Appendix F3.18

Socioeconomics and Environmental Justice
Technical Supplement

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F3.18 Socioeconomics and Environmental Justice Technical Supplement

Note for the Reader: The following material was part of a document that has become Section 3.18 of the draft EIS. Over time, it was necessary to parse out some of the detail describing the affected environment. At the same time, some data has been revised or superseded, including the initial releases from the 2010 U.S. Census. Rather than lose the detail presented in the preliminary document, particularly that pertaining to social conditions and trends (F3.18.8), the material is provided below. Some of this information, along with revised information, is presented in Section 3.18.

This supplement provides additional information, analysis and discussion of the affected environment and environmental consequences for socioeconomics contained in Section 3.18 of the EIS. This section draws on information from numerous public sources; information that is reported and/or updated on a regular schedule. Local unemployment data, for example, is reported monthly, but with minor revisions to the data reported for the preceding 3 to 6 months being common. Other data are released quarterly, annually or even on 10-year cycles. Data releases are subject to time lags reflecting the time required to collect, compile and process data, and in some cases, to comply with regulations dealing with nondisclosure of certain information about private enterprises.

For complex and lengthy National Environmental Policy Act (NEPA) assessments, such as that conducted for the proposed SNWA's Clark, Lincoln, and White Pine counties Groundwater Development Project (GWD Project), new data releases and revision of previously released data pose challenges with respect to describing the affected environment, particularly given Council on Environmental Quality (CEQ) guidance to rely on the best available information. For socioeconomics, this guidance is often viewed as meaning the most current data, even where more current information reveals little substantive change. Given the virtually continuous release of data, that directive must be balanced against the need for some cut-off in order to complete the assessment, provided that any substantive change occurring after that cut-off is considered. For this report, most of the economic and demographic data are current through 2007 or 2008, reflecting data availability at the time this section was initially prepared and then subsequently updated. Since that time, the economic recession and early stages of recovery have resulted in changes to certain social and economic conditions in southern Nevada, Information detailing some of these changes is available, but other data are still pending. Rather than update all of material with information that still does not capture these changes or in the opinion of the authors would not affect the results of the assessment, consequently updates have been included in Section 3.18 of the EIS, but are not included in this Appendix.

F3.18.1 Study Area

The study area for socioeconomics and environmental justice is defined in terms of local county jurisdictional boundaries and includes Clark, White Pine, and Lincoln counties in Nevada and Juab and Millard counties in Utah. These five counties encompass virtually the entire extent of the four basic areal geographies associated with the proposed development and operations of the proposed right-of-way (ROW), groundwater exploratory areas, and most of the area of potential indirect effects from groundwater level declines associated with groundwater pumping (**Figure 3.18-1**). A number of the hydrographic basins included in the groundwater model extend outside these five counties, small portions of which, for instance, western Beaver County, are at risk of potential long-term drawdown. However, those areas are excluded from the socioeconomic study area due to their remoteness and limited areal extent of the affected areas, which together limit the potential for significant socioeconomic effects.

F3.18.2 Overview

The 3 Nevada and 2 Utah counties encompass a vast geographic expanse, 28,550 square miles, ranging from 555 square miles in Juab County to 10,365 square miles in Lincoln County. Private lands comprise only a small share of the land in the area. As across much of the west, the federal government manages a majority of land in the study area, with the share of such public lands ranging from 70 percent in Juab County to 94 percent in Lincoln County (GSA 2005). Additional lands are managed by the two states, local governments, and lands held in trust for various American Indian tribes by the federal government. Federal and private land ownership patterns in the three Nevada counties are changing as a result of recent Congressional actions authorizing major land disposal actions in

these counties. This land ownership pattern has numerous implications for social, economic, local governance, and local government finance conditions across the study area.

Clark County is an internationally known entertainment, gaming, and conference/convention tourism destination. Although much of its economy is supported by those activities, its economic base also includes light and heavy manufacturing, financial and other services, and transportation services. Economies in the rural counties remain heavily dependent on natural resources including agriculture, mineral development, outdoor recreation, and tourism. Clark County contains the Las Vegas metropolitan area, home to 1.9 million residents and, until the recent global economic downturn, among the fastest growing urban areas in the nation, gaining more than 525,000 residents between 2000 and 2009. The area's economy also added more than 310,000 jobs between 2000 and 2008, however, the recession resulted in the loss of approximately 100,000 jobs in 2009 and early 2010. The cities of North Las Vegas, Henderson, Boulder City, and Mesquite also are in Clark County and many additional residents live in large urban planned communities in the Las Vegas Valley that are not incorporated municipalities. The other 4 counties in the study area predominately are rural, ranging in population from about 4,700 residents in Lincoln County to 12,300 residents in Millard County. The populations of Juab and Millard counties are concentrated in the eastern sections of those counties, more than 80 highway miles from the potentially affected areas.

Communities[1] located in or near the proposed groundwater pumping basins in Lincoln and White Pine counties include Ely, Baker, Pioche, Panaca, Caliente, and Alamo in Nevada; and Garrison and Callao in Utah. Other nearby communities, settlements, or developments in the area include McGill, Ruth, Lund, Hiko, and Ursine (Eagle Valley). Ely is the largest community in the rural area (2008 population of 4,352), and along with Caliente (2008 population of 1,077) are the only incorporated communities in the 2 counties.

No American Indian Reservations are located within the proposed groundwater pumping basins, although five are located wholly or partially within the three above-named Nevada counties: the Ely Colony, the Confederated Tribes of the Goshute Indian Reservation, the Moapa Indian Reservation, the Las Vegas Colony, and the Fort Mohave Reservation (NPS 1997). The Las Vegas Colony and Fort Mohave Reservation are quite distant from the project ROW and exploratory areas and the Fort Mohave Reservation is outside the three major flow systems associated with the project. The Paiute Tribe of Utah has tribal reservation lands in several locations in southwestern Utah; however, none are located within the indirect effects study area. There are other tribes, including those on nearby reservations in Nevada, Utah, and Arizona with traditional ancestral ties to the area. Those historic ties are described in the Cultural Resources section of this chapter.

The basin and range physiography that characterizes the region also shapes land use, transportation systems, and hence settlement patterns and many, less formal but well established social interactions in the region. U.S. routes 93 (north-south) and 6/50 (east-west) are the two major highways through the interior of White Pine and Lincoln counties. These eventually connect to Interstate (I)-80 in northern Nevada and to I-15 in Clark County and eastern Juab and Millard counties. The Union Pacific mainline between Salt Lake City, Las Vegas, and Los Angeles passes through Lincoln County. The Northern Nevada Railway, based in Ely, operates today as a heritage tourism museum and railway, but initially began operation to support mining operations. The railroad's track system extends from Ruth, through Ely, eventually connecting to the Union Pacific system near Wells. McCarran International Airport in Las Vegas is the major commercial service airport in the region, with Salt Lake City International and Reno/Tahoe International airports also relatively accessible to the northern portions of the study area. Limited scheduled air service and various services for air taxi, general aviation, gliders and ultralight aircraft are available in Yelland Field near Ely, the largest public airport in the northern portion of the study area. Other general aviation and private airfields are located throughout the region.

The remainder of this section provides additional information regarding social and economic conditions in the study area.

[1] These communities are described in more detail in Section 3.18.7.2.

F3.18.3 Population and Demographics

F3.18.3.1 Population

Long-term population growth patterns among the counties since 1970 reflect important economic and demographic influences and events that contribute to current conditions (**Table F3.18-1**). Lincoln, Juab and Millard counties all experienced long-term population growth, while White Pine County has experienced a pattern of cyclic contraction and expansion tied to mining and the opening of a state prison. Important influences affecting growth in these two counties include the completion of I-15 between Las Vegas and Salt Lake City in the 1970s and more recent economic and population growth in the Salt Lake City-Orem metropolitan statistical area (MSA), with growth spreading southward along the Wasatch Range. Growth trends in Millard County were punctuated by a rapid increase and decline associated with construction of the Intermountain Generating Station near Delta in the mid-1980s (**Figure F3.18-1**). In 2009, the populations of Juab and Millard counties were estimated to be 10,244 and 12,276, respectively, with most of the population and recent population growth concentrated in the eastern portions of each county. Anecdotal reports suggest little population growth in the western portions of each county that are in the study area.

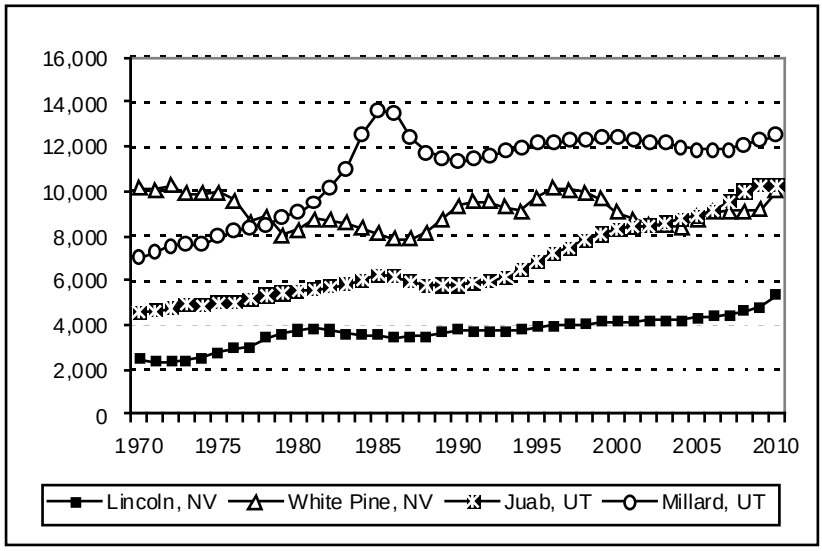
Table F3.18-1 Resident Population, 2000 to 2010

	Clark County, Nevada	Lincoln County, Nevada	White Pine County, Nevada	Juab County, Utah	Millard County, Utah[1]
2000	1,375,535	4,165	9,181	8,238	12,405
2001	1,455,993	4,141	8,679	8,388	12,297
2002	1,514,128	4,193	8,553	8,476	12,219
2003	1,570,341	4,212	8,440	8,603	12,142
2004	1,642,884	4,199	8,429	8,782	11,975
2005	1,702,957	4,344	8,797	8,894	11,872
2006	1,778,129	4,390	9,068	9,132	11,889
2007	1,838,635	4,455	9,110	9,551	11,886
2008	1,879,093	4,643	9,136	9,999	12,095
2009	1,902,834	4,794	9,188	10,244	12,276
2010	1,951,269	5,345	10,030	10,246	12,503
Change 2000 – 2010	575,734	1,180	849	2,008	98
CAGR[2] 2000 – 2010	3.6%	2.5%	0.9%	2.2%	0.1%

[1]The Utah Governor's Office of Planning and Budget estimates the 2008 population of Millard County at 13,550, a net gain of more than 1,100 residents compared to 2000, based on estimated net in-migration in contrast to net out-migration by the Census Bureau (Utah Governor's Office of Planning and Budget 2008). The Census Bureau estimate is reported here for consistency, particularly because the differences are most likely unrelated to changes in the western portion of the county.

[2]CAGR = compounded annual growth rate expressed as a percentage.

Source: U.S. Census Bureau 2011a, 2010a, 2009a.



Sources: U.S. Bureau of Economic Analysis 2009a; U.S. Census Bureau 2011a, 2010a.

Figure F3.18-1 Resident Population, Four Rural Counties, by County – 1970 to 2010

Settlement patterns within the four rural counties are similar, with much of the population concentrated in and near a few established communities, for instance, Ely, McGill, Ruth, and Baker in White Pine County, and Nephi and Mona in Juab County. However, all counties also have a sizeable population base living on farms, ranches, and smaller acreages/tracts in unincorporated areas (**Table F3.18-2**). Development in the outlying areas tends to be near streams and springs in the valleys and flats, as these were locations that historically attracted settlers who homesteaded in the area or acquired lands through the BLM's Desert Entry program.

Baker, an unincorporated community situated in the Snake Valley hydrologic basin in eastern White Pine County straddling the primary road access to the Great Basin National Park, is the only community in which a segment of the proposed pipeline ROW would be located. Including nearby rural development, Baker has an estimated population of 150 to 200, and along with nearby Garrison, Utah and the Border Inn, a service station/restaurant/motel enterprise along U.S. 6/50 at the Nevada – Utah state line, the community comprises an important social and economic place in the region.

Other informal communities and clusters of development and population located in the study area include Callao, Trout Creek, Partoun, Gandy, and the EskDale community in Utah, rural residential development near Baker, on Sacramento Pass and in Spring Valley in White Pine County, and the emerging Coyote Springs development in Lincoln and Clark counties. All but the latter are located in either the Snake Valley or Spring Valley hydrologic basins. The latter is situated in the Coyote Spring basin. With the exception of a few scattered ranches, the remaining groundwater exploratory areas are largely unpopulated due to the limited amount of private land. The EskDale community is a religious community of about 80 residents, supported largely by a thriving dairy, associated farming operations, and dairy cattle breeding/animal husbandry. Approximately 300 to 350 residents reside in Garrison and the remainders of western Juab and Millard counties.

Table F3.18-2 Population of Cities, Places, and Outlying Areas, 1990, 2000, and 2008

County/Place	1990	2000	2008	Changes 1990 to 2008	
				Absolute	Percent
Clark, Nevada					
Boulder City	12,567	14,966	16,840	4,273	1.6%
Henderson	64,942	175,381	272,063	207,121	8.3%
Las Vegas	258,295	478,434	599,087	340,792	4.8%
Mesquite	1,871	9,389	19,939	18,068	14.0%
North Las Vegas	47,707	115,488	216,672	168,965	8.8%
Paradise (uninc.)	n/a	166,260	183,972	NA	NA
Spring Valley (uninc.)	n/a	125,607	178,567	NA	NA
Sunrise Manor (uninc.)	n/a	154,616	187,485	NA	NA
Remainder of county	356,077	135,624	311,521	NA	NA
Lincoln, Nevada					
Caliente	1,111	1,123	1,077	(34)	-0.2%
Alamo (uninc.)	n/a	478	464	NA	NA
Panaca (uninc.)	n/a	632	645	NA	NA
Pioche (uninc.)	n/a	840	785	NA	NA
Remainder of county	2,664	1,092	1,381	1,381	NA
White Pine, Nevada					
	4,756	4,041	4,352	(404)	-0.5%
Lund (uninc.)	n/a	161	157	NA	NA
Mc Gill (uninc.)	n/a	1,184	1,128	NA	NA
Ruth (uninc.)	n/a	404	407	NA	NA
Remainder of county	4,508	3,391	3,515	NA	NA
Juab, Utah					
Eureka	562	766	796	234	2.0%
Levan	416	688	864	448	4.1%
Mona	584	850	1,402	818	5.0%
Nephi	3,515	4,733	5,408	1,893	2.4%
Rocky Ridge town	n/a	403	526	NA	NA
Remainder of county	740	798	887	NA	NA
Millard, Utah					
Delta	2,998	3,209	3,172	174	0.3%
Fillmore	1,956	2,253	2,136	180	0.5%
Hinckley	658	698	708	50	0.4%
Holden	402	400	372	(30)	-0.4%
Kanosh	386	485	470	84	1.1%
Leamington	253	217	206	(47)	-1.1%
Lynndyl	120	134	120	-	0.0%
Meadow	250	254	237	(13)	-0.3%
Oak	587	650	606	19	0.2%
Scipio	291	290	298	7	0.1%
Remainder of county	3,432	3,815	3,757	325	0.5%

uninc. – unincorporated community.

n/a and NA– Population counts for these unincorporated communities were not reported (n/a = not available) in the 1990 Census. Consequently, the absolute and percent change values can not be derived (NA = Not applicable).

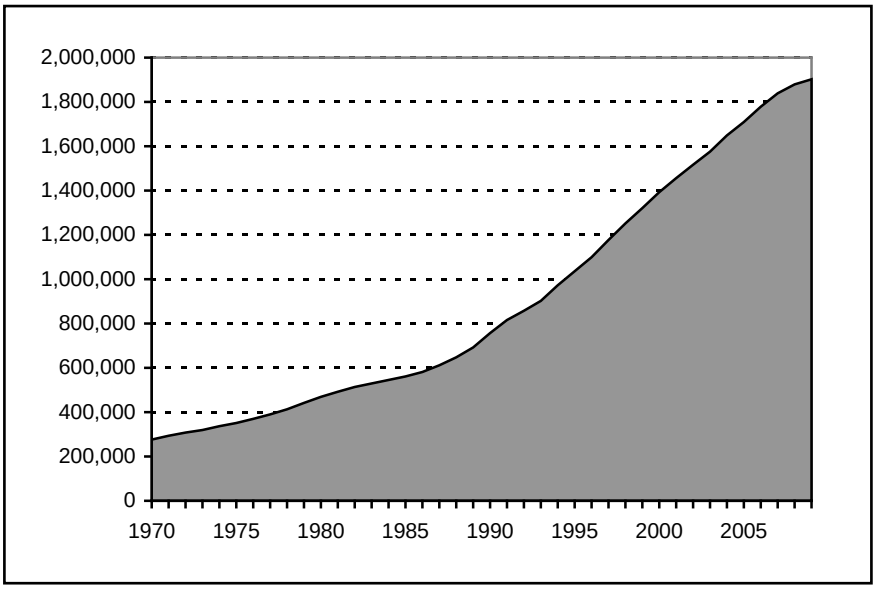
Sources: U.S. Census Bureau 2009b, 2002a; NSD 2008.

Baker and the surrounding area have attracted some new seasonal and year-round residents in recent years, primarily semi-retired and/or lifestyle migrants attracted by the area's social, environmental and scenic amenities. Typically, the new residents were previously acquainted with the area; some for example, had visited the area previously during a vacation. Several of them now operate small businesses in the community. Baker and the remainder of the Snake Valley have also lost population as young adults have left for education or employment opportunities.

The majority of Lincoln County's resident population, and the communities of Panaca, Pioche, and Caliente, are situated east of the proposed pipeline ROW and groundwater development basins in the Meadow Valley Wash flow system. Alamo and the Coyote Spring development are in the White River flow system.

As mentioned in Section 3.5 above, the Salt Lake Desert flow system includes portions of Elko, Tooele, Beaver, and Iron counties, the former in Nevada; the latter three in Utah. With the exception of the area in Tooele County, these areas are sparsely populated, with populations limited to those associated with a few ranches. The area in Tooele County includes a small portion of the Goshute Indian Reservation and the small communities of Ibapah and Gold Hill. The total population of the area was about 175 in 2000. Current estimates of the population are unavailable.

Population trends in the four rural counties stand in stark contrast to that which has occurred in Clark County, where the resident population climbed nearly 7-fold, from 277,230 in 1970 to 1,902,834 in 2009. During that period, Clark County's population growth achieved a long-term CAGR in excess of 5 percent (**Figure F3.18-2**), consistently ranking it among the fastest growing metropolitan areas in the nation.



Source: U.S. Bureau of Economic Analysis 2010a.

Figure F3.18-2 Clark County Population, 1970 to 2009

Net population gains of more than 525,000 in Clark County between 2000 and 2009 accounted for 82 percent of the Nevada's statewide population growth of nearly 645,000 during the same period, the latter equivalent to a 3.2 percent CAGR. Utah registered a statewide increase of more than 551,000 residents between 2000 and 2009, representing a growth rate of 2.5 percent CAGR.

Recent population growth in Clark County has been focused in and around Las Vegas (**Table F3.18-2**). The City of Las Vegas, the central city in the MSA, has seen its population more than double since 1990, to nearly 600,000 in 2008. The population of Henderson has climbed more than 4-fold during the same period, exceeding 272,000 in 2008, while the City of North Las Vegas gained more than 168,000 new residents. The cities of Boulder City and

Mesquite, both of which are located outside of the Las Vegas Valley gained 4,273 and 18,068 residents, respectively.

Substantial population growth also has occurred in the unincorporated areas surrounding Las Vegas. Much of this population is located in large, planned communities where many of the services are provided by community associations rather than local governments. The Census Bureau estimated the population of unincorporated Clark County at more than 861,000 residents in 2008, 140 percent higher than the corresponding total in 1990.

The national economic recession that began in late 2008 dramatically curtailed the economic expansion and pace of population growth in Clark County. Residential construction, which had been a vital element of the region's economy, came to a virtual standstill and new commercial and resort development slowed substantially, contributing to rising unemployment. Las Vegas' gaming, convention and entertainment industry was also affected as the weaker economy resulted in convention cancellations and reduced discretionary travel and spending by visitors. Lay-offs, high unemployment and a lack of job vacancies have dramatically curtailed the migration of job-seekers into region. The economic recession also likely slowed the historical inflow of retirees by increasing economic uncertainties and the adverse effects of the housing crisis in curtailing the number of homebuyers, depressing home values, and limiting access to home financing for those who were interested in selling their existing homes in order to relocate to Las Vegas. While the weak market, large number of foreclosures and depressed housing values represent opportunity for some, thus far, the net effects appears to be one of limiting growth. A critical issue now raised in the community by the economic slowdown is when and how robust will the economic recovery be and will Las Vegas and Clark County resume its previous growth trend or will there be lingering effects that could result in either dampened or accelerated growth?

F3.18.3.2 Migration Trends

Net population change in an area is the net result of natural change, that is, differences between the number of births and deaths among the local resident population, and net migration. Net migration is the difference between the number of former residents who moved from an area and the number of new residents who moved in. Natural change and net-migration occurs in all communities. It is the net differences and the comparative relationship between the two that determine the net change. Natural changes in a community tend to be primarily functions of demographics and various social and cultural characteristics, such as age, ethnicity, and religion, among the resident population. Migration tends to be related to demographics, particularly age, as in the case of college students, but also to economic factors such as employment opportunities, retirement, and lifestyle factors. Population change due to migration, both in magnitude and net gain or loss, can occur relatively abruptly, whereas natural change tends to be more gradual.

The relative roles of natural increase and net migration vary dramatically across the study area, as shown in **Table F3.18-3**. Net in-migration has been the driving force behind the growth in Las Vegas/Clark County, averaging more than 47,000 new residents per year between 2000 and 2008 and representing nearly 80 percent of the net growth. New residents have come from all states and many foreign lands. California is the most common origin of relocating residents and about 20 percent of new residents are foreign born (U.S. Treasury 2007; UNLV-CBER 2007).

Net-migration into Clark County declined precipitously as the current economic recession and housing finance crisis resulted in the loss of upwards of 100,000 jobs, many in construction, and adversely affected the housing market. U.S. Census Bureau estimates report that natural increase accounted for 16,566 (70 percent) of the net population change of 23,741 from 2008 to 2009, with net migration estimated at 7,544. The latter is less than 20 percent of the historical annual average migration of 47,000.

Table F3.18-3 Components of Population Change, 2000 to 2008

	Natural Change	Net International Migration	Net Domestic Migration	Total Population Change[1]	Migration Share of Total (percent)
Clark, Nevada	116,692	68,427	311,685	490,211	78
Lincoln, Nevada	-60	17	861	733	>100
White Pine, Nevada	-32	46	30	18	> 100
Juab, Utah	996	7	788	1,745	45
Millard, Utah[2]	694	331	-1,284	-323	NA

[1]The total change is not the sum of the preceding columns due to statistical rounding.
[2]See footnote 1 below regarding the state's estimates of migration.
NA – not applicable because the net change is negative.

Source: U.S. Census Bureau 2009b.

Net-migration has been responsible for all of the net population growth in Lincoln County and 45 percent of the net change in Juab County. In White Pine County, net in-migration slightly more than offset the declines due to natural change among the local population. According to the Census estimates, Millard County has experienced a substantial level of domestic out-migration since 2000[2].

Natural increase, defined as the net difference between the number of births and deaths among residents, is an important dimension of population change in Juab and Millard counties. In part, this pattern reflects a comparatively large number of young households, many of whom are affiliated with the Church of Jesus Christ of Latter Day Saints (LDS) whose membership characteristically has relatively high birth rates and larger families. The relatively youthful population is evident in the median ages and numbers of residents under 18 in the 2 Utah counties (**Table F3.18-4**).

Table F3.18-4 Age Distribution and Median Age of the Resident Population 2006

	Under 18 (percent)	18 to 64 (percent)	65 and Over (percent)	Median Age 2006	Median Age 2000
Clark, Nevada	26.0	63.6	10.4	34.8	34.4
Lincoln, Nevada	23.4	53.3	23.3	41.4	38.8
White Pine, Nevada	20.3	64.6	15.2	38.7	37.7
Juab, Utah	34.0	56.2	9.8	27.7	26.5
Millard, Utah	31.7	55.7	12.6	32.2	29.9

Source: U.S. Census Bureau 2007a.

F3.18.3.3 Selected Demographic Characteristics

The countywide demographic characteristics of Juab and Millard counties are not thought to be fully reflective of those in the study area. Comments by local residents and educators suggest many young adults leave the area and that local school enrollments have been declining in recent years.

[2] The basis for the estimated out-migration is not apparent and it appears inconsistent with other economic and demographic data, i.e., employment and residential construction trends. However, the differences are also unlikely to be related to changes in the portion of western Millard County in the project study area.

Among the 5 counties, White Pine County has the largest share of its population in the 18 to 64 year category. Factors contributing to this pattern are recent increases in mining jobs, which attract a high portion of working adults, and the adult inmate population at the state prison. The latter contributes to lower local birth rates.

Despite some tendency to think of retirement migration in conjunction with Las Vegas and other sunbelt areas, demographic data indicate that a large portion of the migrants are younger singles and households. The median age of Clark County residents is 34.8 years, only slightly higher than in 2000, even as population has climbed by over 400,000 residents. Fewer than 11 percent of the residents are 65 or over and 26 percent are under the age of 18.

The racial and ethnic compositions of the local populations reflect the influences of migration, historical settlement patterns, and economic factors. Clark County's resident population is about 60 percent white and not Hispanic or Latino, with 40 percent being members of other races, multiracial, Hispanic, or of Latino ethnicity. The total 39.9 percent share of racial and ethnic minorities in Clark County is 9.0 percentage points higher than the nation as a whole and likely reflects the in-migration of minorities attracted by the abundance of jobs in the services, trade, and other industries.

As compared to Clark County, white non-Hispanic or Latino residents comprise considerably higher portions of the populations of all 4 of the rural counties, with such residents accounting for between 79.4 percent of the population in White Pine County and 95.2 percent of all residents in Juab County (**Table F3.18-5**).

Table F3.18-5 Racial and Ethnic Population Composition, 2000

	Percent of the Total Population			
	(A)	(B)	(C)	(D)
	White and not Hispanic or Latino	American Indian and Alaska Native and not Hispanic or Latino	Other Races, Two or More Races, and not Hispanic or Latino	Hispanic or Latino Ethnicity
United States	69.1	0.7	17.6	12.5
Clark County	60.1	0.6	17.3	21.9
Lincoln County	90.1	0.6	4.3	5.0
White Pine County	79.4	3.2	6.7	10.7
Nevada	65.1	1.1	14.1	19.7
Juab County	95.2	0.9	1.1	2.7
Millard County	90.5	1.2	1.1	7.2
Utah	85.3	1.2	4.6	9.0

Notes: Racial minorities includes all persons identifying themselves in the census as a non-white race, including "Black or African American", "American Indian and Alaska Native", "Asian", "Native Hawaiian and Other Pacific Islander", "Some other race alone", and "Two or more races". Ethnic minorities include persons who identify themselves as Hispanic or Latino. Persons of Hispanic or Latino origin can identify themselves as part of any race (including white) and as persons of Hispanic, Latino origin or an ethnic minority.

Source: U.S. Census Bureau 2002a.

Hispanics and Latinos account for larger shares of the resident population in all four rural counties, than do American Indians, Alaskan Natives, and non-white, non-Hispanics or Latinos. In 2000, American Indian and Alaskan Natives accounted for between 0.6 percent (Clark) and 3.2 percent (White Pine) of study area residents. All or substantial portions of four American Indian reservations and colonies are located in these two counties; the Ely Colony, Goshute Reservation, Las Vegas Colony and Moapa River Reservation. The first three gained population

between 1990 and 2000, while the number of inhabitants on the Moapa River Reservation declined (**Table F3.18-6**). There are four other reservations in surrounding counties, but all are quite distant from the project area.[3]

Table F3.18-6 Resident Population on American Indian Reservations In/Near the Study Area

Reservation/Colony (Tribal Affiliation)	1980	1990	2000	Changes 1990 to 2000	
				Abs.	Percent
Ely Colony, Nevada – Shoshone	76	79	133	54	68.4
Confederated Tribes of the Goshute Reservation, Nevada-Utah, Goshute, Paiute, and Bannock	45	99	105	6	6.1
Moapa River Reservation, Nevada - Paiute	185	375	206	-169	-45.1
Las Vegas Colony, Nevada – Paiute	113	80	108	28	35.0

Source: U.S. Census Bureau 2002b.

F3.18.3.4 Projected Population Growth

Long-term population projections are presented for the five county study area in **Table F3.18-7**. These projections are based primarily on a continuation of historic trends, unconstrained by legal, environmental, or political factors, and are only generally reflective of recent and foreseeable future changes in economic development and growth influences, including those associated with Congressionally approved land disposal actions in Southern Nevada.

Table F3.18-7 Long-Term Population Projections to 2030 for Study Area Counties

	2005	2010	2015	2020	2025	2030
Clark, Nevada						
Nevada State Demographer 2006	1,796,380	2,281,997	2,718,502	3,045,813	3,344,390	3,510,400 (e)
Nevada State Demographer 2008	1,796,380	2,148,122	2,433,175	2,666,119	2,863,501	3,017,000 (e)
UNLV-CBER 2005	1,833,500	2,281,340	2,687,055	2,999,953	3,228,140	3,410,332
UNLV-CBER 2008	1,815,700	2,253,000	2,649,000	2,978,000	3,243,000	3,454,000
UNLV-CBER 2009	1,815,700	2,122,000	2,446,000	2,715,000	2,933,000	3,126,000
Lincoln, Nevada	4,344	4,499	4,988	5,308	5,449	5,500 (e)
White Pine, Nevada	8,797	10,453	10,990	11,081	11,265	11,440 (e)
Juab, Utah	8,894	10,519	12,353	14,158	16,055	18,004
Millard, Utah	11,872	13,863	15,404	16,868	18,343	19,682

Notes:

1) The above projections were prepared by the Nevada State Demographer (NSD), University of Las Vegas - Center for Business and Economic Research (UNLV-CBER), and Utah Governor's Office of Planning and Budget (UGOPB). The projections from the NSD do not include explicit assumptions regarding future development and population growth associated with the Coyote Spring or Toquop/Lincoln County Land Act projects.

(e) = estimated by the EIS contractor in order to extend the base projections from 2028 to 2030 to provide forecasts for a consistent period.

Sources: NSD 2008, 2006; UGOPB 2008.

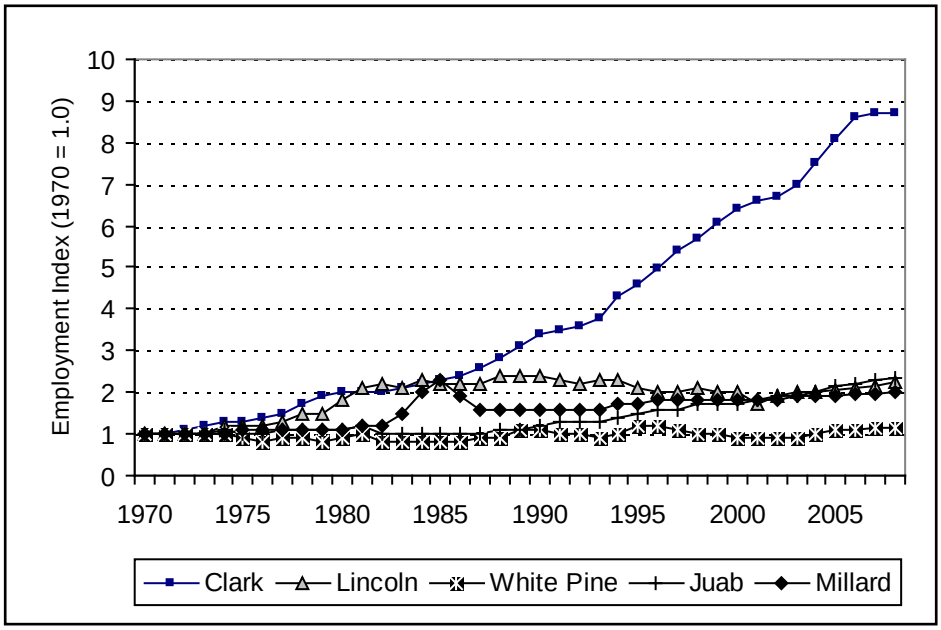
[3] The Fort Mohave Reservation and Off-Reservation Trust Land, AS--CA--NV, has 6.2 square miles in extreme southern Clark County, quite removed from the project area. The Paiute Reservation is located in southwestern Utah and the Skull Valley Reservation is in west-central Utah. The Duckwater Reservation is wholly in Nye County, but the tribe is seeking to establish historic use of some lands in White Pine County.

Five series of projections are provided for Clark County (**Table F3.18-8** and **Figure F3.18-3**); two reflecting the pre-recessionary economic and demographic outlook in 2005, two reflecting the economic outlook in mid-2008, and one released in 2009.[4] The latter reflect a perspective on the potential implications of the economic recession on long-term growth. Under the most aggressive of these projections, prepared by the Nevada State Demographer (NSD) in 2006, Clark County's population would nearly double to more than 3.5 million residents between 2005 and 2030.

Table F3.18-8 Total Employment, By County, 1980 to 2007, Selected Years

Year	Clark	Lincoln	White Pine	Juab	Millard
1990	459,353	2,416	4,981	2,499	5,570
2000	863,502	1,963	4,057	3,649	6,130
2001	884,582	1,661	3,979	3,945	6,003
2002	897,315	1,881	4,084	4,045	6,242
2003	944,087	1,955	4,113	4,057	6,268
2004	1,013,228	1,979	4,412	4,273	6,397
2005	1,078,515	2,006	4,896	4,649	6,435
2006	1,138,806	2,057	5,027	4,772	6,532
2007	1,165,993	2,138	5,219	4,949	6,636
2008	1,165,516	2,244	5,243	5,010	6,772
Change 1990 to 2008					
Absolute	706,163	-172	262	2,511	1,202
CAGR**	5.0%	-0.4%	0.3%	3.7%	1.0%

Source: U.S. Bureau of Economic Analysis 2010a, 2009a, 2008a.



Source: U.S. Bureau of Economic Analysis 2010a, 2009a.

Figure F3.18-3 Comparative Change in Total Employment, 1970 to 2008

[4] Note: The Nevada State Demographer recently released a series of revised population projections, including low and high growth scenarios for Clark County.

The more recent NSD projections, prepared in 2008, are more conservative portraying Clark County's population increasing to about 3,017,000 in 2030, nearly 500,000 fewer residents less than under the 2005 projections.

Whereas comparing the NSD projections from 2006 and 2008 reveal a more conservative long-term outlook, comparing those prepared by UNLV-CBER portray a more conservative interim outlook through 2020, but then anticipate a resumption of pre-recessionary growth levels. UNLV-CBER 2008 projections are approximately 44,000 residents higher than the projected population for 2030 prepared in 2006, even though the former reflect a lower 2005 population. The 2008 growth projections for Clark County from UNLV-CBER, which are integrated into SNWA's 2009 Water Resource Plan, are of interest because they imply that local, regional and national economic conditions support a resumption of pre-recession economic expansion that underlying the projections.

Like the 2008 projections from the NSD, the UNLV-CBER's 2009 projection series reflect a much more conservative perspective on future population growth. In comparison to the 2008 series, the projected population of 3,126,000 in 2030 in the 2009 projections is lower by 328,000 residents, or nearly 10 percent.

The combined population of the 4 rural counties is projected to climb by 61 percent, or nearly 22,000 residents, from 33,907 to 54,626 during the same period. The vast share of the net growth is projected to occur in Juab and Millard counties, and is likely tied to the continued growth along the Wasatch Front. Lincoln County is projected to gain approximately 1,200 residents, while a net increase of more than 2,600 residents is projected in White Pine County. The projected growth in White Pine County reflects the continuation of mining and construction and operation of multiple wind energy farms and several coal-fired generating plants. However, the proposed coal-fired generating plants have been delayed, and possibly cancelled, due to air quality concerns and weak long-term demand for additional coal-fired generating capacity in light of the economic recession, climate change, and other factors. Absent such development, long-term growth in White Pine County is likely to be considerably lower than currently projected by the Nevada State Demographer.

The projections for Lincoln County are noteworthy because they apparently exclude allowances for any substantial level of future development in the Lincoln County portions of the Coyote Spring development or the Toquop/Lincoln County Land Act planned unit development project in the extreme southeastern portion of the county.

F3.18.4 Employment, Labor Force, and Economic Structure

Economic conditions of the study area counties and the changes in such conditions over time closely mirror the previously described population trends. Total employment in Clark County has grown significantly, adding more than 706,000 jobs between 1990 and 2008, and exceeding the 1-million job mark in 2004 (**Table F3.18-8**). Prior to the current economic recession, the increase in job opportunities and demand for labor had been a major influence behind the strong in-migration of residents to the region. Over the long-term, total employment has increased by more than 8-fold since 1970 and more than doubled since 1990 (**Figure F3.18-3**). By comparison, total statewide employment in Utah, which has also experienced strong economic growth, tripled and stood at 1.70 million in 2008.

Prior to the current economic recession, Clark County had experienced unprecedented growth and the remainder of the region an extended period of more modest economic growth. As a consequence, unemployment had remained in check and unemployment rates had generally declined. The recession brought about a sharp reversal of trends, with the number of unemployed and unemployment rates across the region climbed sharply. Unemployment in Clark County increased by 165 percent between 2007 and 2009, climbing by nearly 73,000 displaced workers, with a further 23,000 prospective workers seeking work by April 2010. In April 2010, more than 14 percent of the Clark County labor force was unemployed (**Table F3.18-9**). The number of unemployed and unemployment rates increased in the other study area counties as well due to the recession, increasing from 162 to 360 between 2007 and April 2010 in Millard County, for example. Unemployment rates in Lincoln County also reached double-digits in April 2010.

Table F3.18-9 Selected Local Labor Market Conditions, 2005 to 2010

	2005	2006	2007	2008	2009	2010 (April)	Change 2005 to 2010
Unemployed							
Clark, Nevada	38,594	38,891	44,567	91,450	117,413	140,931	102,337
Lincoln, Nevada	85	78	76	79	164	235	150
White Pine, Nevada	183	174	180	225	367	463	280
Juab, Utah	192	150	135	209	357	367	175
Millard, Utah	251	184	162	197	329	360	109
Unemployment Rate (percent)							
Clark, Nevada	4.4	4.3	4.7	6.6	12.0	14.2	9.8
Lincoln, Nevada	5.4	4.9	4.4	5.4	9.6	13.9	8.5
White Pine, Nevada	4.2	3.9	3.8	4.7	7.4	9.5	5.3
NEVADA Statewide	4.5	4.3	4.7	6.7	11.8	14.0	9.5
Juab, Utah	4.9	3.7	3.3	5.0	9.0	9.3	4.4
Millard, Utah	4.1	3.0	2.6	3.2	5.1	6.2	2.1
Utah Statewide	4.1	3.0	2.7	3.4	6.6	7.0	2.9

Source: U.S. Bureau of Labor Statistics 2010, 2009.

A driving force behind Clark County's expansion through 2008 and an important element of the vision for its future had been the successful branding and global marketing of Las Vegas as one of the world's premiere entertainment, recreation, and conference/convention destinations. The gaming and hospitality industry employs many workers directly and also supports an extensive service support industry. Since 1990 the lodging industry more than doubled in terms of room inventory, adding more than 75,000 rooms which raised the inventory to 148,941 rooms. During that same period, the annual number of visitors had increased by 87 percent to 39.2 million in 2007, before declining to 36.4 million in 2009 as the economic recession took a toll on both convention.conference, and individual discretionary travel. The net result of the expanded room inventory and decline in visitors was a decrease in average annual occupancy rates in Las Vegas' hotels and motels from 90.4% in 2007 to 81.5 percent in 2009. Trends in annual gaming revenue in Clark County paralleled the pattern in visitor volume, climbing from $4.1 billion to $10.9 billion in 2007, but then dropping to $8.8 billion in 2009 (Las Vegas Convention and Visitors Authority [LVCVA] 2010).

Labor demands associated initially with the commercial construction and then the operations of the resort industry were a major factor in the region's economic expansion and the in-migration of workers to satisfy those needs. That demand in turn triggered yet further demand for labor to build housing and public infrastructure to accommodate the new residents. A corollary effect of the competition for labor has been an upward pressure on local wage scales, not only for construction workers, but also more generally across the entire economy.

Much of the expansion in the gaming and hospitality industries occurred in recent years, as nearly $29 billion of resort expansion, including more than 37,000 rooms and timeshare units and another 3.5 million square feet of convention space was planned between 2007 and 2010 (LVCVA 2007a). Included in that total is the MGM CityCenter, a $7 billion project with an ultimate development plan of nearly 17 million square feet. When completed, those projects were expected to stimulate demand for between 40,000 and 113,500 jobs (In Business Las Vegas 2007; Las Vegas Review Journal 2007). However, several of the planned projects have been delayed, if not cancelled. The CityCenter project required major restructuring of its financing program to complete its construction, opening in late 2009.

Historically, consumer demands from the growing number of visitors to Las Vegas and expanding resident population have promoted significant expansion of retail trade, as well as health care, other personal services, the

financial industry, public education, and other local public services. The military and other federal government agencies, principally the Department of Energy, are another element of Clark County's economic base and local economic development efforts have been successful in recruiting some light industry, financial services, and other firms, thereby providing some measure of economic diversification.

The construction industry has been an important cog in the regional economy, driven by the rapid economic and population growth. More than 110,000 workers were employed directly by construction firms in 2006; nearly triple the 40,000 such jobs in 1990. A 2004 study of the local construction industry estimated that every job in the construction industry supported an average of 1.08 additional jobs in the local economy (Hobbs, Ong & Associates 2004). Applying that multiplier to the 2006 construction employment suggests nearly 229,000 total jobs supported by local construction.

Prior to the recession, ongoing resort and commercial development was viewed by many as sustaining construction at a high level for several years. That development would also support continued residential development. However, the pace of new residential construction, new home sales, and sales prices declined through the course of 2007 and early 2008 and a number of ongoing or announced projects were postponed. Thereafter, the local housing market was beset by nationwide problems associated with sub-prime mortgage lending and adjustable rate mortgages. As a result, the number of homes in or threatened by foreclosure and the number of homes listed for sale in the market rose to all-time highs. These circumstances curtailed virtually all construction and mortgage lending, resulted in a loss of jobs in real estate sales and stimulated a local dialogue about their implications. To some it foreshadowed a protracted period of economic weakness and adjustment, to others it is a welcome respite, which would soon transform into the next housing shortage once the new projects are completed and come online (Smith 2007; SNHBA 2007; Economicrot 2007; In Business Las Vegas 2007).

As the construction sector grew to become an important driver of the economy, so too did concerns about the sustainability of the pace of new construction as the construction industry relies more heavily on growth than do other industries. A slowdown in the pace of new development posed potentially significant economic implications for the regional and even the statewide economies in terms of rising unemployment and declining tax revenues, demands for public services, and population growth. The economic recession and problems associated with the sub-prime home mortgages have shown those concerns to have been well founded. More than 50,000 construction jobs have been lost, driving losses in other sectors of the economy. State and local government revenues have also fallen precipitously due to the slowdown in construction and declines in gaming revenue, requiring reductions in staffing, cutbacks in capital construction and operating spending, and drawing on reserves. The incidence of these adverse fiscal effects has been statewide because under Nevada's fiscal structure, portions of the gaming and construction related sales taxes are major sources of revenue for various distributions to the non-metropolitan counties and to public education.

The scale of change, as well as the absolute magnitude of employment in Clark County, contrasts sharply with those of the rural counties. Together the 4 counties registered total employment of 19,019 jobs in 2007, a net increase of 3,553 jobs or 23 percent compared to 1990. The majority of the gains occurred in Juab and Millard counties, as total employment fell in Lincoln and grew modestly in White Pine counties during the period. Cutbacks in NTS activities and in the mining sectors were the principal causes factoring into the declines in Lincoln and White Pine counties, respectively. Resurgence in the mining industry, the opening of the state prison, and gains associated with tourism and other economic development activities have since offset the earlier declines in White Pine County. Recent employment gains in Lincoln County have been more modest, with gains in retail trade, services, and construction. The gains in Juab and Millard counties, concentrated in the eastern parts of these counties some distance from the potentially affected areas, have been primarily in retail trade, services, manufacturing, and construction. The latter is tied to residential and commercial development occurring in concert with population growth.

Agriculture and government employment play vital roles in all four rural counties. Farm employment accounts for between 3.1 percent (White Pine) and 14.1 percent (Millard) of all employment (**Table F3.18-10**). Public sector employment, including public education, has increased in Clark County in response to population growth and accounted for 9.7 percent of the total employment in 2008. In contrast, public sector employment accounted for

13.5 percent and 16.5 percent of all employment in Juab and Millard counties, respectively, and more than 28 percent in Lincoln and White Pine counties. The high shares of government employment in Lincoln and White Pine counties reflect the locations of several state institutions in those counties, as well as a substantial federal presence associated with land and natural resource management activities. The dependency on agriculture and public sector employment is even stronger in the western portions of Juab and Millard counties in the Snake Valley, where it is not uncommon for households to have income from both sources, for example, one member engaged in farming/ranching and another working in education or for government. In fact, some residents note that having an "off-the-ranch" income is imperative, particularly in recent times when agricultural production and income has been adversely affected by the extended drought.

Table F3.18-10 2007 County Employment, By Major Category

Geographic Area	Full and Part Time Employment by Category				Percent of Total Employment		
	Farm	Non-Farm Private	Government	Total	Farm	Non-Farm Private	Government
Clark, Nevada	244	1,052,408	112,864	1,165,516	0.0%	90.3%	9.7%
Lincoln, Nevada	133	1,437	674	2,244	5.9%	64.0%	30.0%
White Pine, Nevada	161	3,580	1,502	5,243	3.1%	68.3%	28.6%
NEVADA	**4,788**	**1,460,009**	**173,207**	**1,638,004**	**0.3%**	**89.1%**	**10.6%**
Juab, Utah	351	3,972	687	5,010	7.0%	79.3%	13.7%
Millard, Utah	958	4,627	1,120	6,772	14.1%	68.3%	16.5%
UTAH	**18,921**	**1,453,673**	**229,899**	**1,702,493**	**1.1%**	**85.4%**	**13.5%**

Source: U.S. Bureau of Economic Analysis (2009b).

The share of total employment accounted for by government has declined over time in Clark and Juab counties, remained about the same in Millard County, and risen dramatically in Lincoln and White Pine counties. The actual level of government employment has increased in all five counties, nearly doubling in Clark County, but those trends are also a reflection of the changes in the non-farm private sector employment as changes in the level of government employment, for example, declines in private sector employment in Lincoln County.

An adjunct of the relatively small size of the rural economies is a lesser degree of diversity, which can make them more susceptible to economic distress and less resilient to adverse changes affecting one or more elements of their economic base. **Table F3.18-11** (employees) and **Table F3.18-12** (percentages) show average annual "covered" employment by major North American Industrial Classification System (NAICS) division for 2007.[5]

Table F3.18-11 Covered Employment, by County and Major NAICS Division, 2007

NAICS Division	Industry	Clark	Lincoln	White Pine	Juab	Millard
11	Agriculture, Forestry, Fishing, and Hunting	125	20	56	33	455
21	Mining	475	16	771	100	90
22	Utilities	3,924	23	33	7	498
23	Construction	102,713	33	164	858	139

[5] The term "covered employment" refers to employment that is covered under the unemployment insurance program of the respective state. It includes most private wage and salary employment, but excludes some railroad workers, proprietors, and some government workers, all of which are included in the employment estimates released by the U.S. Bureau of Economic Analysis. As a result, the data in **Tables F3.15-10** and **F3.15-11** are not directly comparable.

31	Manufacturing	26,716	** [6]	31	465	187
42	Wholesale Trade	24,175	*	69	104	97
44	Retail Trade	100,610	203	439	313	598
48	Transportation and Warehousing	36,898	*	58	59	178
51	Information	12,412	26	40	4	27
52	Finance and Insurance	28,295	40	61	43	69
53	Real Estate and Rental and Leasing	21,670	7	57	32	4
54	Professional and Technical Services	38,743	**	35	158	77
55	Management of Companies and Enterprises	12,614	*	10	0	
56	Administrative, Support and Waste Services	64,555	*	110	18	265
61	Educational Services	48,743	197	334	369	448
62	Health Care and Social Assistance	65,137	210	357	485	368
71	Arts, Entertainment, and Recreation	19,417	18	80	25	78
72	Accommodations, including food and beverage services	254,943	103	495	325	353
81	Other Services, Ex. Public Admin	20,727	**	75	47	98
92	Public Administration	38,489	228	784	216	400
	Not Classified or Withheld (*)	807	263	0	0	0
	Total Non-farm Covered Employment [7]	922,186	1,387	4,059	3,663	4,429

** Not reported to avoid disclosure of confidential information.

Sources: Nevada Department of Employment, Training and Rehabilitation (2009).

[6] Non-disclosure limitations generally indicate three or fewer firms, or a sector dominated by a single large establishment. Non-disclosure of information regarding educational services is not indicative of sensitive information, but rather it is likely indicative that information was withheld because it is necessary to withhold data from at least two sectors to effectively implement the non-disclosure regulations.

[7] The industries of more than 500 jobs in Lincoln and White Pine counties are not reported due to the regulations dealing with non-disclosure of economic data in certain circumstances.

Table F3.18-12 Covered Employment (Percent of Total), by County and Major NAICS Division, 2007

NAICS Division	Industry	Clark	Lincoln	White Pine	Juab	Millard
11	Agriculture, Forestry, Fishing, and Hunting	0.0	1.4	1.4	0.9	10.3
21	Mining	0.1	1.2	19.0	2.7	2.0
22	Utilities	0.4	1.7	0.8	0.2	11.2
23	Construction	11.1	2.4	4.0	23.4	3.1
31	Manufacturing	2.9	n/a	0.8	12.7	4.2
42	Wholesale Trade	2.6	n/a	1.7	2.8	2.2
44	Retail Trade	10.9	14.6	10.8	8.5	13.5
48	Transportation and Warehousing	4.0	n/a	1.4	1.6	4.0
51	Information	1.3	1.9	1.0	0.1	0.6
52	Finance and Insurance	3.1	2.9	1.5	1.2	1.6
53	Real Estate and Rental and Leasing	2.3	0.5	1.4	0.9	0.1
54	Professional and Technical Services	4.2	n/a	0.9	4.3	1.7
55	Management of Companies and Enterprises	1.4	n/a	0.2	0.0	0.0
56	Administrative, Support and Waste Services	7.0	n/a	2.7	0.5	6.0
61	Educational Services	5.3	14.2	8.2	10.1	10.1
62	Health Care and Social Assistance	7.1	15.1	8.8	13.2	8.3
71	Arts, Entertainment, and Recreation	2.1	1.3	2.0	0.7	1.8
72	Accommodation	27.6	7.4	12.2	8.9	8.0
81	Other Services, Ex. Public Admin	2.2	n/a	1.8	1.3	2.2
92	Public Administration	4.2	16.4	19.3	5.9	9.0
	Not Classified or Withheld	0.1	19.0	0.0	0.0	0.0
	Total Non-farm Covered Employment	100.0	100.0	100.0	100.0	100.0

Sources: Nevada Department of Employment, Training and Rehabilitation (2009).

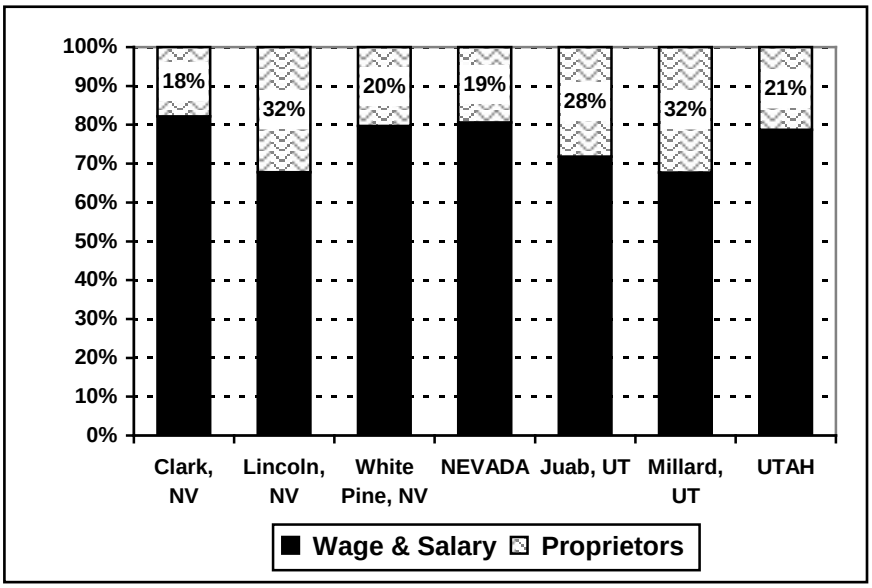
The current lack of economic diversification and associated recognition of the limited options for diversification or expansion facing the rural counties raises a key concern for the rural counties; their susceptibility to severe economic dislocation and fiscal distress from cutbacks or the loss of existing employers, such as the Nevada Test Site and Robinson Mine. Even without unexpected disruptions, ore bodies are finite and will eventually be exhausted and the mine will close. The national recession, its impacts on construction and tourism in Clark County, and the subsequent adverse effects on the state's fiscal health and funding for services and programs added to these concerns. In White Pine County, the potential for cutbacks in state services, including the discussion of the possible closure of one or more state correctional institutions, and the postponement of the Ely Energy Center generating station, brought about renewed urgency to efforts to retain and bolster existing businesses while actively promoting economic development. Renewable energy generation, particularly wind, second home development, and growing higher value agricultural products are among the economic development opportunities viewed locally as economically viable (Rajala 2009).

The information presented attests to the large size of Clark County's economy, in absolute and relative terms, but also the dominant role of the lodging, gaming and hospitality industry, Division 72, and importance of construction, Division 23. The next largest industries, in terms of employment, are retail trade, health care and administrative and waste services. The latter category includes establishments that perform many administrative services for other firms, such as document preparation, work force hiring and placement, and security services. Finance and Insurance (Division 52) and Real Estate and Leasing (Division 53), two other industries that are closely related to the pace of development and construction, are also major employers. Nearly 70,000 employees (7.6 percent of the total) are in firms that were unclassified.

The important economic sectors in the rural counties, as measured in terms of reported employment, are:

- Retail trade, health care and social services, and public administration in Lincoln County;
- Mining, public administration, health care and social services, retail trade, and accommodations in White Pine County;
- Manufacturing, health care and social services, construction, retail trade, and accommodations in Juab County; and
- Utilities, agriculture, and retail trade in Millard County.
- Educational services, which in the NAICS classification includes public education, is an important employer in all counties.

Employment data for 2007 reveal that 18 percent of all jobs in Clark County were held by proprietors, lower than the 19 percent statewide and 21 percent in Utah on a statewide basis. Among the 4 rural counties, White Pine had the lowest share, 20 percent, while Lincoln had the highest, 32 percent (**Figure F3.18-4**). Proprietors account for over 30 percent of jobs in Millard County, a reflection of the large number of farmers and ranchers.



Source: U.S. Bureau of Economic Analysis 2009b.

Figure F3.18-4 Comparative Shares of Proprietors and Wage and Salary Jobs, 2007

The share of total earnings generated by proprietors is lower than the corresponding share of employment in all five counties, in part a result of the part-time or secondary nature of many small business undertakings. For example, proprietors in Clark County account for 18 percent of all jobs but only 9 percent of all earnings. The disparity is substantially greater in Lincoln County, 32 percent of all jobs but only 10 percent of the total earnings (**Table F3.18-13**), and in Juab County, 28 percent of all jobs compared to 7 percent of the total earnings.

Proprietor's income in the rural counties has also adversely affected by the extended drought that has reduced farm income. Despite the disparity between the shares of jobs and income, proprietor's income represents more than 10 percent of all earnings in two of the 4 counties, and given the relatively low per capita income in the rural counties, is likely critical to the economic welfare of the rural communities.

Table F3.18-13 Contribution of Proprietors Income to Total Earnings, 2007 ($ Millions)

	Clark	Lincoln	White Pine	Juab	Millard
Wage and Salary Earnings (including supplements)	$50,734.3	$64.2	$215.4	$133.4	$184.6
Proprietor's Income	$4,897.8	$7.3	$11.5	$10.4	$66.6
Total Earnings	$55,632.1	$71.5	$226.9	$143.8	$251.2
Proprietors Share of Total	9%	10%	5%	7%	27%

Source: U.S. Bureau of Economic Analysis 2009b.

Self-employment is one means to expand economic opportunities in rural area. Commuting to jobs in other nearby, or even distant, locations is another such means. Such commuting can be on a daily basis, or for more extended periods, and can be temporary or long-term. When such commuting reflects a worker's typical work situation, it creates a regular flow of earnings from the place of work to the worker's community of residence, with the concomitant impacts on consumer demand and spending. The federal government uses census data and data provided on income tax filings to track these flows, reporting them on a net basis for each county, that is, the net inflows associated with local workers less that paid by local employers to residents of other counties. Earnings data for 2007 reveal significant flows of income in several study area counties (**Table F3.18-14**). The largest adjustment, albeit representing only 1.4 percent of total local earnings, is a net outflow of $805.4 million from Clark County. The major destinations for the outflows include Mohave County, Arizona, Nye County, Nevada, Washington County, Utah, and Los Angeles, California. Though substantially smaller in absolute terms, the net outflow of $3.1 million in Lincoln County represented 4.3 percent of the total wage and salary earnings paid by local employers. At the same time, some residents of the Alamo area are reported to commute to jobs in Mesquite and the Las Vegas Valley.

Table F3.18-14 Earnings Residency Adjustment, 2007 ($ Millions)

	NEVADA	Clark	Lincoln	White Pine	UTAH	Juab	Millard
Earnings by Place of Work	$76,401.7	$55,632.1	$71.5	$226.9	$66,372.4	$143.8	$251.2
Residence Adj.	($638.9)	($805.4)	($3.1)	$43.1	$41.9	$28.9	$4.0
Residence Adj. (as % of Earnings)	-0.8%	-1.4%	-4.3%	19.0%	0.1%	20.1%	1.6%

Source: U.S. Bureau of Economic Analysis 2009b.

White Pine, Juab, and Millard counties all recorded net inflows of wages and salaries. The estimated net inflow to White Pine County amounts to 19 percent of local earnings, while that in Juab County is nearly 20.1 percent of local earnings. The net inflows in White Pine are primarily from Nye and Clark counties in Nevada, and from various locations in Utah. The net inflow in Juab is associated primarily with jobs along the metropolitan Wasatch Front held by local workers (U.S. Census 2004).

F3.18.4.1 Farming and Ranching

The employment data presented above provide insights and perspectives into the economic structure of the rural counties. **Table F3.18-15** characterizes the local agriculture industry using information from the 2007 Census of Agriculture, the most recent available (USDA 2009a, b) and conversations with local farmers and ranchers in the area.

Table F3.18-15 Summary of Local Farming and Ranching, 2007

	Clark	Lincoln	White Pine	Juab	Millard
Number of Farms					
1997	209	121	115	228	650
2002	253	109	121	236	646
2007	193	98	97	335	703
Change from 1997 to 2007	-16	-23	-18	107	53
Acres in Farms					
1997	70,741	48,897	247,446	275,632	457,823
2002	68,925	55,547 (e)	203,106 (e)	270,350	444,941
2007	88,381	46,271	196,986 (e)	260,444	566,692
Change from 1997 to 2007	17,640	-2,626 (e)	-50,460 (e)	-15,188	108,869
Principal Occupation, 2007					
Farming	78	61	49	102	336
Other	115	37	48	233	367
Farms by Size, 2007					
1 to 9 acres	102	5	10	19	45
10 to 49 acres	42	30	16	72	139
50 to 179 acres	24	30	20	102	161
180 or more acres	25	33	51	142	358
Farms by Value of Sales, 2007					
Less than $5,000	125	30	30	169	253
$5,000 to $49,999	53	43	29	123	231
$50,000 and Over	15	25	38	43	219
Livestock Statistics, 2007					
Farms With Cattle/Calves	67	74	52	151	326
Head of Cattle (inventory)	5,018	16,243	22,027	18,202	74,005
Farms With Sheep/Lambs	16	2	14	30	37
Head of Sheep (inventory)	236	(D)	11,182	7,444	4,651
Land Used for Crops, 2007					
Total Cropland (acres)	6,220	17,903	23,756	65,702	153,728
Harvested Cropland (acres)	2,733	15,454	(D)	27,278	96,473
Irrigated Land (acres)	6,511	18,320	30,877	27,118	103,272

(e) – Estimated based on available information (D) – Not reported.

Source: USDA 2009b.

- Altogether, there were 1,426 farms and ranches in the 5-county study area, nearly half of which were in Millard County and more than 85 percent of which were in the 4 rural counties.
- The number of farms and ranches declined in Clark (-60), Lincoln (-11) and White Pine (-24) counties between 2002 and 2007 but increased in Juab (+99) and Millard (+57) counties.
- Collectively, the farms and ranches in the five counties encompass an estimated 1.16 million acres of land, a net gain of more than 11.1 percent compared to 2002. Most of the net gain occurred in Millard County.

- About one-third of all farms and ranches in the five county area were less than 50 acres in size, while more than 40 percent were 180 acres or larger.
- About 40 percent of all farms were less than 50 acres in size with a comparable number larger than 180 acres.
- About 43 percent had no sales of livestock or products or less than $5,000 in such sales, 24 percent having annual sales of $50,000 or more.
- Forty-three percent of all operators list farming as their principal occupation, a net decline of nearly 10 percentage points in the last five years. The number of operators not listing farming as their principal occupations increased most in Juab and Millard counties.
- It is likely that most of the new agricultural operations in Juab and Millard counties and those with primary occupations other than farming are located in the eastern portions of the respective counties.
- Many of the farms and ranches have one or more household members employed off the farm.
- The total amount of land in agriculture declined in Lincoln, White Pine and Juab counties between 2002 and 2007.
- About 43 percent reported no or less than $5,000 in sales of livestock or farm products in 2007, 24 percent having annual sales of $50,000 or more. The distribution of sales is consistent with that reported by local farmers and ranchers in the 2002 Census of Agriculture.
- About half of all farms in the five counties reported raising cattle and/or sheep. The number of those raising cattle outnumbering those raising sheep by about a 7-to-1 margin.
- Although farming and ranching are not major generators of income on an accounting basis, agriculture is an important element of the economic base in all four rural counties. Farming and ranching provide economic livelihoods for many households, contribute to the tax base supporting local government and public education, support other businesses through purchases of goods and services, and also provide labor for non-farm employers. Furthermore, although farm income is sensitive to many outside influences and frequently varies from year-to-year, the household population associated with agriculture has a connection to the land that tends to anchor it to the area in ways that does not characterize mining and some other elements of the economy. **Table F3.18-16** below summarizes farm income and expenses in 2007 for the five counties in the study area. Note that the data reflect a period when the area was experiencing the effects of an extended drought.
- Among the five counties, Millard County hosts the largest agriculture sector, with local farms and ranches registering more than $160 million in cash receipts from livestock, products and crops in 2007. Farms in Clark County registered more than $24 million in such receipts while the other three counties all registered less than $16 million in farm receipts.
- Production expenses, substantial portions of which are beyond an individual farmer or rancher's control consumed most if not all of the receipts generated from operations.
- Energy costs, including gasoline, diesel, propane and electricity, are among the major production expenses for farmers and ranchers. Like other consumers, such costs have been rising sharply in recent years, both in terms of direct commodity costs and indirectly in terms of transportation and shipping costs, the rising costs of fertilizers and other chemical products, and feed costs. The latter is in part a reflection of shifts in production patterns and markets related to the interest in ethanol production.

Table F3.18-16 Farm Income and Expenses, 2007 (x 000)

	Clark	Lincoln	White Pine	Juab	Millard
1. Cash receipts from livestock and products	$21,094	$6,246	$10,270	$9,663	$110,334
2. Cash receipts from crops	$2,978	$6,198	$2,858	$6,085	$50,747
3. Other income	$1,436	$685	$727	$3,782	$8,545
4. Production Expenses	$27,789	$9,684	$13,108	$18,277	$113,612
5. Value of inventory change	-$638	-$1,832	-$2,822	$455	$2,025
6. Net income of corporate farms	-$596	$474	-$68	$273	$9,919
7. Net farm proprietors income (1+2+3-4+5-6)	-$2,323	$1,139	-$2,007	$1,435	$48,120

Source: USDA 2009b.

- In 2007, the net income of individual farmers and ranchers in Clark and White Pine counties was negative. Operators in Lincoln and Juab counties had a modest positive income and those in Millard County realized a collective net income of $48 million.
- Many ranchers rely on access to grazing use on public lands to help sustain their operation. Grazing on the public lands allows ranchers to use available irrigated lands to grow hay for use as winter feed or for sale as a cash crop. Ranchers have faced reduced stocking rates on public lands to help protect rangeland health during the extended drought period affecting the Great Basin over the past decade.
- Local agriculture production was historically constrained by the availability of surface and shallow subsurface water for irrigation and livestock watering, and the limitations imposed by terrain. The introduction of diesel-powered pumps and groundwater irrigation wells expanded the productive areas. More recently, crop productivity and the amount of lands in production increased following the electrification of the valley and introduction of mechanized irrigation systems.
- In some cases the higher pumping rates facilitated by electric pumps have raised concerns that pumping rates exceed the general use and yield parameters in effect when wells were approved. In addition, the area has experienced a protracted drought resulting in noticeable declines in groundwater levels in irrigation wells.
- Most of the private pasture and cropland in the rural areas is situated along the streams and in the alluvial areas. A substantial share of this land is sub-irrigated by shallow subsurface water flows linked to precipitation and snowmelt in the higher elevation mountain ranges in the region.
- On a more localized level, agriculture is an economic mainstay of the economies in western Juab and Millard counties, and the rural areas of White Pine and Lincoln counties, particularly the Spring Valley, Eagle Valley, and around Panaca, Alamo, and Hiko.

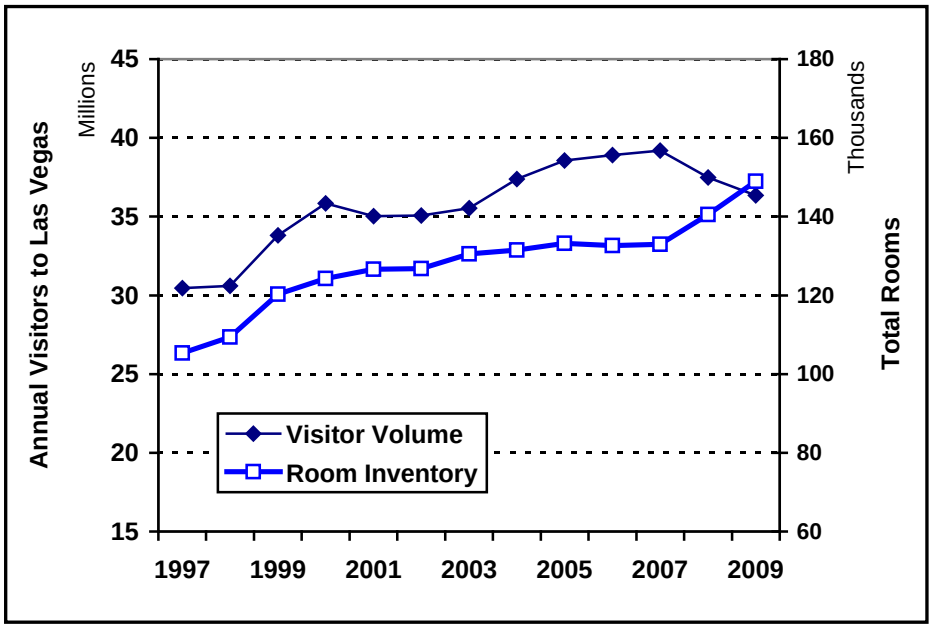
The study area includes two large ranches having unique economic and social significance; the Cleveland Ranch in Spring Valley and the EskDale Dairy in Juab County. The significance of the former stems from its role in supporting the Bishop's Storehouse, a combination welfare assistance and disaster relief program operated by the LDS church. All the beef produced on the ranch is eventually slaughtered and consigned to the Bishop's Storehouse, accounting for approximately one-half of all the beef distributed through the program each year (LightPlanet 2007).

The EskDale Dairy is the principal economic enterprise supporting the EskDale community. The dairy is an integrated operation, utilizing alfalfa, corn, and other crops grown on nearby fields as feed for the herd, with the milk produced transported to Logan for use in cheese production. The dairy herd plays a critical role in a successful, award-winning Holstein breeding program and also produces veal. The dairy, farm, and breeding program employ many members of the EskDale community and the revenues generated by the activities go into the "common fund" that is the primary income source for the community (Anderson 2007; EskDale Dairy 2007).

The roles of larger ranches in the economic and social structure of the region have taken on added significance over time due to the senior water rights typically associated with the land. As in other areas across the west, the rising value of the water rights generates substantial economic incentives, or pressures, depending on one's perspective, for landowners who do not have family interested in actively farming or ranching, to sell at prices far higher than that supported by the productive capacity of the land from an agricultural perspective. The Southern Nevada Water Authority has purchased a number of ranches in the Spring Valley. Similar sales of ranches and inquiries of interest to sell by other development interests have been reported across the region. Such sales raise many economic and social concerns within the local communities, including potential exporting of appropriated water rights and implications thereof for more junior water rights in the basin due to reduced recharge, the effects of such sales on the tax status of the lands, and a weakening of the established social structure.

F3.18.4.2 Tourism and Recreation

Tourism and recreation, in its many forms, is the foundation of the Clark County/Las Vegas economy and vitally important to the state's economy and fiscal health as well. Visitor outlays on gaming, lodging, eating and drinking, other entertainment, transportation and other goods and services total in the tens of billions each year. Long-term growth in the number of visitors, including millions of convention attendees each year, fueled a boom in casino and resort construction, gains in employment, and thereby contributed to a major residential construction boom. In the decade from 1997 to 2007, the annual number of visitors to Las Vegas climbed from 30.4 million to 39.2 million and more than 35,000 additional hotel, motel and condo rooms were added – see **Figure F3.18-5**. Annual room tax collections more than doubled from $98.2 million to $219.7 million and gross gaming revenues rose from $6.2 billion to $10.9 billion during the same period.



Source: LVCVA 2010.

Figure F3.18-5 Annual Visitor Volume and Total Room Inventory for Las Vegas, 1997 to 2009

Las Vegas' convention and tourism industry has been dramatically affected by the national recession, as government, businesses and individuals seek to reduced discretionary spending on conventions, conferences and individual leisure travel. The recessionary effects began to be apparent in mid-2008 when monthly visitor volume in June was more than 3.0 below the preceding year. Declines in monthly visitor volume of 10 percent of more, again on a year-over-year basis, were recorded in September, October and December of 2008, and in January 2009. Total visitor volume for the year 2008 ended at 37.5 million, down 1.7 million or 4.4 percent from the preceding year and a record decline in both absolute and percentage terms. Trends in annual gross gaming revenue, which fell nearly

$1.1 billion to $9.8 billion in 2008, provided yet another indicator of the severity of the recession. Further declines were registered in 2009 as total visitor volume fell to 36.5 million and annual gross gaming revenue declined to $8.8 billion.

Given those declines, the Las Vegas Convention and Visitors Authority and individual hotels and resorts engaged in employing aggressive promotional marketing to entice people to come to Las Vegas. Despite these efforts, the average citywide occupancy rate in 2009 declined to 85.3 percent in 2009, down 4.5 percentage points from 2008, and the average nightly room rate for rented rooms dropped from $132.09 for 2007 to $92.93 in 2009.

A paramount interest across the Las Vegas community concerns the timing and strength of the economic recovery in light of ongoing developments in the community. Specifically, several resort and commercial construction projects were planned and undertaken on pre-recession conditions. The largest of these added nearly 6,000 rooms to the city's inventory at the end of 2009, placing additional pressures on the market and room rates. Weaker returns and cash flows for casino properties could potentially jeopardize presently outstanding financing commitments and limit financing availability for other projects. Downward pressures on room rates have fiscal implications for local governments and entities, including the Southern Nevada Water Authority, which derives a portion of its funding for capital improvements from sales taxes. Future tourism levels in Las Vegas will be a primary factor driving future employment and personal income in Clark County.

Recreation and tourism are also important elements of the local economic base of the rural areas, one that is largely dependent on healthy public lands and public access thereto. Travelers passing through the area as part of a larger itinerary comprise a large segment of the local tourism industry. In some instances, travelers choose routes through the area based on convenience and the limited number of routing options through the region, for example, U.S. 93 from northeastern Nevada to Las Vegas. In other cases, particularly along U.S. 50, "The Loneliest Highway in America", travelers make a deliberate routing choice based on the historical, cultural, and other attractions and at least in part, in response to various state and local tourism promotion efforts. Other routes of interest in the region include the Great Basin Scenic Highway, the Great Basin National Heritage Route, Valley of Fire, and Red Rock Canyon Scenic Byways in Clark County, and the Pony Express National Historic Trail across parts of Juab County and northern White Pine County (NDOT 2007a; Benchmark Maps 2006).

Designated parks and other developed recreation sites are another important element of the regional tourism economy. [Additional detail is provided in the Recreation Section of the EIS]. Foremost among the designated parks and recreation areas are the Great Basin National Park, near Baker, Nevada, and Lake Mead National Recreation Area near Las Vegas.

Congress established the Great Basin National Park in 1986, essentially elevating the status of the former Lehman Caves National Monument, designated in 1922 by Presidential proclamation. The Great Basin National Park encompasses significant natural and geologic resources, expansive scenic vistas, and dark night skies that serve important scientific purposes and provide visitors opportunities for education, recreation, inspiration and introspection. The record high of 91,915 recreation visitors to the Great Basin National Park occurred in 1993, with annual visitation over the past decade ranging from a high of 87,020 in 2003 to a low of 69,235 in 2008; the latter the lowest in nearly two decades. Recreation visitation rebounded to 84,974 in 2009, more in line with historical patterns for about 80,000 annual visitors. Visitors to the Great Basin National Park are a vital market supporting local cafes, RV parks and motels, and other businesses in the Baker area.

The Lake Mead National Recreation Area is located in southern Nevada and northwestern Arizona, encompassing two large reservoirs: Lake Mead and Lake Mohave, along with surrounding land areas. Lake Mead was formed following the completion of Hoover Dam in 1935. The lakes and their tailwaters cater to a wide range of water-based sports and recreation and the surrounding desert environments support hiking, wildlife watching and photography, scenic touring and other land-based recreation. Peak visitation to the Lake Mead National Recreation Area of 9.8 million visitors was registered in 1995. More recently, annual visitation has declined below 8.0 million visitors, in large part in response to extended drought that has resulted in a drop in Lake Mead pool elevation of approximately 126 vertical feet below full pool elevation, to the lowest elevation recorded since 1965. The drop in

pool elevation has adversely affected marinas, boat launches, swim beaches and other shore-based activity, and the area of boat-able reservoir surface. Most of the visitors are residents of the Las Vegas area, but many others are visitors to Las Vegas who take advantage of proximity to recreate at the recreation area or tourists drawn specifically to the recreation opportunities. The economic contributions made by Lake Mead in the region are substantial in nominal terms. However, given the size of the Las Vegas gaming and entertainment industries, those contributions represent but a small share of the overall regional economy.

In addition to the Great Basin National Park, the Lake Mead National Recreation area near Las Vegas, and 11 state parks and historic sites in Nevada, 8 of which are in Lincoln or White Pine counties. Annual visitation levels at the state parks located in and near the project area, for the period 2002 to 2007, are shown in **Table F3.18-17** (Nevada Department of Conservation and Natural Resources, Division of State Parks [NDCNR] 2008). Numerous BLM and USFS developed recreation sites and areas for dispersed recreation, such as hiking and camping. Wilderness areas in the region provide opportunities for a primitive recreation.

Table F3.18-17 Annual Visitation at Selected Nevada State Parks

State Park	2002	2003	2004	2005	2006	2007
Beaver Dam	12,337	11,022	11,225	7,149	5,939	5,573
Cathedral Cave	56,048	59,094	61,596	59,940	59,705	58,849
Cave Lake	64,788	61,157	73,303	61,343	56,322	68,040
Echo Canyon	40,362	33,472	32,317	42,375	38,118	38,317
Kershaw-Ryan	24,226	24,494	23,723	25,121	28,254	33,829
Spring Valley	112,996	115,763	99,881	113,960	107,047	121,894
Spring Mountain Ranch	194,941	208,652	213,717	213,929	206,838	198,292
Valley of Fire	420,629	404,322	429,530	429,158	472,489	422,282

Source: Nevada Division of State Parks 2008.

OHV recreation use is another important and growing segment of recreation use in the region. The increase in such use will be promoted by the Silver State OHV Trail designated as part of the LCCRDA and the subsequent passage of legislation in Nevada allowing for the operation of OHVs on some public highways in order to reach a private or public area designated for such use. Such use is also being promoted in Utah through cooperative efforts between federal, state, and local governments under the auspices of the Utah Interagency OHV Partners. Recent achievements of these efforts include the development of the Amasa Basin, Burbank Hills, and Conger routes and use areas in Millard County and the Little Sahara OHV Recreation Area in Juab County (BLM 2007). The national wildlife refuges and conservation areas in the region provide further opportunities for recreation. Residents of the Las Vegas and Salt Lake City metropolitan areas reportedly account for much of the OHV activity in the region, although some sponsored events draw participants from a larger area.

Hunting and fishing on public and private lands in the region are another source of economic contributions to the local economy. Much of the activity is by residents, but spending by non-local and out-of-state residents support local hospitality establishments, outfitters, and private landowners. A total of 70,158 hunting, fishing and trapping licenses and permits were sold in Clark, Lincoln, and White Pine counties in 2006-2007 (**Table F3.18-18**). That total is nearly 16 percent lower than the corresponding number in 2000-2001, despite the significant population growth in Clark County. The majority of the licenses were sold in Clark County and the ratio of fishing to hunting licenses sold, including combination hunting and fishing licenses, was nearly 5 to 1. Residents purchased more than 56,000 of the licenses sold in the three counties. Expenditures by non-resident hunters and anglers, including guide and outfitting fees, are part of the overall tourism and recreation economy of southern Nevada, particularly in the rural counties.

Table F3.18-18 Hunting, Trapping, and Fishing Licenses (and Permits) Sold in Nevada Counties: 2000 to 2007

Location of Purchase[1]	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07
Clark	76,397	74,443	68,221	64,199	61,300	64,751	62,978
Lincoln	2,723	2,534	2,425	2,410	2,223	2,471	2,540
White Pine	4,498	4,545	4,572	4,503	4,257	4,344	4,640
Total	83,618	81,522	75,218	71,112	67,780	71,566	70,158

[1] The point of purchase does not necessarily reflect the place of residence for Nevada residents.

Source: NDOW 2009.

Comparable time series data on hunting and fishing license sales are not available for Juab and Millard counties. In 2006, a total of 2,856 hunting, fishing, or combined hunting and fishing licenses were sold in Juab County. A total of 2,626 licenses were sold in Millard County in 2006. Hunting license sales outnumbered the numbers of fishing licenses sold in both counties (Utah Division of Wildlife Resources 2007).

The declining number of license sales and higher level of participation in fishing as compared to hunting licenses are consistent with the results of a recent national survey. Selected results from the 2006 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation for Nevada and Utah are presented in **Tables F3.18-19** and **F3.18-20**. Participation rates among Nevada's residents are 8.3 percent in fishing and 3.2 percent in hunting. More than 1 of 4 of Nevada's residents actively watch wildlife as a leisure time pursuit. The importance of such non-consumptive enjoyment of wildlife is increasingly being recognized by state wildlife management agencies, as well as local tourism and economic development agencies. Birders and other wildlife watchers take advantage of the national wildlife refuges and vast public lands in the region and are recognized as an important submarket in the Baker/Great Basin National Park area. Participation rates are substantially higher among Utahans than among residents in all three categories of activity (USFWS 2007).

Table F3.18-19 Resident Participation in Hunting, Fishing, and Wildlife Watching, 2006

Category of Wildlife-related Activity	Nevada		Utah	
	Participants	Percent of Population	Participants	Percent of Population
Fishing	156,000	8.3	313,000	17.2
Hunting	60,000	3.2	154,000	8.5
Wildlife Watching	420,000	22.2	574,000	31.5

Source: USFWS (2007).

Table F3.18-20 Average Annual and Total Expenditures By Sportsmen and Wildlife Watchers, 2006

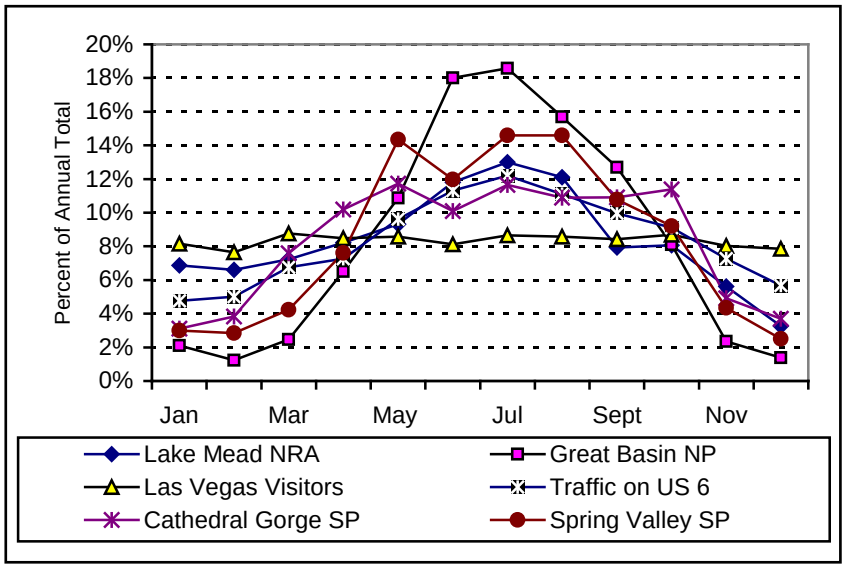
Activity Type	Nevada	Utah
Average annual expenditures per angler	$1,026	$996
Average annual expenditures per hunter	$2,049	$1,649
Average annual expenditures per participant in wildlife watching	$528	$644
Total annual expenditures by sportsmen and wildlife watchers	$637,048,000	$1,211,677,000

Source: USFWS 2007.

Sportsmen and wildlife watchers make significant expenditures while engaging in their pursuits. Average annual expenditures in Nevada ranged from $528 for wildlife watchers to $2,049 per resident hunter. Average expenditures

by Utah anglers and hunters were slightly lower than those by Nevadans, but the average for those engaged in wildlife watching in Utah was higher. Average expenditures by non-residents are considerably higher as a result of travel, higher non-resident license costs, and the costs of guides and outfitters. Including the expenditures by non-residents resulted in total estimated annual expenditures of $637 million in Nevada and $1.2 billion in Utah (USFWS 2007).

Tourism and recreation occurs throughout the year. There is, however, a pronounced summer-fall season in the rural counties (**Figure F3.18-6**). Approximately 65 percent of total annual visitation to the Great Basin National Park occurs in the 4-month period June through September. Visitor use at the Lake Mead National Recreation Area, state parks in the area, and traffic volumes on U.S. 6 south of Ely all exhibit seasonal peaking, though it is not as pronounced as that to the Great Basin National Park. Such seasonal fluctuations stand in sharp contrast to visitation patterns in Las Vegas, which shows a high degree of uniformity over the year.



Sources: NPS 2007; Nevada State Parks 2008; LVCVA 2007b; NDOT 2007b.

Figure F3.18-6 Monthly Visitation or Traffic as A Percent of Total Annual Use or Traffic

The seasonal nature of tourism has implications for local businesses and the jobs they provide. As discussed above, a sense of tenuousness exists across the rural counties regarding their economic future. Tourism and recreation, though much smaller in scale than in Clark County, are viewed as vital elements of the local economies. Many local businesses are somewhat dependent on tourism and recreation, whether they cater to ATV enthusiasts, shed hunters (collection of antlers shed by deer and elk), big game hunters, or overnight visitors drawn by scenic vistas, solitude and the night skies, or part-time residents owning second homes in the region. The purchases of private ranches by non-local corporate and institutional interests, including the Southern Nevada Water Authority, and future groundwater development are seen as threatening the region's tourism and recreation industry. Possible threats include limits on historical hunter access, changes in farming and ranching patterns that affect wildlife, the potential indirect effects of groundwater drawdown and the stability of soils affecting visibility, night skies, and travel patterns of tourists, all of which could reduce the level of tourism and the economic contributions it provides. Tertiary effects of the water rights appropriation process and groundwater drawdown effects on wildlife and tourism are also viewed as threatening long-term second home development, which is seen as an important dimension of economic development in the rural areas.

F3.18.5 Personal Income and Poverty

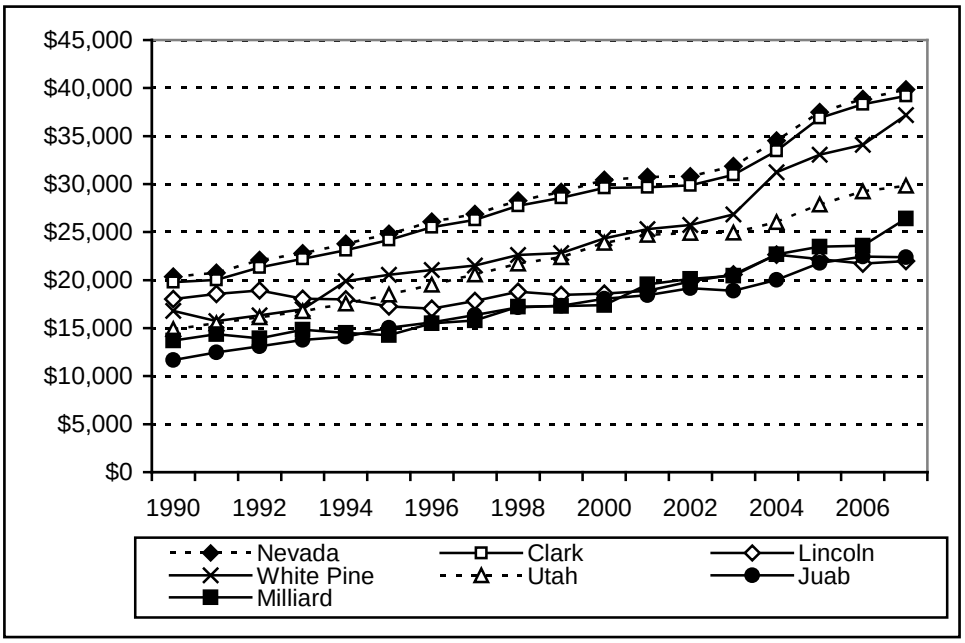
Personal income is an important measure of economic well-being. Total annual personal income trends in the study areas reflect key economic and demographic conditions described above. During the 17-year period 1990 to 2007, Clark County registered a 379 percent increase in total personal income, from $15 to $71.6 billion (**Table F3.18-21**). General inflationary trends would account for about 16 percent of the increase and population growth another 38 percent of the change (U.S. Bureau of Economic Analysis 2009a, U.S. Bureau of Labor Statistics 2007). The residual reflects general increases that translate into per capita income growth over time. As would be expected, all 4 rural counties have substantially lower personal income, ranging from $103.9 million in Lincoln County to $338.7 million in White Pine County; the latter less than 0.5 percent of that of Clark County.

Table F3.18-21 Total Annual Personal Income, 1990 to 2007 Selected Years ($ Millions)

	NEVADA	Clark	Lincoln	White Pine	UTAH	Juab	Millard
1990	$24,836.8	$14,954.6	$68.6	$157.5	$25,817.3	$68.0	$155.0
1995	$39,249.9	$25,053.6	$67.0	$200.4	$37,218.3	$102.4	$173.8
2000	$61,427.9	$41,239.3	$77.5	$219.7	$53,561.2	$149.3	$215.7
2005	$90,018.1	$62,785.7	$96.4	$290.9	$69,747.5	$193.8	$278.9
2006	$96,512.0	$67,832.8	$98.2	$308.8	$75,598.3	$204.6	$280.3
2007	$101,799.0	$71,622.4	$103.9	$338.7	$79,617.9	$214.1	$314.1
Changes 1990 to 2007							
Absolute	$76,962.2	$56,667.8	$35.3	$181.2	$53,800.6	$146.1	$159.1
Percent	310%	379%	51%	115%	208%	215%	103%
Population Change	209%	131%	16%	-3%	43%	57%	8%

Source: U.S. Bureau of Economic Analysis 2009a.

Net changes in total personal income in White Pine, Juab, and Millard counties all exceeded the compounded effects of population change and the pace of inflation over the period indicating a net increase in real per capita income of residents over time. The growth in total personal income in Lincoln County between 1990 and 2007 was 51 percent and did not keep pace with inflation during the period (which was over 60 percent) Net population growth during the same period implies a net decline in real per capita income of local residents over time. Trends in per capita income, including the lower per capita incomes, comparatively slower growth rates in the rural counties, and general differences in statewide averages between Nevada and Utah are shown in **Figure F3.18-7**. A sharp increase in per capita income in White Pine County tied to the reopening of the Robinson Mine near Ely is evident.



Source: U.S. Bureau of Economic Analysis 2009a.

Figure F3.18-7 Changes in Per Capita Income, 1970 to 2007

Per capita personal incomes in 2007 ranged from $21,988 in Lincoln County to $39,853 in Clark County. Among the five counties, only Clark County exceeded the national average of $38,615. The per capita income of $37,176 in White Pine County was 96 percent of the national average. Per capita incomes in the other counties were all less than 70 percent of the national average, with that in Lincoln County, $16,627, trailing by the widest margin (**Table F3.18-22**).

Table F3.18-22 Comparative Per Capita Income, 2007

	Per Capita Income – 2007	Difference Local vs. U.S.	Local As A Percent of U.S.
U.S.	$38,615	$0	100%
NEVADA	$39,853	$1,238	103%
Clark, Nevada	$39,188	$573	101%
Lincoln, Nevada	$21,988	($16,627)	57%
White Pine, Nevada	$37,176	($1,439)	96%
UTAH	$29,831	($8,784)	77%
Juab, Utah	$22,374	($16,241)	58%
Millard, Utah	$26,397	($12,218)	68%

Source: U.S. Bureau of Economic Analysis 2009a.

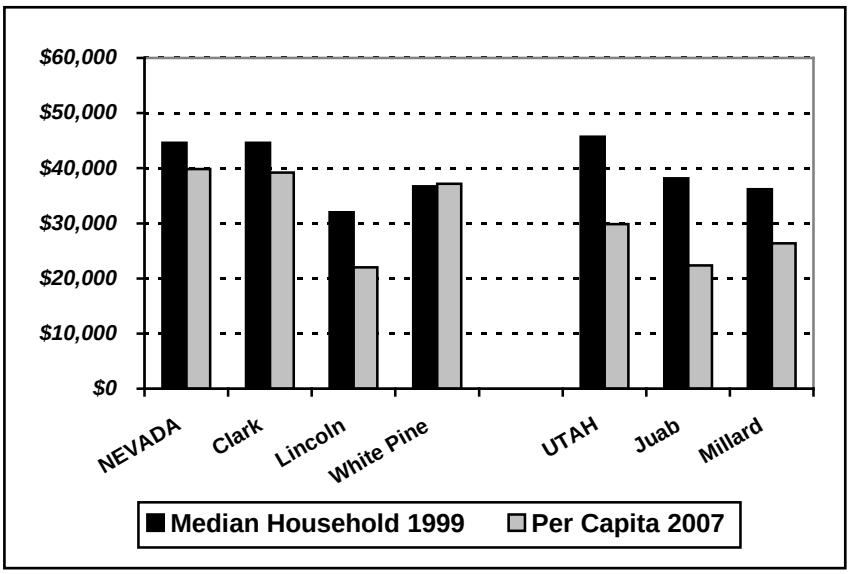
The consistently lower incomes in the rural counties manifest themselves in a higher incidence of poverty and low income as measured by individual or family income relative to a defined threshold. Eligibility for many public social assistance programs is based on income below the poverty level, or income less than 200 percent of the poverty level, i.e., low income. In 1999, 28 percent (Clark) and 38.6 percent (Millard) of the study area population were classified as low income. More than a-third of all residents in Juab and Lincoln counties were also low income. The national average was 29.6 percent (**Table F3.18-23**). The incidence of poverty ranged from 10.4 percent in Juab County to 16.5 percent in Lincoln County, compared to the national average of 12.4 percent.

Table F3.18-23 Incidence of Poverty, 1999

Geographic Area	Share of Population Below Poverty Level	Share of Population Below 200% of Poverty Level	Percent of Population Below Poverty Above the State Average	Percent of Population Below 200% of Poverty Above the State Average
U.S.	12.4%	29.6%	NA	NA
NEVADA	10.5%	27.7%	NA	NA
Clark County	10.8%	28.0%	0.3%	0.4%
Lincoln County	16.5%	37.1%	6.0%	9.4%
White Pine County	11.0%	31.2%	0.5%	3.5%
UTAH	9.4%	27.7%	NA	NA
Juab County	10.4%	34.3%	1.0%	6.6%
Millard County	13.1%	38.6%	3.7%	10.9%

Source: U.S. Census Bureau 2002a.

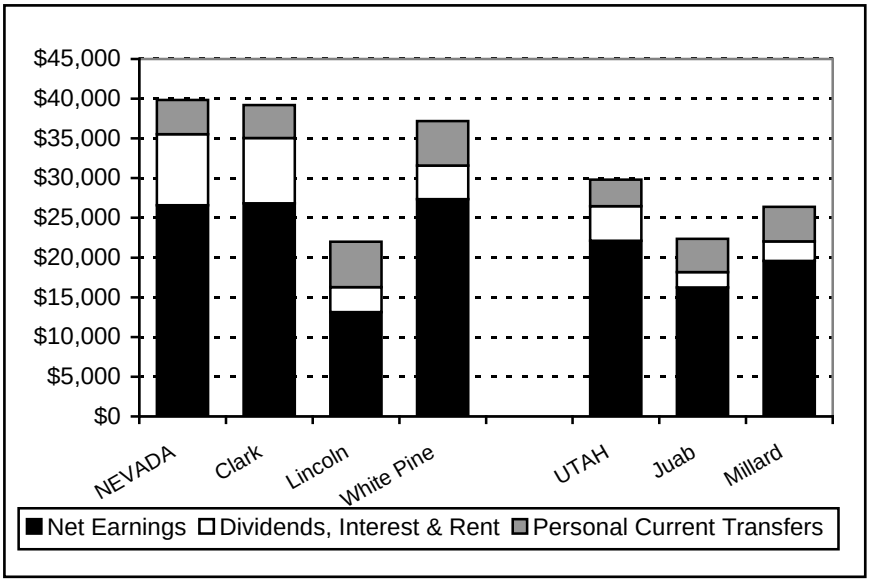
Median household incomes in 1999 (Census 2000), which reflect differences in household size and the distribution of incomes, ranged from $31,979 in Lincoln County to $44,616 in Clark County. The net difference across the range was 72 percent, compared to 60 percent in per capita income, and Juab and Millard counties compare more favorably with the other counties, but still lag the statewide average by a considerable margin. The relationships of median household and per capita incomes for the counties and respective states are shown in **Figure F3.18-8**.



Sources: U.S. Census Bureau 2002a; U.S. Bureau of Economic Analysis 2009c.

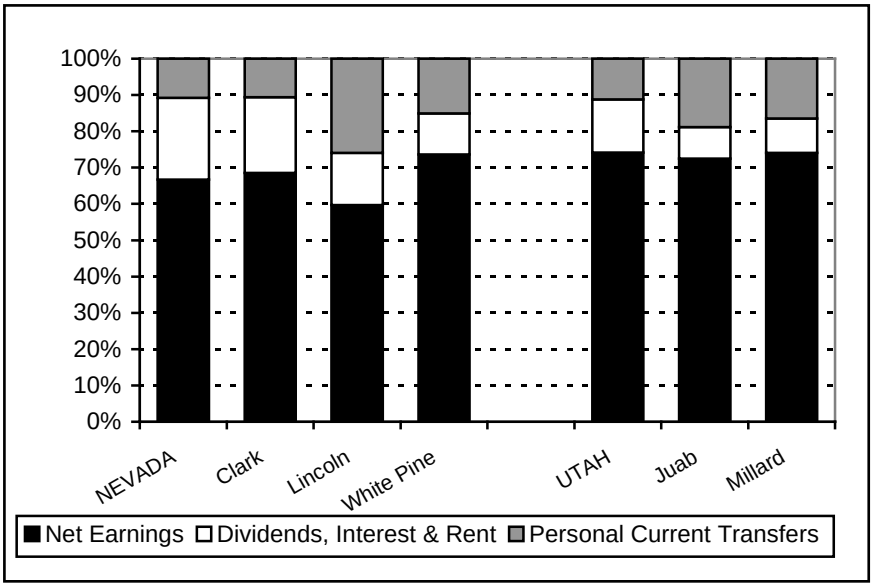
Figure F3.18-8 1999 Median Household and 2007 Per Capita Incomes

Significant differences exist in the composition of personal income across the counties. Net earnings from current employment, ranging from $13,120 in Lincoln County to $26,842 in Clark County comprise the largest share of income, but account for only 60 percent of per capita incomes in Lincoln County compared with 69 percent in Clark County (**Figures F3.18-9** and **F3.18-10**).



Source: U.S. Bureau of Economic Analysis 2009c.

Figure F3.18-9 Composition of Per Capita Income, By Type ($ per capita), 2007



Source: U.S. Bureau of Economic Analysis 2009c.

Figure F3.18-10 Composition of Per Capita Income, Percent by Major Source, 2007

On average, residents of the rural counties realize more of their income from personal current transfers, which include income maintenance programs, such as social security, unemployment benefits, and retirement benefits. Average per capita retirement and other transfer income is particularly important in Lincoln and White Pine counties, $5,703 and $5,599, respectively. For Lincoln County, the personal current transfer income represented 26 percent of the personal income. Retirement and other transfer income sources account for between 15 percent and 19 percent of personal income in the other rural counties. The comparative value for retirement and other transfer

income in Clark County was $4,142 accounting for 11 percent of per capita income (U.S. Bureau of Economic Analysis 2009c).

Residents of the metropolitan area realize more of their income from investments in the form of dividends, interest, and rent. In 2007, investment income averaged $8,204 per resident in Clark County, compared to between $1,939 (Juab) and $4,203 (White Pine) in the rural counties. Considered in combination with the demographic data, the data on income composition suggests a relatively larger share of the population being retired and on fixed incomes in the rural counties.

F3.18.6 Housing

An area's housing supply and increases in the supply over time associated with new construction are important indicators of economic and population growth, or lack thereof, as well as being a precursor of potential changes in social conditions. At the time of Census 2000, housing vacancy rates of non-seasonal units in the study area ranged from 7 percent in Clark County to 22 percent in White Pine County. Vacancy rates in White Pine County reflected the economic woes affecting the local mining industry at that time. Between 2000 and 2007, a net increase of more than 228,000 new units were added in Clark County, a net increase of 40 percent in 7 years and an average of nearly 33,000 new units per year (**Table F3.18-24**).

Table F3.18-24 Housing Inventory, 2000 and 2007

	Census 2000		Estimated Housing Units July 2007	Net Change in Total Housing Units
	Vacancy Rate – Non-seasonal Units	Total Housing Units		
Clark County	7%	559,784	788,094	228,310
Lincoln County	15%	2,178	2,268	90
White Pine County	22%	4,439	4,484	45
Juab County	9%	2,810	3,444	634
Millard County	10%	4,522	4,839	317

Source: U.S. Census Bureau 2008a, 2002a.

Buffeted by the effects of the national recession and sub-prime mortgage crisis, the pace of residential construction in Clark County declined sharply in 2008 and 2009. However, new residential construction continues albeit not at the pace of recent years. Building permits for 2,830 new residential units were issued in Clark County during the 6-month period January-June 2009, approximately 60 percent fewer than for the corresponding period in 2008 and nearly 75 percent below the number for the corresponding period in 2007. Whereas nearly 90 percent of units permitted in 2007 were single-family homes, in 2009 single-family homes accounted for just over half of the total, with multifamily homes accounting for the remainder. In terms of location, 49 percent of the new units permitted in 2009 were to be built in unincorporated areas of Clark County, 22 percent in Las Vegas, 20 percent in Henderson, and the remainder in Mesquite and other communities.

In contrast to the torrid pace of development in Clark County, new residential development since 2000 has been modest n Lincoln and White Pine counties. The two counties registered a combined net increase of 135 units; 90 of those in Lincoln County where residential development was driven primarily by retirees relocating to the area and households with members commuting to jobs in Clark County. The limited scale of residential development in White Pine County suggested by the net change in housing units masks recent population growth as many incoming households were able to find existing, affordably priced housing. Additional new residential development had been anticipated in White Pine County, particularly in the Ely and McGill areas, in conjunction with the proposed Ely Energy Center generating station. However, that project has been postponed indefinitely. Future residential development is also envisioned in southern Lincoln County, primarily in the Coyote Springs and Toquop planned developments, although the pace of such development likely hinges on the timing and strength of the economic recovery.

Although dramatically lower in scale than that in Clark County, substantial new residential development has occurred in Juab and Millard counties since 2000. Net new residential construction in those 2 counties represented 23 and 7 percent, respectively, of the total housing stock in 2000. Virtually all of the new construction occurred in the eastern portion of the two counties, far removed from the indirect effects study area. Those areas are generally being marketed as affordable alternatives to households economically tied to jobs in the Provo-Orem area.

Temporary private lodging, including hotel and motel rooms, guest lodges, and recreational vehicle (RV) sites, are important dimensions of the region's tourism and recreation economy. Such lodging, along with available rental housing, could support temporary housing needs associated with project construction. Project-related needs could compete with the traditional uses and markets for those units. The potential for such competition is particularly acute in Lincoln County and in the Snake Valley portions of White Pine, Juab, and Millard counties due to the limited availability of lodging and rental housing and in Ely due to that community's efforts to promote its tourism and convention trade (Rajala 2008). **Table F3.18-25** summarizes the lodging accommodations and the number of RV spaces, as well as a qualitative assessment of the availability of rental housing. Ely hosts the largest concentration of rooms and RV spaces in the rural area where the limited availability contrasts sharply with the nearly 146,000 rooms and more than 5,000 RV spaces in Clark County.

Table F3.18-25 Lodging and Rental Housing Availability

	Hotels/Motels	Total Rooms	Mobile Home / RV Parks	Total Spaces	Rental Housing
Clark County	300+	145,948	33	> 5,000	Many
Lincoln County	< 10	< 100	< 10	< 100	Very few
White Pine County	25 – 30	700 – 750	10	200 - 250	Very few
Juab County	0 – local 4 – Nephi (100+ miles)	0 – local	0 – local	0 - local	Essentially None
Millard County	1 – local 4 – Delta	29	0 – local	0	Essentially None

Sources: White Pine Chamber of Commerce 2007a; White Pine County Tourism and Recreation Board 2007; LVCVA 2007a, b and 2010; Nevada Commission on Tourism 2007; Utah Office of Tourism 2007.

Additional RV parking and camping opportunities are available at state parks and at federally managed developed and dispersed recreation areas in the region. However, these facilities are not included in the above inventory, as they not intended for long-term use by construction workers.

F3.18.7 Public Facilities and Services and Local Government

The respective county governments are the primary units of local governance and key public service providers in the study area as virtually the entire area is unincorporated. Ely and Caliente are the only two incorporated municipalities in the portions of the four rural counties located near proposed project facilities or within the indirect effects study area. The county governments conduct required statutory and administrative functions for their respective jurisdictional territories, for example, public recording, property assessment, law enforcement and public safety, criminal justice and courts, local road and bridge maintenance, and fiscal management. In White Pine and Lincoln counties, the counties also serve as the umbrella administrative organization for the unincorporated towns. There are no unincorporated towns in the western portions of Juab and Millard counties.

A number of special service districts, providing one or more services or functions under the direction of a separate board or commission, exist in the rural counties. Special districts may serve the entire county or a defined service area. **Table F3.18-26** lists the local governments and special districts, along with the functions of the latter, for the rural portions of the study area.

Table F3.18-26 Key Local Governments and Special Districts

Local Governments	Special Districts[1]
Clark County, Nevada	Southern Nevada Water Authority
Lincoln County, Nevada City of Caliente Town of Alamo (unincorporated) Town of Panaca (unincorporated) Town of Pioche (unincorporated)	Alamo Sewer and Water GID[2] Coyotes Springs GID (water and wastewater) Lincoln County Hospital Lincoln County Regional Transportation Lincoln County Television Lincoln County Water District Pahranagat Valley Fire Pioche Fire TRI GID
White Pine County, Nevada City of Ely Town of Baker (unincorporated)	Baker Water and Sewer GID White Pine County Hospital White Pine Television White Pine Tourism and Recreation
Juab County, Utah	Juab Special Service Fire District Juab Special Service District #2 (Civic infrastructure)
Millard County, Utah	Millard County Fire District

[1]Many of the municipalities and special districts in Clark County could be indirectly affected by changes in future economic and growth scenarios, including those associated with alternative assumptions about water availability. However, detailed assessments of potential impacts on individual municipalities and districts are beyond the scope of the analysis.

[2]GID is an abbreviation for general improvement district, a form of special district that provides one or more types of facilities and services to a defined service area, the service territory of which may include areas in two or more counties.

Sources: Nevada Department of Administration 2007; Utah Office of the State Auditors 2007.

Water providers in the rural areas include the municipal utilities in Ely and Caliente, Pioche Public Utilities, Panaca Farmstead Association, Alamo Water and Sewer General Improvement District (GID), Baker Water and Sewer GID, and Coyote Springs GID. All of these water providers rely on groundwater wells for their water supplies and several are facing issues related to water quality standards for arsenic.

In addition to the county government, there are 5 municipalities and more than 25 service districts in Clark County. Seven of the service districts, including the Southern Nevada Water Authority, are water districts engaged in some aspects of water development, treatment and/or distribution. Only Clark County and the SNWA are listed above because the service areas for the others are quite distant from the project facilities and ROWs and/or they are unlikely to be directly affected by the project.

Among the array of public services provided to residents, businesses, visitors, and other governmental entities, law enforcement, fire suppression, and emergency medical services are among the more important. These services may also see project-related demands, principally during construction, but also during long-term operations. Staffing levels, response times, and the type and level of service provided mirror the geographic area of coverage, population, and underlying local fiscal resource base of the counties and other providers. **Table F3.18-27** identifies the primary law enforcement agencies serving the study area and the locations and types of emergency medical service providers.

Table F3.18-27 Selected Public Service Providers In The Study Area

	Law Enforcement	Hospitals	Fire Departments	EMS / Ambulance
Clark County	Las Vegas Metro Police Nevada Highway Patrol	Las Vegas metro (multiple), Mesquite	Clark County Fire Department (paid professional in metro area) Rural stations in Moapa Valley (volunteer)	Clark County Fire Department (paid professional) Private ambulance Air ambulance
Lincoln County	County Sheriff Nevada Highway Patrol	Caliente	Pioche (vol.) Panaca (vol.) Caliente (vol.) Pahranagat Valley [Alamo] (vol.) Eagle Valley (vol.)	Pioche (vol.) Panaca (vol.) Caliente (vol.) Pahranagat Valley [Alamo] (vol.) Eagle Valley (vol.) Air ambulance from Las Vegas
White Pine County	County Sheriff Nevada Highway Patrol	Ely	Ely (combination) Snake Valley [Baker/Garrison] (vol.)	Ely (vol.) Snake Valley [Baker] (vol.) Air ambulance from Las Vegas or Elko
Juab County	Deputy Sheriff (jointly funded with Millard and Beaver counties)	Nephi (100+ miles) *Ely is closest*	Callao (vol.) Granite Ranch (vol.)	Granite Ranch (vol.) Air ambulance from Salt Lake or Provo
Millard County	Deputy Sheriff (jointly funded with Juab and Beaver counties)	Delta (80+ miles) *Ely is closest*	EskDale (vol.) Snake Valley [Baker/Garrison] (vol.)	Garrison (vol.) Air ambulance from Salt Lake or Provo

(vol.) denotes a volunteer based service.

Sources: Clark County Fire Department 2007; Fire Departments Net 2007; Las Vegas Metropolitan Police 2006; Nevada Department of Public Safety no date; Utah Department of Public Safety 2006.

The Nevada Highway Patrol provides coverage throughout the Nevada portion of the study area and the Utah Highway Patrol provides coverage throughout the Utah portion of the study area. The Nevada Highway Patrol has officers stationed in Mesquite, the Las Vegas Valley, Alamo, and Ely. There are no Utah State Patrol officers based in the Utah portion of the study area.

The Las Vegas Metro Police department provides law enforcement in the unincorporated areas of Clark County. The Sheriff's office provides coverage in White Pine and Lincoln counties. For the former, deputies are dispatched from Ely. In Lincoln County, deputies are based in Pioche and Alamo. A single deputy, based in Garrison and jointly funded by Juab, Millard, and Beaver counties serves the Utah portion of the study area.

Community based acute care hospitals with emergency rooms are located in Caliente and Ely. When care requirements exceed local capabilities, trauma care facilities are located in the Las Vegas Valley or in Salt Lake, with air ambulance service available to transport accident victims and other critically ill patients. There are no hospitals in western Juab or Millard counties. William Bee Ririe Hospital in Ely is the closest facility for most residents of the Snake Valley and Delta Community Medical Center is the nearest hospital in Utah.

Local fire departments provide emergency medical response and fire suppression across most of the rural portions of the study area, often working in concert with law enforcement and local search and rescue teams. All of the rural departments rely on volunteer firefighters and emergency medical technician (EMT)/paramedics. The fire departments and ambulances are typically community-based but respond to calls along the highways and in outlying

areas of their respective service response territories. Response times vary but can be lengthy. There is a high degree of cooperation among various providers in an attempt to reduce burdens on volunteers and maintain coverage in the area. For example, it is not uncommon for an ambulance to be dispatched from Delta to meet one transporting a patient from the Snake Valley, meeting midway and transferring the patient to allow the latter to return.

The Clark County Fire Department covers the rural portion of the county, as well as unincorporated areas in the Las Vegas area. It operates nearly 50 stations, including 4 in northeastern Clark County. Stations in the urban area are staffed by professionals career firefighters and paramedics while the rural stations in the northeastern portion of the county are volunteer based.

Schools serve important roles in the economic and social structures of rural communities. They provide a sense of community identity, are a focal point for community gatherings, provide jobs, and a degree of autonomy. Maintaining local schools in rural areas reduces the time school-age children are in transit, reduces the need to board children in town or to have a parent move into town, and in the case of children from ranch families, allows them to continue traditional ways of helping with chores.

Four school districts serve the rural areas; countywide unified school districts serve White Pine, Lincoln, and Millard counties, and the Tintic School District provides public education in western and northeastern Juab County. Fall enrollments in 2007 ranged from 238 in the Tintic District to 2,852 in the Millard County School District. Many schools in the study area, particularly those in the Snake Valley, are very small, one and two room schools serving multiple grades. The White Pine and Millard school districts cooperate in serving the Snake Valley. Rather than operating separate schools with a single or a few students in a class, they each operate schools with several grades and allow students living in the other district to attend. **Table F3.18-28** presents summary statistics for the public school districts and identifies the schools, location, and grades taught in or near the study area.

Table F3.18-28 Public School Enrollment and Schools In/Near the Study Area

	Total Enrollment Fall 2007	Number of Public Schools in District	Schools in/near the study area School Name (Location and Grades)
White Pine County School District	1,443	8	Baker Elementary (Baker 3-6) [School operates under a cooperative program with Millard County]
Lincoln County School District	953	9	Caliente Elementary (Caliente K-6) Panaca Elementary (Panaca K-6) Pioche Elementary (Pioche K-6) Bastian (Caliente 6-12) Meadow Valley Middle (Panaca 7-8) Pahranagat Valley Middle (Alamo 6-8) Lincoln County High (Panaca 9-12) Pahranagat Valley High (Alamo 9-12)
Tintic School District (Juab County)	238	5	Callao School (Callao K-8) West Desert Elementary (Partoun/Trout Creek K-6) West Desert High (Partoun/Trout Creek 7-12)
Millard County School District	2,852	11	Garrison Elementary (Garrison K-2) Garrison Secondary (EskDale 7-8) EskDale High (EskDale 9-12) [These schools operate under a cooperative program with White Pine County]
Clark County School District	308,783	349	None in area potentially affected by production-related draw downs

Sources: Nevada Department of Education 2007, 2006; Utah State Office of Education 2007a, b.

The Clark County School District is the largest in the state in terms of enrollment. Fall enrollment in 2007 was 308,783 students in 349 public schools (the totals do not include students enrolled in charter or private schools),

nearly 16,000 more students are enrolled in private schools in the county. The total is nearly 82,000 students (33 percent) higher than the 231,765 students enrolled in public and private schools in the fall of 2000, another indication of the rapid population growth in the Las Vegas Valley in recent years. Ninety-nine new public schools have opened since 2000 to accommodate the growth. None of the Clark County public schools are located near any of the proposed facilities.

Local governments and school districts rely heavily on property tax revenues to support public facilities and services. Assessment practices vary between Utah and Nevada, primarily with respect to residential and agricultural property. Despite the differences in assessment practices, the resulting assessed valuations are indicative of the respective tax bases of the counties. As shown in **Table F3.18-29**, the range in assessed valuations in 2006-07 was from $155.7 million in Lincoln County to $89.5 billion in Clark County, a multiple of nearly 575. Millard County's assessed valuation of $1.8 billion reflects the location of the Intermountain Power Plant near Delta, and the valuation in White Pine County is bolstered by $70 million in net proceeds of mining assessment on production from the Quadra Mining Robinson Mine near Ely (Nevada Department of Taxation 2006). Net proceeds of mining can vary dramatically from year to year due to changes in production rates, allowable deductions and market prices. Taxes levied on the local tax base to support the general funds of the counties range from $1.4 million in Lincoln County to $298.2 million in Clark County. Other taxing jurisdictions, including school districts, municipalities (in Clark County), and service districts may realize revenues from levies imposed on the assessed valuation within their respective service areas (though not all service providers impose property taxes).

Table F3.18-29 County Assessed Valuation and General Fund Property Tax Revenue, 2006-07

	Total Assessed Valuation – 2006-07 (Millions)	Property Tax Revenue (Millions)
Clark County	$ 89,521.0	$ 298.2
Lincoln County	$155.7	$ 1.4
White Pine County	$230.7	$ 2.8
Juab County	$632.0	$ 1.6
Millard County	$1,811.5	$ 6.1

Sources: Clark County 2007; Nevada of Administration, no date; Utah State Auditor 2007.

Intergovernmental revenues, including distributions of state-shared revenues, and other taxes, licenses, fees, and earnings also support the county general funds. The monetary receipts in these categories, along with the property tax revenues accruing to each county are shown in **Table F3.18-30**. The rural counties generally realize a higher share of their total revenues from property taxes than does Clark County. Lincoln and White Pine counties are also more dependent on intergovernmental transfers than are the other three counties. Clark, Juab, and Millard counties all realize more than 45 percent of their general fund revenues from other sources. In the case of Clark County, the diversity reflects both the options and perhaps necessities of tapping into additional revenues to address the needs in a large metropolitan area during periods of rapid growth. In the case of Juab and Millard counties, the increased use of other revenues, at least in comparison to White Pine and Lincoln counties, reflects many factors including underlying differences in local government finance between the states.

Table F3.18-30 General Government Revenues for County Government, 2007

	Property Tax Revenue	Intergovernmental Revenue	Other General Fund Revenue	Total General Fund Revenue
Clark County	$ 298.2	$ 349.7	$ 568.3	$ 1,217.2
Lincoln County	$ 1.4	$1.8	$ 0.7	$ 3.9
White Pine County	$ 2.8	$4.8	$ 1.0	$ 8.6
Juab County	$ 1.6	$ 1.3	$ 2.8	$ 5.7
Millard County	$ 6.1	$ 1.0	$ 6.8	$13.9

Sources: Clark County (2007); Nevada Department of Administration (no date); Utah State Auditor (2007).

The purchases of private ranches by the Southern Nevada Water Authority and the prospects of the development and exporting of groundwater have raised fiscal concerns for some of the local governments in the rural areas. The concerns include:

- the removal of the real property from local tax rolls and reduction in sales tax receipts due to SNWA's tax exempt status,
- potential indirect adverse effects on local businesses and tax revenues if SNWA uses its institutional procurement programs to buy supplies outside the region that historically have been purchased locally, and
- what are viewed locally as constraints to economic development, and the fiscal support such development would provide, associated with groundwater allocations in recent rulings by the State Engineer that limit future in-basin use and the affect of SNWA's groundwater development project in increasing the costs to develop those allocations.

To address the first of these concerns, Southern Nevada Water Authority and White Pine County have an agreement under which SNWA will make "in lieu of tax" payments to offset some of the tax revenue reductions. The latter two issues are more fractious. The former involves trade-offs between SNWA's interests to manage costs for it purveyor members and their consumers against what some see as a corporate obligation to support local communities and governments adversely affected by the project's primary constituency, particularly given the modest marginal costs relative to the overall project costs and value of benefits accruing to the Las Vegas Valley. The latter also involves trade-offs, in this case between SNWA's right to pursue development, again in a cost efficient manner, of public water appropriated to it by the State Engineer versus the public's interest in maintaining economically and socially viable rural communities.

F3.18.8 Social Organization and Conditions

This section describes relevant social conditions in the geographic area potentially affected by the Proposed Action and alternatives. Information for this section was obtained from the draft Proposed Ely Resource Management Plan/Final Environmental Impact Statement, review of the EIS scoping record, Nevada State Engineer hearing exhibits, attendance at and transcripts of public meetings, newspaper and magazine articles and editorials concerning the proposed project, and from personal interviews and secondary sources as cited. Individuals interviewed as part of this assessment included local elected and appointed officials and staff, economic development officials, ranchers, business owners and managers, individuals associated with organized recreation user groups, and others. The principal focus of this section is on the areas containing and surrounding the ROWs and proposed groundwater exploratory areas.

From a social standpoint, "communities" include not only settlements, towns and cities but also social institutions (e.g., schools and churches), and community dialogue regarding important issues that serve vital roles in fostering social interactions, In many instances, social and economic effects of various actions and policies that occur across the landscape in outlying rural areas manifest themselves in local communities. All communities in Clark, White Pine, and Lincoln counties in Nevada and Millard and Juab counties in Utah could be affected economically and

socially by the Proposed Action and alternatives. However, the following communities in the rural portion of the study area are most likely to experience measurable social and economic effects: Ely, McGill, Ruth, and Baker in White Pine County, Caliente; Pioche, Panaca, and Alamo/Hiko in Lincoln County; Garrison, EskDale and Gandy in Millard County; and Callao, Trout Creek, and Partoun in Juab County.

Some of the direct and indirect social and economic effects of the proposed project would also manifest themselves in the Las Vegas Valley. The Las Vegas Valley would supply much of the materials, services and labor for construction of the pipeline and ancillary facilities. Expansion of Las Vegas Valley's water supply is a necessary resource to support growth and development in the Las Vegas Valley in the future. However, while lack of water would be a constraint to growth, water availability, in and of itself, would not be the underlying cause of future growth.

F3.18.8.1 Historical Context

Early Euro-American settlement in the study area was largely the result of prospecting and mining, farming and ranching, and establishment of Pony Express and Overland Stage stops. These three types of economic activity: mining, agriculture, and transportation have continued to be among the major factors for growth and development in the region. The mining sector has been subject to substantial volatility over time. Precious and base metal mining has resulted in periods of growth and development (booms) in some parts of the study area, often followed by periods of sharp decline (busts). Although ranching and farming also had its periods of growth and decline, agriculture has over the years sustained a population base and played a major role in the development of social conditions in the rural parts of the study area. Development of railroads and highways and the traffic they carry provided another source of income in the rural parts of the study area as well as a more efficient means of moving goods to markets. In the last half of the 20th century, jobs in the local offices of federal and state government agencies also contributed to economic and population growth. More recently, tourism and recreation visitation and in some cases, second and retirement home development are influencing social conditions in some portions of the study area. Large-scale residential and commercial development may play important roles in future social conditions in north central Clark County and southern Lincoln County.

What is now Southern Nevada was inhabited by Native Americans, primarily the Paiutes, for centuries before European contact. The first documented discovery of the area of lush vegetation around artesian wells and desert springs now known as Las Vegas ("vegas" in Spanish and "the meadows" in English) by Europeans occurred as explorers were looking for a more direct route than the Old Spanish Trail from Mexico to California. Substantial occupation of the area by people of European ancestry first occurred when members of the Mormon Church established a settlement in the mid-1800s to supply travelers en route from Salt Lake City to Southern California. The discovery of gold in the area surrounding Las Vegas in the 1860s also led to the establishment of ranches and farms to provision the gold camps. William Clark arrived in Las Vegas in the early 1900s, constructed the San Pedro, Los Angeles and Salt Lake Railroad, and developed real estate in the area. Las Vegas continued as a major provisioning center for travelers and mining operations for several decades until the mining activity declined.

Las Vegas experienced economic stagnation during the most of the 1920's until construction of the Boulder Dam (now Hoover Dam) began in the early 1930's. Boulder City was constructed to house the more than 5,000 workers needed to construct the dam, but Las Vegas also prospered as local railroad operations grew to handle the large volumes of freight brought in to support construction of the dam and its business sector expanded to meet demands of construction workers, contractors and service companies. Tourist visitors to the Boulder Dam construction project spurred Las Vegas' budding tourist industry, which quickly responded by constructing hotels and casinos to serve tourists and construction workers and to capitalize on the legalization of gambling in 1931. The Hoover Dam and its integrated hydroelectric power plant also became an inexpensive source of power for Las Vegas, which was to become a major factor in the development of the city and the gaming industry.

The Las Vegas area entered another economic depression in the late 1930's following the completion of the Hoover Dam, but the establishment of an Army Air Corps gunnery school (now Nellis Air Force Base) north of the city, near what is now North Las Vegas, and the opening of a magnesium plant south of the city in what is now

Henderson helped revitalize the area's economy. The opening of the Nevada Test Site in Nye County and the establishment of Atomic Energy Commission (now Department of Energy) offices in Las Vegas during the 1950's added an additional federal government element to the local economy.

The burgeoning Southern California population, coupled with the banning of gambling in Los Angeles and other areas of the southwest created a sizeable clientele for the growing casino industry in Las Vegas. Hollywood entrepreneurs and movie stars also contributed to the area's development and renown. But the development of I -15 in the 1960s, the construction of the Southern Nevada Water Project (which provided water for development) in the 1970s, Wall Street and venture capital interest in casino and resort investment in the 1980s and the advent of the "megaresorts" were all key drivers in the period of explosive growth that Las Vegas has experienced over the last 30 years.

F3.18.8.2 Communities of Place

As previously noted, potentially affected communities include those in Clark, White Pine, and Lincoln counties in Nevada and Millard and Juab counties in Utah. From a social standpoint, communities include not only municipalities but also the social linkages associated with economic activities (e.g., ranching, tourism, and recreation services) social institutions (e.g., schools and churches) and interests (e.g., resource preservation or resource use). In some cases, it is more appropriate to discuss communities on a physiographic and hydrologic (valley) basis, rather than on a political geography (state, county, and/or community) basis.

The affected communities in the rural portion of the study area include Ely, McGill, Ruth, and Baker in White Pine County, Caliente; Pioche, Panaca, and Alamo/Hiko in Lincoln County; Garrison, EskDale and Gandy in Millard County; and Callao, Trout Creek, and Partoun in Juab County. Although all communities in the socioeconomic study area could be affected economically and socially by the Proposed Action and alternatives, the listed communities are most likely to experience measurable social and economic effects. Some of the direct and indirect social and economic effects of the Proposed Action would also manifest themselves in the Las Vegas Valley., The Las Vegas Valley would be the beneficiary of future economic and population growth and of a supplemental water supply facilitated by water diversion and would supply much of the materials, services and labor for construction of the pipeline and ancillary facilities. For this assessment, the communities located in the indirect effects study area, i.e., the area potentially affected by groundwater drawdown, are discussed in greater detail than are other communities.

Ely, McGill, Ruth. Ely, McGill, and Ruth share similar economic influences and histories. The City of Ely is the White Pine County seat. It is the largest community in the rural portion of the study area with an estimated 2008 population of 4,352 (**Table F3.18-2**). The unincorporated town of McGill (estimated 2008 population 1,128), a former company town tied to copper smelting, is located 12 miles north of Ely on U.S. Highway 93. The unincorporated community of Ruth (estimated 2008 population 407), near the Robinson Mine site about 5 miles northwest of Ely along U.S. Highway 50 and NV Route 44, is also a former company town.

Traditionally, Ely has been the regional commercial and service center for the ranching and mining communities in east central Nevada. Given its location and relative isolation, Ely provides essential medical, emergency, law enforcement, retail, and hospitality services to residents and travelers alike. In some cases, the nearest alternatives to these services are located in communities some 200 miles away. The city has seen periods of population increase and decline associated primarily with the rising and falling fortunes of area copper mines. Quadra Mining, Ltd. operates the Robinson Mine, a major copper mine near Ruth. The nearby Nevada Department of Corrections facility, BLM's Ely Field Office, and other state agencies provide a measure of economic stability in the area. Ely has an ongoing economic development effort to capitalize on its historic setting and nearby natural attractions such as Great Basin National Park to attract tourism and recreation visitors. The restored Northern Nevada Railroad, which used to serve the copper mines and smelter, now carries tourists and railroad buffs. Two major coal-fired electric power plants are proposed for the Ely area and both projects continue to assess the market and feasibility of proceeding, while simultaneously engaged in the regulatory and permitting process.

The copper mines and railroad brought ethnic diversity to Ely and the community is proud of its diverse ethnic heritage. Although the children of many Ely residents move from town to seek employment, some move back and, despite population loss, Ely has attracted new residents looking for a quieter and perhaps less expensive rural lifestyle.

The Ely Colony. The Ely Colony is the tribal reservation for the Ely Shoshone tribe. The reservation consists of 3 separate parcels, totaling approximately 111 acres, in and near the city of Ely. About half of the estimated 500 members of the tribe reside on the reservation. More than 60 residences for tribal members are located on these lands, as are the tribe's administrative and housing offices, a preschool, clinic, and community center. The tribe also operates a smoke shop, a textile business (Shoshone Cloth Industries), and a truck stop/convenience store to help support the tribe economically. Some tribal members are employed off of the reservation by local private firms and government entities. The tribe has an active language preservation program, offers members instruction in traditional dances, games and skills, and provides college scholarships and adult vocational training (Great Basin National Heritage Partnership 2007; Bureau of Indian Affairs [BIA] 2007).

Confederated Tribes of the Goshute Indian Reservation. The reservation encompasses nearly 113,000 acres in White Pine County, Nevada and Tooele and Juab counties in Utah, principally in the Deep Creek Valley. The confederated tribes of the Goshute include the Goshute (a Shoshonean people), Paiute and Bannock peoples. Prior to contact with the settlers, the Goshutes migrated between winters in the valley and summers closer to the mountains. Following contact with the settlers and Mormon missionaries, the Goshute became active in farming and ranching, which continues as a key form of economic livelihood today. The small community of Ibapah serves as "home" for the reservation (at least in terms of the established mailing address), but most of the tribal population live on farms and ranches dispersed across the reservation (Great Basin National Heritage Partnership 2007; BIA 2007).

Snake Valley (Nevada and Utah). The Snake Valley straddles the Nevada - Utah border and includes portions of White Pine County in Nevada and Millard and Juab counties in Utah. Snake Valley is about 80 miles from north to south and about 20 miles from east to west at its widest point. Baker, Nevada and the Utah communities of Garrison, Border, EskDale, Gandy, Partoun, Trout Creek, and Callao are all located within the valley. These are the only communities within an affected hydrographic basin and Snake Valley and Spring Valley (discussed in the following section) are the only inhabited hydrographic basins associated with the Proposed Action.

Snake Valley is relatively remote and far from large population centers. Although Ely is closer, there are strong economic and social linkages to Delta, Utah (2008 population 3,172) and to urban areas along the Wasatch Front. The valley only received electrical service in the 1970's, phone service in the 1980's and remains without consistent wireless cell phone service today. Visited by early explorers and traversed by the Pony Express and Overland Stage, the valley began to be settled in the mid to late 1800s. Ranching, grazing, and associated cultivation of hay and other feed crops have been the traditional agricultural activity, although early settlers planted orchards and gardens. Today, the EskDale Dairy milks about 250 cows and maintains a herd of about 500 cows including heifers, bulls, dry cows, and breeding stock (EskDale Dairy 2007).

Early visitors to Lehmann Caves began a tradition of tourism and recreation visitor use to the area, since bolstered by the designation of Great Basin National Park in 1986, completion of the Great Basin Visitor Center in 2005 and the designation in 2006 of the segment of U.S. Highway 50 through Millard and White Pine counties as the Great Basin National Heritage Route. The NPS offices in Baker have added a federal government component to the state government (mainly state highway departments) and local government (mainly schools and road departments) sectors of the local economy.

At the time of the 2000 Census, there were about 500 people living within Snake Valley in the various communities and on ranches or individual parcels of land. There were also about 100 people who lived in neighboring Spring Valley, to the west, and in the mountains in between, many of whom have social ties to Snake Valley through churches, schools, and other organizations. In addition to individuals and families involved in ranching/agriculture, retail, service, and government activities, the area has attracted retirees and lifestyle migrants to the area, and people who purchase land or homes for occasional, vacation and possible eventual retirement. Among those who have

moved to the area for its amenity values are a number of artisans who sell locally and export their products to other parts of the country through internet sales, craft shows, galleries, and other methods. There are several other export businesses in the valley including Mount Moriah Stone, north of Baker, an ornamental stone quarry with operations in White Pine and Millard counties, and a metal fabrication business located at EskDale.

Through a cooperative agreement between the local school districts, children from the southern part of the Snake Valley (and some from Spring Valley) attend kindergarten through second grade in Garrison, third through sixth grade in Baker and high school in EskDale. Children in the extreme northern part of the valley in Juab County attend kindergarten through eighth grade in Callao and high school in Partoun. There is also a K-8 school in Partoun serving the central portion of the valley. School plays, concerts, holiday, and sporting events, School Board and Parent Teachers Association meetings provide key opportunities for social contact.

Churches provide an important social setting for their members and draw additional members from adjacent areas such as Spring Valley. The LDS Church is the predominant church in the region with wards – local congregations – located throughout the area. The faith-based community of EskDale provides a spiritual, social, and work setting for its community members and the annual Fourth of July celebration at EskDale is widely attended by residents from all of the southern part of the valley. Volunteer organizations, such as fire departments and ambulance services also provide important social settings for valley residents. The annual Snake Valley Reunion, a barbecue at a local ranch and dance at the Border Inn, draws a large crowd for the benefit of the Snake Valley Volunteer Fire Department. The restaurants and bars in the Baker/Border area of the valley also provide important social settings for valley residents.

Although separated by considerable distances over unpaved roads and nominally divided by state and county boundaries, Snake Valley residents consider themselves to be one community in some respects. Valley residents have many common interests such as education, ranching, and being active in public/community services (health, emergency response, roads, etc.). A common refrain is that "…nobody around here wears just one hat" and that individuals are engaged in activities because "…the community needs you". Many members of the different communities and ranches are related by birth and by marriage, and most north valley residents' children attend the same schools, as do most south valley residents. The relative isolation of the Snake Valley and the distance from commercial and county government centers such as Ely and Delta foster self-reliance and a sense of community in the valley that transcends, occupation, religious affiliation, and lifestyles.

Resident's perceived external threats to security, resources, and lifestyles also serve to draw the community together. Concerns about the residual impacts from the aboveground nuclear weapons testing at the Nevada Test Site, the U.S. Department of Defense's proposed MX missile project in the 1980's, the Las Vegas Valley groundwater development initiative in the 1990's and SNWA's proposed groundwater project have all resulted in collaborative responses from Snake Valley residents. Many Snake Valley residents participated in the BLM scoping process for this EIS, receive project-related mailings from the BLM, and have been involved in ongoing formal and informal meetings, rallies, and other efforts to voice their opposition to the project and to muster public and political support to halt or limit the amount of diversion approved from the Snake Valley.

Spring Valley, Nevada. Spring Valley is located west of Snake Valley between the Schell Creek and Snake mountain ranges. It extends for about 60 miles north to south and is generally less than 10 miles wide. At the time of the 2000 census, about 50 to 100 people lived in Spring Valley.

There are no towns or government facilities in Spring Valley and the sole retail business is an RV park/bar located on the west side of the valley along U.S. 6 and 50. The ghost town of Osceola is located on the eastern side of Spring Valley near the Sacramento Pass area of U.S. 6 and 50.

As noted above, Spring Valley residents, primarily ranchers and ranch employees, have social linkages to Snake Valley and to Ely. Children of Spring Valley residents attend school in Snake Valley or in Ely, or in some cases are home schooled. Some Spring Valley students have lived in Ely during the school year, sometimes accompanied by one or both parents.

There is a history of consolidation of agricultural lands in Spring Valley; most of the existing ranches in the valley are assemblages of parcels from prior homesteads. Although there are a few multi-generation ranching families left in the valley, most ranches have changed ownership in the past few decades. Recently SNWA acquired a number of ranches in the southern and central portions of the valley. Among the remaining ranches not owned by SNWA is the Cleveland Ranch, owned by the LDS Church and part of its Welfare Services Department, which provides assistance to the poor and disaster relief services by growing crops and raising cattle that are used to provide foodstuffs.

The purchase by SNWA of ranches in Spring Valley has accelerated social change in the valley. Some ranchers and ranch employees have left the area, some remain in retirement, while others remain to manage or lease SNWA-owned ranches.

Caliente. Caliente (2008 population - 1,077) is the only incorporated town in Lincoln County and is centrally situated in the county in a north south context. U.S. 93 runs through the town linking Caliente with Panaca, Pioche, and Ely to the north and Alamo and the Las Vegas Valley to the south. Initially a ranching center, Caliente became a railroad town during the early 1900's (Lincoln County Chamber of Commerce 2007). The Union Pacific mainline, linking Salt Lake City, Las Vegas, and Los Angeles, still operates through town. That rail line comprises an essential link in one of the routes considered for a rail transportation network for the movement of high-level nuclear waste to the proposed Yucca Mountain nuclear repository. The historic depot is well preserved and has been transformed into a multipurpose community building housing the town's offices, library, economic development, and other functions. The Lincoln County Record, the local newspaper, is based and published in Caliente.

Tourism, state and local government services, and commercial trade comprise other elements of the town's economic base and factor heavily in the community's social structure. Geothermal hot springs in the town have long been an attraction for residents and travelers. The Caliente Field Station, part of the Ely Field Office, is located in Caliente, as is the Grover C. Dils Medical Center, the only hospital and senior citizen's residential center/nursing home in Lincoln County. Caliente is home to the Caliente Youth Center, a residential care/treatment/education facility for youthful offenders age 12 to 18 operated by the Nevada Division of Child and Family Services. Businesses in Caliente include several convenience stores/gas stations, cafes, bar, a hardware/construction supplies/feed store, a furniture store, bank, automotive garages, and others.

The LDS Church plays a significant role in local social networks. The Caliente ward is one of six wards in the Panaca Stake, the latter of which is responsible for the operations of the Cleveland Ranch and other church ranching operations in the area that are affiliated with its Welfare Services Department/Bishop's Store (Schindler 2003; LightPlanet 2007).

Caliente may eventually develop the strongest intra-county links to the Toquop energy project and planned unit developments in southern Lincoln County due to the existing road corridor provided by Nevada 317 and county roads.

Panaca. The unincorporated Town of Panaca (2008 population - 645) was founded in the 1860's as an agricultural community by members of the LDS Church. Panaca is said to be the oldest surviving town in Nevada (Lincoln County Chamber of Commerce 2007). Agriculture continues to play a central role in the community, anchored by several large ranches. The town has a small but active commercial sector.

Administrative offices for the Lincoln County School District are in Panaca, as is the Lincoln County High School, Meadow Valley Middle School serving the entire northern portion of the county, and an elementary school. Travel/tourism are important in the local economy, as the town is situated at the intersection of U.S. 93 and Nevada 319, the latter linking to Cedar City, St. George, and the I-15 corridor in Utah. A NDOT highway maintenance facility is located in Panaca (NDOT 2007c).

Like Caliente, Panaca benefits from being centrally located in a cluster of 6 state parks, 1 of which, Cathedral Gorge, is located just north of town. Some rural residential development has been occurring near town, attracting retirees as well as owners of second homes from the Las Vegas Valley.

Pioche. The unincorporated town of Pioche (2008 population - 785) is the Lincoln County seat. It was a mining center and the largest town in Southern Nevada during the early 1870's, with a population of 10,000 (Lincoln County Chamber of Commerce 2007). Currently the economic mainstays in Pioche are county and state government, travel/tourism, and commerce supported by the local farming and ranching community.

A number of Lincoln County facilities are located in Pioche, including the county offices located in the courthouse, a county road and bridge shop and the Lincoln County Sheriff's Complex. The latter provides administrative offices, a dispatch center, as well as criminal detention facilities. The county takes in non-violent offenders from Clark County, on a for fee basis, as a means to generate additional revenues to support county operations. The Pioche Conservation Camp, a minimum-security facility operated by the Nevada Department of Corrections, is located near Pioche.

Businesses in the community include several cafes and bars, filling stations/convenience stores, several small hotels and motels, an antique dealer, and automotive garages. These businesses serve residents and some travelers, although U.S. 93 bypasses Pioche's commercial district, limiting the volume of trade by tourists and travelers. Outdoor enthusiasts, including big game hunters, OHV users, campers, mountain bikers, and others destined to the nearby Echo Canyon and Spring Valley state parks and other public recreational use areas administered by the BLM and USFS are vital to these businesses.

Alamo/Pahranagat Valley. The unincorporated town of Alamo (2008 population - 464) is located about 100 miles north of Las Vegas on U.S. 93 and 54 miles south of Caliente. Alamo is the business and social center of the Pahranagat Valley, which also contains the settlements of Ash Springs and Hiko. In addition to ranching, economic activities in the Pahranagat valley include tourism/recreation/travel oriented business serving highway travelers and visitors to the Pahranagat National Wildlife Refuge and other area attractions (Ibid). These attractions include ghost towns and Native American petroglyphs. Two private businesses also serve as important social centers in Alamo; the Great Basin Food Store and Filling Station and the Windmill Restaurant.

Local government and education play important roles in the local economy, with a Lincoln County annex in town (an acknowledgement of the vast size and spatial distance between communities in Lincoln County) and separate high, middle, and elementary schools. The schools, along with the LDS ward and several other small churches, serve as important focal points for local social interactions. At the same time, the high school provides an important community identity as it is the basis of an "intra-county" athletic rivalry with the one in Panaca. The community has occasionally realized some economic benefits from activities at the NTS and Nellis Air Force Range.

NDOT operates a highway maintenance facility in Alamo (NDOT 2007c). While serving local needs, U.S. 93 is an important major north-south commercial trucking corridor and an important route for tourists traveling to/from Las Vegas, underscoring the importance of the highway network to supporting the gaming and hospitality industry.

Alamo is the nearest community to the Coyote Springs development on the Clark County/Lincoln county line. It is in the process of developing an industrial park and residential subdivision on lands to be acquired from the BLM, the markets for which are expected to be service companies and workers associated with the Coyote Springs development. The prospects for such development are met with a combination of anticipation and concern in the local community. Anticipation arises from the job opportunities, expansion of the tax base, and other economic benefits. Weighing against these feelings are concerns that growth will occur too rapidly for local infrastructure and social integration. There are also concerns that growth will adversely affect local low and fixed income residents.

A new 44-lot residential subdivision opened in Alamo in mid-2007. The market for the project is seen as retirees, households associated with development of Coyote Springs, and commuters to jobs in Las Vegas. Such commuting

already occurs. The subdivision offers homes from the mid-$100Ks to low-$200Ks and 6 units had been sold at the time of this assessment (Rudder 2007).

Las Vegas Valley. Clark County encompasses approximately 8,091 square miles of territory. The majority of county's existing development and resident population are located in the Las Vegas Valley urban area. The Las Vegas Valley encompasses the cities of Las Vegas, North Las Vegas, Henderson, nearby master planned communities and urban type development in other unincorporated areas, and Nellis Air Force Base. Although each of these cities and areas are somewhat distinct and unique, for the purposes of this analysis they are considered a single community.

In terms of a community of place, the Las Vegas Valley is a rapidly growing, constantly evolving, dynamic, full-service and diversified metropolitan area, adding more than 1.1 million new residents between 1990 and 2008. From the perspective of many residents, community leaders and outside observers, the Las Vegas Valley is unique in a way that is fundamental to the community's self and external image. The Las Vegas Valley was characterized as 'the manifestation of American capitalism', 'a city of economic opportunity and dreams', 'having a much higher risk tolerance than is common across America', and 'a city where what other city's would see as constraints are viewed as challenges' (Local interviews 2008). The area's achievements in addressing challenges over time have become a source of civic pride and to an extent, of 'having arrived', as is echoed on by the banner "World Class City….Global Appeal" on the cover of the 2007 Las Vegas Perspective (Metropolitan Research Association 2007).

Though most well-known for its gaming, entertainment and convention business, the community supports several major hospitals, the University of Nevada – Las Vegas and more than 25 other colleges and training institutes, McCarran International Airport, and numerous museums, performing arts, and professional sporting venues. Physical development in the community includes nearly 770,0000 housing units and 230 million combined square feet of industrial, retail, office and casino space, and nearly 146,000 hotel/motel rooms (Metropolitan Research Association 2007, Clark County Comprehensive Planning 2007a, and LVCVA 2010).

The community though predominately white, has a relatively high degree of racial and ethnic diversity, its population is relatively young and mobile, and lower-middle to middle income. The average length of residency of residents is about 7 years, and the median just 13 years. The community sees itself as lagging, but improving in terms of overall levels of educational attainment and workforce skills. Like most major urban areas, the community's social networks are defined largely in terms of job setting, neighborhood, civic, and cultural circles and identities.

Another dimension of the Las Vegas Valley as a community of place is captured in the oft-noted refrain, "as goes [Clark County/Las Vegas/the Valley], so goes Nevada." Although reaction to this perspective ranges from disdain to pride, informed observers describe it as a fundamental recognition of Nevada's economic and fiscal realities. The Las Vegas Valley is home to more than 70 percent of the state's resident population and accounts for an even larger share of the state's economic activity; the latter of which is reflected in tax revenues flowing into the state's treasury to support government and public services statewide. The state's tax structure is heavily reliant on gaming and sales and use taxes, the latter including those generated by growth. Together these three sources account for 75 to 80 percent of the state's general fund revenues, and are important to funding local government and education. The state's tax structure is also less broadly diversified in comparison to many states. The reliance on these revenues is a legacy from tax reforms in the 1980s and the integration of tax law into the state's constitution, rather than in statute as is common in other states. An implication of the latter is that it imposes a "very purposeful inflexibility" on Nevada's tax structure (Nevada Governor's Task Force 2002).

A 2002 analysis of Nevada's tax structure and fiscal policy highlighted a major concern with the heavy reliance on sales and use taxes, that being that the development related component of such revenues are non-recurrent. In other words, they are collected once during construction but not in subsequent years. However, the extended period of growth in the Las Vegas Valley has help foster a form of dependency on such revenues by state and local governments to fund demands for current services. Consequently, the prospect or reality of reduced rates of growth or stagnant or declining levels of tourism visitation triggers fiscal concerns having statewide reverberations. From

the Las Vegas Valley perspective, these fiscal linkages also are also the basis of why Nevadans outside the valley have a vested interest in the health of the local economy (Nevada Governor's Task Force 2002).

Las Vegas Paiute Colony and Reservation. Home to the Las Vegas Tribe of Paiute Indians, the colony initially consisted of 10 acres of land near downtown Las Vegas deeded to the tribe by ranch owner Helen Stewart. In 1983, an act of Congress returned 3,800 acres to Paiute possession at the Snow Mountain Reservation. That land is located on the northwest outskirts of the Las Vegas metropolitan area.

A portion of the Snow Mountain Reservation land is now the Las Vegas Paiute Golf Resort, which features three highly-rated, professional tour quality golf courses, with an associated clubhouse and restaurant. The Las Vegas Tribe also operates two tribal retail cigarette businesses, one downtown and the other, co-located with a fueling station, at the Snow Mountain Reservation.

The tribal enterprises provide the Tribe with a source of employment and an independent source of revenues to support Tribal operations and other economic development endeavors.

Northeastern Clark County. A segment of the proposed project right-of-way, along with the treatment and main water storage facilities, would be located in northeastern Clark County, outside the immediate Las Vegas Valley. The immediate vicinity around these facilities is primarily rural and undeveloped. However, the APEX industrial complex, zoned for light and heavy industry, is located west and southwest of the proposed facility locations, and a major BLM multiple-use transmission corridor is located south of the proposed location. The Silverhawk power plant, of which SNWA owns a 25 percent share, is located in the APEX complex. Other nearby development includes a portion of the Nellis Air Force Base flight range located northwest of the proposed facility location.

The City of Mesquite (2006 population 17,656) and the unincorporated communities of Bunkerville, Logandale, Glendale, Overton, Moapa and the Moapa Indian Reservation are located in northeastern Clark County, but are more distant from the project right-of-way. The combined resident population of the area is approximately 30,000 residents, or about 42 percent of the total non-Las Vegas Valley population (Clark County Comprehensive Planning [2007]). Mesquite is a rapidly growing retirement and destination resort community, straddling the I-15 corridor 80 miles from Las Vegas near the Nevada-Utah state line. Mesquite is the largest community near the proposed 750-megawatt coal-fired Toquop power plant, ancillary rail spur and other facilities in southeast Lincoln County. Mesquite also borders more than 13,000 acres of lands disposed of by the BLM pursuant to the Lincoln County Land Act of 2000 and Lincoln County Conservation, Recreation and Development Act of 2004 and slated for mixed residential, commercial and resort development.

The Virgin River separates Bunkerville from neighboring Mesquite. The other small communities are also along the I-15 corridor, midway between Mesquite and the Las Vegas Valley. Bunkerville and the other small communities share an agricultural ancestry, which still play a role in their contemporary economies. Trade and services, catering mostly to travelers on I-15 and recreation visitors to the nearby Valley of the Fire State Park and Lake Mead National Recreation, are also important elements of the local economies.

Moapa Indian Reservation. Home to the Moapa Band of Paiute Indians, the reservation encompasses approximately 71,954 acres straddling I-15 in northeastern Clark County. There are about 300 enrolled Tribal members, approximately two-thirds of whom live on the reservation, along with about 250 non-members. The Moapa Band of Paiutes offers a wide range of social, housing, cultural, education and health care programs in addition to Tribal administration, law enforcement, and court functions. A small portion of the Tribal lands is utilized for farming. The principal economic enterprise for the Tribe is the Moapa Paiute Travel Plaza located at exit 75 on I-15. The travel plaza includes a casino, café, fueling station, convenience store, and a store offering an extensive selection of fireworks that reportedly serves as an important draw for customers. The Tribe also operates two other small stores and is pursuing other economic development prospects to provide job opportunities for members as well as financial support for Tribal operations (Moapa Band of Paiutes, N.d. and Spencer 2007).

Coyote Springs. Coyote Springs is an emerging master-planned community of 42,000 acres being developed in Clark and Lincoln County east of the junction of U.S. Highway 93 and state highway 168, northwest of the community of Moapa and the Moapa Indian Reservation. The master plan for Coyote Springs includes up to 16 golf courses, a wide range of housing options, and retail and other commercial development. Construction of the first two golf courses, a clubhouse and recreation facility, and first phase of residential development is underway. At buildout, which is envisioned to occur over the next half-century, Coyote Springs could have upwards of 200,000 residents.

F3.18.8.3 Social Trends

This section describes the social dimensions of economic and demographic trends discussed in the preceding sections of this assessment. The social trends section is focused on the rural portion of the assessment area.

There is a general out-migration of youth from the rural portions of the study area for education and employment purposes. In some cases this out-migration is temporary and they return as adults, if employment opportunities become available, to take over operation of family ranches and farms, or because they prefer to raise families in a rural setting. Although out-migration of youth from rural areas is not uncommon on a national basis, it is perhaps more noticeable in communities with small populations such as the smaller communities in the study area.

In contrast to this population loss, there are a growing number of people who establish full- or part-time residence within certain portions of the rural counties because of the area's scenic, environmental, recreational and social amenity values. These newcomers include retirees and lifestyle migrants who value the natural or physical characteristics of the area, a quieter rural lifestyle, or some combination of both. In addition to retirees and owners of second homes, lifestyle migrants include people who purchase or establish businesses or secure employment in existing businesses or government operations. An offshoot of this trend is the weekly commuter, who may establish a residence in the study area, particularly in the southern portions of Lincoln County and commute to work in other areas including the Las Vegas Valley. There are also a number of "footloose entrepreneurs" whose businesses or professions are not constrained by location and use the telephone, internet, and parcel delivery services to operate their business or practice their profession within the study area. These newcomers bring new social, cultural, and economic influences to the area, which can be both appreciated and resented, and are typically interested in preserving the amenity values that attracted them to the area.

There is interest in the establishment and expansion of tourism and recreation-oriented businesses in the rural portion of the study area, and there are an increasing number of economic development initiatives to support these efforts. Increased tourism and recreation visitation are valued by some for the increased economic activity and employment opportunities, but viewed by others as undesirable because of the potential for affecting the quiet rural quality of life (Rask 2005). Other economic development efforts recognize the potential markets associated with the Coyote Springs project and for selected goods and services represented by the Las Vegas market and are exploring ways to capitalize on those demands. For example, demonstration projects are underway in Lincoln County to explore the feasibility of raising selected fruits and vegetables for sale to high-end restaurants, a dimension of Las Vegas which has been garnering increased global recognition and acclaim (Gatzke and Sanacare 2006a,b; Gatzke 2007).

F3.18.8.4 Affected Populations and Interest Groups

Social conditions are described for a number of populations and interest groups whose members are principally residents in the hydrological study area or reside elsewhere but have a particularly strong interest in the project area due to factors such as familial ties, land ownership, prior residency, or more general public policy or environmental concerns. Note that Native American cultural resources and Native American tradional values are discussed in Sections 3.16 and 3.17 of this EIS. It is important to note that individuals may be associated by more than one group. For example, some ranchers may also place high value on scenic, environmental, recreational and social amenities and may also be outdoor recreation users.

Ranchers, Farmers, and Grazing Permittees Operating Within the Study Area

Ranching, farming, and grazing have historically been a key element in the traditional economic development and culture of the rural portions of the study area. Mining, another important historical economic and cultural element, has at times generated more employment, income, and tax revenue for the affected rural counties, but ranching has provided a constant social and economic base for the study area, through the mining booms and busts. The economic challenges facing ranchers and farmers are discussed above in Section 3.18.1.3.

Some ranchers and farmers face an uncertain future, underlain with economic and demographic challenges, as they approach retirement (which often reflects physical capabilities to continue rather than chronological age) without immediate or extended family members willing or able to assume the operation of the property. Some ranches are passing into the hands of hobby or recreation-oriented owners, and some ranchers and farmers have sold properties to buyers more interested in water rights than ranching or farming. These land use changes result in corresponding changes in the social fabric of the communities in the study area, as they have in many areas throughout the U.S. In contrast, some local ranchers and farmers and their families who are committed to ranching and farming as a way of life as much as an occupation or business. These individuals and families are often multigenerational. Although ranching currently provides limited employment and income relative to other sectors of the economy of the study area, it remains a valued part of the social and economic fabric and heritage of the area (Graham 2003; Rask 2005; Smith 2007; Walker 2007).

Water availability is a key concern for ranchers, farmers, and grazing operators. This concern has been heightened by the extended drought, concern about climate change, the effects of existing water appropriations and pumping, and water exportation initiatives by the SNWA and others. The potential short-term effects of project construction on grazing on the public lands, and the implications for ranching operations given the effects of the extended drought on range conditions and the limited availability of alternative range and forage, are also of concern.

Current, Former, and Prospective Residents of the Study Area Who Place a High Value on Scenic, Environmental, Recreational, and Social Amenities

Many new and long time residents moved to or remain in the rural portions of the study area because of what they view as its high amenity values. This group values the scenic, environmental, recreational, and/or social (quiet, leisurely-paced, safe rural atmosphere) qualities of the area, and individual members of the group have chosen to move to or remain in the area because of those qualities. This group is likely to oppose any proposal or initiative that would, in their view, pose a risk of damaging those qualities. Members of this group may be relative newcomers or long time residents and include retirees, owners of second homes, and businesspersons who can conduct their business or practice their profession from any locale. The group may also include former residents of the study area who maintain familial or other social and cultural ties to the region and prospective temporary and permanent residents of the area who would consider the amenity values of the area as a factor in their investment/relocation decision. This group sees water and the ecosystem supported by water as essential to maintaining the amenity values of the area.

Outdoor Recreation Users with Interest in the Study Area

There are a variety of outdoor recreation resources on federal, state, and private lands within the study area (recreation resources and these uses are described in Section 3.9 of this EIS) which support organized events and a wide range of use by individual outdoor enthusiasts, as well as groups and organizations such as Trout Unlimited and OHV clubs/groups. These resources include lands that support wildlife and fish populations tied to hunting, fishing, and wildlife watching, roads and trails to provide access for recreation as well as basic recreational travel, and campgrounds, picnic areas, and other forms of developed sites. Residents of Clark County, both current and future, account for a large segment of the outdoor enthusiast group. Some recreation users are concerned about the potential adverse effects of groundwater development and exportation on these resources, both directly and indirectly.

Tourism and Outdoor Recreation Oriented Businesses within the Rural Portion of the Study Area

A variety of businesses in the study area rely on travelers, destination tourists, and other recreation visitors for all or part of their income. Some of these businesses are concerned about the potential loss of tourists and recreation visitors if groundwater development and exportation affects tourist and recreation resources, either directly or indirectly via adverse impacts on vegetation, wildlife, and scenic vistas.

Other Businesses and Economic Development Interests within the Rural Portion of the Study Area

Within the rural portion of the study area, some businesses would likely benefit from the economic activity associated with development and operations of the water conveyance pipeline and ancillary pumping and storage facilities. Others are concerned about the effects of water exportation on area resources and associated employment and population. There is concern that the future availability of water in the study area may limit long-term economic development opportunities. Based on the agreement between Lincoln County and SNWA, some local businesses and economic development interests in that county may view the Proposed Action as enhancing economic development opportunities, particularly in the southern portions of the county.

Businesses and Economic Development Interests within the Las Vegas Valley

In the Las Vegas Valley, many business and economic development interests see the Proposed Action as providing future development opportunities that would not be available without additional water resources. These individuals are also concerned about the effects on the construction industry and the other sectors of the economy supported by the construction industry if development in the Las Vegas Valley were to be limited by the availability of water.

Individuals and Groups Who Give a High Priority to Resource Protection

Many individuals and local, regional and national, organizations concerned about the preservation and protection of natural resources have expressed interest in the Proposed Action. Concerns expressed by these individuals and organizations include effects of water exportation on soils, subsidence, hydrology, air quality, vegetation, and wildlife in the rural portions of the study area, as well as the environmental effects of the growth in the Las Vegas Valley that would be induced or enabled by the water associated with the Proposed Action.

Residents of the Las Vegas Valley Concerned about Future Availability of Water

Some residents, organizations and public officials in the Las Vegas Valley are concerned about future availability of water, both to serve growth and to supplement Colorado River water in case of prolonged drought or long-term climate change. Many see the proposed groundwater project as a vital element of a long-term, multi-faceted solution to these concerns. Although the initial justification for the Proposed Action was to provide water to support continued growth and development in the Las Vegas Valley, the Proposed Action has increasingly been cited as a measure to provide water to existing residents in the event of continued drought and decreasing Colorado River supplies.

Utah Residents Concerned about the Allocation of Snake Valley Water Among the States and Effects on Air Quality and other Environmental Resources

Some Utah residents, local governments, and interest groups have expressed reservations regarding the draft agreement between Utah and Nevada. The expressed concerns include perceived inequities in the allocations of unreserved water, flawed consideration of the effects of hydrologic connections between the Spring and Snake valleys, inadequate protection of existing water use, and long-term environmental effects of drawdown. For example, Millard County has noted that 76% of groundwater depletion through water-rights based beneficial use and 40 percent of the recharge in the Snake River hydrological basin occurs in Utah but that the proposed division of groundwater contained in the Draft Utah/Nevada Agreement for Management of the Snake Valley Groundwater System would apportion only 12 percent of the unallocated water to Utah, an inequitable distribution in its view (Millard County Nd.). Others have noted concern that long-term groundwater depletion and drawdown will result in a loss of vegetation, resulting in increases in airborne dust and diminished air quality for the Wasatch Front.

Broader Public Interests Beyond those associated with the Immediate Project

SNWA's proposed project provides a specific geographic context pitting local concerns about the potential effects of extended drought on water availability from the Colorado River system and the water needs associated with recent and projected population growth in the Las Vegas Valley against the interests of residents and groups of the rural areas regarding sustained economic and community viability. However, the project can also be viewed as an example of the more general and broader underlying public policy issue surrounding the availability, use, and value of freshwater, its contributions to environmental quality, the economic and social implications of the current situation as compared to various alternative futures, and a myriad of other issues. The proposed conversion and exportation of water from a historic point of use or production to a different location and use is not unique to eastern and southern Nevada, but is being played out across the country and other parts of the globe. As a result, while the tangible actions and drawdown effects associated with the project are geographically localized, SNWA's broader interests in groundwater development have attracted statewide interest in Nevada, in Utah, and in the broader national arena. While some groups and organizations with such an interest participated in scoping or have otherwise commented on the program, the totality of such groups and their specific interest or views on the issues are not yet known.

F3.18.8.5 Attitudes and Opinions

Water plays a critical role in the historic and current social and economic development of the region. Consequently, events and actions related to water attract public attention and scrutiny and become focal points for discourse and debate, both informally among individuals and in more public and formal settings, such as, "letters to the editor" in local newspapers, testimony given during Nevada State Engineer water right application hearings and discussions in local county commission proceedings. In this instance, the prior filings of water rights applications, the implications of those filings on regional water development, use and economic development, and SNWA's more recent property acquisitions in the region have given rise to well-formed attitudes and opinions regarding the proposed project that are integral to existing baseline social conditions. The attitudes and opinions regarding the proposed project are complex and vary in specifics across locales and interests and among organizations, groups, and individuals. However, certain general attitudes and opinions tend to be associated with the rural portions of the study area and others with the Las Vegas Valley. The following information is based on interviews with residents, local governments, businesses, and community leaders in the project area, as well as feedback from public scoping, review of magazine and newspaper articles and editorials, review of Nevada State Engineer water rights hearing records, and materials on websites of interested organizations.

Rural Portions of the Study Area

There is great concern in the rural counties – the "source" of water – regarding the potential effects of pumping and subsequent transfer or export of the amount of groundwater associated with SNWA's groundwater applications on surface and groundwater resources that sustain vegetation, wildlife, agriculture, and current and future domestic, municipal and industrial (M&I) uses in the area. Opposition to the proposed project is widespread in the rural area, even in areas not specifically located in the groundwater development areas, with relatively little support evident, at least publicly. The depth and intensity of opposition has individuals investing personal fortune and time into efforts to halt the project.

SNWA's water rights applications, ensuing hearings before the State Engineer, and pursuit of the groundwater development project have at the same time been divisive but also a coalescing force in the rural area. Some public entities have entered into negotiations or consultations with the SNWA, citing the inevitability of approval by the State Engineer of the groundwater applications. Lincoln County's negotiations have resulted in an agreement for allocation of some groundwater resources and conveyance of some water for the county's use in the proposed pipeline. These negotiations and consultations have resulted in some public opinion backlash from residents and prompted recall attempts of public officials. White Pine County has conducted discussions with SNWA about aspects of the project, but the mere suggestions of broader discussion and negotiations prompted recall efforts for some elected officials. At the same time, opposition to the project has brought together an array of individuals, organizations, governmental entities, and other public interest groups.

Local residents are concerned that the amount of water for which SNWA has filed and hopes to export exceeds the perennial yield of the target carbonate-rock aquifers and that possible connections between the carbonate-rock aquifers and the basin fill aquifers and surface waters that sustain vegetation, wildlife, agriculture and M&I uses in the area are poorly understood. In the opinion of some local residents, the potential for such connections pose a threat to the environment, lifestyles, and communities. These concerns are heightened by the protracted drought in the area and increasing concern about global climate change.

The concerns of residents of the rural areas are informed by their first-hand experience of the effects of groundwater pumping, albeit from relatively shallow production zones, on the land and surface and groundwater resources within the study area. There are examples within the study area of vegetation change, drying up of springs, seeps and streams, and lowering of water tables in areas where groundwater pumping has occurred. Many of these residents are familiar with the testimony of water experts at the NSE water hearings, media accounts, and advocacy group coverage of these experts' testimony. Different water experts have at times given widely different opinions on the potential effects of groundwater pumping, ranging from relatively benign to substantially adverse. Expert opinion has also varied widely on the amount of time it would take for groundwater resources to recover, or even whether full recovery would occur, in the event that substantial adverse environmental effects were to occur and pumping halted. This disagreement among experts has heightened the uncertainty surrounding the proposed project for many residents of the rural portion of the assessment area and increased anxiety about the project's potential effects on the environment.

Widespread concern exists regarding the potential effects of the exportation of the volume of water proposed by SNWA on future economic development and future industrial, commercial, and population growth in the affected rural counties. Residents of Snake Valley cite constraints on new well permits for commercial developments due to restrictions imposed by SNWA's water filings and increasing concern about access to business financing due to concerns of commercial lenders regarding uncertain future water supply as current manifestations of such effects. The recent Nevada State Engineer's decision, which has since been set aside by a court ruling, reserved a portion of the estimated unappropriated perennial water yield in Spring Valley, and the SNWA/Lincoln County Agreement which identifies a preferential allocation of future groundwater production in Lincoln County to the County addressed this concern for some residents. However, others who believe the water resources to support the amount of water to be exported exceed the amount of water available are not reassured by these actions.

Assurances that environmental safeguards and monitoring will prevent serious depletion of water resources are not comforting to many residents, because they believe that once adverse effects materialize, mitigation will be difficult at best, extremely costly, and ineffectual in reestablishing current water use in the region. Many also believe that once the Las Vegas Valley becomes dependent on water from the rural counties to serve a portion of its demand – either demand associated with new growth or to meet demand from existing population levels in times of drought – state officials will be reluctant to restrict or cut off the flow of water to such a large number of people, or that the time frame in which initial pumping is monitored prior to approving higher production levels is too short to allow potentially devastating long-term consequences for the rural counties to materialize. Furthermore, there is broad skepticism regarding the reversibility of adverse impacts and SNWA willingness to accept responsibility and accept accountability for impacts. There is concern about the inherent delays in trying to resolve/address adverse effects if they occur and that there is no effective mitigation for such effects, despite public assurances by SNWA that it intends to mitigate adverse impacts.

Residents of the affected rural areas believe the communities in the Las Vegas Valley and the SNWA have the political and financial resources to effect changes in laws, rules, and regulations to serve their interests, particularly if reducing the future withdrawals of water from the rural areas would adversely affect an exponentially larger number of people in the Las Vegas Valley as compared to the smaller number of people who would be negatively affected by continued use of the water. A corollary concern is that the structure of legislative representation in Nevada effectively disenfranchises rural Nevada and cedes political control to the urban areas. There is also concern that the public officials who are developing the agreements and making guarantees today are not likely to be in office when problems materialize many decades hence, and that agreements and policies made today can be changed in the future.

The proposed project brings into sharp contrast what many rural residents see as a fundamental difference in perspectives and values. A common perspective across the rural portion of the assessment area is that local residents make and continually reaffirm their choice to live in the region, even when that choice entails physical hardships, economic sacrifice, and doing without many conveniences. Living with and within limited resources is an essential and fundamental principle of their existence. The proposed project is seen as financially benefitting those who stand to profit from continued high levels of new development and prospective future residents at the expense of existing residents and communities. Rural interests generally see the real estate development community and local government officials in the Las Vegas Valley as willfully or passively ignoring the notion of limited or constrained resources, unwilling to pursue aggressive conservation or adopt growth controls, and willing to discount the economic, social, environmental and other risks to the rural areas while they themselves bear limited risk in conjunction with the proposed project.

Rural interests also raise questions regarding the financial feasibility of the project, the estimated costs of which exceed $3 billion, excluding debt service at the time of this assessment. Questions raised include the equity of burdening existing development and visitors with the costs of new supplies and infrastructure, the impact of water system development costs on housing costs, and the regressive burden of likely funding on low-income households in the Las Vegas Valley. They also wonder about where the financial burden would fall in the event of default on any debt, for example, if the pace of development were inadequate to support debt service.

Many residents of the rural areas are of the opinion that even if the project is economically feasible, it is inherently inequitable as it places one population at risk to benefit another, with little or no compensation, recourse or confidence that the project would be halted even given evidence of significant adverse impacts. In contemporary parlance, many rural residents would contend that there is no possibility for this project to be a “win-win” proposition, but rather a “win-lose” situation, with the rural areas coming out on the “lose” side of the result.

Some Lincoln County residents believe that the provisions of Nevada water law make the GDP inevitable and therefore are supportive of the SNWA/Lincoln County Agreement, which allocates a portion of the currently unallocated Lincoln County groundwater to the County. This allocation is seen by some as a resource for economic development, as is the potential inter-basin transfer fee revenue generated by the export of groundwater from the basin of production. Similarly, the potential for a project-related pipe fabrication facility and the SNWA agreement to transport water to the Coyote Springs development are seen as beneficial for economic development by some Lincoln County residents.

There is local opinion and concern that the water conveyance pipeline is over-sized relative to the amount of water that SNWA has applied for, particularly in the upper reaches of Spring Valley. Thus, the project is viewed as a preview of SNWA’s intent to pursue unappropriated water rights in other basins, to pursue further ranch acquisitions within and outside the study area, and, to extend the scope of its groundwater development program northward into Elko County, with the intent to export water granted or acquired with those rights to the Las Vegas Valley. SNWA’s management has indicated that the agency has no interests in the latter.

The acquisition of ranches within the study area poses concerns for rural area residents and local governments, because SNWA is a tax-exempt public entity that does not pay property or sales tax, and thereby erodes the tax base of local governments. They are also concerned that those tax advantages effectively subsidize the ranch operations and will enable these operations to produce and sell commodities cheaper than privately-owned ranches. The change from privately owned ranches to SNWA-ownership raises concerns about the effects on the culture and social conditions of the areas where the acquired ranches are located, because the managers and employees may not be as committed to and active in the community as were the long-time private landowners.

In addition to the concern for water, vegetation, and wildlife resources, there is concern that air quality could be affected by lowering of the water table and the resultant loss of certain types of vegetation resulting in a substantial increase in airborne dust. The health concerns associated with an increase in airborne dust is heightened by the potential that radioactive material, a legacy from above ground testing at the Nevada Nuclear Test Site, could be

disturbed and transported by the wind. Concerns about air quality degradation also include potential adverse impacts on tourism and travel.

Las Vegas Valley

Many local government, business, and community leaders, community and utility planners, and economic development officials in the Las Vegas Valley believe that the SNWA must develop in-state groundwater resources to meet the region's future water demand and to supplement the region's share of Colorado River water should a deep drought occur. There is also concern that the lack of water to support growth would result in severe economic consequences for Southern Nevada and the State of Nevada as a whole. Residents and organizations that hold these views cite recent studies that highlight Southern Nevada's economic dependence on growth and forecast substantial economic and fiscal disruptions if a severe "interruption" in growth were to occur.

The 2008 – 2009 economic recession and housing crisis have validated several of the perspectives outlined above. The economic "disruption" associated with the contraction of the construction sector and the decline in tourism and gaming have demonstrated the sensitivity of local and state tax revenues to activities that are inherently dependent on economic expansion and growth. The repercussions of the falling state revenues have reverberated across the state and renewed public dialogue about the structure of Nevada's public revenue system.

A corollary argument is that fostering or enabling growth in the Las Vegas Valley would provide additional tax revenues that can then effectively underwrite the future provision of public services in rural Nevada. Opinions have been expressed that the Las Vegas Valley is the economic and fiscal engine of Nevada and the concerns of the water-exporting basin are selfish, because the exported water would benefit many more people in the Las Vegas Valley. The majority of the water in the state is used for agriculture, which contributes relatively few economic and fiscal benefits compared to activities in the metropolitan areas. Some observers believe that the difficult desert environment in much of Nevada coupled with federal subsidies for agriculture result in an inefficient use of the resource for little public benefit. Some also believe that there are ample environmental safeguards in place to protect the interest of rural residents should negative effects of groundwater pumping occur.

There has been no widespread public referendum on the proposed water development project in general or any proposed public funding for the project. Such a referendum promotes public dialogue about a project, identifies issues, interest groups and stakeholders supporting and opposing a project, and produces a result that can be viewed as an affirmation or denial of a project. Given the lack of such a referendum, the only indication of attitudes and opinions about the proposed project among the general Las Vegas Valley population is limited to newspaper polls, the most recent of which indicates that slightly over half of the Clark County population supports the proposed project The SNWA board of directors, which represent local government and water purveyors also reaffirmed its support for the project in 2009.

However, some Las Vegas Valley residents are concerned about potential negative effects of growth that the availability of additional water resources would enable. These include potential deterioration of air quality, increased traffic, infrastructure impacts, and sprawl within the valley. These individuals, groups, and organizations tend to believe that the costs of continued high levels of growth outweigh the benefits and that some form of growth control should be implemented in the Las Vegas Valley.

Some Las Vegas Valley residents are also concerned about potential adverse effects of the water diversion on environmental and social conditions in the rural areas. Concerns include potential effects on wildlife and outdoor recreation opportunities.

Some Las Vegas Valley residents are concerned about the eventual costs of the water importation project and the economic effect on ratepayers. Another view is that the costs are virtually irrelevant because the risks posed by continued long-term drought in the region, as well as the necessity of having additional supplies to support further growth and development, can readily justify the costs. The latter view has been bolstered by concerns raised by the continuing declines in the volume of water in Lake Mead, a recent hydrology study suggesting a relatively high

probability that Lake Mead could "dry up" in the next 50 years, and general concerns regarding the effects of climate change on water availability in the southwest.

F3.18.8.6 Summary of Ongoing Social Effects

Social conditions in the assessment area have already been substantially affected by both the proposed project and the SNWA water rights applications in Lincoln and White Pine counties. Social effects of proposed groundwater exportation began with the 1989 Las Vegas Valley Water District filing for water rights in Lincoln, White Pine and other rural Nevada counties. Subsequent events, including SNWA's renewed interest in pursuing these water right applications, passage of the LCCRDA, which mandated that the BLM grant a ROW for the pipeline corridor, initiation of this EIS, the Nevada State Engineer rulings that granted water rights to SNWA in Cave, Dry Lake, Delamar and Spring Valleys, and the issuance of the draft Utah/Nevada Agreement for Management of the Snake Valley Groundwater System have all signaled to the affected parties that the proposed project was moving ahead and "gaining steam." In contrast, court rulings on the water rights applications in January 2010 and the subsequent suspension of negotiations on the Utah/Nevada agreement by the governor of Utah have signaled to some that the viability of GWD Project may be at risk should insufficient water rights be appropriated to support the project. These signal events have helped shape the attitudes and opinions of the affected parties.

The attitudes and opinions in the rural areas and the Las Vegas Valley are based on the affected parties' perceptions of risk associated with the project. For many residents of the affected rural areas, which include southwestern Millard County and a portion of extreme western Beaver County in Utah as well as Lincoln and White Pine counties in Nevada, the risks include adverse effects on the physical and biological environment, and resident quality of life, health and livelihood. For many residents of the Las Vegas Valley, risks include the risk of an inadequate water supply to sustain growth and serve as a buffer for the diminishing supply of Colorado River water, should the current drought persist or intensify.

Section 1.4.3.2 (Existing Groundwater Data) of the EIS acknowledges the uncertainty associated with existing groundwater data in the Region of Influence, and all parties agree that groundwater pumping in the five hydrographic basins would lower the groundwater table in parts of those basins. But there is substantial disagreement among hydrogeologists about the extent of drawdown and the effect on surface waters (see Section 1.4.3), and about the ability to reverse or mitigate higher than desirable levels of groundwater depletion in the hydrographic basins. These divergent expert opinions have emerged in the NSE hearings for the SNWA water rights applications in the affected hydrographic basins, through newspaper, magazine and journal articles and on websites and in publications of various advocacy groups with interests in the project.

In the rural portions of the socioeconomic assessment area, these divergent opinions and the uncertainty serve to reinforce existing beliefs about the lack of available "surplus" groundwater, derived in part through local experience with groundwater depletion from agricultural use. Local beliefs are also linked to the Owens Valley example, the differences between that example and the proposed SNWA groundwater development project notwithstanding.

For many residents of the rural part of the assessment area, the uncertainty, divergent expert opinion and strongly held local beliefs about water resources have lead to the position that the proposed project presents an unacceptable risk to their quality of life, health and livelihood, for themselves, their children and future generations. For some, particularly the residents of the Snake and Spring Valleys – the only appreciably inhabited hydrographic basins – and to ranching and grazing interests within and adjacent to the other three hydrogeographic basins, offsetting benefits have yet to emerge that would make these risks acceptable.

For some people in the Las Vegas Valley, the proposed project represents the most viable option to support continued growth and provide a buffer against future Colorado River water shortages, and the risk of curtailed growth and water shortages without this option would be unacceptable.

Social effects of the proposed project have included political conflict, social dissension, community discord and personal distress. Political conflict and social dissension have been most prevalent at the interstate level, between

Nevada and Utah, at the intrastate level, between the rural counties and SNWA/the Las Vegas Valley, and at intra-community level, between groups and individuals within the rural counties in Nevada and within the Las Vegas Valley. Community discord has occurred within both Lincoln and White Pine counties, between groups and individuals that support unyielding opposition to the proposed project and those that believe that implementation of the project is inevitable and a negotiated settlement with SNWA would be more beneficial. Within Clark County community, discord has occurred between groups and individuals that support continued growth and those that oppose growth at recent levels and the perceived detrimental environmental and social effects of rapid growth. The potential cost of the proposed project and the associated effects on rate payers and taxpayers has also been a source of community discord within the Las Vegas Valley.

The proposed project has generated substantial levels of personal distress in the rural parts of the assessment area, as evidenced by scoping comments, statements at public meetings, letters to the editor in local news media, comments on internet sites and personal interviews. Evidence of personal distress in the Las Vegas Valley has been less prevalent, but has emerged in some of the same venues around both concern for water availability and concern for the effects of continued high levels of growth.

The social effects of potential groundwater exportation have include the formation of advocacy organizations, local government committees and regional authorities and in at least one case, development of a state agency policy statement. Among the more tangible effects to date of the proposed project on the social context of the rural part of the assessment area are SNWA's purchase of seven ranches in Spring valley and the relocation of some of the ranching families whose property were acquired. Residents of Snake Valley also cite the inability to obtain commercial water rights for such things as RV parks due the SNWA water filings as having a dampening effect on growth and development in the valley.

Over the years, the social effects of potential groundwater exportation have included the formation of advocacy organizations, local government committees and regional authorities and in at least one case, development of a state agency policy statement. Among the more tangible effects to date of the proposed project on the social context of the rural part of the assessment area are SNWA's purchase of seven ranches in Spring Valley and the relocation of some of the ranching families whose properties were acquired. Residents of Snake Valley also cite the inability to obtain commercial water rights due to the SNWA water filings as having a dampening effect on growth and development in the valley.

F3.18.9 Environmental Justice

F3.18.9.1 Overview

Environmental justice is defined as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies (CEQ 1999). Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, tasks "each Federal agency [to] make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high adverse human health and environmental effects of its programs, policies, and activities on minority populations and low-income populations." The memorandum accompanying Executive Order 12898 identifies four important ways to consider environmental justice under NEPA.

1. "Each Federal agency should analyze the environmental effects, including human health, economic, and social effects of Federal actions, including effects on minority populations, low-income populations, and Indian tribes, when such analysis is required by NEPA.
2. Mitigation measures identified as part of a NEPA assessment or a record of decision (ROD), should, whenever feasible, address significant and adverse environmental effects of proposed federal actions on minority populations, low-income populations, and Indian tribes.

3. Each Federal agency must provide opportunities for effective community participation in the NEPA process, including identifying potential effects and mitigation in consultation with affected communities and improving the accessibility of public meetings, crucial documents, and notices.
4. Review of NEPA compliance (such as EPA's review under Section 309 of the Clean Air Act) must ensure that the lead agency preparing NEPA analyses has appropriately analyzed environmental effects on minority populations, low-income populations, or Indian tribes, including human health, social, and economic effects" (CEQ 1997).

The remainder of this section describes the minority and low income status of populations within the socioeconomic study area. It also discusses potentially affected Indian Tribes and directs the reader to sections of the EIS describing the BLM's community and Native American participation initiatives. The analyses of potential environmental justice effects of the Proposed Action and alternatives are included in the Environmental Consequences section as are mitigation measures for potential effects on minority and low income populations and Indian Tribes.

F3.18.9.2 Minority and Low Income Populations and Indian Tribes

Table F3.18-31 provides information comparing the percentages of racial and ethnic minorities residing in the socioeconomic study area, as reported by the 2000 Census, to the percentages of racial and ethnic minorities in Nevada, Utah and the US as a whole. The prevalence of racial and ethnic minorities in each of the four rural counties was substantially lower than that of their respective states. At 39.9 percent, the percentage of racial and ethnic minorities in Clark County was higher than Nevada as a whole (34.9 percent). Most of the minority population resides in the Las Vegas Valley, some distance from the sparsely populated portion of Clark County within the proposed pipeline corridor and associated groundwater production basins, although the western boundary of the Moapa Indian Reservation lies several miles east/northeast the southern terminus of the pipeline and water treatment facility.

Regarding specific minority populations[8], Juab, Millard and Lincoln counties had lower percentages of populations of each of theses races and ethnic groups than did their respective states. The American Indian and Alaskan Native population in White Pine County was 3.4 percent of total population (312 persons) as compared to the Nevada statewide average of 1.1 percent. Most of the American Indian population in White Pine County lives in the Ely Colony near the City of Ely.

There are no tribally-owned lands or mineral resources, or lands or minerals held in trust for Indian Tribes by the federal government located within or near the pipeline corridor or within the Native American Traditional Values analysis area considered for this assessment. All or substantial portions of four Native American reservations or colonies are located in White Pine or Clark counties. Population increased between 1990 and 2000 on three of the four reservations, with the number of inhabitants ranging from 105 on the Goshute Reservation to 206 on the Moapa River Reservation in 2000. However, many tribal members affiliated with those reservations, as well as members of other tribes, live outside the reservation boundaries.

Table F3.18-31 Racial and Ethnic Composition in Select Counties and Geographic Comparison Areas, 2000

Geographic Area	Percentage of Total Population	
	Total Racial and Ethnic Minorities	Difference in Percent Minority Population Above/Below the State Average
United States	30.9%	NA
Clark County	39.9%	5.0%

[8] Black or African American, Hispanic or Latino, American Indian and Alaskan Native, Asian or Native Hawaiian or other Pacific Islander

Lincoln County	9.9%	-25.0%
White Pine County	20.6%	-14.3%
Nevada	34.9%	NA
Juab County	4.8%	-9.9%
Millard County	9.5%	-5.2%
Utah	14.7%	NA

Notes: Racial minorities includes all persons identifying themselves in the census as a non-white race, including "Black or African American", "American Indian and Alaska Native", "Asian", "Native Hawaiian and Other Pacific Islander", "Some other race alone", and "Two or more races". Ethnic minorities include persons who identify themselves as Hispanic or Latino. Persons of Hispanic or Latino origin can identify themselves as part of any race (including white) and as persons of Hispanic or Latino origin are an ethnic minority, the racial group of White Alone does not include persons of Hispanic or Latino origin.

Source: U.S. Census Bureau (2002b).

A small portion of the Fort Mohave Reservation is located in extreme southern Clark County, quite removed from the study area, and three other reservations are located in surrounding counties in Nevada and Utah. Other tribes have historic cultural interests in the area. Those interests are described in additional detail in sections 3.16 and 3.17 of this EIS, which address Cultural Resources and Native American Traditional Values.

The 1999 incidence of low income and poverty as reported by the US Census Bureau was higher in the rural counties than in Clark County, with many of the affected residents also being retired and on fixed incomes (**Table F3.18-32**). Persons living in poverty in Lincoln County in 1999 were 6 percent higher, when expressed as a percent of total population, than the Nevada statewide average. In Millard County, the percentage of population living in poverty was about four percent higher than the Utah statewide average. The economic circumstances of these individuals tend to make them less mobile in terms of being able to relocate in response to adverse economic and/or social changes.

Table F3.18-32 Incidence of Poverty, 1999

Geographic Area	Share of Population: Below Poverty Level	Share of Population: Below 200% of Poverty Level	Percent of Population Below Poverty Above the State Average	Percent of Population Below 200% of Poverty Above the State Average
United States	12.4%	29.6%	NA	NA
Clark County	10.8%	28.0%	0.3%	0.4%
Lincoln County	16.5%	37.1%	6.0%	9.4%
White Pine County	11.0%	31.2%	0.5%	3.5%
Nevada	10.5%	27.7%	NA	NA
Juab County	10.4%	34.3%	1.0%	6.6%
Millard County	13.1%	38.6%	3.7%	10.9%
Utah	9.4%	27.7%	NA	NA

Source: U.S. Census Bureau (2002b).

Opportunities for Effective Community Participation in the NEPA Process

Section 1.4 of this EIS details the Public Scoping process conducted for this EIS. Section 3.17 (Native American Traditional Values) details the ongoing government-to-government consultation and other Native American consultation efforts undertaken by the Agency as part of this NEPA effort.

F3.18.10 Environmental Consequences – Social Organization and Conditions

The effects of groundwater pumping and eventual drawdown of groundwater levels on social organization and conditions would vary for the affected rural areas and for the Las Vegas Valley and within those areas as well. Social effects could also occur in communities along the Wasatch Front in Utah. These effects would essentially be a continuation of the ongoing effects (described in Section 3.18.10 of this assessment) but perhaps intensifying as actual drawdown occurs.

As drawdown occurs, the effects on population, employment, labor force and economic structure described in the preceding sections would have corresponding effects on social organization and conditions in the affected communities. Although initiation of groundwater pumping would be welcomed by many residents, community leaders, and development interests in the Las Vegas Valley, both the prospect and initiation of groundwater pumping would result in a continuation of the attitudes, opinions and associated social effects described in Section 3.18.9 and 3.18.10 of this assessment, including political conflict, social dissension, community discord and personal distress. These effects would stem from the perceived risks and benefits of the GDP for the various affected parties and could in turn effect local population, economic and employment conditions.

As previously noted, the long time period before pumping would begin (currently estimated at 2020 for the Delamar, Dry Lake and Cave valleys, 2028 for Spring Valley and 2050 for the Snake Valley) complicates the assessment of social impacts. For example, although social effects of groundwater pumping would continue in anticipation of pumping, they would likely intensify as groundwater drawdown effects occurred during pumping of Delamar, Dry Lake and Cave Valleys. To the extent that drawdown effects occurred before 2028 or 2050 and were greater than anticipated or the environmental effects of drawdown were greater than anticipated, more intense opposition to groundwater pumping in the remaining two valleys and surrounding areas could be expected. Conversely, the absence of effects of groundwater pumping would not necessarily eliminate opposition because of the long time periods involved for the assessment of effects (75 and 200 years).

F3.18.10.1 Communities

Rural Areas

Many residents of the rural part of the assessment area have strongly held beliefs about the lack of “surplus” groundwater in the five hydrographic basins slated for groundwater pumping. These residents are well aware of the conflicting expert opinion about both the effects of groundwater pumping and the potential for mitigating adverse effects of such pumping, based on the wide dissemination of those opinions through publications and advocacy groups. Consequently, many residents of the rural portion of the assessment area would grow increasingly distressed with the onset of groundwater pumping. This distress would stem from their perception of the risk of damage to the physical and biological environment and associated concern for detrimental effects on their health, quality of life and livelihoods, that of their children, and that of successive generations. For some residents of the rural assessment area, particularly those in Snake and Spring Valleys, personal distress would stem from the risk of loss of a valued rural way of life.

Although the effects of groundwater pumping on local population, economic and employment conditions described in the preceding sections would result in changes to the social context of the rural assessment area, effects on the social context could occur even before groundwater pumping began as the prospect of eventual groundwater pumping becomes more imminent. As with actual effects of groundwater pumping and drawdown, these potential effects could include resident relocation from the area, avoided relocation to the area by perspective residents or businesses, primarily in the Snake and Spring Valleys, and reduced prospects for economic development throughout the rural portion of the assessment area. The long period before groundwater pumping would begin in certain parts of the assessment area, the time lag between pumping and tangible effects and the uncertainty regarding the ultimate effects of such pumping preclude forecasting the incidence or timing of these potential changes.

Some residents, organizations and community leaders in Lincoln County may view the the allocation of water and transmission capacity made available for Lincoln County water through the Proposed Action and future economic

activities thereby enabled, as partially or wholly offsetting the potential risks of adverse effects from groundwater drawdown. These individuals may see implementation of the Proposed Action as having the potential to foster new economic development associated with the Coyote Springs project and enhance economic development potentials elsewhere in the county given the allocation of water resources to Lincoln County through the provisions of the SNWA/Lincoln County Agreement. Some Lincoln County residents may also see the potential for development of a project-related pipe fabrication facility near Caliente as an economic opportunity that would offset the perceived risk of groundwater pumping. Support for the beneficial effects of the project notwithstanding, there is likely to be continued dissatisfaction and personal distress about the project for some Lincoln County residents.

Areas and communities outside the five groundwater production valleys in White Pine County such as Ely and the Steptoe Valley are also likely to be dissatisfied with the prospect and onset of groundwater pumping because of the potential effects on the physical and biological environment of the Snake and Spring Valleys and the associated adverse social and economic effects. To date, the GDP offers no benefits to White Pine County that would be viewed as offsetting the adverse risks.

The same would be true for Millard, Juab and Toole counties in Utah. For them, the concern for the physical and biological effects of groundwater pumping in the Snake and Spring Valleys are compounded by what they view as an inequitable division of the unallocated groundwater resource in Snake Valley. In their view the potential risks are not offset by any benefit.

The Las Vegas Valley

For some Las Vegas Valley residents, organizations community and political leaders, and development interests, initiation of groundwater pumping may provide a measure of assurance that water will be available to support continued growth in the Las Vegas Valley and to provide a buffer against future water shortages due to episodic drought or climate change. But residents of the Las Vegas Valley are likely to remain divided on their support for the Proposed Action because of the implications of continued growth in the Las Vegas Valley for the areas' environment and quality of life, concern about the project's cost and concern about the equity and environmental consequences of groundwater pumping for the rural areas. It is possible that more residents of the Las Vegas Valley would support the project if a prolonged drought on the Colorado River system were to occur.

Communities on the Wasatch Front

Some residents of communities along the Wasatch Front are likely to become increasingly concerned about airborne dust issues at the onset of groundwater pumping. This concern would stem from the perceived risk of deteriorating air quality, including visibility and respiratory health issues. These concerns are likely to continue to be amplified by articles in area publications and activities of various advocacy organizations.

F3.18.10.2 Affected Publics

Ranchers, Farmers, and Grazing Permittees Operating Within the Study Area

Ranchers and farmers in Spring and Snake Valleys and public land grazing permittees in the affected hydrographic basins are likely to be among the most dissatisfied with implementation of the Proposed Action. This group has been among the most active in opposing the groundwater development and exportation project because their livelihoods and ways of life would be among those most directly affected by lowering of groundwater levels. Despite proposed monitoring and mitigation measures and a defined process for identification and mitigation of adverse effects for Utah residents of the Snake Valley contained in the Draft Utah/Nevada Agreement, ranchers and farmers are concerned that the burden of proof of linking damages to SNWA groundwater pumping would fall on them if drawdown effects were to occur and the cost and effort could be costly and time consuming. The issue of compensation for subsequent damages has also been questioned in terms of whether proposed mitigation plans would require SNWA to pay for lost crops, the cost of livestock feed, or provide loan guarantees or other interim financial assistance while claims are being investigated. There is also concern, bolstered by some expert opinion that negative environmental effects of groundwater drawdown are at worst irreversible or at best could not be easily or quickly remedied, so that any proposed mitigation could be ineffective.

Most farmers and ranchers directly affected by groundwater pumping would be located in the Snake and Spring valleys, although farmers and ranchers with property or grazing allotments in and near the other groundwater production basins and in valleys adjacent to those basins could also be affected. Some ranchers and farmers might be disposed to sell their holdings, as others have already, as a result of implementation of ground water pumping. The risk and uncertainty regarding drawdown effects coupled with the high value of their water rights may prove a powerful incentive to sell for some agricultural landowners. For others, attachment to land and community and commitment to the farming/ranching way of life may outweigh the prospect of financial gain. In any case, there is likely to be some tension between those that sell and those that chose to stay, and additional ranch sales and relocation of ranch owners would further alter the current social fabric of the affected rural portions of the study area. The probability and likely timing of additional ranch sales occurring are unknown, in part because of the uncertainty about drawdown effects and in part because of the lengthy period before pumping and drawdown would occur.

It also possible that farmers and ranchers in the Utah portion of Snake Valley or in Nevada valleys adjacent the groundwater production basins may be inclined to sell their properties because of concerns that drawdown and associated environmental effects may be greater than forecast in this assessment. Given the widely divergent expert opinion about the extent, effects and reversibility of groundwater drawdown, the market for such sales is unclear.

Current, Former, and Prospective Future Residents of the Study Area Who Place a High Value on Scenic, Environmental, Recreational, and Social Amenities

Current, former, and prospective future residents of the study area who place a high value on scenic, environmental, recreational, and social amenities are also likely to be among the most dissatisfied with implementation of the Proposed Action, again, because of the perceived risk of damage to the physical and biological environment associated with groundwater drawdown and the widely divergent range of expert opinion regarding the effects of drawdown. The uncertainty concerning the environmental effects may deter some perspective members of this group from locating to the area and may cause others, particularly in the Snake and Spring valleys to consider moving from the area in anticipation of initiation of groundwater pumping. The probability of avoided relocation or relocation of existing residents is unknown, but would increase if substantial degradation of the physical and biological environment were to occur after pumping in the first three hydrographic basins was initiated.

Outdoor Recreation Users with Interest in the Study Area and Tourism and Outdoor Recreation Oriented Businesses within the Rural Portion of the Study Area

Perceived risk of and any long-term evidence of damage to the physical and biological environment is also likely to cause dissatisfaction among many outdoor recreation users with an interest in recreation resources in the study area. But it is likely that this group would continue to use outdoor recreation resources within the study area until actual environmental damages were to occur and resources were to become so degraded as to no longer be attractive for recreational purposes or damage resulted in BLM, Nevada Division of Wildlife or other resource management agencey limitations on travel, access and recreation. A related group, operators and employees of tourism and recreation-oriented businesses are also likely to be dissatisfied with implementation of the Proposed Action because of the potential for decreased recreation use and visitation as described above, with the subsequent adverse effects on business revenues.

Businesses and Economic Development Interests within the Rural Portion of the Study Area

Businesses and economic development interests within the study area would likely have mixed levels of satisfaction/dissatisfaction with the implementation of groundwater pumping. Many businesses in White Pine County and Lincoln County may view groundwater pumping and the potential for drawdown with trepidation, because of the potential adverse effects on the agricultural and tourism/recreation businesses, which support other sectors of the economy as described in Section 3.18.3 above. The potential that economic development prospects may be dampened because of the uncertainty and perception of risk surrounding drawdown would also result in dissatisfaction for many businesses and economic development interests in the rural portion of the study area. The fact that development of the pipeline would allow groundwater pumped in Lincoln County to be transported south to support development in the proposed Coyote Springs Development and elsewhere in Lincoln County would likely

be a cause for optimism for some Lincoln County businesses and economic development interests, as would the allocation of groundwater to Lincoln County from the SNWA/Lincoln County Agreement.

Businesses and Economic Development Interests within the Las Vegas Valley

Las Vegas Valley economic development interests and businesses, particularly those involved with construction and development would welcome implementation of the Proposed Action, because of its potential to support future growth and development in the valley.

Individuals and Groups Who Give a High Priority to Resource Protection

Individuals and groups who give a high priority to resource protection would be dissatisfied with implementation of the Proposed Action because of its potential to adversely affect the physical and biological environment, in the rural portion of the study area, along the Wasatch Front of Utah and in the Las Vegas Valley, the latter area in terms of perceived environmental effects of continued growth and development. The widely divergent expert opinion concerning the extent and effects of drawdown would likely augment the perception of environmental risk for many in this group.

Residents of the Las Vegas Valley Concerned about Future Availability of Water

Residents of the Las Vegas Valley who are concerned about the future availability of water would be encouraged by implementation of the Proposed Action and initiation of groundwater pumping. Recent studies of the Colorado River system highlight the potential for longer term drought that could affect Nevada's allocation of Colorado River water, consequently the potential for development of a water supply to supplement that source would help reassure this group that water could be available during a prolonged drought in the Colorado River Basin.

Utah Residents Concerned about the Allocation of Snake Valley Hydrological Basin Water among the States and Effects on Air Quality and other Environmental Resources

Utah residents concerned about the allocation of Snake Valley water resources and environmental effects of groundwater pumping and drawdown would be dissatisfied with the initiation of groundwater pumping. Some Utah residents are concerned that the proposed allocation of Snake Valley groundwater resources is not equitable. Additionally, the aforementioned concern of some Wasatch Front community residents regarding airborne dust and the potential for degradation of air quality, visibility and respiratory health would also generate dissatisfaction at the initiation of groundwater pumping.

F3.18.10.3 Environmental Justice

Operations of SNWA's groundwater system and the drawdown effects that result would not result directly or indirectly in any disproportionately high and adverse impacts to minority or low-income populations. Rather, the adverse impacts would affect the general population within the rural areas without regard to race, ethnicity, or income. A major concern among tribal representatives participating in the government-to-government consultations was the potential for groundwater development to affect the springs and streams in and adjacent to the basins in which pumping would occur. **Table 3.3-35** (Water Resource Impact Summary for the Proposed Action) in the EIS describes potential reductions in spring and stream flows forecast to occur under the Proposed Action. Such flow reductions could affect Native American traditional values, but the extent and manner of such effects is not known. Also unknown is the extent to which the strategies recommended to address the effects of pumping on surface water (see **Table 3.3-35**) would alleviate, reduce, or avoid potential effects on Native American traditional values. With respect to effects on Native American traditional values, CEQ environmental justice guidelines do not identify thresholds, scales, or appropriate comparisons to determine whether the effects on such traditional values would have an adverse impact on affected Indian Tribes that would appreciably exceed or likely exceed those effects on the general population. Consequently, no further environmental justice analyses are required.

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