5
IMPACT ANALYSIS

5
IMPACT ANALYSIS

METHODOLOGY

As part of the planning effort, the impact of the various designated land uses on the allotments and surrounding environment was conducted and measures to mitigate those impacts were identified. The impact analysis was based on the results of the Land Use Suitability Analysis and focused on a maximum development scenario from the Highest and Best Use Designations. Unlike most impact analyses, there is no specific proposed project to evaluate, making a detailed impact analysis impossible. Rather, this analysis utilized assumptions and only identified general impacts and areas of potential concern. The results of the impact analysis and recommended mitigation measures were 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.

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, with no comprehensive plan or public policies in place, 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.

Because of these unique situations this impact analysis was 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.

The highest and best use as assessed in the Use Designation report showed that from a market perspective, rural housing development was overwhelmingly the likely use, and overall would have the highest impact on land use and demands on infrastructure and public services. The assessment was predicated on three basic steps 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 based 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 (Appendix C), 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 5-1 below summarizes the development and resulting population data.

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.

Table 5-1
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**

SUMMARY OF IMPACTS AND MITIGATION

The potential impacts based on this maximum residential development scenario are summarized in Table 5-2. The complete Impact Analysis is contained in Appendix F.

Overall, based on the development scenario presented, 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, particularly in the North and Northeast Allotment areas where there is no development other than a few earth roads.

Table 5-2
Summary of Potential Impacts and Required Mitigation

Resource	Potential Impacts	Required Mitigation
LAND RESOURCES		
Topography	Minor modifications as a result of regrading for roads and infrastructure; estimated 2,900 acres disturbed	Finish grading will be required for major excavations; to be included in the Development Standards
Soils	Minor disturbances to native soils as a result of regrading for roads and infrastructure; estimated 2900 acres disturbed	Where excavation occurs, top soil will need to be stored and then replaced upon completion of construction
WATER RESOURCES	Reliance on groundwater sources for potable water and fire flows would require in excess of 12 mgd, annually amounting to more than 2,400 acre-feet of groundwater consumption	Wells will be required to be tested every 3 years for yield, drawdown, and depth to static water level to ensure adequate supply, particularly for fire protection
CLIMATE	No significant impacts	None
AIR QUALITY	Short-term dust generation during construction Use of wood stoves in homes and other buildings can create air quality problems Industrial or commercial use may produce airborne emissions	Regular watering, application of approved dust palliative, or reseeding with native plants, depending on length of time disturbed areas are undeveloped Installation of EPA approved wood stoves EA will be required to propose appropriate mitigation measures in order to meet applicable air quality standards
NATURAL RESOURCES		
Wildlife	No significant impact	None
Threatened or Endangered Species	Bald eagle and the Lahontan cutthroat trout are threatened species found in Douglas County – no impact to nesting or habitat areas; the Mountain yellow-legged frog, Webger's ivesia, and Taho Yellowcress are candidate species found in Douglas Co.- impact unknown	Impact assessments and mitigation measures will be proposed in the EA required for each lease
Vegetation and Habitat	Net loss of vegetation and habitat approximately 2,000 acres; no negative impact to Pinon pine areas	Post development, disturbed pervious areas will be reseeded with native plants; landscaping

Table 5-2
Summary of Potential Impacts and Required Mitigation

Resource	Potential Impacts	Required Mitigation
CULTURAL RESOURCES	Cultural resource location anticipated; extent and location unknown.	Cultural resources survey required as part of EA process for each development; appropriate mitigation measures included in EA
LAND USE	Approximately 2,900 acres of rangeland converted to rural residential use	100-foot buffer of nondevelopable area will be required around the perimeter of each allotment to protect neighboring allotments; EA for any development will identify any incompatible land use issues that would require mitigation
SOCIOECONOMIC CONDITIONS	Positive impacts to local economy (e.g. jobs, income from land)	No mitigation required
TRANSPORTATION	Significant increase in number of trips generated; degraded Level of Service, particularly Johnson Lane in North Allotments and along US 395	Each development application will require a traffic study to determine appropriate mitigation measures; development standards will require that access cannot be blocked or denied to neighboring or contiguous allotments
UTILITIES AND COMMUNITY SERVICES		
Public Water and Sewer Systems	No impacts	No mitigation required
Solid Waste Collection	Potential for 5,400 additional dwelling units will produce significant amount of solid waste	Provision for solid waste collection and disposal will be a requirement of any lease
Power	No significant impact	No mitigation required
Communications	No significant impact	No mitigation required
Emergency Services	Major impact on law enforcement, fire, and emergency medical services	Mitigation measures to ensure provision of these services will be required
Schools	Impact to Carson Valley School District	Usual mitigation through increased property taxes; additional mitigation may be required for trust lands