



# Noise Compatibility Program Update

Philadelphia International Airport  
Noise Compatibility Program Update

## Noise Exposure Map Summary Report

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**City of Philadelphia  
Division of Aviation**

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# Noise Compatibility Program Update

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## Acronyms and Abbreviations

AAD	Average Annual Day
ARD	Airspace Redesign
dB	Decibel
DNL	Day-Night Average Sound Level
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulation
HUD	US Department of Housing and Urban Development
INM	Integrated Noise Model
NEM	Noise Exposure Map
NCP	Noise Compatibility Program
PHL	Philadelphia International Airport

# Noise Compatibility Program Update

## 1.0 Introduction

A Noise Compatibility Study Update is being undertaken by the City of Philadelphia, Division of Aviation, to update the airport's existing Noise Compatibility Program (NCP) for Philadelphia International Airport (PHL). The Federal Aviation Administration (FAA) approved the original NCP in May 2003.

A Noise Compatibility Study (FAR Part 150) is a voluntary process initiated by an airport to develop, evaluate, and recommend actions that the airport, local municipalities, airlines, and/or the FAA could take to help reduce the level of aircraft noise in communities surrounding an airport. FAA acceptance of an airport's Noise Exposure Map (NEM) and approval of the NCP allows an airport operator to become eligible to receive Federal funding to develop and implement the recommended programs within the NCP that have been designed to help mitigate aircraft noise.

## 2.0 Purpose and Need for the Study

Numerous changes have occurred at PHL since the original Noise Compatibility Study was prepared and submitted to the FAA. The original NCP was based on a forecast of operations and conditions five years into the future at the time of the study, which means that the future NEM represented operations at PHL for the forecast year 2006. Further, the mitigation components of the original NCP were based on the incompatible land uses bounded by the Federally-identified compatibility threshold (the DNL 65 dB Noise Exposure Contour), which is subject to the airfield configuration, fleet mix, runway use, and a host of additional factors that change over time.

Federal Aviation Regulations require that an airport's NCP be updated if there is any change in the operation of the airport that could increase existing areas or create new areas of non-compatible land uses. The partial implementation of the FAA's Airspace Redesign project (ARD)<sup>1</sup> and the extension of Runway 17/35 would meet the criteria of a change to airport operations. Also, a component of the original NCP was to reevaluate the program on a regular basis, specifically every five years.

## 3.0 Airport Environs

PHL is situated south of Interstate 95 and north of the Delaware River on approximately 2,300 acres of land in Tinicum Township, Delaware County and the City of Philadelphia, Philadelphia County. Land use in the immediate vicinity of the airport is mostly compatible with airport operations as defined by the FAA (refer to Figures 1 and 2 for land use classifications), and consists of industrial,

commercial, waterfront, recreational, residential, transportation, and open spaces. West of the airport, land use includes residential (including Essington, PA and Lester, PA), recreation, commercial and industrial areas. Historically, this area has been the only area subjected to noise levels deemed incompatible with residential land use. East of the airport, land uses include commercial, industrial, and governmental, including Fort Mifflin, a national historic landmark, and the former Philadelphia Naval Base and Shipyard. North of the airport, beyond State Route 291 and Interstate 95, land uses include mixed residential, commercial and open space. The John Heinz National Wildlife Refuge is located northwest of the airport. The boroughs of Paulsboro and National Park lie across the Delaware River in New Jersey.

## 4.0 Land Use Compatibility

Land use compatibility is defined by the FAA in *14 CFR 150, Airport Noise Compatibility Planning* (Part 150), as the "use of land that is identified as normally compatible with the outdoor noise environment or an adequately attenuated noise reduction level for the indoor activities at the location."

The goal of the FAA's noise compatibility guidelines is to discourage the development of incompatible land uses around airports. The FAA guidelines specify that DNL is the noise metric used in defining land-use compatibility. Both the U.S. Department of Housing and Urban Development (HUD) and the FAA define a DNL value of 65 dB as the threshold of incompatibility with residential land uses.

### *Day-Night Average Sound Level (DNL) Metric*

The outdoor noise environment, in relation to airport noise compatibility, is measured in terms of the yearly Day-Night Sound Level (DNL) metric. The DNL represents noise as it occurs over a 24-hour period, with one important note: DNL treats nighttime noise differently from daytime noise. In determining DNL, it is assumed that the sound levels occurring at night (defined as 10 p.m. to 7 a.m.) are 10 dB louder than they really are. This 10 dB penalty is applied to account for greater sensitivity to nighttime noise, and the fact that events at night are often perceived to be more intrusive because nighttime ambient noise is less than daytime ambient noise.

FAA has published guidelines which include a table describing compatible land use information for several land uses as a function of yearly DNL values and a matrix that identifies what types of land uses are incompatible with certain levels of noise exposure; for example, residences, schools, and outdoor music shells or amphitheaters are incompatible land uses where noise exposure levels are

<sup>1</sup>"Partial implementation" refers to the fact that the proposed 230-degree departure heading from Runway 27L is not included in the 2008 existing baseline condition, but is included in the 2013 future baseline condition, as it is anticipated to be implemented sometime between 2009 and 2013.

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greater than DNL 65 dB (see Appendix A). While noise from airport operations may be experienced in areas beyond the DNL 65 dB noise contour, only those areas with noise levels of DNL 65 dB or higher are considered to be significantly impacted. It is the intent of both FAR Part 150 and PHL's Noise Compatibility Study Update to find ways to reduce incompatible land uses and prevent future incompatible land uses in these areas first, while still addressing noise exposure and evaluating methods to reduce noise exposure in all areas surrounding the airport.

## 5.0 Study Methodology

The required model for evaluating noise exposure around an airport is the FAA's Integrated Noise Model (INM). The INM is designed to estimate long-term noise exposure using the annual average number of operations of each aircraft type, using a given runway, and flying in a given direction. This is the standard approach to all aircraft noise modeling projects of this type. Use of a computer model is required by the FAA, and allows for the accurate estimation of noise levels in all areas around an airport, whereas actual noise measurements capture only a sample in time over a fraction of a year. As part of this study, PHL undertook a noise measurement program in November 2007 to measure community and aircraft noise levels. The measurement program indicated that, overall, noise levels measured by the monitors and those predicted by the INM were within an acceptable range. Further, while noise measurements can accurately capture sound levels in the present, they cannot be used to predict noise levels in the future or under various alternative scenarios, such as the extension of a runway, whereas the INM can and is used for such analysis. All aircraft operations and input data used to derive the noise exposure contours were modeled in accordance with FAA standards established in Order 1050.1E, *Policies and Procedures for Considering Environmental Impacts* and Order 5050.4B, *Airport Environmental Handbook*.

The INM utilizes data collected during the airport inventory portion of the study to generate the input files to produce noise contours and grid point calculations of predicted noise at specific sites such as hospitals, schools or other sensitive locations. The INM models noise at a number of individual grid point locations. A noise contour is the graphical depiction of noise exposure levels, created by connecting grid points with equal values.

Noise exposure was calculated for existing conditions and conditions five years ahead using input data which included:

- PHL facilities (i.e. runway data)
- PHL activity levels (operations / take-offs and landings)
- PHL fleet mix (type and size of planes)
- PHL operating conditions (east flow or west flow); and
- PHL runway utilization

## 6.0 2008 Existing Baseline Noise Exposure

To establish the noise exposure for the 2008 existing baseline condition through the INM, twelve months of data was assembled (July 2007 through June 2008). During that time, the airport conducted 499,310 aircraft operations, equating to approximately 1,368 operations on an annual average day.

Regarding the fleet mix for the 2008 baseline condition, regional/business jets and narrowbody jets were the most common type of aircraft operating at PHL (43% and 40% respectively), followed by propeller planes (12%) and widebodies (5%).

During the twelve month study time frame, the airport operated in west-flow 81% of the time (meaning prevailing winds were from the west and weather conditions were generally good), and in east flow the remaining 19% of the time (meaning prevailing winds were from the east and weather conditions were relatively poor). Runway utilization for the 2008 Existing Baseline condition is summarized in **Table 1**.

Also during this twelve month period, the FAA partially implemented the Airspace Redesign Project (ARD) at PHL. Implementation included the utilization of divergent departure headings from Runways 27L, 27R, 9L and 9R during specific daytime hours to assist in reducing delay and to accommodate future airspace changes.

Noise exposure levels of DNL 65 dB and above are shown in **Figure 1: 2008 Baseline Noise Exposure Contour**. The noise contour covers approximately 6.8 square miles, most of which is over compatible land uses. The highest levels of noise exposure (DNL 70 dB and above) remain over airport property or other compatible land uses, including the Delaware River. The DNL 65 dB noise contour also remains over mostly compatible land uses, with exception of an area to the east in the Navy Yard and to the west, where the contour includes portions of residential land uses in Tinicum Township, PA. Overall, a majority of the DNL 65 dB noise contour remains either over airport property or over the Delaware River (approximately 99%), while less than one percent of the underlying land uses are considered incompatible.

The shape of the contour reflects primarily the predominant west flow of operations at PHL and the use of Runways 9L/27R and 9R/27L. As shown on **Figure 1**, to the west the DNL 65 dB noise contour extends over the Delaware River, driven by aircraft departures from Runways 27L and 27R. To the east, the contour also extends over the Delaware River, reflecting mainly the majority of aircraft arrivals to Runway 27R. North of the airport, the contour remains on airport



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property, due to the use of Runway 17/35 by regional jet and propeller aircraft, which are comparatively quieter than larger narrow and widebody aircraft (many of which cannot use Runway 17/35 due to its shorter length). Aircraft departures from Runway 17 and arrivals to Runway 35 contribute to the noise contour extending past the airport property line to the south of the airport; however the contour remains over the Delaware River.

An estimated 132 housing units (240 estimated persons)<sup>2</sup> reside within the DNL 65 dB noise contour for the 2008 Existing Baseline Noise Exposure condition. All of the estimated housing and population impacts are located in Tinicum Township (specifically within Essington), with exception of the caretaker's residence at Fort Mifflin, which falls within the DNL 70 dB noise contour.

**Table 1: 2008 Existing Baseline Runway Utilization  
(by percent of total operations)**

<b>Daytime (7:00 A.M. - 10:00 P.M.) Arrivals</b>									
<b>Runway</b>	<b>08</b>	<b>26</b>	<b>09L</b>	<b>09R</b>	<b>17</b>	<b>35</b>	<b>27L</b>	<b>27R</b>	<b>Total</b>
Widebody	0.0%	0.0%	0.0%	0.4%	0.0%	0.0%	0.0%	1.7%	2.1%
Narrowbody	0.0%	0.0%	0.0%	3.2%	0.0%	0.2%	0.2%	13.3%	16.9%
Propeller	0.0%	1.4%	0.0%	0.2%	0.5%	2.7%	0.0%	0.0%	4.9%
Regional Jet	0.0%	3.0%	0.0%	2.7%	0.6%	5.0%	0.2%	7.2%	18.6%
<b>Total</b>	<b>0.0%</b>	<b>4.4%</b>	<b>0.1%</b>	<b>6.5%</b>	<b>1.0%</b>	<b>7.9%</b>	<b>0.4%</b>	<b>22.2%</b>	<b>42.5%</b>
<b>Nighttime (10:00 P.M. - 7:00 A.M.) Arrivals</b>									
<b>Runway</b>	<b>08</b>	<b>26</b>	<b>09L</b>	<b>09R</b>	<b>17</b>	<b>35</b>	<b>27L</b>	<b>27R</b>	<b>Total</b>
Widebody	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%	0.4%	0.6%
Narrowbody	0.0%	0.0%	0.0%	0.7%	0.0%	0.0%	0.4%	2.3%	3.4%
Propeller	0.0%	0.6%	0.0%	0.1%	0.1%	0.2%	0.0%	0.0%	1.0%
Regional Jet	0.0%	0.7%	0.0%	0.5%	0.1%	0.4%	0.0%	0.9%	2.5%
<b>Total</b>	<b>0.0%</b>	<b>1.2%</b>	<b>0.1%</b>	<b>1.4%</b>	<b>0.1%</b>	<b>0.6%</b>	<b>0.5%</b>	<b>3.6%</b>	<b>7.5%</b>
<b>Daytime (7:00 A.M. - 10:00 P.M.) Departures</b>									
<b>Runway</b>	<b>08</b>	<b>26</b>	<b>09L</b>	<b>09R</b>	<b>17</b>	<b>35</b>	<b>27L</b>	<b>27R</b>	<b>Total</b>
Widebody	0.0%	0.0%	0.4%	0.0%	0.0%	0.0%	1.5%	0.4%	2.3%
Narrowbody	0.0%	0.0%	3.2%	0.1%	0.0%	0.0%	12.4%	1.4%	17.1%
Propeller	0.4%	0.0%	0.6%	0.1%	<0.1%	1.5%	2.0%	0.4%	5.0%
Regional Jet	0.8%	0.0%	2.5%	0.1%	<0.1%	0.2%	13.2%	1.4%	18.2%
<b>Total</b>	<b>1.3%</b>	<b>0.0%</b>	<b>6.6%</b>	<b>0.3%</b>	<b>&lt;0.1%</b>	<b>1.7%</b>	<b>29.1%</b>	<b>3.5%</b>	<b>42.6%</b>
<b>Nighttime (10:00 P.M. - 7:00 A.M.) Departures</b>									
<b>Runway</b>	<b>08</b>	<b>26</b>	<b>09L</b>	<b>09R</b>	<b>17</b>	<b>35</b>	<b>27L</b>	<b>27R</b>	<b>Total</b>
Widebody	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.3%	0.0%	0.4%
Narrowbody	0.0%	0.0%	0.8%	0.0%	0.0%	0.0%	2.1%	0.3%	3.2%
Propeller	0.2%	0.0%	0.1%	0.0%	<0.1%	0.1%	0.3%	0.2%	0.8%
Regional Jet	0.2%	0.0%	0.4%	0.0%	<0.1%	0.0%	2.0%	0.2%	2.9%
<b>Total</b>	<b>0.4%</b>	<b>0.0%</b>	<b>1.4%</b>	<b>0.1%</b>	<b>&lt;0.1%</b>	<b>0.1%</b>	<b>4.7%</b>	<b>0.7%</b>	<b>7.4%</b>
<b>Overall Runway Utilization</b>	<b>1.6%</b>	<b>5.6%</b>	<b>8.2%</b>	<b>8.3%</b>	<b>1.2%</b>	<b>10.3%</b>	<b>34.7%</b>	<b>30.1%</b>	<b>100.0%</b>

Note: Percentages are rounded to the nearest 0.1%. Totals are subject to rounding errors.

<sup>2</sup>The estimated population and housing units information was calculated based on 2000 United States Census data. Population exposure was computed by proportion, which means that the population in each block was proportionally included in the count based on the percentage of each block's area that fell under the noise contour.

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06-05-09

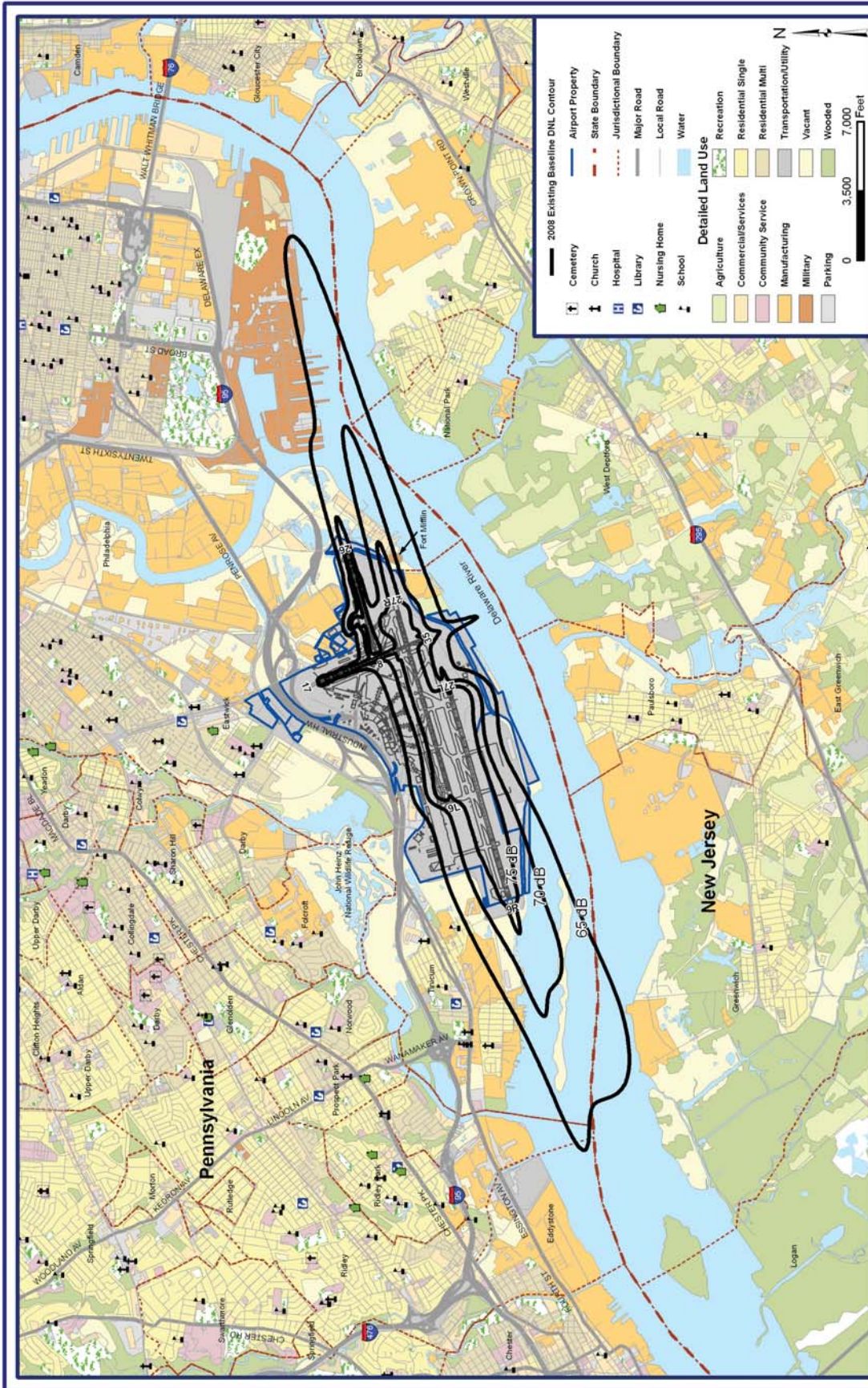


Figure 1 - 2008 Existing Baseline DNL Noise Exposure Contour

DMJM AVIATION AECOM

Prepared by Wyle



## Noise Compatibility Program Update

Coordinate System: NAD 1983 StatePlane Pennsylvania South Feet.

Figure1\_2008ExistingBaseline.mxd

# Noise Compatibility Program Update

## 7.0 2013 Future Baseline Noise Exposure

The five year future forecast condition takes into account anticipated changes to factors which may influence the pattern of noise exposure around an airport, such as increases in the levels of operations and the opening of capacity enhancing projects such as the extension of Runway 17/35.

The forecast fleet mix for 2013 included data from the PHL Master Plan Update which was based upon analysis of historical trends, input from key airlines, and assumptions regarding future key factors affecting aviation activity at PHL. The fleet mix used in the INM for 2013 includes regional/business jets and narrowbody jets maintaining a high percentage (34% and 48% respectively), followed by propeller planes (12%) and widebodies (6%).

Airport operations for 2013 are expected to increase by 19% to over 594,000 (1,628 AAD Operations). Under the 2013 future condition, the airport operates in west-flow on average 70% of the time and in east flow 30% of the time. Runway utilization for the 2013 Future Baseline condition is summarized in **Table 3**.

Results of the INM noise modeling for the 2013 Future Baseline noise exposure contour are depicted in **Figure 2**. Overall, the area exposed to DNL levels of 65 dB or greater is expected to increase to 7.7 square miles, which is consistent with the growth assumptions used in the modeling. Notable changes in noise exposure are attributed to the implementation of the Airspace Redesign Project and the extension of Runway 17/35. This is most evident to the west of PHL, where the implementation of the southern most (230°) dispersed departure heading from Runways 27L and 27R results in a noticeable change to the contour. To the east of the airport, along the Runway 9R/27L and 9L/27R

extended centerlines, the noise contour has receded by approximately 3,500 feet, likely caused by the reduced use of Runways 27L and 27R when PHL is in east flow. North of Runway 17/35, a notable area of noise exposure increase exists, resulting from the increase in operations associated with additional traffic (regional jets and some narrowbody aircraft) departing from Runway 35.

**Table 2** depicts the land use and estimated population impacts associated with the 2008 and 2013 Noise Contours. Using the standard census data methodology, the DNL 65 dB noise exposure contour in 2013 includes an estimated population of approximately 319 people and 168 housing units, with one unit and an estimated population of two people residing within the DNL 70+ dB noise contour. Since the 2013 condition includes incompatible land uses, further land use assessments within the DNL 65 dB noise contour were undertaken. **Figure 3** and **Figure 4** compare the 2008 and 2013 noise contours over Tinicum and Eastwick. Although in the previous Noise Compatibility Study, significant impacts were anticipated to occur in Tinicum Township, the noise contour has receded in this area due to changes in the aircraft fleet mix and the implementation of the dispersed departure headings from Runways 27L and 27R. As a result, no incompatible land uses in Tinicum Township remain impacted by the DNL 65 dB noise exposure contour in the 2013 Future Baseline NEM. However, in Eastwick, due to the extension of Runway 17/35 and the increase in operations on this runway, the noise contour does impact incompatible land uses including approximately 35 homes, two schools, and one church. Impacts within the DNL 70 dB noise contour are attributed to the caretaker residence located at Fort Mifflin. Reducing the incompatibility of these land uses is the goal of the updated Noise Compatibility Program.

**Table 2: Summary of Estimated Noise Exposure Impacts**

2008 Existing Baseline Noise Exposure				
	65-70 DNL	70-75 DNL	75+ DNL	65+ DNL
Estimated Population	237	3	0	240
Housing Units	131	1	0	132
2013 Future Baseline Noise Exposure				
	65-70 DNL	70-75 DNL	75+ DNL	65+ DNL
Estimated Population	317	2	0	319
Housing Units	168	0	0	168

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**Table 3 : 2013 Future Baseline Runway Utilization  
(by percent of total operations)**

<b>Daytime (7:00 A.M. - 10:00 P.M.) Arrivals</b>									
<b>Runway</b>	<b>08</b>	<b>26</b>	<b>09L</b>	<b>09R</b>	<b>17</b>	<b>35</b>	<b>27L</b>	<b>27R</b>	<b>Total</b>
Widebody	0.0%	0.0%	0.0%	0.8%	0.0%	0.0%	0.2%	1.5%	2.6%
Narrowbody	0.0%	0.0%	0.1%	6.4%	0.6%	1.3%	1.6%	11.7%	21.6%
Propeller	0.0%	0.5%	0.0%	0.3%	0.0%	1.2%	0.0%	0.0%	1.9%
Regional Jet	0.0%	1.0%	0.1%	4.6%	0.8%	10.4%	0.2%	1.2%	18.2%
<b>Total</b>	<b>0.0%</b>	<b>1.5%</b>	<b>0.2%</b>	<b>12.1%</b>	<b>1.4%</b>	<b>12.8%</b>	<b>2.0%</b>	<b>14.4%</b>	<b>44.4%</b>
<b>Nighttime (10:00 P.M. - 7:00 A.M.) Arrivals</b>									
<b>Runway</b>	<b>08</b>	<b>26</b>	<b>09L</b>	<b>09R</b>	<b>17</b>	<b>35</b>	<b>27L</b>	<b>27R</b>	<b>Total</b>
Widebody	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.2%	0.3%
Narrowbody	0.0%	0.0%	0.0%	1.0%	0.1%	0.2%	0.4%	1.1%	2.7%
Propeller	0.0%	0.1%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.2%
Regional Jet	0.0%	0.3%	0.0%	0.9%	0.1%	0.9%	0.0%	0.1%	2.3%
<b>Total</b>	<b>0.0%</b>	<b>0.4%</b>	<b>0.1%</b>	<b>2.0%</b>	<b>0.1%</b>	<b>1.2%</b>	<b>0.4%</b>	<b>1.4%</b>	<b>5.6%</b>
<b>Daytime (7:00 A.M. - 10:00 P.M.) Departures</b>									
<b>Runway</b>	<b>08</b>	<b>26</b>	<b>09L</b>	<b>09R</b>	<b>17</b>	<b>35</b>	<b>27L</b>	<b>27R</b>	<b>Total</b>
Widebody	0.0%	0.0%	0.8%	0.0%	0.0%	0.0%	1.6%	0.1%	2.6%
Narrowbody	0.0%	0.0%	6.6%	0.3%	<0.1%	1.4%	12.0%	1.0%	21.3%
Propeller	0.3%	0.0%	0.3%	0.0%	<0.1%	1.1%	0.2%	0.0%	1.9%
Regional Jet	0.6%	0.0%	4.1%	0.2%	<0.1%	10.0%	2.8%	0.2%	17.9%
<b>Total</b>	<b>0.8%</b>	<b>0.0%</b>	<b>11.8%</b>	<b>0.5%</b>	<b>&lt;0.1%</b>	<b>12.6%</b>	<b>16.6%</b>	<b>1.4%</b>	<b>43.7%</b>
<b>Nighttime (10:00 P.M. - 7:00 A.M.) Departures</b>									
<b>Runway</b>	<b>08</b>	<b>26</b>	<b>09L</b>	<b>09R</b>	<b>17</b>	<b>35</b>	<b>27L</b>	<b>27R</b>	<b>Total</b>
Widebody	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.2%	0.0%	0.4%
Narrowbody	0.0%	0.0%	1.0%	0.1%	<0.1%	0.2%	1.6%	0.2%	3.1%
Propeller	0.1%	0.0%	0.0%	0.0%	<0.1%	0.1%	0.0%	0.0%	0.3%
Regional Jet	0.1%	0.0%	0.7%	0.1%	<0.1%	1.2%	0.4%	0.1%	2.6%
<b>Total</b>	<b>0.1%</b>	<b>0.0%</b>	<b>1.9%</b>	<b>0.2%</b>	<b>&lt;0.1%</b>	<b>1.5%</b>	<b>2.3%</b>	<b>0.3%</b>	<b>6.3%</b>
<b>Overall Runway Utilization</b>	<b>1.0%</b>	<b>1.8%</b>	<b>14.0%</b>	<b>14.8%</b>	<b>1.5%</b>	<b>28.1%</b>	<b>21.3%</b>	<b>17.5%</b>	<b>100%</b>

Note: Percentages are rounded to the nearest 0.1%. Totals are subject to rounding errors.



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06-05-09

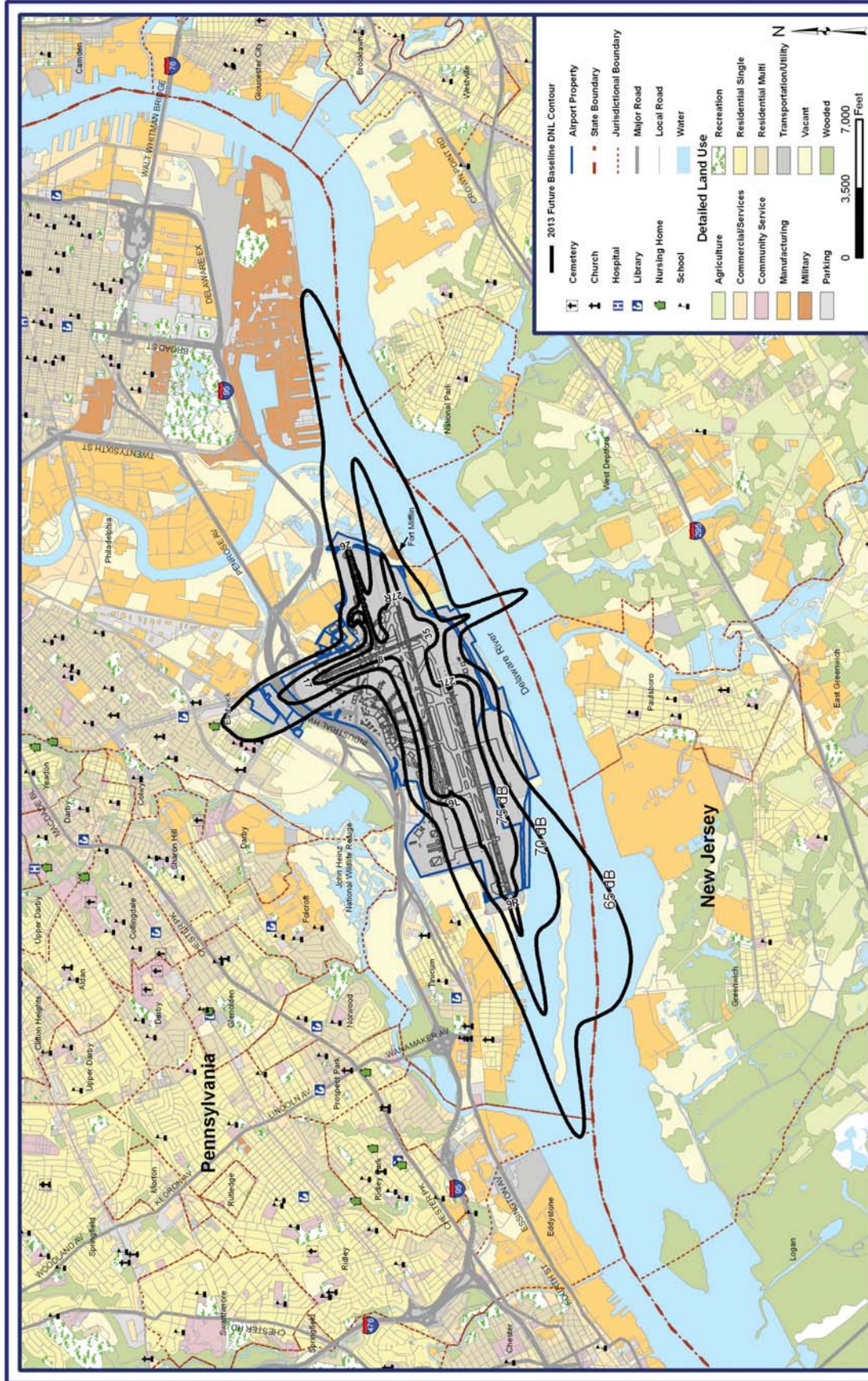


Figure 2 - 2013 Future Baseline DNL Noise Exposure Contour

DMJM AVIATION AECOM

Prepared by Wyle



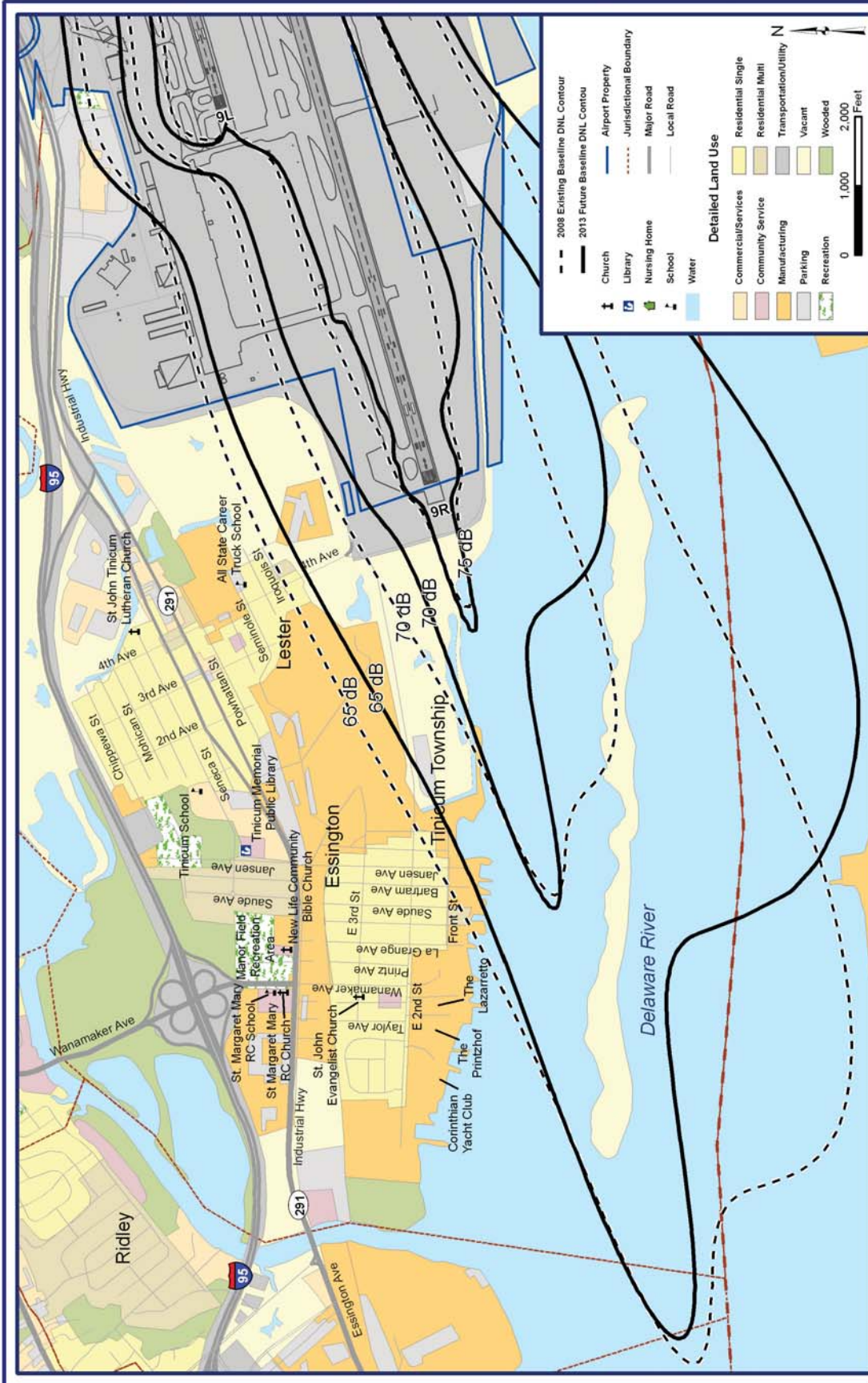
## Noise Compatibility Program Update

Coordinate System: NAD 1983 StatePlane Pennsylvania South Feet

Figure2\_2013FutureBaseline.mxd

# Noise Compatibility Program Update

06-05-09



**Figure 3 - 2008 Existing versus 2013 Future Baseline DNL Noise Exposure Contour Comparison - Tincicum Township**

DMJM AVIATION AECOM

Prepared by Wyle

Noise Compatibility Program Update

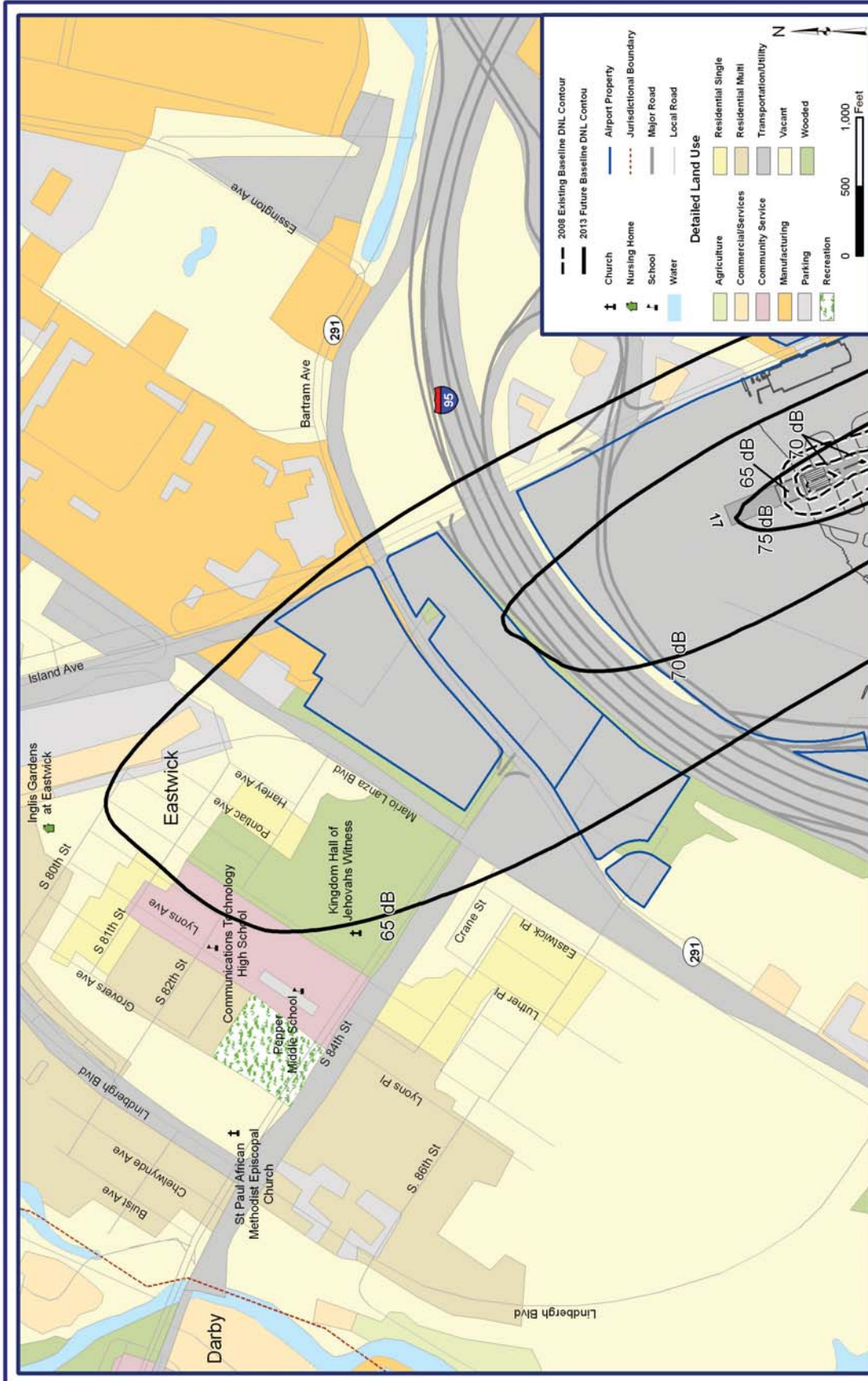


Coordinate System: NAD 1983 StatePlane Pennsylvania South Feet

Figure3\_2008Existingvs2013FutureBaseline\_Tincicum.mxd

# Noise Compatibility Program Update

03-24-09



**Figure 4 - 2008 Existing versus 2013 Future Baseline DNL Noise Exposure Contour Comparison - Eastwick**

DMJM AVIATION | AECOM

Prepared by Wyle

## Noise Compatibility Program Update



Coordinate System: NAD 1983 StatePlane Pennsylvania South Feet

# Noise Compatibility Program Update

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## 8.0 Public Participation

Public participation is a key element of any Airport Noise Compatibility Program. The public involvement process for the PHL Noise Compatibility Program Update has included two sets of Community Workshops, a newsletter, and the development and maintenance of a project website.

The public involvement process, and the inherent information sharing associated with it, has factored into a reevaluation of the existing and future baseline contour years. When the Noise Compatibility Program Update was initiated, the study years were 2007 and 2012 (five years following the initial study and five years out from there). However, given the dynamic nature of Philadelphia International Airport, the partial implementation of the FAA's Airspace Redesign Project at the end of 2007, and the feedback received at the Community Workshops, the study team revisited the baseline conditions. In doing so, the existing baseline contour was reassessed to account for 2008 conditions, and the future baseline contour was reassessed to account for five years out, or 2013, conditions.

The public participation program will continue through to the conclusion of the Noise Compatibility Program Update. Incompatible land uses identified within the DNL 65dB noise contour under the 2013 Future Baseline condition will be addressed in the next phase of the study, the development of the Noise Compatibility Program (NCP). The first priority of the NCP will be to address those areas identified as incompatible with noise exposure levels of at least DNL 65 dB, and to reduce the potential for incompatible development in the future. As the NCP evolves there will be further opportunity for public reviews and comment.

## 9.0 Conclusion

There is an opportunity to comment on these Noise Exposure Maps. Comments may be submitted through the project website, [www.phlpart150update.com](http://www.phlpart150update.com) or by email to [NEM@phlpart150update.com](mailto:NEM@phlpart150update.com), or mail to Phyllis VanIstendal at the address below:

Phyllis VanIstendal,  
Government Affairs Manager  
Philadelphia International Airport  
Division of Aviation  
Terminal D/E, 3rd Floor  
Philadelphia, PA 19153

# Noise Compatibility Program Update

## Appendix

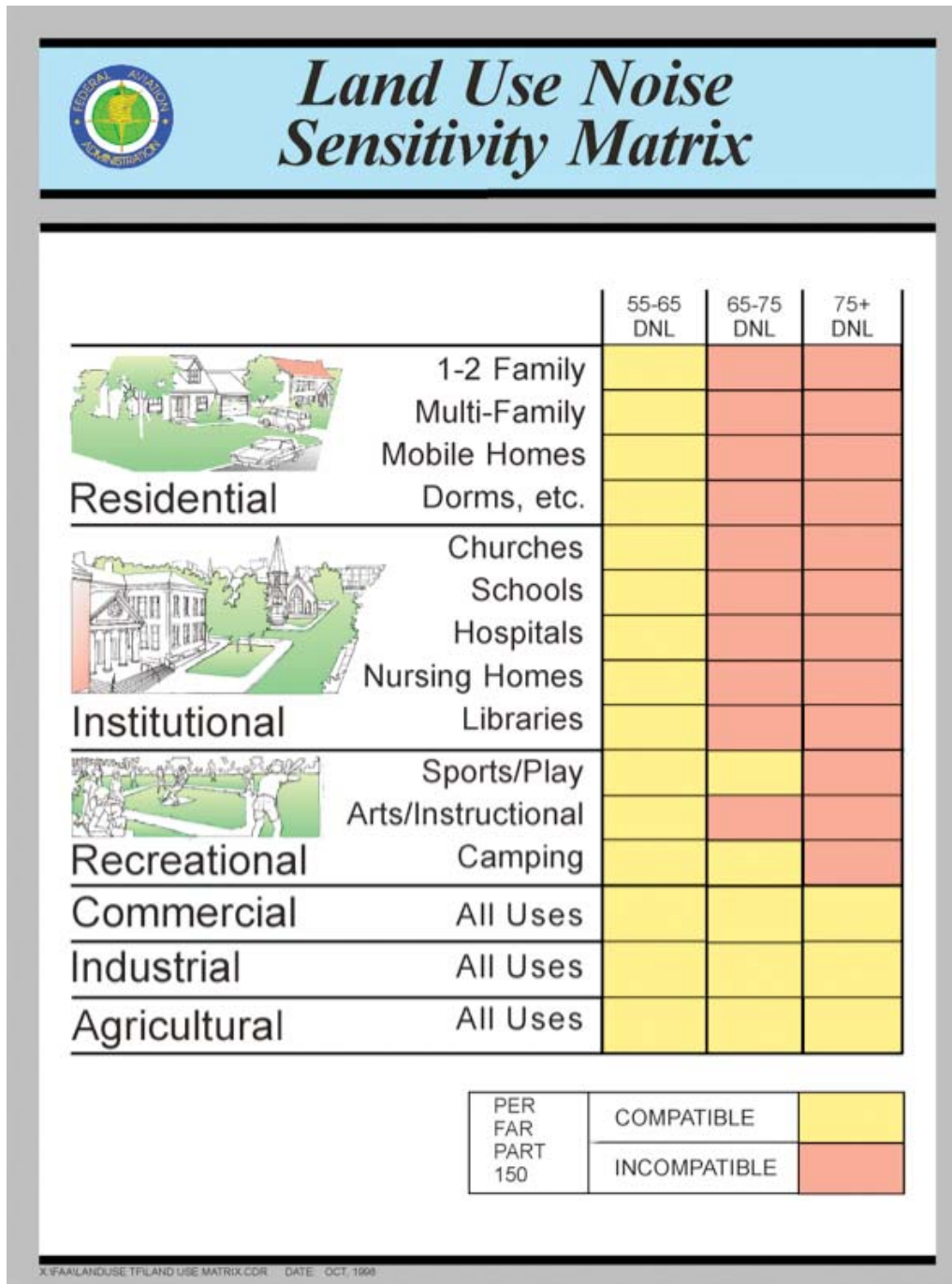


Figure A-1

# Noise Compatibility Program Update

**Table A-1 —Land Use Compatibility\* With Yearly Day-Night Average Sound Levels**

Land Use	Yearly day-night average sound level (L <sub>DNL</sub> ) in decibels					
	Below 65	65–70	70–75	75–80	80–85	Over 85
<b>Residential</b>						
Residential, other than mobile homes and transient lodgings	Y	N(1)	N(1)	N	N	N
Mobile home parks	Y	N	N	N	N	N
Transient lodgings	Y	N(1)	N(1)	N(1)	N	N
<b>Public Use</b>						
Schools	Y	N(1)	N(1)	N	N	N
Hospitals and nursing homes	Y	25	30	N	N	N
Churches, auditoriums, and concert halls	Y	25	30	N	N	N
Governmental services	Y	Y	25	30	N	N
Transportation	Y	Y	Y(2)	Y(3)	Y(4)	Y(4)
Parking	Y	Y	Y(2)	Y(3)	Y(4)	N
<b>Commercial Use</b>						
Offices, business and professional	Y	Y	25	30	N	N
Wholesale and retail—building materials, hardware and farm equipment	Y	Y	Y(2)	Y(3)	Y(4)	N
Retail trade—general	Y	Y	25	30	N	N
Utilities	Y	Y	Y(2)	Y(3)	Y(4)	N
Communication	Y	Y	25	30	N	N
<b>Manufacturing and Production</b>						
Manufacturing, general	Y	Y	Y(2)	Y(3)	Y(4)	N
Photographic and optical	Y	Y	25	30	N	N
Agriculture (except livestock) and forestry	Y	Y(6)	Y(7)	Y(8)	Y(8)	Y(8)
Livestock farming and breeding	Y	Y(6)	Y(7)	N	N	N
Mining and fishing, resource production and extraction	Y	Y	Y	Y	Y	Y
<b>Recreational</b>						
Outdoor sports arenas and spectator sports	Y	Y(5)	Y(5)	N	N	N
Outdoor music shells, amphitheaters	Y	N	N	N	N	N
Nature exhibits and zoos	Y	Y	N	N	N	N
Amusements, parks, resorts and camps	Y	Y	Y	N	N	N
Golf courses, riding stables and water recreation	Y	Y	25	30	N	N

**Source: FAR Part 150**

Numbers in parentheses refer to notes.

\* The designations contained in this table do not constitute a Federal determination that any use of land covered by the program is acceptable or unacceptable under Federal, State, or local law. The responsibility for determining the acceptable and permissible land uses and the relationship between specific properties and specific noise contours

rests with the local authorities. FAA determinations under part 150 are not intended to substitute federally determined land uses for those determined to be appropriate by local authorities in response to locally determined needs and values in achieving noise compatible land uses.

# Noise Compatibility Program Update

## Key to Table A-1

SLUCM=Standard Land Use Coding Manual.

Y (Yes)=Land Use and related structures compatible without restrictions.

N (No)=Land Use and related structures are not compatible and should be prohibited.

NLR=Noise Level Reduction (outdoor to indoor) to be achieved through incorporation of noise attenuation into the design and construction of the structure.

25, 30, or 35=Land use and related structures generally compatible; measures to achieve NLR of 25, 30, or 35 dB must be incorporated into design and construction of structure.

## Notes for Table A-1

(1) Where the community determines that residential or school uses must be allowed, measures to achieve outdoor to indoor Noise Level Reduction (NLR) of at least 25 dB and 30 dB should be incorporated into building codes and be considered in individual approvals. Normal residential construction can be expected to provide a NLR of 20 dB, thus, the reduction requirements are often stated as 5, 10 or 15 dB over standard construction and normally assume mechanical ventilation and closed windows year round. However, the use of NLR criteria will not eliminate outdoor noise problems.

(2) Measures to achieve NLR 25 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.

(3) Measures to achieve NLR of 30 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.

(4) Measures to achieve NLR 35 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal level is low.

(5) Land use compatible provided special sound reinforcement systems are installed.

(6) Residential buildings require an NLR of 25.

(7) Residential buildings require an NLR of 30.

(8) Residential buildings not permitted.