

## **Land Use Analysis**

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### **Introduction**

This section of the FAR Part 150 Noise Exposure and Land Use Compatibility Study for Centennial Airport deals with the evaluation of land uses within both the existing (1999) and future noise contours (2005).

The development of realistic and effective alternatives is the focus of the FAR Part 150 noise compatibility planning process, with the overall objective being to explore a wide range of feasible alternatives of land use patterns, noise control actions and noise impact patterns. Solutions are explored which may accommodate both airport users and inhabitants, as well as environmental parameters. As a prelude to analyzing future noise exposure impacts resulting from changes in noise contours, an examination of existing conditions in terms of areas and persons affected by the existing noise contours is presented here. The following section deals with the types of land uses affected by the existing noise contours and the approximate number of persons within the designated noise contours. A subsequent section deals with these same items, but as they are affected by the future noise contours.

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### **Existing Land Use Analysis/Existing Noise Contours, 1999**

This section discusses the land use types found within the existing noise contours generated by aircraft utilizing Centennial Airport. The existing situation is represented by five contours, the DNL 55, 60, 65, 70 and 75 contours. An FAR Part 150 Study utilizes the DNL 65 contour as the threshold contour for land use analysis. However, this Study will present very generalized housing units and population information for the 55 and 60 also. It must be remembered that the total figures given below are cumulative. The figures for the larger contours contain the area within all smaller contours; i.e., the DNL 65 contour area includes the area representing the 70 and 75 contours. The population and housing information was obtained from 1995 updated Census data.

The DNL 55 contour is the largest and contains approximately thirteen thousand one hundred ninety-two (13,192) acres. There are approximately three thousand one hundred ninety-four (3,194) housing units representing approximately nine thousand eight hundred eighty-three (9,883) persons within the contour. There are three schools within the contour.

The DNL 60 contour is the next largest and contains approximately five thousand eight hundred ninety-nine (5,899) acres. There are approximately one thousand one hundred sixty-four (1,164) housing units representing approximately three thousand eight hundred forty-three (3,843) persons within the contour. This does not include the new apartments south of the airport. There are two schools within the contour.

The DNL 65 contour is the next largest and contains approximately two thousand five hundred forty-eight (2,548) acres. There are approximately eighteen (18) housing units representing approximately sixty-two (62) persons within the contour. This represents approximately one hundred (115) acres of residential development. The residential land use is located to both the north and south of the airport, with additional new residential units under construction to the north of the airport that will be within the contour. There are approximately eighty-eight (88) acres of mixed non-residential development, approximately three hundred forty-three (343) acres of business/office park development within the contour. In addition, there are approximately eight hundred seventy-five (875) acres of open space within the contour. The remaining property consists of approximately one thousand thirty-seven (1,037) acres are on airport property. There are no schools or historical sites listed on the National Register within the 65 DNL noise contour.

The DNL 70 is the next largest noise contour and contains approximately one thousand sixty-five (1,065) acres. There are no residential land uses within this contour. The contour is generally all on airport property except for approximately fifty-three (53) acres to the south that encompass portions of the Meridian Office Park and approximately two hundred forty-eight (248) acres of open space. There are no noise sensitive uses or historical sites listed on the National Register within the contour.

The DNL 75 is the smallest contour. It contains approximately five hundred twenty-two (522) acres. There is no residential development within the contour. The contour is entirely on airport property except for a small area (32 acres) that crosses E470 to the south over the treatment ponds associated with the Meridian Office Park.

The existing table, entitled *EXISTING LAND USE WITHIN EXISTING NOISE CONTOURS, 1998* summarizes the above land use information.

Table D1  
**EXISTING LAND USE WITHIN EXISTING NOISE CONTOURS, 1999**  
*Centennial Airport FAR Part 150 Study*

| Land Use       | DNL 55<br>Contour |           | DNL 60<br>Contour |           | DNL 65<br>Contour |           | DNL 70<br>Contour |           | DNL 75<br>Contour |           |
|----------------|-------------------|-----------|-------------------|-----------|-------------------|-----------|-------------------|-----------|-------------------|-----------|
| Residential    | NA                | Ac        | NA                | Ac        | 115               | Ac        | 0                 | Ac        | 0                 | Ac        |
| People         | 9,883             |           | 3,843             |           | 62                |           | 0                 |           | 0                 |           |
| House. Units   | 3,193             |           | 1,164             |           | 18                |           | 0                 |           | 0                 |           |
| Schools        | 3                 |           | 2                 |           | 0                 |           | 0                 |           | 0                 |           |
| Bus/Off. Park  | NA                | Ac        | NA                | Ac        | 343               | Ac        | 53                | Ac        | 0                 | Ac        |
| Open Space     | NA                | Ac        | NA                | Ac        | 875               | Ac        | 248               | Ac        | 32                | Ac        |
| Govt./Public   | NA                | Ac        | NA                | Ac        | 0                 | Ac        | 0                 | Ac        | 0                 | Ac        |
| Airport        | NA                | Ac        | NA                | Ac        | 1,037             | Ac        | 764               | Ac        | 490               | Ac        |
| Mixed Non-Res. | NA                | Ac        | NA                | Ac        | 88                | Ac        | 0                 | Ac        | 0                 | Ac        |
| <b>Total</b>   | <b>13,192</b>     | <b>Ac</b> | <b>5,899</b>      | <b>Ac</b> | <b>2,458</b>      | <b>Ac</b> | <b>1,065</b>      | <b>Ac</b> | <b>522</b>        | <b>Ac</b> |

The total figures for each contour are cumulative. The figures for the larger contours contain the area -within all smaller contours.

SOURCE: BCS International Contours, BDC Analysis

### Existing Land Use Inconsistencies

Land use incompatibility is an area of determination and regulation that is to be resolved solely at the discretion of the local community or by the state. To determine what constitutes land use incompatibility, the individual land use types within particular noise contours need to be defined. The Federal Aviation Administration, through the FAR Part 150 Study, has developed generalized guidelines for land use compatibility for land use planning purposes, as presented earlier. However, these are guidelines and do not automatically define incompatible land uses. Based on these guidelines, the residential land uses and churches within the 65 or greater DNL noise contours, unless sound attenuated, are inconsistent with the Federal guidelines. However, each jurisdiction can determine and identify land use compatibility based on local conditions and policy.

## Existing Land Use Analysis/ Future (Base Case, 2005) Noise Contours

This section will discuss the land use types found within the agreed upon base case future (2005) noise contours generated by aircraft utilizing Centennial Airport, assuming that all land uses will remain the same. This is the “base case” which assumes that no operational or facility modifications will occur at the airport, and is reflective of the forecast operations and aircraft types presented in Scenario Four in the previous chapter. Scenario Four reflects the same percentage of Stage 2 and Stage 3 aircraft as the existing noise contour, with a slight increase in the percentage of night time operations. This is the situation with which future alternative scenarios will be measured to quantify impacts as compared with the impacts that would occur if not mitigation measures were implemented.

Table D2

### EXISTING LAND USE WITHIN FUTURE NOISE CONTOURS, 2005

*Centennial Airport FAR Part 150 Study*

| Land Use       | DNL 55<br>Contour |           | DNL 60<br>Contour |           | DNL 65<br>Contour |           | DNL 70<br>Contour |           | DNL 75<br>Contour |           |
|----------------|-------------------|-----------|-------------------|-----------|-------------------|-----------|-------------------|-----------|-------------------|-----------|
| Residential    | NA                | Ac        | NA                | Ac        | 225               | Ac        | 71                | Ac        | 5                 | Ac        |
| People         | 17,568            |           | 8,032             |           | 1,591             |           | 143               |           | 34                |           |
| House. Units   | 6,044             |           | 2,581             |           | 544               |           | 117               |           | 29                |           |
| Schools        | 5                 |           | 2                 |           | 0                 |           | 0                 |           | 0                 |           |
| Bus/Off. Park  | NA                | Ac        | NA                | Ac        | 582               | Ac        | 104               | Ac        | 10                | Ac        |
| Open Space     | NA                | Ac        | NA                | Ac        | 916               | Ac        | 265               | Ac        | 43                | Ac        |
| Govt./Public   | NA                | Ac        | NA                | Ac        | 0                 | Ac        | 0                 | Ac        | 0                 | Ac        |
| Airport        | NA                | Ac        | NA                | Ac        | 908               | Ac        | 722               | Ac        | 502               | Ac        |
| Mixed Non-Res. | NA                | Ac        | NA                | Ac        | 75                | Ac        | 9                 | Ac        | 0                 | Ac        |
| <b>Total</b>   | <b>14,077</b>     | <b>Ac</b> | <b>6,554</b>      | <b>Ac</b> | <b>2,706</b>      | <b>Ac</b> | <b>1,170</b>      | <b>Ac</b> | <b>560</b>        | <b>Ac</b> |

The total figures for each contour are cumulative. The figures for the larger contours contain the area -within all smaller contours.

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### **Future Base Case (2005) Land Use Inconsistencies**

Based on the Federal guidelines, the residential land uses and schools within the 65 or greater DNL noise contours, that are not sound attenuated, are inconsistent with these guidelines. The forecast aircraft aviation activity forecasts result in the contours that are reflected in the above table.