01SP21-2J-05/29/02

LEGEND

- Airport Property
- Municipal Boundaries
- Extra-territorial Jurisdiction
- Railroad Tracks
- Study Area
- Helicopter Departure Tracks
- Helicopter Sub-Tracks
- Radar Helicopter Departure Flight Tracks
- Helicopter Arrival Tracks
- Helicopter Arrival Sub-Tracks
- Radar Helicopter Arrival Flight Tracks
- Consolidated Helicopter Touch-and-Go Tracks
- Helicopter Touch-and-Go Sub-Tracks
- Radar Helicopter Touch-and-Go Flight Tracks
- Consolidated Touch-and-Go Tracks
- Touch-and-Go Sub-Tracks
- Radar Touch-and-Go Flight Tracks
- Low Density Residential (0-3 du/ac)
- Medium Density Residential (3.1-10 du/ac)
- High Density Residential (10.1+ du/ac)
- Floodplains
- Noise Sensitive
- School
- Library
- Historic Structures
- Places of Worship

Source: Base Information and Map:
City of Lincoln Geographic Information System, May 2002.
Radar Data, October 7 to 11, 2002
Coffman Associates Analysis.

NORTH

0 4000
SCALE IN FEET

Lincoln Airport

Exhibit 2J
TOUCH-AND-GO AND HELICOPTER TRACKS

aviation ramp. Aircraft were modeled facing a 190-degree heading 70 percent of the time and 30-degree heading 30 percent of the time.

INM OUTPUT

Output data selected for calculation by the INM were annual average noise contours in DNL. F.A.R. Part 150 requires that 65, 70, and 75 DNL contours must be mapped in the official Noise Exposure Maps. In addition, the 60 DNL noise contour is also mapped in this study as a guideline for future noise abatement and land use planning. For purposes of this Part 150 study, Lincoln Airport is considering noise between 60 and 65 DNL to have a marginal effect. See the "Land Use Compatibility Guidelines at Lincoln Airport" section on page 3-3 for more detail.

This section presents the results of the contour analysis for current and forecast noise exposure conditions, as developed from the Integrated Noise Model.

2002 NOISE EXPOSURE CONTOURS

Exhibit 2K presents the plotted results of the INM contour analysis for 2002 conditions using input data described in the preceding pages. The areas within each contour are presented in **Table 2G**.

TABLE 2G
Comparative Areas Of Noise Exposure
Lincoln Airport

	Area In Square Miles		
DNL Contour	2002	2007	2022
60	9.57	9.54	5.56
65	4.61	4.54	2.47
70	2.15	2.09	1.16
75	1.11	1.07	0.59

The shape and extent of the contours reflect the underlying flight track assumptions. As indicated on **Exhibit 2K**, the primary runway, Runway 17R-35L, accommodates the majority of traffic at Lincoln Airport. A number of bulges within the contour set are due to training and maintenance activity at the airport. For example, the bulge east of Runway 17L-35R is due to maintenance runup activities performed by the fixed base operators at the airport. The slight bulge west of the south end of Runway 17R-35L is due to military training activities. The bulge on the east side of the south end of Runway 17L-35R is caused by aircraft turning to the east as well as the presence of the parallel Runway 17R-35L runway system.

As depicted on **Exhibit 2K**, the 60 DNL contour at its longest point extends to the north, approximately 16,000 feet from airport property, over scattered single family residences, agricultural land, and industrial properties. The contour is "forked" due to the differentiation between traffic traveling due north versus to the northeast. To the south, the contour also extends approximately 16,000 feet over residential, commercial, and industrial property. The contour slightly extends off airport property in all other directions, primarily mirroring runway use at the airport with slight bulges due to military and maintenance activities as discussed previously.

The 65 DNL noise contour is smaller than the 60 DNL contour. The shape of the 65 DNL contour is similar to that of the 60 DNL contour, other than that the "fork" in the 60 DNL contour north of the airport is no longer as prevalent. To the north, the 65 DNL contour, at its longest point, extends approximately 7,500 feet from airport property. To the south, the contour extends approximately 8,000 feet, terminating at West A Street. The contour slightly extends off airport property in all other directions.

The 70 DNL noise contour extends approximately 1,800 feet off airport property to the north and 3,000 feet off airport property to the south. In all other directions, the contour primarily remains on airport property. The 75 DNL contour is completely contained on airport property.

COMPARATIVE MEASUREMENT ANALYSIS

A comparison of the average measured DNL(24) versus the computer-predicted cumulative DNL noise values for each measurement site has been developed. In this case, it is important to remember what each of the two noise levels indicates. The computer-modeled DNL contours are analogous to the climate of an area and represent the noise levels on an average day of the period under consideration. In contrast, the field measurements reflect only the noise levels on the specific days of measurement. Additionally, the field measurements consider all the noise events that exceed a prescribed threshold and duration, while the computer model only calculates the noise due to aircraft events. As previously discussed, the field measurements can easily be contaminated by ambient noise sources other than aircraft around the measurement sites. With this understanding in mind, it is useful to evaluate the comparative aircraft DNL levels of the measurement sites.

DNL Comparison

This analysis provides a direct comparison of the measured DNL(24) and predicted values for each noise measurement site. In order to facilitate such a comparison, it is necessary to ensure that the computer model input is representing the observed reality as accurately as possible within the capabilities of the model.