

In Short ■ by Hilary Kaufman, Molly Espey, and Jeffrey Englin

No Plane, Big Gain? Airport Noise and Residential Property Values in the Reno-Sparks Area

People who knowingly purchase a house in the flight path of an airport will pay less than they would for a comparable house elsewhere. But when air travel increases and airports expand, some people who were not previously in a flight path may find themselves negatively impacted by increasing noise. How much does airport noise actually affect residential property values? Airport authorities and property owners often disagree. Our study of the Reno-Tahoe International Airport in Reno, Nevada, provides some estimates.

During the past twenty years, the Reno-Sparks metropolitan area has been one of the fastest growing areas in the United States. This growth in population has been accompanied by growth in Reno's popularity as a vacation site, leading to a rapid increase in the number of flights at the Reno-Tahoe International Airport. The number of passengers increased 16 percent between 1995 and 1996, and growth is expected to be about 10 percent in 1997. Freight traffic is up approximately 30 percent in the past year, and airport officials anticipate that a new terminal will be needed within five years. While the increase in flights has contributed to economic growth in the area, plans for further airport expansion have created controversy in neighborhoods affected by airport noise and physical expansion of the airport.

Airport surrounded by residential communities

The Reno-Tahoe International Airport is located in the southeast section of the city of Reno and is nearly surrounded by residential communities. In 1990, the Washoe County Airport Authority conducted a Federal Aviation

Regulation Noise Compatibility Study for the Reno Cannon International Airport, now named the Reno-Tahoe International Airport. The area studied covered approximately 11 miles in a north-south direction and 3.9 miles in an east-west direction and included significant portions of Reno, Sparks, and unincorporated Washoe County. The study identified current noise exposure conditions, forecasted future conditions if noise continued unabated, and provided a summary of proposed noise abatement measures and forecasts of future conditions should noise abatement measures be implemented. The Airport Authority study did not, however, attempt to quantify the impact of airport noise on residential housing values. This is an issue of obvious concern to all homeowners in the area, but especially to those who did not foresee such growth when they bought their homes.

Analysis relates selling price to noise

We analyzed 1,596 homes in the Airport Authority's study area sold between 1991 and 1995. We used a statistical model to estimate the effect on sell-

ing price of a house's physical characteristics, the characteristics of its neighborhood, and both the noise level, as defined by the County Airport Authority, and the house's proximity to the airport.

The Washoe County Airport Authority furnished Noise Exposure Maps for our study. These maps show noise contours for the 65, 70, and 75 decibel areas, with noise measured as the annual mean sound level with a penalty for noise occurring between 10:00 p.m. and 7:00 a.m. Airplane noise is the dominant noise source in these contours. Figure 1 shows these noise contours for 1993. A more de-

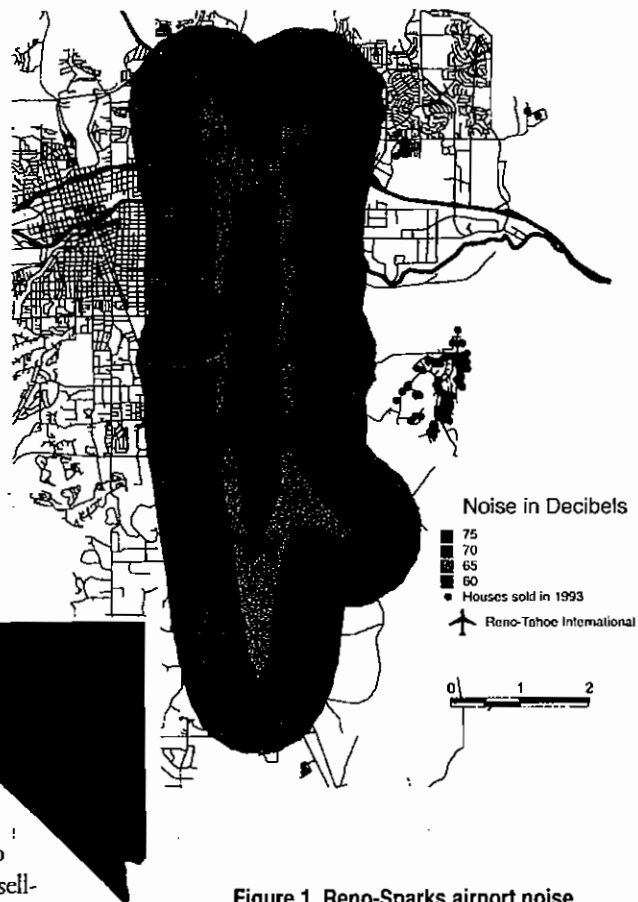


Figure 1. Reno-Sparks airport noise

tailed discussion of the data and analytical techniques is given in Kaufman.

Our estimates show that housing values decline by as much as 3 percent for a 10 decibel increase in the noise level, but that the decline in housing value due to noise diminishes as distance from the airport increases.

Airport noise and location depress housing values

Our estimates show that housing values decline by as much as 3 percent for a 10 decibel increase in the noise level, but that the decline in housing value due to noise diminishes as distance from the airport increases. This may be due to a visual disamenity near the airport, an inaccurate perception on the part of buyers of noise levels related to proximity to the airport, or it may actually reflect slightly diminishing noise levels, even within a given noise zone, as distance from the airport increases. Our estimates suggest, for example, that a \$100,000 home half a mile from the airport in the 60-decibel zone would be worth about \$98,500 in the 65-decibel zone and about \$97,000 in the 70-decibel zone. Our estimates also suggest that distance from the airport is a more important factor in housing values in the Reno-Sparks area than the noise level itself. If a \$100,000 house half a mile from the airport in the 60-decibel zone was located two miles from the airport instead, but still in the 60-decibel zone, it would be worth about \$105,700.

Of course, most communities try to avoid these problems by locating airports in more rural settings. Nev-

ertheless, increasing an airport's distance from the central city increases home-to-airport travel costs and likely reduces the overall popularity of the site. This tension causes most airports to be built in the rural-urban fringe. Urban growth, however, is dynamic. More and more often, airports end up inside of urban areas where the damages we have measured do occur. As the urbanization of the United States increases, these issues will continue to grow in importance. ■

■ For more information

Kaufman, H. "No Plane, Big Gain: Airport Noise and Residential Property Values in the Reno-Sparks Area." Master's thesis, University of Nevada, Reno, 1996.

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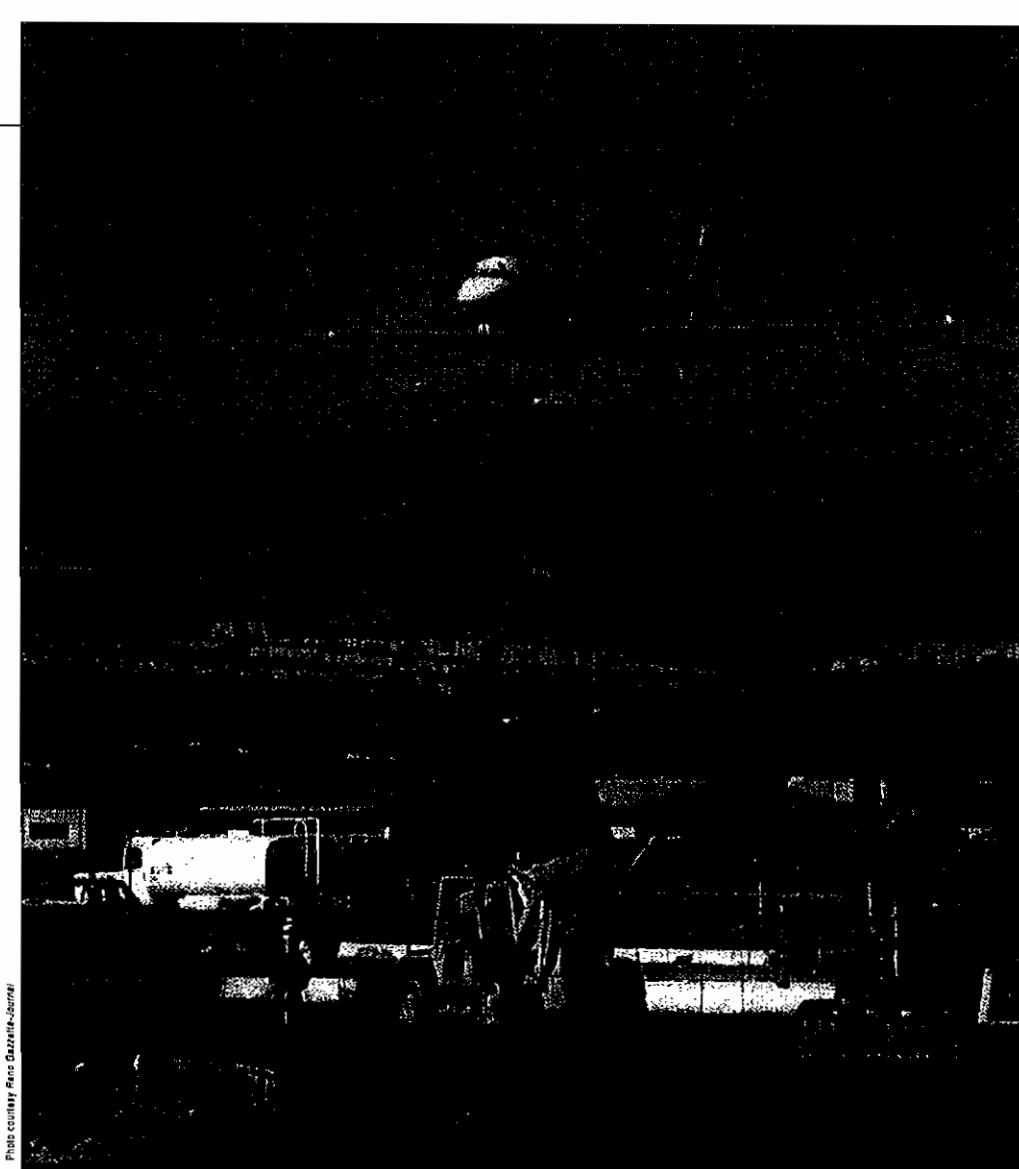


Photo courtesy Reno Gazette-Journal