***	**New Mexico**	***% M or F w/in age group***	**Texas**	***% M or F w/in age group***
Total:	64,727		14,786		137,130		17,526		7,110		241,279		2,059,179		25,145,561	
Under 5	5,909		1,226		12,075		1,819		633		21,662		144,981		1,928,473	
Male	2,985	*51%*	658	*54%*	6,164	*51%*	913	*50%*	322	*51%*	11,042	*51%*	74,078	*51%*	984,149	*51%*
Female	2,924	*49%*	568	*46%*	5,911	*49%*	906	*50%*	311	*49%*	10,620	*49%*	70,903	*49%*	944,324	*49%*
<5 % of Total	*9.1%*		*8.3%*		*8.8%*		*10.4%*		*8.9%*		*9.0%*		*7.0%*		*7.7%*	
5 to 19	15,068		3,500		32,191		4,861		1,659		57,279		434,860		5,693,241	
Male	7,695	*51%*	1,812	*52%*	16,364	*51%*	2,479	*51%*	867	*52%*	29,217	*51%*	221,549	*51%*	2,915,366	*51%*
Female	7,373	*49%*	1,688	*48%*	15,827	*49%*	2,382	*49%*	792	*48%*	28,062	*49%*	213,311	*49%*	2,777,875	*49%*
5-19 % of Total	*23.3%*		*23.7%*		*23.5%*		*27.7%*		*23.3%*		*23.7%*		*21.1%*		*22.6%*	
20 to 44	21,866		4,742		47,023		5,625		2,121		81,377		658,138		8,888,934	
Male	11,530	*53%*	2,362	*50%*	23,481	*50%*	2,816	*50%*	1,031	*49%*	41,220	*51%*	332,620	*51%*	4,477,210	*50%*
Female	10,336	*47%*	2,380	*50%*	23,542	*50%*	2,809	*50%*	1,090	*51%*	40,157	*49%*	325,518	*49%*	4,411,724	*50%*
20-44 % of Total	*33.8%*		*32.1%*		*34.3%*		*32.1%*		*29.8%*		*33.7%*		*32.0%*		*35.3%*	
45 to 59	12,078		2,998		25,908		3,025		1,494		45,503		428,808		4,858,260	
Male	6,303	*52%*	1,492	*50%*	12,759	*49%*	1,545	*51%*	784	*52%*	22,883	*50%*	208,369	*49%*	2,394,071	*49%*
Female	5,775	*48%*	1,506	*50%*	13,149	*51%*	1,480	*49%*	710	*48%*	22,620	*50%*	220,439	*51%*	2,464,189	*51%*
45-59 % of Total	*18.7%*		*20.3%*		*18.9%*		*17.3%*		*21.0%*		*18.9%*		*20.8%*		*19.3%*	
60 to 64	2,815		657		5,979		619		363		10,433		120,137		1,174,767	
Male	1,385	*49%*	320	*49%*	2,944	*49%*	326	*53%*	179	*49%*	5,154	*49%*	58,201	*48%*	565,820	*48%*
Female	1,430	*51%*	337	*51%*	3,035	*51%*	293	*47%*	184	*51%*	5,279	*51%*	61,936	*52%*	608,947	*52%*
60-64 % of Total	*4.3%*		*4.4%*		*4.4%*		*3.5%*		*5.1%*		*4.3%*		*5.8%*		*4.7%*	
65 and over	6,991		1,663		13,954		1,577		840		25,025		272,255		2,601,886	
Male	3,147	*45%*	724	*44%*	5,974	*43%*	719	*46%*	367	*44%*	10,931	*44%*	122,604	*45%*	1,135,664	*44%*
Female	3,844	*55%*	939	*56%*	7,980	*57%*	858	*54%*	473	*56%*	14,094	*56%*	149,651	*55%*	1,466,222	*56%*
65> % of Total	*10.8%*		*11.2%*		*10.2%*		*9.0%*		*11.8%*		*10.4%*		*13.2%*		*10.3%*	

Source: U.S. Census Bureau, 2010 Census Table P12.

Table 1-11: Educational Attainment in the Region of Interest (2009–2013)									
Educational Attainment for Population 25 Years and Older	**Lea County, NM**	**Andrews County, TX**	**Gaines County, TX**	**Winkler County, TX**	**Ector County, TX**	**Andrews City, TX**	**Seminole City, TX**	**New Mexico**	**Texas**
Less than 9th grade	13.2%	15.6%	27.2%	18.2%	13.2%	15.9%	15.4%	7.3%	9.4%
9th to 12th grade, no diploma	15.5%	10.8%	13.4%	11.6%	13.9%	10.1%	17.8%	9.0%	9.4%
High school graduate (includes equivalency)	28.9%	30.3%	26.7%	29.8%	28.6%	28.9%	26.9%	26.4%	25.3%
Some college, no degree	21.6%	24.8%	14.3%	25.5%	25.3%	26.4%	17.7%	23.9%	22.7%
Associate's degree	7.4%	4.4%	6.4%	5.2%	5.5%	5.4%	7.9%	7.5%	6.5%
Bachelor's degree	8.4%	10.4%	9.3%	7.2%	9.7%	9.4%	10.4%	14.7%	17.7%
Graduate or professional degree	4.9%	3.8%	2.6%	2.4%	3.8%	3.8%	3.8%	11.1%	8.9%
Population 25 years and over	39,728	9,392	9,992	4,432	84,299	7,092	3,876	1,347,229	16,080,307

Source: American Community Survey (ACS) 2009–2013 Table S1501.

Table 1-12: Health Characteristics and Vital Statistics in the Region of Interest									
Race/Age	**Lea County, NM**	**Andrews County, TX**	**Andrews, TX**	**Gaines County, TX**	**Seminole, TX**	**Winkler County, TX**	**Ector County, TX**	**New Mexico**	**Texas**
Average Life Span	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	78.3
White	-	-	-	-	-	-	-	-	78.3
Black or African American	-	-	-	-	-	-	-	-	74.7
Hispanic or Latino	-	-	-	-	-	-	-	-	79.5
Birth by Race									
White	-	106	76	189	68	42	850	8.8	132,288
Black or African American	-	4	4	6	1	2	94	10.6	43,100
Hispanic or Latino	-	204	162	150	57	87	1,760	14.5	182,855
Other Races	-	3	1	3	2	1	51		24,195
All Births (2012)	**1,200**	**317**	**243**	**348**	**128**	**132**	**2,755**	**26,242**	**382,438**
Death by Race									
White	-	102	76	90	46	59	759	-	115,089
Black or African American	-	1	1	2	1	0	56	-	20,560
Hispanic or Latino	-	35	31	29	20	23	332	-	34,756
Other Races	-	1	1	0	0	0	5	-	3,530
All Deaths (2012)	**435**	**139**	**109**	**121**	**67**	**82**	**1,152**	**16,780**	**173,935**
Death by Age									
Age - Under 1	-	1	-	1	-	1	17	-	2,224
Age - 1 to 4	-	1	-	1	-	0	2	-	449
Age - 5 to 14	-	0	-	4	-	0	8	-	505
Age - 15 and Over	-	137	-	115	-	81	1,125	-	170,055

Source: Texas Department of State Health Services, Vital Statistics Annual Report. Tables 9a, 9b, 9T, 15, 15a, 15b, and 25.

Texas Health Data: Birth Statistics for the State of Texas (By Race): 2012. Birth Statistics for the State of Texas (By County and Race): 2012. Death Statistics for the State of Texas (By County and Race): 2012. Death Statistics for the State of Texas (Ector County by Age): 2012. Death Statistics for the State of Texas (By County and Age): 2012. Death Statistics for the State of Texas (by Age): 2012. Death Statistics for the State of Texas (by Race): 2012. Death Statistics for the State of Texas (by Race and County): 2012.

* Birth and death data not available for Eunice, New Mexico; Hobbs, New Mexico; and Jal, New Mexico. Average life span only available for the State of Texas; Births and deaths by race and age, as well as cause of death only available for Texas.

Deaths in Texas were primarily concentrated within the age group of 15 and over. Only one death under the age of one occurred in Andrews, Gaines and Winkler Counties, though Ector County had 17 deaths under the age of one in 2012. The cause of death for those under the age of one, in all instances within Andrews, Winkler, and Gaines counties, being certain conditions originating in the perinatal period. Seven deaths were reported in Ector County under the age of one caused by certain conditions originating in the perinatal period, seven were congenital malformations, deformations and chromosomal abnormalities, and three other diseases for a total of 17 (TSDHS 2012).

For 2013, New Mexico residents reported 143 infant deaths and the rate of infant mortality was 5.4 infant deaths per 1,000 live births. This was a decrease from 2012 (6.9 deaths per 1,000 live births), and the 2013 infant mortality rate was lower than the United States rate. From a historical perspective, rates have decreased considerably since the 1930s in New Mexico, when they were above 145 deaths per 1,000 live births (NMDH 2013). The rate of infant death in Lea County, New Mexico, was 7.5 deaths per 1,000 live births in 2012 (Public Records 2015), which was slightly higher than the state rate for that same year.

The infant mortality rate in Texas was 5.8 per 1,000 live births in 2012. The rate for Andrews County in 2012 was 3.5, with the city of Andrews, Texas, at 4.1 percent. The infant mortality rate per 1,000 live births was 6.2 for Ector County, 2.9 for Gaines County, 7.8 for the city of Seminole, Texas, and 7.6 for Winkler County (TDSHS 2012, Table T28). Ector County, Seminole, Texas, and Winkler County were above the state rate for 2012.

The incidence of cancer by county of residence in Texas for the years 2008 through 2012 is tracked by the Texas Cancer Registry in cooperation with the National Program of Cancer Registries through the Centers for Disease Control and Prevention. The state of Texas during this timeframe had a rate of 395.3 occurrences per 100,000 population. Andrews County and Winkler County exhibited slightly lower rates than the state rate at 383.6 and 392.0 occurrences, respectively. Ector County and Winkler County had 394.7 occurrences and Gaines County had 280.1 occurrences, both below the state rate in 2012 (TDSHS Texas Cancer Registry 2015).

The following tables compare the rate per 100,000 persons of various causes of death for Lea County and the State of New Mexico for the year 2013. The data are included for males and females, regardless of race. With the exception of intentional self-harm (suicide), the number of deaths related to firearms, alcohol and drugs, injuries at work, and homicides were all higher in Lea County, New Mexico, compared with the state. Rates for male deaths were all higher than female deaths in all causes. The highest rates for causes of death in Lea County occurred in males for firearms (38.9 deaths per 100,000 population) with drug-induced deaths in males at 32.6. The lowest rates of causes of deaths in Lea County were no female deaths due to injury at work, along with 2.6 deaths per 100,000 for alcohol-induced deaths in females. Male alcohol-induced deaths (31.5 deaths per 100,000) and intentional self-harm (suicide) at 30.7 deaths per 100,000 were highest within the state of New Mexico and higher than the same rates in males in Lea County, New Mexico (see **Table 1-13**).

The New Mexico Indicator-Based Information System (NM-IBIS) is a database that provides information on New Mexico's priority public health issues. NM-IBIS has partnered with New Mexico's Environmental Public Health Tracking Network (NM-EPHT). According to the NM-IBIS, between 1999 and 2013, Lea County had approximately 762.5 deaths per 100,000 individuals. The majority of the deaths documented were related to circulatory/heart disease, malignant neoplasms, and causes other than the National Center for Health Statistics' (NCHS) 50 leading causes (**Table 1-14**). Lea County deaths were low per 100,000 individuals for categories such as nutritional deficiencies, chronic liver disease, viral hepatitis, and renal disease (NMDH, NM-IBIS 2015).

The NM-IBIS also provided calculated life expectancy by county from birth from 1993–2013 by race. Statewide the highest average life expectancy was within Asian or Pacific Islanders at 84.6 years, with White and Hispanic populations at 78.7 and 78.3 years, respectively. Lea County, New Mexico, life expectancies were slightly different than the statewide expectancies with American Indian or Alaska Native populations at 85 years. Asian or Pacific Islander (81 years) and White populations (75.9 years) were lower than the statewide average. Hispanic populations were slightly older at 80.4 years in Lea County, New Mexico (**Table 1-15**).

1.1.3 Ethnic and Racial Distribution

The term "minority population" is not clearly defined by the U.S. Census Bureau. The minority population for this document is to include the five racial categories of Hispanic or Latino, Black or African American, American Indian or Alaska Native, Asian, and Native Hawaiian or other Pacific Islander. Data also include those individuals who declared some other race or two or more races.

Table 1-13: Causes of Death (per 100,000) for Lea County and the State of New Mexico (2013)																		
	Firearms			Alcohol-induced			Drug-induced			Injury at work			Intentional self-harm (suicide)			Assault (homicide)		
	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes
Lea Co., NM	38.9	7.1	23.2	15.8	2.6	9.3	32.6	16.6	24.8	6.5	0	3.4	27.3	4.1	15.7	18.4	6	12.4
New Mexico	26.3	4.8	15.3	31.5	12.8	21.8	28.1	16.8	22.5	3.2	0.1	1.6	30.7	9.7	20	10.5	2.9	6.7

Source: New Mexico Selected Health Statistics Annual Report 2013, The State Center for Health Statistics, Tables M-20 and M-22, Age-adjusted death rates are the numbers of deaths per 100,000 U.S. standard population.

Table 1-14: Mortality Ratios by Cause of Death, 1999–2013 Lea County, New Mexico	
National Center for Health Statistics (NCHS) 50 Leading Causes*	**Deaths per 100,000 Population**
Overall Deaths	762.5
Circulatory, Heart disease	180.4
Causes other than NCHS 50 leading causes	152.5
Neoplasm, malignant	140.8
Respiratory, Chronic lower respiratory diseases	55.7
Injury, Unintentional injuries	49.9
Diabetes mellitus	32.3
Circulatory, Cerebrovascular diseases	26.4
Respiratory, Influenza and pneumonia	20.5
Nephritis, nephrotic syndrome and nephrosis	16.1
Injury, Intentional self-harm (suicide)	14.7
Septicemia	13.2
Injury, Homicide	11.7
Alzheimer's disease	8.8
Chronic liver disease and cirrhosis	8.8
Parkinson's disease	4.4
Certain conditions originating in the perinatal period	4.4
Viral hepatitis	2.9
Neoplasm, In situ, benign and of uncertain or unknown behavior	2.9
Circulatory, Aortic aneurysm and dissection	2.9
Respiratory, Pneumonitis due to solids and liquids	2.9
Congenital malformations, deformations and chromosomal abnormalities	2.9
Nutritional deficiencies	1.5
Circulatory, Essential (primary) hypertension and hypertensive renal disease	1.5
Cholelithiasis and other disorders of gallbladder	1.5
Pregnancy, childbirth and the puerperium	1.5
Injury, Complications of medical and surgical care	1.5

Source: New Mexico Department of Health, New Mexico's Indicator-Based Information System, Query Results for Mortality Data, Years 1999 to 2013 - Leading Causes of Death, Crude Rates (Deaths per 100,000), https://ibis.health.state.nm.us/query/builder/mort/MortCnty/LCDCrudeRate.html.

*Table does not include causes of death that are not statistically significant.

Table 1-15: Life Expectancy From Birth, 1999–2013 (Lea County and NM)						
NM Race and Ethnicity	Overall	White	Black or African American	Hispanic	American Indian or Alaska Native	Asian or Pacific Islander
New Mexico State	78	78.7	75.5	78.3	72.5	84.6
Lea County, NM	77	75.9	68.2	80.4	85	81

Source: New Mexico Department of Health, New Mexico's Indicator-Based Information System, Query Results for Query Module for Life Expectancy, Years 1999 to 2013 - Life Expectancy from Birth, https://ibis.health.state.nm.us/query/builder/mort/MortCntyLifeExp/LifeExpBirth.html.

Based on U.S. Census Bureau data in 2010 (**Table 1-16**), the minority populations of project area counties in the ROI were as follows: Andrews County was 52.1 percent minority; Gaines County was 39.4 percent minority; Winkler County was 57.5 percent minority; Ector County was 58.9 percent minority; and Lea County, New Mexico was 57.0 percent minority. By comparison, the percentages at the state level were 59.5 percent (New Mexico) and 44.3 percent (Texas). The city closest to the WCS facility is Eunice, New Mexico, which had a minority population of 49.9 percent in 2010. The Hispanic or Latino populations are the largest percentages of minorities within the ROI, ranging from 36.6 percent of the population in Gaines County to 53.8 percent in Winkler County. Black or African American was the next-largest share, with percentages ranging from 0.9 to 5.6 percent, depending on the location. Census tracts are shown on **Figure 1.1-1, Census Geographies**.

Within Andrews County, Texas, there are three census tracts (CT) in the ROI (CT 9501, 9502, and 9504). Within these census tracts, the largest percentages of minorities occur in CT 9504, with 48.7 percent of the population as Hispanic or Latino. This is comparable to Hispanic or Latino population percentages of 48.7 percent within Andrews County, Texas. Black or American Africans are the second largest population of minorities in CT 9502 at 1.8 percent, which is comparable to the second largest population within Andrews County, Texas (1.7 percent). CT 9501 has 1.5 percent Asian population, which is the second largest in CT 9502, with Hispanic or Latino populations being the largest percentage within the tract (45.5 percent) (see **Figure 1.1-2, Minority Populations in the Region of Interest**).

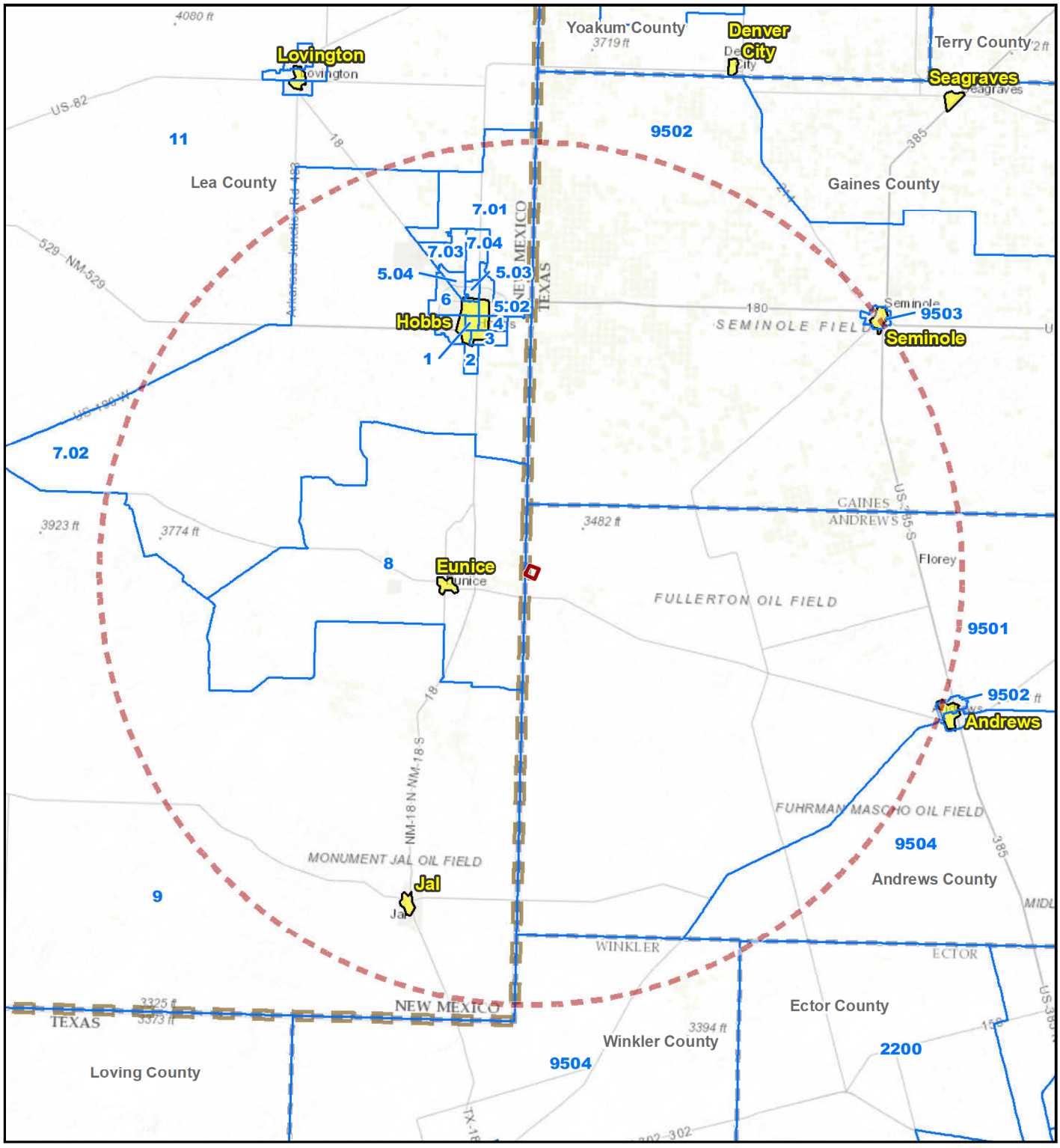
Ector County, Texas, contains one census tract within the ROI (CT 22). Minority populations in this census tract were predominantly Hispanic or Latino (71.4 percent), with two or more races the next highest at 0.6 percent. Ector County, Texas, as a whole has lower percentages of minority persons (58.9 percent) than CT 22.

Table 1-16: Racial and Ethnic Distribution by Census Tracts (2010)

Census 2010 Geography		Race and Ethnicity																
Census Tracts	Total Population	White Alone Number of persons	Percent White Alone	African American Alone Number of persons	Percent Black or African American Alone	American Indian and Alaska Native Alone Number of persons	Percent American Indian and Alaska Native Alone	Asian Alone Number of persons	Percent Asian Alone	Native Hawaiian and Other Pacific Islander Alone Number of persons	Percent Native Hawaiian and Other Pacific Islander Alone	Some Other Race Alone Number of persons	Percent Some Other Race Alone	Two or More Races Number of persons	Percent Two or More Races	Hispanic or Latino of Any Race Number of persons	Percent Hispanic or Latino of Any Race	Minority Number of persons	Percent Minority
Andrews County, TX	14,786	7,083	47.9%	199	1.3%	95	0.6%	85	0.6%	1	-	17	0.1%	111	0.8%	7,195	48.7%	7,703	52.1%
Andrews, TX	11,088	5,101	46%	183	1.7%	70	0.6%	69	0.6%	1	-	14	0.1%	84	0.8%	5,566	50.2%	5,987	54%
Census Tract 9501	1,678	1,142	68.1%	6	0.4%	5	0.3%	26	1.5%	-	-	2	0.1%	14	0.8%	483	28.8%	536	31.9%
Census Tract 9502	6,473	3,275	50.6%	116	1.8%	40	0.6%	36	0.6%	1	-	5	0.1%	52	0.8%	2,948	45.5%	3,198	49.4%
Census Tract 9504	2,711	1,329	49%	13	0.5%	23	0.8%	9	0.3%	-	-	3	0.1%	15	0.6%	1,319	48.7%	1,382	**51%**
Ector County, TX	137,130	56,306	41.1%	5,596	4.1%	623	0.5%	1,004	0.7%	106	0.1%	68	-	1,096	0.8%	72,331	52.7%	80,824	58.9%
Census Tract 22	3,117	853	27.4%	14	0.4%	5	0.2%	-	-	-	-	-	-	18	0.6%	2,227	71.4%	2,264	**72.6%**
Gaines County, TX	17,526	10,628	60.6%	261	1.5%	46	0.3%	37	0.2%	-	-	17	0.1%	124	0.7%	6,413	36.6%	6,898	39.4%
Seminole, TX	6,430	3,614	56.2%	93	1.4%	23	0.4%	24	0.4%	-	-	10	0.2%	47	0.7%	2,619	40.7%	2,816	43.8%
Census Tract 9502	8,643	6,356	73.5%	23	0.3%	21	0.2%	16	0.2%	-	-	9	0.1%	78	0.9%	2,140	24.8%	2,287	26.5%
Census Tract 9503	5,372	2,959	55.1%	83	1.5%	19	0.4%	19	0.4%	-	-	7	0.1%	33	0.6%	2,252	41.9%	2,413	44.9%
Winkler County, TX	7,110	3,024	42.5%	129	1.8%	29	0.4%	16	0.2%	-	-	43	0.6%	45	0.6%	3,824	53.8%	4,086	57.5%
Census Tract 9504	1,424	882	61.9%	11	0.8%	6	0.4%	1	0.1%	-	-	-	-	11	0.8%	513	36%	542	38.1%
Lea County, NM	64,727	27,845	43%	2,399	3.7%	468	0.7%	302	0.5%	18	-	51	0.1%	581	0.9%	33,063	51.1%	36,882	57%
Eunice, NM	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%
Hobbs, NM	34,122	13,059	38.3%	1,924	5.6%	270	0.8%	199	0.6%	14	-	24	0.1%	315	0.9%	18,317	53.7%	21,063	61.7%
Jal, NM	2,047	1,021	49.9%	12	0.6%	10	0.5%	2	0.1%	-	-	1	-	16	0.8%	985	48.1%	1,026	50.1%
Census Tract 1	2,812	571	20.3%	119	4.2%	18	0.6%	7	0.2%	1	-	1	-	27	1%	2,068	73.5%	2,241	**79.7%**
Census Tract 2	3,431	806	23.5%	126	3.7%	34	1%	4	0.1%	2	0.1%	-	-	27	0.8%	2,432	70.9%	2,625	**76.5%**
Census Tract 3	3,909	545	13.9%	363	9.3%	12	0.3%	6	0.2%	2	0.1%	-	-	27	0.7%	2,954	75.6%	3,364	**86.1%**
Census Tract 4	3,406	634	18.6%	459	13.5%	17	0.5%	5	0.1%	6	0.2%	5	0.1%	22	0.6%	2,258	66.3%	2,772	**81.4%**
Census Tract 5.02	6,244	2,841	45.5%	295	4.7%	38	0.6%	33	0.5%	-	-	2	-	67	1.1%	2,968	47.5%	3,403	**54.5%**
Census Tract 5.03	3,743	2,261	60.4%	126	3.4%	24	0.6%	39	1%	1	-	2	0.1%	38	1%	1,252	33.4%	1,482	39.6%
Census Tract 5.04	3,635	2,525	69.5%	105	2.9%	19	0.5%	42	1.2%	1	-	7	0.2%	56	1.5%	880	24.2%	1,110	30.5%
Census Tract 6	6,487	2,822	43.5%	263	4.1%	33	0.5%	35	0.5%	1	-	8	0.1%	54	0.8%	3,271	50.4%	3,665	**56.5%**
Census Tract 7.01	1,489	1,036	69.6%	7	0.5%	11	0.7%	2	0.1%	-	-	-	-	6	0.4%	427	28.7%	453	30.4%
Census Tract 7.02	3,263	1,458	44.7%	138	4.2%	100	3.1%	6	0.2%	-	-	2	0.1%	23	0.7%	1,536	47.1%	1,805	**55.3%**
Census Tract 7.03	2,321	1,660	71.5%	60	2.6%	8	0.3%	36	1.6%	1	-	1	-	20	0.9%	535	23.1%	661	28.5%
Census Tract 7.04	2,565	1,500	58.5%	42	1.6%	17	0.7%	30	1.2%	-	-	2	0.1%	35	1.4%	939	36.6%	1,065	41.5%
Census Tract 8	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%
Census Tract 9	2,175	1,114	51.2%	12	0.6%	13	0.6%	3	0.1%	-	-	1	-	22	1%	1,010	46.4%	1,061	48.8%
Census Tract 11	4,557	2,599	57%	22	0.5%	29	0.6%	13	0.3%	1	-	-	-	41	0.9%	1,852	40.6%	1,958	43%

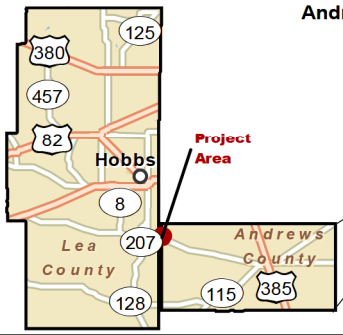
Source: U.S. Census Bureau Census 2010, Summary File 1, Table P9.

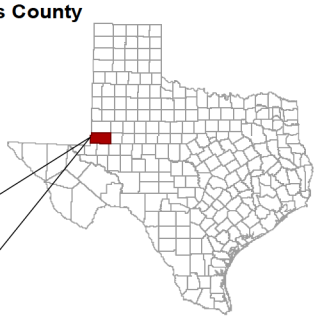
Note: Census Tracts that contain minority populations equal to or higher than 50 percent are bolded.



Project Location
30-mile Region of Interest
State Boundary
County Boundary
2010 Census Tract

Data Source: US Census Bureau (2010)
Basemap Source: ESRI (2014)





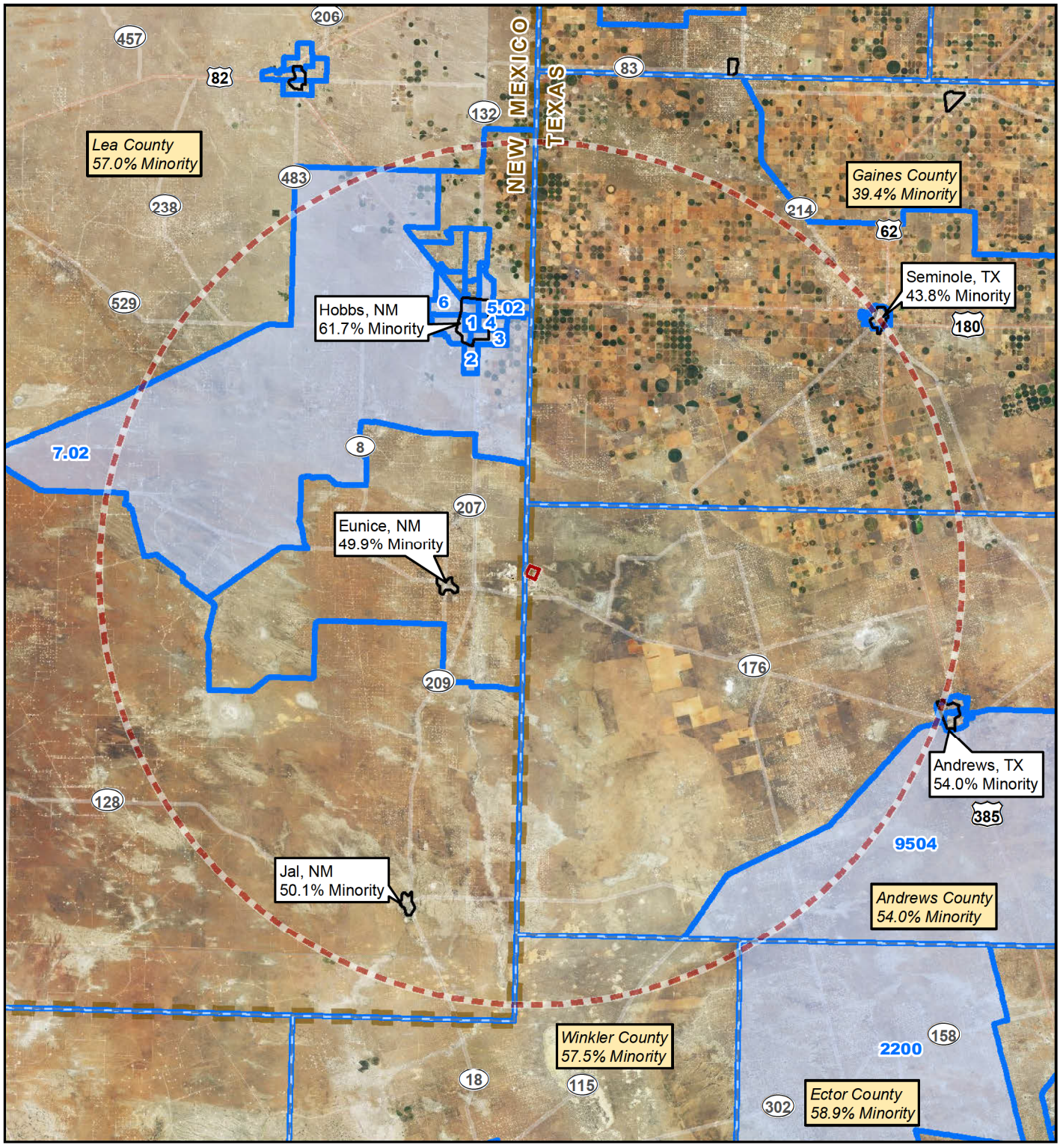
0 10 Miles
0 15 Kilometers

Figure 1.1-1
Region of Interest
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

G:\Projects\WCS\Figure 1.1-1_Census Geographies_20160404.mxd



Project Location

30-mile Region of Interest

2010 Census Tract

Census Tract with >50% Minority Population

State Boundary

County Boundary

Data Source: US Census Bureau (2010)
Aerial Source: NAIP (2014)
G:\Projects\WCS\Figure 1.1-2_Minority_20160404.mxd

0 10 Miles
0 15 Kilometers

Figure 1.1-2

Minority Populations in the Region of Interest

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

Gaines County, Texas, contains two census tracts within the ROI (CT 9502 and 9503). Minority populations range from 26.5 to 44.9 percent within these tracts, in comparison to 39.4 percent in Gaines County, and 43.8 percent for the city of Seminole, Texas. The largest percentage of minorities within the county was Hispanic or Latino populations at 40.7 percent. In both Gaines County census tracts, the largest percentage of minorities was also Hispanic or Latino populations, with 24.8 (CT 9502) and 41.9 percent (CT 9503).

Winkler County, Texas, has one census tract, CT 9504, within the ROI. The percent minorities within the census tract was 38.1 percent compared to 57.5 percent for the county as a whole. Within CT 9504, the largest minority population was Hispanic or Latino, at 36 percent.

Lea County, New Mexico, contains 15 census tracts within the ROI. Minority populations within these tracts ranged from 28.5 percent (CT 7.03) to 86.1 percent (CT 3). Within CT 7.03 the highest percentage of minority populations was Hispanic or Latinos (23.1 percent), Hispanic or Latino populations were highest in CT 3 (75.6 percent).

Lea County, New Mexico, also contains the cities of Eunice, Hobbs, and Jal. Minority populations within Eunice, New Mexico, were 49.9 percent with 47.5 percent of the population as Hispanic or Latino, and within Hobbs, New Mexico, 61.7 percent of the population was a minority with highest percentage as also Hispanic or Latino (53.7 percent). Jal, New Mexico, minority populations as a whole were 50.1 percent, with Hispanic or Latino populations having the highest percentage of minorities (48.1 percent).

Limited English Proficiency (LEP) populations were determined using census tract level data from the U.S. Census Bureau 2009–2013 American Community Survey (ACS) data. Census tracts within a 30-mile radius of the proposed project were assessed. Within the population that is five years of age and older, persons who speak English less than "very well" are considered to have a limited English proficiency. The populations that speak English less than "very well," according to the U.S. Census Bureau's 2009–2013 ACS, are presented in **Table 1-17**.

As shown in **Table 1-17**, the LEP populations in the individual census tracts for all counties within the project area range from approximately 0.9 to 30.0 percent of the total populations. Of the 10,497 people within the census tracts in the ROI within Andrews County, Texas, persons that speak English less than "very well" ranged from 9 to 15.6 percent. The majority of the populations were Spanish speakers (8.4 to 15.6 percent) with 0.6 to 2.4 percent Asian/Pacific language. In Ector County, Texas, there is one census tract that lies within the ROI, where approximately 26 percent of the 784 people speak English less than "very well," all of which are Spanish speaking. Of the 11,821 people in the two census tracts within the ROI in Seminole, Texas (Gaines County, Texas), approximately 12.7 to 19.7 percent speak English less than "very well." The highest percentage of persons that speak English less than "very well" within these census tracts was 7.1 percent Spanish and 12.3 percent Indo-European in CT 9502, and 10.6 percent Spanish and 2.1 percent Indo-European in CT 9503.

Table 1-17: Limited English Proficiency (Population that Speaks English Less than "Very Well") (2009–2013)											
				Languages Spoken by LEP Populations							
Census Tract/ Block Group	Total Population 5 Years and Over	Number of LEP persons	Percent LEP persons	Spanish speakers (#)	Spanish speakers (%)	Indo-European (#)	Indo-European (%)	Asian/Pacific Island (#)	Asian/Pacific Island (%)	Other (#)	Other (%)
Andrews County, TX	14,191	2,225	15.7%	2,068	14.6%	-	-	157	1.1%	-	-
Andrews, TX	10,612	1,818	17.1%	1,661	15.7%	-	-	157	1.5%	-	-
Census Tract 9501	1,894	171	9%	159	8.4%	-	-	12	0.6%	-	-
Census Tract 9502	6,067	927	15.3%	782	12.9%	-	-	145	2.4%	-	-
Census Tract 9504	2,536	396	15.6%	396	15.6%	-	-	-	-	-	-
Ector County, TX	128,984	19,098	14.8%	18,398	14.3%	237	0.2%	340	0.3%	123	0.1%
Census Tract 22	3,019	784	26%	784	26%	-	-	-	-	-	-
Gaines County, TX	16,204	2,825	17.4%	1,698	10.5%	1,100	6.8%	27	0.2%	-	-
Seminole, TX	5,972	663	11.1%	545	9.1%	118	2%	-	-	-	-
Census Tract 9502	7,899	1,555	19.7%	560	7.1%	968	12.3%	27	0.3%	-	-
Census Tract 9503	5,019	635	12.7%	531	10.6%	104	2.1%	-	-	-	-
Winkler County, TX	6,644	1,146	17.2%	1,137	17.1%	-	-	9	0.1%	-	-
Census Tract 9504	1,512	204	13.5%	195	12.9%	-	-	9	0.6%	-	-
Lea County, NM	59,945	7,926	13.2%	7,848	13.1%	38	0.1%	25	0.0%	15	0.0%
Eunice, NM	2,756	517	18.8%	517	18.8%	-	-	-	-	-	-
Hobbs, NM	31,397	4,034	12.8%	3,996	12.7%	23	0.1%	-	-	15	0.0%
Jal, NM	1,939	180	9.3%	180	9.3%	-	-	-	-	-	-
Census Tract 1	2,213	665	30%	659	29.8%	6	0.3%	-	-	-	-
Census Tract 2	3,018	599	19.8%	590	19.5%	-	-	-	-	9	0.3%
Census Tract 3	3,269	832	25.5%	832	25.5%	-	-	-	-	-	-
Census Tract 4	3,372	688	20.4%	688	20.4%	-	-	-	-	-	-
Census Tract 5.02	5,444	452	8.3%	452	8.3%	-	-	-	-	-	-
Census Tract 5.03	3,426	233	6.8%	233	6.8%	-	-	-	-	-	-
Census Tract 5.04	3,381	31	0.9%	31	0.9%	-	-	-	-	-	-
Census Tract 6	6,257	522	8.3%	505	8.1%	17	0.3%	-	-	-	-
Census Tract 7.01	1,691	67	4%	67	4%	-	-	-	-	-	-
Census Tract 7.02	3,184	140	4.4%	125	3.9%	15	0.5%	-	-	-	-
Census Tract 7.03	2,295	105	4.6%	99	4.3%	-	-	-	-	6	0.3%
Census Tract 7.04	2,540	240	9.4%	226	8.9%	-	-	14	0.6%	-	-
Census Tract 8	2,987	517	17.3%	517	17.3%	-	-	-	-	-	-
Census Tract 9	2,041	225	11%	214	10.5%	-	-	11	0.5%	-	-
Census Tract 11	4,488	562	12.5%	562	12.5%	-	-	-	-	-	0%

Source: U.S. Census Bureau, 2009–2013 ACS Table B16004.

ACS data are estimates; they are not counts.

Of the 1,512 people who live within the one census tract in the ROI in Winkler County, Texas, approximately 13.5 percent speak English less than "very well," most of which are Spanish speaking (12.9 percent) and 0.6 percent Asian/Pacific language. Of the 49,606 people within the 15 census blocks groups within the ROI in Lea County, New Mexico, populations that speak English less than "very well" ranged from 0.9 to 30 percent. These percentages were largely Spanish speaking, ranging from 0.9 to 28.8 percent of the population, with 0.3 to 0.6 percent in either Indo-European, Asian/Pacific, or other languages (see **Figure 1.1-3, Limited English Proficiency in the Region of Interest**).

1.1.4 Housing Characteristics by Race/Ethnicity, Including Owner Renter, Value, Rent

Data for housing characteristics (**Table 1-18**) shows the majority of housing units are owner-occupied: 72,268 units or 69.4 percent are owned by residents in the ROI. The median value for owner-occupied housing for Lea County, New Mexico, is $97,200, Andrews County $88,600, Gaines County $93,000, $45,100 for Winkler County, and $91,200 for Ector County. These values are lower than the state median values of $160,000 (New Mexico) and $128,900 (Texas). The ROI is 69.4 percent owner-occupied housing, compared to 68.5 percent in New Mexico and 63.7 percent in Texas. In the ROI, most owner-occupied housing units are occupied by White persons (54.9%) followed by Hispanic or Latino persons (40.8%) and Black or African American persons (2.6%).