

4.10 Socioeconomics

This section characterizes the current and future socioeconomic conditions in the Four Corners region, accounting for ongoing and future operations of FCPP and Navajo Mine. The affected environment is described in two distinct sections, one for baseline conditions prior to 2014 and another for baseline conditions that assumes the installation of SCR on Units 4 and 5, shutdown of Units 1-3, and NTEC ownership of Navajo Mine (i.e., 2016). Impacts from the proposed alternatives are provided to allow for a comparative analysis between current and future operations.

The CEQ regulations implementing NEPA state that when economic or social effects and natural or physical environmental effects are interrelated, the EIS will discuss these effects on the human environment (40 CFR 1508.14). The CEQ regulations further state that the “human environment shall be interpreted comprehensively to include the natural and physical environment and the relationship of people with that environment.” This socioeconomic analysis evaluates how elements of the human environment such as population, employment, and public services might be affected by the Proposed Action and alternatives.

This section describes the key attributes and resources pertaining to the human environment in the ROI, including population, demographics, housing, the economy, social characteristics, and public services. Following a description of the ROI, socioeconomic information in this section is organized into four subsections:

- **Population and General Demographics.** This subsection provides data on the number of residents in the ROI and the racial/ethnic, gender, and age composition of those residents.
- **Economic Conditions.** This subsection provides data on industry composition as well as employment and unemployment characteristics in the ROI. Detailed data are presented on the economic and fiscal contributions of the FCPP and Navajo Mine to San Juan County.
- **Indicators of Social and Economic Well-Being.** This subsection provides information on social issues as well as data on educational attainment, income and poverty, housing, and health status and risks.
- **Navajo Public Services.** This subsection provides information on the staffing levels and service populations of Navajo Nation public service departments. Navajo Nation departments for which data are presented include:
 - Navajo Nation Department of Diné Education
 - Navajo Nation Department of Emergency Management
 - Navajo Nation Department of Fire and Rescue Services
 - Navajo Nation Department of Highway Safety
 - Navajo Nation Emergency Medical Service
 - Navajo Police Department

Information presented in this affected environment section provides two sets of socioeconomic conditions: current conditions (Section 4.10.2) and baseline conditions (Section 4.10.3). Baseline conditions are the conditions that will be present at the time a decision is made regarding the Proposed Action and are the appropriate point of comparison to identify impacts due to the alternatives (rather than due to other, concurrent changes). Due to the shutdown of FCPP Units 1, 2, and 3,¹ associated reduction in coal production at the Navajo Mine, and the sale of the Navajo Mine to NTEC, the baseline socioeconomic conditions in the ROI will differ slightly from current conditions. Specifically, current conditions and the

¹ To comply with Title V of the CAA, APS opted to shut down Units 1-3 and apply SCRs to Units 4 and 5. The shutdown of Units 1-3 occurred December 30, 2013, and the installation of SCRs on Units 4 and 5 will be initiated in 2014 and likely completed by 2018.

majority of available data on the ROI reflect a higher level of economic activity at the FCPP and Navajo Mine than the baseline conditions that will be experienced prior to implementing the Proposed Action. Socioeconomic data describing baseline conditions is based on calculated changes in economic activity due to the shutdown of Units 1, 2, and 3; and the transfer in ownership of the mine. For other socioeconomic attributes and resources, the section discusses qualitatively how baseline conditions may differ from data presented on current conditions.

Data sources include the U.S. Census Bureau (Census), OSMRE, University of New Mexico Bureau of Business and Economic Research, Arizona State University (ASU) study of the FCPP and Navajo Mine, Navajo Nation public service departments, and several studies on the social issues/concerns in the ROI.

4.10.1 Region of Influence

The ROI for this analysis is McKinley County; San Juan County, New Mexico; the city of Farmington; Navajo Nation tribal trust lands; and Hopi tribal trust lands (see Figure 4.10-1). Of primary interest are the Navajo Nation tribal trust lands and San Juan County, New Mexico, as nearly all actions considered under the alternatives would be in these jurisdictions. The Hopi tribal trust lands are included in the ROI because the ROWs for transmission lines that are proposed for renewal also extend to Hopi tribal trust lands. Other areas are included in the ROI because they are near the Navajo Mine and FCPP, and share an economic or social connection. Farmington, a city in San Juan County, shares a strong economic connection to mining and FCPP operations; many local businesses that support mining and FCPP operations are located in Farmington. McKinley County² borders San Juan County and includes Navajo Nation tribal trust lands and residents that may be affected by the alternatives. The state of New Mexico is also considered in the analysis to offer a comparison between how the project affects the local and state economies.

4.10.2 Affected Environment Pre-2014

This section outlines the current socioeconomic conditions within the ROI; these current conditions represent conditions present while all five units at FCPP are in operation, and NTEC and MMCo are the owners/operators of the Navajo Mine. Information presented in this section includes data gathered from the 2010 Census, from various research reports and other environmental documents, and from information provided directly by Navajo Nation public service providers.

4.10.2.1 *Population and Demographics*

This section provides data on the number of residents in the ROI and the racial/ethnic, gender, and age composition of those residents.

Population

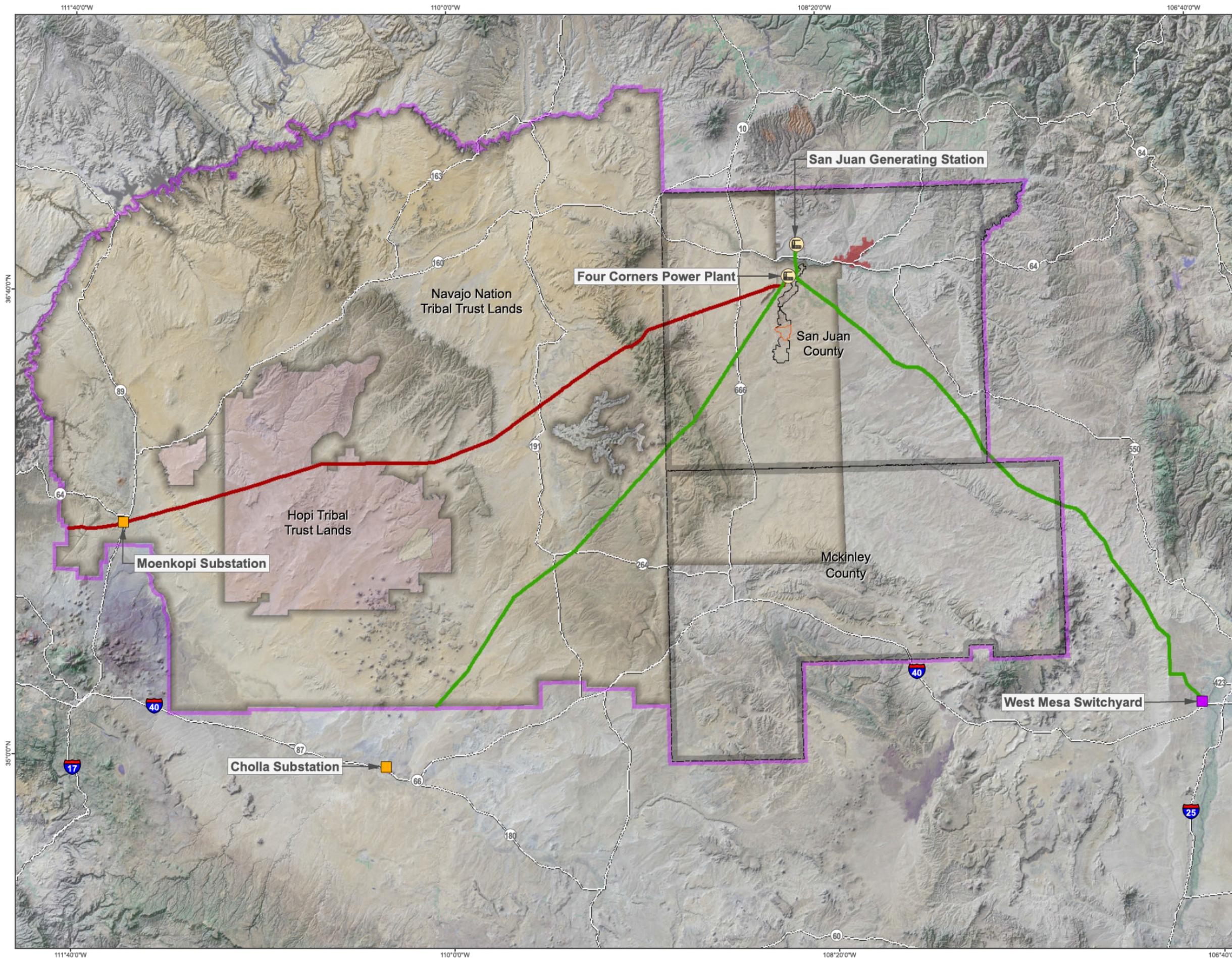
Table 4.10-1 provides information on total population for the years 1990, 2000, and 2010, and the percent changes between those years. In 2010, the population on the Navajo Nation was 173,667; this jurisdiction had the largest population when compared to the other ROI locales. That Navajo Nation population grew by 22 percent from 1990 to 2000 and decreased by 4 percent from 2000 to 2010, resulting in an overall population growth of 17 percent from 1990 to 2010. This overall population growth from 1990 to 2010, coupled with a population decline from 2000 to 2010, also occurred in McKinley County, San Juan County, the City of Farmington, and the state of New Mexico. In contrast, population on Hopi tribal trust lands decreased by 6 percent from 1990 to 2000, and increased by 3 percent from 2000 to 2010; an overall decrease by 2 percent from 1990 to 2010.

² As McKinley County consists largely of Navajo Nation tribal trust lands, data presented for McKinley County are nearly a subset of the data presented for the Navajo Nation.

Four Corners Power Plant and Navajo Mine Energy Project

ENVIRONMENTAL SETTING & CONSEQUENCES

Figure 4.10-1
Region of Influence



PROJECT FACILITIES

- Four Corners Power Plant 
- Substation 
- Switchyard 

PROJECT BOUNDARIES

- Navajo Mine Lease Area 
- Proposed Pinabete SMCRA Permit Boundary 
- Region of Influence 

TRANSMISSION LINES

- 345kV 
- 500kV 

OTHER FEATURES

- County Boundaries 
- Hopi Tribal Trust Lands 
- Navajo Nation Tribal Trust Lands 

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San Juan County population grew faster than any other area in the ROI, increasing 42 percent from 1990 to 2010. The state of New Mexico as a whole (36 percent) and the city of Farmington (35 percent) grew almost as quickly. Both McKinley County and Navajo Nation's populations increased by a little more than 20 percent from 1990 to 2000, and both decreased by 4 percent from 2000 to 2010, resulting in population growth from 1990 to 2010 of 18 and 17 percent, respectively.

Table 4.10-1 Population, 1990-2010

	1990	2000	2010	% Change 1990 to 2000	% Change 2000 to 2010	% Change 1990 to 2010
Navajo Nation	148,451	180,462	173,667	22%	-4%	17%
McKinley County	60,686	74,798	71,492	23%	-4%	18%
San Juan County	91,605	113,801	130,044	24%	14%	42%
City of Farmington	33,997	37,844	45,877	11%	21%	35%
Hopi Reservation	7,360	6,946	7,185	-6%	3%	-2%
New Mexico	1,515,069	1,819,046	2,059,179	20%	13%	36%

Sources: Census 1990, 2000, 2010a.

Table 4.10-2 provides population projections for McKinley County, San Juan County, and the state of New Mexico, for the years 2020 and 2030. Both counties are expected to have a smaller increase in population than New Mexico; however, all are projected to experience population growth. McKinley County is expected to grow by 3 percent and San Juan County is expected to grow by 24 percent between 2010 and 2030. Population growth for New Mexico overall is projected to be 27 percent from 2010 to 2030. No published population projections were available for the city of Farmington and the Hopi Reservation. Population projections for the Navajo Nation were developed for the Navajo Nation Comprehensive Economic Development Strategy (NN-CEDS) (Navajo Nation Division of Economic Development 2010); however, these projections have not been updated to account for the reduction in population from 2000 to 2010 that was identified in the 2010 Census. As the NN-CEDS projection estimated a large population increase from 2000 to 2010 while population actually declined, population figures projected for 2020 and 2030 no longer appear valid.

Table 4.10-2 Population 2010 and Population Projections 2020-2030

	2010	2020	2030	% Change 2010 to 2020	% Change 2010 to 2030
Navajo Nation	173,667	NA	NA	NA	NA
McKinley County	71,492	73,483	73,805	2.8%	3.2%
San Juan County	130,044	146,388	161,593	12.6%	24.3%
City of Farmington	45,877	NA	NA	NA	NA
Hopi Reservation	7,185	NA	NA	NA	NA
New Mexico	2,059,179	2,351,724	2,613,332	14.2%	26.9%

Sources: Census 2010a, University of New Mexico Bureau of Business and Economic Research 2012, Navajo Nation of Economic Development 2010.

Demographics

As shown in Table 4.10-3, in 2010, race in the ROI and New Mexico overall was made up primarily of two groups – White and American Indian. The Navajo Nation was predominately American Indian (97.5 percent); this concentration of American Indians was the highest in the ROI. Hopi tribal trust lands and McKinley County were the only other locations that had a higher concentration of American Indians than any other racial group (96.2 and 77.9 percent, respectively). The population of the state of New Mexico, as a whole, was primarily comprised of Whites (71.5 percent), Hispanic or Latinos (16.5 percent), and American Indians (10.7 percent). The city of Farmington, which was largely White (66.4 percent), is the only location in the ROI with a Hispanic or Latino population above 10 percent (10.6 percent). San Juan County was primarily White (54.5 percent) and also had a substantial American Indian population (38.7 percent). Overall, the Navajo Nation had the smallest percentage of Whites (2.8 percent), Black or African Americans (0.4 percent), Hispanic or Latinos (0.4 percent), Asians (0.3 percent), and Native Hawaiian or other Pacific Islander (0.1 percent).

Table 4.10-3 Race and Ethnicity 2010

	White	Black or African American	Hispanic or Latino	Asian	American Indian or Alaska Native	Native Hawaiian or Other Pacific Islander
Navajo Nation	2.8%	0.4%	0.4%	0.3%	97.5%	0.1%
McKinley County	17.2%	1.0%	5.8%	1.0%	77.9%	0.1%
San Juan County	54.5%	1.0%	8.4%	0.7%	38.7%	0.1%
City of Farmington	66.4%	1.6%	10.6%	1.0%	24.5%	0.2%
Hopi Reservation	3.5%	0.5%	0.2%	0.4%	96.2%	0.3%
New Mexico	71.5%	2.8%	16.5%	2.0%	10.7%	0.2%

Source: Census 2010a.

Note:

Census surveys allow respondents to identify as more than one race; therefore, totals may exceed 100 percent.

Table 4.10-4 provides information on gender and age for the ROI and the state of New Mexico overall, for the year 2010. The Navajo Nation, like all of the locales included in the ROI, had more females than males (50.9 and 49.1 percent, respectively). This gender makeup is very similar to New Mexico overall which was 50.6 percent female and 49.4 percent male. The Navajo Nation consists primarily of working age people, 18 to 64 (57.1 percent), which was less than New Mexico overall (61.6 percent) and all of the other ROI locales but very similar to the makeup of Hopi tribal trust lands (57 percent). Every locale in the ROI had a higher percentage of children 17 and younger compared to New Mexico overall. Hopi tribal trust lands had the largest percentage of children under the age of 5 (9 percent), followed by the Navajo Nation (8.7 percent) and McKinley County and the city of Farmington (both 8.6 percent). The Navajo Nation had the largest percentage of school-age children between 5 and 17 (24.7 percent), followed by Hopi tribal trust lands (23 percent) and McKinley County (22.7 percent). The city of Farmington and Hopi tribal trust lands had the largest percentage of retirement age residents 65 and older (11.1 and 11.0 percent, respectively), but was still less than New Mexico (13.2 percent). Overall, the breakdown in the ages of residents on Hopi tribal trust lands was most similar to that of the Navajo Nation.

Table 4.10-4 Gender and Age, 2010

	Gender Male	Gender Female	Age Under 5	Age 5-17	Age 18-64	Age 65 and Over
Navajo Nation	49.1%	50.9%	8.7%	24.7%	57.1%	9.5%
McKinley County	48.4%	51.6%	8.6%	22.7%	59.2%	9.5%
San Juan County	49.6%	50.4%	8.4%	20.6%	60.2%	10.8%
City of Farmington	49.3%	50.7%	8.6%	19.3%	61.0%	11.1%
Hopi Reservation	48.7%	51.3%	9.0%	23.0%	57.0%	11.0%
New Mexico	49.4%	50.6%	7.0%	18.2%	61.6%	13.2%

Source: Census 2010a.

4.10.2.2 Economic Conditions

This section provides data on industry composition as well as employment and unemployment characteristics in the ROI. Additionally, the economic and fiscal contributions of the FCPP and Navajo Mine to San Juan County under the pre-2014 condition (all five FCPP units operational, BNCC Navajo Mine owner) are presented.

Employment by Industry

Table 4.10-5 displays employment by industry for the ROI and New Mexico overall for 2010. The educational services and healthcare and social assistance industries were the leading employers for every location in the ROI and New Mexico overall; the Navajo Nation had the highest percentage employed in this sector (36.2 percent). The Navajo Nation's other large employers for 2010 were the construction industry (11.2 percent), the public administration industry (10.5 percent), the arts, entertainment, and recreation, and accommodation and food services industry (10 percent), and the retail trade industry (9.9 percent). Compared to the state of New Mexico, jurisdictions in the ROI had relatively low employment in the following sectors: finance and insurance, and real estate and rental and leasing industry; and the professional, scientific, and management, and administrative and waste management services industry.

Labor Force, Employment, and Unemployment

Table 4.10-6 provides 2000 and 2010 labor force, employment, and unemployment statistics for the ROI and New Mexico. The Navajo Nation saw the smallest increase in the civilian labor force between 2000 and 2010 (3 percent), while the Hopi Reservation saw the largest increase (52 percent). Most of the locations in the ROI saw an increase in the civilian labor force from 2000 to 2010; only McKinley County had a decline in the labor force (-1 percent). The city of Farmington had the same increase in its labor force as the state of New Mexico (16 percent) and San Juan County's labor force increased by 13 percent.

From 2000 to 2010, the largest decrease in the unemployment rate was on the Navajo Nation (decrease of 9.4 percentage points), closely followed by McKinley County (-8.1 percentage points). All of the jurisdictions in the ROI experienced a decrease in the unemployment rate, with a larger decrease than experienced in New Mexico overall (-0.1 percentage point).

Table 4.10-5 Employment by Industry, 2010

	McKinley County Qty	McKinley County %	San Juan County NM Qty	San Juan County NM %	City of Farmington Qty	City of Farmington %	Hopi Reservation Qty	Hopi Reservation %	Navajo Nation Qty	Navajo Nation %	New Mexico Qty	New Mexico %
Total Civilian Employment	23,970	100%	52,735	100%	20,308	100%	2,964	100%	44,757	100%	888,761	100%
Agriculture, forestry, fishing and hunting, and mining	618	2.6%	6,895	13.1%	2,603	12.8%	79	2.7%	1,847	4.1%	36,726	4.1%
Construction	1,557	6.5%	4,328	8.2%	1,484	7.3%	73	2.5%	5,021	11.2%	75,349	8.5%
Manufacturing	2,137	8.9%	1,875	3.6%	730	3.6%	270	9.1%	1,803	4.0%	47,079	5.3%
Wholesale trade	505	2.1%	1,671	3.2%	703	3.5%	91	3.1%	472	1.1%	19,887	2.2%
Retail trade	3,580	14.9%	6,244	11.8%	2,603	12.8%	291	9.8%	4,449	9.9%	103,278	11.6%
Transportation and warehousing, and utilities	803	3.4%	4,490	8.5%	1,626	8.0%	146	4.9%	2,428	5.4%	40,748	4.6%
Information	200	0.8%	630	1.2%	376	1.9%	43	1.5%	243	0.5%	16,994	1.9%
Finance and insurance, and real estate and rental and leasing	965	4.0%	1,951	3.7%	870	4.3%	67	2.3%	933	2.1%	45,111	5.1%
Professional, scientific, and management, and administrative and waste management services	910	3.8%	2,906	5.5%	1,148	5.7%	74	2.5%	908	2.0%	95,697	10.8%
Educational services, and healthcare and social assistance	7,343	30.6%	11,766	22.3%	4,364	21.5%	1,021	34.4%	16,189	36.2%	207,969	23.4%
Arts, entertainment, and recreation, and accommodation and food services	2,130	8.9%	4,531	8.6%	1,837	9.0%	215	7.3%	4,472	10.0%	91,649	10.3%
Other services, except public administration	994	4.1%	2,527	4.8%	1,073	5.3%	38	1.3%	1,272	2.8%	41,988	4.7%
Public administration	2,228	9.3%	2,921	5.5%	891	4.4%	556	18.8%	4,720	10.5%	66,286	7.5%

Source: Census 2010b.

Table 4.10-6 Labor Force, Employment, and Unemployment, 2000 and 2010

		Civilian Labor Force	Number Employed	Number Unemployed	Unemployment Rate*
Navajo Nation	2000	51,330	38,465	12,865	25.1%
	2010	53,056	44,757	8,299	15.6%
	% Change	3%	16%	-35%	-9.4
McKinley County	2000	26,487	21,940	4,547	17.2%
	2010	26,300	23,970	2,330	8.9%
	% Change	-1%	9%	-49%	-8.3
San Juan County, NM	2000	48,985	44,541	4,444	9.1%
	2010	55,277	52,735	2,542	4.6%
	% Change	13%	18%	-43%	-4.5
City of Farmington	2000	18,198	16,928	1,270	7.0%
	2010	21,149	20,308	841	4.0%
	% Change	16%	20%	-34%	-3.0
Hopi Reservation	2000	2,280	1,869	411	18.0%
	2010	3,463	2,964	499	14.4%
	% Change	52%	59%	21%	-3.6
New Mexico	2000	823,440	763,116	60,324	7.3%
	2010	957,903	888,761	69,142	7.2%
	% Change	16%	16%	15%	-0.1

Sources: Census 2000, 2010a.

Note:

*Changes in unemployment rates from 2000 to 2010 are presented in terms of difference in percentage points (rather than percentage difference).

Even though the Navajo Nation experienced the largest reduction in its unemployment rate, it still had the highest unemployment rate in both 2000 and 2010 (25.1 and 15.6 percent, respectively). The 2010 unemployment rate on the Navajo Nation (15.6 percent) was more than twice that for the state of New Mexico (7.2 percent). The Hopi Reservation (14.4 percent) and McKinley County (8.9 percent) also had unemployment rates higher than New Mexico overall. Within the ROI, only the city of Farmington and San Juan County had unemployment rates in 2010 that were lower than New Mexico overall (4 and 4.6 percent, respectively).

Economic and Fiscal Role of the FCPP and Navajo Mine

The economic role of the FCPP and Navajo Mine are provided in terms of contributions made to the economy of San Juan County for the year 2011. Contributions are expressed in terms of jobs, labor income, and economic output, defined as follows:

- *Jobs* represent the number of jobs, including part-time jobs, currently located in San Juan County that can be attributed to the FCPP and Navajo Mine.
- *Labor income* represents the income generated through the jobs at the FCPP and Navajo Mine; includes proprietor income (profits).
- *Gross State Product (GSP)* represents the dollar value of all goods and services produced for final demand in a state or county. It excludes the value of intermediate goods and services produced as inputs to final production.

Jobs, labor income, and economic output are measured in three ways – direct impacts, indirect impacts, and induced impacts defined as follows:

- *Direct impacts* are associated with the FCPP and Navajo Mine operations themselves. Direct jobs include jobs at the Navajo Mine and FCPP. Direct labor income is the total combined income earned by workers at the Navajo Mine and FCPP. Direct economic output is associated with initial purchases of local materials and supplies needed to operate the Navajo Mine and FCPP.
- *Indirect impacts* are the jobs, income, and economic output generated by the businesses that would supply goods and services needed to operate the Navajo Mine and FCPP. Indirect jobs include jobs at companies that supply goods and services to the Navajo Mine and FCPP. Indirect jobs can extend to include jobs related to the manufacture of products used to maintain operations (if the manufacturer is in San Juan County). Indirect labor income includes the income earned by people working indirect jobs. Indirect output includes the total sales volume related to the supply of goods and services to suppliers of goods and services.
- *Induced impacts* are the result of spending of the wages and salaries of the direct and indirect employees on items such as food, housing, transportation, and medical services. This spending supports induced employment in nearly all sectors of the economy, especially service sectors.

The fiscal role of the FCPP and Navajo Mine includes tax and royalty payments to governments. Fiscal contributions are closely associated with the ability of local governments to provide public services such as police and fire protection and educational services.

Economic Contribution

The economic contributions of the FCPP and Navajo Mine under the current condition and under the baseline condition were estimated in an economic impact analysis prepared by W.P. Carry School of Business at ASU (ASU 2013). The ASU study estimated total economic impacts at both the county level (San Juan County, New Mexico) and the state level (state of New Mexico). The modeled economic contributions from FCPP and Navajo Mine in San Juan County include both direct economic contribution in the mining and power generation sectors as well as the indirect ripple effects that result from mine and power plant-related spending in other sectors.

Navajo Mine

As estimated in the ASU study, Tables 4.10-7 and 4.10-8 show the economic contribution of the Navajo Mine to San Juan County and the state of New Mexico under the pre-2014 condition (all five FCPP units in operation, BNCC Navajo Mine owner). In 2011, the Navajo Mine directly employed approximately 530 people. Mining operations generated \$64 million in direct labor income and \$143 million was added to GSP. In total, including indirect and induced contributions, coal production at the Navajo Mine supported an estimated 1,580 full- and part-time jobs with an estimated \$107 million in labor income, and added an estimated \$214 million to GSP in San Juan County, New Mexico. As provided in Table 4.10-8, the state-level economy experiences larger indirect and induced effects because the economic benefits from Navajo Mine operations ripple outwards from the local economy to the larger state-level economy, as there are support services/goods sourced from elsewhere in New Mexico and not just in the ROI.

Table 4.10-7 Navajo Mine – Current Economic Contribution to San Juan County, New Mexico (2011)

	Jobs	Labor Income (Millions of 2011 \$s)	GSP (Millions of 2011 \$s)
Direct Contributions from Navajo Mine Operations	530	\$63.8	\$141.3
Indirect Contributions from Navajo Mine Supplier Purchases	280	\$14.4	\$25.3
Induced Effects	770	\$29.2	\$47.6
Total Economic Contribution	1,580	\$107.4	\$214.3

Source: ASU 2013.

Table 4.10-8 Navajo Mine – Current Economic Contribution to State of New Mexico (2011)

	Jobs	Labor Income (Millions of 2011 \$s)	GSP (Millions of 2011 \$s)
Direct Contributions from Navajo Mine Operations	530	\$63.8	\$141.3
Indirect Contributions from Navajo Mine Supplier Purchases	300	\$15.3	\$27.6
Induced Effects	1280	\$52.4	\$80.6
Total Economic Contribution	2,110	\$131.5	\$254.0

Source: ASU 2013.

Four Corners Power Plant

Tables 4.10-9 and 4.10-10 show the economic contribution of the FCPP to San Juan County and state of New Mexico under the current condition (all five FCPP units operational), as estimated by the ASU study. In 2011, the FCPP directly employed approximately 500 people. FCPP operations are estimated to support \$75 million in labor income, and \$253 million in GSP. In total, including indirect and induced effects, FCPP operations supported 1,360 jobs, \$106 million in labor income, and \$302 million in GSP in San Juan County, New Mexico. As provided in Table 4.10-10, the state-level economy experiences larger indirect and induced effects because the economic benefits from FCPP operations ripple outwards from the local economy to the larger state-level economy since more support services/goods are provided from across New Mexico and not just from businesses in the ROI.

Table 4.10-9 Four Corners Power Plant – Current Economic Contribution to San Juan County, New Mexico (2011)

	Jobs	Labor Income (Millions of 2011 \$s)	GSP (Millions of 2011 \$s)
Direct Contributions from FCPP Operations	500	\$75.3	\$253.1
Indirect Contributions from FCPP Supplier Purchases	220	\$6.6	\$8.5
Induced Effects	640	\$24.4	\$40.1
Total Economic Contribution	1,360	\$106.4	\$301.7

Source: ASU 2013.

Table 4.10-10 Four Corners Power Plant – Current Economic Contribution to State of New Mexico (2011)

	Jobs	Labor Income (Millions of 2011 \$s)	GSP (Millions of 2011 \$s)
Direct Contributions from FCPP Operations	500	\$75.3	\$303.5
Indirect Contributions from FCPP Supplier Purchases	200	\$7.1	\$9.1
Induced Effects	750	\$29.0	\$48.0
Total Economic Contribution	1,460	\$111.4	\$360.6

Source: ASU 2013

Note:

Totals may not sum due to rounding.

Right-of-Ways for Transmission Lines and Access Roads

All ROWs for the transmission lines and access roads proposed for renewal are existing and would not require any additional construction or maintenance beyond current activities. The access roads proposed for renewal do not require regular maintenance and the economic contribution from the limited maintenance activities are nominal. All operations and maintenance employees for the APS and PNM transmission lines work out of the FCPP. Therefore, the economic contributions from maintenance of the transmission lines (i.e., line and tower maintenance) and associated ROWs (i.e., vegetative management) are considered part of FCPP operations and accounted for in those sections.

Fiscal Contribution

Navajo Mine – Federal Government Taxes

Table 4.10-11 summarizes the total amount of Federal Government taxes paid by BNCC, based on coal sales, from 2008 through 2011. BNCC annually paid taxes in the form of the Black Lung Excise Tax and the Reclamation Act Levy (also known as the Abandoned Mine Land Fund). The Black Lung Excise Tax goes towards helping to fund the Black Lung Disability Benefit Program, which is managed by the U.S. Department of Labor. Former coal miners who are disabled due to pneumoconiosis (black lung disease) resulting from their coal mine employment are eligible for compensation and medical benefits through the Black Lung Disability Benefit Program. Survivors of coal miners who have died due to pneumoconiosis are also eligible for benefits through this program. BNCC paid over \$4 million annually to this program in the form of taxes between 2008 and 2013 (OSMRE 2013).

Abandoned Mine Land Fund payments are returned to states through grants to fund Abandoned Mine Land reclamation projects. This fund was established through SMCRA in 1997. BNCC paid over \$2 million annually to this fund in the form of taxes. The annual average of total Federal taxes paid by BNCC (prior to the transfer of mine ownership to NTEC) is over \$7 million (OSMRE 2013).

Table 4.10-11 Summary of Federal Government Taxes Paid by BNCC

Category	2008	2009	2010	2011
Black Lung Excise Tax	\$4,519,639	\$4,855,014	\$4,327,713	\$4,038,268
Reclamation Act Levy (Abandoned Mine Land Fund)	\$2,558,620	\$2,780,599	\$2,478,162	\$2,567,231
Annual Average of Total Federal Taxes	\$7,031,312			

Source: OSMRE 2013.

Navajo Mine – State of New Mexico and Local Government Payments

Table 4.10-12 summarizes the annual total of New Mexico state taxes paid by BNCC from 2008 through 2011. BNCC paid production taxes in the form of severance tax, resource excise tax, and conservation tax. The annual average of these taxes and property tax paid between 2008 and 2011 was approximately \$10.4 million. The gross receipt tax (GRT) is paid to the state of New Mexico on purchases of equipment, supplies, and services related to Navajo Mine operations; on average, between 2008 and 2011, \$9.5 million per year was paid in GRT (OSMRE 2013).

Table 4.10-12 Summary of New Mexico State Taxes Paid by BNCC 2008-2011

Category	2008	2009	2010	2011
Property Tax	\$2,103,764	\$2,241,690	\$2,328,629	\$2,261,502
Severance Tax	\$7,860,170	\$10,171,600	\$5,332,543	\$1,588,599
Conservation Tax	\$406,196	\$406,537	\$333,974	\$395,369
Resource Excise Tax	\$1,601,621	\$1,602,753	\$1,321,265	\$1,559,205
Annual Average of Total Navajo Mine Production Taxes Paid	\$10,378,854			
GRT	\$10,036,430	\$9,732,285	\$8,539,857	\$9,769,753
Annual Average of Total GRT Paid	\$9,519,581			

Source: OSMRE 2013.

Navajo Mine – Revenue to Navajo Nation

Table 4.10-13 summarizes the annual Navajo Nation taxes and royalties that BNCC paid from 2008 through 2011. The Navajo Nation has collected approximately \$40 million annually from BNCC through taxes and royalties. According to the Navajo Nation Tribal Council, this money makes up about one-third of the Navajo Nation's general fund (OSMRE 2013).

Table 4.10-13 Summary of Navajo Nation Taxes and Royalties Paid by BNCC

Category	2008	2009	2010	2011
Tribal Royalties	\$32,219,881	\$32,202,529	\$26,802,424	\$31,375,436
Navajo Business Activity Tax	\$4,436,285	\$5,440,000	\$4,174,703	\$4,892,589
Navajo Possessory Interest	\$6,000,000	\$4,800,000	\$3,672,180	\$4,460,992
Annual Average of Total Navajo Nation Payments	\$40,119,255			

Source: OSMRE 2013.

Note:

Updated numbers provided by Navajo Tax Commission.

Four Corners Power Plant – State of New Mexico and Local Government Payments

In 2011, the FCPP paid \$3.7 million in property taxes, most of which was spent at the state level. FCPP's gross receipt payments and compensating tax totaled \$475,000. Taxes paid by FCPP employees amounted to over \$7 million (including Federal taxes). The total 2011 state tax impact of the FCPP was approximately \$8.7 million (ASU 2013).

Four Corners Power Plant – Revenue to Navajo Nation

The FCPP paid approximately \$18.4 million in taxes to the Navajo Nation in 2011 (ASU 2013). PNM makes annual payments of approximately \$6.0 million to the Navajo Nation for all PNM lease and ROW agreements, 21 in total, with the Navajo Nation. PNM and APS also contribute to community and youth programs on an annual basis.

Right-of-Ways for Transmission Lines and Access Roads

Any taxes associated with the ROWs for the transmission lines and access roads are captured under the FCPP and Navajo Mine fiscal contributions discussed above.

4.10.2.3 Indicators of Social and Economic Well-Being

This section provides an overview of the primary social concerns and health status and risks in the Navajo Nation and in San Juan County and, then, provides data on educational attainment, income, poverty, and housing conditions. Overall, as measured by common indicators, residents of the Navajo Nation are less well-off economically compared to San Juan County, the state of New Mexico, and the U.S. overall. Compared to these other areas, the Navajo Nation has higher rates of poverty and unemployment as well as lower median household income. On several social measures, residents of the Navajo Nation also experience more adverse conditions than surrounding counties – the Navajo Nation has higher mortality and crime rates, lower graduation rates, and poorer health outcomes and housing conditions.

Data are presented for current conditions. Social and economic well-being may be slightly reduced under the baseline condition compared to the current condition, as described in Section 4.10.3.3. As income levels and social support programs may be reduced due to declines in overall economic activity at the Navajo Mine and the FCPP, social and economic conditions, including educational attainment, crime and recidivism, healthcare access, and housing stock quality could tend to decline.

Social Concerns and Risks

Many of the social issues identified for San Juan County as a whole are also relevant to the Navajo Nation. However, the issues do differ, as the cultural and economic landscapes are distinct. The 2009-2010 NN-CEDS (2010) and the Navajo Nation Division of Economic Development have both published data that identify the economic challenges facing the Navajo Nation. Among the greatest challenges is the unemployment rate, which according to the NN-CEDS was 51 percent of the labor force in 2010; this contrasts with the Census 2010 estimate of 15.6 percent unemployment rate on the Navajo Nation. The NN-CEDS rate, however, does not take into consideration the informal economy on the Navajo Nation, which includes those who may work in the arts and crafts industry, tourist industry, and domestic services, as well as exchanges of goods and services outside of the market place. In addition to high unemployment, Navajo Nation poverty rates are much higher than the state of New Mexico and San Juan County.

Many Navajo travel to border towns to shop for food, clothing, and other needs. Thus, a great deal of Navajo money leaves the Navajo Nation, rather than circulating within the Navajo economy. A challenge facing the Navajo Nation is building retail sales on the Nation to both meet the needs of the residents who now travel far for services and to increase economic development opportunities. Major employers on the Navajo Nation are the Tribal Enterprises, which are Navajo Nation-owned. Private sector employment includes mining and extraction operations.

As described in detail in the statistics presented below, among the social concerns on the Navajo Nation is lack of infrastructure and access to services. Over 20 percent of Navajos live in houses without plumbing, telephones, kitchen facilities, and electricity (National Indian Health Board 2009, Census 2010b). Furthermore, many Navajo do not own vehicles and have no access to public transportation. The

rural character of the Navajo Nation means that sometimes individuals must travel significant distances to access health and education facilities and meet basic shopping needs (First Things First Navajo Nation Regional Partnership Council 2010). Poverty rates are substantially higher than national, state, and San Juan County rates; and high school graduation rates are substantially lower (Erickson et al. 2008, McKinley Community Health Alliance 2009). The Navajo Nation has a greater proportion of the population with disabilities than the U.S., New Mexico, and San Juan County (Solop et al. 2006). A greater proportion of Navajo work in industries with high occupational risk than New Mexicans in general (New Mexico Occupational Health Registry 2006). Substance and alcohol abuse as well as suicide are social concerns on Navajo land (National Indian Health Board 2009, Indian Health Services 2011).

Also, health outcomes for Navajo are worse than for the general population in San Juan County. Life expectancy is lower, and mortality rates far exceed the national rates. Investment in healthcare services on Navajo land is about half of that for the general population. Healthcare disparities between Navajo and the general population are pronounced due to lack of access and funding (National Indian Health Board 2009).

Educational Attainment

Table 4.10-14 provides information on educational attainment within the ROI and for the state of New Mexico as of 2010. As of 2010, residents on the Navajo Nation were twice as likely to have not completed high school compared to New Mexico as a whole and, in general, residents within the ROI had a lower level of educational attainment than residents of New Mexico. In the ROI, the percentage of residents who did not complete high school is the highest on the Navajo Nation (34.2 percent), followed by McKinley County (30.4 percent), San Juan County (19.1 percent), and the Hopi Reservation (19.0 percent). With the exception of the city of Farmington, all jurisdictions in the ROI had a smaller percentage of residents with some college education or a college degree than New Mexico as a whole (55.8 percent). The Navajo Nation and McKinley County had the lowest percentage of residents with either some college education/associates degree or a college degree at 32.8 and 34.7 percent, respectively, compared to 55.8 percent for the state of New Mexico. The state of New Mexico had the highest percentage of residents obtaining a bachelor's degree or advanced degree (25.5 percent), while the Navajo Nation had the lowest percentage (7.1 percent).

Table 4.10-14 Educational Attainment*, 2010

	Did Not Complete High School	High School or Equivalent, No College	Some College or Associate Degree	Bachelor's Degree or Advanced Degree
Navajo Nation	34.2%	33.0%	25.7%	7.1%
McKinley County	30.4%	34.9%	23.8%	10.9%
San Juan County	19.1%	33.0%	32.9%	15.0%
City of Farmington	15.5%	28.7%	36.1%	19.7%
Hopi Reservation	19.0%	30.1%	41.0%	9.9%
New Mexico	17.3%	27.0%	30.3%	25.5%

Source: Census 2010b.

Note:

*Educational attainment for individuals 25 years and older.

Household Size, Income, and Poverty Levels

Table 4.10-15 shows household characteristics for the ROI and for the state of New Mexico in 2010. All areas within the ROI had a larger average household size than the state of New Mexico (2.5 people). Navajo Nation and the Hopi tribal trust lands had the largest average household size at 3.5 people. Similarly, the Navajo Nation had the highest percentage of family households (76 percent) followed closely by the Hopi Reservation (75 percent) and McKinley County (74 percent). The percent of family households on the Navajo Nation was 10 percent more than the percentage of family households in New Mexico as a whole (76 and 66 percent, respectively).

Median household income was highest in the city of Farmington (\$49,705) and San Juan County (\$46,189), both of which were higher than that of New Mexico (\$43,820). The Navajo Nation had the lowest median household income (\$26,232), \$5,000 less than that of McKinley County (\$31,335). The city of Farmington had the highest income per household member (\$18,406), which is also higher than New Mexico's (\$17,197). The Navajo Nation had the lowest income per household member (\$7,580) in the ROI. The city of Farmington had the lowest percentage of households below the poverty level (14.4 percent), followed by the state of New Mexico as a whole (16.9 percent) and San Juan County (18.9 percent). The Navajo Nation had the highest rate of households below the poverty level (38.0 percent).

Table 4.10-15 Household Characteristics, 2010

	Population in HHs*	Total Households	Average HH Size	% Family HHs	Median HH Income	Income per HH Member	% HHs Below Poverty Level
Navajo Nation	172,842	49,946	3.5	76%	\$26,232	\$7,580	38.0%
McKinley County	70,712	21,968	3.2	74%	\$31,335	\$9,735	29.7%
San Juan County	128,290	44,404	2.9	73%	\$46,189	\$15,987	18.9%
City of Farmington	44,412	16,446	2.7	70%	\$49,705	\$18,406	14.4%
Hopi Reservation	7,185	2,081	3.5	75%	\$34,016	\$9,852	31.4%
New Mexico	2,016,550	791,395	2.5	66%	\$43,820	\$17,197	16.9%

Source: Census 2010b.

Note:

*By definition, population in households consists of the resident population excluding people living in group quarters (i.e., 9 or more people living together who are unrelated to the householder).

Housing

Table 4.10-16 provides information on the number of total housing units, occupied housing units, vacant housing units, and the percentage of housing units that are vacant for the ROI and New Mexico, as of 2010. Of the 71,571 housing units on the Navajo Nation, 43,389 were occupied and 28,173 were vacant. The vacancy rate for homes on the Navajo Nation (39 percent) was the highest in the ROI and more than twice that of New Mexico (15 percent) and San Juan County (14 percent). McKinley County had the second highest percentage of vacant homes (32 percent), while the city of Farmington has the lowest vacancy rate (6 percent).

Table 4.10-16 Housing Units, Occupancy, and Vacancy, 2010

	Total Housing Units	Occupied Housing Units	Vacant Housing Units	% Vacant
Navajo Nation	71,571	43,398	28,173	39%
McKinley County	25,940	17,631	8,309	32%
San Juan County	48,412	41,767	6,645	14%
City of Farmington	16,553	15,569	984	6%
Hopi Reservation	2,823	2,223	600	21%
New Mexico	887,890	756,112	131,778	15%

Source: Census 2010b.

Table 4.10-17 provides information on the number of total occupied housing units, owner- and renter-occupied housing units, housing that was occupied by occupants that moved in between 2000 and 2010, vehicle availability to housing occupants, and the percentage of units that had more than 1.5 occupants per room.

Table 4.10-17 Occupancy Characteristics, 2010

	Occupied Housing Units	Owner Occupied	Renter Occupied	Occupant Moved in Since 2000	Occupant Has No Vehicle Available	More Than 1.5 Occupants Per Room
Navajo Nation	43,398	75.0%	25.0%	32.3%	15.9%	9.8%
McKinley County	17,631	73.4%	26.6%	37.3%	13.1%	5.4%
San Juan County	41,767	73.9%	26.1%	51.8%	5.3%	2.1%
City of Farmington	15,569	65.4%	34.6%	62.4%	4.5%	0.8%
Hopi Reservation	2,223	69.5%	30.5%	37.3%	18.9%	10.4%
New Mexico	756,112	69.6%	30.4%	57.8%	5.5%	0.8%

Source: Census 2010b.

The Navajo Nation had the largest percentage of owner-occupied housing units (75 percent), followed closely by McKinley County (73.4 percent) and San Juan County (73.9 percent). The city of Farmington and the Hopi Reservation had a smaller percentage of owner-occupied housing (65.4 and 69.5 percent, respectively) than that of the state of New Mexico (69.6 percent).

Since 2000, new occupants moved into slightly more than one-third of the housing on the Navajo Nation (32.3 percent), the lowest percentage of occupants moving into housing in the ROI. McKinley County and San Juan County had the second lowest percentages, both 37.3 percent. In San Juan County, the city of Farmington, and the state of New Mexico new residents occupied more than half of the housing units (51.8, 62.4, and 57.8 percent, respectively).

As of 2000, approximately 15.9 percent of occupants on the Navajo Nation had no vehicle available to them; this percentage was almost three times higher than that of the state of New Mexico overall (5.5 percent). The Hopi tribal trust lands were the only location that had a higher percentage of occupants without access to a vehicle, 18.9 percent. McKinley County had approximately 13.1 percent of occupants with no vehicle access; and San Juan County and the city of Farmington had the lowest percentages of occupants with no access to vehicles (5.3 and 4.5 percent, respectively).

Compared to all other ROI locales, housing on the Navajo Nation was crowded; approximately 9.8 percent of housing had more than 1.5 occupants per room. The Hopi Reservation was the only location with a higher percentage of more than 1.5 occupants per room, 10.4 percent. Housing in McKinley County was a little less crowded than those on the reservations (5.4 percent of units with more than 1.5 occupants per room). Three percent or less of the housing units in San Juan County, the city of Farmington, and the state of New Mexico had more than 1.5 occupants per room (2.1, 0.8, and 0.8 percent, respectively).

Table 4.10-18 provides information on the median number of rooms, average number of bedrooms, the percentages of occupied housing units without plumbing facilities and kitchen facilities, the percentage of housing units without available telephone service, and those occupied housing units heated with gas or electricity.

Table 4.10-18 Characteristics of Occupied Housing Units, 2010

	Median Rooms	Average Bedrooms	Lacking Complete Plumbing Facilities	Lacking Complete Kitchen Facilities	No Telephone Service Available	Heated with Gas or Electricity
Navajo Nation	4.0	1.7	21.3%	18.4%	39.4%	35.6%
McKinley County	4.9	2.2	10.0%	7.7%	32.4%	62.9%
San Juan County	5.1	2.5	3.6%	3.5%	15.6%	83.4%
City of Farmington	5.4	2.7	0.8%	0.8%	9.1%	97.3%
Hopi Reservation	4.6	2.1	26.8%	24.8%	13.4%	29.6%
New Mexico	5.3	2.6	1.2%	1.1%	6.1%	92.3%

Source: Census 2010b.

Occupied housing units on the Navajo Nation had the fewest rooms (4.0). The median number of rooms on Hopi tribal trust lands, in McKinley County, and San Juan County was higher (4.6, 4.9, and 5.1 respectively). The city of Farmington had the highest median number rooms per occupied housing unit (5.4), which was slightly higher than the state of New Mexico overall (5.3).

Similarly, occupied housing units in the Navajo Nation had the fewest bedrooms, an average of 1.7 per unit. The average number of bedrooms in McKinley County occupied housing units and on Hopi tribal trust lands was slightly higher (2.2 and 2.1, respectively). San Juan County and the state of New Mexico had a similar average number of bedrooms per occupied housing unit (2.5 and 2.6, respectively); while the city of Farmington had the highest average number of bedrooms (2.7).

A little more than one-fifth (21.3 percent) of occupied housing units on the Navajo Nation lacked complete plumbing facilities, 20 percent more than homes in New Mexico (1.2 percent) overall. Hopi tribal trust land was the only location with a higher percentage of occupied housing units lacking complete plumbing facilities (26.8 percent). Ten percent or fewer of occupied housing units in McKinley County, San Juan County, and the city of Farmington lacked plumbing facilities.

Navajo Nation and Hopi tribal trust lands had the highest percentages of occupied housing units without complete kitchen facilities (18.4 and 24.8 percent, respectively). The city of Farmington had the fewest occupied housing units lacking complete kitchen facilities (0.8 percent), slightly less than the percentage in the state of New Mexico overall (1.1 percent). The percentages of occupied housing units in McKinley County and San Juan County fell in the middle (7.7 and 3.5 percent, respectively).

The Navajo Nation had the highest percentage of occupied housing units without available telephone service (39.4 percent), almost three times as many as those occupied housing units located on the Hopi tribal trust lands (13.4 percent). McKinley County had the second largest percentage of occupied housing units without available telephone service (32.4 percent), followed by San Juan County (15.6 percent) and

the city of Farmington (9.1 percent). The state of New Mexico had the fewest occupied housing units without access to telephone service (6.1 percent).

Approximately one-third of occupied housing units on Navajo Nation and Hopi tribal trust lands were heated with gas or electricity (35.6 and 29.6 percent, respectively). McKinley County was the third location with the smallest percentage of occupied homes heated with gas or electricity (62.9 percent). Occupied housing units in San Juan County, the city of Farmington, and the state of New Mexico were more than twice as likely to be heated with gas or electricity (83.4, 97.3, and 92.3 percent, respectively) than homes on the Navajo Nation.

4.10.2.4 Navajo Nation Public Services

Navajo Nation public services are funded through tribal government tax revenues. The tax and royalty revenue received by the Navajo Nation from the operations of the FCPP and Navajo Mine is, in part, used to fund Navajo Nation public services.

This section provides information on Navajo Nation public service departments, including the types of public services provided, and, as available, staffing levels and service populations. Ratios of staffing to service population are developed to indicate the overall level of current service provided by each department. Navajo Nation departments for which data are presented include:

- Navajo Nation Department of Diné Education
- Navajo Nation Department of Emergency Management
- Navajo Nation Department of Fire and Rescue Services
- Navajo Nation Department of Highway Safety
- Navajo Nation Emergency Medical Service
- Navajo Police Department

Navajo Nation Department of Diné Education

The Navajo Nation Department of Diné Education is a Federally recognized tribal education authority that runs 11 programs related to education, libraries, youth development, and social assistance. Between 2010 and 2012, employment at the Department of Diné Education has been stable at approximately 840 full-time equivalent (FTE) staff, with 842 FTE in 2012. These staff serve a population of approximately 175,000 people (2010 Navajo population was 173,667); thus, the ratio of the 2012 FTE staff members to the Navajo Nation population served is approximately 1 to 210. According to the Department of Diné Education (2013), the department has had difficulty filling vacant skilled positions for a variety of reasons, including: noncompetitive salaries, high turnover rates, no available housing for potential candidates, no applicants interested in the location of the vacant position, job applicants lacking the required education and work experience, and the reclassification of job positions delaying the hiring of staff for 4 months up to a year.

Table 4.10-19 provides information on the level of services provided by programs within the Navajo Nation Department of Diné Education between the years 2010 and 2012.

Table 4.10-19 Navajo Nation Department of Diné Education – Services Provided, 2010–2012

	2010	2011	2012
A. Office of Monitoring, Evaluating, and Technical Assistance			
Educational Institutions Assisted:	21	11	25
B. Diné Culture, Language, and Community Services			
Number of Instructional Programs:	78	75	50
Apprenticeships Coordinated:	44	45	24
C. Office of Special Education and Rehabilitation			
Disabled Individuals Assisted:	5,179	5,959	5,285

	2010	2011	2012
D. Office of Navajo Nation Scholarship and Financial Assistance			
Number of Scholarships Provided:	9,698	7,047	2,991
Total \$ Amount of Scholarships Provided:	\$18,121,733	\$14,536,385	\$14,278,759
E. Office of Youth Development			
Youth Served:	55,823	80,466	74,306
F. Navajo Nation Library			
Patrons Served:	73,455	57,623	70,973
G. Office of Diné Science, Math, and Technology			
Services provided: <ul style="list-style-type: none"> • Direct service to schools on Navajo Nation (AZ, NM, UT) regardless of school classification (e.g., Bureau of Indian Education [BIE], Grant, public, private, etc.) • Direct service in the form of professional development for teachers without using external sources (i.e., consultants) which utilizes actual student data to close the academic achievement gap by developing and implementing school action plans in math, reading, and science. • Direct service to students to provide enrichment opportunities in science, technology, engineering, arts, and mathematics. • Direct service to policy makers to assist with updating existing and formulating new laws that promote academic success for Navajo Nation students. 			
H. Office of Educational Research and Statistics			
Publications: <ul style="list-style-type: none"> • Adequate Yearly Progress (AYP) booklet for Arizona, New Mexico, and Utah Public, Charter, BIE, and Grant schools. The AYP booklets provide information on AYP determinations (whether schools have met AYP or not), No Child Left Behind designations, and letter grades each school receives. • Enrollment booklets for Arizona, New Mexico, and Utah Public, BIE, and Grant schools. Enrollment booklets provide information on enrollment for all schools including the eight Residential Halls. • Academic Progress Report for the Reauthorization process for Grant schools. This booklet provides information on Annual Measurable Objectives (AMOs) for reading and math for Arizona and New Mexico Grant Schools. AMOs for Language Arts and math for Utah Grant schools. 			
I. Department of Early Childhood Development			
Children Served:	2,800	2,674	2,367

Source: Navajo Nation Department of Diné Education 2012, 2013.

Note:

Other departments in the Navajo Nation Department of Diné Education are the Johnson O'Malley Program and NCA/AdvancED.

Navajo Nation Department of Emergency Management

The Navajo Nation Department of Emergency Management operates under the Navajo Nation Division of Public Safety. The department works to educate residents on emergency preparedness, supports

communities in monitoring and evaluation of emergency preparedness, and encourages communities to engage in planning for the coordination of response efforts during times of emergency (Navajo Nation Division of Public Safety 2012a). While in 2012, the department had three field offices (Shiprock, New Mexico; Window Rock, Arizona; and Crownpoint, New Mexico), in 2013, the Crownpoint and Shiprock offices were closed and the number of FTE staff was reduced from 9 to 3 (Navajo Nation Division of Public Safety 2013a). These 3 FTE staff serve a population of approximately 175,000, for a ratio of approximately 1 FTE staff to 58,000 people served.

According to the Department of Emergency Management (Navajo Nation Division of Public Safety 2013a), the remaining Window Rock office is in fair condition, but work-related equipment is in need of repair. In addition, the department noted a need for additional staff to effectively function and provide emergency management services for all of the Navajo Nation.

Navajo Nation Department of Fire and Rescue Services

The Navajo Nation Department of Fire and Rescue Services was established in 1985. The department is responsible for emergency medical response, hazardous materials response, and technical rescues (e.g., vehicle/machinery, high angle, trench, ice/swift water, structural collapse, and confined space). Response to fires accounts for approximately 10 percent of the calls received by the department, while vehicle crashes are the most common type of call received (Navajo Nation Department of Fire and Rescue Services 2012).

The department operates five fire stations in Arizona: Window Rock (Fire Station 10), Fort Defiance (Fire Station 12), Chinle (Fire Station 50), Tuba City (Fire Station 40), and Leupp (Fire Station 80). Each fire station provides service to an area of 2,000 to 3,000 square miles. Geographical areas that the department does not cover typically receive fire protection services from municipal government fire departments or from BIA's Branch of Wildland Fire Management (Navajo Nation Department of Fire and Rescue Services 2013).

Between 10 and 15 volunteer firefighters and 1 to 2 paid firefighters are stationed at each location. In total, all stations in 2012 had 8 FTE paid firefighters, 3 FTE paid administrative personnel, and 51 volunteer firefighters. While the number of paid FTE has fluctuated slightly between 10 and 12 paid FTE between 2010 and 2012, the number of volunteer firefighters has fluctuated more on an annual basis, from 44 in 2010 to 38 in 2011 to 51 in 2012. While staffing levels have remained fairly stable, the population residing in areas serviced by the department has risen 32 percent, from 19,770 in 2010 to 26,173 in 2012. The 2012 service ratio was approximately 1 FTE staff member per 2,400 people served, a lower level of service compared to 2010 when the ratio was 1 FTE per 1,650 people served. The biggest challenge for the Navajo Nation Fire Department and Fire and Rescue Services is retaining both FTE and volunteer firefighters. According to the Navajo Nation Fire Department, the department is not competitive with other neighboring fire departments because the department relies solely on revenues generated by the Navajo Nation, and the Navajo Nation budget is constantly decreasing each year (Navajo Nation Department of Fire and Rescue Services 2013).

Navajo Nation Department of Highway Safety

The department was established in 1982 under the Navajo Nation Division of Public Safety. The purpose of the Department of Highway Safety is to establish and implement highway safety standards to provide safer roadways throughout the Navajo Nation. In addition, the department offers training in Defensive Driving in a course sanctioned by the National Safety Council, issues Navajo Nation vehicle operators permits, provides training on the correct use of seatbelts and infant/child car seats, provides Navajo Nation employee identification cards, promotes community awareness on safe vehicle operation, and conducts safety and injury prevention presentations (Navajo Nation Division of Public Safety 2012b). Table 4.10-20 provides information on the several of the services provided by the Navajo Nation Department of Highway Safety and the number of attendees at the programs.

Table 4.10-20 Navajo Nation Department of Highway Safety – Services Provided, 2010-2012

Services Provided	2010	2011	2012
Defensive Driving Courses	46	39	50
• Number of Attendees	1,503	764	1,044
Child Passenger Safety Clinics	~10	~15	~15
• Number of Attendees	1,000	1,100	1,200
Public Service Announcements	4	5	5

Source: Navajo Nation Division of Public Safety 2013b.

In 2012, the Navajo Nation Department of Highway Safety had 6 FTE personnel (up from 5 in 2010) servicing a population of approximately 175,000, resulting in a staffing to service population ratio of approximately 1 to 35,000. According to Navajo Nation Department of Highway Safety, the small number of FTE staff results in the department relying heavily on partnerships with outside entities to get their public safety awareness message out to the public (Navajo Nation Division of Public Safety 2013b).

Navajo Nation Emergency Medical Service

The Navajo Nation Emergency Medical Service (EMS) was established in the 1970s and currently operates under the Navajo Nation Division of Public Safety. The Navajo Nation EMS' purpose is to provide advanced life support capabilities and emergency transportation. The Navajo Nation EMS also provides cardiopulmonary resuscitation training and Heart Saver First Aid training, and offers courses for emergency medical technicians and first responders (Navajo Nation EMS 2012). Of 13 field offices, 8 are in Arizona and 5 in New Mexico. As of 2012, the Navajo Nation EMS had 153 FTE emergency medical technicians (up from 143 in 2010) and 17 administrative personnel, for a total of 170 FTE staff. These personnel fielded 17,908 service calls in 2012, a steady rise from the number of service calls in 2010 (11,120) and in 2011 (12,397). In 2012, the ratio of FTE staff members (170) to service calls (17,908) was 105 to 1 (i.e., 1 FTE Navajo Nation EMS staff member for every 105 service calls) (Navajo Nation EMS 2013).

Navajo Police Department

The Navajo Police Department operates under the Navajo Nation Division of Public Safety. The Navajo Police Department consists of seven districts located throughout the Navajo Nation, five in Arizona and two in New Mexico. Navajo police officers work in jurisdictions that can cover multiple states and are responsible for handling crimes committed by tribal members and nontribal members (Navajo Nation Division of Public Safety 2012c).

Summary of Navajo Nation Public Service Levels

Table 4.10-21 shows the 2012 staffing to service population/call volume ratios for five of the Navajo Nation public service departments. In general, as the service population and call volume have risen over the last several years, the public service department staffing levels have either stayed fairly constant or have actually declined, indicating that public service levels may have declined in recent years due to resource constraints. This finding is consistent with information provided by several departments; for example, questionnaires indicated that equipment needs improvement (Department of Emergency Management), that positions are vacant partly due to noncompetitive salary levels (Department of Diné Education), and that they need to rely on outside partnerships to enhance public safety (Department of Highway Safety).

Table 4.10-21 Navajo Nation Public Service Departments – Staffing to Service Population Ratios, 2012

Navajo Nation Public Service Department	2012 FTE Staffing	Approximate Service Population/Service Calls	Approximate Staffing to Service Ratio
Navajo Nation Department of Diné Education	842	175,000 (population)	1 to 210
Navajo Nation Department of Emergency Management	3	175,000 (population)	1 to 58,000
Navajo Nation Department of Fire and Rescue Services	11	26,173 (population)	1 to 2,400
Navajo Nation Department Highway Safety	6	175,000 (population)	1 to 35,000
Navajo Nation EMS	170	17,908 (service calls)	1 to 105

Sources: Navajo Nation Department of Diné Education 2013; Navajo Nation Division of Public Safety 2013a,b; Navajo Nation Department of Fire and Rescue Services 2013; Navajo Nation EMS 2013.

Given the expected decline of about \$19 million in payments to the Navajo Nation under the baseline condition compared to the current condition, the Navajo Nation will have less funding to support public services. The lower level of funding would likely mean fewer FTE staff for some Navajo Nation public service agencies and lower staffing to service population ratios (and subsequently, lower service levels) than under the current condition.

4.10.3 Changes to Socioeconomics Affected Environment Post-2014

This section outlines the baseline socioeconomic conditions within the ROI; these baseline conditions represent conditions present after FCPP Units 1, 2, and 3 shut down and NTEC has taken ownership of the Navajo Mine. Information presented in this section describes how these actions will change socioeconomic conditions from current conditions presented in Section 4.10.2. Some information is quantified, such as the economic and fiscal contributions of the FCPP and Navajo Mine, while other information is presented in a more qualitative fashion.

Compared to current conditions, the primary changes in socioeconomic conditions in the baseline is that the economic contributions of the FCPP and Navajo Mine to the ROI's economy would be less, due to reduced activity at both operations that is associated with the shutdown of FCPP Units 1, 2, and 3, and the redistribution of tax revenue due to the purchase of Navajo Mine by NTEC. However, the reductions in economic contribution would not all occur immediately as MCo and APS have stated that they will not lay people off; rather, reductions in direct employment will occur through natural attrition (retirements, employee turnover, etc.). Since reductions in employment would occur over time, data presented as baseline economic contributions represent the long-term baseline conditions (i.e., the period of time after all of the natural attrition has occurred).

4.10.3.1 *Population and Demographics*

Demographic changes from the current condition are unlikely; demographic composition and population growth in the ROI would likely be similar to what is presented in Section 4.10.2.1.

4.10.3.2 *Economic Conditions*

In general, it is expected that the ROI's economy would be smaller (in terms of overall output, employment, and income) under the baseline condition compared to the current condition. The smaller economy would be a result of the lower level of economic activity generated at the FCPP and Navajo Mine and associated lower levels of economic activity generated by firms that provide goods and services to the FCPP and Navajo Mine and their workers. The bulk of the economic impact of reduced activity in the baseline condition will be felt within San Juan County, which is where most of the FCPP and Navajo

Mine employees reside and where much of the FCPP and Navajo Mine maintenance and supply purchases are transacted.

Compared to current conditions, total employment in all sectors in San Juan County, New Mexico is expected to decline by approximately 870 jobs in the baseline condition, all else equal. This represents approximately 1.7 percent of the 2010 San Juan County, New Mexico civilian employment. At the state-level, total employment in all sectors in the baseline condition is expected to decline by approximately 1,240 jobs compared to current condition (0.1 percent of statewide 2010 civilian employment), all else equal. Total economic changes from current conditions to baseline conditions at the state-level are slightly higher than in the ROI, as businesses outside of the ROI that supply goods and services to the FCPP and the Navajo Mine and their workers are also affected.

In the long-term, it is possible that the lower level of activity at the FCPP and the Navajo Mine would be at least partially offset by other economic activity as people formerly employed at the Navajo Mine and FCPP generate alternative economic activities.

Employment and Unemployment in ROI and State of New Mexico

At least in the short term, the number of persons employed in the ROI would be lower under the baseline condition than under the current condition; the lower level of employment would be due to reduced operational activity at the FCPP and Navajo Mine. Reduced operational activity at the FCPP and Navajo Mine would lead to fewer jobs at the FCPP and Navajo Mine as well as fewer jobs at businesses that provide goods and services to the FCPP and Navajo Mine and their employees. The number of unemployed individuals in the ROI would likely be higher under the baseline condition than the current condition, at least in the short-term, until people either find alternative employment or relocate.

Two sectors will directly experience diminished employment under baseline conditions (with FCPP Units 1, 2, and 3 shut down and after NTEC has taken ownership of the Navajo Mine): the mining sector (due to reduced activity at the Navajo Mine) and the utilities sector (due to reduced activity at the FCPP). Other sectors that supply goods and services to the FCPP and Navajo Mine and their employees are also expected to experience reduced employment under baseline conditions, as the FCPP and NTEC will require fewer services and goods from local vendors to operate the downscaled operations, and as reduced income results in less household spending. Due to reduced employment in these sectors, baseline unemployment rates as presented in Table 4.10-6 would also be slightly higher, all other factors being equal. All other sectors, including educational services, healthcare, social assistance and public administration, which constitute a large portion of employers in the ROI (approximately 47 percent on Navajo Nation tribal trust lands), are not anticipated to experience direct loss of employment opportunities as a result of the downscaled operations. However, nearly all sectors will experience reduced demand and may experience changes in employment due to the reduced economic activity at the FCPP and the Navajo Mine (captured in the analyses as indirect and induced impacts).

Economic Role of the Power Plant and Navajo Mine in San Juan County and State of New Mexico

Economic Contribution

The economic contributions of the FCPP and Navajo Mine under the baseline condition were estimated in an economic impact analysis prepared by ASU (2013). The ASU study focused on San Juan County, New Mexico and the state of New Mexico to identify economic contributions at the local and larger state-level economy. The modeled economic contributions from FCPP and Navajo Mine in San Juan County constitute the bulk of the impacts within the ROI.

Navajo Mine

Tables 4.10-22 and 4.10-23 show the economic contribution of the Navajo Mine to San Juan County and the state of New Mexico under the baseline condition (shutdown of FCPP Units 1, 2, and 3). Under the

baseline condition it is projected that, through natural attrition (as current employees retire new employees will not be hired to fill the positions), the Navajo Mine will directly employ 397 people. Mining operations would generate \$48 million in direct labor income and \$106 million would be added to GSP. In total, including indirect and induced effects, coal production at the Navajo Mine is estimated to support 1,120 jobs, \$78 million in labor income, and \$157 million in GSP in San Juan County, New Mexico.

Under the baseline condition, the Navajo Mine's economic contribution to San Juan County will be less than conditions prior to shutdown of FCPP Units 1, 2, and 3. See Table 4.10-7 for the economic contribution of the Navajo Mine to San Juan County under pre-2014 conditions. On an annual basis 460 fewer total jobs would be supported, a reduction of 25 percent from current conditions, \$30 million less in labor income generated, and \$58 million less contributed to GSP. Effects on the state-level economy are magnified as the indirect and induced effects are larger. The state of New Mexico would experience a loss of approximately 800 jobs on an annual basis, \$45.7 million in labor income, and \$80.4 million in GSP. These declines would be due to reduced operational activity at the Navajo Mine that would be necessitated by a reduced coal requirement at FCPP, as Units 1, 2, and 3 are out of service.

Table 4.10-22 Navajo Mine – Baseline Economic Contribution to San Juan County, New Mexico (Annual until 2041)

	Jobs	Labor Income (Millions of 2011 \$s)	GSP (Millions of 2011 \$s)
Direct Contributions from Navajo Mine Operations	400	\$48.0	\$106.3
Indirect Contributions from Navajo Mine Supplier Purchases	200	\$10.1	\$17.8
Induced Effects	520	\$19.4	\$32.5
Total Economic Contribution	1,120	\$77.5	\$156.6

Source: ASU 2013.

Table 4.10-23 Navajo Mine – Baseline Economic Contribution to State of New Mexico (Annual until 2041)

	Jobs	Labor Income (Millions of 2011 \$s)	GSP (Millions of 2011 \$s)
Direct Contributions from Navajo Mine Operations	400	\$48.0	\$109.7
Indirect Contributions from Navajo Mine Supplier Purchases	210	\$10.7	\$19.3
Induced Effects	700	\$27.1	\$44.6
Total Economic Contribution	1,310	\$85.8	\$173.6

Source: ASU 2013.

Four Corners Power Plant

Tables 4.10-24 and 4.10-25 show the economic contribution of the FCPP to San Juan County and the state of New Mexico under the baseline condition (shutdown of FCPP Unit 1, 2, and 3). Under the baseline condition it is projected that, once natural attrition in employment is complete, the FCPP will directly employ 360 people. FCPP operations would generate \$54 million in direct labor income and \$181 million would be added to GSP. In total, including indirect and induced effects, energy generation at the FCPP is estimated to support 950 jobs, generate \$75 million in labor income, and add \$215 million to GSP.

Under the baseline condition, the FCPP's economic contribution to San Juan County will be less than it currently is. On an annual basis 410 fewer total jobs would be supported, a reduction of 28 percent from

current conditions, \$31 million less in labor income generated, and \$87 million less contributed to GSP. Similar to the effects to San Juan County, the state of New Mexico would experience a loss of approximately 440 jobs on an annual basis, \$32.4 million in labor income, and \$103.4 million in GSP. These declines would be due to reduced operational activity that would be necessitated by the shutdown of FCPP Units 1, 2, and 3.

Table 4.10-24 Four Corners Power Plant – Baseline Economic Contribution to San Juan County, New Mexico (Annual until 2041)

	Jobs	Labor Income (Millions of 2011 \$s)	GSP (Millions of 2011 \$s)
Direct Contributions from FCPP Operations	360	\$53.9	\$181.3
Indirect Contributions from FCPP Supplier Purchases	140	\$4.4	\$5.6
Induced Effects	450	\$17.1	\$28.1
Total Economic Contribution	950	\$75.4	\$215.0

Source: ASU 2013.

Table 4.10-25 Four Corners Power Plant – Baseline Economic Contribution to State of New Mexico (Annual until 2041)

	Jobs	Labor Income (Millions of 2011 \$s)	GSP (Millions of 2011 \$s)
Direct Contributions from FCPP Operations	360	\$53.9	\$217.4
Indirect Contributions from FCPP Supplier Purchases	130	\$4.7	\$6.0
Induced Effects	530	\$20.4	\$33.8
Total Economic Contribution	1,030	\$79.0	\$257.2

Source: ASU 2013

Note:

Numbers may not sum due to rounding.

Fiscal Contribution

The fiscal contributions of the FCPP and Navajo Mine would be lower under the baseline condition than under the current condition. Taxes and fees paid by the FCPP and Navajo Mine are primarily based on production, or revenue, both of which have been reduced due to the shutdown of Units 1, 2, and 3.

From 2004 to 2013, the Navajo Nation has received an average of \$29.1 million per year in coal royalty payments from the Navajo Mine and an average of \$7.0 million per year from FCPP lease payments. In 2011, under the current condition, the FCPP and Navajo Mine paid a total of \$59.9 million to the Navajo Nation in the form of royalties, taxes, and fees (\$18.4 was paid by FCPP and \$41.5 was paid by the Navajo Mine). The shutdown of FCPP Units 1, 2, and 3 are expected to reduce operations at the FCPP and Navajo Mine by about one-third, which would indicate that royalties, taxes and fees paid by the FCPP and Navajo Mine could be approximately one-third less under the baseline condition compared to the current condition.

If 2011 payments by FCPP and Navajo Mine to the Navajo Nation were to be one-third less under the baseline condition compared to the current condition, then in the baseline FCPP payments would be \$12.5 million and Navajo Mine payments would be \$28.1 million. Combined, annual payments by the FCPP and Navajo Mine to the Navajo Nation would be \$40.6 million, \$19.3 less than under the current condition.

Now that NTEC owns the Navajo Mine, the baseline fiscal contribution of the Navajo Mine to the Navajo Nation is expected to be higher than the estimated \$28.1 million with existing ownership. Because NTEC would be exempt from some local, state, and Federal taxes, net revenues after taxes would be higher, so conceivably more revenue would be available to the tribal government. It is worth noting that a portion of the profits from NTEC operations would be directed to the investment in “research and development of renewable and alternative sources of energy, storage, and transmission technologies and facilities with priority given to the solar technologies and facilities with attendant storage and transmission capacity,” according to the Navajo Tribal Council Resolution (April 29, 2013) that founded NTEC.

Thus, it is expected that on a net basis, with a reduction in fiscal contribution due to the shutdown of Units 1, 2, and 3 and an increase in fiscal contribution due to tribal ownership of the mine, the combined annual fiscal contribution of the FCPP and Navajo Mine in the baseline condition would be higher than \$40.6 million but lower than the \$59.9 million contribution identified as the current condition.

Right-of-Ways for Transmission Lines and Access Roads

All ROWs for transmission lines and access roads are existing and would not require any additional construction or maintenance beyond current activities. Therefore, the economic contributions to the local and state economies from these connected actions would remain the same under baseline conditions as in current operations (see Section 4.10.2.2).

4.10.3.3 Indicators of Social and Economic Well-Being

Social and economic well-being may be slightly reduced under the baseline condition compared to the current condition. Smaller economic and fiscal contributions from the operations of the FCPP and Navajo Mine would reduce income levels and funding for social support programs, potentially leading to reductions in educational attainment, increased crime and recidivism, and less ability to maintain or upgrade the housing stock. The ability of individuals to obtain healthcare may also be lower under the baseline condition as those with lower incomes tend to be more hesitant to pay for healthcare and healthcare assistance programs may see budget cuts.

The Tribal Resolution (13-277-2, April 2013) that established NTEC includes a provision to invest no less than 10 percent of net income from Navajo Mine operations towards renewable and alternative energy research and development, with an emphasis on solar technologies, energy storage, and transmission. This investment could fund the development of more energy generation and transmission facilities on Navajo Nation tribal trust lands, which would likely result in the creation of employment opportunities for the Navajo membership and a diversified energy portfolio for the Navajo Nation. These future developments would lessen the potential adverse social and economic effects discussed above, but there are no formal plans for any additional energy resource developments and data is not available at this time to estimate the socioeconomic benefits of these projects.

4.10.3.4 Navajo Nation Public Services

Given the expected decline of up to \$19 million in payments to the Navajo Nation under the baseline condition compared to the current condition, it is expected that the Navajo Nation would have less funding to support public services under the baseline condition compared to the current condition. This loss may be offset by the profits and deferred taxes (approximately \$17.9 million per year) accrued by NTEC’s ownership of Navajo Mine, but the difference is not expected to fully offset the payments traditionally realized by the Navajo Nation from BNCC. Therefore, the lower level of funding/revenue would likely mean that the baseline, compared to current conditions, would be characterized by fewer FTE staff for some Navajo Nation public service departments and reduced levels of services for Navajo Nation members.

4.10.4 Environmental Consequences

This section discusses potential socioeconomic impacts resulting from the alternatives described in Section 3.2. Socioeconomic conditions that could be affected include population and demographics, economic conditions, social and economic well-being, and Navajo Nation public services. To identify the impacts of the Alternatives (rather than the concurrent effects of shutdown of FCPP Unit 1, 2, and 3), this section identifies socioeconomic consequences by comparing the potential socioeconomic conditions under each Alternative against the baseline condition (and not the current condition). The baseline conditions most accurately represent the human environment after permitting and compliance is complete (i.e., post 2016).

4.10.4.1 *Alternative A - Proposed Action*

Under the Proposed Action, OSMRE would renew the Navajo Mine SMCRA Permit and approve the proposed Pinabete SMCRA Permit. BIA would approve Lease Amendment #3, access roads, and transmission line ROWs. As described in the baseline conditions, analysis for the Proposed Action incorporates the shut-down of FCPP Units 1-3, installation of SCRs on Units 4-5, and NTEC operation and ownership of Navajo Mine.

Population and Demographics

Under Alternative A, no expected changes would occur to the baseline conditions of population and demographics within the ROI. The baseline conditions are described in Section 4.10.3.1.

Population and demographics can shift if employment or income opportunities change in a region. However, under Alternative A, overall levels of economic activity at the FCPP and Navajo Mine would remain consistent with baseline levels, with essentially the same employment and income opportunities, and no associated expected change in demographics or population.

Economic Conditions

As noted above, overall levels of economic activity at the FCPP and Navajo Mine would remain consistent with baseline levels, with essentially the same employment and income opportunities. Under Alternative A, thus, no expected changes would occur to the baseline economic conditions (including total employment, industry size, labor force, and unemployment rate) within the ROI. The baseline conditions are described in Section 4.10.3.2.

Indicators of Social and Economic Well-Being

Economic conditions are a key determinant of social and economic well-being. As economic conditions would remain consistent with baseline levels, overall economic well-being is expected to also remain at baseline levels. In addition to being influenced by economic factors, social conditions can be affected by changes in population, demographics, and environmental conditions. None of these factors are anticipated to change compared to baseline levels, with the exception of potential changes in environmental conditions. It is possible for changes in environmental conditions due to mine expansion in the Pinabete SMCRA Permit Area to translate into changes in social conditions, particularly for residents or workers in areas near the Pinabete SMCRA Permit Area, who will experience increased industrial activities in their vicinity.

Thus, under Alternative A, little to no expected changes from baseline conditions in the indicators of social and economic well-being would occur within the ROI. The baseline conditions are described in Section 4.10.3.3.

Navajo Public Services

Revenue to the Navajo Nation from the FCPP and Navajo Mine is a key funding source for Navajo Nation public services. Under Alternative A, total revenue to the Navajo Nation from operation of the FCPP and Navajo Mine is expected to remain at baseline levels. Consequently, no expected changes would occur to the baseline condition of Navajo public services within the ROI. (The baseline conditions are described in Section 4.10.3.4).

4.10.4.2 Alternative B – Navajo Mine Extension Project

Under Alternative B, OSMRE would approve an alternate mine plan for the Navajo Mine. The alternate mine plan has no additional socioeconomic implications compared to Alternative A. The BIA would approve Lease Amendment #3 for the FCPP, and FCPP would operate as described under Alternative A.

Population and Demographics

Potential impacts to baseline conditions of population and demographics due to Alternative B would be the same as described under Alternative A.

Economic Background

Potential impacts to baseline conditions of the economic background due to Alternative B would be the same as described under Alternative A.

Indicators of Social and Economic Well-Being

Potential impacts to baseline conditions of the indicators of social and economic well-being due to Alternative B would be the same as described under Alternative A.

Navajo Public Services

Potential impacts to baseline conditions of the Navajo Public Services under Alternative B would be the same as described under Alternative A.

4.10.4.3 Alternative C – Alternative Pinabete Mine Plan

Under Alternative C, OSMRE would disapprove the Pinabete SMCRA Permit application, and NTEC would seek approval from OSMRE for an alternative SMCRA Permit Area. For both the Navajo Mine Permit Area and the alternative SMCRA Permit Area, operations and reclamation would be conducted as described under Alternative A. The BIA would approve Lease Amendment #3 for the FCPP, and FCPP would operate as described under Alternative A.

Population and Demographics

Potential impacts to baseline conditions of population and demographics due to Alternative C would be the same as described under Alternative A.

Economic Background

Potential impacts to baseline conditions of the economic background due to Alternative C would be the same as described under Alternative A.

Indicators of Social and Economic Well-Being

Potential impacts to baseline conditions of the indicators of social and economic well-being due to Alternative C would be the same as described under Alternative A.

Navajo Public Services

Potential impacts to baseline conditions of the Navajo Public Services under Alternative C would be the same as described under Alternative A.

4.10.4.4 Alternative D – Alternative Ash Disposal Area Configuration

Under this alternative, OSMRE would approve the Pinabete SMCRA Permit application and renew the Navajo Mine SMCRA permit. The Navajo Mine would operate as described under the Proposed Action. BIA would approve the amended lease for the FCPP, and the plant would continue to operate as described under the Proposed Action except with a different configuration for the DFADAs. No additional socioeconomic implications compared to Alternative A would result for the alternate DFADA configuration. The transmission line ROWs would be approved and they would continue to be operated and maintained as described for the Proposed Action.

Population and Demographics

Potential impacts to baseline conditions of population and demographics due to Alternative D would be the same as described under Alternative A.

Economic Background

Potential impacts to baseline conditions of the economic background due to Alternative D would be the same as described under Alternative A.

Indicators of Social and Economic Well-Being

Potential impacts to baseline conditions of the indicators of social and economic well-being due to Alternative D would be the same as described under Alternative A.

Navajo Public Services

Potential impacts to baseline conditions of the Navajo Public Services under Alternative D would be the same as described under Alternative A.

4.10.4.5 Alternative E– No Action Alternative

Under the No Action Alternative, the mining would continue until the ROD is issued in 2015, and then the Navajo Mine would close; BIA would not approve Lease Amendment #3 and the FCPP would shut down and the ROW leases for the subject transmission lines would not be approved.

Population and Demographics

Under the No Action Alternative, the shutdown of the FCPP and Navajo Mine may result in a population decline, as net immigration to the area may slow, causing a reduction in population growth rates.

No expected major changes would occur to baseline condition demographics in the ROI due to the No Action Alternative.

Economic Background

Under the No Action Alternative, all activity at the FCPP would cease in 2016. Unless other economic activities, such as production of renewable energy, develop to replace the employment and income opportunities at the FCPP and Navajo Mine, the ROI's economy would become smaller. A total loss of 2,070 jobs, both direct and indirect, a total annual loss of \$152.9 million in labor income, and an annual reduction in GSP of \$372 million is projected to occur.

The fiscal contributions derived from FCPP and Navajo Mine operations would decline to \$0. While this decline would affect local, state, and Federal governments, it would most significantly affect the Navajo

Nation. The Navajo Nation would be expected to lose between \$40 and \$60 million per year; because this revenue constitutes a large portion (approximately 1/3) of Navajo Nation revenues, this is considered a major adverse impact. Further, it is estimated that the Navajo Nation would lose approximately \$17.9 million per year in tax exemptions which would result from NTEC's ownership of the Navajo Mine.

Indicators of Social and Economic Well-Being

Under the No Action Alternative, social and economic well-being would be reduced. While it is recognized that a portion of existing FCPP and Navajo Mine employees would be re-tasked for abandonment and reclamation activities, these assignments would likely only last a few years after shutdown and ultimately render the loss of 2,070 jobs (see Table 4.10-22). This loss of jobs would add to the already high unemployment rate (approximately 51 percent) in the Navajo Nation as 410 direct jobs at the Navajo Mine and 380 direct jobs at the FCPP are staffed by tribal members; these jobs are relatively high-skill, high-income jobs. The even higher unemployment rate and reductions in income could exacerbate some of the “pressing health challenges” identified by the San Juan Community Health Department, including those associated with financial burdens and related stress.

The end of economic and fiscal contributions from the operations of the FCPP and Navajo Mine could lead to reductions in education attainment, reduced economic well-being, increased recidivism, and a reduced ability to maintain or upgrade the housing stock. The ability of individuals to obtain healthcare could be negatively impacted as well. In summary, the weakened economy could result in moderate adverse impacts to overall social and economic well-being.

Navajo Public Services

Under the No Action Alternative, after 2016 no more tax revenues would be received from the operations and production associated with the FCPP and Navajo Mine. The net effect of the loss of all tax royalties paid to the Navajo Nation are shown in Table 4.10-26. All tax royalties paid to the Navajo Nation revenues associated with the Navajo Mine and FCPP would be eliminated. Unless replaced with revenue from other sources, this reduction in revenues would negatively impact the quality and quantity of the public services offered on the Navajo Nation. For example, the Navajo Nation Fire Department relies on money generated by the Navajo Nation to pay its firefighters. The Fire Department is already struggling to retain firefighters because it cannot pay wages that are competitive with neighboring fire departments, and the Fire Department is currently understaffed. A reduction in revenue would negatively impact the Navajo Nation Fire Department and other Navajo Nation public service providers and their ability to provide services to the Navajo Nation people.

Table 4.10-26 Navajo Mine and Four Corners Power Plant Combined – Alternative E Compared to Baseline Economic Contribution, Annual Until 2041

	Jobs	Labor Income (Millions of 2011 \$s)	GSP (Millions of 2011 \$s)
Direct Impacts from Navajo Mine and FCPP Operations	-760	-\$101.9	-\$287.6
Indirect Impacts from Navajo Mine and FCPP Supplier Purchases	-340	-\$14.5	-\$23.4
Induced Impacts	-970	-\$36.5	-\$60.6
Total Economic Contribution	-2,070	-\$152.9	-\$371.6

Source: ASU 2013.

4.10.5 Socioeconomics Mitigation Measures

The Project Applicants have proposed measures that would be implemented to reduce or eliminate some of the environmental impacts of the Proposed Action. These measures include specific mitigating measures for certain environmental impacts, standard operating procedures that reduce or avoid environmental impacts, and BMPs for specific activities. These are described in Section 3.2.6.10. These measures are part of their application materials and are enforceable through permit or lease conditions. Where the environmental analysis in this EIS recommends additional protective measures, over and above the applicant proposed measures, they are listed below as specific mitigation measures.

The Proposed Action, including the continued operations of Navajo Mine, FCPP, and the transmission lines, would not result in major adverse impacts to socioeconomics. Therefore, no additional mitigation is recommended.