

**APPENDIX F
IMPACT ANALYSIS**

Land Use and Development Procedural Plan for the Pine Nut Allotments (NV)

**U.S. Bureau of Indian Affairs
Western Regional Office**



Impact Analysis

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Prepared by



CASCADE DESIGN
PROFESSIONALS, INC.

TABLE OF CONTENTS

Introduction	1
Description of Affected Environment	2
Land Resources	4
Topography	4
Geology/Soils.....	4
Existing Land Use	5
Water Resources	6
Climate	7
Air Quality	7
Natural Resources	8
Wildlife	8
Threatened and Endangered Species	8
Vegetation.....	8
Cultural Resources	8
Socioeconomic Conditions	9
Population	9
Economy	9
Transportation	10
Utilities and Community Services	10
Summary of Highest and Best Use Designations	11
Northern and Northeast Allotments	11
US 395 Allotments	12
Northwest Transition Area between Pine Nut Mountains and Carson Valley	12
Topaz Lake – Holbrook Junction Area	12
Central Hwy 395 Allotments	12
Allotments East and West of Hwy 395.....	12
Impact Analysis	12
Methodology	13
Land Resources	15
Topography	15
Geology/Soils.....	15
Water Resources	15
Climate	16
Air Quality	16
Natural Resources	17
Wildlife	17
Threatened and Endangered Species	17

Vegetation.....	17
Cultural Resources.....	18
Land Use	18
Socioeconomic Conditions.....	18
Transportation	19
Utilities and Community Services	20
Public Water and Sewerage Systems.....	20
Solid Waste collection	20
Power	21
Communications	21
Emergency Services.....	21
Schools.....	21
 Mitigation Measures	 21
Land Resources	21
Topography.....	21
Soils.....	21
Water Resources	22
Air Quality	22
Natural Resources.....	22
Wildlife	22
Threatened and Endangered Species	22
Vegetation.....	22
Cultural Resources.....	23
Land Use	23
Transportation.....	23
Utilities and Community Services	23
Emergency Services.....	23
Solid Waste Collection	24
 Cumulative Effects	 24

List of Tables

Table 1 Population Growth in Western Nevada, 1980 - 2006	9
Table 2 Developable Area, Housing Units, & Population	15
Table 3 Daily Groundwater Consumption Estimates.....	16
Table 4 Land Use Assessment Matrix.....	25

List of Figures

Figure 1 Study Area	3
Figure 2 Development Suitability	14

LAND USE AND DEVELOPMENT PROCEDURAL PLAN FOR THE PINE NUT ALLOTMENTS (NV) IMPACT ANALYSIS

INTRODUCTION

In May 2007, the Bureau of Indian Affairs, Western Regional Office, contracted with Cascade Design Professionals, Inc. to prepare a Land Use and Development Procedural Plan (Procedural Plan or Plan) for the Pine Nut Allotments, all of which are located in Douglas County, Nevada. The purpose of the plan is to guide the Bureau of Indian Affairs (BIA) in making decisions regarding revenue-producing development proposals that will require land leases on allotments. Initial planning efforts centered on identification of the “highest and best” use for allotments based on analyses of site development suitability, groundwater availability and quality, soil suitability, and development trends.

The purpose of this impact analysis is to evaluate the impact of the various designated land uses on the allotments and surrounding environment and to identify measures to mitigate those impacts. The results of this impact analysis and recommended mitigation measures will be used to recommend development standards and to develop an appropriate leasing structure that provides sufficient incentives to the developer while still ensuring the landowner of revenues commensurate with the value of the property over the entire lease term.

It is important to note that precise development impacts are impossible to forecast for those allotments included in this study for several major reasons. First of all, these lands are not under the jurisdiction of any city, county, or state government; and therefore, there is no comprehensive plan or public policies in place to assume that orderly conversion of certain lands for urbanization would occur over time. As a result, there is no zoning ordinance/zoning map or other development codes in place to designate appropriate land uses for specific areas or to control and direct development. Allotment owners are only subject to federal laws and regulations and to some extent have the right to develop their lands for any use they so desire, so restricting uses by traditional means, such as zoning, is not an option. Therefore, it is impossible to predict, on potentially developable allotments, exactly what types of development will occur, if at all, when development might occur, or where development may occur.

Compounding this situation is the fact that any moderate to large development will be driven by private sector developers in conjunction with allotment owners who are interested in leasing their land for residential, commercial, or industrial uses. A majority of the allotment owners must agree to any development proposal in order to go forward with a lease. An analysis of the ownerships showed that 70% of the allotments have more than 30 owners and some have as many as 150 owners. Only 17% of the allotments have 5 owners or less and 27% have 15 owners or less.

During the first round of public meetings, a number of allotment owners commented that this multiple ownership situation made for extreme difficulty in reaching a majority consensus concerning any use of their respective allotment or in some instances more than one allotment. In other cases, owners were emphatic that they considered their lands as sacred and wanted them left as they are in their natural state. Others expressed that the only development they would consider was for family members to build homes for themselves. As a result, it is anticipated that it will be difficult for a developer to get a majority consensus when dealing with more than just a few owners. It should be noted that the only existing development, the Pine View Estates, occurred on an allotment with only one owner.

Because of the unique situations, there is no way to predict the type of future development, nor which allotments will develop, nor the degree of development. As a result, this impact analysis will be limited to addressing general impacts based on one development scenario that would potentially produce the most severe impacts. Specific impacts and quantifiable impacts will need to be addressed in the leasing process through the requirement for each developer to prepare an Environmental Assessment or Environmental Impact Statement as the case may be.

DESCRIPTION OF AFFECTED ENVIRONMENT

The study area includes 176 allotments. For reference purposes, the allotments were separated into three groups. The two clusters of allotments northeast of Gardnerville are referred to as the "northern" and "northeastern" allotments. These groups comprise 26 allotments north-northeast of the Minden/Gardnerville urban area and east of the Minden – Lake Tahoe Regional Airport. The remaining 150 allotments are referred to as the "Hwy 395" allotments. These allotments are situated southeast of the Minden/Gardnerville urban area along both sides of Hwy 395 where the road crosses the Pine Nut Mountains. The study area is shown in Figure 1.

Information pertaining to the affected environment was primarily obtained from the March 2008 *Pine Nut Mountain Administrative Draft Plan Amendment and EIS* (prepared by TetraTech for the Bureau of Land Management (BLM) Carson City Field Office) and has been incorporated into this impact analysis where appropriate. Therefore, the March 2008 draft plan amendment and EIS is hereby acknowledged and referenced.

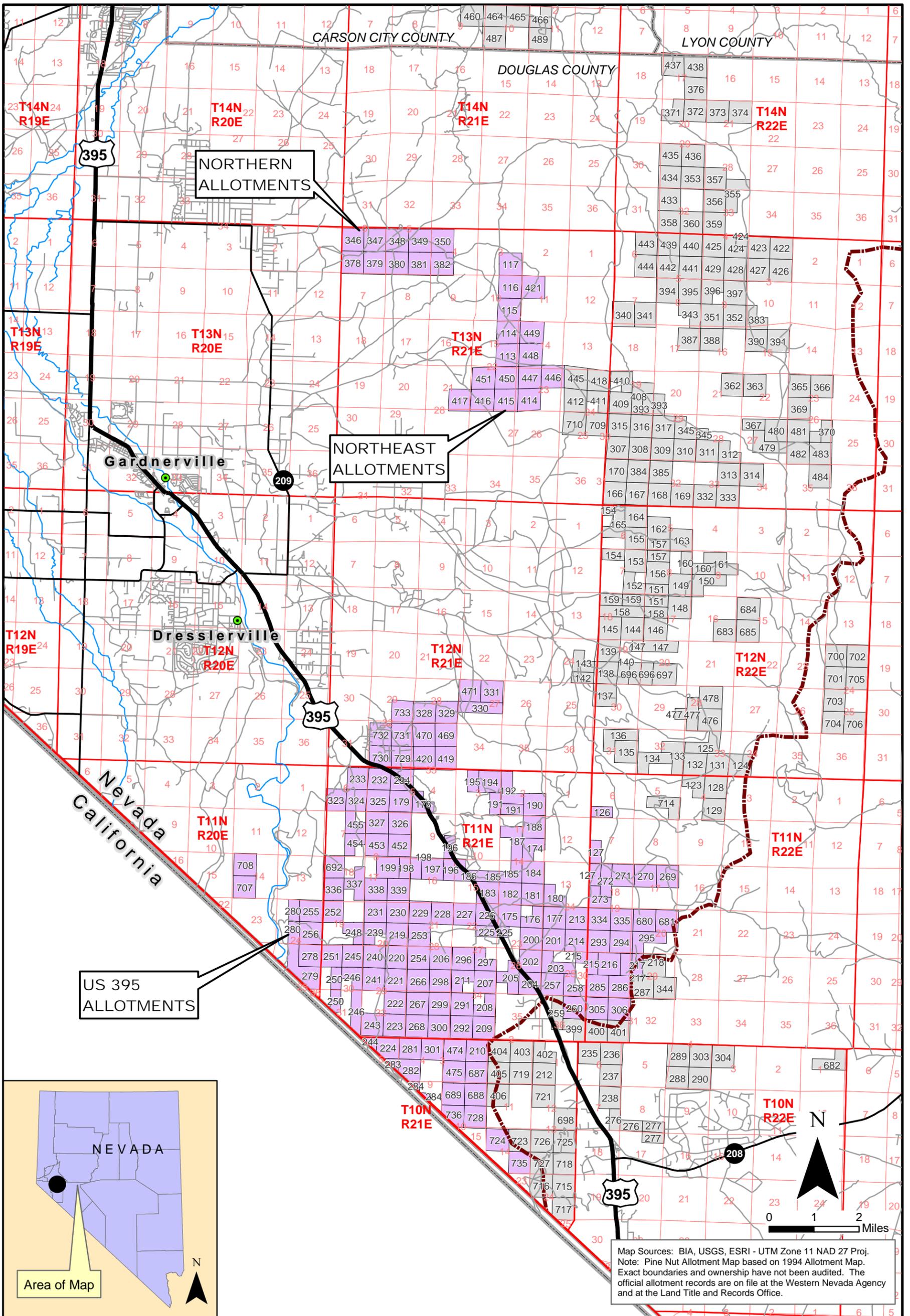


Figure 1

Study Area

Pine Nut Allotments, Douglas County, Nevada

Map Prepared by Cascade Design Professionals, Inc., Jan. 2009

Legend

-  Carson River Watershed Boundary
-  Allotment Included in Master Land Use Plan
-  Allotment Not Included in Master Plan
-  Local Road
-  50 Meter Contours

Land Resources

Topography

The Pine Nut Allotments comprise approximately 27,130 acres, all of which are located in Douglas County, Nevada. Minden/Gardnerville is the main urban center about 60 miles south of Reno. The area from Carson City south to the Pine Nut Mountains is known as the Carson Valley, with the Carson River running through it on a south-to-north course. The Valley extends from the Pine Nut Mountains on the east to the foothills of the Sierra Nevada Mountains on the west. US Highway 395 is the main highway connecting the Carson Valley to points north and south.



The Sierra Nevada Mountains reach 11,000 feet above mean sea level, and peaks in the Pine Nut Mountains reach 9,000 feet. The elevation of the valley ranges from 4,600 feet, where the Carson River flows out of the area, to 5,000 feet above sea level.

The Northern Allotments are located in an area of flat to rolling terrain. Elevations in the area are less than 5800 feet. The US 395 Allotments are in the Pine Nut Mountain Range which is very rugged, and elevations exceed 8000 feet in many areas. US 395 climbs to approximately 6,000 feet within this highway corridor. Many of these allotments are in areas of steep slopes, and many do not have access or are too far from the highway to be of interest to developers.

Geology/Soils

The Carson Valley was formed by volcanic, tectonic and erosional events during the past 240 million years. The oldest geologic units in the Carson Valley are 138 to 240 million year old volcanic and sedimentary rocks deposited in the Jurassic and Triassic Periods. During the Cretaceous Period (63 to 138 million years ago), granitic magma of the Sierra Nevada batholith intruded into the Jurassic and Triassic sedimentary rocks, forming the basement rock of the Carson Valley and a majority of the Pine Nut and Sierra Nevada Mountains. A long period of erosion followed the intrusion, until approximately 10 million years ago when basin and range faulting created present day topography by dropping the valley floor and uplifting the Sierra Nevada and Pine Nut Mountains. Erosion of the newly-formed highlands resulted in deposition of Tertiary Sediments, consisting of 40 to 80 foot thick clay beds with 10 to 20 foot thick sand and gravel interbeds over most of the valley floor. Continued faulting between 15 and 5 million years ago tilted the Tertiary sediments towards the west, and Tertiary Andesites and Basalts erupted along the southern and western sides of the valley. During the last 2 million years, continued erosion of highlands filled the Carson Valley, covering the Tertiary Sediments with Quaternary Alluvium. The combined thickness of basin fill in the Carson Valley (i.e., Tertiary Sediments and Quaternary Alluvium) ranges from 5,000 feet to 2,000 feet on the west and east sides of the valley, respectively.

The northern and northeast Pine Nut Allotments are underlain by Tertiary Sediments (Ts) and Quaternary Alluvium (Qal, QToa). Driller's logs from wells drilled near the northern Pine Nut

Allotments indicate that the Tertiary Sediments are relatively thick (up to 705 feet) and the Quaternary Alluvium is thin, ranging from 20 to 68 feet.

The US 395 Pine Nut Allotments west of the highway are underlain primarily by Tertiary Basalts. Allotments east of US 395 are underlain primarily by Jurassic sedimentary rocks. Minor amounts of Quaternary Alluvium have been identified along US 395. The mountains east and west of US 395 are composed of Tertiary Basalts and Jurassic sedimentary rocks. The Quaternary Alluvium is a valley fill deposit, and therefore, exhibits a wide range of thicknesses (from 98 feet to 780 feet). Driller's logs from wells drilled near the northern Pine Nut Allotments indicate that the Jurassic sedimentary rocks and Tertiary Basalts are relatively thick.

The BIA and the USDA Natural Resources Conservation Service recently completed a soils study for an area of the Pine Nut Mountains that included the study area for the Pine Nut Allotments. This data was utilized to analyze development suitability for those 80 allotments that were determined to have development capability in the Land Use Suitability Analysis report. Appendix A of that report contains the detailed soils suitability analysis. Overall, this data showed that the soil suitability for construction of buildings and for subsurface sewage disposal or construction of sewage lagoons is generally poor on these allotments. Not one allotment had an overall rating of "good" for either category of sewage disposal. These suitability categories are primary concerns to a developer in rural areas as poor soils increases construction costs, particularly when rock excavation is required and when sewage treatment plants are necessary.

Existing Land Use

Existing land use is primarily public and private forest and range lands. What development exists is concentrated along Pine Nut Creek and the US 395 corridor.

The vast majority of the Pine Nut Allotments are undeveloped. What housing exists is scattered along the US 395 corridor. The only residential development is Pine View Estates, which is located adjacent to US 395 approximately 7 miles southeast of Gardnerville at Cedar Flat. The development includes approximately 200 single-family homes.



Pine View Estates

Commercial development occurs mainly along US 395 in the communities of Minden, Gardnerville and Dresslerville. The Holbrook Junction area offers the only commercial facilities along Hwy 395 through the Pine Nut Mountains, along with the lodge and other services at Topaz Lake.

Some of the Pine Nut Allotments are under commercial leases for livestock grazing purposes. In the upper elevations, allotment owners also harvest pine nuts commercially. Also, the use of off-road vehicles for recreation is popular in this area. Because very few of the Pine Nut Allotments are fenced or have been surveyed, trespass is an ongoing problem, especially with those with off-

road vehicles and with some pine nut harvesters. The general public does not always know where the boundaries are for public land, Indian lands, and other private lands.

Water Resources

The most significant surface water feature in the Carson Valley is the Carson River, which flows northward through the central part of the valley. The Carson River drains several ephemeral drainages originating in the Sierra Nevada and Pine Nut Mountains, and is a major source of irrigation water.

Groundwater in the Carson Valley flows from the margins of the valley towards the Carson River in the center of the valley, and then northward along the Carson River. The US Geological Survey identifies three water-bearing units in the Carson Valley:

- Unconsolidated Alluvium – Primary aquifer in the Carson Valley, with a groundwater yield sufficiently high to support irrigation, municipal and domestic demands; depth to groundwater ranges from 5 feet below ground surface near the Carson River to greater than 100 feet at the margins of the valley.
- Tertiary Sediments – Include clays with interbedded discontinuous sand and gravel lenses; supplies water primarily for domestic purposes.
- Bedrock – Fractured zones in the volcanic and sedimentary rock supply water primarily for domestic purposes.

Water resources investigations show that aquifers exist at various elevations in the area of the north allotments and northeast allotments. The shallow aquifer supplies most of the development in that area. However, this aquifer appears not to be fully recharging, and as a result, long-term supply will probably need to come from a deeper aquifer. Well yields also vary in the area.

Groundwater is available in the southern area (southeast of Minden/Gardnerville urban area along the US 395 corridor), but primarily to the west of the highway in basalt deposits. Aquifers occur at various elevations, some of which are as deep as 1600 feet.

Groundwater quality results from a single well located near the northern Pine Nut Allotments indicate that groundwater chemistry in the well meets drinking water standards established by the Environmental Protection Agency (EPA) [i.e., Maximum Contaminant Levels (MCLs) and Secondary Standards]. Because the groundwater quality results in the northern Pine Nut Allotments are from a single well, definitive conclusions about groundwater quality cannot be made.

Groundwater quality results from other parts of the Carson Valley (e.g., near the southern Pine Nut Allotments) indicate that arsenic, sulfate, manganese and dissolved iron exceed either EPA MCLs or Secondary Standards; therefore, groundwater quality in the vicinity of the northern Pine Nut Allotments should be tested, and possibly treated, prior to groundwater development.

Groundwater quality results from five wells in the vicinity of the southern Pine Nut Allotments indicate that three of the five groundwater quality results are from groundwater samples collected at wells on the southern Pine Nut Allotments (i.e., Buffalo Run, Buffalo Run#1, and Pinion Point). The groundwater chemistry results indicate that:

- Nitrates were detected in four of five groundwater samples collected in the vicinity of the southern Pine Nut Allotments. Nitrates in groundwater are commonly due to septic effluent and fertilizers (e.g., Kehew, et al., 2001). Nitrate concentrations are below Environmental Protection Agency (EPA) Maximum Contaminant Levels (MCLs) for drinking water, which are legally enforceable drinking water standards for public water supply systems.
- Arsenic was detected in four of five Carson Valley groundwater samples collected in the vicinity of the southern Pine Nut Allotments. In one groundwater sample (Pinion Point), located on the southern Pine Nut Allotments, the arsenic concentration exceeded EPA MCLs.
- Sulfate, dissolved iron, and manganese exceeded EPA National Secondary Drinking Water Standards (EPA, 2003) at one or more sample locations. EPA secondary standards are guidelines for contaminants that, when exceeded, may cause deleterious cosmetic effects (e.g., skin or tooth discoloration).

Groundwater chemistry results in the vicinity of the southern Pine Nut Allotments do not prohibit development of the groundwater resource. However, treatment may be required prior to use of groundwater for potable water use.

Climate

The cold high desert climate of the region is characterized by moderately cold winters and moderate summers. Temperatures range from an average minimum temperature of 22 degrees F. in the winter to an average maximum temperature near 90 degrees F. in summer. Average annual precipitation is 9.4 to 11.8 inches in Carson City and 8.3 inches in Minden. Annual average snowfall is 19.4 to 22.2 inches in Carson City and 18.3 inches in Minden.

Air Quality

Douglas County and therefore the plan area are in an attainment area, i.e. in attainment with EPA pollutant concentrations for lead, ozone, sulfur dioxide, oxides of nitrogen, carbon monoxide, and PM₁₀ established by the EPA and adopted by the State of Nevada. Air quality data for some pollutants are obtained at two monitoring sites, one in Carson City (carbon monoxide and particulate matter) and one in Gardnerville (particulate matter).

Natural Resources

Wildlife

Common wildlife species in the area include Jackrabbits (*Lepus* sp.), coyote (*Canis Latrans*), mule deer (*Odocoileus hemoinus*), Black Bear (*Ursidae* sp.), mountain lion (*Feix concolor*), skunks (*Mephitis, mephitis and/or Spilogale putorius*), red-tailed hawk (*Buteo jamaicensis*) and a variety of rodents and non-game birds. The project area is part of the mule deer habitat which ranges throughout the Pine Nut and Carson Ranges. The US 395 corridor allotment area is also in the migration route for the mule deer population as they move seasonally from the Sierra Mountains to the Pine Nut mountains.

Threatened and Endangered Species

The U.S. Fish and Wildlife Service and the Nevada Department of Wildlife list 37 threatened or endangered species (28 animals and 9 plants) in Nevada, 5 of which (3 animals and 2 plants) are listed for Douglas County. These are:

- Threatened species: Bald eagle (proposed for delisting); Lahontan cutthroat trout
- Candidate species: Mountain yellow-legged frog; Webber's ivesia; and Tahoe yellowcress

In addition, the Carson wandering skipper is an endangered species found in the Carson City rural area.

Vegetation

Vegetation varies widely throughout the Pine Nut Allotments and surrounding area. Major vegetation types include:

- Pinon Pine
- Juniper
- Mountain Mahogany
- Big Sage
- Mormon Tea
- Rabbit Brush
- Bitter Brush
- Other Minor Species (sagebrush, cheat grass, blue grass, greasewood)

Higher elevations are predominantly forested with Pinon Pine and Juniper, and the lower lying areas are predominantly sagebrush and cheat grass.

Cultural Resources

The cultural resources of the Pine Nut Allotments have not yet been surveyed and mapped. The BIA reports that the area is rich in archaeological and cultural resources. As a result, for any

proposed lease, an archaeological survey will be required along with any appropriate mitigation measures.

Socioeconomic Conditions

Population

Population in the three parts of Western Nevada that comprise the planning region is shown in Table 1.

Table 1 Population Growth in Western Nevada, 1980 - 2006					
	1980	1990	2000	2006	%Δ 1980-2006
Douglas County	19,921	27,637	41,259	45,909	130.5%
Carson City	32,022	40,443	52,457	55,289	72.7%
Washoe County	193,623	254,667	339,486	396,428	104.7%
Total	311,043	324,737	435,202	499,632	60.6%

Source: US Census Bureau, Decennial Census Counts and Estimated Count for 2006

The 2006 U.S. Census data shows that of the three areas, Douglas County has been experiencing the highest growth rates, with an increase of 130.5% from April 1, 1980 to July 1, 2006. Carson City grew by a little over one-half that rate, at 72.7%, while Washoe County increased by 104.7%.

In numerical terms, Douglas County population grew from 19,920 to 45,909, an increase of 25,988 people; Carson City grew from 32,022 to 55,289, an increase of 23,267 people, nearly the same amount as Douglas County. However, Washoe County population grew from 193,623 to 396,428, an increase of 202,808 people, or almost 8 times the growth in Douglas County.

Economy

Data published by the Nevada Department of Employment, Training, and Rehabilitation indicate that the leisure and hospitality industry, primarily gaming, is the largest employer in Douglas County. Most of this sector is located at Lake Tahoe rather than in the valley; however, the valley is reported to be a major residential location for gaming-industry workers because of the lack of available housing and the high prices of land and houses at the lake. Several of the casinos have their own shuttles that pick up employees in the valley and take them to work at their facilities at the lake. For that reason, the gaming industry at Lake Tahoe and other areas in the region add to the demand for residential housing in the Carson Valley.

Trade, transportation and utilities sector, the second largest employer, is growing, gaining 11.7% employment from 2003 to the 1st Quarter of 2007. In part, this reflects the growth of the retail trade industry in response to the increased population in the county.

Manufacturing appears to be relatively healthy, with an increase in employment of 6.8% between 2003 and the 1st Quarter of 2007. However, the Carson Valley has relatively few manufacturing employers and the number of workers reflects only about 8.4% of all employment, compared to a national average of about 9.8%. Diversifying the economic base and recruiting more higher wage manufacturing industries is a goal of regional economic development efforts.

The professional and business services sector has also shown strong growth, increasing by 24.1% over the period. This is the fastest-growing sector in the U.S. economy and the data show that Douglas County is participating in that growth.

Education and health services showed the strongest growth, increasing by 43.3%. This sector also pays the highest annual mean wage in Douglas County at \$42,853 according to the latest data available. It represented 5.4% of total employment in the county in the 1st Quarter of 2007.

Transportation

US Highway 395 is the major north-south link to urban centers to the north, traversing the southern portion of the allotments north to Gardnerville, Minden, Carson City, and Reno. State Route 3 joins US Highway 395 at Holbrook Junction. Other access to the allotments is provided by Leviathan Mine Road which extends west from US 395 into the southwestern portion of the allotments; Pine Nut Road which extends east from US 395 just north of Dresslerville into the central portion of the allotments; and the “Sunrise Route” which extends east from the highway just north of the Douglas-Tahoe Airport into the northern portion of the allotments. Most of the other roads in the area are unimproved dirt roads or trails suitable for trucks and/or four-wheel-drive vehicles only.

Bus and truck (shipping) service is provided along US 395. Rail and major air service are available at Reno, 50 miles north of the allotments. Local flights are available at the Carson Municipal Airport, about 20 miles north of the allotments and the Douglas-Tahoe Airport, just north of Minden provides service for private flights only.

Utilities and Community Services

Elementary students attend various Carson Valley schools, and all middle and high school students attend Carson Valley Middle School and Douglas High School, respectively.

In the US 395 area, power and communications facilities are in place along US 395. With the exception of the community water system, the sewage collection system, and treatment plant serving the Pine View Estates, there are currently no community water or sewer systems in the planning area. Sewage disposal is provided by individual sewage, on-site disposal systems. Domestic water is provided by individual wells.

Solid waste collection and disposal services are provided by Douglas Disposal, Inc., which owns and operates a transfer station west of Highway 395, south of Gardnerville, and south of Pinenut Road. Waste is received at the station either by collection trucks or by local residents and then transported to the Lockwood Landfill in Storey County, which is owned and operated by Reno Refuse, Inc. Currently there are no operating landfills in Douglas County.

Fire protection and emergency services are provided by the East Fork Fire and Paramedic District. The District is one of three fire protection districts in Douglas County and serves approximately 600 square miles. The district supports 13 fire stations, 8 of which are all volunteer. The District provides structural firefighting, emergency medical services, wildland firefighting and operations-based hazardous materials response.

SUMMARY OF HIGHEST AND BEST USE DESIGNATIONS

The Douglas County Land Use and Transportation Plan shows that virtually all of the allotments are located on land classified as forest and range land. This land is owned by the U.S. Government under the jurisdiction of several federal agencies, primarily BIA, BLM, and USDA. It can be observed that none of the allotments directly border areas of urbanization.

In general, the allotments are separated from the urban zoning areas by land that is designated as forest or range land. The zoning map shows that the northern allotments are relatively close to urban development but would still not be classified as “in the path of development”.

Some of the southern Hwy 395 allotments are close or adjacent to areas zoned for residential and limited commercial uses in the vicinity of Holbrook Junction.

Based on the data provided above, it is found that the allotment areas are subject to overall growth influences in Douglas County but do not have specific influences affecting their short-term or near-term development potentials. Development of individual allotments will be in response to opportunities as they arise but cannot be predicted in advance based on development patterns and trends.

Highest and best use land use designations assigned to each area are summarized as follow:

Northern and Northeast Allotments

The two blocks of allotments that comprise the northern allotments area appear to offer the best opportunities for larger scale development, such as residential subdivisions or self-contained communities such as a retirement center, or resort. The allotments are also suitable for multiple lots, but economies of scale in developing infrastructure would support higher densities.

US 395 Allotments

Northwest Transition Area between Pine Nut Mountains and Carson Valley

In this part of the US 395 allotments, several allotments are suitable for single-family residential development or small subdivisions on the flatter parcels for family housing to support workers commuting to jobs in Gardnerville or Minden. Lot sizes are generally in the one-acre to two-acre size range. This area would also support “ranchets” or dude ranches.

Topaz Lake – Holbrook Junction Area

Some of the allotments at the southern end of the Pine Nut Mountains could be developed for horse ranches or other “lifestyle” homesites similar to existing subdivisions. Lot sizes would be in the two-acre to five-acre range. The market is currently soft but the area is expected to grow.

Central Hwy. 395 Allotments

Flatter allotment areas close to Hwy. 395 are suitable for single-family residential development for families that want relative isolation and a rural lifestyle. Commuting is difficult during the winter months, so the area is not suited for family-oriented subdivisions. Lots would be generally in the two-acre size range. Allotments with frontage on Hwy. would also be suitable for light industrial and small commercial developments (mini storage as example).

Allotments East and West of Hwy 395

Beyond the flatter areas, there is essentially no development potential. These areas should be retained for cultural, recreational, or resource uses.

IMPACT ANALYSIS

This impact analysis is based on the results of the Land Use Suitability Analysis and is focused on a maximum development scenario from the Highest and Best Use Land Use Designation report. The main objective of the Land Use Suitability Analysis was to determine which allotments would be suitable for development as well as being attractive to a land developer. This analysis showed that 80 allotments were suitable for development with 58 rated as good suitability, 7 rated as fair, and 15 were rated as marginal. (See Figure 2.) Of the 80 allotments, 26 are located in the North and Northeast allotment areas. The remaining 54 allotments are along the US 395 corridor. In total, these 80 allotments include 12,451 acres of land. This impact analysis is directed to these 80 allotments.

It should be noted that there is no specific proposed project to evaluate. As a result, a detailed impact analysis is not possible. This analysis utilizes assumptions and can only identify general impacts and areas of potential concern. Environmental Assessments that will be required and

conducted at part of the leasing process will identify specific impacts and propose appropriate mitigation measures.

Methodology

In the Land Use Suitability Analysis, various land uses were assessed, including residential, commercial, light industrial, and recreational developments. Of these uses, the “Highest and Best Use” as assessed in the Use Designation report, showed that from a market perspective that rural housing development was overwhelmingly the likely use. At this level of analysis, it is extremely difficult to predict industrial, commercial, or recreational markets for these rural areas. These uses also would not be the prevailing uses.

Overall, in terms of impacts, predominately residential development will likely have the highest impact on land use and demands on infrastructure and public services. As a result, the following methodology was utilized to assess potential impacts based on a maximum residential development scenario.

In order to assess impacts the following methodology was utilized which is predicated on three basic steps in order to determine:

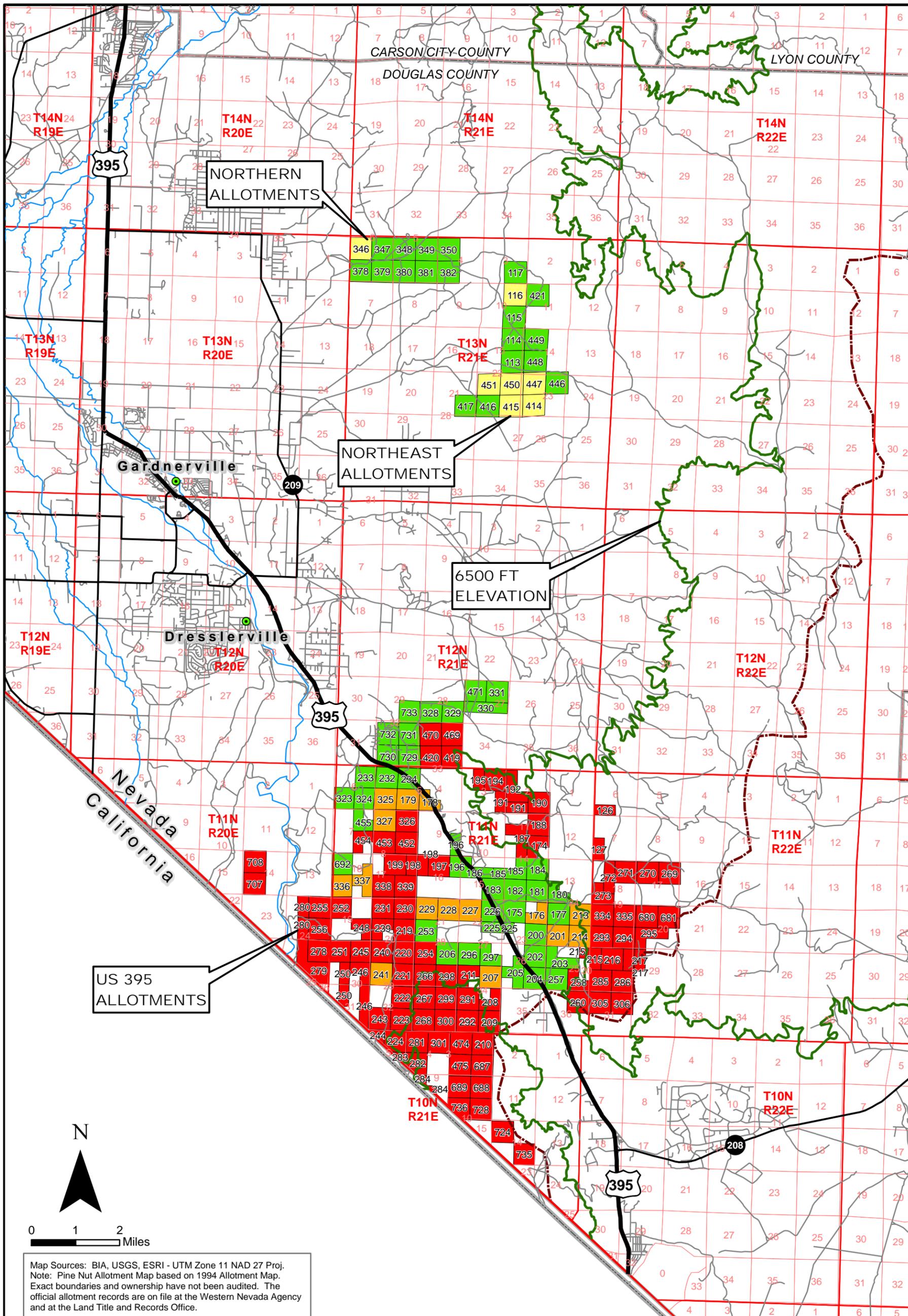
- The amount of net developable acreage
- The number of dwelling units that could be constructed
- The resulting population increase

Determining the amount of net buildable land involved several steps. The first involved reducing the gross acreage by the amount of a 100-foot buffer on the outer edge of each allotment in order to minimize impacts to adjacent allotments. The second step, based on looking at aerial photographs, was to estimate the percentage of developable land base on topography. Steep slopes over 20% are considered non-buildable. The remaining acreage was further reduced by 21% to account for roads and other infrastructure needs. The result is net acreage to support housing.

Based on the findings from the Land Use Suitability Analysis, the highest suitable density was assigned to determine the maximum number of dwelling units. High density was calculated at an average of half-acre lots, medium density at 2-acre lots, and low density at 5-acre lots.

To determine population impacts, the average household size for Douglas County (2.5 persons) was multiplied by the number of housing units. Table 2 below summarizes the development and resulting population data. Figure 2 shows the development potential of each allotment.

Overall, when taking into account the buffer area, unsuitable topography, and infrastructure needs, net acreage was approximately half of the gross acreage. Of 12,451 gross acres, there are approximately 6,148 net acres. This would support approximately 5,400 dwelling units and a resulting population in the order of 13,500, if fully developed for residential uses. (See Table 4 at the end of this report for a detailed breakdown dwelling units and population by allotment.)



Map Sources: BIA, USGS, ESRI - UTM Zone 11 NAD 27 Proj.
 Note: Pine Nut Allotment Map based on 1994 Allotment Map.
 Exact boundaries and ownership have not been audited. The
 official allotment records are on file at the Western Nevada Agency
 and at the Land Title and Records Office.

Figure 2

Development Suitability

Pine Nut Allotments, Douglas County, Nevada

Map Prepared by Cascade Design Professionals, Inc., Jan. 2009

Legend

- 6500 Ft. El.
- Local Road
- Carson River Watershed Boundary
- 50 Meter Contours
- Development Suitability**
- Good
- Fair
- Marginal
- Not Developable

Table 2 Developable Area, Housing Units, & Population					
Area	No. of Allotments	Gross Acres	Net Acres	Dwelling Units	Population
North	10	1582	1044	1469	3673
Northeast	16	2560	1707	1962	4905
US 395 Corridor	54	8309	3397	1976	4940
Total	80	12451	6148	5407	13518

Land Resources

Topography

Minor modifications of the topography will occur as a result of regrading for roads and driveways, parking areas, building pads, septic tank and drainfields or other wastewater treatment facilities, and water storage reservoirs. It is estimated that approximately 2900 acres would be disturbed and re-graded for the construction of roads, housing, septic tanks and drainfields, and other types of public facilities.

Mitigation is required to prevent erosion and sedimentation.

Soils

Minor disturbances to native soils will occur as a result of regrading for roads and driveways, parking areas, building pads, wastewater treatment facilities, septic tanks and drainfields, and water storage reservoirs. It is estimated that approximately 2,900 acres would be disturbed. Some soils may be removed and some minor amounts may be imported for septic drain fields or wastewater lagoons.

Mitigation is required.

Water Resources

Any type of development will need to rely on groundwater sources for potable water and to provide water for fire flows. It is expected that groundwater resources would be impacted by additional development. In the area of the North and Northeast Allotments, groundwater for rural residential development is generally being supplied by shallow aquifers that are not being recharged. Additional development will most likely require tapping and potentially depleting deeper aquifers. Long-term sustainability may not be possible.

In the US 395 corridor, aquifers vary in depth and in size. Aquifer recharge is also an issue in this area as well and long-term sustainability is also unknown. As a result, of the uncertainty of long-term sustainability of groundwater sources, the BIA Master Lease will require that this issue be disclosed in all sub-lease agreements.

As shown in Table 3, average daily water consumption for all three allotment areas would be in excess of 12 million gallons per day. On an annual basis, this would amount to more than 2,400 acre-feet of groundwater consumption.

Area	Projected Number of Dwelling Units	Average Gallons per Day per Dwelling Unit	Total Gallons per Day	Cubic Feet per Day	Acre-feet per Day
North	1469	400	587,600		
Northeast	1962	400	784,800		
US 395 Corridor	1976	400	790,400		
Total			12,162,800	289,123	6.64

Climate

This study did not find any significant impacts on the climate. Although additional traffic may increase carbon dioxide levels in the air, adding to greenhouse gases, the overall impact should be negligible.

No mitigation is required.

Air Quality

During clearing and grubbing for any development, particulates in the form of dust will be generated. This will be for a short period of time and will require mitigation

The use of wood stoves in homes and other building can also create air quality problems. Mitigation will be required.

Should some type of industrial or commercial use be proposed that produces airborne emissions, the Environmental Assessment required for that development application will be required to identify appropriate mitigation measures necessary to meet federal air quality standards.

Increased development and population growth will generate more traffic that will result in additional pollution. However, this will occur within the region no matter where additional development is located. The amount of pollution is not expected to be significant. No mitigation is required.

Natural Resources

Wildlife

In general, the overall density of development will be low enough not to significantly impact wildlife migration routes, particularly the mule deer. There will be sufficient space available for migratory or feeding patterns to shift in order to avoid development areas. Much of the wildlife habitat is found above elevations where development should occur, or in terrain unsuitable for development.

Threatened or Endangered Species

The Bald eagle and the Lahontan cutthroat trout threatened species found in Douglas County. The Lahontan cutthroat trout will not be impacted as there are no year-round flowing streams or rivers on the allotments. Development in the North and Northeast Allotments should not impact the Bald eagle as there is minimal nesting or habitat area in these locations. Development along US 395 will have some impact, but it should be minimal as the better nesting areas are in higher elevations where there is more forest vegetation and there is little potential for development.

As species mapping was not included in this study, any specific potential impact to three candidate species found in Douglas County is unknown. These are the Mountain yellow-legged frog, Webber's ivesia, and Tahoe Yellowcress.

Impacts to these species will be required to be documented in any individual development's environmental assessment process, and mitigation may be required.

Vegetation and Habitat

It is estimated that approximately 2,900 acres (Table 4) of vegetation and habitat area will be disturbed as a short-term impact resulting from construction activities. Most of this land would be classified as rangeland. Over the long term, it is estimated that approximately a third of these acres will be re-seeded or replanted as part of landscaping on the part of homeowners, so the overall loss of vegetation and habitat will be approximately 2,000 acres. This amounts to 16% of the total acreage of the 80 allotments that were determined to be developable or about 9% of the total acreage of all 176 allotments included in the overall study. Although this is a significant amount of acreage, this type of vegetation and habitat loss will result anywhere in Douglas County where urbanization or rural residential development occurs. Mitigation will be required.

Invasive cheat grass infestations may be negatively impacted by development, which is a positive outcome for the overall health of the local vegetation.

Pine nut harvesting is generally done above elevations suitable for development, thus there will be little to no negative impact to Pinon pine areas.

Cultural Resources

Because the area is known to be rich in artifacts, it is anticipated that various cultural resources will be found. The extent and locations are unknown and will not be known until cultural resource surveys are undertaken as part of the environmental assessment process that will be required for any development requiring a lease.

Cultural resources are highly sensitive and would be impacted negatively by any development, and if found, mitigation measures will be required.

Land Use

It is estimated that approximately 2,900 acres of rangeland would be converted to rural residential use. This will certainly change the character of the North and Northeast Allotments which is currently undeveloped. Likewise, along the US 395 corridor, rural residential development will change the natural character of most of this area. Additional residential use will impact traffic, public services, and other areas as noted in other sections of this document.

Housing developments adjacent to grazing lands may not be the most compatible of uses, particularly in open range areas and may restrict livestock management activities.

As with any developing residential areas, small commercial nodes may develop. These could be neighborhood or highway related retail and service activities. This type of development is likely to be minimal.

Quarry rock may be available as an economic resource in some areas. If any mining and extraction, activities are proposed, the environmental assessments due at the time of development will clarify potential impacts and propose appropriate mitigation measures.

Many allotments may be suitable for recreational uses. Dude ranches, guided backpacking and horse camping, and other outdoor recreational uses are possibilities.

Socioeconomic Conditions

Population for Douglas County is estimated at 54,000 for the year 2007. The planning population projected for the year 2030 is 83,500. This is approximately a 2% growth rate per year and is largely based on the limitation placed on the number of building permits that the County will issue annually. This forecast represents an increase of 29,500 people.

Based on the number of residential units that could be placed on developable allotments, it is estimated that the resulting population would be approximately 13,500 people, which would be 46% of the projected county growth and would represent 25% of the overall county projected population for 2030.

Demographic trends in Douglas County are expected to remain fairly constant as the area is likely to remain attractive as a retirement area. No mitigation is proposed for population growth.

Impacts to the local economy are difficult to predict, but should be positive. Jobs will be created during construction and allotment owners will receive income from their land. In addition, new residents will utilize existing businesses in the Mindon/Gardnerville urban area and Topaz for goods and services. No mitigation is proposed for employment and income.

Transportation

Traffic impacts are likely to be fairly major. Trips generated per dwelling unit can vary depending on a number of variables, including household size, age of the occupants, and household income. In general, the more people living in the dwelling unit the more trips are generated. Also, higher income households generate more trips than lower income households. Age is also important in that elderly and retired people do not generate as many trips as there are no work or school destination trips and household size is generally smaller.

Overall, a general rule of thumb is that each single family dwelling unit will generate approximately 10 trips per day. (Each trip has an origin and a destination, so a trip to the store and back counts as two trips—home to store and store to home.) However, because of the demographics of Douglas County, an assumption of 8 trips per day is assumed for each dwelling unit. This is based on census data that shows that the number of persons per dwelling unit in the county is only 2.5, which is a relatively low average. This is likely the result of the fact that Douglas County has been an attractive area for retirees over the past decade; and therefore, the average family size is lower. Since it is anticipated this trend will continue, a lower trip generation rate was applied, which also accounts for internal trips that do not reach the highway or other major roads.

Even at 8 trips per dwelling unit, the number of trips generated is significant. The north allotments could generate as many as 11,800 new trips, the northeast allotments approximately 15,700 trips, and the US 395 corridor approximately 15,800 trips. These volumes will have a noticeable impact on the road system as congestion increases. A measure of congestion is Level of Service which Ranges from A to F. The 2000 Highway Capacity Manual defines these for roadways as:

- A Free flow
- B Free flow, presence of other vehicles is noticeable
- C Ability to maneuver and sect operating speed is affected
- D Unstable flow, speeds and ability to maneuver are restricted
- E At or near capacity, flow is quite unstable
- F Forced flow, breakdown (commonly called gridlock)

Level of Service is also applied to signalized and unsignalized intersections. Again, these levels go from little or no delay to gridlock with long delays. Generally, it is desirable to plan for C levels or better, but it is not uncommon for communities to have to settle for D or sometimes E Levels of Service because of physical constraints or cost constraints.

For the north allotments, most of the generated traffic will likely impact Johnson Lane. Current traffic counts on Johnson Lane at US 395 and east of Vicky Lane are 10,300 and 4,700, respectively. Johnson Lane is designated as a collector road in the County's 2007 Transportation Plan. It is currently a 2-lane road operating at a B Level of Service at US 395 and at an A level east of Vicky Lane. Potential traffic generated from the allotments would degrade the level of service to a D level with an F level at US 395. The County plan, however, shows Johnson Lane being upgraded to a 4-lane collector. As a result, the additional trips generated would only degrade the level of service to a B level at US 395. However, this does not take into account other additional development in that area. Most likely, levels of service will be degraded to C and D levels over the long term.

Access to the northeast allotments is less defined, so increased traffic impacts are difficult to predict. Johnson Lane will probably be impacted by the northern most allotments in the group which will contribute to further degrading of service levels on this collector. Impacts to roads to the west and southwest will not be known until the road system in this area becomes more defined. To some degree, traffic will likely disperse to different collector roads.

Along the US 395 corridor, almost all of the traffic generated by any new development will find its way to US 395 south of Dresslerville. The only exceptions are a few allotments on the north border (northeast of US 395) that will likely be accessed by other roads coming out of the Dresslerville area. The addition of 15,000 plus trips on US 395 between Dresslerville and Topaz Lake will have a major impact as most of these trips will be northbound as opposed to southbound. The Nevada Department of Transportation reports that in 2007 the Average Annual Daily Traffic on US 392 at Dresslerville (Palomino Drive) was 9,000. North of the SR 208 (north of Topaz Lake), the count was 6,700. It is assumed that the average of these two counts, of approximately 7,850 trips could be applied to the corridor running through the US 395 allotments. The addition of 14,000-15,000 additional trips per day would degrade the level of service from the current A level to a D level.

Utilities and Community Services

Public Water and Sewerage Systems

There will be no impact to existing public water and sewerage systems as none are anticipated to be extended to serve the allotments. No mitigation is required.

Solid Waste Collection

The potential for 5,400 additional dwelling units will produce a significant amount of solid waste. However, any population growth in the County will produce similar impacts no matter where it is located. Provisions for the collection and disposal of solid waste will be a requirement of any lease.

Power

The extension of electrical service is not anticipated to be a problem and would have little environmental impact. No mitigation is required.

Communications

The extension of telephone service is not anticipated to be a problem and would have little environmental impact. No mitigation is required.

Emergency Services

The potential addition of 13,000 people will have a major impact on law enforcement, fire, and emergency medical services. On trust lands, the BIA has responsibility for law enforcement and fire suppression. However, the BIA Western Nevada Agency does not have the capacity to provide adequate law enforcement (24 hours a day; 7 days a week) and cannot provide immediate response to structure fires. BIA is not responsible for providing emergency medical services. Mitigation measures to ensure provision of these services will be required.

Schools

Population growth anywhere in the county will impact the Carson Valley School District. These impacts are usually mitigated to some degree by increases in taxes that result from new development and population. Since trust lands are not subject to real property taxation, funding for schools has come via personal property tax. It is reported that the school district is not pleased with this arrangement, and additional mitigation may be required.

MITIGATION MEASURES

Mitigation measures are discussed in the following for those areas where mitigation is required.

Land Resources

Topography

Where major excavations are required for roads and homesites, finish grading will be required to reduce the potential for erosion. Requirements will be included in the Development Standards.

Soils

Where excavation occurs, top soil will need to be stored and then replaced on completion of construction.

Water Resources

Because of the uncertainty of groundwater supply in the future, wells will be required to be tested every 3 years (or more often if need be) for yield, drawdown, and depth to static water level in order to ensure adequate supply, particularly for fire protection. In addition, water shall be tested annually for quality to ensure public safety. Groundwater can then be monitored, and appropriate measures can be taken if supply or water quality problems are documented. Test results are to be submitted to the Superintendent of the BIA Western Nevada Agency.

Air Quality

Clearing and grubbing activities during dry weather will generate dust. Regular watering of exposed soil will be required. Any areas disturbed that are not developed within 30 days will require the application of an approved dust palliative. Areas not developed within a 90 day period will require reseeding with an approved seeding mix of native plants. On completion of improvements, landscaping and or replanting and reseeding of native plants will be required as specified in the Development Standards.

If wood stoves are installed in homes or other building; they must be EPA approved in order to reduce emissions.

Should some type of industrial or commercial use be proposed that produces airborne emissions, the Environmental Assessment prepared for that development application will be required to propose appropriate mitigation measures in order to meet applicable air quality standards.

Natural Resources

Wildlife

There will be temporary loss of habitat during construction and permanent loss of habitat where permanent development occurs. If grubbing and grading is conducted during breeding or nesting seasons, a qualified biologist will be required to survey the area prior to clearing and grubbing. Nesting areas will be delineated, and a buffer area will be established, so the area can be avoided.

Threatened and Endangered Species

If any threatened or endangered species are found to be impacted, mitigations will be required. Mitigation measures will be proposed in the environmental assessment required for each lease.

Vegetation

There will be both temporary and permanent loss of vegetation. After improvements are completed, disturbed pervious areas will be reseeded with an approved seed mixture of native plants. Landscaping will also help lessen any impacts.

Cultural Resources

A cultural resources survey will be required as part of the environmental assessment process for each development application. If cultural resources are found, appropriate mitigation measures will be included the Environmental Assessments.

Land Use

Since allotment owners have the right to develop their land, the conversion of natural environment to rural and urban uses will occur, although to what extent is unknown. To protect neighboring allotments, a 100-foot buffer of non-developable area will be required around the perimeter of each allotment. The Environmental Assessment process for any development will also identify any incompatible land use issues that would require mitigation

Transportation

Traffic impacts potentially could be severe, and each development application will require a traffic study to determine appropriate mitigation measures. To access US 395 will require an encroachment permit from the Nevada Department of Transportation (NDOT). NDOT will determine which mitigation actions are warranted. These could include additional traffic lanes, turn lanes, and/or signalization. There will be a similar procedure for accessing roads owned by the county or other jurisdictions.

Many of the allotments have existing dirt roads, most unimproved, that provide access. Many allotments have no access roads. In order to ensure that development does not preclude access to a neighboring allotment, the development standards will require that access cannot be blocked or denied to neighboring or contiguous allotments.

Utilities and Community Services

Emergency Services

Since the BIA Western Nevada Agency does not have the capacity to provide adequate law enforcement and fire protection services on trust lands, provision of these services will need to be negotiated by developers to ensure that these developments will be served by existing agencies and special districts. Law enforcement will require contracting with Douglas County, and fire and emergency medical services will need to be contracted with the East Fork Fire and Paramedic District. Fire protection services are particularly important as this will affect the ability to insure developments for fire damage.

Solid Waste Collection

The provision for solid waste collection and disposal will be a requirement of any lease. This will most likely require contracting with a local collection service.

CUMULATIVE EFFECTS

Overall, based on the development scenario present, the major cumulative effect would be the change in character of the landscape in specific areas from undeveloped, unspoiled natural areas to rural and suburban densities of residential uses. Clearly the most significant changes would be the conversion of land use and the increase in traffic that it will generate. This will be particularly true in the North and Northeast Allotment areas where there is no development other than a few earth roads. These two areas include about 4,200 acres. Both areas are composed of contiguous allotments. Thus the change in land use would be very pronounced.

The US 395 corridor allotments that are developable will impact the character of the highway as most of these allotments area either adjacent to the highway or nearby. Outside of this corridor, there would be little impact.

**Table 4
LAND USE ASSESSMENT MATRIX**

ALLOTMENT DATA					Developable (yes/no)	HIGHEST & BEST USE							DEVELOPABLE AREA				HOUSING UNITS & POPULATION						DISTURB.
Allotment No.	Size (acres)	Location	No. of Owners	Current Land Use		Commercial Residential			Commercial Investment			Comm. Rec.	Size Less Buffer (acres)	% Developable	Gross area developable	Net Developable Acres	0.5 AC lot size	1.0 AC	2.0 AC lot size	5.0 AC lot size	Housing Units	Population @ 2.5 Persons/Household	AREA
					High Density (subdivision)	Medium Density	Low Density (rural)	Highway Retail	Neighborhood Services	Light Industrial	Destination	Net Disturbed Area											
346	148.80	North	10	Undev.	Yes	No	No	M	No	No	No	M	128	70%	90	71	142	71	35	14	14	35	24
347	161.30	North	10	Undev.	Yes	M	Yes	Yes	No	M	No	Yes	139	100%	139	110	219	110	55	22	55	138	46
348	161.45	North	10	Undev.	Yes	Yes	Yes	Yes	No	M	No	Yes	139	100%	139	110	219	110	55	22	219	548	73
349	160.93	North	10	Undev.	Yes	Yes	Yes	Yes	No	M	No	Yes	138	100%	138	109	219	109	55	22	219	548	73
350	160.72	North	10	Undev.	Yes	M	Yes	Yes	No	M	No	Yes	138	100%	138	109	218	109	55	22	55	138	45
378	148.80	North	24	Undev.	Yes	Yes	Yes	Yes	No	M	No	Yes	128	100%	128	101	202	101	51	20	202	505	67
379	160.00	North	24	Undev.	Yes	Yes	Yes	Yes	No	M	No	Yes	138	100%	138	109	217	109	54	22	217	543	72
380	160.00	North	24	Undev.	Yes	Yes	Yes	Yes	No	M	No	Yes	138	100%	138	109	217	109	54	22	217	543	72
381	160.00	North	24	Undev.	Yes	Yes	Yes	Yes	No	M	No	Yes	138	100%	138	109	217	109	54	22	217	543	72
382	160.00	North	15	Undev.	Yes	M	Yes	Yes	No	M	No	Yes	138	100%	138	109	217	109	54	22	54	135	45
	1582.00	North Allotments											1361		1322	1044	2089	1044	522	209	1469	3673	590
117	160.00	NE	13	Undev.	Yes	Yes	Yes	Yes	No	M	No	Yes	138	100%	138	109	217	109	54	22	217	543	72
116	160.00	NE	27	Undev.	Yes	M	Yes	Yes	No	M	No	Yes	138	100%	138	109	217	109	54	22	54	135	45
421	160.00	NE	15	Undev.	Yes	M	Yes	Yes	No	M	No	Yes	138	100%	138	109	217	109	54	22	54	135	45
115	160.00	NE	27	Undev.	Yes	Yes	Yes	Yes	No	M	No	Yes	138	100%	138	109	217	109	54	22	217	543	72
114	160.00	NE	27	Undev.	Yes	Yes	Yes	Yes	No	M	No	Yes	138	100%	138	109	217	109	54	22	217	543	72
449	160.00	NE	38	Undev.	Yes	Yes	Yes	Yes	No	M	No	Yes	138	100%	138	109	217	109	54	22	217	543	72
113	160.00	NE	27	Undev.	Yes	M	Yes	Yes	No	M	No	Yes	138	100%	138	109	217	109	54	22	54	135	45
448	160.00	NE	38	Undev.	Yes	Yes	Yes	Yes	No	M	No	Yes	138	100%	138	109	217	109	54	22	217	543	72
451	160.00	NE	14	Undev.	Yes	M	Yes	Yes	No	M	No	Yes	138	95%	131	103	207	103	52	21	52	130	43
450	160.00	NE	24	Undev.	Yes	No	M	Yes	No	No	No	M	138	90%	124	98	196	98	49	20	20	50	33
447	160.00	NE	2	Undev.	Yes	M	Yes	Yes	No	M	No	Yes	138	95%	131	103	207	103	52	21	52	130	43
446	160.00	NE	2	Undev.	Yes	Yes	Yes	Yes	No	M	No	Yes	138	100%	138	109	217	109	54	22	217	543	72
417	160.00	NE	26	Undev.	Yes	Yes	Yes	Yes	No	M	No	Yes	138	100%	138	109	217	109	54	22	217	543	72
416	160.00	NE	2	Undev.	Yes	M	Yes	Yes	No	M	No	Yes	138	100%	138	109	217	109	54	22	54	135	45
415	160.00	NE	1	Undev.	Yes	M	Yes	Yes	No	M	No	Yes	138	100%	138	109	217	109	54	22	54	135	45
414	160.00	NE	1	Undev.	Yes	M	Yes	Yes	No	M	No	Yes	138	90%	124	98	196	98	49	20	49	123	41
	2560.00	Northeast Allotments											2512		2160	1707	3413	1707	853	341	1962	4905	892
471	160.00	US 395	145	Undev.	Yes	Yes	Yes	Yes	No	No	No	No	138	100%	138	109	217	109	54	22	217	543	72
331	160.00	US 395	48	Undev.	Yes	M	M	Yes	No	No	No	No	138	80%	110	87	174	87	43	17	17	43	29
733	160.00	US 395	35	Undev.	Yes	M	Yes	Yes	No	No	No	No	138	100%	138	109	217	109	54	22	54	135	45
328	160.00	US 395	5	Undev.	Yes	No	No	M	No	No	No	No	138	75%	103	82	163	82	41	16	16	40	27
329	160.00	US 395	41	Undev.	Yes	No	M	Yes	No	No	No	No	138	80%	110	87	174	87	43	17	17	43	29
330	160.00	US 395	46	Undev.	Yes	No	M	M	No	No	No	No	138	90%	124	98	196	98	49	20	20	50	31

**Table 4
LAND USE ASSESSMENT MATRIX**

ALLOTMENT DATA					Developable (yes/no)	HIGHEST & BEST USE							DEVELOPABLE AREA				HOUSING UNITS & POPULATION						DISTURB.
Allotment No.	Size (acres)	Location	No. of Owners	Current Land Use		Commercial Residential			Commercial Investment			Comm. Rec.	Size Less Buffer (acres)	% Developable	Gross area developable	Net Developable Acres	0.5 AC lot size	1.0 AC	2.0 AC lot size	5.0 AC lot size	Housing Units	Population @ 2.5 Persons/Household	AREA
					High Density (subdivision)	Medium Density	Low Density (rural)	Highway Retail	Neighborhood Services	Light Industrial	Destination	Net Disturbed Area											
732	160.00	US 395	4	Subdiv.	Yes	M	Yes	Yes	No	No	No	No	138	80%	110	87	174	87	43	17	43	108	36
731	160.00	US 395	24	Homes	Yes	M	Yes	Yes	No	No	No	No	138	90%	124	98	196	98	49	20	49	123	41
730	160.00	US 395	14	Homes	Yes	M	Yes	Yes	Yes	Yes	M	M	138	80%	110	87	174	87	43	17	43	108	36
729	162.50	US 395	26	Homes	Yes	M	Yes	Yes	Yes	Yes	M	M	140	90%	126	99	199	99	50	20	50	125	41
233	161.08	US 395	7	Undev.	Yes	M	Yes	Yes	No	M	No	M	139	50%	69	55	109	55	27	11	27	68	23
232	161.43	US 395	1	Undev.	Yes	M	M	Yes	M	M	No	No	139	50%	69	55	110	55	27	11	11	28	18
234	98.10	US 395	2	Subdiv.	Yes	Yes	Yes	Yes	M	M	No	No	84	45%	38	30	60	30	15	6	60	150	20
323	154.25	US 395	11	Undev.	Yes	No	M	Yes	No	No	No	No	133	75%	99	79	157	79	39	16	16	40	26
324	160.00	US 395	8	homes	Yes	No	M	Yes	No	No	No	No	138	75%	103	82	163	82	41	16	16	40	27
325	160.00	US 395	6	Undev.	Marginal	No	M	Yes	No	No	No	No	138	75%	103	82	163	82	41	16	16	40	27
179	160.00	US 395	79	Undev.	Marginal	No	No	M	No	No	No	No	138	40%	55	43	87	43	22	9	9	23	15
178	120.00	US 395	63	Undev.	Marginal	No	M	Yes	No	No	No	No	103	50%	52	41	82	41	20	8	8	20	14
455	120.00	US 395	10	Undev.	Yes	No	No	Yes	No	No	No	No	103	50%	52	41	82	41	20	8	8	20	14
327	160.00	US 395	7	Undev.	Marginal	No	No	M	No	No	No	No	138	50%	69	54	109	54	27	11	11	28	18
196	160.00	US 395	61	House	Yes	No	M	Yes	Yes	M	No	No	138	75%	103	82	163	82	41	16	16	40	27
692	152.25	US 395	9	Undev.	Yes	No	No	Yes	No	No	No	M	131	50%	65	52	103	52	26	10	10	25	17
337	160.00	US 395	22	Undev.	Marginal	No	No	M	No	No	No	No	138	40%	55	43	87	43	22	9	9	23	15
186	145.47	US 395	7	House	Yes	No	M	Yes	Yes	M	No	No	125	50%	63	49	99	49	25	10	10	25	17
185	160.00	US 395	18	Undev.	Yes	M	Yes	Yes	M	M	No	No	138	50%	69	54	109	54	27	11	27	68	23
184	160.00	US 395	15	Undev.	Yes	No	M	Yes	No	No	No	No	138	50%	69	54	109	54	27	11	11	28	18
336	153.55	US 395	26	Undev.	Marginal	No	No	Yes	No	No	No	M	132	75%	99	78	156	78	39	16	16	40	26
183	160.00	US 395	16	Undev.	Yes	M	Yes	Yes	Yes	Yes	No	No	138	80%	110	87	174	87	43	17	43	108	36
182	160.00	US 395	1	Undev.	Yes	No	M	Yes	No	M	No	No	138	50%	69	54	109	54	27	11	11	28	18
181	160.00	US 395	7	Undev.	Yes	No	M	Yes	No	No	No	No	138	30%	41	33	65	33	16	7	7	18	11
180	120.00	US 395	36	Undev.	Yes	No	M	Yes	No	No	No	No	103	30%	31	24	49	24	12	5	5	13	8
229	160.00	US 395	30	Undev.	Marginal	No	No	M	No	No	No	No	138	20%	28	22	43	22	11	4	4	10	7
228	160.00	US 395	30	Undev.	Marginal	No	No	M	No	No	No	No	138	20%	28	22	43	22	11	4	4	10	7
227	160.00	US 395	134	Undev.	Marginal	No	No	M	No	No	No	No	138	20%	28	22	43	22	11	4	4	10	7
226	160.00	US 395	80	Undev.	Yes	M	Yes	Yes	Yes	Yes	No	No	138	20%	28	22	43	22	11	4	11	28	9
175	160.00	US 395	31	Undev.	Yes	M	Yes	Yes	Yes	Yes	M	No	138	60%	83	65	130	65	33	13	33	83	27
176	120.00	US 395	29	Undev.	Marginal	No	No	M	No	No	No	No	103	50%	52	41	82	41	20	8	8	20	14
177	160.00	US 395	31	Undev.	Yes	No	No	M	No	No	No	No	138	40%	55	43	87	43	22	9	9	23	15
213	160.00	US 395	18	Undev.	Marginal	No	No	M	No	No	No	No	138	30%	41	33	65	33	16	7	7	18	11
253	160.00	US 395	91	Undev.	Yes	M	M	Yes	No	M	No	No	138	50%	69	54	109	54	27	11	11	28	18
225	120.00	US 395	126	House	Yes	Yes	Yes	Yes	Yes	Yes	M	M	103	100%	103	82	163	82	41	16	163	408	54
200	160.00	US 395	28	Undev.	Yes	No	M	Yes	No	No	No	M	138	40%	55	43	87	43	22	9	9	23	15
201	160.00	US 395	5	Undev.	Marginal	No	No	M	No	No	No	No	138	30%	41	33	65	33	16	7	7	18	11
214	160.00	US 395	34	Undev.	Marginal	No	No	M	No	No	No	No	138	30%	41	33	65	33	16	7	7	18	11
206	160.00	US 395	31	Undev.	Yes	M	Yes	Yes	No	M	No	M	138	50%	69	54	109	54	27	11	27	68	23
296	160.00	US 395	18	Undev.	Yes	M	Yes	Yes	No	M	No	M	138	50%	69	54	109	54	27	11	27	68	23

