

**APPENDIX D  
DEVELOPMENT TREND ANALYSIS  
AND  
USE DESIGNATIONS**

PINE NUT ALLOTMENTS  
REVISED USE DESIGNATIONS STATUS REPORT, MAY 1, 2009

---

This report summarizes the findings related to the land use designations of the Pine Nut allotments as of May 1, 2009. These findings were presented verbally at a meeting with BIA staff at the Western Regional Office in Phoenix on May 13, 2009. Some additional materials have been added to this report but the findings are essentially the same as reported at that meeting.

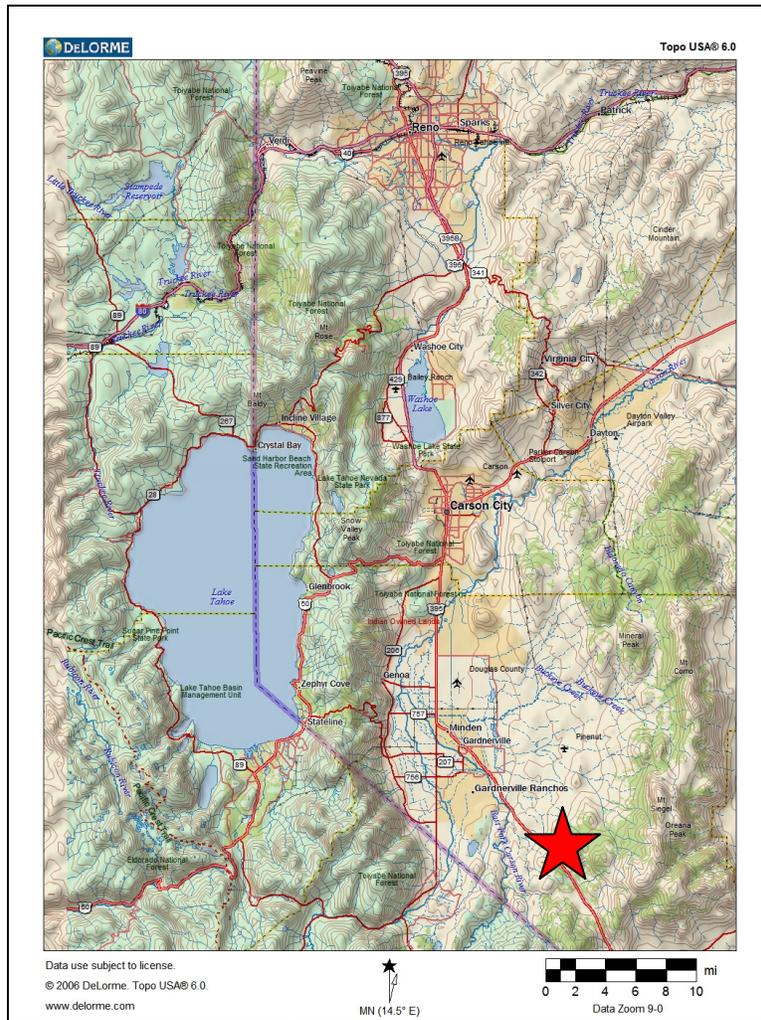
The report is organized as follows:

1. Growth and Development in the Pine Nut Region
  - Overall growth trends and projections
  - Patterns of growth and development
  - Types of growth and development
  - Growth and development in relation to the allotment areas
  - Influences on the allotment areas
  
2. Development Suitability by Areas
  - “Northern Allotments” area
  - Gardnerville Ranchettes, Pine View Estates area
  - Holbrook Junction area
  - Central Hwy 395 area
  - East/west of Hwy 395 areas
  
3. Summary of Land Use Designations by Area

The findings and recommended designations are based on extensive on-site research performed during the period of July – October, 2007 along with additional research and analysis of data performed from October 2007 to May 2009.

## Part 1: Growth and Development in the Pine Nut Region

The Pine Nut allotments are all located in Douglas County, Nevada, with Minden/Gardnerville as its main urban center about 60 miles south of Reno. However, growth in Douglas County is influenced by patterns and trends in a larger region that includes Carson City (which is its own jurisdiction with separate data) and Washoe County where Reno is the engine for much of the regional growth. Storey County also has some influence on growth patterns in the region, but most of that is oriented toward the Finley and Fallon areas rather than south toward Douglas County so its data are not included in this report.



Map of Region. ★ shows general area of allotments

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 Hwy 395 is the main highway connecting the Carson Valley to points north and south.

One of the issues in developing good data for Douglas County is that its western boundary extends to the eastern shoreline of Lake Tahoe and includes the large casino complexes at South Lake Tahoe as well as the expensive homes that have been constructed on the shoreline and hills overlooking the lake. That causes certain economic and demographic trend lines to shift upward from those found in the Carson Valley. Even the Valley is not immune from skewed data, however, as recent golf course housing developments in the Genoa area have also shifted income and pricing averages upward. As much as possible, this report takes those factors into account and modifies the data to reflect the allotment areas and the types of development most suited for them.

### Population Changes

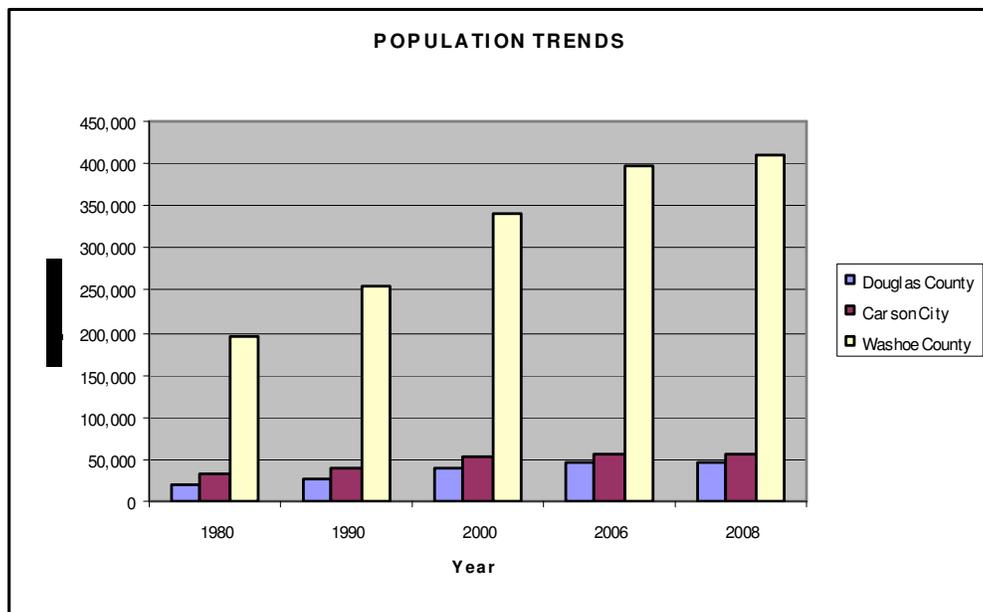
Table 1 shows population growth in the three parts of Western Nevada that comprise the region evaluated in this report, followed by a graphic depiction of the data in Chart 1.

Table 1: Population Growth in Western Nevada, 1980 - 2006

	1980	1990	2000	2006	2008	%Δ 1980-2008
Douglas County	19,921	27,637	41,259	45,909	45,180	126.8%
Carson City	32,022	40,443	52,457	55,289	54,867	71.3%
Washoe County	193,623	254,667	339,486	396,428	410,443	112.0%
Total	311,043	324,737	435,202	499,632	512,498	64.8%

Source: US Census Bureau, Decennial Census Counts and Estimated Counts as of July 1, 2006 and 2008

Chart 1: Population Trends in Western Nevada, 1980 - 2008



The data show that Douglas County experienced the highest growth rates of the three counties measured, with an increase of 126.8% from April 1, 1980 to July 1, 2008. Carson City grew by a little over one-half that rate, at 71.3%, while Washoe County increased by 112.0%.

In numerical terms, Douglas County grew by 25,259 people while Carson City grew by 22,845 people, nearly the same amount as Douglas County. However, Washoe County added 216,820 people which was 9½ times the numerical growth in Douglas County. Both Douglas County and Carson City showed slight declines in population between 2006 and 2008 as the U.S. entered into recession, but Washoe County showed continued growth. Douglas County’s population declined by 1.6% over the two-year period while the decline in Carson City was 0.8%. Washoe County’s population *increased* by 3.5%.

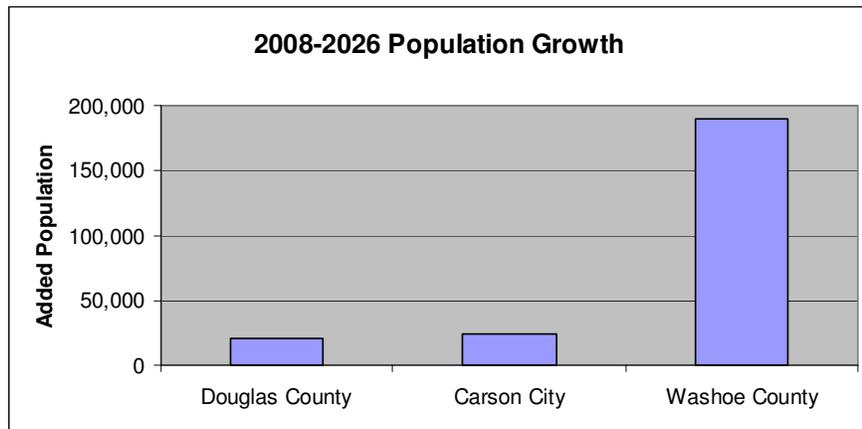
According to data released in 2007 by the Center for Regional Studies at the University of Nevada Reno, these trends are going to change in the future. Their report estimates that these three areas will grow by the following numbers between 2008 and 2026:

Table 2: Population Growth Forecasts, 2008 - 2026

	2008 Population	2026 Pop Est.	# Change	% Change
Douglas County	45,180	66,064	20,884	46.2%
Carson City	54,867	79,134	24,267	44.2%
Washoe County	410,443	586,248	175,805	42.8%
Total	512,498	731,446	218,948	42.7%

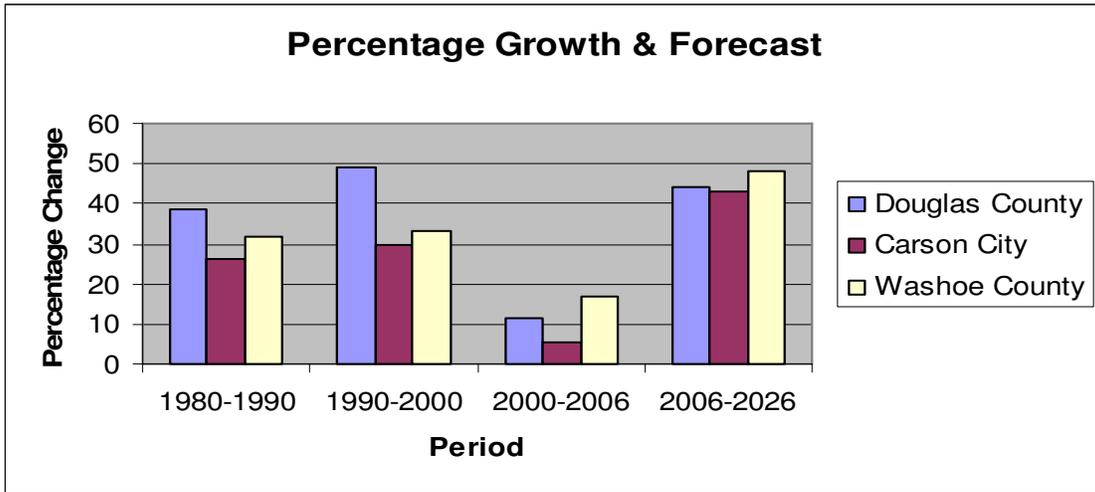
Data adjusted by Elesco Limited to show base of 2008 instead of 2005.

Chart 2: Population Forecasts, 2008 - 2026



These forecasts indicate that Douglas County will continue to lead in percentage population growth over the period from 2008 to 2026, while Washoe County will continue to dominate the region’s growth in absolute numbers. They also show Carson City’s percentage growth almost catching up with that of Douglas County while surpassing it in absolute numbers. It is not known how the declines in population in Douglas County and Carson City between 2006 and 2008 will affect these long range forecasts.

Chart 3: Population Growth & Forecasts in Percentages, 1980 - 2026



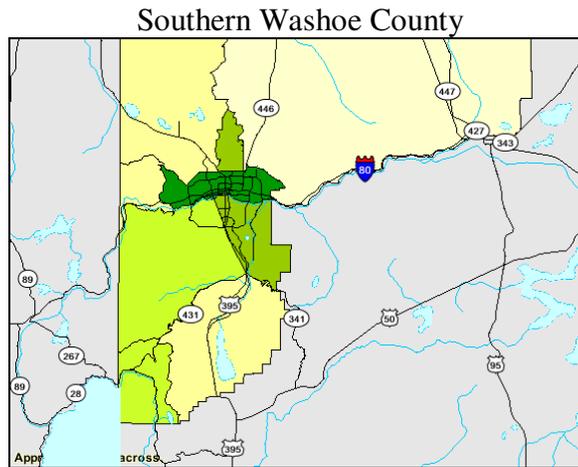
While the numerical growth in Douglas County is forecasted to be relatively smaller than the other two areas measured, the net addition of more than 20,000 people between 2008 and 2026 indicates continuation of new demand for housing along with other commodities and services.

Patterns of Growth and Development

The patterns of population densities at the time of the 2000 U.S. Census are shown below for Washoe County, Carson City, and Douglas County. All three maps have the same scale of 65 miles across.

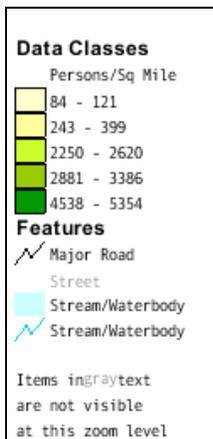
Legend

Data Classes	
Persons/Sq Mile	
[Lightest Yellow]	0 - 43
[Light Yellow]	93 - 130
[Yellow-Green]	345 - 364
[Green]	1167 - 1356
[Darkest Green]	3288 - 3464
Features	
[Black line]	Major Road
[Thin black line]	Street
[Blue wavy line]	Stream/Waterbody
[Light blue wavy line]	Stream/Waterbody
Items in gray text are not visible at this zoom level	

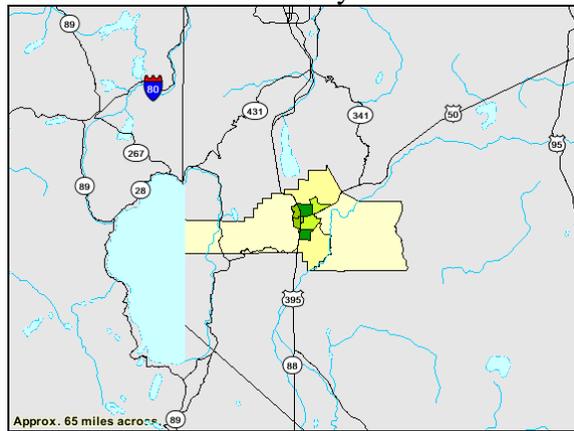


Areas show regional subdivisions

**Legend**

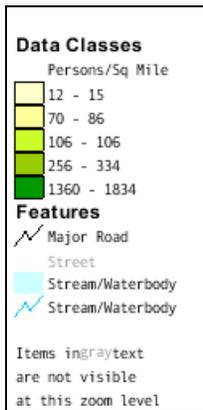


**Carson City**

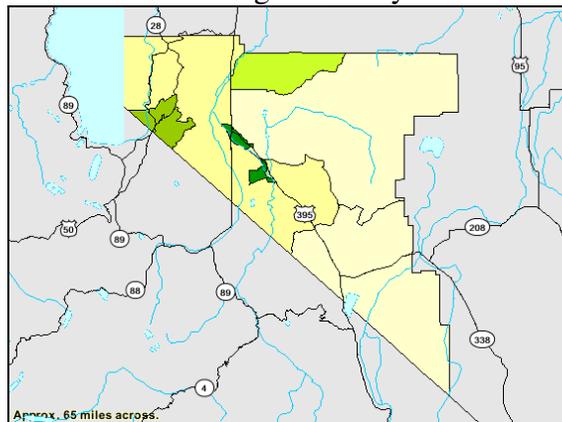


Areas show Census Tracts

**Legend**



**Douglas County**



Areas show Census Tracts

These U.S. Census Bureau maps show that in the year 2000 population in all three areas tended to be concentrated along the US Hwy 395 corridor, primarily in the incorporated cities. The next heaviest concentrations tended to be west of US Hwy 395 toward the Sierra Nevada Mountains and Lake Tahoe. Only Carson City showed less of this trend.

Comparable data for measuring changes during the current decade will not be available until the results of the 2010 Census are released, probably in 2012. During the interim period, the Bureau of Business and Economic Research at the University of Nevada, Reno, provides estimates of changes in population by cities and counties, but not by Census Tracts or County Subdivisions. Their graphic showing new subdivision activities in the region was examined for this report, which showed that most recent development activities followed the same general patterns as the Census population concentration maps. No evidence was found that there are any dramatic shifts taking place that would direct growth towards southern Douglas County and the allotment areas.

The Center for Regional Studies at the University of Nevada, Reno, provides information about residential building permit activities in Northwest Nevada, which includes the three areas examined in this report plus Churchill, Lyon, Mineral and Storey counties. Their report states that the source of data is the US Census Bureau.

Their report showing building permit data from the 1<sup>st</sup> Quarter of 2006 through the 1<sup>st</sup> Quarter of 2009 is shown below for Carson City, Douglas and Washoe counties.

Table 3: Quarterly Residential Building Permits – Carson City, Douglas County, Washoe County

	1st Quarter 2006	2nd Quarter 2006	3rd Quarter 2006	4th Quarter 2006	1st Quarter 2007	2nd Quarter 2007	3rd Quarter 2007
<b>Carson City</b>	22	17	33	115	15	22	7
<b>Douglas County</b>	148	193	48	201	70	53	35
<b>Washoe County</b>	1045	580	1036	381	461	661	467

	4th Quarter 2007	1st Quarter 2008	2nd Quarter 2008	3rd Quarter 2008	4th Quarter 2008	1st Quarter 2009	Total
<b>Carson City</b>	7	7	2	3	4	11	265
<b>Douglas County</b>	30	15	28	26	7	10	861
<b>Washoe County</b>	350	214	243	407	150	156	6151

Source: US Census Bureau

Of the total of 7,277 residential building permits issued during this three-year period, the 6,151 permits issued in Washoe County represented 84.5% of the total; the 861 permits in Douglas County represented 11.8% of the total and Carson City's 265 permits represented 3.6%. While building permits do not necessarily track evenly with population growth, it can be assumed that there is some degree of correlation. On the basis of building permits, Douglas County may be experiencing higher rates of population growth than are indicated solely by the population estimates and projections.

Building permit activities in all three areas have experienced sharp declines beginning in about the first quarter of 2007, especially in Douglas County and Carson City. The total number of building permits issued in the three counties between the 1<sup>st</sup> quarter of 2006 and the 1<sup>st</sup> quarter of 2009 was slightly less than one-half the total during the three year period that ended in the 4<sup>th</sup> quarter of 2006. However, building permits and housing starts are expected to pick up again in the 1<sup>st</sup> quarter of 2010 as the national recession moderates. The region may experience strong pent-up demand for housing after this long period of reduced construction

## Types of Growth and Development

An indication of the types of growth and development in Douglas County can be shown by the recent changes and current assessed values by major classifications. Table 4 shows those values from The State of the County presentation to the Board of Commissioners on July 5, 2007.

Table 4: Assessed Values by Major Category, Douglas County, Nevada

	<b>2005-06</b>	<b>2006-07 *</b>	<b>2007-08 **</b>	<b>% of Total</b>
Vacant Land	150,681,433	208,128,409	267,955,945	7.87%
Residential	1,851,301,355	2,435,319,267	2,631,869,638	77.30%
Tourist Commercial (42,43,44)	178,708,403	161,326,704	163,525,583	4.80%
Com./Industrial	157,617,142	196,751,164	209,198,474	6.14%
Agricultural	23,945,181	27,843,532	30,819,398	0.91%
Other	105,192,752	103,627,607	101,547,340	2.98%
<b>Total</b>	<b>2,467,446,266</b>	<b>3,132,996,683</b>	<b>3,404,916,378</b>	<b>100.00%</b>
% Increase Over Previous Year	21.04%	26.97%	8.68%	
* at 7/1/06				
** at 1/30/07				

Several significant findings can be drawn from these statistics. One is the apparent slowing of annual rates of growth, although the figures for 2007-08 represented only one-half of the fiscal year. However, other data confirm that overall growth has slowed in Douglas County especially in the residential construction sector.

Another significant finding is that the value of vacant land, which was 6.1% of the total valuation in the 2005-06 period, grew to 7.87% in the 2007-08 period. Assuming the quantity of land is a constant, that means the value of vacant land increased by 78% over a period of 2 ½ years. The normal economic reaction to higher prices is lower demand.

The concentration of values in the residential sector is also significant, especially when viewed against the other sectors shown in the table. The Tourist Commercial sector showed a decline in assessed values of 8.5% from 2005-06 to 2007-08 while the Commercial/Industrial sector showed an increase of 32.7%. Combined, they represented approximately 11% of total assessed values in 2007-08. While current values have not been obtained, it can be assumed that land values in all categories have declined in direct correlation to the decline in construction activity.

A review of the commercial/industrial sector shows the following companies are the largest employers in Douglas County. This list excludes school districts and health care providers that are also large employers.

Table 5: Douglas County's Largest Commercial/Industrial Employers

Employer	City	Industry	Code	Number of Employees
Harrah's Stateline	Stateline	Casino Hotels	721120	1,500 - 1,999
Harvey's Resort Hotel Casino	Stateline	Casino Hotels	721120	1,000 - 1,499
Horizon Casino Resort	Stateline	Casino Hotels	721120	800 - 899
Bently Nevada	Minden	Industrial Process Variable Instruments	334513	600 - 699
Douglas County	Minden	Executive & Legislative Offices Combined	921140	600 - 699
Carson Valley Inn	Minden	Casino Hotels	721120	500 - 599
Lakeside Inn & Casino	Stateline	Casino Hotels	721120	300 - 399
Travel Systems Limited	Zephyr Cove	Food Service Contractors	722310	200 - 299
Resorts West A Nevada Partner	Stateline	Hotels (except Casino Hotels) and Motels	721110	200 - 299

Source: Nevada Department of Employment, Training and Rehabilitation (DETR)

This list clearly shows that the gaming industry dominates commercial/industrial employment in Douglas County and that 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.

By industrial sector, employment in Douglas County shows the following pattern:

Table 6: Douglas County Employment by Industry

Industry	2003	2004	2005	2006	1st Quarter 2007
<b>Total All Industries</b>	<b>20,879</b>	<b>21,685</b>	<b>21,622</b>	<b>21,645</b>	<b>21,414</b>
Total Private Coverage	18,696	19,456	19,333	19,347	19,140
Natural Resources & Mining	162	181	176	175	160
Construction	1,740	1,934	2,183	2,029	1,846
Manufacturing	1,709	1,713	1,753	1,802	1,826
Trade, Transportation & Utilities	2,528	2,764	2,795	2,863	2,824
Information	235	221	197	230	214

Industry	2003	2004	2005	2006	1st Quarter 2007
Financial Activities	707	791	865	774	804
Professional & Business Services	1,230	1,396	1,572	1,702	1,527
Education & Health Services	802	884	1,054	1,149	1,149
Leisure & Hospitality	9,201	9,145	8,363	8,246	8,436
Other Services	373	377	350	361	336
Government	2,183	2,230	2,289	2,298	2,274

Source: Nevada Department of Employment, Training and Rehabilitation

Unfortunately, the gaming industry has been declining since 2003, from 9,201 in 2003 to 8,246 in 2006 for a decrease of more than 10%. The statistic for 2007 is for the first quarter only so it is not known whether the annual average will also show the slight increase indicated in Table 6. If the pattern of decline continues, then this sector will not stimulate additional housing demand in Douglas County in at least the near future.

The construction sector showed positive growth from 2003 through 2006 but the decline in the 1<sup>st</sup> Quarter of 2007 reflects the major recession that hit this industry in the past year. With serious turmoil in both the housing construction sector and the mortgage lending industry, it is not expected that there will be recovery any time soon.

Manufacturing appears to be relatively healthy, with an increase in employment of 6.8% between 2003 and the 1<sup>st</sup> 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.

Trade, transportation and utilities have been a growth sector, gaining 11.7% employment from 2003 to the 1<sup>st</sup> Quarter of 2007. In part, this reflects the growth of the retail trade industry in response to the increased population in the county.

The professional and business services sector has also shown strong growth, increasing by 24.1% over the period shown in Table 6. This is the fastest-growing sector in the U.S. economy and the data show that Douglas County is participating in that growth.

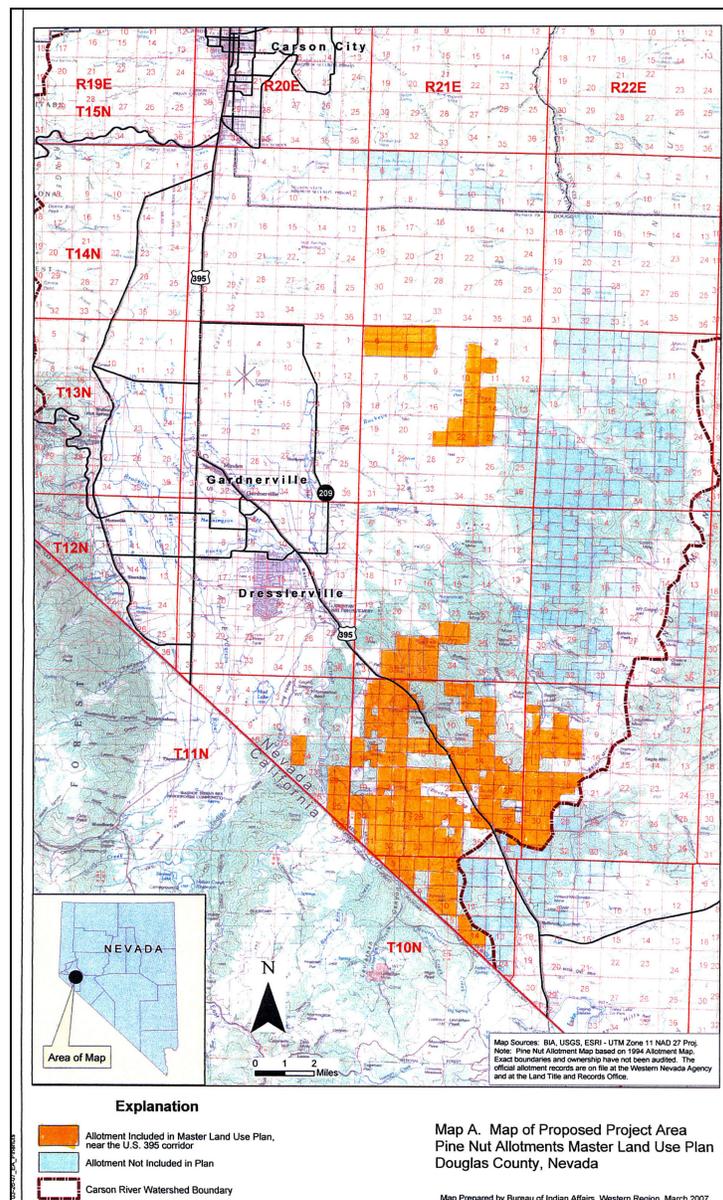
Education and health services showed the strongest growth, increasing by 43.3%. This sector also pays the highest annual mean wage in Douglas County at \$42,853 according to the latest data available. It represented 5.4% of total employment in the county in the 1<sup>st</sup> Quarter of 2007.

In general, the current slump in the housing and mortgage finance industry is likely to cause static overall employment levels for at least the short term. The decline in gaming industry employment will also dampen growth in Douglas County. There are currently no obvious

“drivers” for rapid growth although there are continuous efforts to recruit new companies to the area through economic development efforts.

Growth and Development in Relation to the Allotment Areas

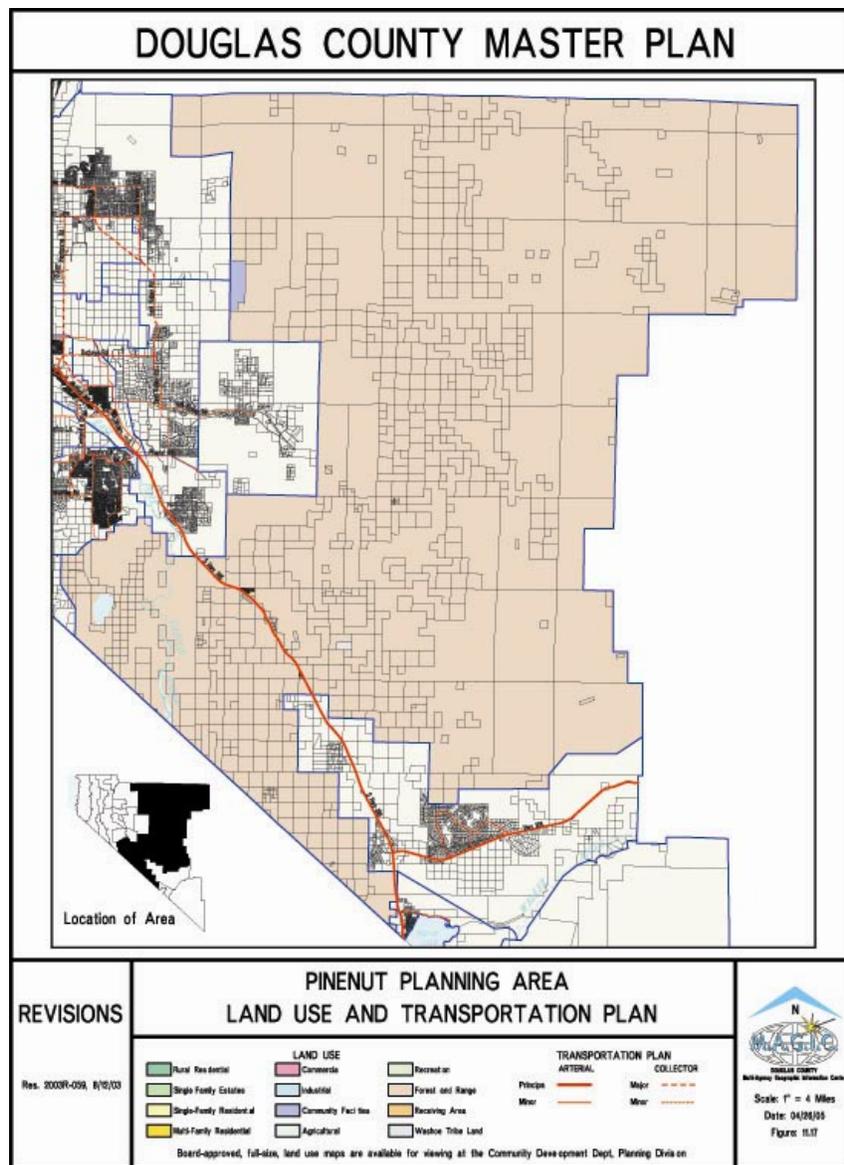
The map below shows the locations of the Pine Nut Allotment Areas in relation to other parts of Douglas County. Only the allotments shaded in orange are included in this report.



The allotments are essentially divided into two parts. The two sections of allotments northeast of Gardnerville are referenced herein as the “northern” allotments. These are located east of the Minden – Lake Tahoe Regional Airport and are in relative proximity to new subdivision activities taking place in the county.

The remaining allotments are simply referenced as the Hwy 395 allotments. They are situated on both sides of Hwy 395 where the road crosses the Pine Nut Mountains.

One of the ways to visually observe the relationship between the allotments and existing growth and development in Douglas County is by cross-referencing the map above with the County’s master plan for the Pine Nut area.



11.069



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. These are explored individually in this report.

### Influences on the Allotment Areas

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.

## **Part 2: Development Suitability by Areas**

### A. Northern Allotments Area

The two blocks of allotments that comprise the northern allotments area appear to offer the best opportunities for larger scale development, either as residential subdivisions or as a planned community such as a senior retirement center or golf course resort. The land in both blocks is relatively flat, accessible with road construction, and relatively close to existing developments. These allotments are situated within the area shown on the photo below, with the Minden – Lake Tahoe Regional Airport shown at the upper left corner for locational reference.

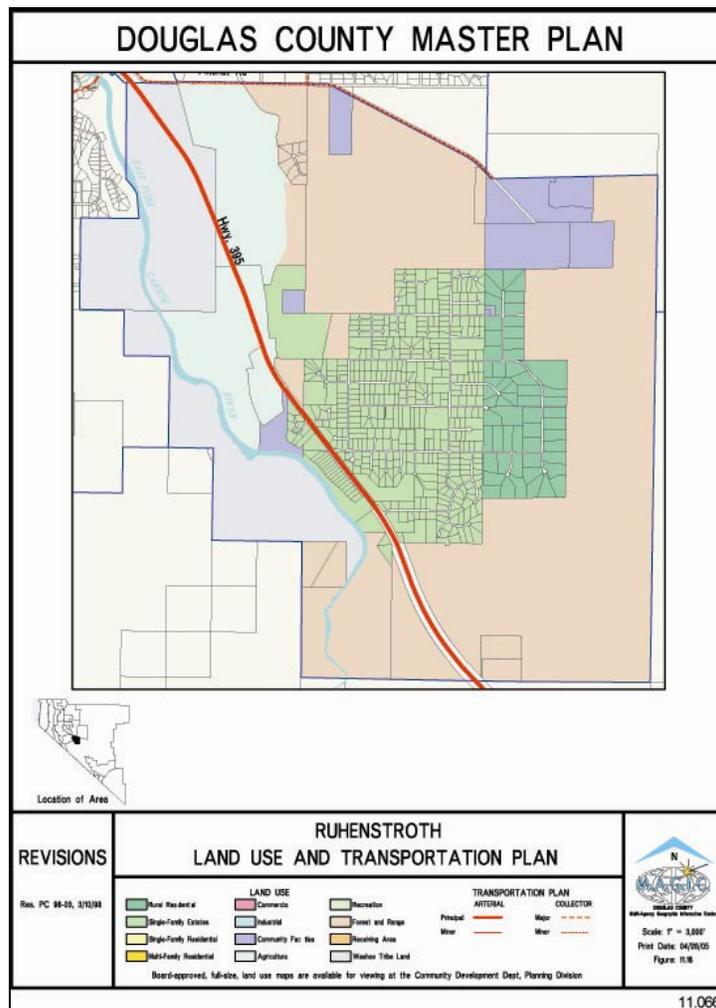


Aerial View of Northern Allotments Area

Issues of availability of infrastructure are not addressed in this report as they are examined in other reports. If there are no significant barriers to development, it appears that these allotments will have their greatest values if they are combined into the kinds of larger scale development described above.

B. Gardnerville Ranchettes, Pine View Estates area

This is the area at the northwest end of the Hwy 395 allotments where the road transitions between the Carson Valley and the Pine Nut Mountains. This area includes the Ruhenstroth Planning Area as well as the Pine View Estates.



The Ruhenstroth Planning Area is the last area of urban zoning southeast of the Gardnerville Ranchettes before leaving the Carson Valley and climbing the grade into the Pine Nut Mountains. As the map shows, this planning area also includes large tracts of land owned by the Washoe Tribe.

The Ruhenstroth community area includes approximately 5,089 acres of land area. Agricultural lands located to the west and northwest of the community comprise 485 acres or 10 percent of the total land. Open space and vacant lands comprise over 48 percent of the land. These perimeter lands and their land uses surround the housing area of Ruhenstroth, providing an open space buffer for the community.

The community population is estimated at about 1,600 people. The predominant lot size is one acre in the residential area. The area also has some industrial uses, primarily related to resource industries and service facilities.

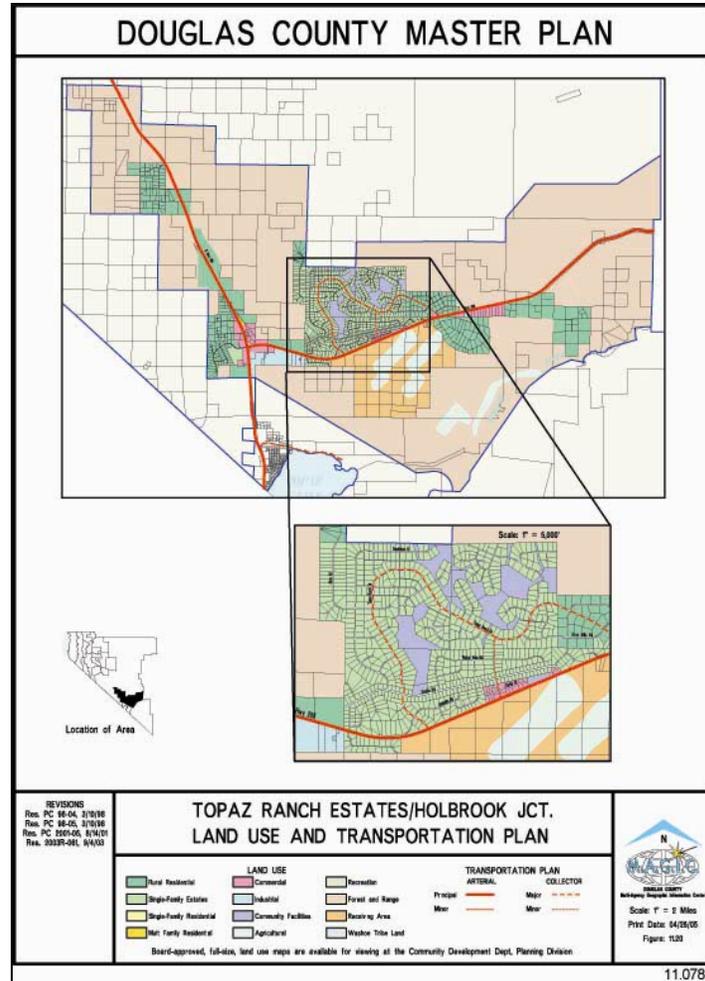
Further development of this area may cause residential demand to extend southeastward into the Pine Nut allotments. Some of the allotments offer better view properties because of the elevation gains. There are also some allotments suited for single-family developments both southwest and northeast of Hwy 395. It is expected that any such demand will be on an individual lot basis rather than for planned subdivisions such as Pine View Estates. Average lot sizes will be in the range of one-acre to two-acres.



Looking North from Leviathan Mine Road toward Gardnerville

### C. Holbrook Junction area

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. This is also designated as the Topaz - Holbrook Planning Area by Douglas County.



As the map shows, this area has several planned developments and/or subdivisions in addition to the commercial facilities at Holbrook Junction. Areas along Hwy 395 are platted for lots ranging in size generally from one acre to five acres. While some of these have been built out, there are still many lots available for sale or for resale.

There is also a long-term plan to construct up to 5,000 residential units on the east side of Topaz Lake.

This area essentially anchors the southern end of the Pine Nut allotments. That puts residential communities at both ends of the Hwy 395 corridor, along with some commercial facilities. As the county's population grows, it can be expected that demand for residential land will gradually infill toward the middle.



Looking South from Leviathan Mine Road toward Topaz Lake

#### D. Central Hwy 395 area

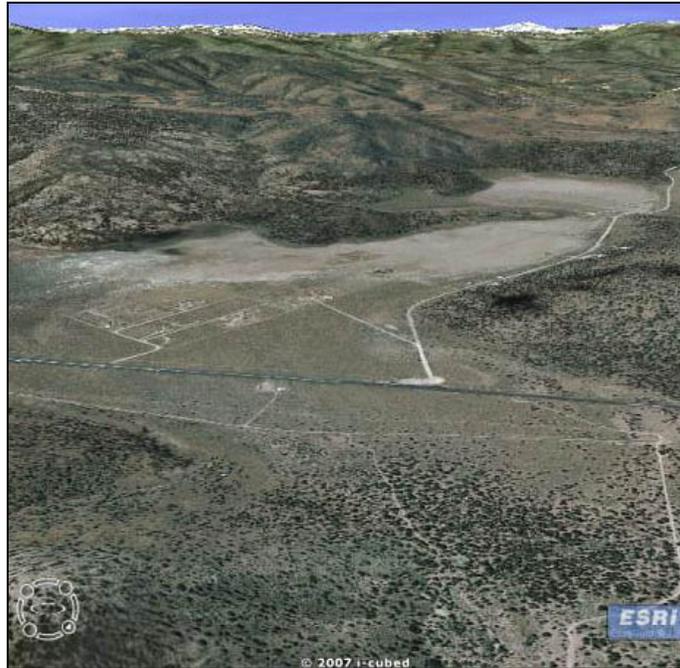
The central area of Hwy 395 includes the relatively flat plain shown in the photo above along with some sites on both sides of the highway that have little or moderate slopes. It consists of all the area between Pine View Estates on the north to the Holbrook Junction area to the south.

The small amount of residential development in this area is comprised of single-family homes, generally on small acreages. There are some properties developed specifically for horse ranches offering a rural lifestyle that may not be available in the more urbanized areas. Most lots range from two to five acres in size.

Any additional development in this area will probably fit the same pattern. This is not an area that is conducive to residential subdivisions, in part because of its relative isolation from community services and also because of more severe winter weather conditions that would impact workers commuting to jobs in Gardnerville or Minden. That will also limit the development of community infrastructure systems, favoring wells and septic systems that also suggest larger lots.

E. East/west of Hwy 395 areas

All of the remaining allotments are located in the rugged hills, valleys and mountains farther off Hwy 395. The two photos below give an idea of the terrain in those areas.



Looking West toward Sierra's from Leviathan Mine Road



Looking East to Pine Nut Mountains from Leviathan Mine Road

On-site inspections of these mountainous areas showed that they are suited only for recreational, cultural, or resource uses. Most of the slopes are too steep for any kind of development, including construction of wells and septic systems. While there are some spectacular views from some of the higher areas, the severe winter weather conditions above about 6,500 feet would completely isolate these areas for several months of each year.

### **Part 3: Summary of Land Use Designations by Area**

Land use designations assigned to each area are summarized as follows:

#### **A. Northern allotments**

Most suitable area for development. Favors larger scale planned development such as residential subdivisions or self-contained communities such as a retirement center or resort. Also suitable for multiple lots but economies of scale in developing infrastructure support higher densities.

#### **B. Northwest transition area between Pine Nut Mountains and Carson Valley**

Several allotments suitable for single-family residential development or small subdivisions on the flatter parcels. Lot sizes generally in the one-acre to two-acre size range. Family housing to support workers commuting to jobs in Gardnerville or Minden.

#### **C. 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.

#### **D. 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. Difficult commuting during the winter months, so the area is not suited for family-oriented subdivisions. Lots generally in the two-acre size range.

#### **E. 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.