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ABSTRACT

This paper should help the reader understand the impact that the proposed Yucca Mountain spent nuclear fuel and high-level waste shipping campaign by rail and truck may have on the “present and future uses of the land” that are impacted by these shipments in the Las Vegas Metropolitan area. In the FEIS, DOE states that, “information useful for an evaluation of land-use and ownership impacts should identify the *current ownership* of the land that its activities could disturb, and the *present and anticipated future uses of the land*” (emphasis added) [1]. As stated, any information that helps evaluate the land use and ownership impacts needs to look at the present and anticipated uses of the land. This paper looks at the change occurring in Clark County, specifically in the Las Vegas Metropolitan area, in regards to the anticipated use of the land.

INTRODUCTION

In 2002, the Secretary of the U.S. Department of Energy (DOE) recommended to the President of the United States that DOE should construct a geological repository at Yucca Mountain, Nevada for disposal of 70,000 metric tons of spent nuclear fuel (SNF) and high-level radioactive waste (HLW). As part of this recommendation, DOE published the *Final Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County* (FEIS) in the federal register. To accomplish this recommendation, thousands of metric tons of SNF and HLW will travel through the towns and cities of at least 32 states.

In 1987, the Nuclear Waste Policy Act was amended to state that DOE should focus its resources on Yucca Mountain. As part of this amendment Clark County, Nevada (Clark County or the County), along with other local counties, was designated as an “Affected Unit of Local Government” (AULG). With this designation the federal government recognizes the potential for economic, social, public health, public safety and the environment impacts to Clark County and its residents from the activities of the proposed Yucca Mountain Repository. Clark County is authorized to identify any potential impact that the proposed Yucca Mountain Repository may have.

The FEIS states that an impact “is the positive or negative effect of an action (past, present, or future) on the natural environment (land use, air quality, water resources, geological resources, ecological resources, aesthetic and scenic resources) and the human environment (infrastructure, economics, social and cultural)” [1].

In December 2003, DOE publish a *Notice of the Preferred Nevada Rail Corridor* selecting the Caliente Corridor as the preferred corridor to build a rail route to the proposed Yucca Mountain Repository [2]. In April 2004, a Record of Decision (ROD) was published in the Federal Register officially announcing DOE’s decision to construct and operate a rail line on the Caliente Corridor [3]. At the same DOE published a *Notice of Intent to Prepare an Environmental Impact Statement (EIS) for the Alignment, Construction, and Operation of a Rail Line to a Geologic Repository at Yucca Mountain, Nye County, NV* in the federal register announcing DOE’s intent to prepare an EIS for the Caliente Corridor [4]. That decision reaffirmed Clark County’s concern that it would be impacted by rail shipments to the proposed Yucca Mountain Repository on the Caliente Rail Corridor.

By mid 2006 the Draft EIS for the Caliente Rail Alignment had not been published in the federal register and noise began to surface of a potential “new” route in Nevada. In October 2006, DOE published in the federal register an *Amended Notice of Intent to Prepare an Environmental Impact Statement (EIS) for the Alignment, Construction, and Operation of a Rail Line to a Geologic Repository at Yucca Mountain, Nye County, NV* (ANOI) [5]. The ANOI’s proposed action is for DOE to expand the scope of the Draft Caliente Rail Alignment EIS (Draft EIS) to review, analyze, and update the environmental impact and information for the Caliente, Carlin, Jean and Valley Modified routes; and for DOE to consider a new route known as the Mina route at a level of detail commensurate with that of the FEIS. The ANOI will also consider in detail the impacts of different alignments of either rail line within the Caliente and Mina corridors.

This latest action not only continues the possibility that Clark County will be affected by rail shipments to the proposed Yucca Mountain Repository if the Caliente Rail Corridor is built, but keeps opens the possibility that a rail route could be built through Clark County. The lack of detail and the many possibilities that remain open including which route will potentially be used, or if a rail line will even be built, is another reason why it is important for Clark County to continue reviewing and evaluating the impacts that SNF and HLW shipments would have on the County and its residents. Ultimately, if the

proposed Yucca Mountain Repository opens and shipments begin, Clark County will be affected by rail and/or truck shipments.

LAND USE IMPACTS

The Clark County 2002 *Yucca Mountain Impact Assessment Report* examined many of the potential impacts facing the County. The report found that “property values are likely to be affected adversely by DOE’s proposed action” and that there was no doubt that the proposed Yucca Mountain Repository posed a threat to property values in Clark County [6]. To monitor these potential impacts, in 2004, the County began the Clark County Monitoring Program. Over a period of time the County will monitor, among other things, land use and land value impacts and what if any of those impacts are related to the proposed Yucca Mountain Repository especially if it opens.

The federal government owns the majority of land in Nevada and developers are often dependent upon obtaining new property only when the land is auctioned off. This circumstance often leads to increase land values in Clark County. After DOE published the FEIS, Clark County began to see one of the largest and longest land value increases in the County’s history. The increase in land value caused elected officials, developers, and consumers to look at other ways to increase the value of the privately owned land. For many years most large developments were limited to densities up to the teens in the number of dwelling units per acre. A dwelling unit may consist of a condominium, apartment, hotel, town home, timeshare, and/or residential lot. As land values increased, developers and county officials began looking at considerable higher development densities. Following the lead of other large cities, Las Vegas began considering developments with both dwelling units and commercial units known as mixed-use developments (MUD). Table 1 shows the current development densities for mixed-use developments in Clark County.

Table 1.

Type	Base Height	Density
MUD 1 – Most intense urban form	100’	More than 50 dwelling units per acre
MUD 2 – Most intense suburban form	100’	Up to 50 dwelling units per acre
MUD 3 – Moderately intense suburban form	50’	Up to 32 dwelling units per acre
MUD 4 – Least intense suburban form	35’	Up to 18 dwelling units per acre

With the creation of the MUD district, developers began planning and selling large projects in these areas. The land planned for this type of growth is often located near major road and rail arterials.

2006 PROPOSED PROJECTS

Figure 1 is a map of the 2006 proposed projects to be built within one mile on either side of the proposed Yucca Mountain Repository corridors. A quick glance at this map appears to reveal that there are not many proposed projects within this corridor. This would be completely wrong. Some of the approved projects currently will have as many as 7,190 units and others with as much as twelve million (12,000,000) square feet of commercial property.

There are two types of routes, rail and/or highway, which proposed Yucca Mountain shipments would use to pass through Clark County. As discussed earlier, after the FEIS was published, Clark County began to experience the largest and longest increase in property value. The amount of changes in the last three to four years within one mile of either a rail route or a truck route is staggering. The total number of large development dwelling units currently planned, approved or under construction is over 132,000 with another 33,000,000 square feet of commercial property also either planned, approved or under construction. The following is a breakdown of the numbers:

- Total Commercial Square Feet = 33,368,223
- Total Number of Dwelling Units = 132,951
- Number of Projects in Clark County (Las Vegas Valley) = 105
- Number of Projects in Henderson = 1
- Number of Projects in Las Vegas = 94
- Number of Projects in North Las Vegas = 51

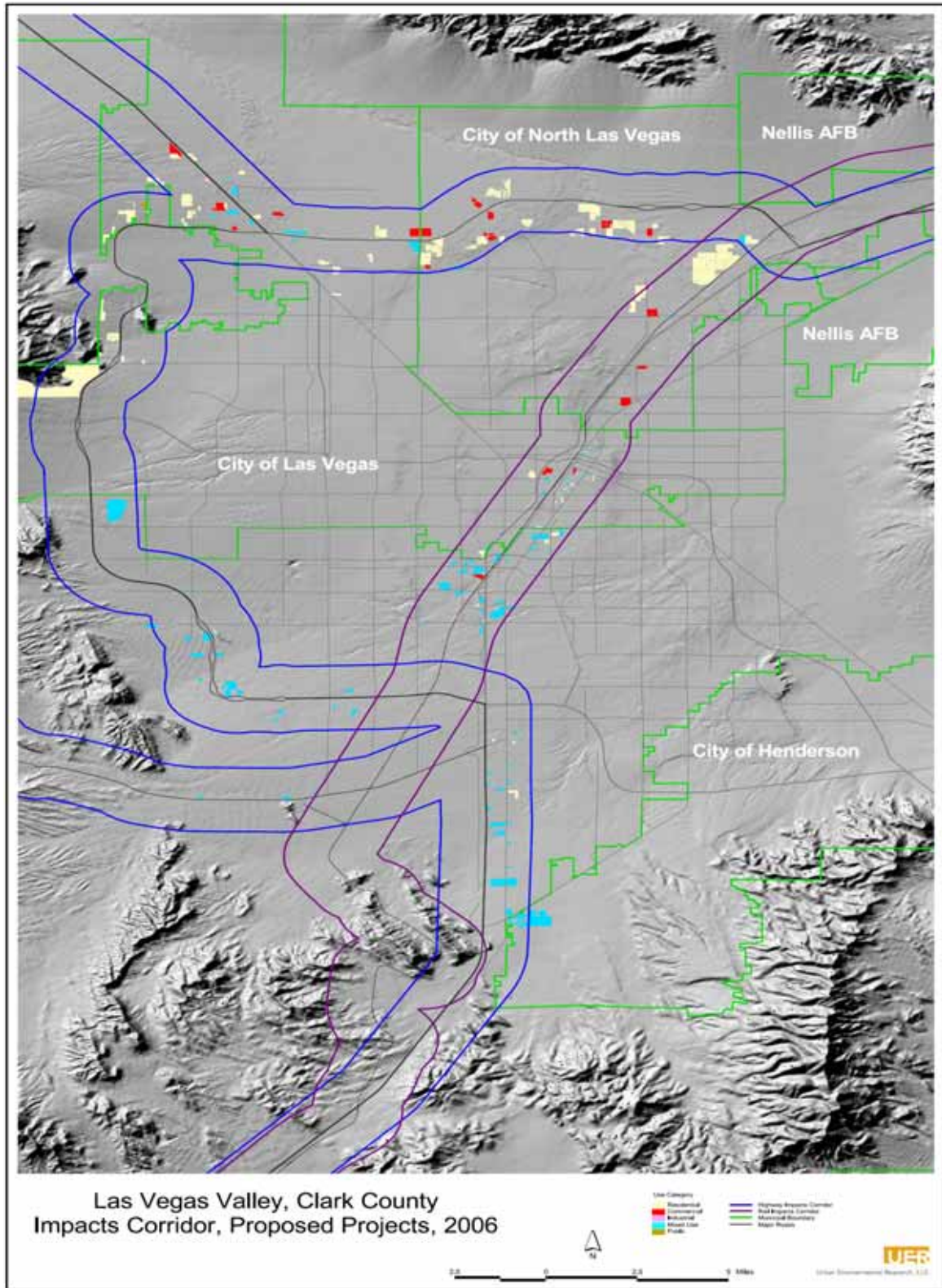


Figure 1. 2006 Proposed projects Las Vegas Valley

Population along the current Proposed Routes

Many thousands of Las Vegas Metropolitan area residents live and/or work near the rail infrastructure in the Las Vegas valley. In a report completed in 2004, it was estimated that “the average daily exposed population within one-half mile of the route is currently about 86,000.” [7] The 2005 U.S. Census Bureau estimate is that an average of 2.63 persons reside in each dwelling unit in the Las Vegas Metropolitan Area. Assuming this number is correct, and if over 132,000 new dwelling units are built next to the rail and truck routes of the proposed Yucca Mountain Repository, than the estimated number of residents in these new units is 347,160. Add this to the number from the 2004 report and potentially over 400,000 thousand people could be living and working within one mile of a potential rail and truck route through the Las Vegas Metropolitan area.

OTHER IMPACTS

The safety and security of these residents will ultimately fall on the local jurisdictions. This unfunded mandate has been appraised and reviewed in a couple of reports completed by Clark County [8-14]. As the population increases and the number of dwelling units and commercial square footage grow, the impact to the local jurisdictions continues to increase.

In June 2001 a report entitled *Clark County Property Value Report on the Effects of DOE's Proposal to Ship High Level Radioactive Waste to a Repository at Yucca Mountain* was completed. Figure 2 shows the land use in 2001. The research from this report indicated that a possible fair market loss of between \$214 million to \$1.6 billion dollars is possible [6]. Though a new study would be required to assess the newest fair market loss the 2006 assessed value is close to \$33 billion dollars. A dollar breakdown by land use is shown in Table 2. Figure 3 shows the land use in 2006.

Table 2. 2006 Land Use Assessed Values

Land Use	Total Value
Residential	\$14,744,448,325
Commercial	\$15,497,772,599
Industrial	\$1,406,450,025
Public	\$1,264,478,140
Transportation	\$4,646,146
	\$32,917,795,235

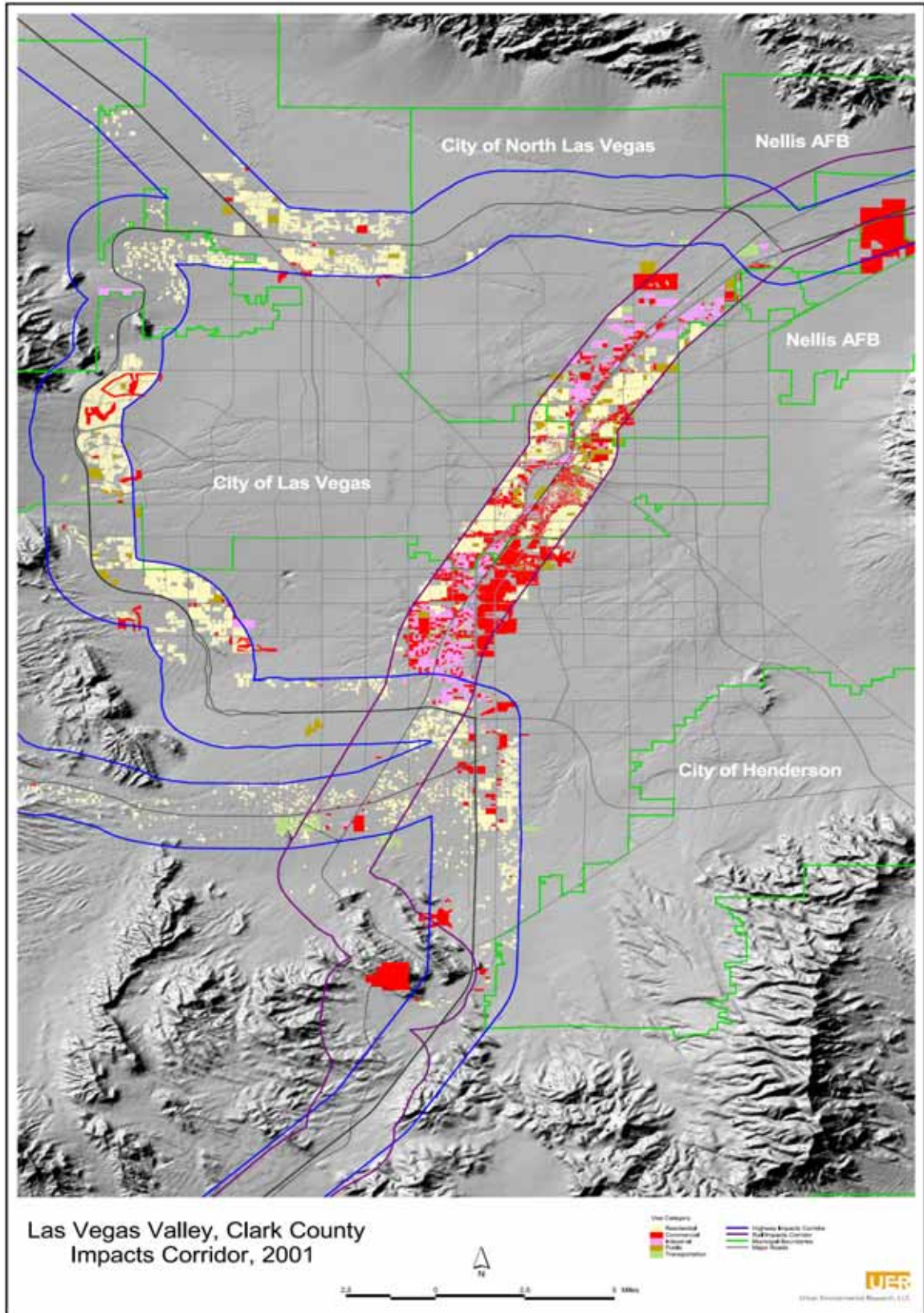


Figure 2. 2001 Land use area

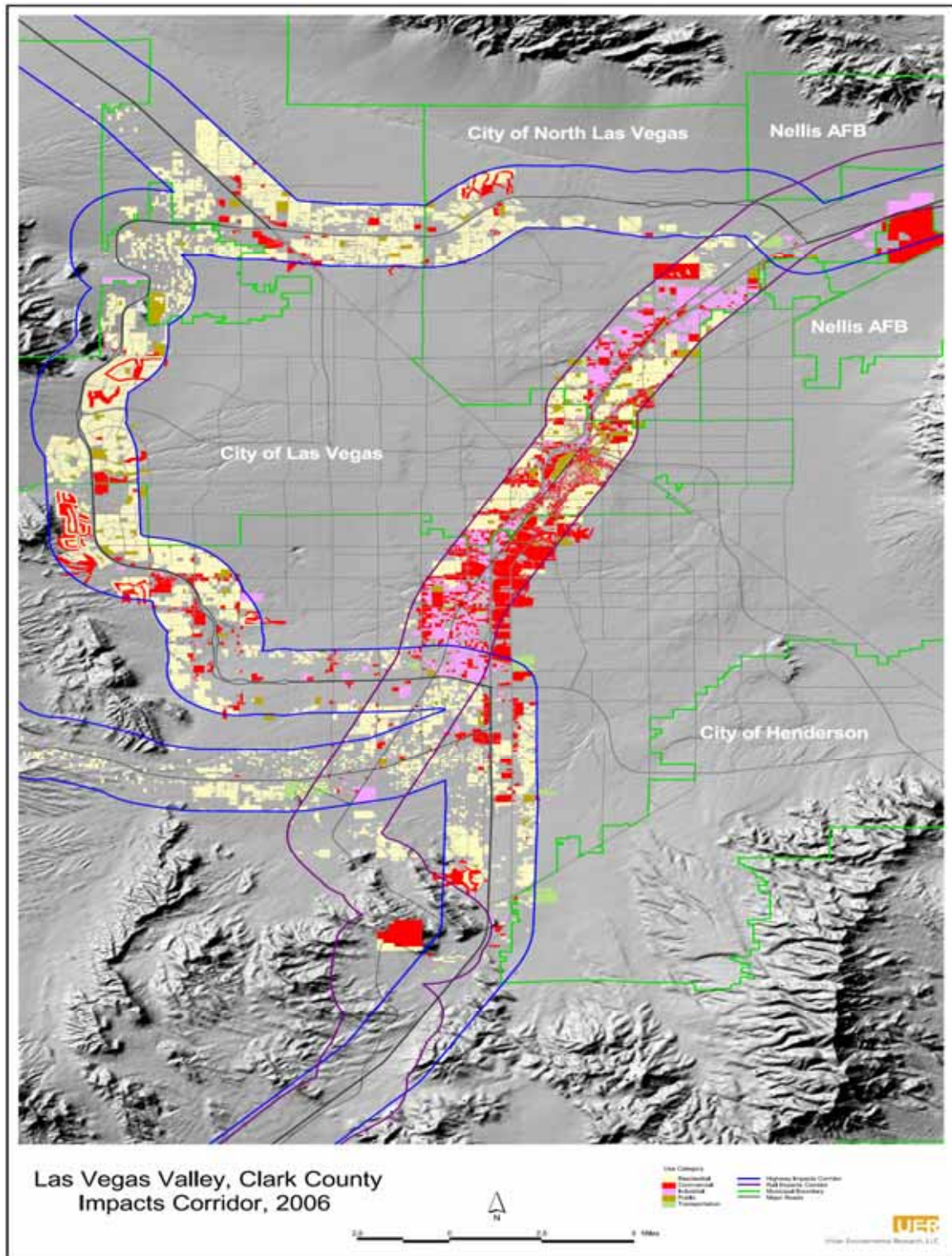


Figure 3. 2006 Land use area

CONCLUSIONS AND NEXT STEPS

Clark County has recently experienced a large increase in land value. These increases direct local officials and private developers to plan the building of many large-scale projects with many dwelling units and large amounts of commercial square footage. There are numerous planned, approved, and under construction projects that DOE needs to identify and address the impacts that a shipping campaign to the proposed Yucca Mountain Repository could have on this development and land use. This paper does not address mitigation of impacts, and should not be used as a baseline for impact mitigation. The information should be used as a guide for DOE to identify and address future issues related to transportation.

It is critical for Clark County to continue updating the land-use impacts on a regular basis and continue to provide this information to DOE. In addition, it is vital that Clark County continue to monitor the full range of potential public safety impacts and document those Yucca Mountain related impacts for federal, state, and local decision makers. It is important for DOE to identify any impacts that this type of land use will have and provide the ability to mitigate those impacts.

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