

Social and Environmental Setting

Jurisdictions and Agencies

Nevada, like other western states, is a public land state—much of the land is owned and managed by public agencies. This federal land is used as military bases or testing grounds, nature parks/reserves, and Native American reservations, or is leased to the private sector for commercial exploration (for example, forestry, mining, agriculture). The land is managed by different federal agencies, such as the Bureau of Land Management (BLM), U.S. Forest Service, Bureau of Indian Affairs, U.S. Department of Defense (DoD), National Park Service, Bureau of Reclamation, or U.S. Fish and Wildlife Service (refer to Figure 12, page 57).

Nevada encompasses nearly 71 million acres, of which over 60 million acres (approximately 87 percent) are under federal administration. Less than 1 percent is under state government administration, and approximately 13 percent of the total state acreage is under local government administration or is privately owned (Harris 2001).

The impacts of the federal government administering large quantities of land are significant, and they include:

1. The taxable property base is quite small (in Lincoln County, only 1.6 percent of the land area is on the tax roll).
2. Decisions affecting the use of much of the land in Nevada are made outside the state, by persons who may be unfamiliar with local conditions or needs of the local populace.

As noted, only about 13 percent of Nevada's land is in private ownership, less than any other state. The Nevada counties of Nye, Esmeralda, Lander, Lincoln, and White Pine have over 90 percent of their total acreage administered by the federal government. The economies of Nevada counties that have extensive public land are influenced considerably by federal land management decisions. Storey County had the largest percentage of total county acreage that is classified as either local government or private property, at 90 percent. For the metropolitan counties of Clark and Washoe, approximately 8 and 27 percent of total county acreage, respectively, is administered by local government and/or classified as private property.

The following sections provide a brief accounting of the principal Nevada landowners and administrators.

Bureau of Land Management

Within Nevada, BLM manages over 47 million acres, or approximately 67 percent of the state. BLM's multiple-use mission, set forth in the Federal Land Policy and Management Act of 1976, mandates that public land resources be managed for a variety of uses, such as: energy development, livestock grazing, recreation, and timber harvesting, while protecting a wide array of natural, cultural, and historical resources. While the BLM is authorized to sell land when it is specifically identified for disposal in a land use plan,

it currently leases land to various local agencies, organizations, districts, and governments for recreation and public purposes.

Given the extent of BLM land in Nevada, it is important to note that BLM may grant rights-of-way on any public lands. Where an appropriate corridor has been designated, BLM will encourage use of that corridor. Advance corridor planning is necessary because new corridors must be designated through BLM's Land Use Planning – Resource Management Plans or through amendments to Management Framework Plans. The need for corridors must be identified during the planning process. The proposed uses within the corridors must also be considered with other uses of the public land covered by the plan or amendment. The PEL process (described later in this plan) provides for engaging BLM and other resource agencies early in the planning process to facilitate this coordination.

National Forests, Parks, and Wilderness Areas

The Humboldt-Toiyabe National Forest's 6.3 million acres makes it the largest national forest in the lower 48 states, covering approximately 8 percent of the state. The forest is located in Nevada and a small portion of eastern California. It consists of numerous fairly large but noncontiguous sections scattered around most of the state of Nevada and a portion of eastern California.

Land management for national forests focuses on timber harvesting, livestock grazing, water, wildlife, and recreation. Unlike national parks and other federal land managed by the National Park Service, commercial use of national forests is permitted, and often encouraged.

U.S. Department of Defense (DoD)

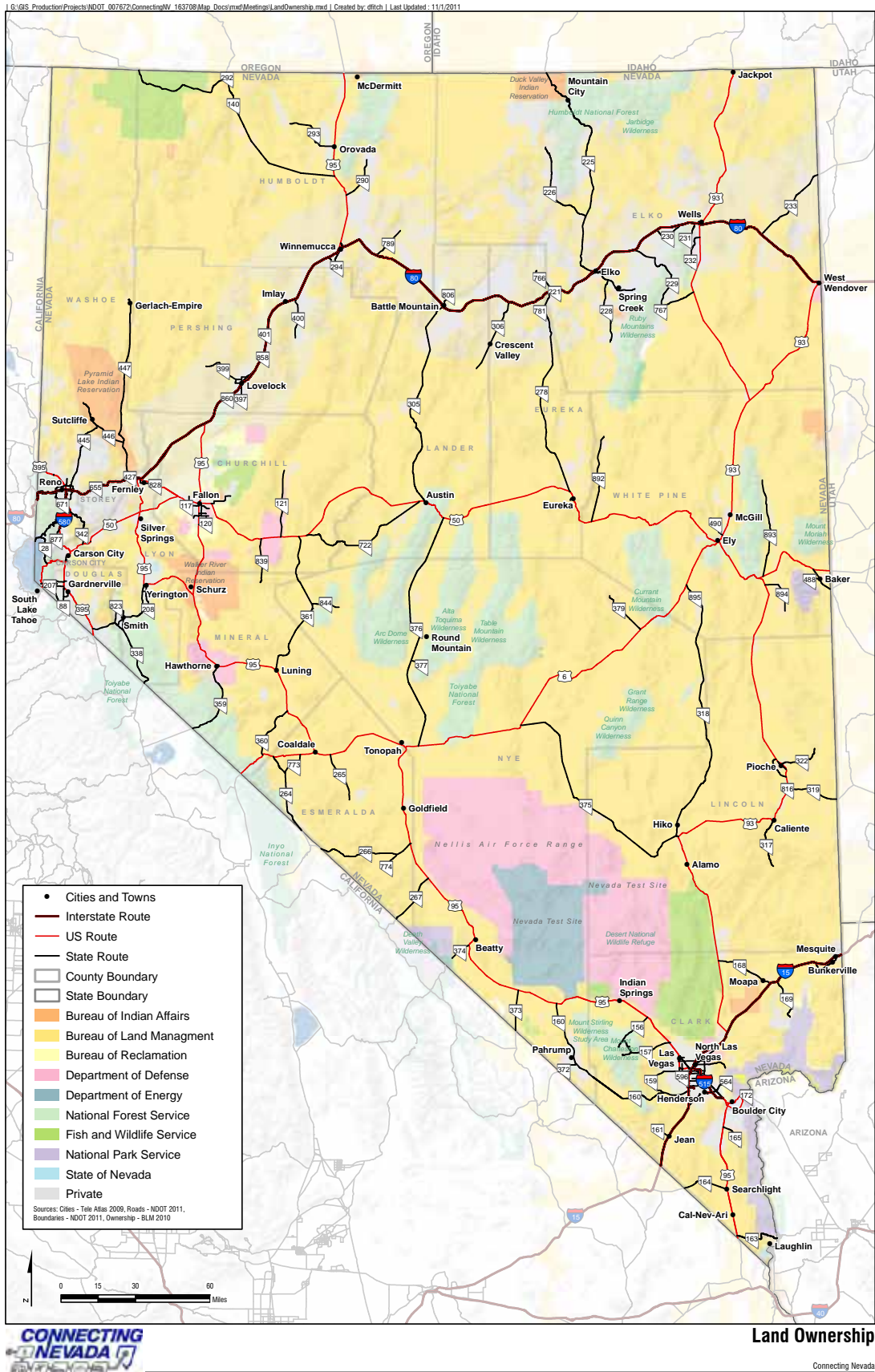
DoD occupies nearly 1 million acres in Nevada. Facilities include Nellis AFB, Creech AFB, Fallon Naval Air Station, and the Hawthorne Army Ammunition Depot.

Nellis AFB is home to the largest advanced combat air-training center in the world. The base covers more than 14,000 acres. Nellis' work force of approximately 12,000 military members and civilians makes it one of the largest employers in the state. Fallon Naval Air Station employs over 3,000 active-duty personnel, civilian employees, and DoD contractors. The Hawthorne Army Ammunition Depot covers 147,000 acres. According to an economic impact analysis prepared for Nellis Air Force Base in 2011, the total economic impact of Nellis, Creech, and the Nevada Test and Training Range operations amounted to more than \$5 billion in FY 2011.

U.S. Fish and Wildlife Service

The National Wildlife Refuge System, managed by the U.S. Fish and Wildlife Service, is a system of public land and water bodies set aside to conserve wildlife. In Nevada, there are nine such refuges. The largest national wildlife refuge in the continental 48 states is the Desert National Wildlife Refuge, encompassing 1.6 million acres of the Mojave Desert in Southern Nevada, 25 miles north of Las Vegas. The range was established in 1936 for the protection, enhancement, and maintenance of desert bighorn

Figure 12. Land Ownership



sheep. The Sheldon National Wildlife Refuge, located in the northwestern corner of the state, covers more than half a million acres of high desert habitat for large herds of pronghorn antelope, bighorn sheep, and other wildlife. The Stillwater National Wildlife Refuge Complex consists of Stillwater Refuge, Fallon Refuge, and Anaho Island Refuge in western Nevada, encompassing approximately 163,000 acres of diverse habitat.

Bureau of Indian Affairs

There are 26 federally recognized Native American tribes in Nevada and 31 Native American reservations and colonies. Their properties cover almost 2,000 square miles. Tribal holdings are scattered across vast geographic areas of the state that are near both urban areas and semi rural or extremely rural areas. There are close to 9,000 tribal members in the state, and 26,000 people who classify themselves as American Indian or Alaska Native.

Nevada's Native American tribes share common concerns about land management, water rights, transportation and storage of nuclear waste, economic development, and the decimation of ancestral burial sites. Several of Nevada's Native American tribes were active participants in the Connecting Nevada project. Topics discussed with representatives of the tribes during the stakeholder outreach effort included road safety and economic development. Safety concerns included traffic along US 95, especially through small towns such as Schurz and Walker Lake. Economic development issues raised included access for energy production and opportunities for tourism.

Department of Energy

Covering approximately 1,375 square miles, the Nevada National Security Site is one of the largest restricted-access areas in the United States. The site is surrounded by thousands of additional acres of land withdrawn from public domain for use as a protected wildlife range and for a military gunnery range, creating an unpopulated land area encompassing some 5,470 square miles (roughly equivalent to the state of Connecticut).

National Park Service

Nevada is home to Great Basin National Park, Lake Mead National Recreation Area, and a small portion of Death Valley National Park. These parks reported over 5 million visitors (in 2010) and a combined economic benefit of \$173 million dollars (National Park Service 2011).

Great Basin National Park and the entire northeastern portion of the state is often lauded for its natural beauty and access to recreation activities, including hunting, fishing, camping, and hiking. Improved access and signs were noted as needs to improve economic opportunities of this region.

Nevada Division of State Lands

The State Lands Division operates as the "real estate" agency of the state for all agencies except the Legislature, the University system, and NDOT. The agency holds title to state land and interests in land. The agency issues leases, easements,

permits and other authorizations for the use of state land. There are currently about 139,000 acres of “agency land” statewide.

State Trust land includes sovereign land—those lands lying in the beds of navigable waterways that are held in trust by the State to provide public access to those waterways for the purposes of fishing, commerce, and navigation. At present, the following bodies of water are considered to be navigable: Lake Tahoe, Washoe Lake, Walker Lake, Truckee River, Carson River, Colorado River, and Virgin River.

Bureau of Reclamation

The Bureau of Reclamation acts as the Colorado River water manager, contracting with water users and managing the flow of the Colorado River and water releases from the dams along its length.

The Bureau of Reclamation primarily sees its role in land management as facilitating the recreational use of the land it administers. The operation of these sites normally becomes the responsibility of other federal, state, and local agencies.

U.S. Army Corps of Engineers

The U.S. Army Corps of Engineers (Corps) regulates the discharge of dredged and/or fill materials into waters of the United States, which includes the Colorado River, as well as many washes throughout the state. Authorization to conduct construction activities, (including, but not limited to, residential, institutional, and commercial development; mining; infrastructure placement [roads and utilities]; and recreational development) must be obtained from the Corps prior to commencement of the activity.

Biophysical Environment

Topography

All of Nevada is in the Basin and Range Province, characterized by long, narrow north-to-south trending mountain ranges separated by broad valleys. Elevations vary from under 1,000 feet to over 13,000 feet above sea level.

Areas of Critical Environmental Concern

The areas of critical environmental concern (ACEC) designation highlights areas where special management attention is needed to protect and prevent irreparable damage to important historic, cultural, and scenic values; fish; wildlife resources or other natural systems or processes; or to protect human life and safety from natural hazards. The ACEC designation indicates to the public that BLM recognizes that an area has significant value and has established special management measures to protect those values

(BLM 1988). Nevada has several areas with this designation; the majority are in Southern Nevada in remote regions of the Mohave Desert (see Figure 13).

Areas in Nevada have been designated to protect:

- mesquite woodland important for neotropical bird species
- historic railroad construction and mining sites
- prehistoric habitation sites and rock art
- paleontological resources
- desert tortoise critical habitat
- habitat critical to threatened and endangered species

Critical Habitat

Under the Endangered Species Act, critical habitat is defined as a specific geographic area (or areas) that is essential for the conservation of a threatened or endangered species and that may require special management and protection. Critical habitat is administered by the U.S. Fish and Wildlife Service. In Nevada, several areas are designated as critical habitat for the desert tortoise, a species listed as “threatened” under the Endangered Species Act.

Waters of the US

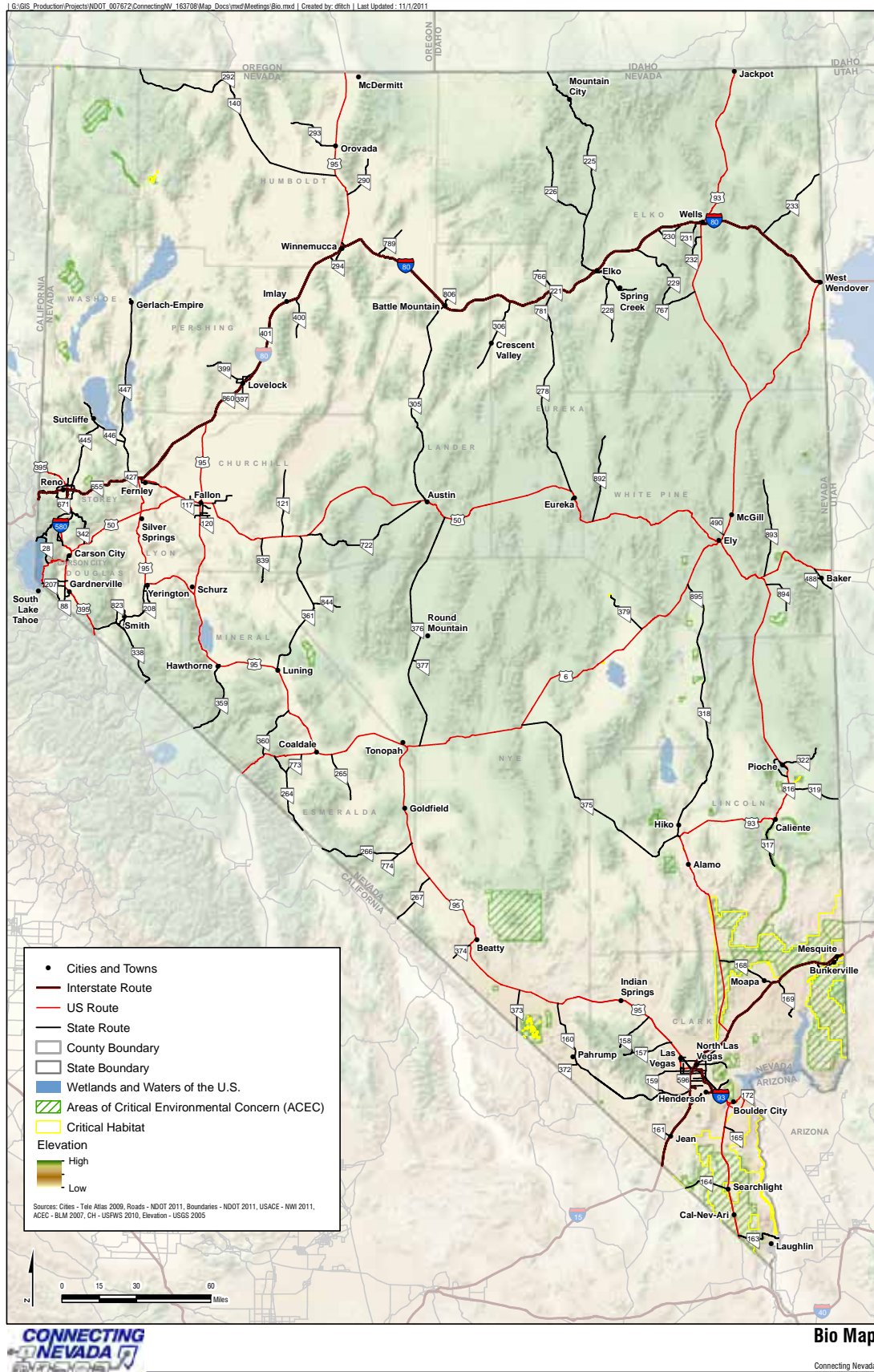
The 1972 Clean Water Act (CWA) was enacted to protect our health and environment by reducing pollution in streams, lakes, rivers, wetlands, and other waterways. Section 404 of the CWA defines waters of the United States to mean the interstate “navigable waters” of the United States, including the territorial seas, that are currently, have been used in the past, or may be used in the future for foreign or interstate commerce. Specifically, such waters may be interstate lakes, rivers, streams (including intermittent streams), mud flats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, whose use, degradation, or destruction could affect interstate or foreign commerce activities. Waters of the United States in Nevada are:

- Lake Tahoe
- Lake Mead
- Carson River
- Truckee River
- Walker River
- Humboldt River
- Las Vegas Wash
- any tributary to these water systems

Transportation System Impacts

Constructing or rebuilding transportation infrastructure in ACECs, critical habitats, or near waters of the United States is not prohibited. However, consultation with the appropriate agency (or agencies) is needed, along with studying the project effects and identifying, if needed, mitigation measures. These steps may add time and cost to a project.

Figure 13. Biophysical Environment



Energy Resources

In 2010, the value of overall mineral and energy production in Nevada increased to an all-time high of \$7.72 billion, up substantially from the previous high of \$6.26 billion in 2008 (Nevada Bureau of Mines and Geology Special Publication MI-2010, The Nevada Mineral Industry 2010).

Mining

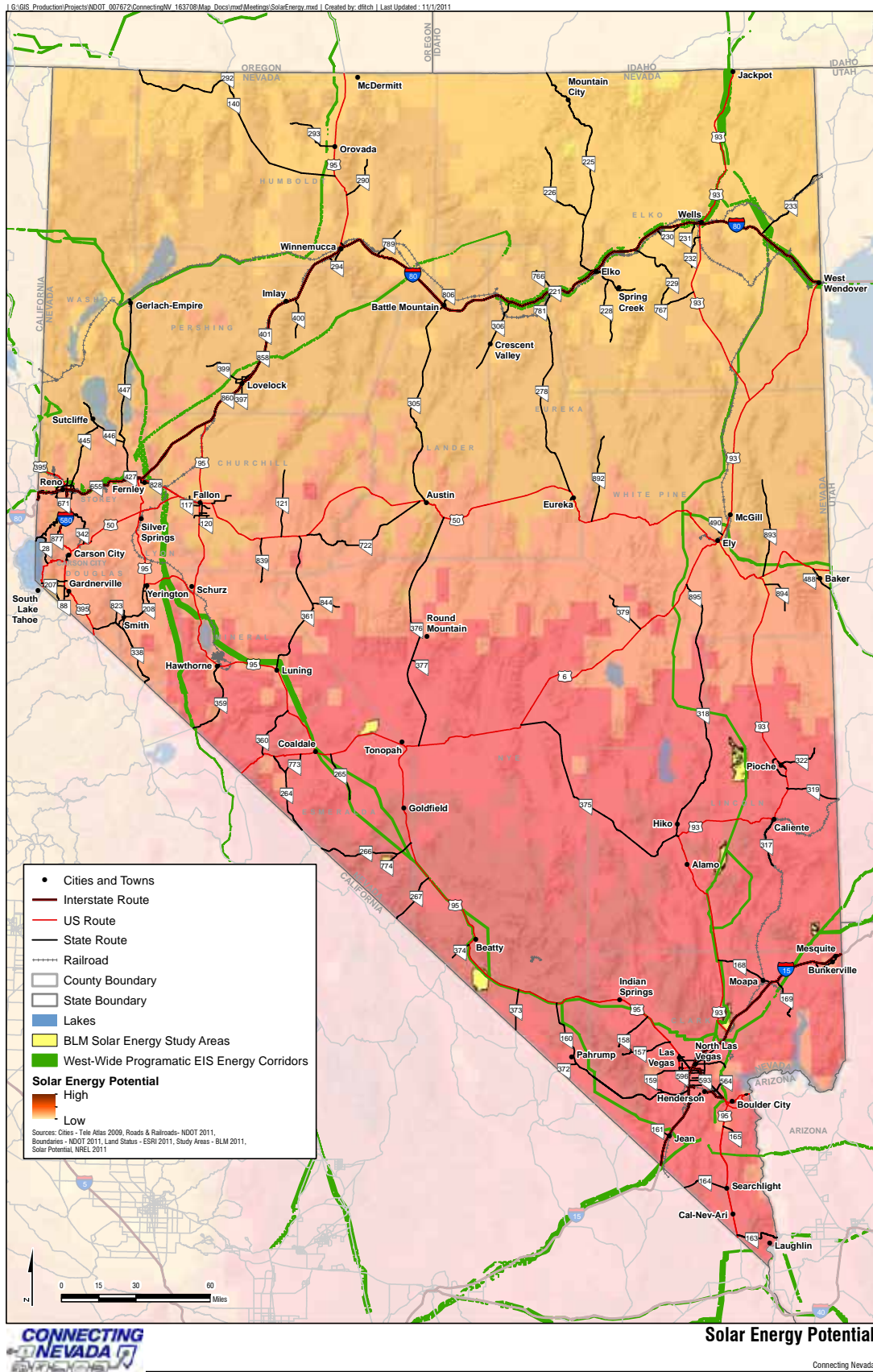
Mining in Nevada is a very significant contributor to the State's economy. According to the Nevada Bureau of Mines and Geology, the value of overall mineral and energy production in Nevada increased to an all-time high of \$7.72 billion in 2010. The mining industry directly employed 12,210 people in 2010 (including oil; according to the Nevada Department of Employment, Training and Rehabilitation, <http://www.nevada-workforce.com/>), and the industry is responsible for another 51,000 jobs related to providing the goods and services needed by the industry and its employees (Nevada Bureau of Mines and Geology). Gold production in Nevada accounts for 72 percent of the total gold produced in the United States. Nevada ranked first in the United States in terms of value of overall nonfuel (excluding oil, gas, coal, uranium, and geothermal) mineral production in 2010 (according to the U.S. Geological Survey, Mineral Commodity Summaries 2011). The contributions that mining makes to the economies of Nevada and the United States are significant in terms of jobs, commerce, taxes, improvements to the infrastructure, and lowering the U.S. trade deficit (<http://www.nbmgu.unr.edu/Pubs/mi/mi2010/mi2010.pdf>).

Renewable Energy

In addition to mineral resources, Nevada produces substantial amounts of renewable energy. Electrical power from geothermal energy production in Nevada in 2010 was valued at \$145 million. The value of petroleum was \$27 million. According to the Nevada State Energy Office, renewable energy accounted for 572 megawatts of energy production in 2011, with an additional 226 megawatts added to date in 2012 (as of May 2012). The majority of this energy production is geothermal, followed by solar (photovoltaic) and wind (see Figure 14, Solar Energy Potential).

Development of renewable energy resources affects the transportation system in a number of ways. Many of the energy projects are located in rural areas, requiring travel for construction and ongoing maintenance along the state's highways. Energy transmission from these facilities often requires new transmission corridors that may be co-located with existing road corridors, but more often require identification and development of new corridors. Nevada's New Energy Industry Task Force (established by Nevada Revised Statute 701.500) is charged with examining energy transmission issues and assessing a regional market for Nevada's renewable energy resources. The Nevada State Energy Office is coordinating the efforts of the task force with other state, regional, and federal organizations to identify and establish corridors for the transmission of electricity in Nevada.

Figure 14. Solar Energy Potential



Climate Change

Mining requires energy, and while industry growth will increase demand, we recognize our responsibility to address climate change through initiatives to reduce energy consumption and develop renewable energy. Fortunately, there is significant potential in Nevada to develop renewable energy. According to the chairman of the Federal Energy Regulatory Commission, aggressive energy efficiency programs and the state's abundant wind, solar, and geothermal resources could provide all of Nevada's energy in the next 15 to 20 years. The challenge lies in taking steps to realize this potential (see the Nevada Mining Association website, http://www.nevadamining.org/issues_policy/outlook.php)

Population and Demographics

According to a U.S. Census Bureau estimate, the 2011 United States population was more than 310.5 million. Looking at the past decade, the U.S. population grew by 9.7 percent, from 281.4 million in 2000 to 308.7 million in 2010. Nevada gained the most as a percentage of its 2000 count, with a 35 percent increase. With three of Nevada's four largest cities, Clark County predictably dominated the state's population growth by increasing 42 percent. More than two-thirds of the state's population lives in the Las Vegas metropolitan area. The neighboring state of California is the most populous state, with 37.3 million people.

Nevada was ranked 35th in population in the United State, with a total population of 2.7 million in 2010. Between 1990 and 2000, Nevada's population grew from 1.2 million to 2 million, an increase of 66 percent—by far the decade's largest increase among the 50 states. It was also the fourth consecutive decade in which Nevada was the country's fastest-growing state and had a population growth rate over 50 percent. The U.S. Census Bureau projects that the Nevada population will grow to 4.3 million in 2030, based on 2000 data.

This population growth was mirrored by the growth of employment during the prior decades. Between 1990 and 2000, Nevada's employment grew from 621,000 to 1 million, and continued to grow until the start of the recession in 2008. According to 10-year industry employment projections for 2008 to 2018, released by the Nevada Workforce Informer (the research and analysis arm of the Nevada Department of Employment, Training and Rehabilitation), more bright spots than dark ones are on the horizon. Industries experiencing the greatest declines for this period include building and construction (especially in subdivisions and commercial buildings), real estate, motor vehicle parts manufacturing, and publishing. Yet remarkable growth—in some cases by up to one-third or more of the current workforce—is expected in mining; manufacturing (food, plastics, metals, machinery, and paper); wholesalers and retailers of clothing, shoes, appliances, and electronics; civil engineering and road construction; Internet and data services, including systems and tech support (by as much as 50 percent); financial services; educational support services (by nearly 60 percent); and independent artists, writers, and performers. Nevada has been especially hard hit by the recent economic downturn.

Demographics

The median age in Nevada, 35.6, is lower than the median age of the nation, 36.4 (see Table 4). The population for different minority groups is also presented in the table, which shows that the minority population is growing. The median household income was \$53,310, higher than the national level of \$50,221.

Table 4. Demographics of Nevada

Description	2000 ^a	2010 ^b
Population	1,998,257	2,700,551
Persons under 5 years	7.3	7.7
Persons under 18 years	25.6	25.8
Persons 65 years and over	11.0	11.6
Median age for Nevada ^c , years	35.0	35.6
Female, 2009	49.1	49.1
Minority population	34.8	45.9
Hispanic or Latino origin	19.7	26.5
Black or African American	6.6	7.7
American Indian or Alaska Native	1.1	0.9
Asian	4.4	7.1
Native Hawaiian and Other Pacific Islander	0.4	0.6
Some Other Race alone	0.1	0.2
Two or More Races	2.5	2.9
	1999	2009
Median household income	\$44,581	\$53,310

Source: U.S. Census Bureau

a Census 2000 Summary File 1 (SF 1) 100-percent Data

b Census 2010 Demographic Profile

c Nevada State Demographer

Projections of Population and Employment

RTC AND MPO POPULATION AND EMPLOYMENT PROJECTIONS

Regional Transportation Commission of Southern Nevada

Construction employment peaked in June 2006. After that, Nevada was affected by the spike in gasoline prices in 2007 and the crisis in the financial markets in 2008. Nevada's total employment peaked in May 2007. Nevada was the fastest-growing state in the country in 2007. The previous year, Arizona was the fastest-growing state, and before that Nevada was the fastest-growing state for 19 years. Between the peak and the bottom, Nevada has lost over 196,000 jobs. Job loss in Nevada appears to be flattening out with the low point occurring in January 2010. Figure 15, page 67, shows population and employment trends in the Las Vegas area.

Regional Transportation Commission of Washoe County

Between 1990 and 2005, according to the U.S. Census Bureau, the Washoe County population increased from 121,000 to 396,421. During the same time, employment increased from 54,000 to 216,000. Land use data used to prepare the Regional Transportation Plan were obtained from the Cities of Reno and Sparks and Washoe County for 2007, and these data represent the build-out of all master-planned, approved, and highly likely development. Table 5 shows the projected population for different time frames. Table 6 shows the population and employment for the Reno/Sparks area as of 2007.

Table 5. Population Projections for Washoe County

Year	Washoe County
2009–2010	440,000
2011–2015	485,000
2016–2022	550,000
2023–2030	620,000
2031–2039	730,000
2040–2044	800,000

Source: Regional Transportation Plan, RTC of Washoe County <http://www.rtcwashoe.com/planning-7>

Table 6. Population and Employment Projections for Reno/Sparks Urban Area

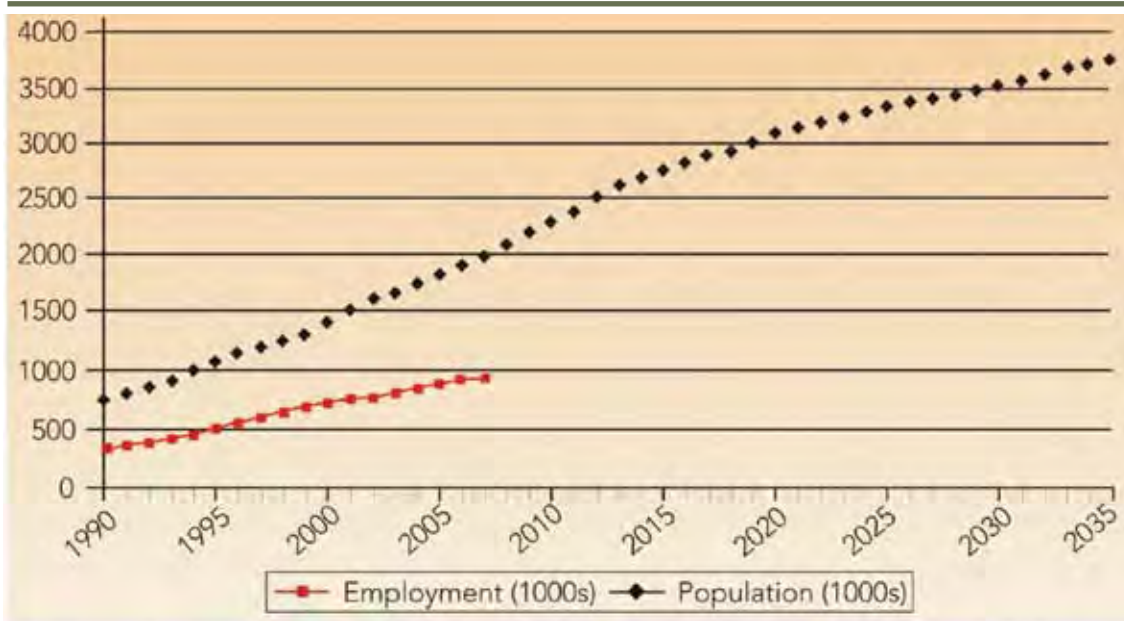
Description	2007	2013	2018	2030	2040
Population	385,321	490,104	577,005	720,154	790,121
Employment	208,121	274,321	319,943	414,054	444,841

Source: Regional Transportation Plan, RTC of Washoe County <http://www.rtcwashoe.com/planning-7>

Carson Area Metropolitan Planning Organization

Household, employment, and land use data for the CAMPO area were obtained with assistance from the local planning departments of Carson City and Douglas and Lyon Counties. This information was used to develop the CAMPO travel demand model. Based on the model, the total number of households in the CAMPO model area is estimated to increase from approximately 32,000 in 2011 to 37,100 in 2035. This represents a modest increase of nearly 14 percent. Likewise, employment within the CAMPO area is estimated to increase from nearly 32,200 jobs in 2011 to 38,900 in 2035, which translates to a 17 percent increase. The portions of Douglas and Lyon Counties within the CAMPO area are estimated to experience a nearly equal rate of growth in the number of households (approximately a 17 percent increase), and Carson City is estimated to grow by roughly 12 percent. The increase in employment by 2035 is estimated to occur consistently between the three counties on a percentage basis, with Carson City showing only a slightly higher rate of growth than the other two counties.

Figure 15. Population and Employment of Las Vegas Area.



Source: Regional Transportation Plan, RTC of Southern Nevada, <http://www.rtcnv.com/mpo/plansstudies/rtp0930/>

Carson City is expected to have the most significant net increase in the number of jobs, with over 5,800 new jobs by 2035 (nearly double the estimated increase in the number of Carson City households). This projection indicates a potential increase in the number of daily employment-related trips entering Carson City from adjacent counties. Carson City will likely become more of a regional employment destination by 2035, with an increase in the number of “bedroom” communities in the surrounding areas. Although the CAMPO planning area will likely be larger in 2035 than it is today, the travel demand model assumes the same geography for existing and forecast years. Based on this assumption, the relative proportion of households and employment for the three counties is expected to remain fairly constant.

Tahoe Metropolitan Planning Organization

The total resident population of the Tahoe Metropolitan Planning Organization grew between 1990 and 2000 from approximately 52,600 to 62,800, but declined between 2000 and 2010 to 54,500 (U.S. Census 1990, 2000, and 2010). Because the Tahoe Region is a vacation destination and contains many residences that serve as second homes, the overall population also fluctuates seasonally.

For the Connecting Nevada State Travel Demand Model, projections for the Tahoe Metropolitan Planning Organization area based on modest population increase; using a compound annual growth rate of one-half of one percent through 2060. This increase would result in projected 2030 population of 60,590 (the 2012 Regional Transportation Plan, Mobility 2035, reports a 2035 forecast population of 60,365).