Prepared for:

City of San Antonio
Aviation Department
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San Antonio, TX 78216

FINAL

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Wyle Report

WR 09-01

Noise Exposure Map Report and Noise Compatibility Program Update for San Antonio International Airport

Job No. T56279

May 2009

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FAR Part 150 Study Noise Compatibility Program Checklist

Program Requirement	Yes	No	Supporting Pages/Review Comments
I. IDENTIFICATION AND SUBMISSION OF PROGRAM:			
A. Submission is properly identified:			
1. 14 C.F.R. Part 150 NCP?	Yes		Letter of Submittal, Statement of Certification
2. NEM and NCP together?	Yes		Letter of Submittal, Statement of Certification
3. Program revision? (To what extent has it been revised?)	Yes		Letter of Submittal, Statement of Certification The NCP is being updated to include new NEMs and the related impacts only to Mitigation Measures 1 and 2.
B. Airport and Airport sponsor's name are identified?	Yes		Letter of Submittal; Section 1
C. NCP is transmitted by airport sponsor's cover letter?	Yes		Letter of Submittal
II. CONSULTATION: [150.23]			
A. Documentation includes narrative of public participation and consultation process?	Yes		Section 1, Appendix C, Appendix D
B. Identification of consulted parties:			
1. All parties in 150.23c consulted?	Yes		Section 1
2. Public and planning agencies identified?	Yes		
3. Agencies in 2., above, correspond to those affected by the NEM noise contours?	Yes		Section 6, 2014 NEM
C. Satisfies 150.23(d) requirements:			
1. Documentation shows active and direct participation of parties in B., above?	Yes		Sections 1 and 6; Appendix C, Appendix D
2. Active and direct participation of general public and opportunity to submit their views, data, and comments on the formulation and adequacy of the NCP?	Yes		Appendix C, Appendix D
3. Participation was prior to and during development of NCP and prior to submittal to FAA?	Yes		Section 1, Appendix C
4. Indicates adequate opportunity afforded to all consulted parties to submit views, data, etc.?	Yes		Section 1, Appendix C
D. Evidence included of notice and opportunity for a public hearing on NCP?	Yes		Appendix C
E. Documentation of comments:			
1. Includes summary of public hearing comments, if hearing was held?	Yes		Appendix D
2. Includes copy of all written material submitted to operator?	Yes		Appendix C
3. Includes operator's responses/disposition of written and verbal comments?	Yes		Appendix D
F. Is there written evidence from the appropriate office within the FAA that the sponsor received informal agreement to carry out proposed flight procedures?	N/A		
III. NOISE EXPOSURE MAPS: [150.23, B150.3; 150.35(f)]			
A. Inclusion of NEMs and supporting documentation:			
1. Map documentation either included or incorporated by reference?	Yes		Sections 3,4, and 5
2. Maps previously found in compliance by FAA?	Yes		
3. Compliance determination still valid?			

FAR Part 150 Study Noise Compatibility Program Checklist - *continued*

(a) Existing condition NEM represents conditions at the airport at the time of submittal of the NCP for FAA approval?	Yes		Statement of Certification
(b) Forecast condition NEM represents conditions at the airport at least 5 years into the future from the date of submittal of the NCP to the FAA for approval?	Yes		Statement of Certification, Section 4
(c) Sponsor letter confirming elements (a) and (b), above, if date of submission is either different than the year of submittal of the previously approved NEMs or over 12 months from the date shown on the face of the NEM?	Yes		Letter of Submittal
(d) If (a) through (c) cannot be validated, the NEMs must be redone and resubmitted as per 150.21.			
4. Does 180-day period have to wait for map compliance finding?			
B. Revised NEMs submitted with program: (Review using NEM checklist if map revisions included in NCP submittal. Report the applicable findings in the spaces below after a full review using the NEM checklist and narrative.)	Yes		See NEM checklist
1. Revised NEMs included with program?	Yes		
2. Has airport sponsor requested in writing that FAA make a determination on the NEM(s), showing NCP measures in place, when NCP approval is made?	Yes		Letter of Submittal
C. If program analysis uses noise modeling:			
1. INM, HNM, or FAA-approved equivalent?	Yes		
2. Monitoring in accordance with A150.5?	N/A		Noise monitoring was not conducted as a part of this Study
D. One existing condition and one forecast-year map clearly identified as the official NEMs?	Yes		Figure 5-1, Figure 5-2
IV. CONSIDERATION OF ALTERNATIVES: [B150.7, 150.23(e)]			
A. At a minimum, were the alternatives below considered, or if they were rejected was the reason for rejection reasonable and based on accurate technical information and local circumstances?			NOTE: For all of this section, please note that the stated purpose of this NCP update was to include updated NEMs and their effects on Mitigation Measures 1 and 2 only. As shown in Table 6-2, other existing approved measures are identified and their status is shown, yet no new measures have been put forth.
1. Land acquisition and interests therein, including air rights, easements, and development rights?		No	See note above
2. Barriers, acoustical shielding, public building soundproofing		No	See note above
3. Preferential runway system		No	See note above
4. Flight procedures		No	See note above
5. Restrictions described in B150.7 (taking into account Part 161 requirements)		No	See note above
6. Other actions with beneficial impact not listed in the regulation		No	See note above
7. Other FAA recommendations (see D, below)		No	See note above
B. Responsible implementing authority identified for each considered alternative?			
C. Analysis of alternative measures:			
1. Measures clearly described?	Yes		

FAR Part 150 Study Noise Compatibility Program Checklist - *continued*

2. Measures adequately analyzed?	Yes		
3. Adequate reasoning for rejecting alternatives?	Yes		
D. with the local airport circumstances, determine whether other actions should be added? *(List separately, or on back, actions and describe discussions with airport sponsor to have them included prior to the start of the 180-day cycle. New measures recommended by the airport sponsor must meet applicable public participation and consultation with officials before they can be submitted to the FAA for action. See E., below.)*	N/A		
V. ALTERNATIVES RECOMMENDED FOR IMPLEMENTATION: [150.23(e), B150.7(c); 150.35(b), B150.5]			
A. Document clearly indicates:			
1. Alternatives that are recommended for implementation?	Yes		Section 6
2. Final recommendations are airport sponsor's, not those of consultant or third party?	Yes		Letter of Submittal
B. Do all program recommendations:			
1. Relate directly or indirectly to reduction of noise and noncompatible land uses? *(Note: All program recommendations, regardless of whether previously approved by the FAA in an earlier Part 150 study, must demonstrate a noise benefit if the airport sponsor wants FAA to consider the measure for approval in a program update. See E., below.)*	Yes		Section 6
2. Contain description of each measure's relative contribution to overall effectiveness of program?	Yes		Section 6
3. Noise/land use benefits quantified to extent possible to be quantified? *(Note: some program management measures cannot be readily quantified and should be described in other terms to show their implementation contributes to overall effectiveness of the program.)*	Yes		Section 5
4. Does each alternative include actual/anticipated effect on reducing noise exposure within noncompatible area shown on NEM?	Yes		Section 5
5. Effects based on relevant and reasonable expressed assumptions?	Yes		Section 5
6. Does the document have adequate supporting data that the measure contributes to noise/land use compatibility?	Yes		Section 5
C. Analysis appears to support program standards set forth in 150.35(b) and B150.5?	Yes		Section 6
D. When use restrictions are recommended for approval by the FAA:			
1. Does (or could) the restriction affect Stage 2 or Stage 3 aircraft operations (regardless of whether they presently operate at the airport)? (If the restriction affects Stage 2 helicopters, Part 161 also applies.)	N/A		

FAR Part 150 Study Noise Compatibility Program Checklist - *continued*

2. If the answer to D.1 is yes, has the airport sponsor completed the Part 161 process and received FAA Part 161 approval for a restriction affecting Stage 3 aircraft? Is the FAA's approval documented? For restrictions affecting only Stage 2 aircraft, has the airport sponsor successfully completed the Stage 2 analysis and consultation process required by Part 161 and met the regulatory requirements, and is there evidenced by letter from FAA stating this fact?	N/A		
3. Are non-restrictive alternatives with potentially significant noise/compatible land use benefits thoroughly analyzed so that appropriate comparisons and conclusions among all alternatives can be made?	N/A		
4. Did the FAA regional or ADO reviewer coordinate the use restriction with APP-400 prior to making determination on start of 180-days?	N/A		
E. Do the following also meet Part 150 analytical standards:			
1. Recommendations that continue existing practices and that are submitted for FAA re-approval? *(Note: An airport sponsor does not have to request FAA re-approval if noise compatibility measures are in place from previously approved Part 150 studies. If the airport has implemented the measures as approved in the previous NCP, the measures may be reported and modeled as baseline conditions at the airport.)*	Yes		Section 6
2. New recommendations or changes proposed at the end of the Part 150 process?	N/A		No new measures are included
F. Documentation indicates how recommendations may change previously adopted noise compatibility plans, programs, or measures?	Yes		Section 6
G. Documentation also:			
1. Identifies agencies that are responsible for implementing each recommendation?	Yes		Section 6
2. Indicates whether those agencies have agreed to implement?	Yes		Section 6
3. Indicates essential government actions necessary to implement recommendations?	Yes		Section 6
H. Timeframe:			
1. Includes agreed-upon schedule to implement alternatives?	Yes		Section 6
2. Indicates period covered by the program?	Yes		Section 6
I. Funding/Costs:			
1. Includes costs to implement alternatives?	Yes		Section 6
2. Includes anticipated funding sources?	Yes		Section 6

FAR Part 150 Study Noise Compatibility Program Checklist - *concluded*

VI. PROGRAM REVISION: [150.23(e)(9)]			
Supporting documentation includes provision for revision? (Note: Revision should occur when it is likely a change has taken place at the airport that will cause a significant increase or decrease in the DNL noise contour of 1.5 dB or greater over noncompatible land uses. See §150.21(d))	Yes		Section 6

FAR Part 150 Study Noise Exposure Map Checklist

Program Requirement	Yes	No	Supporting Pages/Review Comments
I. Submitting and Identifying the NEM:			
A. Submission is properly identified:			
1. 14 C.F.R. Part 150 NEM	Yes		
2. NEM and NCP together?	Yes		Letter of Submittal, Statement of Certification
3. Revision to NEMs FAA previously determined to be in compliance with Part 150?	Yes		Letter of Submittal, Statement of Certification
B. Airport and Airport Operator's name are identified?	Yes		Letter of Submittal; Section 1
C. NCP is transmitted by airport operator's dated cover letter, describing it as a Part 150 submittal and requesting appropriate FAA determination?	Yes		Statement of Certification
II. CONSULTATION: [150.21(b), A150.105(a)]			
A. Is there a narrative description of the consultation accomplished, including opportunities for public review and comment during map development?	Yes		Section 1; Appendix C
B. Identification of consulted parties:			
1. Are the consulted parties identified?	Yes		Section 1
2. Do they include all those required by 150.21(b) and A150.105(a)?	Yes		Section 1
C. Does the documentation include the airport operator's certification, and evidence to support it, that interested persons have been afforded adequate opportunity to submit their views, data, and comments during map development and in accordance with 150.21(b)?	Yes		Statement of Certification; Appendix C, Appendix D
D. Does the document indicate whether written comments were received during consultation and, if there were comments, that they are on file with the FAA regional airports division manager?	Yes		Section 1; Appendix C, Appendix D
III. GENERAL REQUIREMENTS: [150.21]			
A. Are there two maps, each clearly labeled on the face with year (existing condition year and one that is at least 5 years into the future)?	Yes		Figure 5-1; Figure 5-2
B. Map currency:			
1. Does the year on the face of the existing condition map graphic match the year on the airport operator's NEM submittal letter?	Yes		
2. Is the forecast year map based on reasonable forecasts and other planning assumptions and is it for at least the fifth calendar year after the year of submission?	Yes		
3. If the answer to 1 and 2 above is no, the airport operator must verify in writing that data in the documentation are representative of existing condition and at least 5 years' forecast conditions as of the date of submission?	N/A		
C. If the NEM and NCP are submitted together:			
1. Has the airport operator indicated whether the forecast year map is based on either forecast conditions without the program or forecast conditions if the program is implemented?	Yes		There would be no difference to noise contours with or without the mitigation measures (ie, sound insulation) implemented.
2. If the forecast year map is based on program implementation:			
a. Are the specific program measures that are reflected on the map identified?	Yes		Please note, a planned extension to runway 3/21 is included on the 2014 NEM.
b. Does the documentation specifically describe how these measures affect land use compatibilities depicted on the map?	Yes		
3. If the forecast year NEM does not model program implementation, the airport operator must either submit a revised forecast NEM showing program implementation conditions [B150.3(b), 150.35(f)] or the sponsor must demonstrate the adopted forecast year NEM with approved NCP measures would not change by plus/minus 1.5 DNL? (150.21(d))	N/A		

FAR Part 150 Study Noise Exposure Map Checklist - *continued*

IV. MAP SCALE, GRAPHICS, AND DATA REQUIREMENTS: [A150.101, A150.103, A150.105, A150.21(a)]			
A. Are the maps of sufficient scale to be clear and readable (they must not be less than 1" to 2,000'), and is the scale indicated on the maps? *(Note (1) if the submittal uses separate graphics to depict flight tracks and/or noise monitoring sites, these must be of the same scale, because they are part of the documentation required for NEMs.) (Note (2) supplemental graphics that are not required by the regulation do not need to be at the 1" to 2,000' scale)*	Yes		
B. Is the quality of the graphics such that required information is clear and readable? *(Refer to C. through G., below, for specific graphic depictions that must be clear and readable)*	Yes		
C. Depiction of the airport and its environs:			
1. Is the following graphically depicted to scale on both the existing condition and forecast year maps?			
a. Airport boundaries	Yes		
b. Runway configurations with runway end numbers	Yes		
2. Does the depiction of the off-airport data include?			
a. A land use base map depicting streets and other identifiable geographic features	Yes		
b. The area within the DNL 65 dB (or beyond, at local discretion)	Yes		
c. Clear delineation of geographic boundaries and the names of all jurisdictions with planning and land use control authority within the DNL 65 dB (or beyond, at local discretion)	Yes		
D. 1. Continuous contours for at least the DNL 65, 70, and 75 dB	Yes		
2. Has the local land use jurisdiction(s) adopted a lower local standard and if so, has the sponsor depicted this on the NEMs?		No	No local standards have been adopted
3. Based on current airport and operational data for the existing condition year NEM, and forecast data representative of the selected year for the forecast NEM?	Yes		Section 3; Section 4
E. Flight tracks for the existing condition and forecast year timeframes (these may be on supplemental graphics which must use the same land use base map and scale as the existing condition and forecast year NEM), which are numbered to correspond to accompanying narrative?	Yes		Figure 3-2; Figure 3-3
F. Locations of any noise monitoring sites (these may be on supplemental graphics which must use the same land use base map and scale as the official NEMs)		No	A noise measurement program was not undertaken in this study
G. Noncompatible land use identification:			
1. Are noncompatible land uses within at least the DNL 65 dB noise contour depicted on the map graphics?	Yes		
2. Are noise sensitive public buildings and historic properties identified? *(Note: If none are within the depicted NEM noise contours, this should be stated in the accompanying narrative text.)*	Yes		
3. Are the noncompatible uses and noise sensitive public buildings readily identifiable and explained on the map legend?	Yes		
4. Are compatible land uses, which would normally be considered noncompatible, explained in the accompanying narrative?		No	No normally noncompatible land uses are considered compatible
V. NARRATIVE SUPPORT OF MAP DATA: [150.21(a), A150.1; A150.101, A150.103]			
A. 1. Are the technical data and data sources on which the NEMs are based adequately described in the narrative?	Yes		Section 3, Section 4
A. 2. Are the underlying technical data and planning assumptions reasonable?	Yes		Section 3, Section 4
B. Calculation of Noise Contours:			
1. Is the methodology indicated?	Yes		
a. Is it FAA approved?	Yes		

FAR Part 150 Study Noise Exposure Map Checklist - *continued*

b. Was the same model used for both maps? *(Note: The same model also must be used for NCP submittals associated with NEM determinations already issued by FAA where the NCP is submitted later, unless the airport sponsor submits a combined NEM/NCP submittal as a replacement, in which case the model used must be the most recent version at the time the update was started.)*	Yes		INM version 7.0a
c. Has AEE approval been obtained for use of a model other than those that have previous blanket FAA approval?		No	Not Applicable
2. Correct use of noise models:			
a. Does the documentation indicate, or is there evidence, the airport operator (or its consultant) has adjusted or calibrated FAA-approved noise models or substituted one aircraft type for another that was not included on the FAA's pre-approved list of aircraft substitutions?		No	No model adjustments or substitutions were made to the FAA-approved noise model
b. If so, does this have written approval from AEE, and is that written approval included in the submitted document?		No	Not Applicable
3. If noise monitoring was used, does the narrative indicate that Part 150 guidelines were followed?		No	A noise measurement program was not undertaken in this study
4. For noise contours below DNL 65 dB, does the supporting documentation include an explanation of local reasons? *(Note: A narrative explanation, including evidence the local jurisdiction(s) have adopted a noise level less than DNL 65 dB as sensitive for the local community(ies), and including a table or other depiction of the differences from the Federal table, is highly desirable but not specifically required by the rule. However, if the airport sponsor submits NCP measures within the locally significant noise contour, an explanation must be included if it wants the FAA to consider the measure(s) for approval for purposes of eligibility for Federal aid.)*		No	Noise contours are shown for DNL 65 dB and above.
C. Noncompatible Land Use Information:			
1. Does the narrative (or map graphics) give estimates of the number of people residing in each of the contours (DNL 65, 70 and 75, at a minimum) for both the existing condition and forecast year maps?	Yes		Section 5
2. Does the documentation indicate whether the airport operator used Table 1 of Part 150?	Yes		See Table 2-2
a. If a local variation to table 1 was used:			
(1) Does the narrative clearly indicate which adjustments were made and the local reasons for doing so?		No	Table 1 was used in the determination of compatible land uses
(2) Does the narrative include the airport operator's complete substitution for Table 1?		No	Table 1 was used in the determination of compatible land uses
3. Does the narrative include information on self-generated or ambient noise where compatible or noncompatible land use identifications consider non-airport and non-aircraft noise sources?		No	No self-generated or ambient noise sources were considered
4. Where normally noncompatible land uses are not depicted as such on the NEMs, does the narrative satisfactorily explain why, with reference to the specific geographic areas?		No	All noncompatible land uses are correctly depicted on the NEMs
5. Does the narrative describe how forecast aircraft operations, forecast airport layout changes, and forecast land use changes will affect land use compatibility in the future?	Yes		Section 4; Section 5

FAR Part 150 Study Noise Exposure Map Checklist - *concluded*

VI. MAP CERTIFICATIONS: [150.21(b), 150.21(e)]			
A. Has the operator certified in writing that interested persons have been afforded adequate opportunity to submit views, data, and comments concerning the correctness and adequacy of the draft maps and forecasts?	Yes		Statement of Certification
B. Has the operator certified in writing that each map and description of consultation and opportunity for public comment are true and complete under penalty of 18 U.S.C. § 1001?	Yes		Statement of Certification

Executive Summary

E.1 Introduction

This San Antonio International Airport (SAT) Limited Noise Compatibility Planning Study has been undertaken following direction provided by the City of San Antonio Aviation Department and the Federal Aviation Administration (FAA) Southwest Region office, and has been completed to satisfy the requirements set forth in FAR Part 150 for updating both the Noise Exposure Maps (NEM) and Noise Compatibility Program (NCP). NEMs depict noise exposure resulting from aviation activity at an airport over a land use base map that shows both compatible and incompatible land uses, and an NCP sets forth the measures that an airport operator has taken or proposed for the abatement and mitigation of noise exposure. Voluntary submission of NEMs and an NCP allows the airport to apply for Federal grants to implement FAA-approved measures.

The airport most recently updated its NEMs and NCP through a Part 150 study completed in 2002. That study, which included NEMs for 1999 and 2004, also included revisions to the airport's NCP, first developed in 1990. Those measures addressed strategies to reduce existing significant noise exposure and to mitigate eligible residences and noise-sensitive facilities as identified in the 2004 NEM. Since 2002, conditions at the airport have changed, and as such, the City of San Antonio Aviation Department embarked on an update to the NEMs and NCP. This document presents NEMs for 2009 Existing Conditions and for Future Conditions for the year 2014. The NCP will be revised to reflect the use of the 2014 NEM for mitigation components. Other FAA-approved measures in the NCP, such as those that address specific flight procedures or administrative efforts, will remain unchanged.

During a preliminary review of the Draft version of this document, which was released on January 23, 2009, the FAA provided comments which prompted further data collection and noise modeling analysis. This analysis involved additional coordination with Air Traffic Control (ATC) personnel, resulting in revisions to the Draft NEMs. The revised NEMs and associated revisions to the Draft version of this report were presented in an Addendum on February 18 and at the Public Hearing on March 19, 2009. The Addendum is included in this Final document, located in Appendix G.

E.2 Noise Modeling and Methodology

All noise modeling performed in this study was completed according to established Federal guidelines, including both the use of the Integrated Noise Model (INM) to estimate noise exposure and the use of the Day-Night Average Sound Level (DNL) metric to identify areas of significant noise exposure. Noise modeling for the Existing Conditions considered the number of overall aircraft operations, the time of day of operations, the specific fleet mix that operates at the airport, the runway and flight track utilization, engine run-up and maintenance activity, and weather and terrain data. Collectively, this data was analyzed to quantify how the airport operates on an average annual day. Thus, the resulting noise exposure contours do not depict noise levels on any specific day, but rather on an average day based on the input data provided.

Numerous sources of data were analyzed in the quantification and calculation of airport operations, including data from the Air Traffic Control Tower, FAA-published statistics, the Department of Transportation (DOT), the airport's flight track monitoring system, airport finance records, and for forecast operations, official FAA forecast data.

E.3 Existing Conditions and Noise Exposure

Numerous changes have occurred at the airport since the completion of the 2002 Part 150 Study. In that study, aircraft activity levels forecast in the 2004 NEM were projected to be over 290,000, however, in 2004, actual operations were 222,243. Between 1990 and 2007, operations peaked at over 270,000 in 1998, but began to gradually decline (with exception of an increase in 2003), to a total of less than 219,000 in 2007. For this study, operational data from 2008 was analyzed and a baseline of 223,501 annual operations was identified, equating to 612 operations on an average annual day.

Additionally, the aircraft fleet mix used by airport tenants has changed since 2004, most notably in a reduction in older aircraft which had been retrofitted to meet the Stage 3 requirements for aircraft noise certification. Aircraft operators have continued to shift operations from larger narrow-body aircraft to smaller regional jets. Nine aircraft account for over 75% of air carrier, cargo, and commuter operations at the airport, with the highest percentage of operations flown by the Boeing 737-300 and -700 series and McDonnell Douglas MD-82 aircraft. However, single engine propeller aircraft are the most common aircraft type flown at the airport, accounting for approximately 25% of all aircraft operations.

Significant noise exposure in 2009 (areas which experience noise levels of 65 dB DNL or higher), has decreased since 1999. Overall, the 65 dB DNL noise exposure contour encompasses 2,717 acres, nearly 65% of which remains over compatible land uses. Other land uses, considered by the FAA to be incompatible with noise levels of 65 dB DNL or greater, include residential and noise-sensitive facilities such as churches and schools. The Existing Conditions noise exposure contour continues to impact incompatible land uses.

E.4 Future Conditions and Noise Exposure

FAR Part 150 requires that a forecast noise exposure contour be developed based on a condition five years into the future. This future condition should take into account all reasonably foreseeable changes that may occur at the airport, including changes to the airport facilities, fleet mix, runway and flight track utilization, and ground activity. As such, forecast information was collected and refined to identify any potential changes that may influence noise exposure at the airport.

Forecast operations were developed using the FAA's Terminal Area Forecast (TAF), which is the official forecast used by airports in the National Plan of Integrated Airport System (NPIAS). The TAF forecast 229,651 operations at the airport for the year 2014, an average of 629 daily operations and an increase of 3% from current operating levels. Since the TAF provides operations only by operator category, further analysis of historical trends was undertaken to project the specific fleet mix anticipated in 2014. The analysis indicated a continuation of the shift towards smaller regional jet aircraft, and a continued retirement of older hushkitted Stage 3 aircraft. The most common air carrier/cargo/commuter aircraft anticipated to be in use in 2014 is the Canadair Regional Jet (700 series), followed by the Boeing 737-300 and -700 series.

As a result of the forecast operations, noise exposure in 2014 is anticipated to decrease by approximately 187 acres, equating to an 7% reduction in the overall size of the noise contour. In addition, approximately 76% of the area within the 65 dB DNL noise exposure contour falls over compatible land uses.

E.5 Noise Compatibility Program Planning

The airport has long maintained an NCP, of which various program elements have been approved by both the City of San Antonio and the FAA. The program has identified measures that reduce significant noise exposure based the NEMs, and attempts to prevent future incompatible development.

As the currently-approved 2002 NCP was based on a forecast 2004 condition, the FAA and City of San Antonio identified the need to re-evaluate noise exposure, and thus the boundaries of mitigation programs. Other measures identified in the NCP need not be updated to reflect the inclusion of the 2014 NEM, however, that contour, once approved by the FAA, will serve as the boundary for the airport's Residential Acoustical Treatment Program (RATP).

As of January 2009, 317 Homes and 216 apartment units have been treated in the RATP. Figure E-1 depicts the 2014 NEM, as well as the boundary, pending FAA approval, of the Acoustical Treatment Program. Approximately 1,924 residences, one church, three day-care facilities, one hospital, and three schools are located within the 65 dB DNL contour of the 2014 NEM. They may be eligible for participation in the RATP if they have not already been treated.

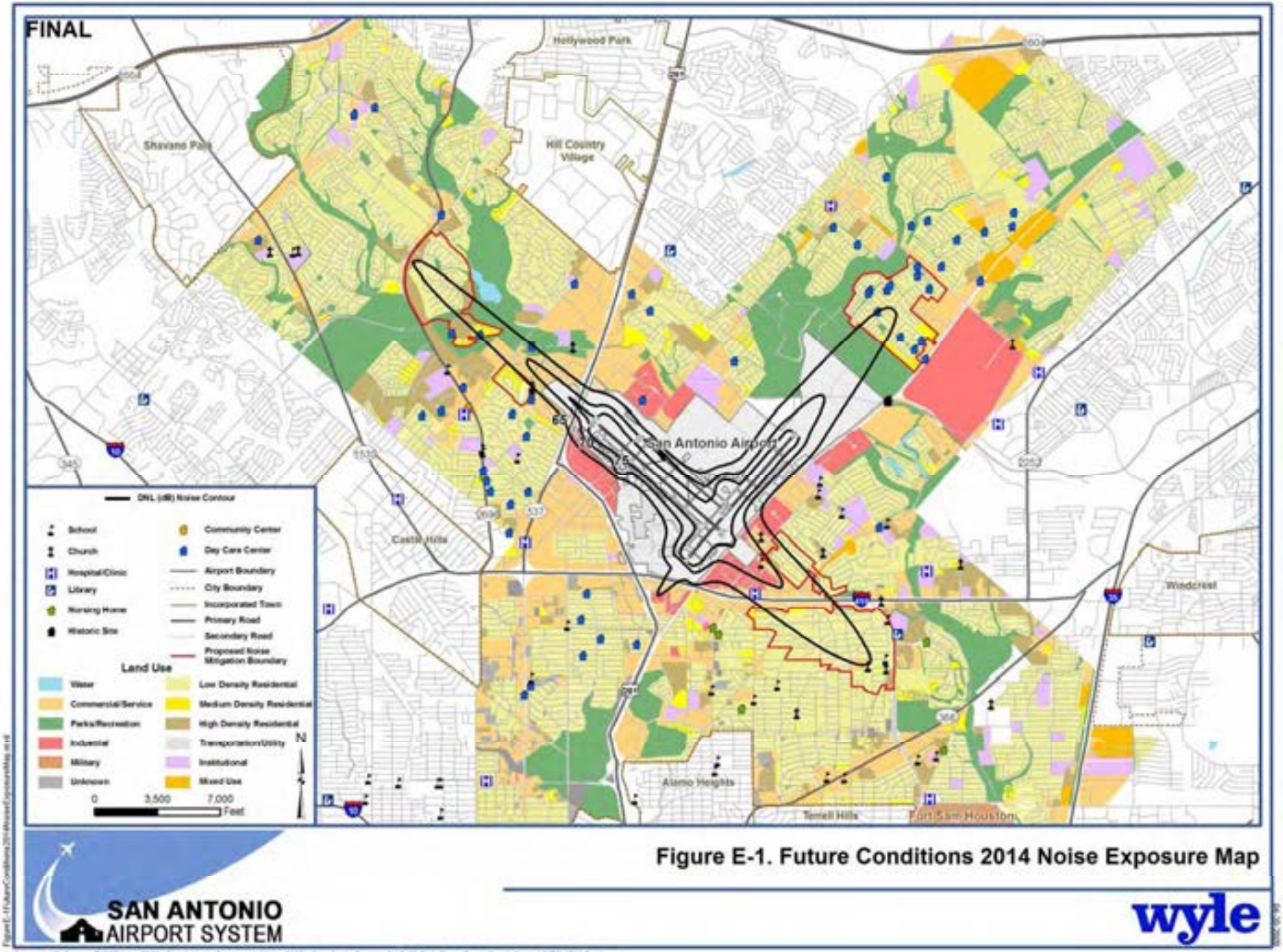

Figure E-1. Future Conditions 2014 Noise Exposure Map

Sources: US Census TIGER/Line 2000, San Antonio Government, Wyle 2006 Coordinate System: NAD 83 StatePlane Texas South Central FIPS 4204 Feet

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1.0 Introduction

1.1 Background

This study, known as the Limited Airport Noise Compatibility Planning Study, addresses noise exposure that results from aircraft operations at San Antonio International Airport (SAT), located in the City of San Antonio in Bexar County, Texas. The study is sponsored by the City of San Antonio Airport System (Sponsor) and has been prepared pursuant to the guidelines set forth in the United States Code of Federal Regulations (CFR) Title 14, Part 150 "Airport Noise Compatibility Planning" and additional guidance as provided by Federal Aviation Administration (FAA) Advisory Circular 150/5020-1 "Noise Control and Compatibility Planning for Airports" and the FAA Southwest Region Airports District Office. The purpose of this study is to identify areas of significant noise exposure in the vicinity of the airport for current and forecast conditions and to update the airport's Noise Compatibility Program (NCP).

This study will update previous Noise Exposure Map (NEM) submissions made by the Sponsor, and reflects changes that have taken place and changes expected to occur at the airport since the most recent NEMs were completed (accepted by the FAA in 2002). The existing conditions NEM reflects airport operating conditions in 2009, and the five-year forecast NEM reflects anticipated operations and development at SAT in 2014. In addition, this study will update the NCP to reflect the changes in noise exposure due to the updated NEMs. However, no new noise abatement or mitigation measures were considered under this study. More details on the measures approved by FAA under the current NCP are given in Section 6 of this document.

During a preliminary review of the Draft version of this document, which was released on January 23, 2009, the FAA provided comments which prompted further data collection and noise modeling analysis. This analysis involved additional coordination and Air Traffic Control (ATC) personnel, resulting in revisions to the Draft NEMs. The revised NEMs and associated revisions to the Draft version of this report were presented in an Addendum on February 18 and at the Public Hearing on March 19, 2009. The Addendum is included in this Final document, located in Appendix G.

1.1.1 United States Noise Regulatory Context

There have been a number of laws, regulations, and guidance issued in the United States to assist the public in addressing health concerns, including noise. The Environmental Protection Agency (EPA) first issued guidance for the protection of public health and welfare against hearing loss, annoyance, and activity interference in 1974 (EPA, 1974). Commonly known as the "Levels Document", it identified thresholds for protection of public health with an adequate margin of safety for noise levels averaged over various time periods. Passage of the National Environmental Policy Act (NEPA) in 1970 led to the establishment of criteria for the evaluation of Federally-funded projects and their impact on the environment. The FAA has since issued two Orders to assist in the implementation of NEPA: FAA Orders 1050.1E Environmental Impacts: Policies and Procedures, and 5050.4B National Environmental Policy Act (NEPA): Implementing Instructions for Airport Actions. These two Orders provide direction and guidance for evaluating noise impacts at airports, including the use of specific noise metrics and thresholds of significance for Federal actions.

The Airport and Airway Improvement Act of 1982 established Federal funding standards for airports through the development of the Airport Improvement Program (AIP), which funds many airport noise mitigation and abatement programs today. The Act also addressed compatible land uses in the vicinity of airports, including zoning, to ensure the continued safe operation of flights. The Aviation Safety and Noise Abatement Act of 1979, or ASNA, was a landmark legislation that provided assistance to airport operators in the development and implementation of noise compatibility programs. ASNA further mandated that the FAA establish the use of an appropriate noise metric and also required that airports would have to develop a procedure to follow to receive noise compatibility program funding. ASNA directly led to the establishment of FAR Part 150, which is the guidance on which this Limited Airport Noise Compatibility Planning Study is based. The Airport Noise and Capacity Act of 1990 (ANCA) was the key legislation that led to the eventual phase out of Stage 2 aircraft, as certified under FAR Part 36, and which established review procedures for airport and access restrictions.

The FAA has issued a number of Federal Aviation Regulations (FAR) designed to address noise. FAR Part 36, Noise Standards: Aircraft Type and Airworthiness Certification, released in 1974, certifies aircraft based on measured noise levels, initially into one of three categories, or Stages. FAR Part 91 established a phase out schedule of Stage 1 and, eventually, Stage 2 aircraft weighing more than 75,000 pounds. Stage 1 aircraft were eliminated from service completely in 1985, and Stage 2 under 75,000 pounds were phased out of the United States on December 31, 1999, following the passage of ANCA. Many of these aircraft were re-engined, meaning the aircraft engines were replaced or modified to meet the more stringent Stage 3 standards, and some remain in the SAT fleet today. At this point, no phase out schedules for Stage 1 and 2 aircraft less than 75,000 pounds, nor Stage 3 aircraft, have been identified.

FAR Part 150, Airport Noise Compatibility Planning, which originated with the implementation of ASNA, provides the regulatory guidance used to develop Noise Exposure Maps and Noise Compatibility Programs. Part 150 describes methodologies to measure noise in the vicinity of airports that provides a "highly reliable relationship between projected noise exposure and surveyed reaction of people to noise" and determines individual noise exposure as a result of those aircraft operations. Importantly, Part 150 outlines the types of land uses that are typically considered compatible or incompatible with specific levels of aircraft noise. This guideline serves as a measurement of the effectiveness of a Noise Compatibility Program for mitigation purposes. FAR Part 161, established in 1990, formalized the procedure for airports to impose mandatory access restrictions, which often were included in the sponsor's Part 150 program to address flights by loud aircraft or flights at noise-sensitive times, such as overnight hours.

Through fiscal year 2008, 254 airports have received AIP grants relating to Part 150 studies. To date, 240 airports have completed and submitted a Noise Compatibility Program, and 101 of those airports have revised or amended their program. The Federal government has spent nearly $93 million in AIP funds to aid airports in preparation of Part 150 studies, and over $5.1 billion to assist airports in implementing measures identified in the Noise Compatibility Program. When combined with Passenger Facility Charges (PFC), an additional $11.9 million has been spent on the preparation of Part 150 studies and an additional $3.1 billion has been spent on implementation (FAA, 2009). Many of the noise compatibility planning elements in place at SAT have been funded through participation in the Part 150 program.

1.1.2 Part 150 Planning Process Overview

The Part 150 planning process is designed to facilitate airport user and community input throughout the study. As a voluntary study undertaken by an airport sponsor, a Part 150 Study's goals include increasing the public's awareness of airport operations as well as to access funding (through AIP grants) to implement actions that reduce the impact of aircraft overflights on noise-sensitive development around an airport. An airport sponsor may elect to start a Part 150 study at any point in time, although the FAA recommends updates be performed every five years, or when conditions at an airport have, or are expected to, change the noise environment. Importantly, a Part 150 study is not a study designed to increase the airport's capacity by building runways, taxiways, or other facility developments; yet those types of projects may be evaluated if they have the potential to reduce noise impacts within the boundary of the significant noise exposure contour. An NCP may favorably evaluate a runway extension, but it must also be financially beneficial to the airport to pursue; i.e., the cost of the extension must be less than the cost of purchasing or mitigating the noise-sensitive development that would otherwise remain significantly impacted.

The process typically begins with an introductory meeting concurrent with an inventory of airport facilities and operations. The existing NEM, representative of baseline conditions over a 12-month period, is developed and overlaid on a land use base map which identifies land use patterns, noise-sensitive development (such as residences, places of worship, libraries, and schools), major roadways, airport facilities, and other readily identifiable geographic references. The noise exposure contours are developed using the FAA computer model named the Integrated Noise Model (INM), which utilizes as input data the runway orientation, airport facilities, weather, types of aircraft operations, flight trajectories used for the operations, and the time of day of operations. The noise model and modeling process are discussed in detail in Section 1.2.2.

A forecast, developed as part of or independent of the Part 150, is used for identifying and projecting operations for the five-year future condition. The forecast should identify projected changes at the airport in the number of operations, the fleet mix, and the time of day of each operation, as well as any other facility development that will be in place. The forecast noise exposure contour serves as the baseline for the development of the Noise Compatibility Program, and is used to evaluate the potential benefit of various noise abatement alternatives. Each of the alternatives are designed to minimize land use incompatibilities in the affected areas around the airport. Once the optimum abatement alternatives are identified, the appropriate mitigation measures, such as zoning changes, sound insulation programs, and other preventive and corrective land use methods are identified and recommended. Additionally, programmatic abatement and mitigation measures, such as pilot awareness programs, installation of noise monitors, and provisions to update the noise environment are identified. All alternatives are then evaluated based on their financial feasibility, practicality, safety, and ability to reduce the impacts of noise from aircraft operations.

Once an airport sponsor has determined, in coordination with its stakeholders, the set of abatement, mitigation and programmatic alternatives that would most benefit the current and future noise environment and are practical for implementation, the NEM maps and NCP are submitted to the FAA for review and approval. The FAA evaluates the methodology used to create each NEM, and accepts the maps as an accurate representation of existing and future noise exposure. Upon that acceptance, the FAA evaluates the merits of the recommended Noise Compatibility Program and for each

approved alternative further study and implementation may begin under a separate process. An overview of the noise compatibility planning process is shown in Figure 1-1.

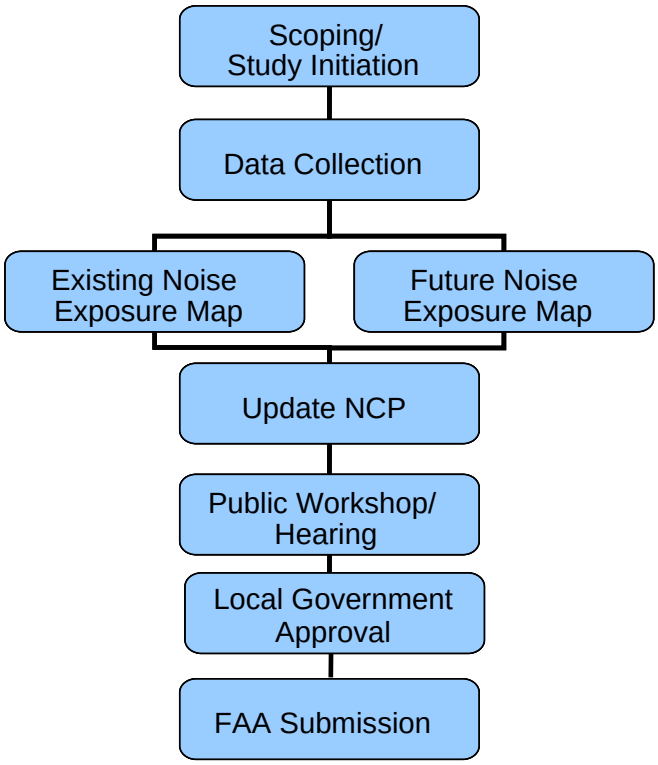


Figure 1-1. Noise Compatibility Planning Process

1.1.3 Noise Compatibility Planning History at SAT

San Antonio International Airport first completed a Part 150 study in 1990. That study, which was submitted and approved by the FAA in October of 1991, identified 11 strategies, or measures, designed to reduce noise exposure and mitigate significant impacts. Measures addressing aircraft operations and noise management included the establishment of both a noise abatement officer staff position and a noise abatement advisory committee, recording and investigating noise complaints, a request for pilots to utilize an optional noise abatement take-off procedure, implementation of a pilot advisory program, continuation of restrictions on nighttime engine run-ups, encouragement of operators to utilize Stage 3 aircraft at the airport, and periodic noise measurement. Measures addressing compatible land uses and mitigation included the development of a comprehensive land use policy for future development near the airport, an acoustic treatment program for significantly impacted public buildings, and the enactment of a City ordinance requiring perspective homebuyers be notified when property is located within a noise-impacted area. Each of these measures were first identified and reviewed through the Part 150 process, then approved by the City of San Antonio, and finally approved by the FAA.

In 1997, the San Antonio International Airport submitted an amendment to its Noise Compatibility Program to address the development of a ground run-up enclosure (GRE), which is a walled facility designed to reduce noise exposure from extended engine maintenance testing occurring on the airfield. The GRE was completed in 2002 and continues to be in use today.

In 1999, San Antonio International updated its Part 150 program, developing an Existing NEM for 1999 and a Forecast NEM for 2004. In addition to updating the NEMs, the program also reevaluated the Noise Compatibility Program, and included a series of new measures designed to further reduce and mitigate aircraft noise exposure.

This Limited Airport Noise Compatibility Planning Study includes the development of an Existing NEM representative of 2009 conditions and a Future NEM representative of 2014 conditions. No additional noise abatement or mitigation measures have been evaluated or recommended in this NCP update. The 1999 measures are discussed in further detail in Section 6 of this document.

1.1.4 Goals and Objectives of this Study

As stated in FAR Part 150, the overall goal of a Part 150 Noise Compatibility Program is "to reduce the impact of aircraft noise in surrounding neighborhoods through noise abatement, noise mitigation, and the encouragement of compatible land use in undeveloped areas in the vicinity of the Airport." The City of San Antonio and the San Antonio Airport System are committed to be proactive in addressing noise exposure and mitigation in areas surrounding the airport.

The goals of this study include:

- Determine the existing aircraft operations and define a baseline noise exposure contour representative of aircraft operations in the year 2009.
- Analyze the potential impact of aircraft operations for a five-year forecast (2014) including the potential impacts due to projected changes, including a runway extension.
- Update the NCP to reflect changes due to the 2009 and 2014 NEMs.
- Ensure eligibility for continued Federal funding for existing SAT noise abatement programs, including the Residential Acoustical Treatment Program (RATP).

1.2 Airport Noise

Noise represents one of the most contentious environmental issues associated with aircraft operations. Although many other sources of noise are present in typical communities, because of its uniqueness, aircraft noise is readily identifiable and tends to stand out as an annoyance for many people. An assessment of aircraft noise requires a general understanding of how sound affects people and the natural environment and how it is measured. Appendix A provides additional detail regarding noise metrics, noise, and its effect on the environment.

1.2.1 Day-Night Average Sound Level (DNL) Metric

The Aviation Safety and Noise Abatement Act of 1979 directed the FAA to establish, by regulation, a single system for measuring noise exposure at airports and surrounding areas, which would provide a highly reliable relationship between projected noise exposure and surveyed reactions of people to noise. The FAA adopted the Day-Night Average Sound Level (DNL) metric. The EPA Guidelines for Noise Impact Analysis also uses DNL as the primary measure of general audible noise. All Federal agencies have now adopted DNL as the metric for airport noise analysis in NEPA documents. The DNL is the energy-average of the sound levels at a location over a 24-hour period, with a 10-decibel penalty added to nighttime sound levels (between 10:00 p.m. and 7:00 a.m.). DNL represents average

sound exposure during a 24-hour day, rather than the sound level heard at any particular time, and it accounts for both the duration and frequency of aircraft events.

The goal of the FAA's noise compatibility guidelines is to provide guidance that encourages appropriate land uses around all U.S. airports. The FAA guidelines specify that DNL is the noise metric used in defining land-use compatibility. Based on this guidance, FAR Part 150 studies, Environmental Assessments (EA), and Environmental Impact Statements (EIS) use the DNL 65 dB contour to identify the boundary between compatible and non-compatible noise exposure levels for land uses. Land uses subjected to levels less than DNL 65 dB are considered compatible with airport operations. Section 5 describes the Federal guidelines associated with compatible land uses surrounding airports.

1.2.2 Noise Modeling Methodology

The required model for evaluation of noise exposure around an airport for a FAR Part 150 Study 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. The model accepts fractions of operations, and includes a directional distribution of operations based on the proportion of aircraft flying in different directions throughout the year. This is the standard approach to all aircraft noise modeling projects of this type, including those completed under NEPA and FAA Part 150. INM version 7.0A was used to model noise exposure at SAT. 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 and Order 5050.4B.

INM has many analytical uses, such as assessing changes in noise exposure resulting from new or extended runways or runway configurations, assessing new traffic demand and fleet mix, as well as evaluating operational procedures. As input, the INM uses information about the airfield configuration, average temperature and humidity, flight track locations, aircraft fleet mix, aircraft climb and descent profiles, runway utilization, and number of daily operations (day/night). The model includes flight characteristics for a wide variety of aircraft in both the commercial and military fleets, and works by computing the noise from each flight at a large number of grid points on the ground. Once all operations have been modeled and the sound levels summed for the grid points, noise contours are generated by connecting grid points with equal levels of noise exposure.

Part 150 regulations require the use of an average annual day (AAD) condition, meaning that the analysis input has to take into account all aircraft that operate at the airport in a 365-day period, the runways and flight paths utilized, the profiles flown, and the time of day of the operations to create a average daily noise exposure. While scoping this study in October of 2008, the FAA determined that the most-recent full 12 months of operational data should be used (i.e. October 1, 2007 through September 30, 2008) to represent existing conditions. Sections 3 and 4 describe the input data used for the development of the NEMs.

1.3 Consultation and Public Involvement

In accordance with Part 150 program requirements, local stakeholders were consulted in the development of the NEMs and NCP update. As noted in Figure 1-2, both a Public Meeting/Workshop and a Public Hearing were held, followed by the approval of the San Antonio City Council. The Draft version of this document was released for public review on January 23, 2009, and was advertized 30 days in advance via legal notices in local newspapers, a press release, and direct-mailed flyers to 665 residents, local elected officials, condominium boards, and community/home-owners associations. The document was posted to the Airport's web site and the following locations:

- Central Library - 600 Soledad;
- Tobin Library at Oakwell - 4134 Harry Wurzbach Road;
- Brook Hollow Library - 530 Heimer Road;
- Edmund Cody Library - 11441 Vance Jackson;
- Thousand Oaks-El Sendero Library - 4618 Thousand Oaks;
- Trinity University, Elizabeth Huth Coates Library - One Trinity Place;
- Department of Planning and Development Services - 1901 South Alamo;
- Office of the City Clerk, City Hall Building - 100 Military Plaza; and
- Aviation Dept., Noise Mitigation Office - 9700 Airport Blvd., Terminal 2, 2nd Floor.

Figure 1-2. San Antonio Study Process

The document release was followed by a Public Meeting/Workshop held January 27 at Holy Spirit Catholic Church; 236 persons attended this meeting. Following the Public Meeting, the FAA provided comments on the Draft document, which prompted further data collection and noise modeling analysis, resulting in revised NEMs. The revised NEMs and associated revisions to the Draft report were published in an Addendum released for public review on February 18, 2009. The Addendum is included in this document, located in Appendix G.

The Addendum was released 30 days before the Public Hearing held on March 19, 2009 at Coker United Methodist Church. The Public Hearing was advertized 30 days in advance via legal notices in local newspapers, a press release, and direct-mailed flyers to all parties notified of the Public Meeting plus 96 additional addresses obtained during and following the Public Meeting; 80 persons attended the Public Hearing.

The public comment period which began January 23 continued through the Public Hearing date, and an additional 10 working days after the Hearing, ending on April 2, 2009. There were a total of 118 comments submitted. The NEMs and NCP were then presented to the San Antonio City Council on

April 30. With the approval of the City Council, this document was submitted to the FAA in May 2009.

See Appendices C and D for full documentation of the Public Meeting and Public Hearing, including presentation materials, transcripts, flyers, affidavits, sign-in sheets, public comments, and responses to the comments.

1.4 Overview and Organization of this Document

This document is organized into six sections, including this introduction. Section 2 describes SAT operating characteristics, including an introduction to the airport's history, facilities, current tenants, and levels of operations, as well as a discussion of surrounding existing land uses.

Section 3 describes the detailed information used to develop the existing NEM, representative of airport activity in 2009. The section provides the number, type, and frequency of operations, study-level data such as weather, airport elevation, and terrain, a description of aircraft flight tracks, and engine maintenance activity. Section 4 discusses INM input used for the development of the Future Conditions 2014 NEM, including information on the forecast, fleet mix, flight tracks, runway utilization, and airport facility changes. Section 5 provides the results of the noise exposure contour modeling for the 2009 and 2014 NEMs. Each noise exposure contour is depicted over the land use base map, existing and projected incompatible land uses, and estimated significantly-impacted populations.

Section 6 evaluates the previously-approved and implemented noise compatibility program in the context of the updated 2014 NEM. For each measure, a history and current status is provided, and changes that result in the application of the measure in the context of the 2014 NEM are described. Section 6 serves as the official NCP Update.

The document is concluded with a series of appendices, provided to give the reader additional background detail about this study. Appendix A provides a detailed description of noise and its effect on the environment, and includes a detailed description of sound, metrics and measures used to describe it and its effects. Appendix B lists common terms used throughout this study. Appendix C provides the reader with all materials used during the preparation of public participation portion of this project. For the public workshop and hearing, all distributed materials, such as sign-in sheets, handouts, and display boards are included. Appendix D lists all comments received from the public and provides a response to each. Appendix E presents the previous NCP Record of Approval from 2002. Appendix F includes a sample of arrival flight profiles derived from radar data. Finally, Appendix G includes the Addendum to the Draft version of this document.

2.0 San Antonio International Airport and Surrounding Land Uses

2.1 San Antonio International Airport

2.1.1 History

San Antonio International Airport originated on 1,200 acres eight miles north of downtown San Antonio on undeveloped land in 1941. Prior to its completion, the airport served as a training base for military operations at the onset of World War II, and was returned to civilian use following the end of the war. By 1953, the airport had opened its first terminal building, later expanded in 1959 and again 1968, and opened a second terminal in the 1980s. Today, San Antonio International Airport covers over 2,600 acres, has three runways, and two terminal buildings with 27 gates. Airlines offer service to over 30 markets, including flights by Aerolitoral, Aeromexico, AirTran, American Airlines, Continental, Continental Express, Delta, ASA, Comair, Skywest, Frontier, Mexicana, Northwest, Southwest, Sky West, Spirit, United and US Airways. The airport, along with Stinson Municipal Airport, is operated by the City of San Antonio Department of Aviation.

Development over the past 35 years has been driven by the airport's master planning process, the first of which was completed in 1975. That process included the planning of a second terminal building, completed in 1984 and now called Terminal 1. An update to the master plan was approved by the FAA in 1998, of which the primary project was the identification of replacement terminal facilities for the airport's original terminal building. The airport is currently expanding its terminal facilities, with also the construction of a new terminal and the demolition of original Terminal 2. The airport is currently in the process of updating its master plan to address long term airport facility needs.

2.1.2 Location

Located in the southeastern portion of the state of Texas in Bexar County, the City of San Antonio and surrounding metropolitan area is home to over two million people. The airport is located to the north of downtown San Antonio, and is easily accessible by State Route 281 and Interstate 410. The Airport is located within close proximity to a number of other aviation facilities. Two Air Force bases, Randolph AFB and Lackland AFB - Kelly Field Annex, are located within 11 miles of the airport – Lackland AFB - Kelly Field Annex located to the southwest and Randolph AFB located to the east. The nearest public airport is Stinson Municipal Airport, a general aviation facility, which is the FAA-designated reliever airport for SAT, and is located 12 miles south of SAT. Figure 2-1 shows San Antonio International Airport and the region surrounding the Airport.

2.1.3 Annual Operations

The Airport serves a multitude of aircraft users, including air carriers, cargo, air taxi and charter services, general aviation operators, and military operations. Historically, the airport has hosted at least 200,000 annual operations since 1990. Table 2-1 depicts the fluctuation of aircraft operations between 1990 and 2007. As the chart indicates, operations peaked in 1997 with over 270,000 occurring annually, and have remained relatively consistent in the last four years. Additional information pertaining to the users at the airport is provided in Section 3.

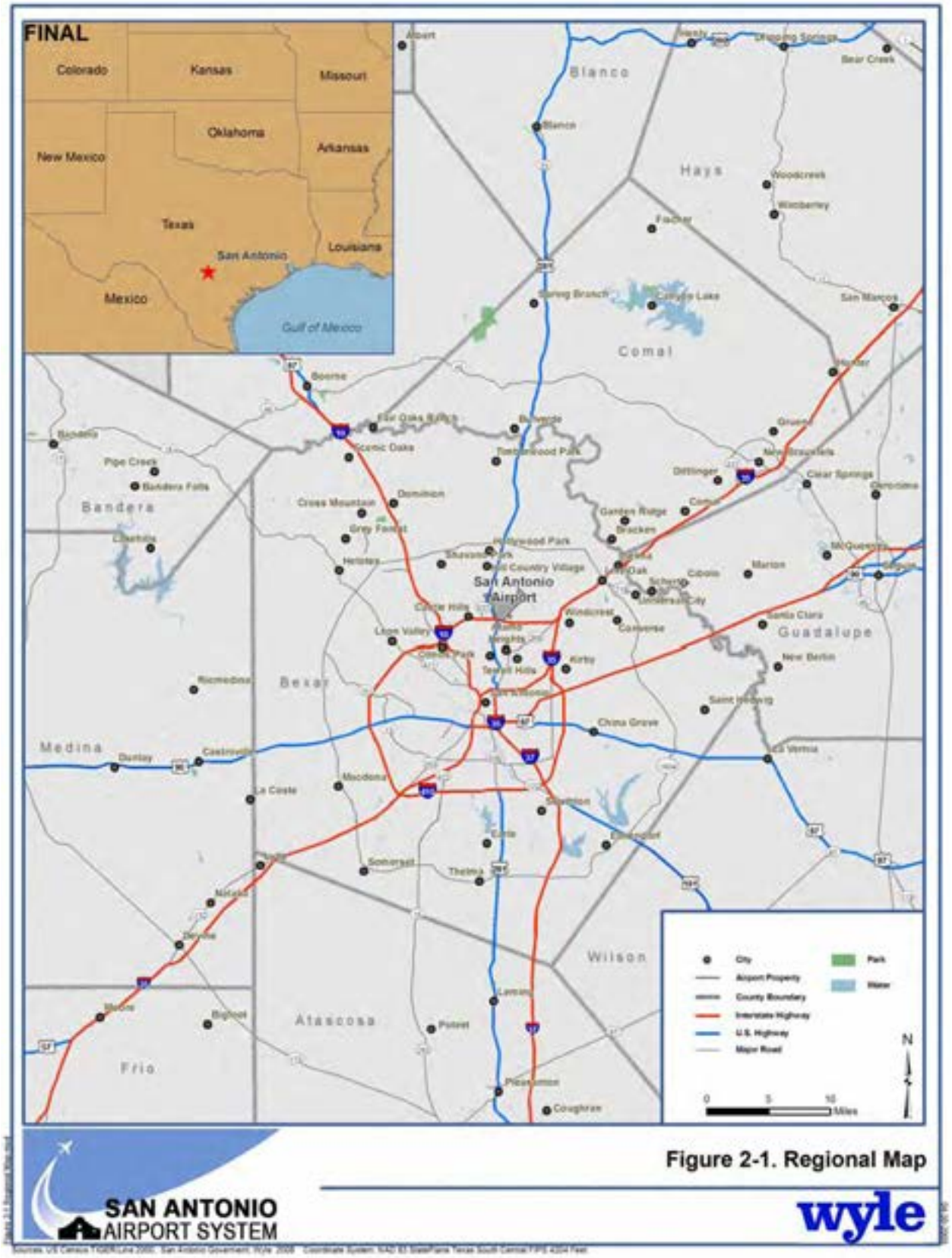
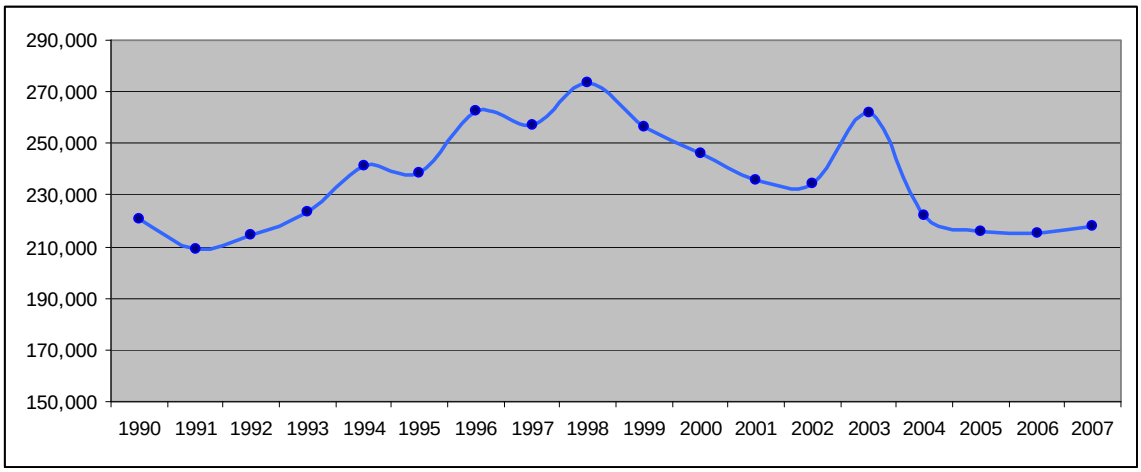


Figure 2-1. Regional Map

Table 2-1. Annual Aircraft Operations, 1990 – 2007



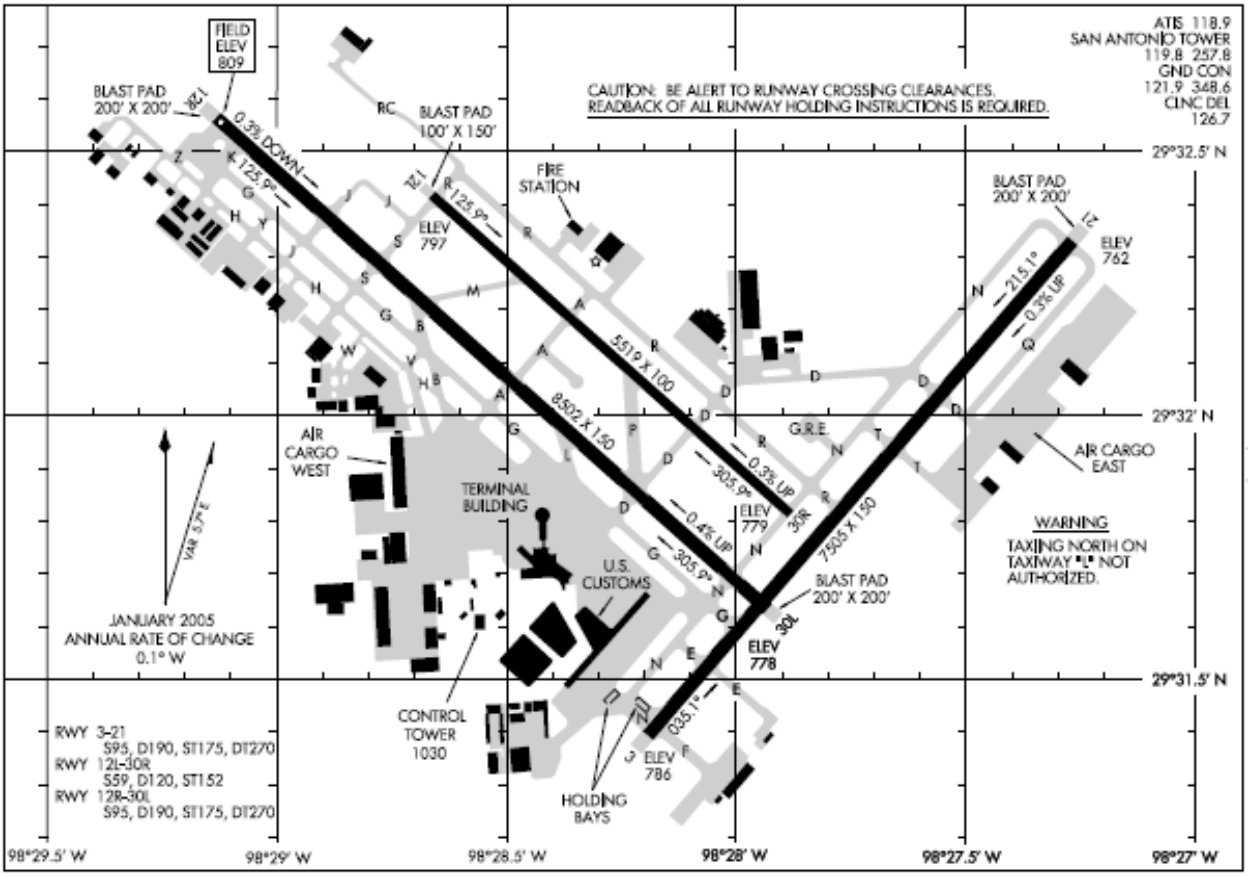
Source: FAA ATADS 2009

2.2 Airport Facilities

2.2.1 Runways

San Antonio International Airport maintains three runways, which are served by a series of parallel taxiways. Runways 12R/30L and 12L/30R are parallel runways separated by approximately 990 feet and are oriented in a northwest-southeast direction. Runway 12R/30L is the airport's primary runway, and currently the airport's longest, measuring 8,502 feet long with a width of 150 feet and parallel taxiways. Runway 12L/30R is 5,519 feet long by 100 feet wide and is located north of the terminal facilities. Due to its shorter length and construction, Runway 12L/30R is not often used, and only used for some general aviation operations. Runway 3/21 is the airport's crosswind runway, designed to accommodate aircraft operations when wind conditions prohibit the use of the parallel runways. The runway is currently 7,505 feet long and 150 feet wide with parallel taxiways, and will soon be extended approximately 1,000 feet to the northeast, for a total length of 8,505 feet, making it nearly the same length as 12R/30L. It is anticipated that the runway extension will be fully operational before the forecast year for this study, 2014.

In addition to runway length and orientation, the configuration of the airfield and navigation aids determine aircraft movements. Figure 2-2 depicts the airfield layout, including the passenger terminals, cargo terminals, runways, taxiways, and additional airport facilities.



Source: FAA 2008

Figure 2-2. Airport Diagram

2.2.2 Instrumentation, Lighting, Navigation Aids

An aircraft's choice of runway for departure or for arrival depends on a number of factors. For departures, runway length, orientation to the wind, and destination are determining factors. For arrivals, the origin of the flight and aids to safely landing the aircraft influence the selection of an arrival runway. Pilots follow instructions issued to them by air traffic controllers throughout their route, and once approaching the airport, weather conditions and the amount of air traffic in the vicinity influence those instructions. Navigation aids (Navaids) throughout the aircraft's flight provide navigation and spatial information, and aids for safely landing an aircraft. SAT operates a number of Navaids on multiple runway ends for this purpose, including those designated as precision and non-precision, based on the accuracy and amount of vertical and horizontal guidance offered.

Non-precision approach Navaids include a Nondirectional radio beacon (NDB) for Runways 12R, 30L, and 3. An NDB is a low to medium frequency radio beacon, which transmits non-directional signals from a fixed point on the ground. With the proper navigation equipment, an aircraft can tune in to the specific band of frequency once close enough to the NDB to receive directional information. Runway 21 maintains an Approach Surveillance System (ASR). For precision approaches, an Instrument Landing System (ILS) is available on multiple runways. An ILS generally consists of a

localizer, glide slope, outer and middle markers, and approach lights, and allows precision instrument approaches to runways during periods of low visibility, in varying degrees of precision. Runways 30L and 3 are equipped with a CAT I ILS system, while Runway 12R is equipped with a CAT II ILS, which provides a higher level of precision, categorized by visibility minimums. Runway 12R is the most-used arrival runway at the Airport.

Additionally, the utility of a runway is based on other navigation equipment, such as approach lighting systems (which may be a component of the ILS), visual slope indicators, and runway edge and centerline lighting.

2.2.3 Aircraft Navigation

Aircraft navigation can be thought of as "highways in the sky." Throughout an aircraft's journey, pilots follow ground or satellite navigation aids, and maintain contact with air traffic control personnel who provide guidance and maintain the safe and orderly flow of traffic. In the immediate vicinity of SAT, aircraft maintain contact with the local Air Traffic Control Tower (ATCT). The SAT ATCT provides local air traffic control services to aircraft operating in and out of the airport, as well as coordinating aircraft ground movements (including taxiways and gate areas). The ATCT at SAT is located south of the terminal complex. Once an aircraft departs, they are under the control of a Terminal Radar Approach Control (TRACON), which provides radar separation and vectoring services to aircraft within the terminal airspace. The SAT TRACON facility is co-located with the ATCT on the airfield. Once at cruising altitude, an aircraft maintains contact with the Air Route Traffic Control Center (ARTCC or "Center"), which provides enroute air traffic control services to aircraft. SAT is one of 20 commercial service airports within the approximately 168,000 square miles of airspace served by the Houston Center, located at George Bush Intercontinental Airport in Houston, Texas.

Airspace within the control of the United States can be said to be classified as either uncontrolled (Class G) or controlled (Classes A-E), each of which maintains specific restrictions and guidelines. The San Antonio Terminal Control Area is designated by the FAA as Class C airspace. Generally, Class C airspace begins at the surface and extends to 4,000 feet above the airport elevation (SAT is located 809 feet mean sea level), and consists of both a five nautical mile radius core (extending from surface to 4,000 feet MSL) and a ten nautical mile radius shelf area (extending no lower than 1,200 feet up to 4,000 feet above the airport elevation). It is a large and complex airspace structure that is tailored beyond these general specifications to account for various additional airspace restrictions, such as the Military Operating Areas (MOA) surrounding Randolph AFB and Lackland AFB, which cannot be traversed by civilian aircraft.

San Antonio terminal airspace is organized into various sectors through which air traffic controllers vector arriving and departing aircraft. These major corridors act as airborne "highways" on which aircraft are sequenced in and out of the San Antonio terminal airspace. Air traffic controllers segregate traffic using altitude blocks along those corridors based on aircraft type. In other words, because different aircraft have varying performance characteristics (i.e., speed, climb/descent rates), San Antonio TRACON controllers often segregate jets and propeller-driven aircraft by placing them in different altitude blocks to guarantee proper separation and enhance traffic flow efficiency.

Flights operating at SAT fly under either Instrument Flight Rules (IFR) or Visual Flight Rules (VFR). VFR is a series of rules, which apply to aircraft operating by visual reference and "see-and-avoid" procedures. VFR rules govern flights operating in weather conditions with ceilings of 1,000 feet above the ground level and with at least three miles visibility. IFR includes flight during times when cloud cover and visibility are below published minimums. Flight under IFR conditions requires specific procedures, pilot certification requirements, and onboard instruments for aircraft navigation.

2.2.4 Approach and Departure Procedures

As an approaching aircraft is instructed by the Houston Center to contact the SAT TRACON, the pilot and controller will confirm the instrument arrival procedure to be used by the aircraft, of which SAT has four options, depending on the location of the aircraft. As the aircraft nears the airport, the specific instrument approach procedure is confirmed, which outlines the specific procedure to be followed by a pilot to a specific runway. At SAT, both ILS and area navigation (RNAV) procedures are available to Runways 12R, 30L, 3, and 21.

Standard Instrument Departure (SID) routes, also known as Departure Procedures (DP) are published procedures followed by aircraft on an IFR flight plan immediately after take-off from an airport. A SID provides detailed instructions for an aircraft during the transition from the terminal area to the en route portion of flight. SAT includes two published departure procedures.

2.3 Land Use Compatibility

Suggested land use compatibility guidelines for evaluating land use in areas surrounding public-use airports were developed by the FAA when Part 150 regulations were promulgated. These guidelines, reproduced in Table 2-2, outline the recommended compatibility guidelines for common land uses found in the vicinity of airports. Based on the guidelines, all land uses, including residential and noise-sensitive developments, are considered compatible at levels lower than DNL 65 dB. At levels at or above DNL 65 dB, different land uses are either permitted outright, permitted with recommended sound attenuation materials incorporated into the construction, or not recommended. The Federal government does not have jurisdiction in local land use decisions; thus, the land-use compatibility guidelines are recommendations for use by local planning jurisdictions. The guidelines form the basis for defining areas that may be eligible for Federal funding assistance through AIP grants. However, this does not preclude local jurisdictions from implementing local noise standards that are more stringent than those recommended by Federal guidance documents.

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 acceptable and permissible land uses rests with local authorities.

A land use analysis was completed for this study. Land use data in a Geographic Information System (GIS) format was retrieved from the City of San Antonio Planning & Development Services Department web site in addition to the Bexar Appraisal District (which provided the North Central Plan land use data and Northeast Inner Loop Community Plan land use data). The land uses within the DNL 65 dB noise exposure contours (see Section 5) were analyzed using Table 2-2 for reference.

Table 2-2. Land Use Compatibility with Yearly Day-Night Average Sound Levels

Land Use	Below 65	65 - 70	70 - 75	75 - 80	80 - 85	Over 85
Residential						
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
Public Use						
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
Government 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
Commercial Use						
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
Manufacturing and Production						
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
Recreational						
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

Key:
- 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:
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.

Source: FAR Part 150 Airport Noise Compatibility Planning, Appendix A, Table 1.

3.0 Existing 2009 Conditions

This section explains the noise modeling analysis for the existing conditions, including airport facilities, data sources, fleet mix, runway utilization, flight tracks, flight profiles, run-up operations, weather, and terrain.

3.1 Airport Facilities

Modeling noise exposure for a particular airport using the INM first requires that the airport's specific geographical location, elevation, and runway layout be input into the software. For the Existing 2009 conditions, the airport layout and facilities discussed in Section 2.2 were input into INM. During modeling, this basic information provides the framework for using additional data described in this section.

3.2 Data Sources

In order to build input for the INM, the following sources of data were leveraged to collect the required information.

3.2.1 FAA Operations Counts

The number of operations at SAT for the baseline year was determined from two FAA data sets, the Air Traffic Activity Data System (ATADS) and the Airport's Air Traffic Control Tower (ATCT) records. The ATADS, available online, contains the official national airspace air traffic operations counts from the FAA air traffic control facilities. ATADS reports historical operations data by four operation categories: Air carrier, Air taxi/commuter, General Aviation, and Military. The ATCT counts, provided by FAA air traffic staff, utilize the same categories and report similar figures. These data sets were compared on a day-by-day basis to verify their overall validity and to conservatively adjust the counts by using the higher value in case of discrepancies. This FAA data was then used to determine the annual average day operations for each category.

3.2.2 Department of Transportation (DOT-BTS)

The DOT Bureau of Transportation Statistics (BTS) is an agency whose mission is to "administer data collection, analysis, and reporting and ensure the most cost-effective use of transportation-monitoring resources." BTS is now part of the Research and Innovative Technology Administration (RITA). BTS' data collection program for aviation is authorized under approved legislation and is mandatory (DOT, 2005).

DOT-BTS operates TranStats, an "e-government" initiative, which is designed to provide a data mining hub for transportation researchers and analysts. TranStats provides monthly data reported by certificated U.S. and foreign air carriers on passengers, freight and mail transported. The TranStats data are rather detailed and comprehensive; they include aircraft type, number of scheduled and actual operations, service class, as well as available capacity and seats.

Wyle downloaded a complete dataset of reported monthly air carrier operations to and from SAT for October 2007 through September 2008 and used this detailed information in conjunction with other data sources to improve the accuracy of the fleet mix information. At the time the analysis was conducted, some data were not yet published by DOT-BTS: domestic flights for September 2008 and international flights for June through September 2008.

3.2.3 Airport Flight Tracking Data (NOMS)

The Airport's Noise and Operations Monitoring System (NOMS) is a flight tracking system that derives real-time aircraft identification and trajectory information from the Airport Surveillance Radar (ASR) for use by SAT in its noise management program. The system, which can also be used by airlines for scheduling and flow management, processes real-time flight tracking data and displays it using a graphical user interface that also provides the ability to query data and produce reports. SAT purchased and installed an Era AirScene NOMS as a tool for its noise management program.

The NOMS provided two data sets: the flight tracks and the header data information. The NOMS flight tracks included:

- Time at each point along track;
- East-west coordinates (X);
- North-south coordinates (Y); and
- Altitude (Z).

The flight header data (which was linked to each flight track's data) included:

- Aircraft type;
- Operation type (arrival, departure, or over-flight);
- Runway;
- Flight number or call sign;
- Airline;
- Date of flight; and
- Departing airport/arriving airport codes.

Wyle worked with the Airport Noise Manager to compile airport operations data from the NOMS system for October 2007 through September 2008. Wyle used a 3-month sample (July, August, and September 2008) of flight tracks to gain a more thorough understanding of the airspace and for developing backbone tracks and sub-tracks for input to INM. The full 12 months of flight header data was used to determine runway use statistics as well as refining the fleet mix and time-of-day distribution of operations. It is important to note that there were some records in the header data for which the aircraft type was not specified.

3.2.4 Landing Fee Reports

In order to assess aircraft landing fees, the Airport requires a report of monthly aircraft operations from each passenger, cargo and charter services operator. These reports include the number of landings of each type of aircraft, the weight of the aircraft, number of seats, passenger counts, and cargo weights. This data was utilized to determine the count of arrival operations for each type of aircraft and each operator for October 2007 through September 2008 and to verify the DOT-BTS and NOMS sources.

3.2.5 Environmental Assessment

In September 2007, an Environmental Assessment (EA) was completed on behalf of the Airport and the FAA for two actions: the extension of Runway 3/21 and lease of Airport property for commercial development. The EA was used to determine the projected runway utilization including the extended runway for the year 2014. In addition, since the EA includes Airport operations for the years 2005, 2012, and 2017, it was compared to the data modeled in this study to confirm consistency between the studies.

3.2.6 Ground Run-Up Enclosure Operations Log

The Airport has a Ground Run-up Enclosure (GRE) which is a noise barrier used to shield the noise generated by engine maintenance operations. The GRE is a U-shaped building, which is located near the intersection of Runways 3/21 and 12R/30L. Aircraft are positioned in the GRE such that the exhaust end of the engines face the closed end of the barrier.

The Airport maintains a log of each operation conducted in the GRE, which details the date and time of operation, the operator and aircraft type, and the duration (length) of the maintenance period. The majority of run-up operations occur between 7:00 am and 10:00 pm and these data were used to model run-ups in INM for the baseline year.

3.2.7 FAA STARS Data

The FAA STARS system records live radar data from the ATCT system, and a database was provided which included aircraft type, aircraft category (air carrier, air taxi, general aviation, and military) operation type, flight number/call sign, time of operation, and date of operation, for each operation flown into and out of the Airport between December 3, 2007 and September 30, 2008. This set of data did not include runway utilization information.

3.3 Fleet Mix

An aircraft fleet mix refers to the different types of aircraft that operate at an airport. Because the noise model database does not contain noise data for every individual aircraft type and engine configuration, the fleet mix is generalized by grouping aircraft with similar performance and noise characteristics. For noise modeling of the average annual day condition, aircraft are typically categorized based on the size, type, or weight of the aircraft (such as heavy, regional jet, or turboprop), the type of users (cargo operators, commercial airlines, general aviation) and may be further categorized as appropriate based on local conditions. The result of this analysis is the number of annual average day operations for each type of aircraft operating at SAT for October 2007 through September 2008.

3.3.1 Annual Operations per Category

As discussed above, the FAA uses four categories to classify and count airport operations: Air Carrier, Air Taxi/Commuter, General Aviation (GA), and Military. Table 3-1 shows the total number of annual operations for each category for October 2007 through September 2008 as reported by the FAA. To be noted is that local operations, including touch-and-go flights, which do not exit the terminal airspace, were very infrequent and thus were not modeled in INM.

Table 3-1. Existing Conditions Annual Operations

Category	Annual Operations
Itinerant	
Air Carrier and Cargo	109,797
Air Taxi/Commuter	21,356
General Aviation	88,010
Military	4,115
Total	223,278
Local	
Civil (General Aviation)	183
Military	40
Total	223
Grand Total	
All	223,501
Source: ATADS 2008; SAT ATCT	

The categories shown in Table 3-1 consist of many different types of aircraft. Each category was analyzed individually using NOMS, DOT-BTS, FAA STARS, and Landing Fee Reports, where possible, creating subdivisions as follows:

- Air Carrier – Heavy Jets (weighing more than 255,000 pounds) and Large Jets (weighting between 41,000 and 255,000 pounds);
- Air Taxi/Commuter – Regional Jets (typically weighting less than 41,000 pounds) and Turboprops;
- GA – Business Jets, Turboprops, and Piston-engine Props; and
- Military – Props, Small Jets, and Helicopters.

The Air Carrier category includes all scheduled passenger airline and cargo operations while the Air Taxi/Commuter category includes all regional operators (i.e., airline affiliates that operate smaller regional jets and turboprops).

The STARS data was used to determine the fleet mix for Existing Conditions 2009, including the number of arrivals and departures of each type of aircraft occurring during daytime and nighttime hours. Since the STARS data did not include a full year, it was scaled by computing percentages of each aircraft type/operation type/time of day in each category (air carrier, air taxi, general aviation, and military) then applying the percentages to the annual numbers of operations shown in Table 3-1.

The resulting Air Carrier/Cargo/Commuter category fleet mix is shown in Table 3-2, which provides the aircraft type and corresponding INM aircraft type, the percentage of operations per category, and the number of annual operations.

Table 3-2. Existing Conditions Fleet Mix

Aircraft Category	INM Aircraft	Annual Operations
Air Carrier/Cargo/Commuter		
Heavy Jet	DC1030	1,284
	A300-622R	791
	DC870	433
	MD11GE	55
	A310-304	25
	767300	17
	74720B	5
	767CF6	5
	777200	5
	A300B4-203	5
	747400	2
	767400	2
Large Jet	737700	20,743
	CL601	18,016
	737300	17,311
	MD82	11,550
	A319-131	7,029
	737500	5,857
	MD83	5,417
	EMB14L	5,084
	EMB145	3,697
	737800	3,476
	757PW	2,645
	727EM2	2,023
	A320-232	1,858
	717200	957
	DC93LW	751
	EMB145	429
	757300	292
	GII	224
	DC95HW	212
	CL601	163
	GIV	130
	737400	121
	GV	39
	MD87	34
	MD81	33
	737N9	17
	GIIB	11
	GULF1	11
	GV	10
	727EM1	7
	737N17	7
	DC910	2
Turbo-prop/Prop	{Multiple}	11,846
Helicopter	B222	1,280
Business Jet	{Multiple}	7,244

Note: Operations are rounded to the nearest whole number.

Source: FAA STARS data from 12-3-07 to 9-30-08

Table 3-2. Existing Conditions Fleet Mix – *concluded*

Aircraft Category	INM Aircraft	Annual Operations
General Aviation		
Turbo-prop/Prop	{Multiple}	52,579
Business Jet	{Multiple}	27,523
Helicopter	B222; R22	4,648
Large Jet	{Multiple}	3,228
Other	{Multiple}	32
Military		
Heavy Jet	{Multiple}	1
Helicopter	S70	475
Large Jet	{Multiple}	153
Military	T34	621
	T1	240
	C130	87
	C17	83
	T-38A	50
	F16A	28
	T44	25
Turbo-prop/Prop	{Multiple}	1,443
Small Jet	T6	648
	LEAR35	136
	MU3001	88
	FAL20	20
	LEAR25	7
	CL600	4
	CNA500	4
	CNA750	1
	CNA152	1

Note: Operations are rounded to the nearest whole number.
Source: FAA STARS data from 12-3-07 to 9-30-08

For the GA operations, which are not reported in the DOT-BTS or Landing Fee Reports, the NOMS was the only available source of detailed annual fleet mix data. The NOMS data was analyzed to determine the number of identified business jet, turboprop, and piston-engine prop operations. This total was below the total GA operations reported by the FAA, shown in Table 3-1, because many piston-engine prop operations are Visual Flight Rule (VFR) operations which do not file a flight plan and consequently the NOMS data have flights listed which have no aircraft type identified. After determining the number of business jet and turboprop operations in the NOMS database and identifying piston-engine prop operations, it was deduced that all remaining operations in the GA category consist of piston-engine props. The resulting GA fleet mix is shown in Table 3-2.

Lastly, while the NOMS database identifies military operations, it does not, however, provide the specific types of aircraft. Due to this lack of information, the military fleet mix was determined based on reviewing the past and forecast year information provided by FAA and the EA. The number of projected military operations in the FAA Terminal Area Forecast (TAF), which is discussed in Section 4, showed that there is no projected increase or decrease in operations. Furthermore, the EA shows constant number of operations and fleet mix for its baseline year of 2005 and forecast years of 2012 and 2017. Based on this information it was determined that the 2005 military fleet mix would remain constant in 2009 and it is shown in Table 3-2.

3.3.2 Time of Day Operations

To compute DNL noise exposure the INM requires definition of aircraft operations in terms of daytime and nighttime counts for each aircraft type, as DNL metric penalizes operations occurring during nighttime hours (between 10:00 p.m. and 7:00 a.m.). The FAA STARS data was used to compute the percentage of daytime and nighttime operations individually for each type of aircraft for arrivals and departures. Table 3-3 shows a summary of the daytime vs. nighttime operations for each aircraft type category grouped by arrival and departure operations; approximately 88% of operations occurred during the day, while the remaining 12% occurred during night.

3.4 Runway Utilization

The selection of a runway for an arrival or departure by a pilot or Air Traffic Control is based on wind and weather conditions, aircraft operating requirements (i.e. runway length), and, in some cases, the level of activity (delay) associated with the runway. Runway use is a crucial component for determining noise exposure. The runway utilization for the Existing Conditions was determined from NOMS data, which lists the runway used for all arrivals and departures at SAT. The NOMS data was used to determine runway use specifically for each aircraft category, operation type, and time of day, all important parameters for accurate modeling of the runway utilization at an airport. In addition, the Existing Conditions runway use was compared to the EA to check for general consistency. After consulting with ATC staff, the utilization of Runway 12L/30R, the Airport's shortest runway, was increased for propeller and business jet aircraft. This increase was based upon percentages derived from the NOMS data. Table 3-4 shows the runway use percentages for each category and totals for all departures, all arrivals, and total operations. Figure 3-1 shows an illustration of the total departure and total arrival runway use.

Table 3-3. Existing Conditions Day-Night Summary

Category	Time of Day	Operation Type	
		Arrival	Departure
Heavy Jet	Day	45%	59%
	Night	55%	41%
Large Jet	Day	82%	86%
	Night	18%	14%
Military	Day	90%	94%
	Night	10%	6%
Propeller	Day	89%	82%
	Night	11%	18%
Small Jet	Day	94%	92%
	Night	6%	8%
Overall	Day	87%	89%
	Night	13%	11%
Note: Values are rounded to the nearest percent. Totals are subject to rounding errors.			

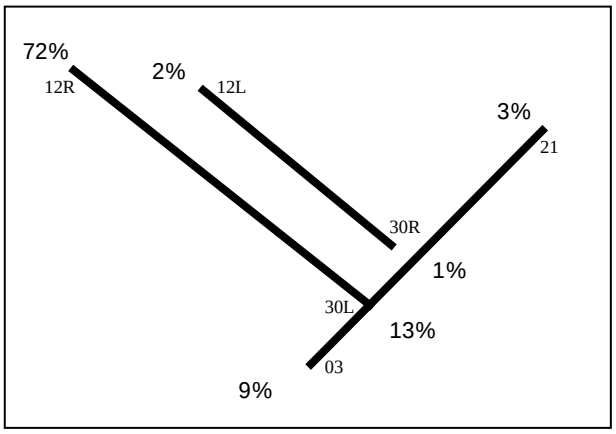
Source: SAT NOMS

Table 3-4. Runway Utilization

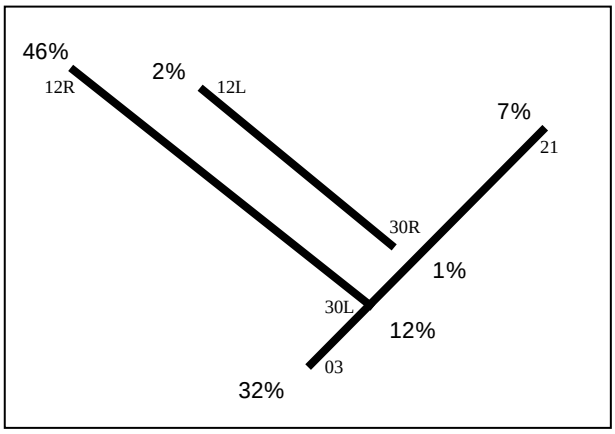
Operation Type	Category	Time of Day	Runway						Total
			03	12L	12R	21	30L	30R	
Arrival	Heavy Jet	Day	9%	0%	74%	1%	16%	0%	100%
		Night	12%	0%	81%	0%	7%	0%	100%
	Large Jet	Day	6%	0%	79%	1%	14%	0%	100%
		Night	5%	0%	86%	2%	7%	0%	100%
	Military	Day	4%	0%	80%	3%	13%	0%	100%
		Night	3%	0%	90%	1%	6%	0%	100%
	Propeller	Day	8%	3%	73%	1%	14%	1%	100%
		Night	5%	3%	74%	4%	13%	1%	100%
	Small Jet	Day	6%	3%	75%	1%	14%	1%	100%
		Night	3%	3%	83%	4%	6%	1%	100%
Departure	Heavy Jet	Day	24%	0%	32%	23%	21%	0%	100%
		Night	29%	0%	30%	27%	13%	0%	100%
	Large Jet	Day	35%	0%	50%	1%	14%	0%	100%
		Night	39%	0%	43%	6%	13%	0%	100%
	Military	Day	19%	0%	68%	1%	11%	0%	100%
		Night	11%	0%	79%	3%	8%	0%	100%
	Propeller	Day	40%	1%	38%	7%	13%	1%	100%
		Night	41%	1%	27%	20%	10%	1%	100%
	Small Jet	Day	22%	1%	62%	1%	13%	1%	100%
		Night	25%	1%	64%	0%	9%	1%	100%
Total Arrival			9%	2%	72%	3%	13%	1%	100%
Total Departure			32%	2%	46%	7%	12%	1%	100%
Grand Total			22%	2%	58%	5%	12%	1%	100%

Note: Values are rounded to the nearest percent. Totals are subject to rounding errors.

Source: SAT NOMS



ARRIVALS



DEPARTURES

Figure 3-1. Overall Runway Utilization

3.5 Flight Tracks

NOMS was also the source of data for the radar analysis performed to create the flight tracks needed for modeling in INM. The most-recent available 3 months of NOMS flight tracking data (July, August, and September 2008) were analyzed in detail utilizing Wyle's proprietary radar analysis tool, the Noise Data Analysis and Display System (NDADS). Radar tracks were grouped in "bundles" according to the operation type, aircraft category, runway, day/night classification, and departure or arrival fix. The term "bundle" is used to refer to a group of radar flight tracks which follow a specific procedure and travel in the same direction. A bundle is converted into a backbone flight track and associated sub- tracks for modeling in INM.

Each bundle of radar tracks was then used to develop or modify one or more INM flight tracks depending on the size and spatial distribution of the bundle. Overlaying the EA tracks on the radar data revealed the need to develop new INM tracks for the most-used runways (arrivals to 12R, departures from 12R, and departures from 3). The EA INM tracks were used for all other runways (with a few exceptions in which new tracks were added to the EA tracks). A combination of the new flight tracks and EA flight tracks were utilized to create the final set for the study. Additionally, each INM backbone track was assigned sub-tracks, which are used to model the dispersion of radar trajectories along the defined path. Flight tracks utilizing Runway 12L/30R were revised based on ATC interviews. Helicopter flight tracks were adjusted based on discussions with Airport personnel. Figures 3-2 and 3-3 show the INM backbone tracks and sub-tracks for arrivals and departures, respectively.

In addition to the geometry of the INM flight tracks, a statistical analysis of individual bundles was conducted to determine the distribution of operations among the INM tracks for each runway. The percentages were computed by grouping the radar tracks for both departure and arrival operations by runway and then by assessing their utilization per bundle. Once the INM track utilization was determined, the next step was to define dispersion statistics for each set of INM sub-tracks. This analysis was also conducted in NDADS, which computed dispersion width, number of sub-tracks, and their respective usage data.

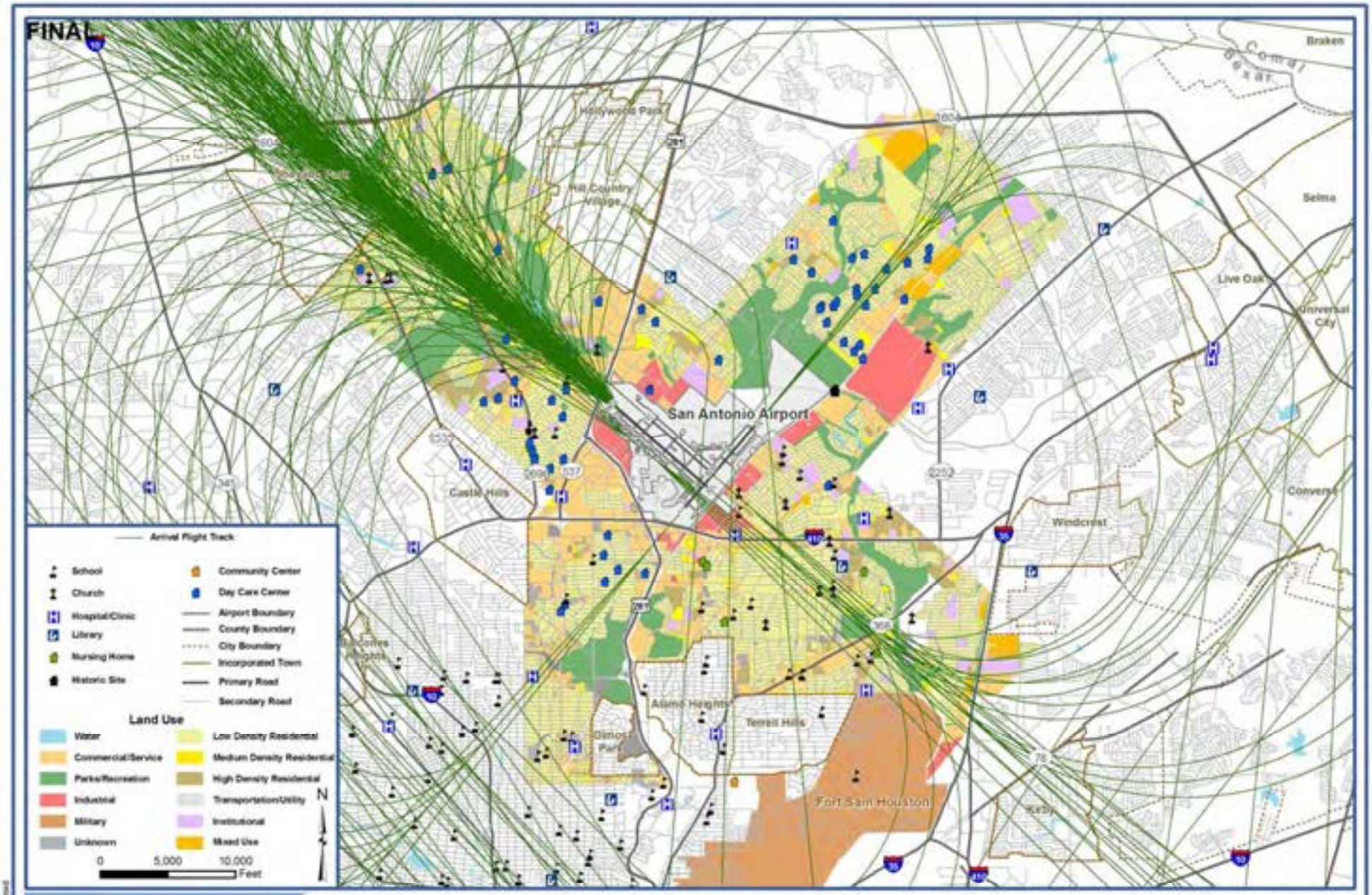


Figure 3-2. Arrival Flight Tracks

SAN ANTONIO AIRPORT SYSTEM

wyle

Sources: US Census TIGER/Line 2000, San Antonio Government, Wyle 2008. Coordinate System: NAD 83 StatePlane Texas South Central FIPS 4204 Feet

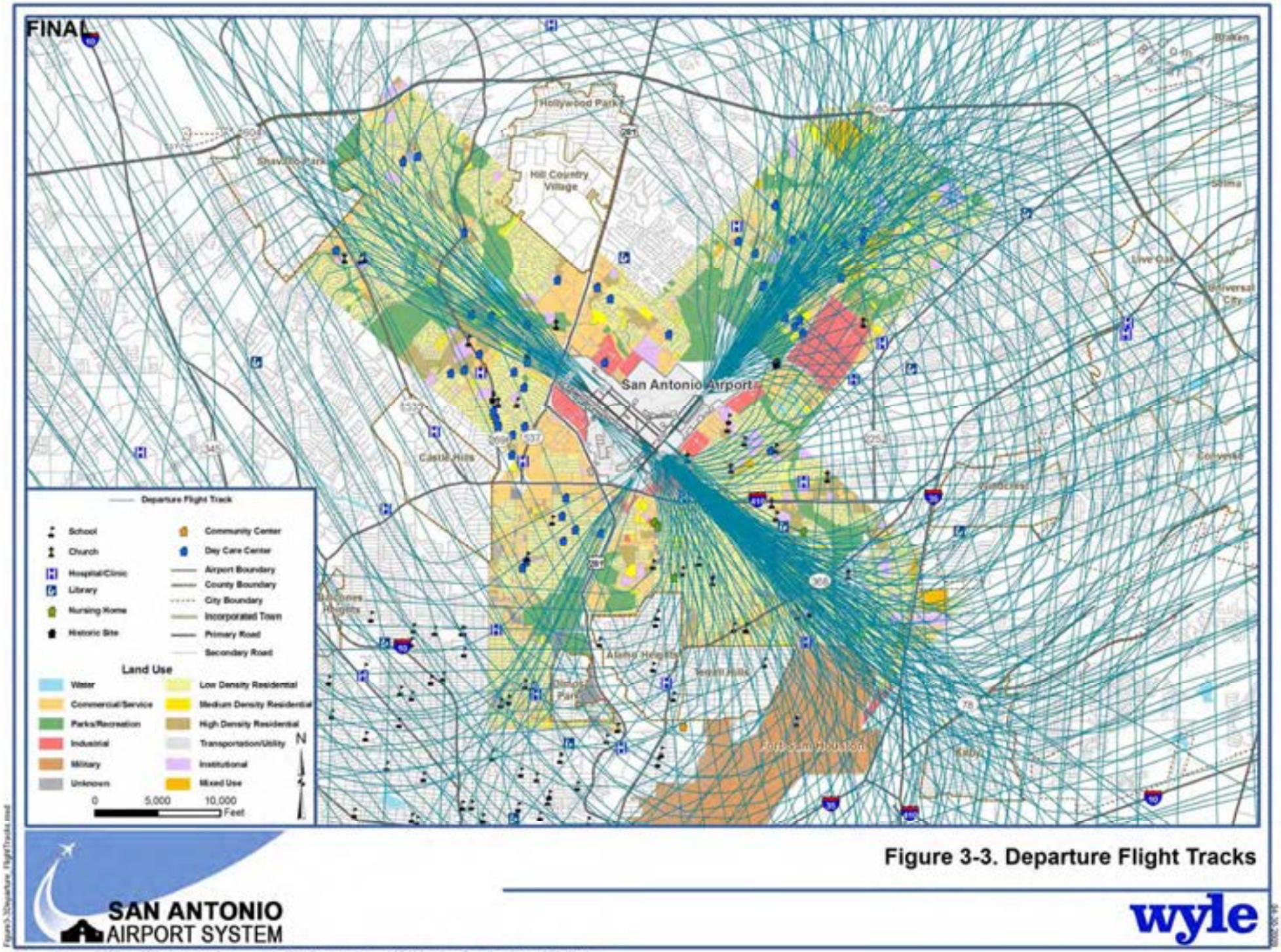


Figure 3-3. Departure Flight Tracks

SAN ANTONIO AIRPORT SYSTEM

wyle

Sources: US Census TIGER/Line 2000; San Antonio Government; Wyle 2008. Coordinate System: NAD 83 StatePlane Texas South Central FIPS 4204 Feet

3.6 Flight Profiles

While a flight track is the representation of the aircraft position as projected on the ground, the flight profile is the representation of an aircraft's vertical trajectory, thrust, and speed. For departure operations, the INM includes a set of standard profiles that vary by aircraft type, operational procedures, and weight, which have been developed by FAA to provide an adequate representation of an aircraft's performance for a range of takeoff weights. In INM, the standard technique is to use Stage Length (e.g., trip distance) as a predictor of aircraft takeoff weight since the longer the trip distance, the higher the weight is likely to be due to increased fuel load.

Since NOMS data included the destination airport codes from each departure flight, the data was grouped by aircraft category and runway to determine the distances flown specific to each runway. The analysis results were then compared and validated using DOT-BTS data, which also contains flight destination airport codes, but only for Air Carrier, Cargo, and Commuter operations. The distances were then used to assign the appropriate stage lengths to be used in noise model input data; Table 3-5 shows the stage lengths used to model departures for each category of aircraft.

Table 3-5. Departure Stage Lengths

Category	Stage Length (Distance Range)		
	Stg. 1 (0-500 NM)	Stg. 2 (500-1,000 NM)	Stg. 3 (1,000-1,500 NM)
Heavy Jet	34%	66%	1%
Large Jet	42%	44%	14%
Military	100%	0%	0%
Propeller	93%	7%	0%
Small Jet	52%	35%	12%
Note: Values are rounded to the nearest percent. Totals are subject to rounding errors.			

Source: SAT NOMS; DOT-BTS

The technique described above was applied only to departure operations since it is assumed that arrival operations always fly a typical 3-degree approach glide slope regardless of the flight's origin. In order to verify that the actual arrival profiles conform to the INM 3-degree approach glide slope, a comparison of radar data and INM profiles was performed for the most frequently operated aircraft at the Airport. Appendix F shows graphs of the radar altitude versus distance along the flight track and the median radar altitude. It is important to note that radar altitude data can sometimes be inaccurate, showing altitudes of zero in the middle of a track or showing unusually high altitudes. While considering the accuracy of radar data, this analysis determined that, within the area affected by the 65 dB DNL contours, the median altitudes of aircraft are consistent with the INM arrival profiles.

3.7 Engine Run-up Operations

Aircraft noise and its effect on the surrounding environment is not limited to flight operations, and the INM allows modeling of engine run-up activity resulting primarily from extended engine maintenance operations. As discussed in Section 3.2.6, at SAT these operations are performed in the GRE. Table 3-6 shows the number of annual average day operations utilizing the GRE from October 2007 through September 2008.

Table 3-6. Engine Run-up Operations

Aircraft Type	INM Aircraft Type	Day Operations	Night Operations	Total Annual Operations
Cessna Citation Jet	CNA560	509	384	893
Boeing 757-200	757PW	61	4	65
Business Jet	BEC400	50	1	51
Mcdonnell Douglas Md-11	MD11GE	39	1	40
Mcdonnell Douglas Dc-8-73	DC870	31	-	31
Mcdonnell Douglas Md-82	MD82	13	4	17
Business Jet	FAL20	13	-	13
Mcdonnell Douglas Dc-10-30	DC1030	10	-	10
Business Jet	HS125	10	-	10
Boeing 737-700	737700	7	2	9
Airbus A300-600	A300-622	8	1	9
Mcdonnell Douglas Dc-9-30	DC93LW	6	-	6
Regional Jet	CL601	3	2	5
Business Jet	GIV	4	-	4
Airbus A319	A319-131	2	1	3
Boeing 727-200/231a	727EM2	3	-	3
TurboProp	EMB110	1	-	1
TurboProp	EMB120	1	-	1
Embraer-145	EMB145	-	1	1
Business Jet	IA1124	1	-	1
Mcdonnell Douglas Md-81	MD81	1	-	1
Business Jet	MU3001	1	-	1

Note: Operations are rounded to the nearest whole number. Totals may be subject to rounding error.

Source: SAT GRE Log

The amount of noise reduction provided by the GRE has been measured to be 16 dB (SAAS 2009) although actual noise reductions for different aircraft may vary. In order to model this noise reduction in INM, equivalent changes were computed in the number of aircraft operations, in accordance with standard modeling procedures (ECAC 2005). The following formula was used:

$$N = 10^{(\Delta L/10)}$$

In this formula, "N" is the equivalent number of aircraft operations and "ΔL" is the noise reduction in decibels. Since the noise reduction was measured to be at least 10 dB, "N" was calculated to be 10^(-10/10), which equals 0.1. This value was multiplied by each of the numbers of modeled operations shown in Table 3-6, and the resulting reduced numbers of operations were modeled in INM. Furthermore, the GRE log showed that, on average, an aircraft spent a total of one hour in the GRE including entry, set-up, engine run-ups, and exit. It was assumed that on average aircraft engines would be running at full power for half of the time spent in the GRE, 30 minutes.

3.8 Weather

Weather data for the existing conditions was obtained from the National Oceanic and Atmospheric Administration (NOAA) and included the following information:

- Average temperature;
- Relative humidity; and
- Barometric pressure.

All three parameters were averaged over a 5-year period to better account for long-term conditions at the Airport. These values were then input into INM, which uses them to better model the propagation of sound through the atmosphere from the noise source (aircraft) to the receiver (at the ground). The annual weather data are shown in Table 3-7.

Table 3-7. Annual Weather Data

Metric	2003	2004	2005	2006	2007	Average
Average temperature (F)	68.9	69.6	70.3	72.1	68.8	69.9
Relative humidity (%)	70	72	67	61	71	68
Barometric pressure (in-Hg)	29.16	29.18	29.16	29.23	29.10	29.17

Source: NOAA, 2009

3.9 Terrain

Elevation data, in 100-foot intervals, were obtained for an area covering the extents surrounding the Airport. INM uses ground elevation data in the computation of noise contours.

4.0 Future 2014 Conditions

This section explains the noise modeling analysis for the future conditions, including airport facilities, data sources, fleet mix, runway utilization, flight tracks, flight profiles, run-up operations, weather, and terrain.

4.1 Airport Facilities

The existing airport layout and facilities were utilized, with the addition of the runway extension of Runway 3/21. The Runway 21 end (i.e., north end) will be extended by 1,000 feet prior to 2014 according to the EA. This runway extension is shown in Figure 5-2.

4.2 Data Sources

In order to build input for the INM, particularly the forecast number of operations and fleet mix, the following sources of data were collected and analyzed.

4.2.1 Terminal Area Forecast (TAF)

The Terminal Area Forecast (TAF) is the FAA's official forecast of aviation activity at active airports in the NPIAS and at FAA air traffic control facilities. The TAF serves the purpose of assisting FAA in its budgeting and planning processes as well as providing a common source of information for state and local authorities, the aviation industry, and the public. The TAF reports historical operations data and provides future traffic projections at both towered and non-towered airports and provides those data by operation category: Air carrier, Air taxi/commuter, General Aviation, and Military.

The Final 2009 TAF (downloaded January 12, 2009) was used to determine the number of modeled operations for the 2014 case.

4.2.2 Department of Transportation (DOT-BTS) Historical Analysis

The DOT Bureau of Transportation Statistics (BTS) makes available the data described in Section 3.2.2 for past years. Wyle downloaded complete datasets of reported monthly operations at SAT for the past six years, 2002 through 2007, to assess historical operations of air carrier, cargo, and commuter traffic, and also to project the 2014 fleet mix.

4.2.3 Environmental Assessment

The EA specifies the length and geometry of the runway extension and the projected runway utilization for all runways once the extension is in operation.

4.3 Forecast Operations and Fleet Mix

The primary data source for the 2014 forecast was the FAA TAF; Table 4-1 shows a summary of the TAF operations. Local operations, which were not modeled in the existing conditions, were also excluded for the future conditions. In addition, to be consistent with the existing conditions, the Air Carrier and Air Taxi/Commuter categories were combined for the analysis described below.

Table 4-1. TAF 2014 Annual Operations

Category	Annual Operations 2014	Percent Change from 2009*
Itinerant		
Air Carrier and Cargo	129,762	2.5%
Air Taxi/Commuter	4,633	
General Aviation	90,926	3.3%
Military	4,107	-0.2%
Total	229,428	2.8%
Local		
Civil (General Aviation)	183	0%
Military	40	0%
Total	223	0%
Grand Total		
All	229,651	2.8%

*Note: Positive percentage indicates a forecast increase in 2014; negative percentage indicates a forecast decrease in 2014. Air Carrier/Cargo and Air Taxi/Commuter categories were combined for forecasting and noise modeling analysis.

Source: FAA Final TAF 2009; Downloaded Jan. 12, 2009

BTS data was used to project the 2014 fleet mix because the TAF only provides operations totals by category. Figure 4-1 shows the results of the analysis of historical DOT-BTS data. For each of the years 2002 through 2007, the percentage composition of the Air Carrier/Cargo/Commuter fleet mix was determined. The DOT-BTS data was divided into three major categories by aircraft type: Heavy Jet, Large Jet, and Regional Jets and Turboprops. The Heavy Jets represented the smallest portion of the fleet mix, were mostly cargo operations, and were constant from year to year. The Regional Jet category increased every year except for 2005, which matched the related decrease in Large Jet (mainly passenger airline) operations.

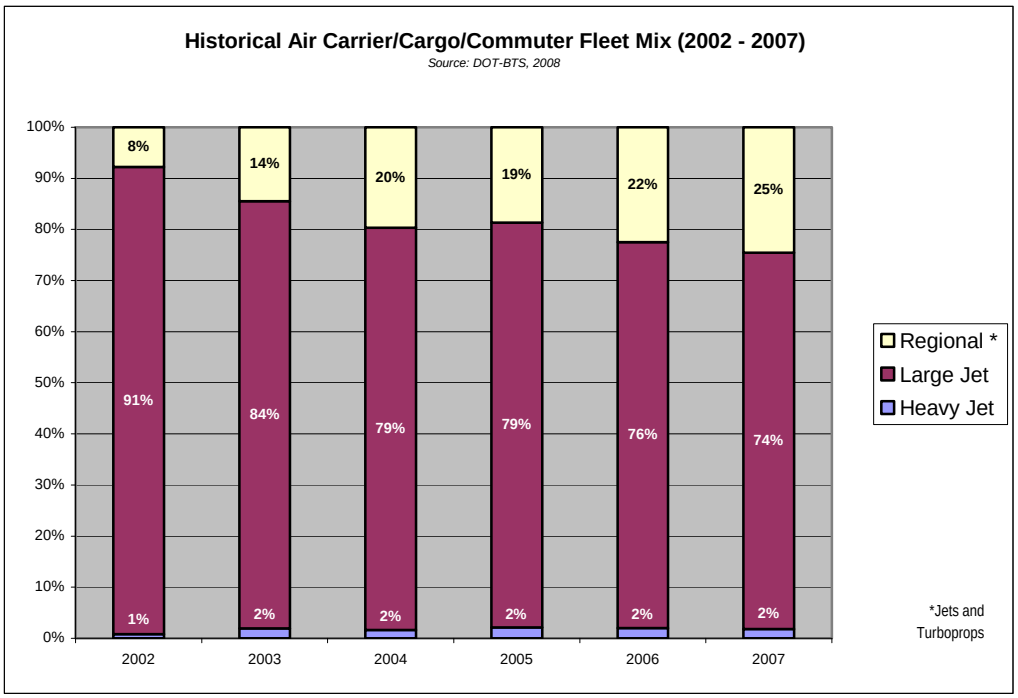


Figure 4-1. Historical Fleet

Based on these trends, a projection was derived for the 2014 fleet mix for these three categories of aircraft. Figure 4-2 shows the projected trends from 2009 through 2014. Based on the historical trends, an increase of 2% per year was projected for the Regional Jet category, balanced by a corresponding 2% decrease per year in Large Jets. In each year, there was a constant percentage of Heavy Jets.

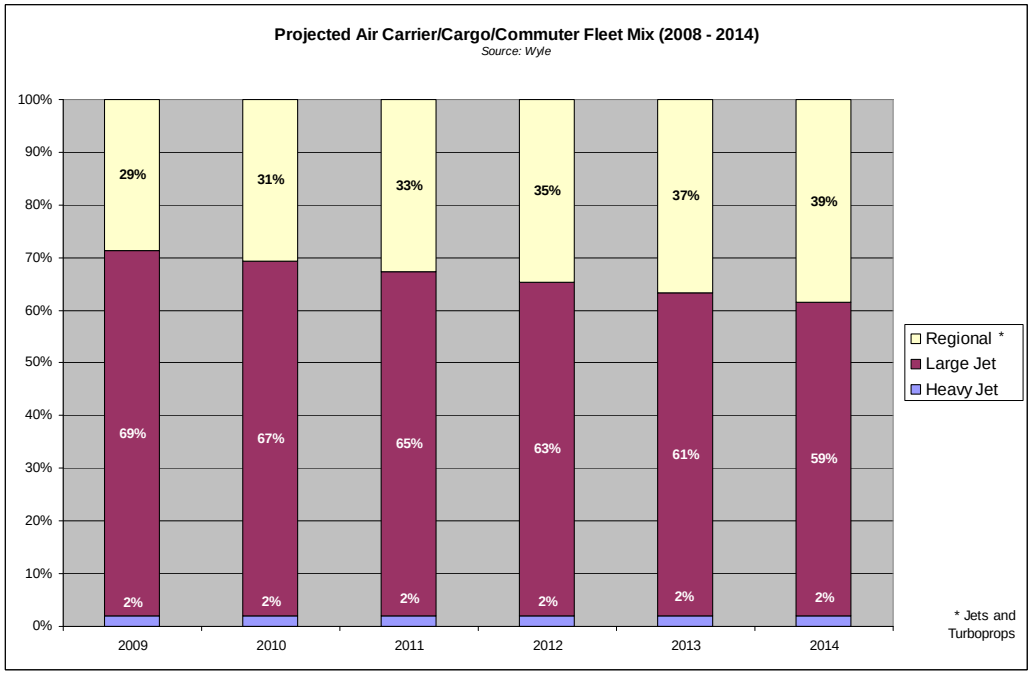


Figure 4-2. Forecast Fleet

Within each of these three categories, historical trends in the numbers of operations for individual aircraft types were examined to determine the projected fleet mix within each category. Table 4-2 reflects the results of this analysis for the Air Carrier/Cargo/Commuter category, which determined that older aircraft (such as MD-80 and Boeing 737-300) will be gradually replaced with newer models at rates consistent with past trends shown in the DOT-BTS data.

In addition, Table 4-2 also shows that, within the GA category, the numbers of business jet, turboprop, and piston-engine prop operations were each projected to increase from 2009 to 2014 in accordance with the TAF GA category. The total number of military operations was derived from the TAF, which forecasts no annual growth. The fleet mix within the military category was set to remain the same as in the existing conditions.

4.4 Forecast Runway Utilization

The EA details the runway extension planned for Runway 3/21 and describes the purpose of the runway extension:

> "This would provide sufficient runway length to accommodate current and foreseeable future runway requirements for certain aircraft operating at the Airport during periods of high temperature. High temperature is established as 94.7° Fahrenheit (rounded to 95°) at the Airport … extending the runway would remove weight or payload restrictions for certain departing aircraft during periods of high temperature, enabling the aircraft to fly longer distances to destinations such as Salt Lake City, Utah; Memphis, Tennessee; and Newark, New Jersey. Although the purpose of the proposed runway extension is not specifically intended as a safety enhancement, the additional runway length adds an extra margin of safety for aircraft departures…" (City of San Antonio, 2007).

According to the EA, the annual average difference in runway use between the existing condition and future condition computed for INM modeling is within 1%. That is, the percentages of runway use for each runway per operation type and aircraft category vary only by 1% or less between the baseline year and forecast years analyzed in the EA. Indeed, the EA states that "the construction of the proposed runway extension has little effect on the [EA noise] contours". Nonetheless, in this study, differences in fleet mix and number of operations did have an effect on the future conditions DNL contours.

Table 4-2. Future Fleet Mix

Aircraft Category	INM Aircraft	Annual Operations
Air Carrier/Cargo/Commuter		
Heavy Jet	DC1030	1,316
	A300-622R	810
	DC870	433
	MD11GE	55
	A310-304	25
	767300	17
	A300B4-203	5
	777200	5
	74720B	5
	767CF6	5
	767400	2
	747400	2
Large Jet	CL601	28,273
	737700	16,946
	737300	14,116
	MD82	9,418
	EMB14L	7,978
	EMB145	5,803
	A319-131	5,732
	737500	4,776
	MD83	4,417
	737800	2,834
	757PW	2,157
	727EM2	1,649
	A320-232	1,515
	717200	780
	EMB145	673
	DC93LW	612
	CL601	256
	757300	238
	GII	183
	DC95HW	173
	GIV	106
	737400	99
	GV	32
	MD87	27
	MD81	24
	GV	15
	GIIB	9
	GULF1	9
	737N9	-
	727EM1	-
	DC910	-
	737N17	-
Turbo-prop/Prop	{Multiple}	13,944
Helicopter	B222	1,311
Business Jet	{Multiple}	7,609

Note: Operations are rounded to the nearest whole number.

Source: FAA STARS data from 12-3-07 to 9-30-08

FAA Final TAF 2009; DOT-BTS 2008; Wyle 2009

Table 4-2. Future Fleet Mix - concluded

Aircraft Category	INM Aircraft	Annual Operations
General Aviation		
Turbo-prop/Prop	{Multiple}	54,321
Business Jet	{Multiple}	28,435
Helicopter	B222; R22	4,802
Large Jet	{Multiple}	3,335
Other	{Multiple}	33
Military		
Heavy Jet	{Multiple}	1
Helicopter	S70	474
Large Jet	{Multiple}	153
Military	T34	620
	T1	240
	C130	87
	C17	83
	T-38A	50
	F16A	28
	T44	25
Turbo-prop/Prop	{Multiple}	1,440
Small Jet	T6	646
	LEAR35	136
	MU3001	88
	FAL20	20
	LEAR25	7
	CL600	4
	CNA500	4
	CNA750	1
	CNA152	1

Note: Operations are rounded to the nearest whole number.
Source: FAA STARS data from 12-3-07 to 9-30-08
FAA Final TAF 2009; DOT-BTS 2008; Wyle 2009

4.5 Flight Tracks

There are no planned changes to the airspace surrounding the Airport which would change the flight tracks currently in use. Therefore, the existing conditions flight tracks were used for the future conditions along with their per-runway utilization percentages. The only change to flight track geometry was associated with the extension of Runway 21: the departures will begin takeoff roll at the new runway endpoint and lifted off at a different point on the runway, and arrivals will touch down at a different point which was also relative to the new runway endpoint.

4.6 Flight Profiles

The departure stage lengths modeled for the future conditions were consistent with the existing conditions annual average INM inputs. This was in accordance with the EA which does not project a change in stage lengths due to the runway extension.

Arrival profiles were modeled with INM default profiles as in the existing conditions INM model. As previously discussed, the actual altitudes of aircraft were consistent with the INM arrival profiles, within areas close to the airport.

4.7 Forecast Engine Run-up Operations

The GRE operations modeled for the existing conditions were scaled according to the forecast to determine the 2014 run-up operations, shown in Table 4-3. The same noise-reduction formula discussed in Section 3.7 was applied.

Table 4-3. Engine Run-up Operations

Aircraft Type	INM Aircraft Type	Day Operations	Night Operations	Total Annual Operations
Cessna Citation Jet	CNA560	524	396	920
Boeing 757-200	757PW	63	4	67
Business Jet	BEC400	52	1	53
Mcdonnell Douglas Md-11	MD11GE	40	1	41
Mcdonnell Douglas Dc-8-73	DC870	32	-	32
Mcdonnell Douglas Md-82	MD82	13	4	18
Business Jet	FAL20	13	-	13
Mcdonnell Douglas Dc-10-30	DC1030	10	-	10
Business Jet	HS125	10	-	10
Boeing 737-700	737700	7	2	9
Airbus A300-600	A300-622	8	1	9
Mcdonnell Douglas Dc-9-30	DC93LW	6	-	6
Regional Jet	CL601	3	2	5
Business Jet	GIV	4	-	4
Airbus A319	A319-131	2	1	3
Boeing 727-200/231a	727EM2	3	-	3
TurboProp	EMB110	1	-	1
TurboProp	EMB120	1	-	1
Embraer-145	EMB145	-	1	1
Business Jet	IA1124	1	-	1
Mcdonnell Douglas Md-81	MD81	1	-	1
Business Jet	MU3001	1	-	1

Note: Operations are rounded to the nearest whole number. Totals may be subject to rounding error.

Source: Wyle

4.8 Weather

Future weather conditions were modeled using the existing conditions data.

4.9 Terrain

Terrain was modeled using the existing conditions data.

5.0 Noise Exposure Maps

This section describes the results of the noise analysis discussed in Sections 3 and 4. Included are Noise Exposure Maps as well as tabulations of land use and population impacts. The effect of these updated NEMs on the Airport's Noise Compatibility Program is discussed in detail in Section 6.

5.1 Existing Conditions 2009 Noise Exposure

Noise contours are lines overlaid on a background map that connect points of equal sound level values. For instance, a 65 dB contour is drawn by connecting all points on a grid with a DNL value of 65 dB; another contour line may be plotted to connect all points with a DNL of 75 dB. Generally, noise contours are plotted at 5 dB intervals starting with the noise compatibility DNL threshold of 65 dB. The Part 150 Land Use Compatibility Guidelines define noise sensitive land uses above a DNL of 65 dB to be non-compatible with airports, and noise-sensitive uses below DNL 65 dB are considered to be compatible "without restrictions." The full listing of Part 150 land use compatibility is shown in Section 2 in Table 2-2.

The Existing Conditions 2009 Noise Exposure Map is shown in Figure 5-1. Noise contours representing 65, 70, and 75 dB DNL are shown. The contours extend farthest from the airfield to the northwest, southeast, and northeast; this is due to the high percentage of airport operations arriving to Runway 12R, departing from Runway 12R and departing from Runway 3, respectively. The 65 dB DNL contour extends beyond the airport boundary and into local neighborhoods in these three directions.

Estimated population and housing units information was calculated based on data from the 2000 United States Census, and is shown in Table 5-1.

The 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. To be noted is that this approach assumes that the population within each block is evenly distributed over the entire census block area, which is not always accurate, but is consistent with the source data assumptions.

5.2 Future Conditions 2014 Noise Exposure

The Future Conditions 2014 Noise Exposure Map is shown in Figure 5-2, including noise contours representing 65, 70, and 75 dB DNL. Similar to the Existing Conditions 2009 NEM, the contours extend farthest from the airfield to the northwest, southeast, and northeast. The 65 dB DNL contour extends beyond the airport boundary and into neighborhoods in these three directions. The 2014 NEM includes a Proposed Noise Mitigation Boundary for the Airport's on-going Residential Acoustical Treatment Program (ATP). The noise impact of the Future Conditions 65 dB DNL contour on residential neighborhoods was assessed and the implications for the NCP are discussed in Section 6. Estimated population and housing unit information for the 2014 NEM is shown in Table 5-2. In addition, Table 5-3 shows the names of the noise-sensitive facilities identified within the 65 dB DNL contour.

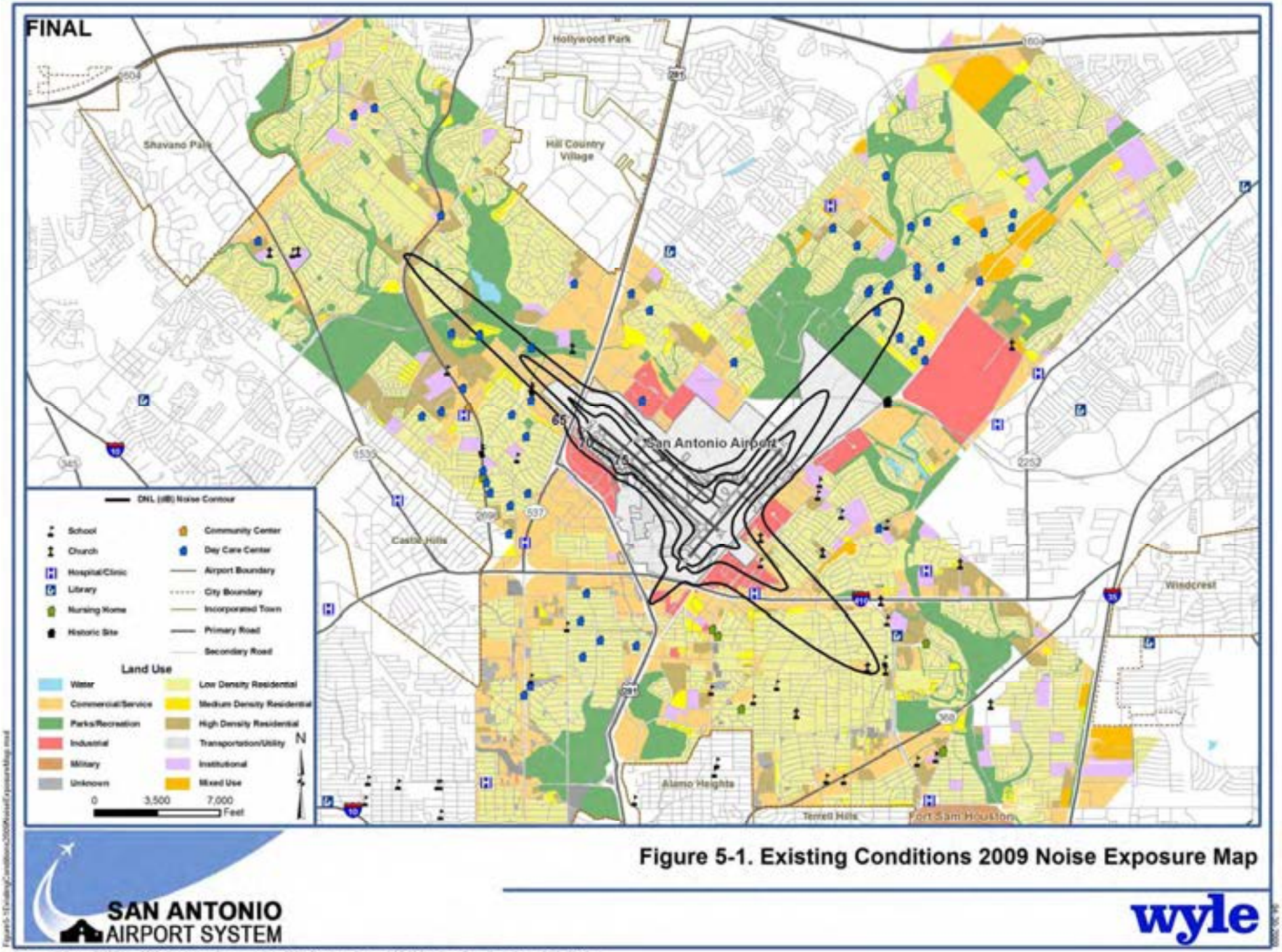


Figure 5-1. Existing Conditions 2009 Noise Exposure Map

Sources: US Census TIGER/Line 2000, San Antonio Government, Wyle 2008. Coordinate System: NAD 83 StatePlane Texas South Central FIPS 4204 Feet

Table 5-1. Existing Conditions 2009 Noise Exposure Contour Impacts

Category	DNL Contour Level			
	65 - 70 dB	70 - 75 dB	75 + dB	65+ dB
Land Use Impacts (Acres)				
Airport Property	590.8	520.2	508.1	1,619.1
Low Density Residential	364.5	0.0	-	364.5
Commercial Services	223.4	52.0	-	275.3
Parks/Recreation	223.0	1.5	-	224.5
Industrial	102.5	46.9	-	149.4
High Density Residential	50.3	4.2	-	54.4
Medium Density Residential	29.7	-	-	29.7
Institutional	-	-	-	-
Unknown	0.0	-	-	0.0
Total	1,584.1	624.8	508.1	2,717.0
Population				
Residences	2,170	97	0	2,266
Estimated Population	4,490	218	0	4,709
Noise-Sensitive Facilities				
Church	2	-	-	2
Community Service	-	-	-	-
Day Care Center	3	-	-	3
Hospital	1	-	-	1
Library	-	-	-	-
Nursing Home	-	-	-	-
School	2	1	-	3

Note: Population figures are derived from determining the percentage of each census block contained within each contour band. Some values and totals subject to rounding error.
Source: U.S. Census, 2000; Wyle, 2008

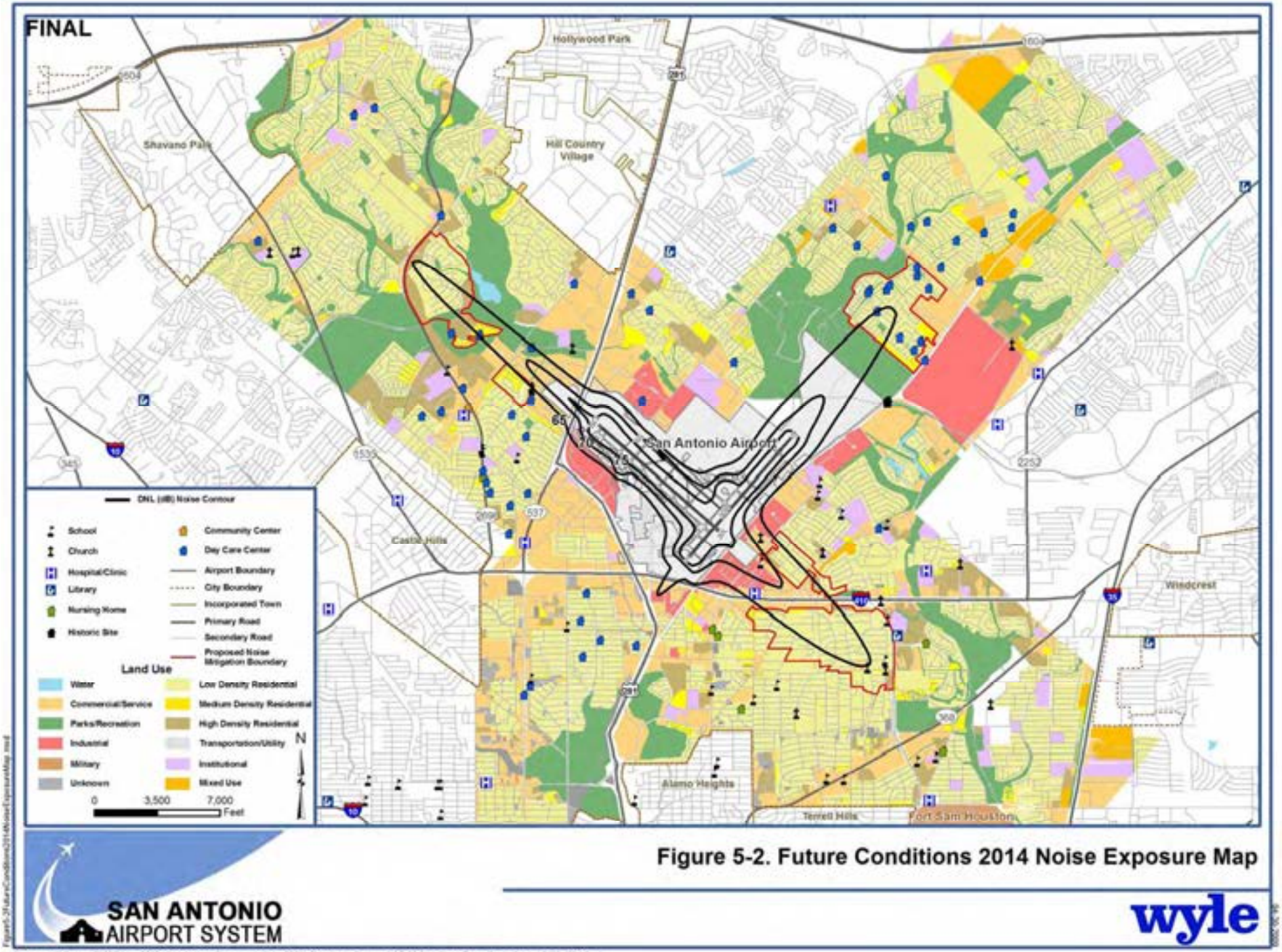


Figure 5-2. Future Conditions 2014 Noise Exposure Map

Sources: US Census TIGER/Line 2000, San Antonio Government, Wyle 2008. Coordinate System: NAD 83 StatePlane Texas South Central FIPS 4204 Feet

Table 5-2. Future Conditions 2014 Noise Exposure Contour Impacts

Category	DNL Contour Level			
	65 - 70 dB	70 - 75 dB	75 + dB	65+ dB
Land Use Impacts (Acres)				
Airport Property	592.4	497.4	490.5	1,580.3
Low Density Residential	296.7	-	-	296.7
Commercial Services	215.4	37.4	-	252.8
Parks/Recreation	199.3	1.0	-	200.3
Industrial	89.6	42.5	-	132.1
High Density Residential	40.5	2.4	-	42.9
Medium Density Residential	24.9	-	-	24.9
Institutional	-	-	-	-
Unknown	0.0	-	-	0.0
Total	1,458.8	580.7	490.5	2,530.0
Population				
Residences	1,856	68	0	1,924
Estimated Population	3,821	155	0	3,975
Noise-Sensitive Facilities				
Church	1	-	-	1
Community Service	-	-	-	-
Day Care Center	3	-	-	3
Hospital	1	-	-	1
Library	-	-	-	-
Nursing Home	-	-	-	-
School	2	1	-	3

Note: Population figures are derived from determining the percentage of each census block contained within each contour band. Some values and totals subject to rounding error.
Source: U.S. Census, 2000; Wyle, 2008

Table 5-3. Noise-Sensitive Facilities within the Future Conditions 65 dB DNL Contour

Type	Name
Church	Alliance Bible Church
	Northwood Presbyterian Church
Day Care	Coker United Methodist Child Care
	Laura Nordquist
	Penny Eastman
Hospital	Santa Rosa Rehab Center - North
School	Rhapsody Head Start
	Northwood Elementary School
	Northeast J J A E P

6.0 Noise Compatibility Program Update

This section reports on the past efforts of the City of San Antonio to promote noise compatibility through the development of an NCP, and concludes with an update of the airport's existing NCP in the context of the revised NEMs prepared under this study.

6.1 NCP Development

The responsibility for reducing the impact of noise exposure from operations at airports is a shared one, and includes the Federal government, the airport operator, airlines and tenants, and local jurisdictions. The NCP represents SAT's efforts to promote compatibility between the airport and surrounding environment. An NCP identifies strategies to reduce existing noise impacts and minimize the potential for future noise impacts, and includes methods for which the airport itself may have control, and also strategies that could be effective if implemented by additional stakeholders.

Once an airport has submitted to the FAA an acceptable Noise Exposure Map, it may develop and submit for approval to the FAA an NCP. Once submitted to the FAA, the evaluation of each individual program element, or measure, begins. Each measure is evaluated to determine if it: would create an undue burden on interstate or foreign commerce be reasonably consistent with obtaining the goal of reducing noncompatible land uses and preventing the introduction of additional noncompatible land uses; include the use of new or modified flight procedures to control the operation of aircraft for purposes of noise control, or affect flight procedures in any way; or whether the measure adversely affects the exercise of authority and responsibilities of the Federal government. The FAA either approves or disapproves each measure in the context of the entire program. Approvals indicate only that the actions would, if implemented, be consistent with the purposes of Part 150.

The NCP must be developed and submitted in accordance with the provisions set forth in 14 CFR Part 150, which states specifically in Subparts 150.5 (a) and (b) some of the limitations of the FAA's role in approving the Sponsor's NCP. Subpart (a) states "Approval of a NCP under this part is neither a commitment by FAA to financially assist in the implementation of the program, nor a determination that all measures covered by the program are eligible for grant-in-aid funding from the FAA." Subpart (b) states that "Approval of a NCP under this part does not by itself constitute an FAA implementing action. A request for Federal action or approval to implement specific noise compatibility measures may be required, and an FAA decision on the request may require an environmental assessment of the proposed action, pursuant to the National Environmental Policy Act and applicable regulations, directives, and guidelines."

Part 150 also prescribes the steps, including consultation with airport tenants, public, state and local jurisdictions, and the FAA in the development of the NCP. Once a measure is approved, steps necessary for its implementation may begin. Neither the FAA approval or the Sponsor's identification of a measure assures it will be implemented – many unforeseen obstacles or changes in operations or land use may negate the need for a specific measure. Further, many measures require funding from both the FAA and local sources, which may not always be available. In short, even though a measure may have been identified, submitted, and approved, it may still not be implemented.

6.2 1990 Part 150 Study

San Antonio International Airport has embarked on multiple Part 150 studies over the past 20 years. The original NCP was approved by the City of San Antonio in 1990 and the FAA in 1991, and included 11 measures designed to reduce existing noise exposure and prevent the introduction of future incompatible land uses. A number of these measures were implemented, while others were not implemented, or were continued as recommended measures in the 2002 Part 150 study. The establishment of a noise abatement officer staff position, a noise abatement advisory committee, a pilot advisory program, ongoing noise monitoring, and a procedure for the investigation and recording of noise complaints were all implemented. A request for pilots to use noise abatement departure profiles was implemented, as was encouragement of airlines and cargo operators to utilize as many Stage 3 aircraft as possible (prior to the phase-out of all Stage 2 aircraft in excess of 75,000 lbs by December 31st, 1999). The NCP also included restrictions of nighttime run ups by aircraft to reduce the impact of noise during sensitive hours, which was implemented. In terms of land use management techniques, the NCP included the recommendation to begin an acoustical treatment program for public buildings, which has been implemented, and to develop a comprehensive land use policy to address future incompatible land uses in the vicinity of the airport, which has also been partially implemented. One measure was not implemented, which called for noise disclosure through a city ordinance for property located in specific noise-sensitive areas.

6.3 1997 Part 150 NCP Update

In 1996, SAT performed an update to its previously approved NCP to account for the increase in engine run up activity at the airport, as well as the installation of permanent noise monitors. The updated NCP called for the installation of a Ground Run-up Enclosure (GRE) to be used at all times by airport tenants performing engine maintenance operations and testing. Both of these measures were approved by the FAA in May 1997.

6.4 2002 Part 150 NCP Update

The most recent Part 150 study undertaken at SAT was approved in 2002, following San Antonio City Council approval in October 2001. The NCP, which initially recommended 11 noise abatement measures and four noise mitigation measures (two remedial and two preventive), resulted in a Record of Approval (ROA) issued by the FAA in September 2002. The FAA approved four of the noise abatement measures (measures 2, 6, 7, and 8) and each of the four noise mitigation measures. Other measures were disapproved, either outright as not consistent with the purposes of Part 150, or pending the submission of additional information. The future conditions NEM for this NCP update was for the year 2004.

The current update to the SAT NCP will only address those measures previously approved by the FAA. Each of the recommended measures from the 2002 Part 150 NCP is described in the following sections, which includes a brief description of the measure as well as the FAA finding, and any relevant information pertaining to actions that have occurred since the Record of Approval was issued.

Noise Abatement Measure No. 1: Conduct live tests of noise abatement departure profiles.

Noise Abatement Measure 1 directed the airport to work with individual airlines to conduct flight tests, monitored with noise measurement equipment, to assist in the identification of flight procedures which would minimize single-event noise levels at each of the airport's runways. The FAA disapproved the measure, citing that airlines already develop specific procedures for aircraft operating at SAT and that Advisory Circular 91-53a, which was implemented to identify consistent departure procedures which minimize noise impacts without compromising safety by allowing each airport to maintain specific departure procedures. The FAA identified the distant procedure, outlined in AC 91-53a, as having more potential benefit at SAT as compatible land uses are located closest to the runways. Flight procedure testing of both the close-in and distant departures identified in AC 91-53a occurred in 2001, the results of which indicated that there is little measured difference and virtually no perceptible difference between the close-in and distant noise abatement departure procedures in the environs of SAT. The study also determined that many airlines operating from SAT are currently using noise abatement departure procedures consistent with AC 91-53A and further guidance specifying the use of a specific noise abatement departure is unwarranted.

Noise Abatement Measure No. 2: Pursue additional voluntary noise abatement departure procedures to further reduce noise levels of aircraft operations.

Noise Abatement Measure 2 called for the additional development of voluntary flight procedures designed to further reduce noise levels in the environs surrounding SAT. They include: (1) Departure profiles which would increase the altitude to which an aircraft would climb at departure thrust before reducing power settings and adjusting flaps, and (2) Modifications to arrival tracks which would prevent aircraft from turning onto a short final approach over noise-sensitive areas close to the Airport. The FAA disapproved the portion of the measure which called for modifications to departure profiles, and approved the arrival portion of the measure. No further action has been taken on this measure.

Noise Abatement Measure No. 3: Establish a preferential runway use program and enhance its effectiveness by extending existing runways.

Noise Abatement Measure 3 included multiple recommendations, including the establishment of a preferential runway use program that minimized departures from Runways 12L and 12R as well as arrivals to Runways 30L and 30R; the extension of Runway 3/21 to the northeast; and the extension of 12R/30L to the northwest. These measures, collectively, would have allowed the increase in use of Runway 3/21 which would reduce the number of overflights over noise sensitive land uses located along Runways 12L/30R and 12R/30L. The FAA disapproved each of the elements, citing that the revised runway use program would constrain air traffic efficiency and capacity. The extension of Runway 3/21 was included in a previous master plan to allow for an increase in capacity; therefore, it cannot be approved for the purposes of Part 150, which is designed to identify measures that reduce overall noise exposure. The Runway 3/21 extension was considered and evaluated in the EA completed by the airport, which concluded that the extension will be completed. Runway use tables for the existing condition are located in Section 3 of this report. As an extension to Runway 12R/30L would also have allowed for an increase in capacity at the airport, it was also disapproved for Part 150 purposes.

Noise Abatement Measure No. 4: For departures from Runway 3, establish a departure corridor that places aircraft over compatible land uses east of Wetmore Road to the extent possible.

Noise Abatement Measure 4 was designed to promote the use of a compatible land use departure corridor from Runway 3, to allow for a reduction in the number of aircraft overflights northeast of the airport. Citing both airspace restrictions due to the location of Randolph Air Force Base and a potential reduction in air traffic efficiency and flexibility, the FAA disapproved this measure. The Airport has taken no action on this measure.

Noise Abatement Measure No. 5: For those times that Runway 21 must be used for departure, establish a departure corridor that places aircraft over the Highway 281 corridor to the extent possible.

Noise Abatement Measure 5 called for the establishment of a departure corridor for Runway 21 departures over more compatible land uses. The FAA disapproved the measure, pending the submission of further information, and the issue was evaluated in the EA for the extension of Runway 3/21. The Airport has taken no action on this measure.

Noise Abatement Measure No. 6: Incorporate the findings and recommendations of the engine run-up study into the FAR Part 150 Noise Compatibility Program (NCP).

The FAA approved this measure, which built upon previous recommendations to reduce noise exposure from airport run up operations. At the time of the approval, the FAA had issued a grant for the construction of the Ground Run-up Enclosure, which was completed in May 2002 and is currently used by airport tenants to perform all run-up operations. The effectiveness of the GRE was measured to be a noise level reduction of 16 dB at 400 feet from the structure.

Noise Abatement Measure No. 7: Install an aircraft noise and operations monitoring system to track the use of departure corridors and departure profiles.

First identified in the original NCP, this measure called for the installation of an aircraft noise and operation monitoring system. The FAA approved the measure, and had issued a grant at the time of approval of the program, and a noise and operations monitoring system has been installed at SAT and is used regularly to monitor aircraft noise levels in the vicinity of the airport. The current system was installed in 2004 by Rannoch Corporation (now known as Era Corporation) and has (12) noise monitoring sensors and (5) flight tracking sensors linked to a central computer located in the Airport's noise abatement office. Note that this measure replaces Program Element Number 8 in the May 23, 1997, Record of Approval.

Noise Abatement Measure No. 8: Enhance pilot awareness of noise-sensitive areas and noise abatement procedures by providing information for Jeppesen charts, airline pilot manuals, and fixed based operator information.

Noise Abatement Measure 8 was designed to effectively convey to aircraft pilots the location of noise-sensitive areas around the airport and noise abatement procedures in use at the airport through traditional pilot awareness measures, such as Jeppesen plates and airport signage. The FAA approved the measure and it is currently in use.

Noise Abatement Measure No. 9: Investigate the use of noise barriers along Airport boundaries at runway ends to reduce the effects of takeoff roll noise.

Noise Abatement Measure 9 was designed to allow for the study of noise barriers which reduce the noise generated by aircraft operating on the ground, such as during taxiing, initial departure roll, use of reverse thrust on landing, and engine operation at the gate. The FAA disapproved the measure, citing a need for additional information. The Airport has taken no action on this measure.

Noise Abatement Measure No. 10: Encourage Congress to seek stricter aircraft noise standards, particularly regarding a phase-out schedule for aircraft originally manufactured as Stage 2 that have been modified or are operated to meet Stage 3 noise standards.

Noise Abatement Measure 10 was designed to encourage Congress to restrict aircraft noise levels through legislation, which would benefit SAT by developing a timeline for the phase out of hush-kitted Stage 3 aircraft. The FAA disapproved the measure, citing previous study that a hush-kitted Stage 3 phase- out would provide minimal overall noise reduction as compared to its high economic cost.

Noise Abatement Measure No. 11: Encourage the FAA to develop a phase-out schedule for FAR Part 36 Stage 2 aircraft weighing less than 75,000 pounds.

Similar to Noise Abatement Measure 10, Measure 11 called for the FAA to develop a phase-out schedule for Stage 2 aircraft still in operation (those weighing less than 75,000 lbs, which were not included in ANCA). The FAA encourages the voluntary coordination with aircraft owners and operators for such methods as voluntary curfews, which have been proven to be effective. Currently, Stage 2 aircraft represent a small percentage of the fleet at SAT. They are forecast to be reduced in the future as these aircraft, which consist mostly of general aviation and corporate jets, are retired. As such, the FAA disapproved this measure.

Noise Mitigation Measure No. 1: Develop an expanded residential acoustical treatment program based on the positive results from the current Residential Acoustical Treatment Pilot Program.

Noise Mitigation Measure 1, the second remedial mitigation measure, called for the expansion of the Residential Acoustical Treatment Program (RATP) based on the success of the pilot program established in the previous NCP. The measure identified homes located in areas with noise exposure of at least DNL 70 dB as the first priority, and established boundaries depicting each of the areas based on the noise exposure map developed for 2004. The FAA approved this measure, and the program is currently in progress. After the final FAA approval of this NCP update, this measure will utilize the 2014 NEM to set the boundaries for the RATP. The proposed noise mitigation boundary is discussed in detail in Section 6.5. To date the Airport has treated 317 homes and 216 apartment units had has acquired avigation easements for each of these properties.

Noise Mitigation Measure No. 2: Provide acoustical treatment for schools and religious facilities that have not yet received such treatment and could be exposed to aircraft noise of DNL 65 and higher.

This remedial mitigation measure was a continuation of previous NCP programs that provided acoustical treatment to noise-sensitive facilities around SAT. Ten schools, 19 religious facilities, one library, and two nursing homes have participated in the RATP. The continuation of this measure was approved by the FAA. At the time of the previous NCP, two schools, one religious facility, and one

group care home had not been treated and were potentially eligible for acoustical treatment. After the final FAA approval of this NCP update, this measure will utilize the 2014 NEM to set the boundaries for the RATP. The proposed noise mitigation boundary is discussed in detail in Section 6.5.

Noise Mitigation Measure No. 3: Study the mechanism for and impact of incorporating noise exposure acknowledgements into real estate transactions.

Noise Mitigation Measure 3, one of two preventive mitigation measures, was recommended with the intent of disclosing aircraft noise information into real estate transactions. Typically, noise disclosure ordinances primarily address property within the 65 DNL noise exposure contour, which is considered incompatible with airport operations according to Federal guidelines. Real estate disclosure notices can be an effective means of transferring an acknowledgement of potential impacts from aircraft overflights in an area surrounding an airport. Real estate disclosure effectively incorporates information about aircraft overflights, the location of the property in relation to the airport or flight patterns, and potential affects in either a legal document (through an easement) or in real estate marketing materials.

In previous noise studies, noise disclosure was approved as a measure but was not carried out by the City of San Antonio. The Part 150 recommended the evaluation of both a mandatory disclosure notice or voluntary agreements with local realtors. The FAA approved this measure for further study. No action has been taken by the City nor the State.

Noise Mitigation Measure No. 4: Study mechanisms to maintain compatible land uses in current and proposed flight corridors and to prevent development of additional incompatible noise-sensitive land uses in areas exposed to DNL 65 and higher.

Noise Mitigation Measure 4, the second preventive mitigation measure, called for the detailed study of a set of land use planning controls, including zoning, land use trends, and short and long range plans to minimize the impact of aircraft noise. This measure included working closely on an ongoing basis with the City of San Antonio regarding the Comprehensive Plan and overlay zoning. The FAA approved the measure, stating specifically that since the airport is owned by the City of San Antonio, it has additional obligations as well as the jurisdictional control necessary to effectively reduce incompatible land uses. The City is currently performing this study.

6.5 2009 Part 150 NCP Update

Based on the decision by the City of San Antonio to update its Noise Exposure Maps for San Antonio International Airport, the 2002 NCP must also be updated to reflect the new NEMs. Only those measures previously approved by the FAA and those intended to be carried forth by the Airport are included in this update: Noise Mitigation Measures 1 and 2. This section summarizes the changes to these two existing program measures based on the use of the Future Conditions 2014 Noise Exposure Map for mitigation.

As shown previously in Figure 5-2, the Future Conditions 2014 NEM, noise exposure is anticipated to change from that presented in the 2004 NEM. The 2014 NEM contours are generally smaller as compared to the 2004 NEM. In addition to the overall reduction in the size and shape of the Future

Conditions 2014 NEM, fewer incompatible land uses are expected to experience significant noise exposure, thus resulting in fewer residences being potentially eligible for noise mitigation under the residential Acoustical Treatment Program. Table 5-2 shows the number of impacted residences and noise-sensitive facilities for the 2014 NEM.

Guidance for the implementation of a sound insulation program is found in the AIP Handbook, published by the FAA for use in implementing various AIP programs. Sound insulation, as well as other types of remedial mitigation, is generally only applicable to structures which have been found to be adversely affected by aircraft noise through the completion and approval of an NCP. Generally, only those structures within the 65 dB DNL contour are eligible; however, the FAA allows for an adjustment of the sound insulation boundaries to avoid the division of contiguous residential neighborhoods intersected by the 65 dB DNL contour. This is because, if a neighborhood were split mid-block, then a situation could arise in which some homes would receive acoustical treatment and adjacent homes would not.

The 2014 NEM shows the proposed noise mitigation boundary, determined based on the location of the 65 dB DNL contour and expanded to include contiguous areas adjacent to the contour to provide for neighborhood integrity. It is important to note that inclusion in the RATP, and FAA approval, is not a guarantee that a particular home will be sound insulated. Factors effecting this determination include future changes in noise exposure, availability of Federal and local funds, and/or specific local zoning or code issues.

A method was devised to assess neighborhood integrity and delineate the proposed mitigation boundary. A residence was considered impacted, and therefore potentially eligible for inclusion in the ATP, if the 65 dB DNL contour falls within the parcel boundary of the property. If the 65 dB DNL contour intersected a residential neighborhood, and at least one residence was within the contour, then at a minimum, all residences on the same block of the street were included within the boundary. When possible, the mitigation boundary was placed at the closest street to the 65 DNL contour for which none of the residences on that street were within the contour. However, in order to account for neighborhoods with small non-intersecting streets, in some areas the mitigation boundary was extended to the nearest geographic boundary, such as a continuous or major road, a recreational area, or other non-residential land use. This method increases the likelihood that all homes and noise-sensitive facilities throughout a contiguous neighborhood will be eligible for acoustical treatment, balanced against the need to create a definitive boundary in the proximity of the 65 DNL contour.

The proposed noise mitigation boundary shown in the 2014 NEM, once subjected to FAA review and approval, will be referred to in the updated Noise Mitigation Measures 1 and 2. Although the measures themselves remain unchanged and will continue to be approved by the FAA, they will now refer to the updated 2014 NEM, as shown below:

Noise Mitigation Measure No. 1: Continue the Residential Acoustical Treatment Program within the Noise Mitigation Boundary shown in the San Antonio International Airport 2014 Noise Exposure Map (NEM).

Noise Mitigation Measure No. 2: Continue to provide acoustical treatment for schools and religious facilities that have not yet received such treatment and are within the Noise Mitigation Boundary shown in the San Antonio International Airport 2014 Noise Exposure Map (NEM).

The implementation of Noise Mitigation Measures 1 and 2 are the responsibility of the City of San Antonio. The San Antonio City Council has approved this NEM/NCP update for submittal to FAA – a necessary local governmental action – and as such the City agrees to continue RATP program funding. The RATP program is funded with 80% federal funds and 20% City funds. The steps to implementation of this on-going program are complete, with the exception of FAA acceptance of this NCP update, which will allow for continued federal funding.

Current and estimated future RATP program costs are shown in Table 6-1. The airport currently employs a consultant to manage the project; the consultant provided the current costs shown in Table 6-1. Total program costs are difficult to estimate, as they are affected by varying per-unit treatment costs which are influenced greatly by the type, size, and condition of the residence or facility being treated. Thus, the costs shown in Table 6-1 should be considered generalized estimates.

Table 6-1. RATP Program Summary

Program Costs (July 2006 -- Present)	Federal Funds (July 2006 -- Present)
Approx. $30 Million	Approx. $24 Million
Units Completed (July 2006 -- Present)	**Treatment Cost per Unit**
533 (317 Homes and 216 Apartment Units)	$30,000 -- $60,000 (plus overhead)
Treated Units per Year (Planned)	**Estimated Number of Eligible Untreated Units**
216	Approx. 1,600
Estimated Future Program Costs	**Estimated Future Federal Contribution**
Approx. $80 Million	Approx. $64 Million

Source: THC, Inc. 2009; San Antonio International Airport 2009; Wyle 2009
Note: A unit refers to a single-family home or an individual townhome/apartment/condominium unit.

At the planned rate of progress, the program will continue for approximately 7 to 8 years, inclusive of 2009. However, note that the period of time covered by Noise Mitigation Measures 1 and 2 will be the time required to sound insulate all eligible residences and facilities within the program, which may take longer than the estimated timeline to complete.

Finally, this NCP Update also allows for periodic evaluation of noise exposure and revision of the NEMs and NCP. The City of San Antonio will periodically assess the need to update the NEMs at the airport, either within a five-year time frame, or when operating conditions at the airport change significantly and it is likely that the DNL would increase or decrease by 1.5 dB or more over non-compatible land uses. This provision ensures a continuation of the evaluation of noise exposure, and will also allow for modifications to the boundaries of the RATP program should the need arise. Although the City is responsible for this provision, the NEM/NCP update costs would be shared between the City and FAA.

Table 6-2 provides a summary of the previous NCP, its current status, and identifies those measures which will be continued through the approval of this study by the City of San Antonio and the FAA.

Table 6-2. NCP Status

Measure	Summary	FAA Determination	Status	Next Steps
Abatement Measure 1	Noise Measurement tests of departure profiles	Disapproved	Flight testing in 2001	Not included for continuation
Abatement Measure 2	Develop additional noise abatement procedures	Disapproved for departures, approved for arrivals	No Action	Not included for continuation
Abatement Measure 3	Preferential Runway Use Program	Disapproved	Runway 3/21 to be extended	Not included for continuation
Abatement Measure 4	Runway 3 Departure Corridor	Disapproved	No Action	Not included for continuation
Abatement Measure 5	Runway 21 Departure Corridor	Disapproved	No Action	Not included for continuation
Abatement Measure 6	Update NCP with GRE study information	Approved	GRE constructed and in use	Not included for continuation
Abatement Measure 7	Acquire aircraft noise and operations monitoring system	Approved	Acquired and in use	Not included for continuation
Abatement Measure 8	Pilot Awareness Program	Approved	On-Going	Ongoing Measure; Not affected by this NCP update
Abatement Measure 9	Noise Barrier Study	Disapproved	No Action	Not included for continuation
Abatement Measure 10	Encourage Congress to develop a phase-out schedule for Hushkitted Stage 3 aircraft	Disapproved	No Action	Not included for continuation
Abatement Measure 11	Encourage FAA to develop a phase-out schedule for Stage 2 aircraft less than 75,000 lbs.	Disapproved	No Action	Not included for continuation
Mitigation Measure 1	Continue Residential Acoustical Treatment Program	Approved	317 Homes and 216 Apartment Units treated to-date; Avigation easements acquired for each	Continue based on 2014 NEM
Mitigation Measure 2	Continue acoustical treatment for remaining noise-senstive facilities	Approved	On-Going	Continue based on 2014 NEM
Mitigation Measure 3	Study of Real Estate Disclosure	Approved	No Action	Not affected by this NCP update
Mitigation Measure 4	Study of additional land use development controls	Approved	City currently performing study	Not affected by this NCP update

Source: San Antonio International Airport, 2008; Wyle, 2009

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APPENDIX A

Discussion of Noise and Its Effect on the Environment

APPENDIX A
Discussion of Noise and Its Effect on the Environment

A.1 Basics of Sound

Noise is unwanted sound. Sound is all around us; sound becomes noise when it interferes with normal activities, such as sleep or conversation.

Sound is a physical phenomenon consisting of minute vibrations that travel through a medium, such as air, and are sensed by the human ear. Whether that sound is interpreted as pleasant (e.g., music) or unpleasant (e.g., jackhammers) depends largely on the listener's current activity, past experience, and attitude toward the source of that sound.

The measurement and human perception of sound involves three basic physical characteristics: intensity, frequency, and duration. First, intensity is a measure of the acoustic energy of the sound vibrations and is expressed in terms of sound pressure. The greater the sound pressure, the more energy carried by the sound and the louder the perception of that sound. The second important physical characteristic of sound is frequency, which is the number of times per second the air vibrates or oscillates. Low-frequency sounds are characterized as rumbles or roars, while high-frequency sounds are typified by sirens or screeches. The third important characteristic of sound is duration or the length of time the sound can be detected.

The loudest sounds that can be detected comfortably by the human ear have intensities that are a trillion times higher than those of sounds that can barely be detected. Because of this vast range, using a linear scale to represent the intensity of sound becomes very unwieldy. As a result, a logarithmic unit known as the decibel (abbreviated dB) is used to represent the intensity of a sound. Such a representation is called a sound level. A sound level of 0 dB is approximately the threshold of human hearing and is barely audible under extremely quiet listening conditions. Normal speech has a sound level of approximately 60 dB; sound levels above 120 dB begin to be felt inside the human ear as discomfort. Sound levels between 130 to 140 dB are felt as pain (Berglund and Lindvall 1995).

Because of the logarithmic nature of the decibel unit, sound levels cannot be arithmetically added or subtracted and are somewhat cumbersome to handle mathematically. However, some simple rules are useful in dealing with sound levels. First, if a sound's intensity is doubled, the sound level increases by 3 dB, regardless of the initial sound level. For example:

60 dB + 60 dB = 63 dB, and

80 dB + 80 dB = 83 dB.

Second, the total sound level produced by two sounds of different levels is usually only slightly more than the higher of the two. For example:

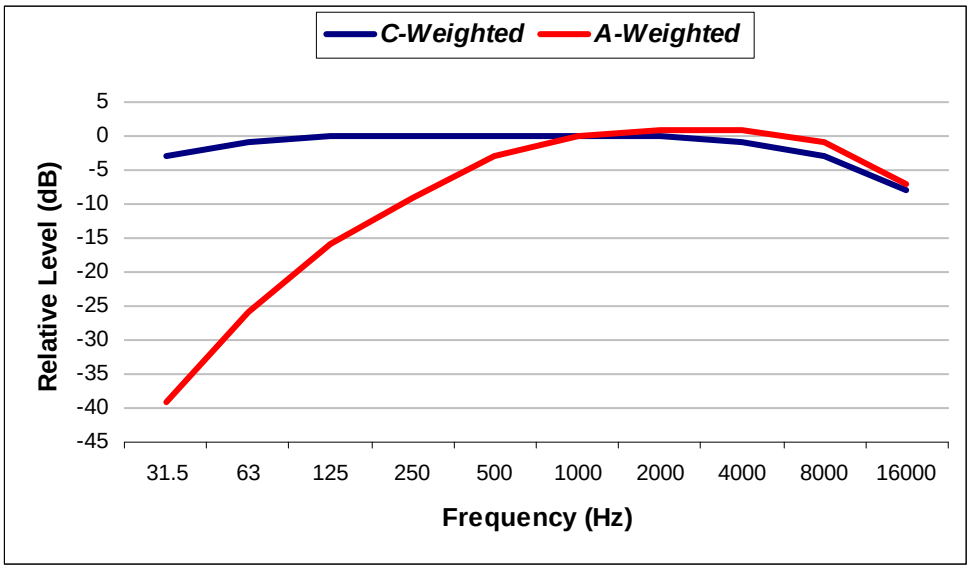
60.0 dB + 70.0 dB = 70.4 dB.

Because the addition of sound levels is different than that of ordinary numbers, such addition is often referred to as "decibel addition" or "energy addition." The latter term arises from the fact that what we are really doing when we add decibel values is first converting each decibel value to its

corresponding acoustic energy, then adding the energies using the normal rules of addition, and finally converting the total energy back to its decibel equivalent.

The minimum change in the sound level of individual events that an average human ear can detect is about 3 dB. On average, a person perceives a change in sound level of about 10 dB as a doubling (or halving) of the sound's loudness, and this relation holds true for loud and quiet sounds. A decrease in sound level of 10 dB actually represents a 90% decrease in sound intensity but only a 50% decrease in perceived loudness because of the nonlinear response of the human ear (similar to most human senses).

Sound frequency is measured in terms of cycles per second (cps), or hertz (Hz), which is the standard unit for cps. The normal human ear can detect sounds that range in frequency from about 20 Hz to about 15,000 Hz. All sounds in this wide range of frequencies, however, are not heard equally by the human ear, which is most sensitive to frequencies in the 1,000 to 4,000 Hz range. Weighting curves have been developed to correspond to the sensitivity and perception of different types of sound. A-weighting and C-weighting are the two most common weightings. A-weighting accounts for frequency dependence by adjusting the very high and very low frequencies (below approximately 500 Hz and above approximately 10,000 Hz) to approximate the human ear's lower sensitivities to those frequencies. C-weighting is nearly flat throughout the range of audible frequencies, hardly de-emphasizing the low frequency sound while approximating the human ear's sensitivity to higher intensity sounds. The two curves shown in Figure A-1 are also the most adequate to quantify environmental noises.



Source: ANSI S1.4 -1983 "Specification of Sound Level Meters"

Figure A-1. Frequency Response Characteristics of A and C Weighting Networks

A.1.2 A-weighted Sound Level

Sound levels that are measured using A-weighting, called A-weighted sound levels, are often denoted by the unit dBA or dB(A) rather than dB. When the use of A-weighting is understood, the adjective "A-weighted" is often omitted and the measurements are expressed as dB. In this report (as in most environmental impact documents), dB units refer to A-weighted sound levels.

Noise potentially becomes an issue when its intensity exceeds the ambient or background sound pressures. Ambient background noise in metropolitan, urbanized areas typically varies from 60 to 70 B and can be as high as 80 dB or greater; quiet suburban neighborhoods experience ambient noise levels of approximately 45-50 dB (U.S. Environmental Protection Agency 1978).

Figure A-2 is a chart of A-weighted sound levels from typical sounds. Some noise sources (air conditioner, vacuum cleaner) are continuous sounds which levels are constant for some time. Some (automobile, heavy truck) are the maximum sound during a vehicle pass-by. Some (urban daytime, urban nighttime) are averages over extended periods. A variety of noise metrics have been developed to describe noise over different time periods, as discussed below.

Aircraft noise consists of two major types of sound events: aircraft takeoffs and landings, and engine maintenance operations. The former can be described as intermittent sounds and the latter as continuous. Noise levels from flight operations exceeding background noise typically occur beneath main approach and departure corridors, in local air traffic patterns around the airfield, and in areas immediately adjacent to parking ramps and aircraft staging areas. As aircraft in flight gain altitude, their noise contribution drops to lower levels, often becoming indistinguishable from the background.

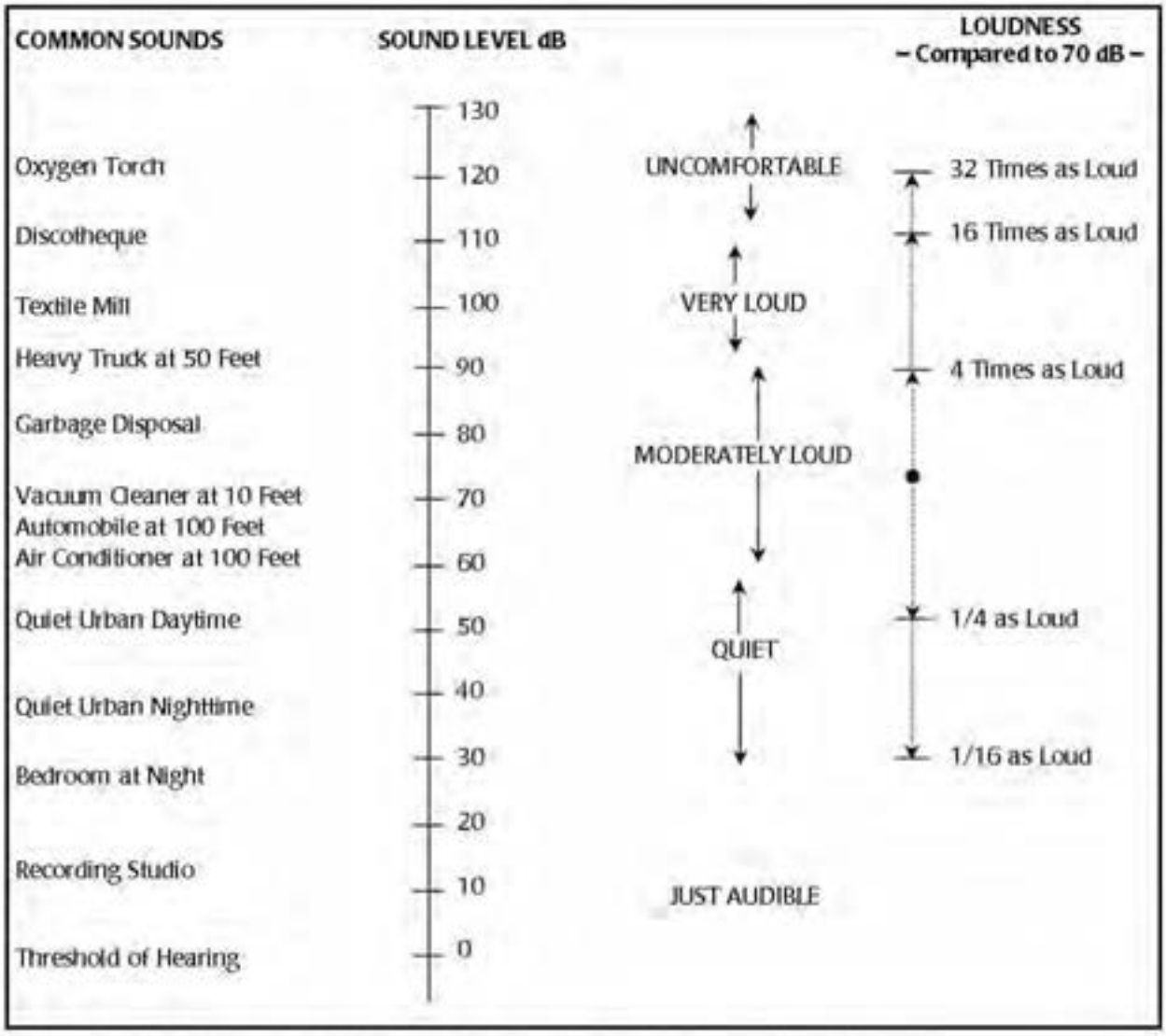
C-weighted Sound Level

Sound levels measured using a C-weighting are most appropriately called C-weighted sound levels (and denoted dBC). C-weighting is nearly flat throughout the audible frequency range, hardly de-mphasizing the low frequency. This weighting scale is generally used to describe impulsive sounds. Sounds that are characterized as impulsive generally contain low frequencies. Impulsive sounds may induce secondary effects, such as shaking of a structure, rattling of windows, inducing vibrations. These secondary effects can cause additional annoyance and complaints.

The following definitions in the American National Standard Institute (ANSI) Report S12.9, Part 4 provide general concepts helpful in understanding impulsive sounds (American National Standards Institute 1996).

Impulsive Sound: Sound characterized by brief excursions of sound pressure (acoustic impulses) that significantly exceeds the ambient environmental sound pressure. The duration of a single impulsive sound is usually less than one second (American National Standards Institute 1996).

Highly Impulsive Sound: Sound from one of the following enumerated categories of sound sources: small-arms gunfire, metal hammering, wood hammering, drop hammering, pile driving, drop forging, pneumatic hammering, pavement breaking, metal impacts during rail-yard shunting operation, and riveting.



Source: *Handbook of Noise Control*, C.M. Harris, Editor, McGraw-Hill Book Co., 1979, and FICAN 1992.

Figure A-2. Typical A-weighted Sound Levels of Common Sounds

High-energy Impulsive Sound: Sound from one of the following enumerated categories of sound sources: quarry and mining explosions, sonic booms, demolition and industrial processes that use high explosives, military ordnance (e.g., armor, artillery and mortar fire, and bombs), explosive ignition of rockets and missiles, explosive industrial circuit breakers, and any other explosive source where the equivalent mass of dynamite exceeds 25 grams.

A.2 Noise Metrics

As used in environmental noise analyses, a metric refers to the unit or quantity that quantitatively measures the effect of noise on the environment. To quantify these effects, the Department of Defense and the Federal Aviation Administration use three noise-measuring techniques, or metrics: first, a measure of the highest sound level occurring during an individual aircraft overflight (single event); second, a combination of the maximum level of that single event with its duration; and third, a description of the noise environment based on the cumulative flight and engine maintenance activity. Single noise events can be described with Sound Exposure Level or Maximum Sound Level. Another measure of instantaneous level is the Peak Sound Pressure Level. The cumulative energy noise metric used is the Day/Night Average Sound Level. Metrics related to DNL include the Onset-Rate Adjusted Day/Night Average Sound Level, and the Equivalent Sound Level. In the state of California, it is mandated that average noise be described in terms of Community Noise Equivalent Level (State of California 1990). CNEL represents the Day/Evening/Night average noise exposure, calculated over a 24-hour period. Metrics and their uses are described below.

A.2.1 Maximum Sound Level (L_{max})

The highest A-weighted integrated sound level measured during a single event in which the sound level changes value with time (e.g., an aircraft overflight) is called the maximum A-weighted sound level or maximum sound level.

During an aircraft overflight, the noise level starts at the ambient or background noise level, rises to the maximum level as the aircraft flies closest to the observer, and returns to the background level as the aircraft recedes into the distance. The maximum sound level indicates the maximum sound level occurring for a fraction of a second. For aircraft noise, the "fraction of a second" over which the maximum level is defined is generally 1/8 second, and is denoted as "fast" response (American National Standards Institute 1988). Slowly varying or steady sounds are generally measured over a period of one second, denoted "slow" response. The maximum sound level is important in judging the interference caused by a noise event with conversation, TV or radio listening, sleep, or other common activities. Although it provides some measure of the intrusiveness of the event, it does not completely describe the total event, because it does not include the period of time that the sound is heard.

A.2.2 Peak Sound Pressure Level (L_{pk})

The peak sound pressure level, is the highest instantaneous level obtained by a sound level measurement device. The peak sound pressure level is typically measured using a 20 microseconds or faster sampling rate, and is typically based on unweighted or linear response of the meter.

A.2.3 Sound Exposure Level (SEL)

Sound exposure level is a composite metric that represents both the intensity of a sound and its duration. Individual time-varying noise events (e.g., aircraft overflights) have two main characteristics: a sound level that changes throughout the event and a period of time during which the event is heard. SEL provides a measure of the net impact of the entire acoustic event, but it does not directly represent the sound level heard at any given time. During an aircraft flyover, SEL would

include both the maximum noise level and the lower noise levels produced during onset and recess periods of the overflight.

SEL is a logarithmic measure of the total acoustic energy transmitted to the listener during the event. Mathematically, it represents the sound level of a constant sound that would, in one second, generate the same acoustic energy as the actual time-varying noise event. For sound from aircraft overflights, which typically lasts more than one second, the SEL is usually greater than the L_{max} because an individual overflight takes seconds and the maximum sound level (L_{max}) occurs instantaneously. SEL represents the best metric to compare noise levels from overflights.

A.2.4 Day-Night Average Sound Level (DNL) and Community Noise Equivalent Level (CNEL)

Day-Night Average Sound Level and Community Noise Equivalent Level are composite metrics that account for SEL of all noise events in a 24-hour period. In order to account for increased human sensitivity to noise at night, a 10 dB penalty is applied to nighttime events (10:00 p.m. to 7:00 a.m. time period). A variant of the DNL, the CNEL level includes a 5-decibel penalty on noise during the 7:00 p.m. to 10:00 p.m. time period, and a 10-decibel penalty on noise during the 10:00 p.m. to 7:00 a.m. time period.

The above-described metrics are average quantities, mathematically representing the continuous A-weighted or C-weighted sound level that would be present if all of the variations in sound level that occur over a 24-hour period were smoothed out so as to contain the same total sound energy. These composite metrics account for the maximum noise levels, the duration of the events (sorties or operations), and the number of events that occur over a 24-hour period. Like SEL, neither DNL nor CNEL represent the sound level heard at any particular time, but quantifies the total sound energy received. While it is normalized as an average, it represents all of the sound energy, and is therefore a cumulative measure.

The penalties added to both the DNL and CNEL metrics account for the added intrusiveness of sounds that occur during normal sleeping hours, both because of the increased sensitivity to noise during those hours and because ambient sound levels during nighttime are typically about 10 dB lower than during daytime hours.

The inclusion of daytime and nighttime periods in the computation of the DNL and CNEL reflects their basic 24-hour definition. It can, however, be applied over periods of multiple days. For application to civil airports, where operations are consistent from day to day, DNL and CNEL are usually applied as an annual average. For some military airbases, where operations are not necessarily consistent from day to day, a common practice is to compute a 24-hour DNL or CNEL based on an average busy day, so that the calculated noise is not diluted by periods of low activity.

Although DNL and CNEL provide a single measure of overall noise impact, they do not provide specific information on the number of noise events or the individual sound levels that occur during the 24-hour day. For example, a daily average sound level of 65 dB could result from a very few noisy events or a large number of quieter events.

Daily average sound levels are typically used for the evaluation of community noise effects (i.e., long-term annoyance), and particularly aircraft noise effects. In general, scientific studies and social surveys have found a high correlation between the percentages of groups of people highly annoyed and the level of average noise exposure measured in DNL (U.S. Environmental Protection Agency 1978 and Schultz 1978). The correlation from Schultz's original 1978 study is shown in Figure A-3. It represents the results of a large number of social surveys relating community responses to various types of noises, measured in day-night average sound level.

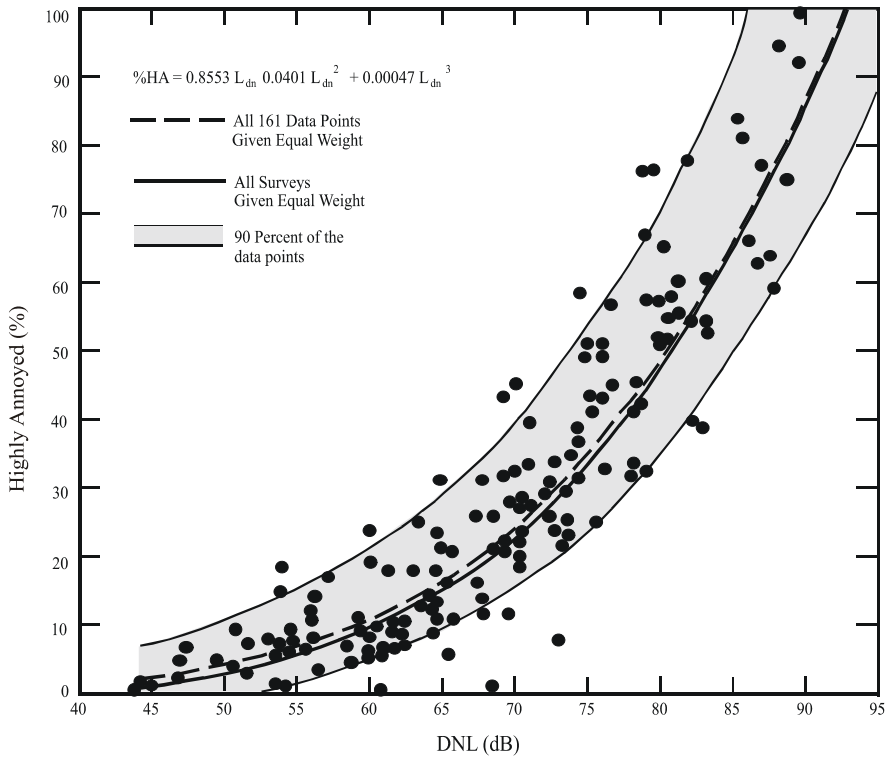


Figure A-3. Community Surveys of Noise Annoyance

A more recent study has reaffirmed this relationship (Fidell, et al. 1991). Figure A-4 (Federal Interagency Committee On Noise 1992) shows an updated form of the curve fit (Finegold, et al. 1994) in comparison with the original. The updated fit, which does not differ substantially from the original, is the current preferred form. In general, correlation coefficients of 0.85 to 0.95 are found between the percentages of groups of people highly annoyed and the level of average noise exposure. The correlation coefficients for the annoyance of individuals are relatively low, however, on the order of 0.5 or less. This is not surprising, considering the varying personal factors that influence the manner in which individuals react to noise. However, for the evaluation of community noise impacts, the scientific community has endorsed the use of DNL (American National Standards Institute 1980; American National Standards Institute 1988; U.S. Environmental Protection Agency 1974; Federal Interagency Committee On Urban Noise 1980 and Federal Interagency Committee On Noise 1992).

The use of DNL (CNEL in California) has been criticized as not accurately representing community annoyance and land-use compatibility with aircraft noise. Much of that criticism stems from a lack of understanding of the basis for the measurement or calculation of DNL. One frequent criticism is based

on the inherent feeling that people react more to single noise events and not as much to "meaningless" time-average sound levels.

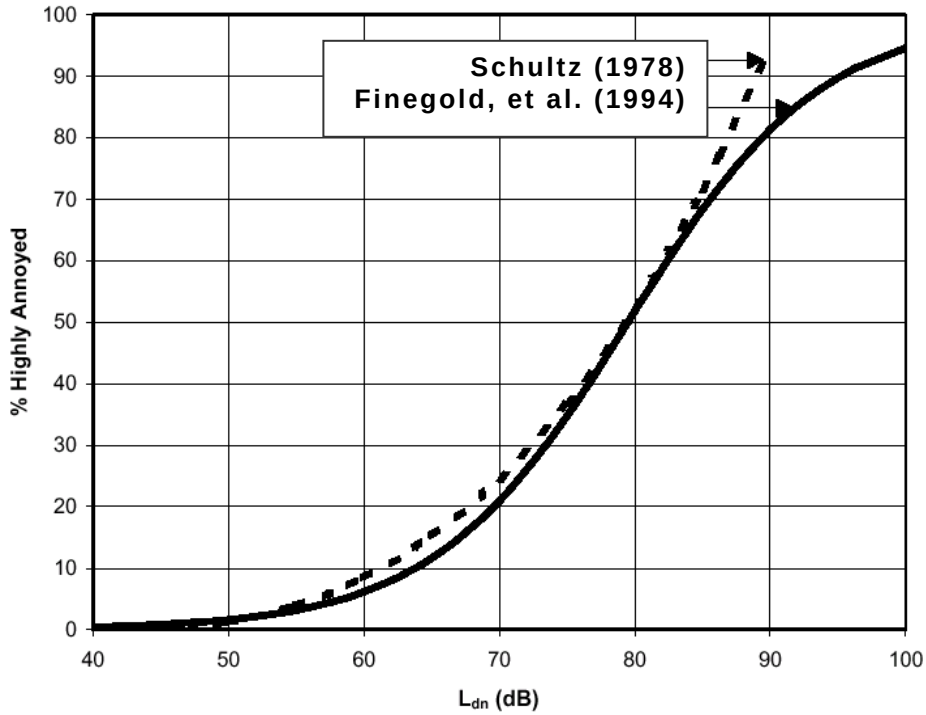


Figure A-4. Response of Communities to Noise; Comparison of Original (Schultz, 1978) and Current (Finegold, et al. 1994) Curve Fits

In fact, a time-average noise metric, such as DNL and CNEL, takes into account both the noise levels of all individual events that occur during a 24-hour period and the number of times those events occur. The logarithmic nature of the decibel unit causes the noise levels of the loudest events to control the 24-hour average.

As a simple example of this characteristic, consider a case in which only one aircraft overflight occurs during the daytime over a 24-hour period, creating a sound level of 100 dB for 30 seconds. During the remaining 23 hours, 59 minutes, and 30 seconds of the day, the ambient sound level is 50 dB. The day-night average sound level for this 24-hour period is 65.9 dB. Assume, as a second example, that 10 such 30-second overflights occur during daytime hours during the next 24-hour period, with the same ambient sound level of 50 dB during the remaining 23 hours and 55 minutes of the day. The day-night average sound level for this 24-hour period is 75.5 dB. Clearly, the averaging of noise over a 24-hour period does not ignore the louder single events and tends to emphasize both the sound levels and number of those events.

A.2.5 Equivalent Sound Level (L_{eq})

Another cumulative noise metric that is useful in describing noise is the equivalent sound level. L_{eq} is calculated to determine the steady-state noise level over a specified time period. The L_{eq} metric can

provide a more accurate quantification of noise exposure for a specific period, particularly for daytime periods when the nighttime penalty under the DNL metric is inappropriate.

Just as SEL has proven to be a good measure of the noise impact of a single event, L_{eq} has been established to be a good measure of the impact of a series of events during a given time period. Also, while L_{eq} is defined as an average, it is effectively a sum over that time period and is, thus, a measure of the cumulative impact of noise. For example, the sum of all noise-generating events during the period of 7 a.m. to 4 p.m. could provide the relative impact of noise generating events for a school day.

A.2.6 Rate Adjusted Day-Night Average Sound Level (L_{dnr})

Military aircraft flying on Military Training Routes (MTRs) and in Restricted Areas/Ranges generate a noise environment that is somewhat different from that associated with airfield operations. As opposed to patterned or continuous noise environments associated with airfields, overflights along MTRs are highly sporadic, ranging from 10 per hour to less than one per week. Individual military overflight events also differ from typical community noise events in that noise from a low-altitude, high-airspeed flyover can have a rather sudden onset, exhibiting a rate of increase in sound level (onset rate) of up to 150 dB per second.

To represent these differences, the conventional SEL metric is adjusted to account for the "surprise" effect of the sudden onset of aircraft noise events on humans with an adjustment ranging up to 11 dB above the normal Sound Exposure Level (Stusnick, et al. 1992). Onset rates between 15 to 150 dB per second require an adjustment of 0 to 11 dB, while onset rates below 15 dB per second require no adjustment. The adjusted SEL is designated as the onset-rate adjusted sound exposure level (SEL_r).

Because of the sporadic, often seasonal, occurrences of aircraft overflights along MTRs and in Restricted Areas/Ranges, the number of daily operations is determined from the number of flying days in the calendar month with the highest number of operations in the affected airspace or MTR. This avoids dilution of the exposure from periods of low activity, much the way that the average busy day is used around military airbases. The cumulative exposure to noise in these areas is computed by DNL over the busy month, but using SEL_r instead of SEL. This monthly average is denoted L_{dnmr}. If onset rate adjusted DNL is computed over a period other than a month, it would be designated L_{dnr} and the period must be specified. In the state of California, a variant of the L_{dnmr} includes a penalty for evening operations (7 p.m. to 10 p.m) and is denoted $CNEL_{mr}$.

A.3 Noise Effects

A.3.1 Annoyance

The primary effect of aircraft noise on exposed communities is one of long-term annoyance. Noise annoyance is defined by the EPA as any negative subjective reaction on the part of an individual or group (U.S. Environmental Protection Agency 1974). As noted in the discussion of DNL above, community annoyance is best measured by that metric.

The results of attitudinal surveys, conducted to find percentages of people who express various degrees of annoyance when exposed to different levels of DNL, are very consistent. The most useful metric for assessing people's responses to noise impacts is the percentage of the exposed population

expected to be "highly annoyed." A wide variety of responses have been used to determine intrusiveness of noise and disturbances of speech, sleep, television or radio listening, and outdoor living. The concept of "percent highly annoyed" has provided the most consistent response of a community to a particular noise environment. The response is remarkably complex, and when considered on an individual basis, widely varies for any given noise level (Federal Interagency Committee On Noise 1992).

A number of nonacoustic factors have been identified that may influence the annoyance response of an individual. Newman and Beattie (1985) divided these factors into emotional and physical variables:

Emotional Variables

- Feelings about the necessity or preventability of the noise;
- Judgment of the importance and value of the activity that is producing the noise;
- Activity at the time an individual hears the noise;
- Attitude about the environment;
- General sensitivity to noise;
- Belief about the effect of noise on health; and
- Feeling of fear associated with the noise.

Physical Variables

- Type of neighborhood;
- Time of day;
- Season;
- Predictability of noise;
- Control over the noise source; and
- Length of time an individual is exposed to a noise.

A.3.2 Speech Interference

Speech interference associated with aircraft noise is a primary cause of annoyance to individuals on the ground. The disruption of routine activities such as radio or television listening, telephone use, or family conversation gives rise to frustration and irritation. The quality of speech communication is also important in classrooms, offices, and industrial settings and can cause fatigue and vocal strain in those who attempt to communicate over the noise. Speech is an acoustic signal characterized by rapid fluctuations in sound level and frequency pattern. It is essential for optimum speech intelligibility to recognize these continually shifting sound patterns. Not only does noise diminish the ability to perceive the auditory signal, but it also reduces a listener's ability to follow the pattern of signal fluctuation. In general, interference with speech communication occurs when intrusive noise exceeds about 60 dB (Federal Interagency Committee On Noise 1992).

Indoor speech interference can be expressed as a percentage of sentence intelligibility among two people speaking in relaxed conversation approximately 3 feet apart in a typical living room or bedroom (U.S. Environmental Protection Agency 1974). The percentage of sentence intelligibility is a non-linear function of the (steady) indoor background A-weighted sound level. Such a curve-fit yields 100 percent sentence intelligibility for background levels below 57 dB and yields less than 10 percent intelligibility for background levels above 73 dB. The function is especially sensitive to changes in

sound level between 65 dB and 75 dB. As an example of the sensitivity, a 1 dB increase in background sound level from 70 dB to 71 dB yields a 14 percent decrease in sentence intelligibility. The sensitivity of speech interference to noise at 65 dB and above is consistent with the criterion of DNL 65 dB generally taken from the Schultz curve. This is consistent with the observation that speech interference is the primary cause of annoyance.

A.3.3 Sleep Interference

Sleep interference is another source of annoyance and potential health concern associated with aircraft noise. Because of the intermittent nature and content of aircraft noise, it is more disturbing than continuous noise of equal energy. Given that quality sleep is requisite for good health, repeated occurrences of sleep interference could have an effect on overall health.

Sleep interference may be measured in either of two ways. "Arousal" represents actual awakening from sleep, while a change in "sleep stage" represents a shift from one of four sleep stages to another stage of lighter sleep without actual awakening. In general, arousal requires a somewhat higher noise level than does a change in sleep stage.

Sleep is not a continuous, uniform condition but a complex series of states through which the brain progresses in a cyclical pattern. Arousal from sleep is a function of a number of factors that include age, sex, sleep stage, noise level, frequency of noise occurrences, noise quality, and pre-sleep activity. Because individuals differ in their physiology, behavior, habitation, and ability to adapt to noise, few studies have attempted to establish noise criterion levels for sleep disturbance.

Lukas (1978) concluded the following with regard to human sleep response to noise:

- Children 5 to 8 years of age are generally unaffected by noise during sleep.
- Older people are more sensitive to sleep disturbance than younger people.
- Women are more sensitive to noise than men, in general.
- There is a wide variation in the sensitivity of individuals to noise even within the same age group.
- Sleep arousal is directly proportional to the sound intensity of aircraft flyover. While there have been several studies conducted to assess the effect of aircraft noise on sleep, none have produced quantitative dose-response relationships in terms of noise exposure level, DNL, and sleep disturbance. Noise-sleep disturbance relationships have been developed based on single-event noise exposure.

An analysis sponsored by the U.S. Air Force summarized 21 published studies concerning the effects of noise on sleep (Pearsons, et al. 1989). The analysis concluded that a lack of reliable studies in homes, combined with large differences among the results from the various laboratory studies, did not permit development of an acceptably accurate assessment procedure. The noise events used in the laboratory studies and in contrived in-home studies were presented at much higher rates of occurrence than would normally be experienced in the home. None of the laboratory studies were of sufficiently long duration to determine any effects of habituation, such as that which would occur under normal community conditions.

A study of the effects of nighttime noise exposure on the in-home sleep of residents near one military airbase, near one civil airport, and in several households with negligible nighttime aircraft noise exposure, revealed SEL as the best noise metric predicting noise-related awakenings. It also determined that out of 930 subject nights, the average spontaneous (not noise-related) awakenings per night was 2.07 compared to the average number of noise-related awakenings per night of 0.24 (Fidell, et al. 1994). Additionally, a 1995 analysis of sleep disturbance studies conducted both in the laboratory environment and in the field (in the sleeping quarters of homes) showed that when measuring awakening to noise, a 10 dB increase in SEL was associated with only an 8 percent increase in the probability of awakening in the laboratory studies, but only a 1 percent increase in the field (Pearsons, et al. 1995). Pearsons, et al. (1995), reported that even SEL values as high as 85 dB produced no awakenings or arousals in at least one study. This observation suggests a strong influence of habituation on susceptibility to noise-induced sleep disturbance. A 1984 study (Kryter 1984) indicates that an indoor SEL of 65 dB or lower should awaken less than 5 percent of exposed individuals.

Nevertheless, some guidance is available in judging sleep interference. The EPA identified an indoor DNL of 45 dB as necessary to protect against sleep interference (U.S. Environmental Protection Agency 1978). Assuming a very conservative structural noise insulation of 20 dB for typical dwelling units, this corresponds to an outdoor day-night average sound level of 65 dB to minimize sleep interference.

In 1997, the Federal Interagency Committee on Aviation Noise (FICAN) adopted an interim guideline for sleep awakening prediction. The new curve, based on studies in England (Ollerhead, et al. 1992) and at two U.S. airports (Los Angeles International and Denver International), concluded that the incidence of sleep awakening from aircraft noise was less than identified in a 1992 study (Federal Interagency Committee On Noise 1992). Using indoor single-event noise levels represented by SEL, potential sleep awakening can be predicted using the curve presented in Figure A-5. Typically, homes in the United States provide 15 dB of sound attenuation with windows open and 25 dB with windows closed and air conditioning operating. Hence, the outdoor SEL of 107 dB would be 92 dB indoors with windows open and 82 dB indoors with windows closed and air conditioning operating.

Using Figure A-5, the potential sleep awakening would be 15% with windows open and 10% with windows closed in the above example.

The new FICAN curve does not address habituation over time by sleeping subjects and is applicable only to adult populations. Nevertheless, this curve provides a reasonable guideline for assessing sleep awakening. It is conservative, representing the upper envelope of field study results.

The FICAN curve shown in Figure A-5 represents awakenings from single events. To date, no exact quantitative dose-response relationship exists for noise-related sleep interference from multiple events; yet, based on studies conducted to date and the USEPA guideline of a 45 DNL to protect sleep interference, useful ways to assess sleep interference have emerged. If homes are conservatively estimated to have a 20-dB noise insulation, an average of 65 DNL would produce an indoor level of 45 DNL and would form a reasonable guideline for evaluating sleep interference. This also corresponds well to the general guideline for assessing speech interference. Annoyance that may result from sleep disturbance is accounted for in the calculation of DNL, which includes a 10-dB penalty for each sortie occurring after 10 pm or before 7 am.

A.3.4 Hearing Loss

Considerable data on hearing loss have been collected and analyzed. It has been well established that continuous exposure to high noise levels will damage human hearing (U.S. Environmental Protection Agency 1978). People are normally capable of hearing up to 120 dB over a wide frequency range. Hearing loss is generally interpreted as the shifting of a higher sound level of the ear's sensitivity or acuity to perceive sound. This change can either be temporary, called a temporary threshold shift (TTS), or permanent, called a permanent threshold shift (PTS) (Berger, et al. 1995).

The EPA has established 75 dB for an 8-hour exposure and 70 dB for a 24-hour exposure as the average noise level standard requisite to protect 96% of the population from greater than a 5 dB PTS (U.S. Environmental Protection Agency 1978). Similarly, the National Academy of Sciences Committee on Hearing, Bioacoustics, and Biomechanics (CHABA) identified 75 dB as the minimum level at which hearing loss may occur (Committee on Hearing, Bioacoustics, and Biomechanics 1977). However, it is important to note that continuous, long-term (40 years) exposure is assumed by both EPA and CHABA before hearing loss may occur.

Federal workplace standards for protection from hearing loss allow a time-average level of 90 dB over an 8-hour work period or 85 dB over a 16-hour period. Even the most protective criterion (no measurable hearing loss for the most sensitive portion of the population at the ear's most sensitive frequency, 4,000 Hz, after a 40-year exposure) is a time-average sound level of 70 dB over a 24-hour period.

Studies on community hearing loss from exposure to aircraft flyovers near airports showed that there is no danger, under normal circumstances, of hearing loss due to aircraft noise (Newman and Beattie 1985).

A laboratory study measured changes in human hearing from noise representative of low-flying aircraft on MTRs. (Nixon, et al. 1993). In this study, participants were first subjected to four overflight noise exposures at A-weighted levels of 115 dB to 130 dB. One-half of the subjects showed no change in hearing levels, one-fourth had a temporary 5-dB increase in sensitivity (the people could hear a 5-dB wider range of sound than before exposure), and one-fourth had a temporary 5-dB decrease in sensitivity (the people could hear a 5-dB narrower range of sound than before exposure). In the next phase, participants were subjected to a single overflight at a maximum level of 130 dB for eight successive exposures, separated by 90 seconds or until a temporary shift in hearing was observed. The temporary hearing threshold shifts resulted in the participants hearing a wider range of sound, but within 10 dB of their original range.

In another study of 115 test subjects between 18 and 50 years old, temporary threshold shifts were measured after laboratory exposure to military low-altitude flight (MLAF) noise (Ising, et al. 1999). According to the authors, the results indicate that repeated exposure to MLAF noise with L_{max} greater than 114 dB, especially if the noise level increases rapidly, may have the potential to cause noise induced hearing loss in humans.

Because it is unlikely that airport neighbors will remain outside their homes 24 hours per day for extended periods of time, there is little possibility of hearing loss below a day-night average sound level of 75 dB, and this level is extremely conservative.

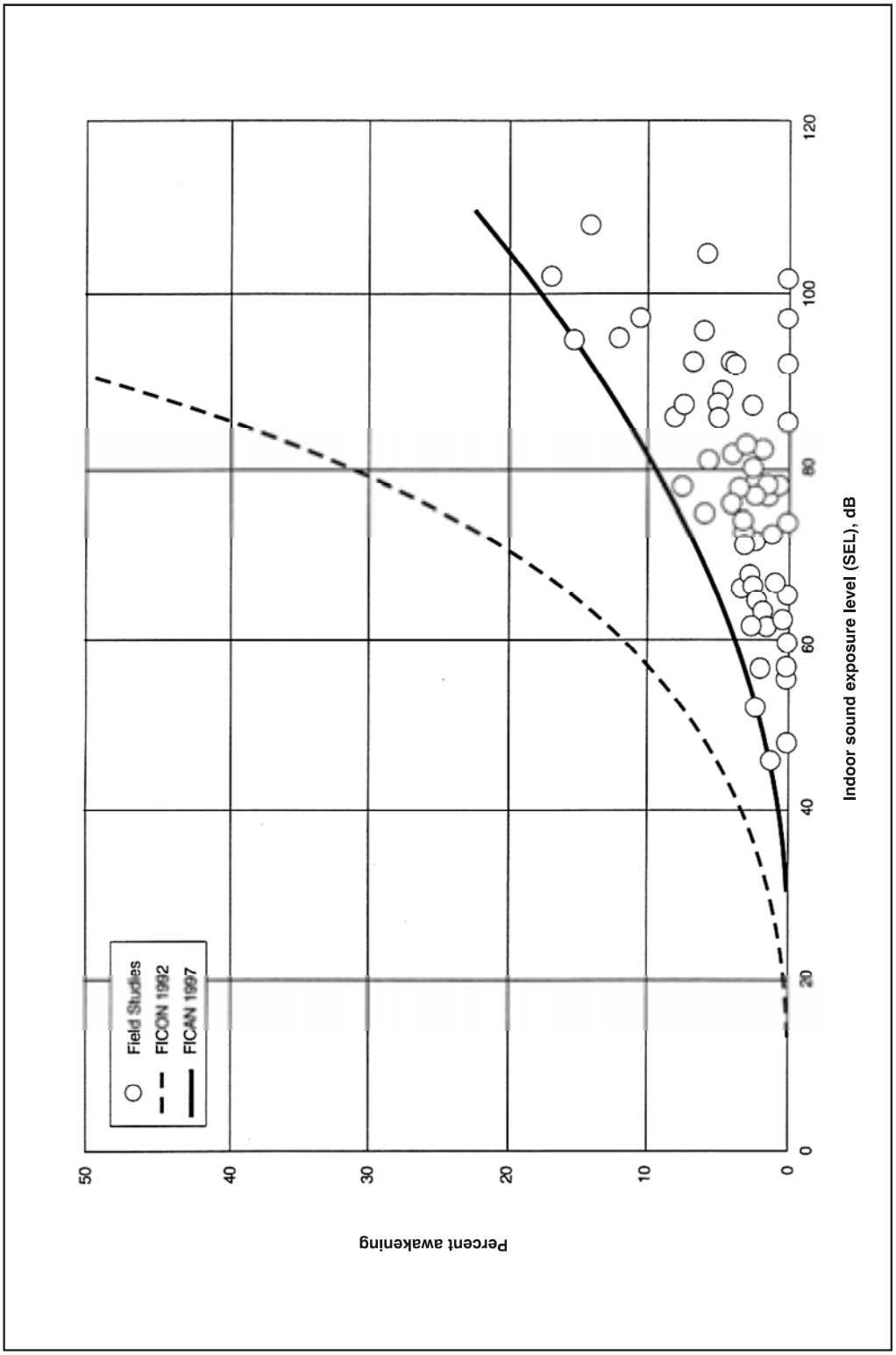


Figure A-5. Recommended Sleep Disturbance Dose-Response Relationship

A.3.5 Nonauditory Health Effects

Studies have been conducted to determine whether correlations exist between noise exposure and cardiovascular problems, birth weight, and mortality rates. The nonauditory effect of noise on humans is not as easily substantiated as the effect on hearing. The results of studies conducted in the United States, primarily concentrating on cardiovascular response to noise, have been contradictory (Cantrell 1974). Cantrell (1974) concluded that the results of human and animal experiments show that average or intrusive noise can act as a stress-provoking stimulus. Prolonged stress is known to be a contributor to a number of health disorders. Kryter and Poza (1980) state, "It is more likely that noise-related general ill-health effects are due to the psychological annoyance from the noise interfering with normal everyday behavior, than it is from the noise eliciting, because of its intensity, reflexive response in the autonomic or other physiological systems of the body." Psychological stresses may cause a physiological stress reaction that could result in impaired health.

The National Institute for Occupational Safety and Health and EPA commissioned CHABA in 1981 to study whether established noise standards are adequate to protect against health disorders other than hearing defects. CHABA's conclusion was that:

Evidence from available research reports is suggestive, but it does not provide definitive answers to the question of health effects, other than to the auditory system, of long-term exposure to noise. It seems prudent, therefore, in the absence of adequate knowledge as to whether or not noise can produce effects upon health other than damage to auditory system, either directly or mediated through stress, that insofar as feasible, an attempt should be made to obtain more critical evidence.

Since the CHABA report, there have been more recent studies that suggest that noise exposure may cause hypertension and other stress-related effects in adults. Near an airport in Stockholm, Sweden, the prevalence of hypertension was reportedly greater among nearby residents who were exposed to energy averaged noise levels exceeding 55 dB and maximum noise levels exceeding 72 dB, particularly older subjects and those not reporting impaired hearing ability (Rosenlund, et al. 2001). A study of elderly volunteers who were exposed to simulated military low-altitude flight noise reported that blood pressure was raised by L_{max} of 112 dB and high speed level increase (Michalak, et al. 1990). Yet another study of subjects exposed to varying levels of military aircraft or road noise found no significant relationship between noise level and blood pressure (Pulles, et al. 1990).

The U.S. Department of the Navy prepared a programmatic Environmental Assessment (EA) for the continued use of non-explosive ordnance on the Vieques Inner Range. Following the preparation of the EA, it was learned that research conducted by the University of Puerto Rico, Ponce School of Medicine, suggested that Vieques fishermen and their families were experiencing symptoms associated with vibroacoustic disease (VAD) (U.S. Department of the Navy 2002). The study alleged that exposure to noise and sound waves of large pressure amplitudes within lower frequency bands, associated with Navy training activities—specifically, air-to-ground bombing or naval fire support—was related to a larger prevalence of heart anomalies within the Vieques fishermen and their families. The Ponce School of Medicine study compared the Vieques group with a group from Ponce Playa. A 1999 study conducted on Portuguese aircraft-manufacturing workers from a single factory reported effects of jet aircraft noise exposure that involved a wide range of symptoms and disorders, including

the cardiac issues on which the Ponce School of Medicine study focused. The 1999 study identified these effects as VAD.

Johns Hopkins University (JHU) conducted an independent review of the Ponce School of Medicine study, as well as the Portuguese aircraft workers study and other relevant scientific literature. Their findings concluded that VAD should not be accepted as a syndrome, given that exhaustive research across a number of populations has not yet been conducted. JHU also pointed out that the evidence supporting the existence of VAD comes largely from one group of investigators and that similar results would have to be replicated by other investigators. In short, JHU concluded that it had not been established that noise was the causal agent for the symptoms reported and no inference can be made as to the role of noise from naval gunfire in producing echocardiographic abnormalities (U.S. Department of the Navy 2002).

Most studies of nonauditory health effects of long-term noise exposure have found that noise exposure levels established for hearing protection will also protect against any potential nonauditory health effects, at least in workplace conditions. One of the best scientific summaries of these findings is contained in the lead paper at the National Institutes of Health Conference on Noise and Hearing Loss, held on 22 to 24 January 1990 in Washington, D.C.:

> "The nonauditory effects of chronic noise exposure, when noise is suspected to act as one of the risk factors in the development of hypertension, cardiovascular disease, and other nervous disorders, have never been proven to occur as chronic manifestations at levels below these criteria (an average of 75 dBA for complete protection against hearing loss for an 8-hour day). At the recent (1988) International Congress on Noise as a Public Health Problem, most studies attempting to clarify such health effects did not find them at levels below the criteria protective of noise-induced hearing loss, and even above these criteria, results regarding such health effects were ambiguous. Consequently, one comes to the conclusion that establishing and enforcing exposure levels protecting against noise-induced hearing loss would not only solve the noise-induced hearing loss problem, but also any potential nonauditory health effects in the work place" (von Gierke 1990).

Although these findings were specifically directed at noise effects in the workplace, they are equally applicable to aircraft noise effects in the community environment. Research studies regarding the nonauditory health effects of aircraft noise are ambiguous, at best, and often contradictory. Yet, even those studies that purport to find such health effects use time-average noise levels of 75 dB and higher for their research.

For example, two UCLA researchers apparently found a relationship between aircraft noise levels under the approach path to Los Angeles International Airport (LAX) and increased mortality rates among the exposed residents by using an average noise exposure level greater than 75 dB for the "noise-exposed" population (Meacham and Shaw 1979). Nevertheless, three other UCLA professors analyzed those same data and found no relationship between noise exposure and mortality rates (Frerichs, et al. 1980).

As a second example, two other UCLA researchers used this same population near LAX to show a higher rate of birth defects for 1970 to 1972 when compared with a control group residing away from the airport (Jones and Tauscher 1978). Based on this report, a separate group at the Center for Disease

Control performed a more thorough study of populations near Atlanta's Hartsfield International Airport (ATL) for 1970 to 1972 and found no relationship in their study of 17 identified categories of birth defects to aircraft noise levels above 65 dB (Edmonds, et al. 1979).

In summary, there is no scientific basis for a claim that potential health effects exist for aircraft time-average sound levels below 75 dB.

The potential for noise to affect physiological health, such as the cardiovascular system, has been speculated; however, no unequivocal evidence exists to support such claims (Harris 1997). Conclusions drawn from a review of health effect studies involving military low-altitude flight noise with its unusually high maximum levels and rapid rise in sound level have shown no increase in cardiovascular disease (Schwartze and Thompson 1993). Additional claims that are unsupported include flyover noise producing increased mortality rates and increases in cardiovascular death, aggravation of post-traumatic stress syndrome, increased stress, increase in admissions to mental hospitals, and adverse affects on pregnant women and the unborn fetus (Harris 1997).

A.3.6 Performance Effects

The effect of noise on the performance of activities or tasks has been the subject of many studies. Some of these studies have established links between continuous high noise levels and performance loss. Noise-induced performance losses are most frequently reported in studies employing noise levels in excess of 85 dB. Little change has been found in low-noise cases. It has been cited that moderate noise levels appear to act as a stressor for more sensitive individuals performing a difficult psychomotor task.

While the results of research on the general effect of periodic aircraft noise on performance have yet to yield definitive criteria, several general trends have been noted including:

- A periodic intermittent noise is more likely to disrupt performance than a steady-state continuous noise of the same level. Flyover noise, due to its intermittent nature, might be more likely to disrupt performance than a steady-state noise of equal level.
- Noise is more inclined to affect the quality than the quantity of work.
- Noise is more likely to impair the performance of tasks that place extreme demands on the worker.

A.3.7 Noise Effects on Children

In response to noise-specific and other environmental studies, Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks (1997), requires federal agencies to ensure that policies, programs, and activities address environmental health and safety risks to identify any disproportionate risks to children.

A review of the scientific literature indicates that there has not been a tremendous amount of research in the area of aircraft noise effects on children. The research reviewed does suggest that environments with sustained high background noise can have variable effects, including noise effects on learning and cognitive abilities, and reports of various noise-related physiological changes.

A.3.7.1 Effects on Learning and Cognitive Abilities

In 2002 release of the "Acoustical Performance Criteria, Design Requirements, and Guidelines for Schools," the American National Standards Institute refers to studies that suggest that loud and frequent background noise can affect the learning patterns of young children. ANSI provides discussion on the relationships between noise and learning, and stipulates design requirements and acoustical performance criteria for outdoor-to-indoor noise isolation. School design is directed to be cognizant of, and responsive to, surrounding land uses and the shielding of outdoor noise from the indoor environment. ANSI has approved a new standard for acoustical performance criteria in schools. The new criteria include the requirement that the one-hour-average background noise level shall not exceed 35 dBA in core learning spaces smaller than 20,000 cubic-feet and 40 dBA in core learning spaces with enclosed volumes exceeding 20,000 cubic-feet. This would require schools be constructed such that, in quiet neighborhoods indoor noise levels are lowered by 15 to 20 dBA relative to outdoor levels. In schools near airports, indoor noise levels would have to be lowered by 35 to 45 dBA relative to outdoor levels (American National Standards Institute 2002).

The studies referenced by ANSI to support the new standard are not specific to jet aircraft noise and the potential effects on children. However, there are references to studies that have shown that children in noisier classrooms scored lower on a variety of tests. Excessive background noise or reverberation within schools causes interferences of communication and can therefore create an acoustical barrier to learning (American National Standards Institute 2002). Studies have been performed that contribute to the body of evidence emphasizing the importance of communication by way of the spoken language to the development of cognitive skills. The ability to read, write, comprehend, and maintain attentiveness, are, in part, based upon whether teacher communication is consistently intelligible (American National Standards Institute 2002).

Numerous studies have shown varying degrees of effects of noise on the reading comprehension, attentiveness, puzzle-solving, and memory/recall ability of children. It is generally accepted that young children are more susceptible than adults to the effects of background noise. Because of the developmental status of young children (linguistic, cognitive, and proficiency), barriers to hearing can cause interferences or disruptions in developmental evolution.

Research on the impacts of aircraft noise, and noise in general, on the cognitive abilities of school-aged children has received more attention in recent years. Several studies suggest that aircraft noise can affect the academic performance of schoolchildren. Although many factors could contribute to learning deficits in school-aged children (e.g., socioeconomic level, home environment, diet, sleep patterns), evidence exists that suggests that chronic exposure to high aircraft noise levels can impair learning.

Specifically, elementary school children attending schools near New York City's two airports demonstrated lower reading scores than children living farther away from the flight paths (Green, et al. 1982). Researchers have found that tasks involving central processing and language comprehension (such as reading, attention, problem solving, and memory) appear to be the most affected by noise (Evans and Lepore 1993; Hygge 1994; and Evans, et al. 1998). It has been demonstrated that chronic exposure of first- and second-grade children to aircraft noise can result in reading deficits and impaired speech perception (i.e., the ability to hear common, low-frequency [vowel] sounds but not high frequencies [consonants] in speech) (Evans and Maxwell 1997).

The Evans and Maxwell (1997) study found that chronic exposure to aircraft noise resulted in reading deficits and impaired speech perception for first- and second-grade children. Other studies found that children residing near the Los Angeles International Airport had more difficulty solving cognitive problems and did not perform as well as children from quieter schools in puzzle-solving and attentiveness (Bronzaft 1997; Cohen, et al. 1980). Children attending elementary schools in high aircraft noise areas near London's Heathrow Airport demonstrated poorer reading comprehension and selective cognitive impairments (Haines, et al. 2001a, and 2001b). Similarly, a study conducted by Hygge (1994) found that students exposed to aircraft noise (76 dBA) scored 20% lower on recall ability tests than students exposed to ambient noise (42-44 dBA). Similar studies involving the testing of attention, memory, and reading comprehension of schoolchildren located near airports showed that their tests exhibited reduced performance results compared to those of similar groups of children who were located in quieter environments (Evans, et al. 1998; Haines, et al. 1998). The Haines and Stansfeld study indicated that there may be some long-term effects associated with exposure, as one-year follow-up testing still demonstrated lowered scores for children in higher noise schools (Haines, et al. 2001a, and 2001b). In contrast, a study conducted by Hygge, et al. (2002) found that although children living near the old Munich airport scored lower in standardized reading and long-term memory tests than a control group, their performance on the same tests was equal to that of the control group once the airport was closed.

Finally, although it is recognized that there are many factors that could contribute to learning deficits in school-aged children, there is increasing awareness that chronic exposure to high aircraft noise levels may impair learning. This awareness has led the World Health Organization and a North Atlantic Treaty Organization working group to conclude that daycare centers and schools should not be located near major sources of noise, such as highways, airports, and industrial sites (World Health Organization 2000; North Atlantic Treaty Organization 2000).

A.3.7.2 Health Effects

Physiological effects in children exposed to aircraft noise and the potential for health effects have also been the focus of limited investigation. Studies in the literature include examination of blood pressure levels, hormonal secretions, and hearing loss.

As a measure of stress response to aircraft noise, authors have looked at blood pressure readings to monitor children's health. Children who were chronically exposed to aircraft noise from a new airport near Munich, Germany, had modest (although significant) increases in blood pressure, significant increases in stress hormones, and a decline in quality of life (Evans, et al. 1998). Children attending noisy schools had statistically significant average systolic and diastolic blood pressure ($p<0.03$). Systolic blood pressure means were 89.68 mm for children attending schools located in noisier environments compared to 86.77 mm for a control group. Similarly, diastolic blood pressure means for the noisier environment group were 47.84 mm and 45.16 for the control group (Cohen, et al. 1980).

Although the literature appears limited, relatively recent studies focused on the wide range of potential effects of aircraft noise on school children have also investigated hormonal levels between groups of children exposed to aircraft noise compared to those in a control group. Specifically, Haines, et al. (2001b and 2001c) analyzed cortisol and urinary catecholamine levels in school children as measurements of stress response to aircraft noise. In both instances, there were no differences between the aircraft-noise-exposed children and the control groups.

Other studies have reported hearing losses from exposure to aircraft noise. Noise-induced hearing loss was reportedly higher in children who attended a school located under a flight path near a Taiwan airport, as compared to children at another school far away (Chen, et al. 1997). Another study reported that hearing ability was reduced significantly in individuals who lived near an airport and were frequently exposed to aircraft noise (Chen and Chen 1993). In that study, noise exposure near the airport was reportedly uniform, with DNL greater than 75 dB and maximum noise levels of about 87 dB during overflights. Conversely, several other studies that were reviewed reported no difference in hearing ability between children exposed to high levels of airport noise and children located in quieter areas (Fisch 1977; Andrus, et al. 1975; Wu, et al. 1995).

A.3.8 Effects on Domestic Animals and Wildlife

Hearing is critical to an animal's ability to react, compete, reproduce, hunt, forage, and survive in its environment. While the existing literature does include studies on possible effects of jet aircraft noise and sonic booms on wildlife, there appears to have been little concerted effort in developing quantitative comparisons of aircraft noise effects on normal auditory characteristics. Behavioral effects have been relatively well described, but the larger ecological context issues, and the potential for drawing conclusions regarding effects on populations, has not been well developed.

The relationships between potential auditory/physiological effects and species interactions with their environments are not well understood. Manci, et al. (1988), assert that the consequences that physiological effects may have on behavioral patterns is vital to understanding the long-term effects of noise on wildlife. Questions regarding the effects (if any) on predator-prey interactions, reproductive success, and intra-inter specific behavior patterns remain.

The following discussion provides an overview of the existing literature on noise effects (particularly jet aircraft noise) on animal species. The literature reviewed here involves those studies that have focused on the observations of the behavioral effects that jet aircraft and sonic booms have on animals.

A great deal of research was conducted in the 1960's and 1970's on the effects of aircraft noise on the public and the potential for adverse ecological impacts. These studies were largely completed in response to the increase in air travel and as a result of the introduction of supersonic jet aircraft. According to Manci, et al. (1988), the foundation of information created from that focus does not necessarily correlate or provide information specific to the impacts to wildlife in areas overflown by aircraft at supersonic speed or at low altitudes.

The abilities to hear sounds and noise and to communicate assist wildlife in maintaining group cohesiveness and survivorship. Social species communicate by transmitting calls of warning, introduction, and other types that are subsequently related to an individual's or group's responsiveness.

Animal species differ greatly in their responses to noise. Noise effects on domestic animals and wildlife are classified as primary, secondary, and tertiary. Primary effects are direct, physiological changes to the auditory system, and most likely include the masking of auditory signals. Masking is defined as the inability of an individual to hear important environmental signals that may arise from mates, predators, or prey. There is some potential that noise could disrupt a species' ability to communicate or could interfere with behavioral patterns (Manci, et al. 1988). Although the effects are likely temporal, aircraft noise may cause masking of auditory signals within exposed faunal

communities. Animals rely on hearing to avoid predators, obtain food, and communicate with, and attract, other members of their species. Aircraft noise may mask or interfere with these functions. Other primary effects, such as ear drum rupture or temporary and permanent hearing threshold shifts, are not as likely given the subsonic noise levels produced by aircraft overflights. Secondary effects may include non-auditory effects such as stress and hypertension; behavioral modifications; interference with mating or reproduction; and impaired ability to obtain adequate food, cover, or water. Tertiary effects are the direct result of primary and secondary effects, and include population decline and habitat loss. Most of the effects of noise are mild enough that they may never be detectable as variables of change in population size or population growth against the background of normal variation (Bowles 1995). Other environmental variables (e.g., predators, weather, changing prey base, ground-based disturbance) also influence secondary and tertiary effects, and confound the ability to identify the ultimate factor in limiting productivity of a certain nest, area, or region (Smith, et al. 1988). Overall, the literature suggests that species differ in their response to various types, durations, and sources of noise (Manci, et al. 1988).

Many scientific studies have investigated the effects of aircraft noise on wildlife, and some have focused on wildlife "flight" due to noise. Apparently, animal responses to aircraft are influenced by many variables, including size, speed, proximity (both height above the ground and lateral distance), engine noise, color, flight profile, and radiated noise. The type of aircraft (e.g., fixed wing versus rotor-wing [helicopter]) and type of flight mission may also produce different levels of disturbance, with varying animal responses (Smith, et al. 1988). Consequently, it is difficult to generalize animal responses to noise disturbances across species.

One result of the 1988 Manci, et al., literature review was the conclusion that, while behavioral observation studies were relatively limited, a general behavioral reaction in animals from exposure to aircraft noise is the startle response. The intensity and duration of the startle response appears to be dependent on which species is exposed, whether there is a group or an individual, and whether there have been some previous exposures. Responses range from flight, trampling, stampeding, jumping, or running, to movement of the head in the apparent direction of the noise source. Manci, et al. (1988), reported that the literature indicated that avian species may be more sensitive to aircraft noise than mammals.

A.3.8.1 Domestic Animals

Although some studies report that the effects of aircraft noise on domestic animals is inconclusive, a majority of the literature reviewed indicates that domestic animals exhibit some behavioral responses to military overflights but generally seem to habituate to the disturbances over a period of time. Mammals in particular appear to react to noise at sound levels higher than 90 dB, with responses including the startle response, freezing (i.e., becoming temporarily stationary), and fleeing from the sound source. Many studies on domestic animals suggest that some species appear to acclimate to some forms of sound disturbance (Manci, et al. 1988). Some studies have reported such primary and secondary effects as reduced milk production and rate of milk release, increased glucose concentrations, decreased levels of hemoglobin, increased heart rate, and a reduction in thyroid activity. These latter effects appear to represent a small percentage of the findings occurring in the existing literature.

Some reviewers have indicated that earlier studies, and claims by farmers linking adverse effects of aircraft noise on livestock, did not necessarily provide clear-cut evidence of cause and effect (Cottereau 1978). In contrast, many studies conclude that there is no evidence that aircraft overflights affect feed intake, growth, or production rates in domestic animals.

Cattle

In response to concerns about overflight effects on pregnant cattle, milk production, and cattle safety, the U.S. Air Force prepared a handbook for environmental protection that summarizes the literature on the impacts of low-altitude flights on livestock (and poultry) and includes specific case studies conducted in numerous airspaces across the country. Adverse effects have been found in a few studies but have not been reproduced in other similar studies. One such study, conducted in 1983, suggested that 2 of 10 cows in late pregnancy aborted after showing rising estrogen and falling progesterone levels. These increased hormonal levels were reported as being linked to 59 aircraft overflights. The remaining eight cows showed no changes in their blood concentrations and calved normally (U.S. Air Force 1994b). A similar study reported abortions occurred in three out of five pregnant cattle after exposing them to flyovers by six different aircraft (U.S.Air Force 1994b). Another study suggested that feedlot cattle could stampede and injure themselves when exposed to low-level overflights (U.S. Air Force 1994b).

A majority of the studies reviewed suggests that there is little or no effect of aircraft noise on cattle. Studies presenting adverse effects to domestic animals have been limited. A number of studies (Parker and Bayley 1960; Casady and Lehmann 1967; Kovalcik and Sottnik 1971) investigated the effects of jet aircraft noise and sonic booms on the milk production of dairy cows. Through the compilation and examination of milk production data from areas exposed to jet aircraft noise and sonic boom events, it was determined that milk yields were not affected. This was particularly evident in those cows that had been previously exposed to jet aircraft noise.

A study examined the causes of 1,763 abortions in Wisconsin dairy cattle over a one-year time period and none were associated with aircraft disturbances (U.S.Air Force 1993). In 1987, Anderson contacted seven livestock operators for production data, and no effects of low-altitude and supersonic flights were noted. Three out of 43 cattle previously exposed to low-altitude flights showed a startle response to an F/A-18 aircraft flying overhead at 500 feet above ground level and 400 knots by running less than 10 meters. They resumed normal activity within one minute (U.S.Air Force 1994b). Beyer (1983) found that helicopters caused more reaction than other low-aircraft overflights, and that the helicopters at 30 to 60 feet overhead did not affect milk production and pregnancies of 44 cows and heifers in a 1964 study (U.S. Air Force 1994b).

Additionally, Beyer reported that five pregnant dairy cows in a pasture did not exhibit fright-flight tendencies or disturb their pregnancies after being overflown by 79 low-altitude helicopter flights and 4 low-altitude, subsonic jet aircraft flights (U.S. Air Force 1994b). A 1956 study found that the reactions of dairy and beef cattle to noise from low-altitude, subsonic aircraft were similar to those caused by paper blowing about, strange persons, or other moving objects (U.S. Air Force 1994b).

In a report to Congress, the U. S. Forest Service concluded that "evidence both from field studies of wild ungulates and laboratory studies of domestic stock indicate that the risks of damage are small (from aircraft approaches of 50 to 100 meters), as animals take care not to damage themselves (U.S. Forest Service 1992). If animals are overflown by aircraft at altitudes of 50 to 100 meters, there is

no evidence that mothers and young are separated, that animals collide with obstructions (unless confined) or that they traverse dangerous ground at too high a rate." These varied study results suggest that, although the confining of cattle could magnify animal response to aircraft overflight, there is no proven cause-and-effect link between startling cattle from aircraft overflights and abortion rates or lower milk production.

Horses

Horses have also been observed to react to overflights of jet aircraft. Several of the studies reviewed reported a varied response of horses to low-altitude aircraft overflights. Observations made in 1966 and 1968 noted that horses galloped in response to jet flyovers (U.S. Air Force 1993). Bowles (1995) cites Kruger and Erath as observing horses exhibiting intensive flight reactions, random movements, and biting/kicking behavior. However, no injuries or abortions occurred, and there was evidence that the mares adapted somewhat to the flyovers over the course of a month (U.S. Air Force 1994b). Although horses were observed noticing the overflights, it did not appear to affect either survivability or reproductive success. There was also some indication that habituation to these types of disturbances was occurring.

LeBlanc, et al. (1991), studied the effects of F-14 jet aircraft noise on pregnant mares. They specifically focused on any changes in pregnancy success, behavior, cardiac function, hormonal production, and rate of habituation. Their findings reported observations of "flight-fright" reactions, which caused increases in heart rates and serum cortisol concentrations. The mares, however, did habituate to the noise. Levels of anxiety and mass body movements were the highest after initial exposure, with intensities of responses decreasing thereafter. There were no differences in pregnancy success when compared to a control group.

Swine

Generally, the literature findings for swine appear to be similar to those reported for cows and horses. While there are some effects from aircraft noise reported in the literature, these effects are minor. Studies of continuous noise exposure (i.e., 6 hours, 72 hours of constant exposure) reported influences on short-term hormonal production and release. Additional constant exposure studies indicated the observation of stress reactions, hypertension, and electrolyte imbalances (Dufour 1980). A study by Bond, et al. (1963), demonstrated no adverse effects on the feeding efficiency, weight gain, ear physiology, or thyroid and adrenal gland condition of pigs subjected to observed aircraft noise. Observations of heart rate increase were recorded, noting that cessation of the noise resulted in the return to normal heart rates. Conception rates and offspring survivorship did not appear to be influenced by exposure to aircraft noise.

Similarly, simulated aircraft noise at levels of 100 dB to 135 dB had only minor effects on the rate of feed utilization, weight gain, food intake, or reproduction rates of boars and sows exposed, and there were no injuries or inner ear changes observed (Manci, et al. 1988; Gladwin, et al. 1988).

Domestic Fowl

According to a 1994 position paper by the U.S. Air Force on effects of low-altitude overflights (below 1,000 ft) on domestic fowl, overflight activity has negligible effects (U.S. Air Force 1994a). The paper did recognize that given certain circumstances, adverse effects can be serious. Some of the effects can

be panic reactions, reduced productivity, and effects on marketability (e.g., bruising of the meat caused during "pile-up" situations).

The typical reaction of domestic fowl after exposure to sudden, intense noise is a short-term startle response. The reaction ceases as soon as the stimulus is ended, and within a few minutes all activity returns to normal. More severe responses are possible depending on the number of birds, the frequency of exposure, and environmental conditions. Large crowds of birds, and birds not previously exposed, are more likely to pile up in response to a noise stimulus (U.S. Air Force 1994a). According to studies and interviews with growers, it is typically the previously unexposed birds that incite panic crowding, and the tendency to do so is markedly reduced within five exposures to the stimulus (U.S. Air Force 1994a). This suggests that the birds habituate relatively quickly. Egg productivity was not adversely affected by infrequent noise bursts, even at exposure levels as high as 120 to 130 dBA.

Between 1956 and 1988, there were 100 recorded claims against the Navy for alleged damage to domestic fowl. The number of claims averaged three per year, with peak numbers of claims following publications of studies on the topic in the early 1960s (U.S. Air Force 1994a). Many of the claims were disproved or did not have sufficient supporting evidence. The claims were filed for the following alleged damages: 55% for panic reactions, 31% for decreased production, 6% for reduced hatchability, 6% for weight loss, and less than 1% for reduced fertility (U.S. Air Force 1994a).

Turkeys

The review of the existing literature suggests that there has not been a concerted or widespread effort to study the effects of aircraft noise on commercial turkeys. One study involving turkeys examined the differences between simulated versus actual overflight aircraft noise, turkey responses to the noise, weight gain, and evidence of habituation (Bowles, et al. 1990a). Findings from the study suggested that turkeys habituated to jet aircraft noise quickly, that there were no growth rate differences between the experimental and control groups, and that there were some behavioral differences that increased the difficulty in handling individuals within the experimental group.

Low-altitude overflights were shown to cause turkey flocks that were kept inside turkey houses to occasionally pile up and experience high mortality rates due to the aircraft noise and a variety of disturbances unrelated to aircraft (U.S. Air Force 1994a).

A.3.8.2 Wildlife

Studies on the effects of overflights and sonic booms on wildlife have been focused mostly on avian species and ungulates such as caribou and bighorn sheep. Few studies have been conducted on marine mammals, small terrestrial mammals, reptiles, amphibians, and carnivorous mammals. Generally, species that live entirely below the surface of the water have also been ignored due to the fact they do not experience the same level of sound as terrestrial species (National Park Service 1994). Wild ungulates appear to be much more sensitive to noise disturbance than domestic livestock (Manci, et al. 1988). This may be due to previous exposure to disturbances. One common factor appears to be that low-altitude flyovers seem to be more disruptive in terrain where there is little cover (Manci, et al. 1988).

A.3.8.2.1 MAMMALS

Terrestrial Mammals

Studies of terrestrial mammals have shown that noise levels of 120 dBA can damage mammals' ears, and levels at 95 dBA can cause temporary loss of hearing acuity. Noise from aircraft has affected other large carnivores by causing changes in home ranges, foraging patterns, and breeding behavior. One study recommended that aircraft not be allowed to fly at altitudes below 2,000 feet above ground level over important grizzly and polar bear habitat (Dufour 1980). Wolves have been frightened by low-altitude flights that were 25 to 1,000 feet off the ground. However, wolves have been found to adapt to aircraft overflights and noise as long as they were not being hunted from aircraft (Dufour 1980).

Wild ungulates (American bison, caribou, bighorn sheep) appear to be much more sensitive to noise disturbance than domestic livestock (Weisenberger, et al. 1996). Behavioral reactions may be related to the past history of disturbances by such things as humans and aircraft. Common reactions of reindeer kept in an enclosure exposed to aircraft noise disturbance were a slight startle response, raising of the head, pricking ears, and scenting of the air. Panic reactions and extensive changes in behavior of individual animals were not observed. Observations of caribou in Alaska exposed to fixed-wing aircraft and helicopters showed running and panic reactions occurred when overflights were at an altitude of 200 feet or less. The reactions decreased with increased altitude of overflights, and, with more than 500 feet in altitude, the panic reactions stopped. Also, smaller groups reacted less strongly than larger groups. One negative effect of the running and avoidance behavior is increased expenditure of energy. For a 90-kg animal, the calculated expenditure due to aircraft harassment is 64 kilocalories per minute when running and 20 kilocalories per minute when walking. When conditions are favorable, this expenditure can be counteracted with increased feeding; however, during harsh winter conditions, this may not be possible. Incidental observations of wolves and bears exposed to fixed-wing aircraft and helicopters in the northern regions suggested that wolves are less disturbed than wild ungulates, while grizzly bears showed the greatest response of any animal species observed.

It has been proven that low-altitude overflights do induce stress in animals. Increased heart rates, an indicator of excitement or stress, have been found in pronghorn antelope, elk, and bighorn sheep. As such reactions occur naturally as a response to predation, infrequent overflights may not, in and of themselves, be detrimental. However, flights at high frequencies over a long period of time may cause harmful effects. The consequences of this disturbance, while cumulative, is not additive. It may be that aircraft disturbance may not cause obvious and serious health effects, but coupled with a harsh winter, it may have an adverse impact. Research has shown that stress induced by other types of disturbances produces long-term decreases in metabolism and hormone balances in wild ungulates.

Behavioral responses can range from mild to severe. Mild responses include head raising, body shifting, or turning to orient toward the aircraft. Moderate disturbance may be nervous behaviors, such as trotting a short distance. Escape is the typical severe response.

Marine Mammals

The physiological composition of the ear in aquatic and marine mammals exhibits adaptation to the aqueous environment. These differences (relative to terrestrial species) manifest themselves in the

auricle and middle ear (Manci, et al. 1988). Some mammals use echolocation to perceive objects in their surroundings and to determine the directions and locations of sound sources (Simmons 1983 in Manci, et al. 1988).

In 1980, the Acoustical Society of America held a workshop to assess the potential hazard of manmade noise associated with proposed Alaska Arctic (North Slope-Outer Continental Shelf) petroleum operations on marine wildlife and to prepare a research plan to secure the knowledge necessary for proper assessment of noise impacts (Acoustical Society of America, 1980). Since 1980 it appears that research on responses of aquatic mammals to aircraft noise and sonic booms has been limited. Research conducted on northern fur seals, sea lions, and ringed seals indicated that there are some differences in how various animal groups receive frequencies of sound. It was observed that these species exhibited varying intensities of a startle response to airborne noise, which was habituated over time. The rates of habituation appeared to vary with species, populations, and demographics (age, sex). Time of day of exposure was also a factor (Muyberg 1978 in Manci, et al. 1988).

Studies accomplished near the Channel Islands were conducted near the area where the space shuttle launches occur. It was found that there were some response differences between species relative to the loudness of sonic booms. Those booms that were between 80 and 89 dBA caused a greater intensity of startle reactions than lower-intensity booms at 72 to 79 dBA. However, the duration of the startle responses to louder sonic booms was shorter (Jehl and Cooper 1980 in Manci, et al. 1988).

Jehl and Cooper (1980) indicated that low-flying helicopters, loud boat noises, and humans were the most disturbing to pinnipeds. According to the research, while the space launch and associated operational activity noises have not had a measurable effect on the pinniped population, it also suggests that there was a greater "disturbance level" exhibited during launch activities. There was a recommendation to continue observations for behavioral effects and to perform long-term population monitoring (Jehl and Cooper 1980).

The continued presence of single or multiple noise sources could cause marine mammals to leave a preferred habitat. However, it does not appear likely that overflights could cause migration from suitable habitats as aircraft noise over water is mobile and would not persist over any particular area. Aircraft noise, including supersonic noise, currently occurs in the overwater airspace of Eglin, Tyndall, and Langley AFBs from sorties predominantly involving jet aircraft. Survey results reported in Davis, et al. (2000), indicate that cetaceans (i.e., dolphins) occur under all of the Eglin and Tyndall marine airspace. The continuing presence of dolphins indicates that aircraft noise does not discourage use of the area and apparently does not harm the locally occurring population.

In a summary by the National Parks Service (1994) on the effects of noise on marine mammals, it was determined that gray whales and harbor porpoises showed no outward behavioral response to aircraft noise or overflights. Bottlenose dolphins showed no obvious reaction in a study involving helicopter overflights at 1,200 to 1,800 feet above the water. Neither did they show any reaction to survey aircraft unless the shadow of the aircraft passed over them, at which point there was some observed tendency to dive (Richardson, et al. 1995). Other anthropogenic noises in the marine environment from ships and pleasure craft may have more of an effect on marine mammals than aircraft noise (U.S. Air Force 2000). The noise effects on cetaceans appear to be somewhat attenuated by the air/water interface. The cetacean fauna along the coast of California have been subjected to

sonic booms from military aircraft for many years without apparent adverse effects (Tetra Tech, Inc. 1997).

Manatees appear relatively unresponsive to human-generated noise to the point that they are often suspected of being deaf to oncoming boats [although their hearing is actually similar to that of pinnipeds (Bullock, et al. 1980)]. Little is known about the importance of acoustic communication to manatees, although they are known to produce at least ten different types of sounds and are thought to have sensitive hearing (Richardson, et al. 1995). Manatees continue to occupy canals near Miami International Airport, which suggests that they have become habituated to human disturbance and noise (Metro-Dade County 1995). Since manatees spend most of their time below the surface and do not startle readily, no effect of aircraft overflights on manatees would be expected (Bowles, et al. 1991b).

A.3.8.2.2 BIRDS

Auditory research conducted on birds indicates that they fall between the reptiles and the mammals relative to hearing sensitivity. According to Dooling (1978), within the range of 1 to 5 kHz, birds show a level of hearing sensitivity similar to that of the more sensitive mammals. In contrast to mammals, bird sensitivity falls off at a greater rate to increasing and decreasing frequencies. Passive observations and studies examining aircraft bird strikes indicate that birds nest and forage near airports. Aircraft noise in the vicinity of commercial airports apparently does not inhibit bird presence and use.

High-noise events (like a low-altitude aircraft overflight) may cause birds to engage in escape or avoidance behaviors, such as flushing from perches or nests (Ellis, et al. 1991). These activities impose an energy cost on the birds that, over the long term, may affect survival or growth. In addition, the birds may spend less time engaged in necessary activities like feeding, preening, or caring for their young because they spend time in noise-avoidance activity. However, the long-term significance of noise-related impacts is less clear. Several studies on nesting raptors have indicated that birds become habituated to aircraft overflights and that long-term reproductive success is not affected (Grubb and King 1991; Ellis, et al. 1991). Threshold noise levels for significant responses range from 62 dB for Pacific black brant (Branta bernicla nigricans) (Ward and Stehn 1990) to 85 dB for crested tern (Sterna bergii) (Brown 1990).

Songbirds were observed to become silent prior to the onset of a sonic boom event (F-111 jets), followed by "raucous discordant cries." There was a return to normal singing within 10 seconds after the boom (Higgins 1974 in Manci, et al. 1988). Ravens responded by emitting protestation calls, flapping their wings, and soaring.

Manci, et al. (1988), reported a reduction in reproductive success in some small territorial passerines (i.e., perching birds or songbirds) after exposure to low-altitude overflights. However, it has been observed that passerines are not driven any great distance from a favored food source by a nonspecific disturbance, such as aircraft overflights (U.S. Forest Service 1992). Further study may be warranted.

A recent study, conducted cooperatively between the DoD and the USFWS, assessed the response of the red-cockaded woodpecker to a range of military training noise events, including artillery, small arms, helicopter, and maneuver noise (Pater, et al. 1999). The project findings show that the red-cockaded woodpecker successfully acclimates to military noise events. Depending on the noise level that ranged from innocuous to very loud, the birds responded by flushing from their nest cavities.

When the noise source was closer and the noise level was higher, the number of flushes increased proportionately. In all cases, however, the birds returned to their nests within a relatively short period of time (usually within 12 minutes). Additionally, the noise exposure did not result in any mortality or statistically detectable changes in reproductive success (Pater, et al. 1999). Red-cockaded woodpeckers did not flush when artillery simulators were more than 122 meters away and SEL noise levels were 70 dBA.

Lynch and Speake (1978) studied the effects of both real and simulated sonic booms on the nesting and brooding eastern wild turkey (Meleagris gallopavo silvestris) in Alabama. Hens at four nest sites were subjected to between 8 and 11 combined real and simulated sonic booms. All tests elicited similar responses, including quick lifting of the head and apparent alertness for between 10 and 20 seconds. No apparent nest failure occurred as a result of the sonic booms.

Twenty-one brood groups were also subjected to simulated sonic booms. Reactions varied slightly between groups, but the largest percentage of groups reacted by standing motionless after the initial blast. Upon the sound of the boom, the hens and poults fled until reaching the edge of the woods (approximately 4 to 8 meters). Afterward, the poults resumed feeding activities while the hens remained alert for a short period of time (approximately 15 to 20 seconds). In no instances were poults abandoned, nor did they scatter and become lost. Every observation group returned to normal activities within a maximum of 30 seconds after a blast.

A38221 RAPTORS

In a literature review of raptor responses to aircraft noise, Manci, et al. (1988), found that most raptors did not show a negative response to overflights. When negative responses were observed they were predominantly associated with rotor-winged aircraft or jet aircraft that were repeatedly passing within 0.5 mile of a nest.

Ellis, et al. (1991), performed a study to estimate the effects of low-level military jet aircraft and mid- to high-altitude sonic booms (both actual and simulated) on nesting peregrine falcons and seven other raptors (common black-hawk, Harris' hawk, zone-tailed hawk, red-tailed hawk, golden eagle, prairie falcon, bald eagle). They observed responses to test stimuli, determined nest success for the year of the testing, and evaluated site occupancy the following year. Both long- and short-term effects were noted in the study. The results reported the successful fledging of young in 34 of 38 nest sites (all eight species) subjected to low-level flight and/or simulated sonic booms. Twenty-two of the test sites were revisited in the following year, and observations of pairs or lone birds were made at all but one nest. Nesting attempts were underway at 19 of 20 sites that were observed long enough to be certain of breeding activity. Reoccupancy and productivity rates were within or above expected values for self-sustaining populations.

Short-term behavior responses were also noted. Overflights at a distance of 150 m or less produced few significant responses and no severe responses. Typical responses consisted of crouching or, very rarely, flushing from the perch site. Significant responses were most evident before egg laying and after young were "well grown." Incubating or brooding adults never burst from the nest, thus preventing egg breaking or knocking chicks out of the nest. Jet passes and sonic booms often caused noticeable alarm; however, significant negative responses were rare and did not appear to limit productivity or reoccupancy. Due to the locations of some of the nests, some birds may have been habituated to aircraft noise. There were some test sites located at distances far from zones of frequent

military aircraft usage, and the test stimuli were often closer, louder, and more frequent than would be likely for a normal training situation.

Manci, et al. (1988), noted that a female northern harrier was observed hunting on a bombing range in Mississippi during bombing exercises. The harrier was apparently unfazed by the exercises, even when a bomb exploded within 200 feet. In a similar case of habituation/non-disturbance, a study on the Florida snail-kite stated the greatest reaction to overflights (approximately 98 dBA) was "watching the aircraft fly by." No detrimental impacts to distribution, breeding success, or behavior were noted.

Bald Eagle

A study by Grubb and King (1991) on the reactions of the bald eagle to human disturbances showed that terrestrial disturbances elicited the greatest response, followed by aquatic (i.e., boats) and aerial disturbances. The disturbance regime of the area where the study occurred was predominantly characterized by aircraft noise. The study found that pedestrians consistently caused responses that were greater in both frequency and duration. Helicopters elicited the highest level of aircraft-related responses. Aircraft disturbances, although the most common form of disturbance, resulted in the lowest levels of response. This low response level may have been due to habituation; however, flights less than 170 meters away caused reactions similar to other disturbance types. Ellis, et al. (1991), showed that eagles typically respond to the proximity of a disturbance, such as a pedestrian or aircraft within 100 meters, rather than the noise level. Fleischner and Weisberg (1986) stated that reactions of bald eagles to commercial jet flights, although minor (e.g., looking), were twice as likely to occur when the jets passed at a distance of 0.5 mile or less. They also noted that helicopters were four times more likely to cause a reaction than a commercial jet and 20 times more likely to cause a reaction than a propeller plane.

The USFWS advised Cannon AFB that flights at or below 2,000 feet AGL from October 1 through March 1 could result in adverse impacts to wintering bald eagles (U.S. Fish and Wildlife Serice 1998). However, Fraser, et al. (1985), suggested that raptors habituate to overflights rapidly, sometimes tolerating aircraft approaches of 65 feet or less.

Osprey

A study by Trimper, et al. (1998), in Goose Bay, Labrador, Canada, focused on the reactions of nesting osprey to military overflights by CF-18 Hornets. Reactions varied from increased alertness and focused observation of planes to adjustments in incubation posture. No overt reactions (e.g., startle response, rapid nest departure) were observed as a result of an overflight. Young nestlings crouched as a result of any disturbance until they grew to 1 to 2 weeks prior to fledging. Helicopters, human presence, float planes, and other ospreys elicited the strongest reactions from nesting ospreys. These responses included flushing, agitation, and aggressive displays. Adult osprey showed high nest occupancy rates during incubation regardless of external influences.

The osprey observed occasionally stared in the direction of the flight before it was audible to the observers. The birds may have been habituated to the noise of the flights; however, overflights were strictly controlled during the experimental period. Strong reactions to float planes and helicopter may have been due to the slower flight and therefore longer duration of visual stimuli rather than noise-related stimuli.

Red-tailed Hawk

Anderson, et al. (1989), conducted a study that investigated the effects of low-level helicopter overflights on 35 red-tailed hawk nests. Some of the nests had not been flown over prior to the study. The hawks that were naïve (i.e., not previously exposed) to helicopter flights exhibited stronger avoidance behavior (nine of 17 birds flushed from their nests) than those that had experienced prior overflights. The overflights did not appear to affect nesting success in either study group. These findings were consistent with the belief that red-tailed hawks habituate to low-level air traffic, even during the nesting period.

A.3.8.2.2.2 MIGRATORY WATERFOWL

A study of caged American black ducks was conducted by Fleming, et al. in 1996. It was determined that noise had negligible energetic and physiologic effects on adult waterfowl. Measurements included body weight, behavior, heart rate, and enzymatic activity. Experiments also showed that adult ducks exposed to high noise events acclimated rapidly and showed no effects.

The study also investigated the reproductive success of captive ducks, which indicated that duckling growth and survival rates at Piney Island, North Carolina, were lower than those at a background location. In contrast, observations of several other reproductive indices (i.e., pair formation, nesting, egg production, and hatching success) showed no difference between Piney Island and the background location. Potential effects on wild duck populations may vary, as wild ducks at Piney Island have presumably acclimated to aircraft overflights. It was not demonstrated that noise was the cause of adverse impacts. A variety of other factors, such as weather conditions, drinking water and food availability and variability, disease, and natural variability in reproduction, could explain the observed effects. Fleming noted that drinking water conditions (particularly at Piney Island) deteriorated during the study, which could have affected the growth of young ducks. Further research would be necessary to determine the cause of any reproductive effects.

Another study by Conomy, et al. (1998) exposed previously unexposed ducks to 71 noise events per day that equaled or exceeded 80 dBA. It was determined that the proportion of time black ducks reacted to aircraft activity and noise decreased from 38 percent to 6 percent in 17 days and remained stable at 5.8 percent thereafter. In the same study, the wood duck did not appear to habituate to aircraft disturbance. This supports the notion that animal response to aircraft noise is species-specific. Because a startle response to aircraft noise can result in flushing from nests, migrants and animals living in areas with high concentrations of predators would be the most vulnerable to experiencing effects of lowered birth rates and recruitment over time. Species that are subjected to infrequent overflights do not appear to habituate to overflight disturbance as readily.

Black brant studied in the Alaska Peninsula were exposed to jets and propeller aircraft, helicopters, gunshots, people, boats, and various raptors. Jets accounted for 65% of all the disturbances. Humans, eagles, and boats caused a greater percentage of brant to take flight. There was markedly greater reaction to Bell-206-B helicopter flights than fixed wing, single-engine aircraft (Ward, et al. 1986).

The presence of humans and low-flying helicopters in the Mackenzie Valley North Slope area did not appear to affect the population density of Lapland longspurs, but the experimental group was shown to have reduced hatching and fledging success and higher nest abandonment. Human presence

appeared to have a greater impact on the incubating behavior of the black brant, common eider, and Arctic tern than fixed-wing aircraft (Gunn and Livingston 1974).

Gunn and Livingston (1974) found that waterfowl and seabirds in the Mackenzie Valley and North Slope of Alaska and Canada became acclimated to float plane disturbance over the course of three days. Additionally, it was observed that potential predators (bald eagle) caused a number of birds to leave their nests. Non-breeding birds were observed to be more reactive than breeding birds. Waterfowl were affected by helicopter flights, while snow geese were disturbed by Cessna 185 flights. The geese flushed when the planes were under 1,000 feet, compared to higher flight elevations. An overall reduction in flock sizes was observed. It was recommended that aircraft flights be reduced in the vicinity of premigratory staging areas.

Manci, et al. 1988 reported that waterfowl were particularly disturbed by aircraft noise. The most sensitive appeared to be snow geese. Canada geese and snow geese were thought to be more sensitive than other animals such as turkey vultures, coyotes, and raptors (Edwards, et al. 1979).

A.3.8.2.2.3 WADING AND SHORE BIRDS

Black, et al. (1984), studied the effects of low-altitude (less than 500 feet AGL) military training flights with sound levels from 55 to 100 dBA on wading bird colonies (i.e., great egret, snowy egret, tricolored heron, and little blue heron). The training flights involved three or four aircraft, which occurred once or twice per day. This study concluded that the reproductive activity--including nest success, nestling survival, and nestling chronology--was independent of F-16 overflights. Dependent variables were more strongly related to ecological factors, including location and physical characteristics of the colony and climatology. Another study on the effects of circling fixed-wing aircraft and helicopter overflights on wading bird colonies found that at altitudes of 195 to 390 feet, there was no reaction in nearly 75% of the 220 observations. Ninety percent displayed no reaction or merely looked toward the direction of the noise source. Another 6 percent stood up, 3 percent walked from the nest, and 2 percent flushed (but were without active nests) and returned within 5 minutes (Kushlan 1978). Apparently, non-nesting wading birds had a slightly higher incidence of reacting to overflights than nesting birds. Seagulls observed roosting near a colony of wading birds in another study remained at their roosts when subsonic aircraft flew overhead (Burger 1981). Colony distribution appeared to be most directly correlated to available wetland community types and was found to be distributed randomly with respect to military training routes. These results suggest that wading bird species presence was most closely linked to habitat availability and that they were not affected by low-level military overflights (U.S. Air Force 2000).

Burger (1986) studied the response of migrating shorebirds to human disturbance and found that shorebirds did not fly in response to aircraft overflights, but did flush in response to more localized intrusions (i.e., humans and dogs on the beach). Burger (1981) studied the effects of noise from JFK Airport in New York on herring gulls that nested less than 1 kilometer from the airport. Noise levels over the nesting colony were 85 to 100 dBA on approach and 94 to 105 dBA on takeoff. Generally, there did not appear to be any prominent adverse effects of subsonic aircraft on nesting, although some birds flushed when the concorde flew overhead and, when they returned, engaged in aggressive behavior. Groups of gulls tended to loaf in the area of the nesting colony, and these birds remained at the roost when the concorde flew overhead. Up to 208 of the loafing gulls flew when

supersonic aircraft flew overhead. These birds would circle around and immediately land in the loafing flock (U.S. Air Force 2000).

In 1970, sonic booms were potentially linked to a mass hatch failure of Sooty Terns on the Dry Tortugas (Austin, et al. 1970). The cause of the failure was not certain, but it was conjectured that sonic booms from military aircraft or an overgrowth of vegetation were factors. In the previous season, Sooties were observed to react to sonic booms by rising in a "panic flight," circling over the island, then usually settling down on their eggs again. Hatching that year was normal. Following the 1969 hatch failure, excess vegetation was cleared and measures were taken to reduce supersonic activity. The 1970 hatch appeared to proceed normally. A colony of Noddies on the same island hatched successfully in 1969, the year of the Sooty hatch failure.

Subsequent laboratory tests of exposure of eggs to sonic booms and other impulsive noises (Bowles, et al. 1991a; Bowles, et al. 1994; Cottereau 1972; Cogger and Zegarra 1980) failed to show adverse effects on hatching of eggs. A structural analysis (Ting, et al. 2002) showed that, even under extraordinary circumstances, sonic booms would not damage an avian egg.

Burger (1981) observed no effects of subsonic aircraft on herring gulls in the vicinity of JFK International Airport. The concorde aircraft did cause more nesting gulls to leave their nests (especially in areas of higher density of nests), causing the breakage of eggs and the scavenging of eggs by intruder prey. Clutch sizes were observed to be smaller in areas of higher-density nesting (presumably due to the greater tendency for panic flight) than in areas where there were fewer nests.

A.3.8.3 Fish, Reptiles, and Amphibians

The effects of overflight noise on fish, reptiles, and amphibians have been poorly studied, but conclusions regarding their expected responses have involved speculation based upon known physiologies and behavioral traits of these taxa (Gladwin, et al. 1988). Although fish do startle in response to low-flying aircraft noise, and probably to the shadows of aircraft, they have been found to habituate to the sound and overflights. Reptiles and amphibians that respond to low frequencies and those that respond to ground vibration, such as spadefoots (genus Scaphiopus), may be affected by noise. Limited information is available on the effects of short-duration noise events on reptiles. Dufour (1980) and Manci, et al. (1988), summarized a few studies of reptile responses to noise. Some reptile species tested under laboratory conditions experienced at least temporary threshold shifts or hearing loss after exposure to 95 dB for several minutes. Crocodilians in general have the most highly developed hearing of all reptiles. Crocodile ears have lids that can be closed when the animal goes under water. These lids can reduce the noise intensity by 10 to 12 dB (Wever and Vernon 1957). On Homestead Air Reserve Station, Florida, two crocodilians (the American Alligator and the Spectacled Caiman) reside in wetlands and canals along the base runway suggesting that they can coexist with existing noise levels of an active runway including DNLs of 85 dB.

A.3.8.4 Summary

Some physiological/behavioral responses such as increased hormonal production, increased heart rate, and reduction in milk production have been described in a small percentage of studies. A majority of the studies focusing on these types of effects have reported short-term or no effects.

The relationships between physiological effects and how species interact with their environments have not been thoroughly studied. Therefore, the larger ecological context issues regarding

physiological effects of jet aircraft noise (if any) and resulting behavioral pattern changes are not well understood.

Animal species exhibit a wide variety of responses to noise. It is therefore difficult to generalize animal responses to noise disturbances or to draw inferences across species, as reactions to jet aircraft noise appear to be species-specific. Consequently, some animal species may be more sensitive than other species and/or may exhibit different forms or intensities of behavioral responses. For instance, wood ducks appear to be more sensitive and more resistant to acclimation to jet aircraft noise than Canada geese in one study. Similarly, wild ungulates seem to be more easily disturbed than domestic animals.

The literature does suggest that common responses include the "startle" or "fright" response and, ultimately, habituation. It has been reported that the intensities and durations of the startle response decrease with the numbers and frequencies of exposures, suggesting no long-term adverse effects. The majority of the literature suggests that domestic animal species (cows, horses, chickens) and wildlife species exhibit adaptation, acclimation, and habituation after repeated exposure to jet aircraft noise and sonic booms.

Animal responses to aircraft noise appear to be somewhat dependent on, or influenced by, the size, shape, speed, proximity (vertical and horizontal), engine noise, color, and flight profile of planes. Helicopters also appear to induce greater intensities and durations of disturbance behavior as compared to fixed-wing aircraft. Some studies showed that animals that had been previously exposed to jet aircraft noise exhibited greater degrees of alarm and disturbance to other objects creating noise, such as boats, people, and objects blowing across the landscape. Other factors influencing response to jet aircraft noise may include wind direction, speed, and local air turbulence; landscape structures (i.e., amount and type of vegetative cover); and, in the case of bird species, whether the animals are in the incubation/nesting phase.

A.3.9 Property Values

Property within a noise zone (or Accident Potential Zone) may be affected by the availability of federally guaranteed loans. According to U.S. Department of Housing and Urban Development (HUD), Federal Housing Administration (FHA), and Veterans Administration (VA) guidance, sites are acceptable for program assistance, subsidy, or insurance for housing in noise zones of less than 65 DNL, and sites are conditionally acceptable with special approvals and noise attenuation in the 65 to 75 DNL noise zone and the greater than 75 DNL noise zone. HUD's position is that noise is not the only determining factor for site acceptability, and properties should not be rejected only because of airport influences if there is evidence of acceptability within the market and if use of the dwelling is expected to continue. Similar to the Navy's and Air Force's Air Installation Compatible Use Zone Program, HUD, FHA, and VA recommend sound attenuation for housing in the higher noise zones and written disclosures to all prospective buyers or lessees of property within a noise zone (or Accident Potential Zone).

Newman and Beattie (1985) reviewed the literature to assess the effect of aircraft noise on property values. One paper by Nelson (1978), reviewed by Newman and Beattie, suggested a 1.8 to 2.3 percent decrease in property value per decibel at three separate airports, while at another period of time, they found only a 0.8 percent devaluation per decibel change in DNL. However, Nelson also noted a

decline in noise depreciation over time which he theorized could be due to either noise sensitive people being replaced by less sensitive people or the increase in commerical value of the property near airports; both ideas were supported by Crowley (1978). Ultimately, Newman and Beattie summarized that while an effect of noise was observed, noise is only one of the many factors that is part of a decision to move close to, or away from, an airport, but which is sometimes considered an advantage due to increased opportunities for employment or ready access to the airport itself. With all the issues associated with determining property values, their reviews found that decreases in property values usually range from 0.5 to 2 percent per decibel increase of cumulative noise exposure.

More recently Fidell, et al. (1996) studied the influences of aircraft noise on actual sale prices of residential properties in the vicinity of two military facilities and found that equations developed for one area to predict residential sale prices in areas unaffected by aircraft noise worked equally well when applied to predicting sale prices of homes in areas with aircraft noise in excess of LDN 65 dB. Thus, the model worked equally well in predicting sale prices in areas with and without aircraft noise exposure. This indicates that aircraft noise had no meaningful effect on residential property values. In some cases, the average sale prices of noise exposed properties were somewhat higher than those elsewhere in the same area. In the vicinity of Davis-Monthan AFB/Tucson, AZ, Fidell found the homes near the airbase were much older, smaller and in poorer condition than homes elsewhere. These factors caused the equations developed for predicting sale prices in areas further away from the base to be inapplicable with those nearer the base. However, again Fidell found that, similar to other researchers, differences in sale prices between homes with and without aircraft noise were frequently due to factors other than noise itself.

A.3.10 Noise Effects on Structures

Normally, the most sensitive components of a structure to airborne noise are the windows and, infrequently, the plastered walls and ceilings. An evaluation of the peak sound pressures impinging on the structure is normally used to determine the possibility of damage. In general, with peak sound levels above 130 dB, there is the possibility of the excitation of structural component resonances. While certain frequencies (such as 30 hertz for window breakage) may be of more concern than other frequencies, conservatively, only sounds lasting more than one second above a sound level of 130 dB are potentially damaging to structural components (Committee on Hearing, Bioacoustics, and Biomechanics 1977).

Noise-induced structural vibration may also cause annoyance to dwelling occupants because of induced secondary vibrations, or rattling of objects within the dwelling such as hanging pictures, dishes, plaques, and bric-a-brac. Window panes may also vibrate noticeably when exposed to high levels of airborne noise. In general, such noise-induced vibrations occur at peak sound levels of 110 dB or greater. Thus, assessments of noise exposure levels for compatible land use should also be protective of noise-induced secondary vibrations.

A.3.11 Noise Effects on Terrain

It has been suggested that noise levels associated with low-flying aircraft may affect the terrain under the flight path by disturbing fragile soil or snow, especially in mountainous areas, causing landslides or avalanches. There are no known instances of such effects, and it is considered improbable that such effects would result from routine, subsonic aircraft operations.

A.3.12 Noise Effects on Historical and Archaeological Sites

Because of the potential for increased fragility of structural components of historical buildings and other historical sites, aircraft noise may affect such sites more severely than newer, modern structures. Particularly in older structures, seemingly insignificant surface cracks initiated by vibrations from aircraft noise may lead to greater damage from natural forces (Hanson, et al. 1991). There are few scientific studies of such effects to provide guidance for their assessment.

One study involved the measurements of sound levels and structural vibration levels in a superbly restored plantation house, originally built in 1795, and now situated approximately 1,500 feet from the centerline at the departure end of Runway 19L at Washington Dulles International Airport. These measurements were made in connection with the proposed scheduled operation of the supersonic Concorde airplane at Dulles (Wesler 1977). There was special concern for the building's windows, since roughly half of the 324 panes were original. No instances of structural damage were found. Interestingly, despite the high levels of noise during Concorde takeoffs, the induced structural vibration levels were actually less than those induced by touring groups and vacuum cleaning.

As noted above for the noise effects of noise-induced vibrations of conventional structures, assessments of noise exposure levels for normally compatible land uses should also be protective of historic and archaeological sites.

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APPENDIX B

Glossary

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Glossary

A-weighted Sound Level (dBA): A measurement of loudness which accounts for the frequency sensitivity of the human ear. A-weighting accounts for frequency dependence by adjusting the very high and very low frequencies (below approximately 500 Hz and above approximately 10,000 Hz) to approximate the human ear's lower sensitivities to those frequencies. Sound in each one third octave band is A-weighted and summed.

Acoustics: The study of the generation, propagation and reception of sound.

Advisory Circular (AC): An FAA-issued document providing methods, procedures, and practices for compliance with regulations and grant requirements.

Air Route Traffic Control Center (ARTCC): An FAA facility which provides enroute air traffic control services to aircraft, primarily operating on IFR flight plans, within controlled airspace. There are 24 such centers controlling traffic in US airspace, including Alaska, Hawaii, Puerto Rico and Guam.

Air Traffic Control (ATC): The function of providing positive control and aircraft separation services to participating aircraft through safe, orderly, and expeditious traffic flow procedures and instructions.

Air Traffic Control Tower (ATCT): A facility that provides local air traffic control services to aircraft operating into and out of an airport. ATCT facilities are located on the airfield maintaining an unrestricted view of airside facilities (i.e., runway, taxiways). They are typically FAA-operated, but can also operate under contract.

Airport Improvement Program (AIP): A federal funding mechanism that provides grants for planning and capital improvement projects at public-use airports included in the National Plan of Integrated Airport Systems (NPIAS).

Airport Layout Plan (ALP): A graphic illustration of existing and proposed airport facilities (e.g. runways, taxiways, terminal buildings, navigation aids, etc.).

Airport Noise and Capacity Act of 1990 (ANCA): The congressional act that established the first national noise policy. ANCA created a timeline for the phase out of Stage 2 aircraft and created a review and approval process governing the implementation of local airport use or access restrictions by airport proprietors.

Airport Sponsor: The recipient of AIP grant funding. In a Part 150 study, the airport operator is identified as the Airport Sponsor, but local jurisdictions can also assume 'airport sponsor' status when applying for AIP funding for noise mitigation programs.

Airspace: A three-dimensional portion of the atmosphere that is controlled by a jurisdictional entity, generally a nation. In aviation, airspace is either defined as regulatory or non-regulatory, with many subcategories.

Ambient Noise: Background noise levels not including aircraft activity. These levels can also be referred to as "community noise levels."

Arrival (or Approach): A flight operation in the terminal control area that encompasses the descent and landing of an aircraft on an airport runway or pad.

Attenuation: The change in sound level that occurs due to the loss in acoustical energy as sound waves pass through a medium (such as air or water). Also due in part to the interaction between sound waves that travel directly from the source to the receiver and reflected waves that bounce off any surfaces (such as the ground or a building) while traveling from the source to the receiver.

Automated Radar Terminal System (ARTS): A software and display system that provides aircraft position, altitude, and time sequence data to air traffic controllers engaged in the positive control of aircraft in a terminal area environment. The system processes and displays data from the Airport Surveillance Radar (ASR) and interacts with other systems providing critical information, such as weather, conflict resolution, and traffic flow management.

Aviation Safety and Noise Abatement Act of 1979: A congressional act authorizing the FAA to award grants under the AIP for noise mitigation projects. The Act states that in order to access funding for noise mitigation projects, the project must be identified in an airport's Noise Compatibility Program (NCP) per 14 CFR Part 150.

Avigation Easement: An agreement which secures the right of flight with inherent noise and vibration above the surface, the right to remove existing obstructions, and a restriction against the establishment of future obstructions.

Building Code: A minimum set of standards for the structural safety of buildings set and enforced by local governments.

Building Permit: A written authorization by a municipality for new construction, additions to pre-existing structures, or major renovations.

Closed Pattern Operation (Touch and Go): An aircraft training operation flown in a rectangular path around the runway and within site of the Air Traffic Control Tower, if present. A closed pattern operation consists of five legs: upwind, crosswind, downwind, base, and final.

Commuter Aircraft: A certified air carrier operator typically configured with 30 seats or less. Commuter aircraft operate a published flight schedule and operate under FAR Part 121.

Contour: see noise contour

Day-Night Average Sound Level (DNL): The 24-hour average sound level, in A-weighted decibels, with a 10-dB penalty for sound levels occurring between 10 p.m. and 7 a.m. local time.

Decibel (dB): A logarithmic unit used to describe the intensity of sound.

Displaced Threshold: A runway threshold that is located other than at the beginning of the runway, generally designated in order to provide suitable obstacle clearance or safe pavement conditions for arriving aircraft. The displaced portion of the runway may still be used for departing aircraft.

Distance Measuring Equipment: Equipment used to measure slant range distance in nautical miles from an aircraft to a navigational aid.

Eminent Domain: A governmental unit's power to condemn private property for public or civic use, with the provision that the owner will be justly compensated.

En route: The portion of a flight outside the terminal airspace of both the origin and destination airports.

Engine Run-up Area: A designated area on an airfield used for prolonged aircraft engine testing.

Environmental Assessment (EA): An analysis prepared, pursuant to the National Environmental Policy Act (NEPA), to assess the potential environmental impacts of a proposed Federal action, which contains sufficient detail in order for a Federal determination of either a Finding of No Significant Impact (FONSI) or the need to pursue an Environmental Impact Statement (EIS).

Environmental Impact Statement (EIS): An analysis prepared pursuant to NEPA that discloses the significant impacts of a proposed Federal action and evaluates a series of alternatives. The process for completing an EIS is outlined in Order 5050.4B and Order 1050.1E.

Environmental Protection Agency (EPA): The federal agency responsible for natural resource protection and oversight of the release of toxins and other pollutants into the environment.

Equivalent Sound Level (L_{eq}): The average sound level of all noise occurring over a specified period of time. The L_{eq} metric can provide an accurate quantification of noise exposure for a specific period, particularly for daytime periods when the nighttime penalty under the DNL metric is inappropriate.

FAR Part 150 (also known as "Part 150" or "14 C.F.R Part 150"): Titled *Airport Noise Compatibility Planning*, establishes standards for the documentation of noise exposure in the airport environs, as well as procedures for obtaining FAA approval of programs to reduce or eliminate incompatibilities between aircraft noise and surrounding land uses. A Part 150 study is comprised of both a set of Noise Exposure Maps which depict existing and future five-year forecast conditions and a Noise Compatibility Program, which identifies strategies to reduce, mitigate, and prevent existing and future incompatible land uses in the vicinity of an airport. An approved NCP is required to access AIP funding for mitigation programs.

Federal Aviation Administration (FAA): The federal agency responsible for regulating aviation activity, certifying pilots, air carriers, air traffic controllers and aircraft, as well as operating the National Airspace System (NAS) in the United States.

Fee Simple Land Acquisition: Fee simple acquisition is the purchase of lands that may have sensitive environmental concerns. In the context of airport noise mitigation projects, acquisition is subject to the provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970.

Final Approach: The final leg of an arrival flight path, which is typically the straight-in segment of the operation, except during circling and offset approaches whereby aircraft would not be directly aligned with the arrival runway.

Fixed Base Operator (FBO): A private-sector airport tenant that offers services to General Aviation (GA) and FAR Part 135 operators including refueling, de-icing, parking, maintenance services, flight training and other ground services.

Fleet mix: A representation of aircraft types operating at the airport over a given period of time.

Flight Plan: A record filed by pilots and air carrier dispatchers with a Flight Service Station (FSS) declaring flight intent and requesting clearance and routing information. A typical flight plan includes information on aircraft, type, onboard equipment, origin and destination, fuel on board, and requested routing.

Flight Track (or path): The three-dimensional flight trajectory traveled by aircraft from the start of the departure (takeoff-off roll) to the destination. Flight tracks for noise modeling usually are derived from radar data and are generalized for input into the INM.

General Aviation (GA): All aircraft operating under FAR Part 91 typically consisting of single and multi-engine propeller aircraft and business jet aircraft. GA operations comprise all operations other than air carrier, air taxi, and military operations.

Geographical Information Systems (GIS): A group of software applications used to analyze, interpret, and visualize spatial data such as street, terrain, and demographic data.

Glide Slope: A vertically-guided path directed by a radio signal, which aircraft travel as they approach a runway on a precision approach, such as that offered by an Instrument Landing System (ILS). Glide slopes are indicated by a specific angle of approach, generally 3 degrees from a final approach fix to the runway threshold.

Global Positioning System (GPS): A constellation of orbiting satellites which provide position and time information to ground based and airborne receivers.

Instrument Flight Rules (IFR): Flight during times when cloud cover and visibility are below published safety standards. Flight under IFR conditions requires specific procedures, pilot certification requirements, and onboard instruments for aircraft navigation.

Instrument Landing System (ILS): A system consisting of a localizer (which provides runway centerline guidance), glide slope (which provides vertical guidance), outer and middle markers, and approach lights, which allows precision instrument approaches to runways during periods of low visibility.

Integrated Noise Model (INM): An integrated model used as the standard tool for the modeling of noise exposure resulting from aircraft operations at civilian airports in the U.S.

Knots: A measure of aircraft speed in nautical miles per hour.

Land Use Controls: Regulations set forth by Federal, state, and local governments on the characteristics of development that may occur on a specific parcel of land, such as setback lines of buildings, zoning, or historic preservation guidelines.

Loudness: The degree of sound perceived by the ear.

Maximum Sound Level (Lmax): The highest A-weighted sound level measured during a single event in which the sound level changes value as time goes on (e.g., an aircraft over-flight).

Mean Sea Level (MSL): An altitude indicated as feet above sea level.

Missed Approach: A flight procedure that redirects the aircraft along a predefined course when an approach to a runway is not feasible due to weather or other considerations.

Mitigation: The lessening of severity or intensity. In the aviation planning context, mitigation generally refers to measures taken to reduce the transmission of sound through buildings, such as in the context of a residential sound insulation program.

National Airspace System (NAS): The sovereign airspace under the control of the United States as defined by international law and governed by access and use restrictions.

National Environmental Policy Act (NEPA): A congressional Act which established the national policy for disclosing the potential impacts of Federal actions. Compliance with NEPA requires the completion of an environmental document that outlines impacts that may significantly affect the quality of the human environment.

Navigation Aid: Typically, a ground-based facility designed to provide signal data to assist aircraft with navigation, approach and departure operations both within terminal airspace and in the enroute environment.

Noise: Typically defined as disagreeable or unwanted sound.

Noise Abatement Procedure: A voluntary operational procedure for arriving and departing aircraft designed to reduce the impact of noise in a specific location.

Noise Attenuation: A reduction of noise.

Noise Berm: A man-made structure composed of either earthen or other materials to act as a mitigating barrier for the transmission of sound.

Noise Compatibility Program (NCP): A program that promulgates recommendations on the abatement and/or mitigation of existing impacts of aviation noise, and the prevention of future incompatibilities in areas identified as being significantly impacted by aircraft noise. An NCP is created or updated as part of the FAR Part 150 process, following the completion of existing and future Noise Exposure Maps.

Noise Contour: A line connecting a series of points of equal sound level values. Locations inside of a noise contour have greater sound levels, and locations outside of the contour have lesser sound levels. Noise exposure contours are computed using noise models such as INM.

Noise Exposure Map (NEM): Noise exposure contours overlaid on a background map (i.e., street map, satellite imagery) which identifies existing or future noise exposure conditions at an airport. An NEM is typically developed as part of the FAR Part 150 process.

Noise Level Reduction (NLR): The difference between the outdoor noise level and the interior noise level. A composite NLR is computed based on the individual noise reductions of the room's exterior elements and weightings according to the areas of those elements.

NoiseMap: A suite of computer-based programs, developed by the U.S. Air Force, and used to model aircraft noise exposure at U.S. military installations.

Over-flight: An aircraft operation that both originates and terminates at an airport outside of the airport of interest, yet transverses the terminal airspace.

Overlay Districts: A special zoning district which mandates regulatory standards for permitted land use and construction, in addition to existing zoning regulations.

Precision Approach Path Indicator (PAPI): A navigation aid on the end of a runway consisting of a single row of two to four lights which emit red or white beams depending on the altitude of the approaching aircraft.

Precision Instrument Approach Procedure: An instrument approach where vertical guidance is provided.

Reliever Airport: A general aviation airport located in a metropolitan area that serves to accommodate air traffic that would otherwise use the region's primary commercial service airport.

Run-up: A maintenance operation conducted to test aircraft engines following routine or major maintenance or repair. Run-ups consist of engine tests at varying durations and power settings.

Runway Use Program: A program that indicates the preferred use of specific runways at an airport. Runway use programs may be designed to enhance noise mitigation to airport communities for arriving and departing

aircraft. Programs are categorized as formal (defined and acknowledged in a Letter of Understanding, with mandatory participation) or informal (voluntary participation).

Sound: Minute vibrations that travel through air and can be sensed by the human ear. Sounds are measured by their intensity, frequency, and duration.

Sound Exposure Level (SEL): A logarithmic measure of the total acoustic energy transmitted to the listener during the event. SEL represents the sound level of the constant sound that would, in one second, generate the same acoustic energy as did the actual time-varying noise event. SEL is the building block for calculating DNL, which consists of the logarithmic sum of the aircraft SEL values for one day of operations, averaged over 24 hours, and with a 10 dB weighting applied to nighttime events.

Sound Insulation: Methods of construction or modification designed to reduce the transmission of sound energy in a structure.

Sound Level Meter: A device that measures sound pressure levels for the quantification of noise.

Standard Instrument Departure Procedure (SID): A published instrument departure procedure which provides detailed instructions for an aircraft during the transition from the terminal area to the en route portion of flight.

Standard Terminal Arrival Route (STAR): A published instrument arrival procedure which transitions an aircraft from the en route environment into to the terminal area. A STAR specifies operational criteria such as the rate of descent, specific routing directions, and communications for arrival to an airport.

Tactical Air Navigation (TACAN): An ultra-high frequency navigation aid which provides military aircraft with bearing and distance information.

Terminal Airspace: Airspace located immediately surrounding an airport in which guidance or instructions are issued from the local ATCT.

Terminal Radar Approach Control (TRACON): An FAA air traffic control facility providing radar separation and vectoring services to aircraft within terminal airspace.

Very High Frequency Omni-directional Range (VOR): A ground-based navigation aid which transmits very high frequency navigation signals in 360 degrees. A VOR may be co-located with other navigation equipment, such as a TACAN or DME.

Visual Approach Slope Indicator (VASI): An airport lighting facility which provides vertical guidance to aircraft during an arrival.

Visual Approach: An IFR approach which allows an aircraft to visually proceed to the airport.

Visual Flight Rules (VFR): A series of rules which apply to aircraft operating by visual reference and "see-and-avoid" procedures. VFR rules govern flights operating in weather conditions with ceilings of 1,000 feet AGL and at least three miles visibility.

Zoning: The classification of land into separately regulated areas which specify permitted land uses, density, design, and placement of structures within each boundary.

APPENDIX C

Public Participation and Comments

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San Antonio International Airport
Public Workshop & Public Meeting, January 27, 2009

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REGISTRATION

- Sign-In Sheets
- Speaker Registration Cards

PUBLIC COMMENTS

- Public Meeting Transcripts
- Public Meeting Comments

Meeting Notification

SAN ANTONIO EXPRESS NEWS
AFFIDAVIT OF PUBLICATION

STATE OF TEXAS:

COUNTY OF BEXAR:

Before me, the undersigned authority, a Notary Public in and for the State of Texas, on this day personally appeared: Norma Castaneda, who after being duly sworn, says that she is the BOOKKEEPER of THE HEARST CORPORATION (SAN ANTONIO EXPRESS-NEWS DIVISION) a daily newspaper published in Bexar County, Texas and that the publication, of which the annexed is a true copy, was published to wit:

Date(s) ad published:

12-21-08 12-21-08

appr: 02 ad number: 1056880

customer: CITY OF SAN ANTONIO account: 0560520006

Norma Castaneda
Bookkeeper

Sworn and subscribed to before me, this the 22nd

day of December A.D. 2008

Notary public in and for the State of Texas

NOTICE OF PUBLIC WORKSHOP AND PUBLIC MEETING

For further information, contact Lynn Hayden, City Clerk

C-4

WWW.LAPRENSASA.COM

10 Palabras por $5.00 y 40¢ por cada palabra despues. Estas tarifas se aplican al servicio clasificados de anuncios personales, bienes raices, autos, empleos, ventas, ventas de garaje y servicios de publicidad.

Tarifas adicionales disponibles cuando sean requeridas.

$5 LA PRENSA

VISA MasterCard

Aceptamos: Dinero en efectivo cheques personales y money orders

LEGAL/PUBLIC NOTICES

NOTICE TO CONTRACTORS OF PROPOSED TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT) CONTRACTS

Sealed proposals for contracts listed below will be received by TxDOT until the date(s) shown below, and then publicly read.

CONSTRUCTION/MAINTENANCE/BUILDING FACILITIES CONTRACT(S)

Dist/Div: San Antonio
Contract 0291-03-054 for CONSTRUCT LEFT TURN LANES in KERR County will be opened on January 14, 2009 at 1:00 pm at the State Office.

Plans and specifications are available for inspection, along with bidding proposals, and applications for the TxDOT Prequalified Contractor's list, at the applicable State and/or Dist/Div Offices listed below. If applicable, bidders must submit prequalification information to TxDOT at least 10 days prior to the bid date to be eligible to bid on a project. Prequalification materials may be requested from the State Office listed below. Plans for the above contract(s) are available from TxDOT's website at www.txdot.gov and from reproduction companies at the expense of the contractor.
NPO: 28549

State Office

Constr./Maint. Division
200 E. Riverside Dr.
Austin, Texas 78704
Phone: 512-416-2540

Dist/Div Office(s)

San Antonio District
District Engineer
4615 NWLoop 410
San Antonio, Texas 78229-0928
Phone: 210-615-1110

Minimum wage rates are set out in bidding documents and the rates will be part of the contract. TXDOT ensures that bidders will not be discriminated against on the grounds of race, color, sex, or national origin.

OFFICIAL PUBLIC NOTICE

Bexar County, Texas

Address sealed bids on IFB 2009-006 for Maintenance of Uninterruptible Power Supplies and Battery Systems to Gary O'Bar, C.P.M., Bexar County Purchasing Agent, Vista Verde Plaza, 233 N. Pecos, Suite 320 (third floor), San Antonio, Texas 78207. Offers will be accepted until: 10:00 O'clock A.M., Central Time, on December 30, 2008. A pre-bid conference is scheduled for all prospective bidders at 10:00 a.m. on December 22, 2008 at the Bexar County Vista Verde Plaza, Infrastructure Services Department, 233 N. Pecos Suite 420, San Antonio, TX 78207, Large Conference Room. Prospective respondents are encouraged to attend the conference and to submit written questions in advance so that prepared answers can be delivered during the conference. Attendance is not mandatory to submit a proposal. The solicitation documents may be downloaded at www.bexar.org, Purchasing.

GARY O'BAR, C.P.M.
County Purchasing Agent

Request for proposals

The **San Antonio Housing Authority** and its Affiliates invites Proposals for:

Apartment Marketing RFP #0812-915-03-2874

Proposals will received until 10 a.m. (CST) on January 13, 2009 and publicly opened at that time at the offices of SAHA Procurement Department, 818 S. Flores, San Antonio, Texas 78204. A resubmitted meeting will be held on December 22, 2008 at 10 a.m. (CST) at the same location.

Specification packages are available online at www.saha.org, or at nahro.economicengine.com or at SAHA's Offices of Procurement located at 818 S. Flores, San Antonio, Texas 78204 or by calling (210)477-6059.

Notice of Public Workshop and Public Meeting
San Antonio International Airport
Limited Airport Noise Compatibility Planning Study

The City of San Antonio Aviation Department will hold a Public Workshop and Public Meeting on Tuesday, January 27, 2009, in the Skylight Room (Administration Building) of the Holy Spirit Catholic Church, 758 W. Ramsey. The Public Workshop will be held from 6:00 pm to 7:00 pm and the Public Meeting will begin at 7:00 pm.

The purpose of the public workshop and public meeting is to receive comments on the Noise Exposure Maps (NEMs) and their effect on the existing Noise Compatibility Program (NCP) for the San Antonio International Airport. The Limited Airport Noise Compatibility Planning Study will consider many factors, including includes the effects of operational changes at the Airport on noise exposure. The Code of Federal Regulations (CFR) Title 14 Part 150 establishes the requirements for Airports to periodically update their Noise Exposure Maps. The NEMs are the basis for determining homeowners' eligibility for the airport's residential acoustical treatment program. Public participation is a required element of the Part 150 regulations. .

The Public Workshop will be conducted in an open-house format providing attendees the opportunity to view exhibits, ask questions, and discuss the project with representatives of the City of San Antonio and their consultants.

The Public Meeting will begin with a formal presentation followed by an oral public comment session. A court reporter will be present. Oral comments will be limited to five (5) minutes to allow everyone an opportunity to be heard.

Written comments will be accepted at the workshop/meeting or may be submitted by February 23, 2009 to: Jerry Rankin, Noise Mitigation Officer, San Antonio International Airport, 9800 Airport Blvd., San Antonio, TX, 78216.

Copies of the Draft Noise Exposure Map (NEM) Report will be available for public review at the workshop/hearing and also available at the following locations after January 23, 2009:

- Central Library - 600 Soledad
- Tobin Library at Oakwell - 4134 Harry Wurzbach Road
- Brook Hollow Library - 530 Heimer Road
- Edmund Cody Library - 11441 Vance Jackson
- Thousand Oaks-El Sendero Library - 4618 Thousand Oaks
- Trinity University, Elizabeth Huth Coates Library - One Trinity Place
- Department of Planning and Development Services - 1901 South Alamo
- Office of the City Clerk, City Hall Building - 100 Military Plaza
- Aviation Dept., Noise Mitigation Office - 9700 Airport Blvd., Terminal 2, 2nd Floor

For further information, contact Jerry Rankin, San Antonio Aviation Department, at (210) 207-3471

Leticia M. Vacek,TRMC, CMC, City Clerk

NOTICE TO CONTRACTORS OF PROPOSED TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT) CONTRACTS

Sealed proposals for contracts listed below will be received by TxDOT until the date(s) shown below, and then publicly read.

CONSTRUCTION/MAINTENANCE/BUILDING FACILITIES CONTRACT(S)

Dist/Div: Lubbock
Contract 6190-26-001 for CRACK SEAL in PARMER County, etc will be opened on January 21, 2009 at 10:00 am at the District Office for an estimate of $131,694.00.

Plans and specifications are available for inspection, along with bidding proposals, and applications for the TxDOT Prequalified Contractor's list, at the applicable State and/or Dist/Div Offices listed below. If applicable, bidders must submit prequalification information to TxDOT at least 10 days prior to the bid date to be eligible to bid on a project. Prequalification materials may be requested from the State Office listed below. Plans for the above contract(s) are available from TxDOT's website at www.txdot.gov and from reproduction companies at the expense of the contractor.
NPO: 28506

State Office

Constr./Maint. Division
200 E. Riverside Dr.
Austin, Texas 78704
Phone: 512-416-2540

Dist/Div Office(s)

Lubbock District
District Engineer
135 Slaton
Lubbock, Texas 79408-0771
Phone: 806-745-4411

Minimum wage rates are set out in bidding documents and the rates will be part of the contract. TXDOT ensures that bidders will not be discriminated against on the grounds of race, color, sex, or national origin.

NOTICE TO CONTRACTORS OF PROPOSED TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT) CONTRACTS

Sealed proposals for contracts listed below will be received by TxDOT until the date(s) shown below, and then publicly read.

CONSTRUCTION/ MAINTENANCE/BUILDING FACILITIES CONTRACT(S)

Dist/Div: San Antonio
Contract 6163-11-001 for CONCETE RIPRAP REPAIR in WILSON County will be opened on January 21, 2009 at 1:30 pm at the District Office for an estimate of $121,362.00.
Contract 6180-27-001 for SCOUR REAIR in GUADALUPE County will be opened on January 21, 2009 at 1:30 pm at the District Office for an estimate of $99,036.75.
Contract 6180-28-001 for SCOUR REPAIR in GUADALUPE County will be opened on January 21, 2009 at 1:30 pm at the District Office for an estimate of $230,199.00.
Contract 6180-29-001 for SCOUR REPAIR in GUADALUPE County will be opened on January 21, 2009 at 1:30 pm at the District Office for an estimate of $51,865.00.
Contract 6183-98-001 for SLOPE REPAIR in BEXAR County will be opened on January 21, 2009 at 1:30 pm at the District Office for an estimate of $193,448.00.
Contract 6184-67-001 for BASE REPAIR in ATASCOSA County will be opened on January 21, 2009 at 1:30 pm at the District Office for an estimate of $198,450.00.
Contract 6189-71-001 for MAINTENANCE OF STORM WATER TREATMENT SYS in BEXAR County will be opened on January 21, 2009 at 1:30 pm at the District Office for an estimate of $43,591.00.

Plans and specifications are available for inspection, along with bidding proposals, and applications for the TxDOT Prequalified Contractor's list, at the applicable State and/or Dist/Div Offices listed below. If applicable, bidders must submit prequalification information to TxDOT at least 10 days prior to the bid date to be eligible to bid on a project. Prequalification materials may be requested from the State Office listed below. Plans for the above contract(s) are available from TxDOT's website at www.txdot.gov and from reproduction companies at the expense of the contractor.
NPO: 28505

State Office

Constr./Maint. Division
200 E. Riverside Dr.
Austin, Texas 78704
Phone: 512-416-2540

Dist/Div Office(s)

San Antonio District
District Engineer
4615 NWLoop 410
San Antonio, Texas 78229-0928
Phone: 210-615-1110

Minimum wage rates are set out in bidding documents and the rates will be part of the contract. TXDOT ensures that bidders will not be discriminated against on the grounds of race, color, sex, or national origin.

WWW.LAPRENSASA.COM

Happy Holidays from the La Prensa Family
Merry Christmas and Happy New Year 2009

SAN ANTONIO AIRPORT SYSTEM
NEWS RELEASE

FOR IMMEDIATE RELEASE:
January 21, 2009
CONTACT PERSON:
Nora Castro 908-8665

City of San Antonio Aviation Department to hold Public Workshop and Meeting on Noise Exposure Maps

The City of San Antonio Aviation Department will hold a Public Workshop and Public Meeting on Tuesday, January 27, 2009, in the Skylight Room (Administration Building) of the Holy Spirit Catholic Church, 758 W. Ramsey, to receive comments on the Noise Exposure Maps (NEMs) and their effect on the existing Noise Compatibility Program (NCP) for the San Antonio International Airport

The workshop will be held in an open-house formal from 6:00 pm to 7:00 pm, in which attendees will have the opportunity to view exhibits, ask questions and discuss the project with representatives of the City of San Antonio and their consultants. Following the workshop, a Public Meeting will begin at 7:00 pm with a formal presentation followed by an oral public comment session.

Copies of the Draft Noise Exposure Map Report will be available for public review at the workshop/meeting and also available at the following locations after January 23, 2009.

Central Library - 600 Soledad
Tobin Library at Oakwell - 4124 Harry Wurzbach Road
Brook Hollow Library - 530 Heimer Road
Edmund Cody Library - 11441 Vance Jackson
Thousand Oaks - El Sendero Library - 4618 Thousand Oaks
Trinity University, Elizabeth Huth Coates Library - One Trinity Place
Department of Planning and Development Services - 1901 South Alamo
Office of the City Clerk, City Hall Building - 100 Military Plaza
Aviation Department - Noise Mitigation Office - 9706 Airport Blvd., Terminal 2, 2nd Floor

The public can call Jerry Rankin, Noise Mitigation Officer for San Antonio International Airport at 207-3471 for more information.

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Distribution: KMOL-TV, KENS-TV, KSAT-TV, KABB-TV, KWEX-TV (Spanish), KVDA-TV (Spanish), WOAI-Radio, KTSA-Radio, Express News (Newspaper), La Prensa (Newspaper).

PUBLIC WORKSHOP AND PUBLIC MEETING

SAN ANTONIO INTERNATIONAL AIRPORT

SAN ANTONIO AIRPORT SYSTEM

Noise Compatibility Program

January 27, 2009
Workshop: 6-7 pm
Meeting: 7:00 pm

HOLY SPIRIT CATHOLIC CHURCH

Administration Bldg.
2nd Floor, Skylight Rm.
758 W. Ramsey

The City of San Antonio Aviation Department will hold a Public Workshop and Public Meeting on Tuesday, January 27, 2009, in the Skylight Room (Administration Building) of the Holy Spirit Catholic Church, 758 W. Ramsey, to receive comments on the Noise Exposure Maps (NEMs) and their effect on the existing Noise Compatibility Program (NCP) for the San Antonio International Airport.

The Public Workshop will be conducted from 6:00 pm to 7:00 pm in an open-house format providing attendees the opportunity to view exhibits, ask questions, and discuss the project with representatives of the City of San Antonio and their consultants. The Public Meeting will begin at 7:00 pm with a formal presentation followed by an oral public comment session. A court reporter will be present. Oral comments will be limited to five (5) minutes to allow everyone an opportunity to be heard.

Written comments will be accepted at the workshop/meeting or may be submitted by February 23, 2009 to: Jerry Rankin, Noise Mitigation Officer, San Antonio International Airport, 9800 Airport Blvd., San Antonio, TX, 78216.

Copies of the Draft Noise Exposure Map (NEM) Report will be available for public review at the workshop/hearing and also available at the following locations after January 23, 2009:

- Central Library - 600 Soledad
- Tobin Library at Oakwell - 4134 Harry Wurzbach Road
- Brook Hollow Library - 530 Heimer Road
- Edmund Cody Library - 11441 Vance Jackson
- Thousand Oaks-El Sendero Library - 4818 Thousand Oaks
- Trinity University, Elizabeth Huth Coates Library - One Trinity Place
- Department of Planning and Development Services - 1901 South Alamo
- Office of the City Clerk, City Hall Building - 100 Military Plaza
- Aviation Dept., Noise Mitigation Office - 9700 Airport Blvd., Terminal 2, 2nd Floor

For further information, contact Jerry Rankin, San Antonio Aviation Department, at (210) 207-3471.

Elected Officials for SAT Noise Compatability Planning Study

Type	Title	FirstName	LastName	Position	OrganizationName	Dept	Address	City	State	Zip	Email
Fed	The Hon.	Charles	Gonzalez	Congressman	U.S. House of Representatives	Dist. 20	727 E. Durango, B-124 Federal Bldg	San Antonio	TX	78206	
Fed	The Hon.	Lamar	Smith	Congressman	U.S. House of Representatives	Dist. 21	1100 NE Loop 410, Ste. 640	San Antonio	TX	78209	
Fed	The Hon.	Ciro	Rodriguez	Congressman	U.S. House of Representatives	Dist. 23	1950 S.W. Military Dr	San Antonio	TX	78221	
Fed	The Hon.	John	Cornyn	Senator	U.S. Senate		600 Navarro, Ste. 210	San Antonio	TX	78205	
Fed	The Hon.	Kay Bailey	Hutchison	Senator	U.S. Senate		145 Duncan Dr, Ste. 120	San Antonio	TX	78226	
State	The Hon.	Trey	Martinez Fisher	Representative	TX House of Representatives	Dist. 116	1910 Fredericksburg Rd	San Antonio	TX	78201	
State	The Hon.	Joe	Straus	Representative	TX House of Representatives	Dist. 121	7373 Broadway 202-A	San Antonio	TX	78209	
State	The Hon.	Frank	Corte, Jr.	Representative	TX House of Representatives	Dist. 122	2040 Babcock Rd, Ste. 402	San Antonio	TX	78229	
State	The Hon.	Michael	Villarreal	Representative	TX House of Representatives	Dist. 123	1114 S. St. Marys, Ste. 110	San Antonio	TX	78210	
State	The Hon.	Joaquin	Castro	Representative	TX House of Representatives	Dist. 125	6502 Bandera, Ste. 106	San Antonio	TX	78238	
State	The Hon.	Judith	Zaffirini	Senator	Texas Senate	Dist. 21	12702 Toepperwein Rd., #214	San Antonio	TX	78233	
State	The Hon.	Jeff	Wentworth	Senator	Texas Senate	Dist. 25	1250 NE Loop 410, Ste. 925	San Antonio	TX	78209	
State	The Hon.	Leticia	Van de Putte	Senator	Texas Senate	Dist. 26	700 N. St. Mary's St, Ste. 1725	San Antonio	TX	78205	
County	The Hon.	Sergio "Chico"	Rodriguez	Commissioner	Bexar County	Precinct 1	100 Dolorosa	San Antonio	TX	78205	
County	The Hon.	Paul	Elizondo	Commissioner	Bexar County	Precinct 2	100 Dolorosa	San Antonio	TX	78205	
County	The Hon.	Kevin	Nelson	Commissioner	Bexar County	Precinct 3	100 Dolorosa	San Antonio	TX	78205	
County	The Hon.	Tommy	Adkisson	Commissioner	Bexar County	Precinct 4	100 Dolorosa	San Antonio	TX	78205	
County	The Hon.	Neslon W.	Wolff	Judge	Bexar County		100 Dolorosa	San Antonio	TX	78205	
City	The Hon.	Louis	Cooper	Mayor	City of Alamo Heights		6116 Broadway	San Antonio	TX	78209	
City	The Hon.	Jill	Souter	Mayor Pro-Tem	City of Alamo Heights		6116 Broadway	San Antonio	TX	78209	
City	The Hon.	Bobby	Rosenthal	Councilmember	City of Alamo Heights	Place 2	6116 Broadway	San Antonio	TX	78209	
City	The Hon.	Bill	Kiel	Councilmember	City of Alamo Heights	Place 4	6116 Broadway	San Antonio	TX	78209	
City	The Hon.	Susan	Harwell	Councilmember	City of Alamo Heights	Place 5	6116 Broadway	San Antonio	TX	78209	
City	The Hon.	Stan	McCormick	Councilmember	City of Alamo Heights	Place 1	6116 Broadway	San Antonio	TX	78209	
City	The Hon.	Marcy	Harper	Mayor	City of Castle Hills		209 Lemonwood Dr.	San Antonio	TX	78213	
City	The Hon.	Marcella	Huff	Councilmember	City of Castle Hills	Place 1	209 Lemonwood Dr.	San Antonio	TX	78213	
City	The Hon.	Douglas	Gregory	Councilmember	City of Castle Hills	Place 2	209 Lemonwood Dr.	San Antonio	TX	78213	
City	The Hon.	Tim	Howell	Councilmember	City of Castle Hills	Place 3	209 Lemonwood Dr.	San Antonio	TX	78213	
City	The Hon.	Bruce	Smiley	Councilmember	City of Castle Hills	Place 4	209 Lemonwood Dr.	San Antonio	TX	78213	
City	The Hon.	Tom	Davis	Councilmember	City of Castle Hills	Place 5	209 Lemonwood Dr.	San Antonio	TX	78213	
City	The Hon.	Dan	Kasprowicz	Mayor	City of Fair Oaks Ranch		7286 Dietz Elkhorn	Fair Oaks Ranch	TX	78015	
City	The Hon.	Fred	Jones	Alderman	City of Fair Oaks Ranch	Place 1	7286 Dietz Elkhorn	Fair Oaks Ranch	TX	78015	
City	The Hon.	Cheryl	Landman	Alderman	City of Fair Oaks Ranch	Place 2	7286 Dietz Elkhorn	Fair Oaks Ranch	TX	78015	
City	The Hon.	Mark	Anderson	Alderman	City of Fair Oaks Ranch	Place 3	7286 Dietz Elkhorn	Fair Oaks Ranch	TX	78015	
City	The Hon.	Frank	Pickart	Alderman	City of Fair Oaks Ranch	Place 4	7286 Dietz Elkhorn	Fair Oaks Ranch	TX	78015	
City	The Hon.	Conrad	Fothergill	Alderman	City of Fair Oaks Ranch	Place 5	7286 Dietz Elkhorn	Fair Oaks Ranch	TX	78015	
City	The Hon.	Kirk W.	Francis	Mayor	City of Hill Country Village		116 Aspen Lane	San Antonio	TX	78232	
City	The Hon.	Carl A.	Register	Mayor Pro-Tem	City of Hill Country Village		116 Aspen Lane	San Antonio	TX	78232	
City	The Hon.	Gabriel	Durand-Hollis	Councilmember	City of Hill Country Village	Place 2	116 Aspen Lane	San Antonio	TX	78232	
City	The Hon.	Elizabeth	Worley	Councilmember	City of Hill Country Village	Place 3	116 Aspen Lane	San Antonio	TX	78232	
City	The Hon.	George R. "Rick"	Evans	Councilmember	City of Hill Country Village	Place 4	116 Aspen Lane	San Antonio	TX	78232	
City	The Hon.	Margaret	Mayberry	Councilmember	City of Hill Country Village	Place 5	116 Aspen Lane	San Antonio	TX	78232	
City	The Hon.	Richard	McIlveen	Mayor	City of Hollywood Park		No. 2 Mecca Dr.	Hollywood Park	TX	78232	
City	The Hon.	Bruce	Graham	Councilmember	City of Hollywood Park	Place 1	No. 2 Mecca Dr.	Hollywood Park	TX	78232	
City	The Hon.	Ellen	Alkire	Councilmember	City of Hollywood Park	Place 2	No. 2 Mecca Dr.	Hollywood Park	TX	78232	
City	The Hon.	Ken	Ballard	Councilmember	City of Hollywood Park	Place 3	No. 2 Mecca Dr.	Hollywood Park	TX	78232	
City	The Hon.	Steve	Treu	Councilmember	City of Hollywood Park	Place 4	No. 2 Mecca Dr.	Hollywood Park	TX	78232	
City	The Hon.	Bob	Moore	Councilmember	City of Hollywood Park	Place 5	No. 2 Mecca Dr.	Hollywood Park	TX	78232	
City	The Hon.	Ronald G.	Tefteller	Mayor	City of Olmos Park		119 W. El Prado Dr.	San Antonio	TX	78212	
City	The Hon.	Susan O.	Gragg	Councilmember	City of Olmos Park		119 W. El Prado Dr.	San Antonio	TX	78212	
City	The Hon.	Joseph	Izbrand	Councilmember	City of Olmos Park		119 W. El Prado Dr.	San Antonio	TX	78212	
City	The Hon.	Jeffrey	Judson	Councilmember	City of Olmos Park		119 W. El Prado Dr.	San Antonio	TX	78212	
City	The Hon.	Sean	McNelis	Councilmember	City of Olmos Park		119 W. El Prado Dr.	San Antonio	TX	78212	
City	The Hon.	Harriet S.	Oppenheimer	Councilmember	City of Olmos Park		119 W. El Prado Dr.	San Antonio	TX	78212	
City	The Hon.	Phil	Hardberger	Mayor	City of San Antonio		P.O. Box 839966	San Antonio	TX	78283-3966	
City	The Hon.	Mary Alice P.	Cisneros	Councilmember	City of San Antonio	District 1	P.O. Box 839966	San Antonio	TX	78283-3966	
City	The Hon.	Sheila D.	McNeil	Councilmember	City of San Antonio	District 2	P.O. Box 839966	San Antonio	TX	78283-3966	
City	The Hon.	Jennifer V.	Ramos	Councilmember	City of San Antonio	District 3	P.O. Box 839966	San Antonio	TX	78283-3966	
City	The Hon.	Philip A.	Cortez	Councilmember	City of San Antonio	District 4	P.O. Box 839966	San Antonio	TX	78283-3966	
City	The Hon.	Lourdes	Galvan	Councilmember	City of San Antonio	District 5	P.O. Box 839966	San Antonio	TX	78283-3966	
City	The Hon.	Delicia	Herrera	Councilmember	City of San Antonio	District 6	P.O. Box 839966	San Antonio	TX	78283-3966	

Elected Officials for SAT Noise Compatability Planning Study

Type	Title	FirstName	LastName	Position	OrganizationName	Dept	Address	City	State	Zip	Email
City	The Hon.	Justin	Rodriguez	Councilmember	City of San Antonio	District 7	P.O. Box 839966	San Antonio	TX	78283-3966	
City	The Hon.	Diane G.	Cibrian	Councilmember	City of San Antonio	District 8	P.O. Box 839966	San Antonio	TX	78283-3966	
City	The Hon.	Louis E.	Rowe	Councilmember	City of San Antonio	District 9	P.O. Box 839966	San Antonio	TX	78283-3966	
City	The Hon.	John G.	Clamp	Councilmember	City of San Antonio	District 10	P.O. Box 839966	San Antonio	TX	78283-3966	
City	The Hon.	A. David	Marne	Mayor	City of Shavano Park		900 Saddletree Ct	San Antonio	TX	78231	
City	The Hon.	Mary	Werner	Mayor Pro-Tem	City of Shavano Park		900 Saddletree Ct	San Antonio	TX	78231	
City	The Hon.	Bruce	Baumann	Alderman	City of Shavano Park		900 Saddletree Ct	San Antonio	TX	78231	
City	The Hon.	Dave	Burns	Alderman	City of Shavano Park		900 Saddletree Ct	San Antonio	TX	78231	
City	The Hon.	Ken	McClure	Alderman	City of Shavano Park		900 Saddletree Ct	San Antonio	TX	78231	
City	The Hon.	Al	Walea	Alderman	City of Shavano Park		900 Saddletree Ct	San Antonio	TX	78231	
City	The Hon.	J. Bradford	Camp	Mayor	City of Terrell Hills		5100 N. New Braunfels	San Antonio	TX	78209	
City	The Hon.	Michelle	Brady	Mayor Pro-Tem	City of Terrell Hills		5100 N. New Braunfels	San Antonio	TX	78209	
City	The Hon.	Anne M.	Ballantyne	Councilmember	City of Terrell Hills		5100 N. New Braunfels	San Antonio	TX	78209	
City	The Hon.	William W.	Ochse III	Councilmember	City of Terrell Hills		5100 N. New Braunfels	San Antonio	TX	78209	
City	The Hon.	Charles W.	Parish, Jr.	Councilmember	City of Terrell Hills		5100 N. New Braunfels	San Antonio	TX	78209	
City	The Hon.	Jack	Leonhardt	Mayor	City of Windcrest		8601 Midcrown	Windcrest	TX	78239	
City	The Hon.	James	Tremblay	Mayor Pro-Tem	City of Windcrest		8601 Midcrown	Windcrest	TX	78239	
City	The Hon.	Mary	Hatch	Councilmember	City of Windcrest	Place 2	8601 Midcrown	Windcrest	TX	78239	
City	The Hon.	Joe	Regan	Councilmember	City of Windcrest	Place 3	8601 Midcrown	Windcrest	TX	78239	
City	The Hon.	Rick	Bruns	Councilmember	City of Windcrest	Place 4	8601 Midcrown	Windcrest	TX	78239	
City	The Hon.	Garlene	Bach	Councilmember	City of Windcrest	Place 5	8601 Midcrown	Windcrest	TX	78239	
Military					Lackland Air Force Base	37th TRW Public Affairs	1701 Kenly Ave, Ste. 102	Lackland AFB	TX	78236-5053	
Military		Sandra	Taylor		Randolph Air Force Base						sandra.taylor@randolph.af.mil
Military		Scott	Shepherd		Randolph Air Force Base						scott.shepherd@randolph.af.mil

Neighborhood Associations for SAT Noise Compatability Planning Study

Neighborhood Association	First	Last	Title	Address	City	State	Zip	Phone	Email
ARBORETUM NA	CHERYL	SMITH	PRESIDENT	13511 CASSIA WAY	SAN ANTONIO	TX	78232	210-403-3797	ARBORETUM963@ATT.NET
BITTERS ENCLAVE HOA INC	WILLIAM	CHAMPINE	PRESIDENT	4 STIRMAN WAY	SAN ANTONIO	TX	78216	210-402-3330	WCHAMPINE@SATX.RR.COM
BLANCO WOODS HOA	SHERRY	HOUWERZYL	PRESIDENT	13432 BLANCO ROAD, #313	SAN ANTONIO	TX	78216	210-382-3744	BWHOA@ATT.NET
BLOSSOM PARK NA	SHERRY	SHAW	PRESIDENT	P.O. BOX 160746	SAN ANTONIO	TX	78280-2946	210-545-2406	SSHAW@SATX.RR.COM
BLUFF CREEK HOA	PROCOMM		PRESIDENT	300 EAST SONTERRA BLVD., SUITE #350	SAN ANTONIO	TX	78258	210-545-1888	
BLUFFVIEW AT CAMINO REAL HOA	DONNA	THOMPSON	PRESIDENT	13815 BLUFF LANE	SAN ANTONIO	TX	78216	210-494-4579	DRDDT@HOTMAIL.COM
CADILLAC DRIVE HOA	RONNIE	SWANNER	PRESIDENT	15202 CADILLAC DRIVE	SAN ANTONIO	TX	78248-1010	210-492-5800	RSWANNER@TRINITY.EDU
CAMELOT I NA	LILLIE	HORKY	PRESIDENT	7415 CASTLE CROWN	SAN ANTONIO	TX	78218	210-656-1327	AKPOLANSKY@WORLDNET.ATT.NET
CANYON CREEK BLUFFS POA	ROD	ENLOW	PRESIDENT	17418 SHADY CANYON	SAN ANTONIO	TX	78248	210-492-6046	RENLOWCONSULT@WORLD-NET.NET
CANYON CREEK ESTATES HOA	DENNIS	MEANS	PRESIDENT	107 LARIAT DR.	SAN ANTONIO	TX	78232	210-408-9001	DMEANS@SATX.RR.COM
CANYON CREEK VILLAGE HOA	PATTI	PADGETT	PRESIDENT	1305 GOLDEN BEAR	SAN ANTONIO	TX	78248	210-492-9645	MANAGER@CANYONCREEKVILLAGE.NET
CASTLE HILLS FOREST HOA	RAY	HAMILTON	PRESIDENT	2523 WILDERNESS HILL	SAN ANTONIO	TX	78231-1829	210-492-2826	HAMCPC@AOL.COM
CASTLE WOOD FOREST HOA	ALICE	AIKEN	PRESIDENT	12823 CASTLE GEORGE ST.	SAN ANTONIO	TX	78230	210-493-3848	ALICEAIKEN@AOL.COM
CHURCHILL ESTATES HOMES ASSOCIATION, INC.	LORA	REYNOLDS	PRESIDENT	13423 BLANCO RD. #288	SAN ANTONIO	TX	78216	210-697-3270	REYNOLDSWRITE@SBCGLOBAL.NET
COUNTRYSIDE SAN PEDRO PROPERTY OWNERS ASSN.	DENNIS	STEWART	PRESIDENT	P.O. BOX 160413	SAN ANTONIO	TX	78280-2340	210-496-4970	DENNISSTEWART02@HOTMAIL.COM
CROWNHILL PARK NEIGHBORHOOD ASSOCIATION	GEORGE	MCDILL	PRESIDENT	215 TRAFALGAR RD.	SAN ANTONIO	TX	78216	210-344-4630	SAT4GBM@SBCGLOBAL.NET
CROWNRIDGE OF TEXAS OWNERS ASSOCIATION	JUDY	JORDAN	PRESIDENT	6926 WASHITA WAY	SAN ANTONIO	TX	78256	210-698-2388	JWTJSJ@EARTHLINK.NET
DEER HOLLOW HOA	JAN	RUSSELL	PRESIDENT	7613 TEZEL RD.	SAN ANTONIO	TX	78250	210-523-1320	MPOTEX@SWBELL.NET
DEERFIELD HOA	RIKKO	OLLERVIDA	PRESIDENT	15715 THRUSH GALE LANE	SAN ANTONIO	TX	78248	210-445-0930	RIKKOOLLEAVIDEZ@YAHOO.COM
DEVONSHIRE HOA	JEAN	LESLEY	PRESIDENT	11843 BRAESVIEW, SUITE B	SAN ANTONIO	TX	78213	210-493-1208	
EAST TERRELL HILLS NA	ROSE MARY	GREENE	PRESIDENT	P.O. BOX 18131	SAN ANTONIO	TX	78218-0131	210-656-0131	GTFCONSULTANTS@YAHOO.COM
EDEN HOA	BRAD	LARSON	PRESIDENT	3535 OAK HEATH	SAN ANTONIO	TX	78247	210-385-4424	BRAD@SABRAD.COM
EDEN ROC MAINTENANCE ASSOCIATION	PROCOMM	MANAGEMENT	PRESIDENT	300 EAST SONTERRA BLVD., SUITE #350	SAN ANTONIO	TX	78258	210-545-1888	RBIERING@PROCOMM-MGMT.COM
EL CHAPARRAL / FERTILE VALLEY NA	ALLIE	HOSTETLER	PRESIDENT	13909 NACOGDOCHES #105 BOX 1132	SAN ANTONIO	TX	78217	210-544-5031	ELCHAPARRALSUBDIVISION@YAHOO.COM
ENCHANTED VILLAGE TOWNHOUSE ASSOC.	RICHARD	JODRY	PRESIDENT	641 STRINGS DR.	SAN ANTONIO	TX	78216	210-341-3489	DICKJODRY@JUNO.COM
FOREST OAK NA	LARRY	STULL	PRESIDENT	PO BOX 171384	SAN ANTONIO	TX	78217	210-822-4574	STULLLARRY@SBCGLOBAL.NET
FORESTS AT INWOOD HOA	BRENDA	ARMSTRONG	PRESIDENT	1600 NE LOOP 410, SUITE #202	SAN ANTONIO	TX	78209	210-829-7202	AMS9@AMS-SA.COM
GENERAL KRUEGER NA	SHIRLEY	ESCOBEDO	PRESIDENT	P O BOX 18946	SAN ANTONIO	TX	78218	210-655-4870	
GREATER HARMONY HILLS NA	CHRISTINE	DE LA ROSA	PRESIDENT	630 BRIAR OAK	SAN ANTONIO	TX	78216	210-341-4031	FATS78216@YAHOO.COM
HIDDEN FOREST HOA	BECKY	BOWHOLTZ	PRESIDENT	831 SHERMAN OAK	SAN ANTONIO	TX	78232	210-494-0711	
HUNTERS CREEK NA	KEN	LAWRENCE	PRESIDENT	13307 HUNTERS HOLLOW	SAN ANTONIO	TX	78230	210-493-7936	KLAWRENCE1@SATX.RR.COM
HUNTERS MILL ASSOCIATION, INC.	SPECTRUM	MANAGEMENT	PRESIDENT	1000 CENTRAL PARKWAY NORTH, SUITE 270	SAN ANTONIO	TX	78232	210-494-0659	CONTACT@SPECTRUMAM.COM
INWOOD VILLAGE HOA	LISA	DORY	PRESIDENT	1600 NE LOOP 410, SUITE #202	SAN ANTONIO	TX	78209	210-829-7202	LISA@AMS-SA.COM
KNOLLCREEK HOA	BOB	CRAWFORD	PRESIDENT	1000 CENTRAL PARKWAY NORTH, SUITE #270	SAN ANTONIO	TX	78232	210-494-0659	BCRAWFORD@SPECTRUMAM.COM
LOCKHILL ESTATES HOME AND PROPERTY ASSN.	JOHN	RIVENBURGH	PRESIDENT	11002 LINK	SAN ANTONIO	TX	78213	210-366-4779	JRIVEN@SBCGLOBAL.NET
LONGS CREEK HOMEOWNERS ASSOCIATION	CAROL	PORTER	PRESIDENT	16000 HICKORY WELL DR.	SAN ANTONIO	TX	78247	210-403-3604	LONGSCREEK@SBCGLOBAL.NET
MACARTHUR PARK NEIGHBORHOOD ASSOCIATION	ALBERT	FULTON	PRESIDENT	8708 NORWICH	SAN ANTONIO	TX	78217	210-822-5073	MACPARKNA@LIVE.COM
MISSION RIDGE HOA	DOUG	PANTHER	PRESIDENT	ASSET PROP. MGNT., 8318 JONES MALTSBERGER SUITE 12	SAN ANTONIO	TX	78216	210-341-1181	
NORTH CASTLE HILLS HOMEOWNERS' ASSOCIATION	WAYNE W.	WRIGHT	PRESIDENT	12006 BAMMEL LANE	SAN ANTONIO	TX	78231	210-493-8450	WWRIGHT5@SATX.RR.COM
NORTH CENTRAL NEIGHBORHOOD ASSOCIATION	LISA	TALLEY	PRESIDENT	1710 LAMPOST	SAN ANTONIO	TX	78213	210-380-8066	LISA0KAPI@GRANDECOM.NET
NORTH CENTRAL THOUSAND OAKS NA	LYAL	GORDON	PRESIDENT	P.O. BOX 701321	SAN ANTONIO	TX	78270-1321	210-490-3766	LYALGORDON@SBCGLOBAL.NET
NORTH SHEARER HILLS NA	MARY ALICE	RAMSAY	PRESIDENT	125 AVE MARIA	SAN ANTONIO	TX	78216	210-342-8338	MARAMSAY@SATX.RR.COM
NORTHERN HILLS COUNTRY VILLAGE OWNERS ASSN.	GERHARD J.	ROKICKI	PRESIDENT	99 SUNCREST LN	SAN ANTONIO	TX	78217-2133	210-599-9430	NHCVOA@SBCGLOBAL.NET
OAK PARK/NORTHWOOD NA	WALTER	THORMAN	PRESIDENT	P.O. BOX 17093	SAN ANTONIO	TX	78217	210-826-3014	
PARK VILLAGE NA	C.R.	NOWELL	PRESIDENT	P.O. BOX 18871	SAN ANTONIO	TX	78218	210-637-6515	PARKVILLAGENA@EARTHLINK.NET
PRESTON HOLLOW HOMEOWNERS ASSOCIATION	PROCOMM		PRESIDENT	300 EAST SONTERRA BLVD., SUITE #350	SAN ANTONIO	TX	78258	210-545-1888	
REGENCY PARK OWNERS ASSN.	M.C.	TOBIAS	PRESIDENT	14927 GATEVIEW DR	SAN ANTONIO	TX	78248	210-493-7583	HATWCT@AOL.COM
RIDGE AT DEERFIELD HOA	MICHAEL	ZAHN	PRESIDENT	1703 ASPEN RIDGE	SAN ANTONIO	TX	78248	210-479-9060	
RIDGESTONE NO. 9 HOA	MANAGEMENT	PROFESSIONALS	PRESIDENT	7613 TEZEL RD.	SAN ANTONIO	TX	78250	210-523-1320	MPOTEX@SWBELL.NET
S.A. ST. JAMES PLACE HOA, INC.	MP OF TEXAS		PRESIDENT	7613 TEZEL RD.	SAN ANTONIO	TX	78250	210-523-1320	MPOTEX@SWBELL.NET
SAN ANTONIO CAMBRIDGE VILLAGE HOA	MADLYN	BOWEN	PRESIDENT	6292 QUEENS CASTLE #201	SAN ANTONIO	TX	78218	210-421-8817	MBOWEN@SATX.RR.COM
SCATTERED OAKS HOA	ELISEA	FLOYD	PRESIDENT	2915 SCATTERED OAKS	SAN ANTONIO	TX	78232	210-494-6889	GFLOYD@SATX.RR.COM
SHADY OAKS HOA	RODNEY E.	GILLESPIE	PRESIDENT	106 PALO PINTO	SAN ANTONIO	TX	78232	210-496-0711	RGILLESPIE@SATX.RR.COM
SHEARER HILLS/RIDGEVIEW NA	ART	VELIZ, JR.	PRESIDENT	130 SHANNON LEE	SAN ANTONIO	TX	78216	210-821-6841	AVELIZ2@SATX.RR.COM
TERRELL HEIGHTS NA	K.T.	WHITEHEAD	PRESIDENT	3004 NACOGDOCHES	SAN ANTONIO	TX	78217	210-930-4300	KATHLEENW@WHITEHEAD-ELDERLAW.COM
THE BLUFFS OF HENDERSON PASS	DOUG	PANTHER	PRESIDENT	ASSET PROPERTY MGMT, 8318 JONES MALTSBERGER, SUITE	SAN ANTONIO	TX	78216	210-342-1181	HOA@A-PM.COM
THE FOUNTAINS AT DEERFIELD	PROCOMM		PRESIDENT	300 EAST SONTERRA BLVD., SUITE #350	SAN ANTONIO	TX	78258	210-545-1888	
THE PARK AT DEERFIELD	NOLAN	MARTIN	PRESIDENT	17122 EAGLE HOLLOW	SAN ANTONIO	TX	78248	210-492-8422	
THE PARK/WATERS RECREATION ASSOCIATION, INC.	L. DARLEEN	STARKEY	PRESIDENT	P.O. BOX 690114	SAN ANTONIO	TX	78269	210-492-6932	
THE WATERS AT DEERFIELD	MICHAEL	BROKER	PRESIDENT	7 REGENCY ROW DRIVE	SAN ANTONIO	TX	78248	210-492-4611	ABROKER@SATX.RR.COM
THOUSAND OAKS HOA	LUANA	JOHNSON	PRESIDENT	2611 N. MAIN	SAN ANTONIO	TX	78212	210-732-0000	
VISTA DEL NORTE SUBDIVISION HOA	STEPHEN	SCHNEIDER	PRESIDENT	13102 VISTA DEL LAGUNA	SAN ANTONIO	TX	78216	210-492-0470	SCHNEIDER@SATX.RR.COM
WALKER RANCH HOMEOWNERS ASSOCIATION	PROCOMM		PRESIDENT	300 EAST SONTERRA BLVD., SUITE #350	SAN ANTONIO	TX	78258	210-545-1888	
WOODLANDS OF CAMINO REAL HOA	JAMES	DYMOND	PRESIDENT	P.O. BOX 792522	SAN ANTONIO	TX	78279-2522	210-490-3717	WOODLANDS.HOA@SBCGLOBAL.NET
WOODS OF DEERFIELD HOA	GREG	ESMON	PRESIDENT	2226 FAWN FIELD LANE	SAN ANTONIO	TX	78248	210-408-2805	

Acoustical Treatment Program Contacts for SAT Noise Compatability Planning Study

Name	Address	City	State	Zip Code	Phone #
Adolph Andrade	3302 Cadbury	San Antonio	TX	78247	491-3443
Alfredo Garcia	3407 Star Bend	San Antonio	TX	78247	653-4322
Allen Goldsmith	439 Laramie Drive	San Antonio	TX	78209	826-1786
Allen Hodapp	12243 Victory Palm	San Antonio	TX	78247	495-3200
Allison Partridge	3502 Stoney Dawn	San Antonio	TX	78247	496-3889
Allyson Foster	614 Cave Lane	San Antonio	TX	78209	829-8527
Amanda Presely	14131 Shire Oak	San Antonio	TX	78247	771-7726
Amy Black	159 Oakhurst	San Antonio	TX	78209	826-2056
Amy Rowland	330 Oak Glen	San Antonio	TX	78209	602-1800
Angela Clark	9 Inwood Terrace	San Antonio	TX	78248	492-0039
Ann Nydegger	14307 Citation	San Antonio	TX	78248	408-1268
Ann Philips	11719 Sandman	San Antonio	TX	78216	341-0076
Ann Smith	14018 Shire Oak	San Antonio	TX	78247	545-4422
Ann Vinson	2610 Country Square	San Antonio	TX	78209	826-4876
Annette Henson	230 Five Oaks	San Antonio	TX	78209	828-6461
Annette Olivares	3122 Stoney Grove	San Antonio	TX	78247	490-9578
Annette Winbery	8726 Oak Ledge Drive	San Antonio	TX	78217	824-8772
Annice Guenther	2406 Danbury	San Antonio	TX	78217	826-5515
Anthony Pierulla	13430 Vista Del Ray	San Antonio	TX	78216	408-0475
Arne Klendshoj	3338 Morning Brook	San Antonio	TX	78247	830-981-5512
Arnulfo C. Gomez	526 Sprucewood Lane	San Antonio	TX	78216	497-5383
Aronld Ackermann	3434 Butterleigh	San Antonio	TX	78247	490-2607
Art Hodas	2314 Blossom Dr	San Antonio	TX	78217	824-6064
Ashley Roberts	115 Oak Glen	San Antonio	TX	78209	824-5386
Audrie Ethridge	3426 Stoney Dawn	San Antonio	TX	78247	497-1920
Audrie Laubauch	11110 Gordon Road	San Antonio	TX	78216	494-2268
Audrie Laubauch	2407 Danbury	San Antonio	TX	78217	494-2268
Barbara Crocket	12114 Stoney Crown	San Antonio	TX	78247	404-2904
Barbara Martin	13635 Bridgeview	San Antonio	TX	78247	491-9374
Barbara Pettit	9619 Salbury	San Antonio	TX	78217	824-8627
Baron Clark	7910 Robin Rest	San Antonio	TX	78209	822-4688
Belinda Cheney	3310 Stoney Cluster	San Antonio	TX	78217	404-4788
Bernice Lekawa	3317 Stoney Square	San Antonio	TX	78247	545-4457
Bertha Alarcon	3522 Byron	San Antonio	TX	78247	4882815
Beth Buchan	12000 Stoney Pass	San Antonio	TX	78247	270-7235
Betty Mascorro	315 Laramie	San Antonio	TX	78209	822-9404
Beverly Adkins	331 Rockhill	San Antonio	TX	78209	828-4183
Beverly Adkins	102 Middle Berry	San Antonio	TX	78217	828-4183
Beverly Dent	7430 Quail Run	San Antonio	TX	78209	822-3251
Beverly Wright	3662 Stoney Branch	San Antonio	TX	78247	494-4550
Bill Bassuk	1246 Vista Del Rio	San Antonio	TX	78216	823-8180
Bill Bodzek	14410 Triple Crown Lane	San Antonio	TX	78248	493-5603
Bill Richards	142 El Rancho way	San Antonio	TX	78209	826-5572
Billy Crochran	3506 Forest Glade	San Antonio	TX	78247	495-3179
Bob Orr	1803 East Byron	San Antonio	TX	78223	534-7511
Bob Suori	14519 Majestic Prince	San Antonio	TX	78248	492-2278
Bob Weidman	2643 Friar Tuk	San Antonio	TX	78209	829-5790
Brad Hutton	15030 Preston Hollow Dr.	San Antonio	TX	78247	403-2733
Brandon Elley	3518 Bunyan	San Antonio	TX	78247	347-1333
Brandy Cloud	131 Eastly	San Antonio	TX	78217	820-0896
Brent & Anna Holland	14311 Hill Prince	San Antonio	TX	78248	408-1980
Brent Washam	466 Pike Road	San Antonio	TX	78209	829-8488
Brett Calvert	519 Rockhill	San Antonio	TX	78209	930-1034
Bridgett Bar	12050 Stoney Bridge	San Antonio	TX	78247	938-8002

Acoustical Treatment Program Contacts for SAT Noise Compatability Planning Study

Name	Address	City	State	Zip Code	Phone #
Bruce Yates	1102 Vidorra Court	San Antonio	TX	78216	313-4543
Bryan Sharp	618 Wyndeale	San Antonio	TX	78209	680-5243
Carey McCadas	2702 Burning Trail	San Antonio	TX	78247	494-9928
Carol Suriel	13627 Summer Glen	San Antonio	TX	78247	494-2142
Carolyn Petro	12814 Lungo Vista	San Antonio	TX	78216	492-2266
Carolyn Wheat	507 Rockhill	San Antonio	TX	78209	829-8852
Carrie Steele	7506 Bridgewater	San Antonio	TX	78209	824-3242
Cecil Smith	3304 Cadbury	San Antonio	TX	78247	490-3539
Cecylia Butler	13407 Vista Bonita	San Antonio	TX	78216	492-2188
Charleen Burleson	14710 Churchil Estates	San Antonio	TX	78248	492-9770
Charles Nowlin	410 Country Lane	San Antonio	TX	78209	828-7164
Charles Roof	430 Rockhill	San Antonio	TX	78209	805-9625
Cherly Shuler	3130 Stoney Grove	San Antonio	TX	78247	490-6041
Chris Wong	14023 Shire Oak	San Antonio	TX	78247	545-0820
Christina Davis	3654 Stoney Branch	San Antonio	TX	78247	403-3161
Christina O'Neill	166 Cave Lane	San Antonio	TX	78209	822-9174
Christine Yates	3618 Ridge Dawn	San Antonio	TX	78247	495-6204
Christy Esquivel	14215 Bold Ruler	San Antonio	TX	78248	479-1081
Cindy Cunningham	314 Royal Oaks	San Antonio	TX	78209	269-5424
Clarence McGowan	102 Wyndale	San Antonio	TX	78209	822-5956
Clarence Nail	2511 Blossom Dr.	San Antonio	TX	78217	828-4205
Connie Boyle	153 Rilla Vista	San Antonio	TX	78216	805-0492
Connie Haiduk	214 Oak Glen	San Antonio	TX	78209	822-6952
Consuelo Donohue	433 Patrica	San Antonio	TX	78216	348-9178
Dagmar Begley	3351 Rosetti Dr	San Antonio	TX	78247	402-3171
Daisey Gidley	2618 Country Hollow	San Antonio	TX	78209	805-9929
Damen Olsen	3126 Samar	San Antonio	TX	78217	967-5599
Dan & Gina Powell	8810 Pineridge	San Antonio	TX	78217	822-3391
Dan and Sue Holt	8827 Pine Ridge	San Antonio	TX	78217	824-7245
Dan Worcster	2903 Hedgewyck	San Antonio	TX	78217	410-9436
Daniel & Sally Blecher	8306 Country Side	San Antonio	TX	78209	930-3082
Daniel Burns	510 Cave Lane	San Antonio	TX	78209	930-1050
Daniel Denham	3330 Coral Grove	San Antonio	TX	78247	218-1314
Darlene Long	202 Shropshire	San Antonio	TX	78217	8241668
David Caldron	3674 Stoney Branch	San Antonio	TX	78247	225-6130
David Moreno	339 Eastley	San Antonio	TX	78217	279-9392
David Parker	12015 Stoney Summit	San Antonio	TX	78247	496-0162
David Rodriguez	1230 Vista Del Juez	San Antonio	TX	78216	764-7610
David Youngquest	117 Landuram	San Antonio	TX	78209	366-3222
Dean Parker	13226 Vista Del Mundo	San Antonio	TX	78216	789-7030
Debbie Villers	3307 Flson Grove	San Antonio	TX	78247	490-6769
Debra J. Oswald	14035 Quarles Dr.	San Antonio	TX	78247	494-7988
Denis Lunquist	14342 Hill Prince	San Antonio	TX	78248	492-7498
Dennis Kirsch	11712 Persuasion	San Antonio	TX	78209	377-1705
Dennis Mergele	3425 Stoney Country	San Antonio	TX	78247	494-9563
Dennis Scecina	2518 Blossom Drive	San Antonio	TX	78217	822-2116
Deone Saenz	13706 Pebble point	San Antonio	TX	78231	764-8310
Derek Horanzy	430 Sharon Drive	San Antonio	TX	78216	930-7207
Dian Palmiotti	7414 Robin Rest	San Antonio	TX	78209	826-9818
Diana R. Welker	12110 Stoney Ash	San Antonio	TX	78247	495-8922
Diana Toscano	134 Stardream	San Antonio	TX	78216	442-0404
Dinna & Dale Brown	14914 Enchanted Castle	San Antonio	TX	78247	496-6875
Don Sueltenfuss	447 Forrest Hill	San Antonio	TX	78209	822-7785
Donald Howard	126 Laramie Dr.	San Antonio	TX	78209	826-3691

Acoustical Treatment Program Contacts for SAT Noise Compatability Planning Study

Name	Address	City	State	Zip Code	Phone #
Donald Pope	12103 Stoney Crown	San Antonio	TX	78247	260-6577
Donica Torres	4234 Moana	San Antonio	TX	78218	590-4345
Donnie Allbritton	3311 Falcon Grove	San Antonio	TX	78247	545-0751
Donnie Vorpahl	12014 Stoney Pass	San Antonio	TX	78247	377-1124
Dorine Garth	3307 Stoney Star	San Antonio	TX	78247	404-2853
Dorothy Chesser	14714 Churchill Estates	San Antonio	TX	78248	492-2120
Dorthy Minor	13626 Summer Glen	San Antonio	TX	78247	495-0917
Doug Atwell	3507 Oakhorn	San Antonio	TX	78247	490-5081
Drake Saylak	14114 Shire Oak	San Antonio	TX	78247	365-5281
Drew Nicholas	154 Treasway Way	San Antonio	TX	78209	663-1927 Cell
Dudley Hays	118 Laburnum	San Antonio	TX	78209	822-9777
Dyane Shirley	13118 Vista Del Mondo	San Antonio	TX	78216	493-7159
Ed Abel	14815 Forward Pass	San Antonio	TX	78248	493-1550
Edward Delagarza	111 Haverford Dr.	San Antonio	TX	78217	484-2056 wk
Edward Lavin	2502 Danbury	San Antonio	TX	78217	829-1938
Elizabeth Robillard	3307 Le Blanca	San Antonio	TX	78247	494-0588
Elizabeth Thornburg	2443 Blossom Drive	San Antonio	TX	78217	223-2299
Ella Smolka	103 North Guilford	San Antonio	TX	78217	828-7647
Eloit Maas	13814 Chevy Oak	San Antonio	TX	78247	495-4024
Ely Porter	3663 Ridgecluster	San Antonio	TX	78247	496-5985
Emmett V. Matthews	227 Wyndale	San Antonio	TX	78209	698-2541
Erenest Giron	12135 Stoney Summit	San Antonio	TX	78247	710-1098
Erica Bochantin	15031 Preston Hollow Drive	San Antonio	TX	78247	495-2800
Ernest Ramon	1306 Vista Del Avion	San Antonio	TX	78216	479-2321
Eugene Reed	115 Five Oaks	San Antonio	TX	78209	826-1314
Eva Day	434 Larimie Drive	San Antonio	TX	78209	841-0144
Evan Black	7427 Quail Run	San Antonio	TX	78209	828-6527
Favien Castillo	506 Shropshire Drive	San Antonio	TX	78209	822-3060
Felipe Reyes	13715 Wondering Oak	San Antonio	TX	78247	495-4948
Felix Rodriguez	130 Eastly	San Antonio	TX	78217	826-5597
Florinda Tovar	12118 Soney Circle	San Antonio	TX	78247	403-2422
Fran Levinson	226 Pinoak Knoll	San Antonio	TX	78248	479-1225
Frank & Katerine Sepulveda	13126 Vista Haven	San Antonio	TX	78216	492-6352
Frank Barrera	12087 Stoney Bridge	San Antonio	TX	78247	496-0327
Frank Dickson	119 Oak Glen	San Antonio	TX	78209	826-5790
Frank Haegelin	2930 Burnside	San Antonio	TX	78209	822-7907
Frank Janicek	106 Sleepy Elm	San Antonio	TX	78209	308-4325
Fred Bonavita	334 Royal Oak	San Antonio	TX	78209	828-1368
Fred Lentz	164 Hillview	San Antonio	TX	78209	828-1522
Fred Sechter	430 Larmier	San Antonio	TX	78247	824-7049
Fred Wernli	511 Country Lane	San Antonio	TX	78209	414-0460
Gail Kabrich	3651 Ridge Cluster	San Antonio	TX	78247	725-4274
Garry Gray	218 South Guiford	San Antonio	TX	78217	820-3161
Gary Allen	3501 Stoney Meadow	San Antonio	TX	78247	490-4196
Gary Metcalf	3421-23 Ridge Country	San Antonio	TX	78247	545-5286
Gene Millard	11819 Persuasion	San Antonio	TX	78216	366-9488
George Hurt	222 Haverford	San Antonio	TX	78217	824-3606
Georgie Dinn	8619 Oak Leadge	San Antonio	TX	78217	826-7294
Geraldean Pena	12018 Stoney Bridge	San Antonio	TX	78247	579-3815
Geri Bannaster	311 Oakleaf Drive	San Antonio	TX	78209	822-6855
Gilder McCarroll	3374 Butterleigh	San Antonio	TX	78247	545-1538
Gordan Chace	3402 Ridge Smoke	San Antonio	TX	78247	494-1527
Gordon Keogh	4114 Chiselhurst	San Antonio	TX	78247	722-1282
Greg Babcock	13823 Wondering Oak	San Antonio	TX	78247	860-1605

Acoustical Treatment Program Contacts for SAT Noise Compatability Planning Study

Name	Address	City	State	Zip Code	Phone #
Gwen Todaro	3538 Byron	San Antonio	TX	78247	494-9748
Hallie Nikotich	2931 Oak Leaf Drive	San Antonio	TX	78209	821-6221
Harold Duncan	110 Laburnum Dr.	San Antonio	TX	78209	822-1453
Harold Moore	311 Royal Oaks	San Antonio	TX	78209	829-5138
Harvey Gutierrez	12023 Stoney Drive	San Antonio	TX	78247	494-8573
Heather Stetson	202 Fiveoaks	San Antonio	TX	78209	824-6059
Heidi Weidner	3409 Ridge Ranch	San Antonio	TX	78247	930-8463
Heith Wenrich	122 Oak Glenn	San Antonio	TX	78209	826-5985
Hipolito & Felicitas Alba	507 Patricia	San Antonio	TX	78216	385-8021
Joe and Peggy Hnnon	13240 Vista Del Mundo	San Antonio	TX	78216	492-1317
Howard Cooper	218 Wyndale	San Antonio	TX	78209	822-7628
Hubbard Parks	206 Royal Oaks	San Antonio	TX	78209	828-7258
Ingrid Tenwolde	202 Larame	San Antonio	TX	78209	946-2752
Irving Njus	3538 Bunyan	San Antonio	TX	78247	496-2821
Jack Bellos	415 Rockhill	San Antonio	TX	78209	824-1193
Jack Yoes	1707 Agile	San Antonio	TX	78248	492-2504
Jackie Rouse	631 Chauncey	San Antonio	TX	78216	348-6677
Jaclyn Shepherd	223 Five Oaks	San Antonio	TX	78209	805-8792
James Dickson	3410 Le Blanc	San Antonio	TX	78247	545-0602
James Joffe	3202 Urban Crest	San Antonio	TX	78209	822-2727
James Joffe	3204 Urban Crest	San Antonio	TX	78209	822-2727
James Kirk	211 Five Oaks	San Antonio	TX	78209	822-5778
James Martin Jr.	7422 Dove Mountain	San Antonio	TX	78209	826-3421
James Mitchell	14722 Churchill Estates	San Antonio	TX	78247	884-7713
James Stokes	2315 Kenilworth	San Antonio	TX	78209	379-8890
James Thomas	13638 Summer Glen	San Antonio	TX	78247	490-6474
Jan Curtright	11908 Persuasion	San Antonio	TX	78216	616-5816
Jane Key	2627 Country Square	San Antonio	TX	78209	736-2244 ext 317
Janet Alyn	2606 Friar Tuck Rd	San Antonio	TX	78209	
Janice Donald Moeller	3531 Forest Glade	San Antonio	TX	78247	494-1048
Janie Sanchez	2325 Blossen Drive	San Antonio	TX	78217	828-4786
Jason Jablecki	203 Laramie	San Antonio	TX	78209	829-5419
Jay Aguilar	13202 Vusta del Mundo	San Antonio	TX	78216	
Jay Dabbs	13859 Griffen Ridge	San Antonio	TX	78247	494-3686
Jay Norwood	8818 Oak Ledge Dr	San Antonio	TX	78217	832-9885
Jeanette Garcia	1103 Vidorra Court	San Antonio	TX	78216	764-1044
Jeffrey Regan	206 Oak Glen	San Antonio	TX	78209	832-0723
Jim Alexander	210 cave lane	San Antonio	TX	78209	828-2794
Jim Craig	14719 Churchill Estates	San Antonio	TX	78248	492-0149
Jim Glascock	339 Shropshire	San Antonio	TX	78217	826-8151
Jim Joffe	3204 Urban Crest	San Antonio	TX	78209	832-0705
Jim Nowacek	414 Cave Lane	San Antonio	TX	78209	832-0855
Jim Vasquez	614 Cave Lane	San Antonio	TX	78209	826-4855
Joe Graham	2823 Old Ranch Road	San Antonio	TX	78217	824-1211
Joe Swatez	12007 Stoney Crossing	San Antonio	TX	78247	289-3467
John Armstrong	3322 Butterleigh	San Antonio	TX	78247	494-4912
John Bula	158 Waxwood	San Antonio	TX	78216	826-8777
John Kornhurs	14023 Quarles	San Antonio	TX	78247	846-4405
John Liddy	606 Cave Lane	San Antonio	TX	78209	872-3883
John Liles	3730 Van Dyke	San Antonio	TX	78218	804-0429
John Lombardino	311 Pinewood	San Antonio	TX	78216	824-2289
John McDonald	2518 Danbury	San Antonio	TX	78217	826-2973
John Stenger	13330 Partridge Hill	San Antonio	TX	78247	499-1011
John Wood	126 Westchester Dr.	San Antonio	TX	78217	826-4232

Acoustical Treatment Program Contacts for SAT Noise Compatability Planning Study

Name	Address	City	State	Zip Code	Phone #
Joie Laney	2911 Sir Phillip	San Antonio	TX	78209	826-2345
Joleen Lammons	13651 Bridgeview	San Antonio	TX	78247	495-0217
Josphine Santillano	147 Fantasia	San Antonio	TX	78216	366-9389
Joyce Codd	7702 Mertz	San Antonio	TX	78216	824-5782
Joyce Schmitt	12010 Stoney Pass	San Antonio	TX	78247	491-0638
Judith Hyndman	438 Laramie Dr.	San Antonio	TX	78209	826-4869
Julia Gomez	3334 Cadbury	San Antonio	TX	78247	491-1362
Julian Carven	419 Rockhill Dr.	San Antonio	TX	78209	824-5073
Julie Vincent	3425 Ridge Ranch	San Antonio	TX	78247	690-6592
Julie Waehlling	3210 Oakleaf	San Antonio	TX	78209	821-6460
Karen Gillespie	12203 Sone Crossing	San Antonio	TX	78247	494-9481
Karen Meeks	13610 Ridgeview	San Antonio	TX	78247	290-9571
Katherine Goodloe	12034 Stoney Bridge	San Antonio	TX	78247	495-9958
Kathleen Hensley	12050 Stoney Drive	San Antonio	TX	78247	495-0900
Kathy Ashcraft	114 Shroshire	San Antonio	TX	78217	530-7639
Kathy Garison	3214 Tophill	San Antonio	TX	78209	220-5513
Kathy LeBoues	3502 Stoney Bluff	San Antonio	TX	78247	494-9935
Kathy Leinnenber	14806-2 Churchill Estates	San Antonio	TX	78248	492-5042
Kathy Young	12160 Stoney Bridge	San Antonio	TX	78247	496-0692
Keith Garterkk	12122 Stoney Crown	San Antonio	TX	78247	494-8760
Ken Davis	506 Burn Side Dr.	San Antonio	TX	78209	804-1919
Ken Thomas	8302 Counrty Side	San Antonio	TX	78209	641-9999
Kennth Staglik	2435 Blossom Drive	San Antonio	TX	78217	930-8100
Kerry Copeland	3610 Stoney Meadow	San Antonio	TX	78247	494-9343
Kevin O'Reilly	12144 Stoney Ridge	San Antonio	TX	78247	490-7121
Kevin Spivey	13615 Bentwood Oaks	San Antonio	TX	78247	326-7526
Kim Register	14011 Irish Pass	San Antonio	TX	78247	545-3049
Kristin Newkirk	13202 Vista Del Punte	San Antonio	TX	78216	479-8078
Kyle Sherrington	2200 Nacogdoches	San Antonio	TX	78209	826-2874
Lara Matinez	2442 Blossom Drive	San Antonio	TX	78247	824-7571
Larry Shephard	2618 Danbury	San Antonio	TX	78217	826-4504
Lauren Haby	406 Laramie	San Antonio	TX	78209	824-2010
Lee Lisa Fairall	318 Cave Road	San Antonio	TX	78209	820-3136
Leon Kattengell	135 Mason Crest	San Antonio	TX	78247	295-8945
Lesley Robertson	12059 Stoney Bridge	San Antonio	TX	78247	490-8975
Leslie Beasley	219 Laramie	San Antonio	TX	78209	829-8196
Linda Batot	12131 Stoney Ash	San Antonio	TX	78247	535-8816
Linda Jeffords	8002 Robin Rest	San Antonio	TX	78209	826-5241
Linda Shafer	13318 Stairock	San Antonio	TX	78248	492-3507
Linna Prystash	307 Oak Glen	San Antonio	TX	78209	826-5069
Lisa Aguirre	3309 Stoney Square	San Antonio	TX	78247	846-2828
Lisa Cruz	3314 Stoney Square	San Antonio	TX	78247	724-1691
Lisa Dubois	115 Tyrol	San Antonio	TX	78209	822-2714
Lois C. Grefe	8521 Sagebrush	San Antonio	TX	78217	824-9904
Loney Power	13615 Bridgeview	San Antonio	TX	78247	831-4738
Lopuis Labell	606 Northridge Drive	San Antonio	TX	78209	828-7056
Loretta Casillas	637 Strings	San Antonio	TX	78216	366-3213
Loretta Vega	3506 Stoney Dawn	San Antonio	TX	78247	494-8366
Louis Gonzales	334 Haverford	San Antonio	TX	78217	930-3155
Manny Castillo	2641 Nacogdoches	San Antonio	TX	78247	822-0445
Marcus Romero	3683 Ridge Cluster	San Antonio	TX	78247	499-4892
Marcy Perry	12223 Ridge Court St	San Antonio	TX	78247	494-2698
Margaret Drdla	12102 Stoney Crown	San Antonio	TX	78247	491-4472
Margaret Obryan	651 Cave lane	San Antonio	TX	78209	822-7392

Acoustical Treatment Program Contacts for SAT Noise Compatability Planning Study

Name	Address	City	State	Zip Code	Phone #
Margaret Olivares	3686 Stoney Branch	San Antonio	TX	78247	704-7080
Marie Jacobson	3151 Knight Robin	San Antonio	TX	78209	822-0513
Marilyn O'Sullivan	13431 Coram Peak	San Antonio	TX	78248	492-9786
Marilyn Ward	3222 Bent Bow	San Antonio	TX	78209	828 0169
Marin Miller	3527 McCormick	San Antonio	TX	78247	494-1758
Marjorie Swinney	14147 Daystar	San Antonio	TX	78248	492-1073
Mark Adams	239 Eastly	San Antonio	TX	78217	843-4461
Mark Giltener	13211 Vista Del Puente	San Antonio	TX	78216	493-7931
Mark Ledford	14122 Churchhill Estates # 601	San Antonio	TX	78248	492-9113
Mark Parrish	810 Nuffy Ridge	San Antonio	TX	78209	822-0622
Mark Rogers	14126 Kint Cir	San Antonio	TX	78247	545-0906
Mark Swanson	12102 Ridge Summit	San Antonio	TX	78247	494-7177
Mark Swanson	13334 Partridge Hill	San Antonio	TX	78247	494-7177
Marlene McKay	14142 Day Star	San Antonio	TX	78248	377-8607
Martin Vandermey	13403 Vista Bonita	San Antonio	TX	78216	408-0564
Mary Jane Kral	14118 Daystar	San Antonio	TX	78248	408-1696
Mary Kay Tennant	3035 Sir Phillip	San Antonio	TX	78209	822-0390
Mary Loux	12035 Stoneycrossing	San Antonio	TX	78247	495-6425
Mary Wendzel	630 Wyndel	San Antonio	TX	78209	826-3823
Marybeth Coffer	8401 N. New Braunsfel #308	San Antonio	TX	78209	930-6161
Mazola Collins	106 Wyndale	San Antonio	TX	78209	826-5919
Melanie Llamas	3114 Stoney Grove	San Antonio	TX	78247	495-1893
Melvin Joffe	3206 Urban Crest	San Antonio	TX	78209	822-1987
Michael Barrett	3319 Falcon Grove	San Antonio	TX	78247	218-2971
Michael Doyle	403 Country Lane	San Antonio	TX	78209	320-4136
Michael Wilkes	2627 Friar Tuck	San Antonio	TX	78209	828-2231
Michel Hendrix	1915 Kennelworth	San Antonio	TX	78209	820-8203
Michelle Chank	3334 Coral Grove	San Antonio	TX	78247	496-1044
Michelle Duryea	12130 Ridge Summit	San Antonio	TX	78247	496-9470
Michelle Frisenhahn	7415 Dove Mountain	San Antonio	TX	78209	930-0203
Mike Janet Daily	13106 Vista Del Mundo	San Antonio	TX	78216	764-1489
Mike Moore	12127 Ridge Spur	San Antonio	TX	78247	499-0990
Mildred Hall	514 Woodcrest	San Antonio	TX	78209	822-9805
Mildred M. Beasley	114 Wyndale	San Antonio	TX	78209	826-5534
Milred Wilfong	3427 Ridge Ranch	San Antonio	TX	78247	494-3532
Miriam Beckius	2907 Chisolm Trail	San Antonio	TX	78217	824-7420
Miriam McCaskey	8826 Sadge Brush	San Antonio	TX	78217	661-2512
Miryam Bujanda	414 Lamarie Drive	San Antonio	TX	78209	949-1834
Morris Chase	3614 Ridge Country	San Antonio	TX	78247	490-9145
Mr. Cowart	14315 Rowe	San Antonio	TX	78247	496-0597
Mr. Miller	111 Middlebury	San Antonio	TX	78217	826-2880
Mr. Mozley, Jack and Pat	442 Laramie Dr.	San Antonio	TX	78209	822-2092
Mrs. Garza	419 Shropshire	San Antonio	TX	78209	473-3011
Mrs. Campbell	14802 Bold Venture	San Antonio	TX	78248	493-4543
Mrs. Herta Price	12011 Cane Ridge	San Antonio	TX	78247	491-0942
Mrs. Wrockloffg	2531 Blossom	San Antonio	TX	78217	822-0224
Ms. Lax	12106 Stoney Falls	San Antonio	TX	78247	498-2386
Ms. Henderson	2331 Blossom Drive	San Antonio	TX	78217	601-8003
Ms. Hilton	14122 Churchill Estates	San Antonio	TX	78248	493-1210
Ms. Pleasant	3214 Stoney Fork	San Antonio	TX	78247	490-5996
Neal Schneider	12827 Vidorra Vista	San Antonio	TX	78216	885-5656
Neelie Mueller	9406 Wahada	San Antonio	TX	78217	930-5131
Nellie Marsh	13507 Mason Crest Drive	San Antonio	TX	78247	643-1604
Ng Tempio	2927 Larkwood	San Antonio	TX	78209	826-7894

Acoustical Treatment Program Contacts for SAT Noise Compatability Planning Study

Name	Address	City	State	Zip Code	Phone #
Nicole Escobedo	13315 Vista Del Avion	San Antonio	TX	78216	493-6406
Oliver Kuykendall	11647 Persuasion	San Antonio	TX	78216	340-4962
Owen Kilday	13322 Partridge Hill	San Antonio	TX	78247	545-2369
Pam Harrell	12027 Stoney Park	San Antonio	TX	78247	402-3668
Pam Malley	235 Five Oaks	San Antonio	TX	78209	821-6772
Pam Patterson	103 Five Oaks	San Antonio	TX	78209	822-1460
Pam Seruta	3209 Thrush Bend	San Antonio	TX	78209	822-5450
Pat Lonsdale	2434 Blossom Drive	San Antonio	TX	78217	887-3030
Pat Whitehill	303 Haverford	San Antonio	TX	78217	804-0690
Patric Berria	14918 Eminence	San Antonio	TX	78248	764-0927
Patrica F. McManus	67 Oakwell Farms Parkway	San Antonio	TX	78218	822-0655
Patrica Gonzales	2535 Danbury	San Antonio	TX	78217	820-3275
Patrica Nicholl	11723 Raindrop	San Antonio	TX	78216	344-4073
Patricia Rodrgiuez	639 Rockhill Drive	San Antonio	TX	78209	824-3137
Patrick Richarson	227 Treasure Way	San Antonio	TX	78209	829-5984
Patsy Switzer	13110 Vista Loma	San Antonio	TX	78216	764-7019
Patty Halliday	263 Country Lane	San Antonio	TX	78209	822-0064
Paul Andrews	12076 Stoney Bridge	San Antonio	TX	78247	496-2218
Paul Manriquez	415 Larmine	San Antonio	TX	78209	828-4956
Paul Miller	1103 Vendo Vista	San Antonio	TX	78216	213-8910
Paul Slattery	507 Cave Lane	San Antonio	TX	78209	829-5313
Pedro Gonzalez	3403 Stoney Country	San Antonio	TX	78247	351-4612
Peggy & John Tenison	7814 Woodrige Drive	San Antonio	TX	78209	822-8158
Peggy Erdely	12818 Vidorra Cir	San Antonio	TX	78216	493-0154
Perry Wornat	14122 Chruchhill Estate #904	San Antonio	TX	78248	559-5084
Pete Gonzalez	1546 Haskins	San Antonio	TX	78209	822-4714
Pete Ramirez	1511 Haskins Drive	San Antonio	TX	78209	824-8593
Phad Lawson	435 Rockhill	San Antonio	TX	78209	822-6695
Phil Fernandez	12114 Stoney Cove	San Antonio	TX	78247	491-0885
Philp Palomo	3226 Coral Grove	San Antonio	TX	78247	491-4128
Preston Barragan	12026 Stoney Crown	San Antonio	TX	78247	490-0564
Pritica Simmons	303 Haverford	San Antonio	TX	78217	804-0690
Ralph Riojas	2423 Danbury	San Antonio	TX	78217	824-0471
Ralph W. Evans	446 Pike Rd	San Antonio	TX	78209	826-0482
Ramiro Gomez	110 Oak Park	San Antonio	TX	78209	826-0288
Ramiro Tanguma	14119 Annbelle	San Antonio	TX	78247	967-1060
Ramond Jackson	322 Haverford	San Antonio	TX	78217	826-6646
Randy Morris	2811 Woodbury Square Condo	San Antonio	TX	78217	654-1094x15
Ray Forsbach	1251 Vista Del Juez	San Antonio	TX	78216	479-0879
Raymond Ellis	3526 Bunyan	San Antonio	TX	78247	490-6584
Raymond Whitehead	3667 Ridge cluster	San Antonio	TX	78247	494-2650
Reinhart Frenzel	403 E Rampart Drive	San Antonio	TX	78216	344-7170
Rex Preis	330 Laramie	San Antonio	TX	78209	822-8508
Rich Morris	12903 Vidorra Circle Dr.	San Antonio	TX	78216	364-1447
Richard Boerckel	3334 Le Blanc	San Antonio	TX	78247	490-6527
Richard Dore	3442 Stoney Dawn	San Antonio	TX	78247	545-3014
Richard Jodry	641 Strings	San Antonio	TX	78216	341-3489
Richard Miller	402 Larkwood	San Antonio	TX	78209	829-5564
Richard Slightom	8502 Sagebrush	San Antonio	TX	78217	824-1624
Rita Worthy	2006 Kenilworth Blvd	San Antonio	TX	78209	822-1673
RJ Salazar	130 Westchester	San Antonio	TX	78217	828-0038
Rob Brockwell, Jr.	418 Country Lane	San Antonio	TX	78209	822-3898
Robert Baribeau	3318 Stone Cave	San Antonio	TX	78247	491-0889
Robert Baxter	3347 Rosedati Drive	San Antonio	TX	78247	491-0774

Acoustical Treatment Program Contacts for SAT Noise Compatability Planning Study

Name	Address	City	State	Zip Code	Phone #
Robert Burke	107 Shropshire	San Antonio	TX	78217	828-8980
Robert C. Vielock	507 Country Lane	San Antonio	TX	78209	826-7693
Robert Clark	13303 La Vista	San Antonio	TX	78216	492-4274
Robert Fruth	13602 Bridgeview	San Antonio	TX	78216	490-9540
Robert Jones	3338 Stoney Biar	San Antonio	TX	78247	925-1363
Robert Long	13607 Ashley Oaks	San Antonio	TX	78247	495-0401
Robert Lucas	11840 Petal	San Antonio	TX	78216	340-2136
Robert Rhinehold	3216 Urban Crest	San Antonio	TX	78209	830-885-2233
Robert Rojas	307 Shopshire	San Antonio	TX	78217	494-7088
Robert Rojas	311 Shopshire	San Antonio	TX	78217	494-7088
Robert Singer	2310 Blossom Dr.	San Antonio	TX	78217	822-8771
Robert W. Provines	13402 Vista Del Mundo	San Antonio	TX	78216	479-0273
Robin McGarr	214 Wyndale	San Antonio	TX	78209	220-4724
Roland Garcia	12023 Stoney Park	San Antonio	TX	78247	602-1853
Rolinda Camo	8314 Republic	San Antonio	TX	78216	473-4440
Ron McIntyre	74 Granburg	San Antonio	TX	78218	930-0105
Ronald Cornwell	3337 Coral Grove (eden)	San Antonio	TX	78247	545-7935
Ronny Santos	15010 Enchanted Castle	San Antonio	TX	78247	402-6293
Rose Portillo	3410 Butterleigh	San Antonio	TX	78247	581-8853
Roy & Margaret Thompson	12046 Stoney Bridge	San Antonio	TX	78247	495-4174
Ruby Ballard	11716 Persuasion	San Antonio	TX	78216	342-1147
Ryan Morales	12011 Stoney Park	San Antonio	TX	78247	496-2291
Sam Green	231 Five Oaks Drive	San Antonio	TX	78209	824-5030
Scott Barenblat	610 Cave Lane	San Antonio	TX	78209	824-4878
Scott Cline	1215 Vista Del Rio	San Antonio	TX	78216	493-9071
Scott Daigle	603 Rockhill	San Antonio	TX	78209	930-3841
Scott Nelson	339 Royal Oaks	San Antonio	TX	78209	541-3484
Scott Sawtelle	106 Five Oaks	San Antonio	TX	78209	822-5252
Scott Senter	7510 Bridgewater	San Antonio	TX	78209	220-5778
Shanda Rendon	12051 Stoney Bridge	San Antonio	TX	78247	402-6641
Shani Hopkins	3326 Stoney Square	San Antonio	TX	78247	288-1242
Shannon Lerette	3650 Ridgecluster	San Antonio	TX	78247	490-4144
Sharon Harrison	111 Oakhurst Place	San Antonio	TX	78209	822-4383
Shawn Johnson	13103 Vista Loma	San Antonio	TX	78216	764-0131
Shephanie Barnacle	410 Laramie	San Antonio	TX	78209	824-3236
Shirley Hoover	12123 Stoney Circle	San Antonio	TX	78247	495-5458
Spencer Rafert	7502 Quail Run	San Antonio	TX	78209	805-0373
Steve Rendon	2519 Blossom Drive	San Antonio	TX	78217	828-1667
Steve Wagner	3824 Traverdales	San Antonio	TX	78247	545-0087
Steven Rios	12103 Stoney Ash	San Antonio	TX	78247	491-4183
Steven Whitworth	13014 Vista Heaven	San Antonio	TX	78216	764-2072
Stewart Hendy	8107 Countryside	San Antonio	TX	78209	601-5588
Sue & Richard Dullnig	530 Country Lane	San Antonio	TX	78209	822-2257
Sue McMullan	211 Country Lane	San Antonio	TX	78209	213-8910
Sylvia Juarez	3514 Byron St.	San Antonio	TX	78247	496-1465
Tammy Crawley	13606 Bridgeview	San Antonio	TX	78247	495-6246
Teresa Hernedez	134 Eastly Drive	San Antonio	TX	78217	490-4788
Terie Homrighaus	13927 Bolder Oaks	San Antonio	TX	78247	403-0424
Terry Jones	3418 Stoney Square	San Antonio	TX	78247	545-6895
Terry Lindemann	1310 Vista De Mundo	San Antonio	TX	78216	493-2288
Terry Taylor	3215 Burnside	San Antonio	TX	78209	403-1811
Tersa Gonzalez	12015 Stoney Park	San Antonio	TX	78247	490-7967
Thomas Bugosh	14493 Cadlic Drive	San Antonio	TX	78248	288-9464
Thomas Manning	3535 Forest Glade	San Antonio	TX	78247	496-2351

Acoustical Treatment Program Contacts for SAT Noise Compatability Planning Study

Name	Address	City	State	Zip Code	Phone #
Thomas Quirk	202 Oak Glenn	San Antonio	TX	78209	382-8908
Tod Reus	3319 Stoney Country	San Antonio	TX	78247	496-7031
Todd Siebert	14101 Daystar	San Antonio	TX	78248	764-2629
Tom Vitacco	13659 Bridgeview	San Antonio	TX	78247	495-7972
Toni Deodati	14915 Polynsian	San Antonio	TX	78248	829-1423
Toni Wendt	3558 Le Blanc	San Antonio	TX	78247	545-3143
Tony Wood	12903 Vidorra Vista	San Antonio	TX	78216	492-4684
Travis Hedman	523 Rockhill	San Antonio	TX	78209	462-9896
Trini Gonzalez	303 Shopshire	San Antonio	TX	78217	223-1046
Vernaell Burch	2542 Blossom Dr.	San Antonio	TX	78217	508-8982
Virgina & James Laura	614 Northridge Drive	San Antonio	TX	78209	824-5438
Virgina Connolly	12230 & 2 Stoney Spur	San Antonio	TX	78247	240-7343
Virgina Valdez	207 Eastly	San Antonio	TX	78217	828-4748
Virginia Reed	13102 Vista Del Mundo	San Antonio	TX	78216	492-3402
Walter Lee Taylor	11719 Rain drop	San Antonio	TX	78216	3420430
Walter Martinez	2402 Blossen Lane	San Antonio	TX	78217	221-9257
Wayne Cobb	139 Shropshire	San Antonio	TX	78217	822-4449
Will Howorth	8722 Oak Ledge	San Antonio	TX	78217	822-0281
Williadene Rampt	322 Oak Glen	San Antonio	TX	78209	828-0070
William Dees	11810 Persuasion	San Antonio	TX	78216	348-9243
William Render	1706 Agile	San Antonio	TX	78248	493-2988
Windy Sauder-Salas	12111 Stoney Ash	San Antonio	TX	78247	402-0715
Winston Thompson	3306 Rositta	San Antonio	TX	78247	490-3682
Yvette Cardel	3322 Stoney Country	San Antonio	TX	78247	490-6884
Yvonne Benan	2622 Country Sq	San Antonio	TX	78209	824-4439

Date: Jan. 08

NOISE ABATEMENT ADVISORY COMMITTEE

REPRESENTING	REPRESENTATIVE	PHONE/FAX NUMBERS	TERM EXPIRATION
NEIGHBORHOOD	Orline K. Kolm 231 Sharon Drive San Antonio, Texas 78216	(H)822-5360 (O) 826-2345	10/11/08
NEIGHBORHOOD	Leslie Hobgood 4414 Putting Green San Antonio, TX 78217	(H) 599-3583 1960corvette@att.net	10/11/07
NEIGHBORHOOD	Ray Kincaid 2 Waters Edge Way San Antonio, TX 78248	(O) 492-6485 (Cell) 771-7152 kincaid@kincaidgroup.com	10/11/08
NEIGHBORHOOD	Verner Eglit 7310 Hovingham San Antonio, TX 78257	(698-5103) (C)561-676-9212 ve744@satx.rr.com	
NEIGHBORHOOD	John McConnell 106 Woodcrest San Antonio, TX 78209	824-1329	10/11/08
NEIGHBORHOOD	Donna Schneider 13102 Vista Del La Laguna San Antonio, TX 78216	(H) 492-0470 (O) 832-3468 (Fax) donnaschneider@clearchannel.com	10/11/08
AVIATION INDUSTRY	Rand Goldstein 837 Emerald Bay Ridge San Antonio, TX 78258	(O) 820-3800	
AVIATION INDUSTRY	Scott Shepherd 12th CES/CEC 1651 5th Street West Randolph AFB, TX 78150-4313	(O) 652-7103 Scott.shepherd@randolph.af.mil	10/11/07
AVIATION INDUSTRY	Gary Pape 19214 Heather Creek San Antonio, TX 78258	(O) 804-5700 (H) 494-5737 gp1318@txmail.sbc.com	10/11/08
AVIATION INDUSTRY	James Caudle 4208 Fairway Crossing Drive Fort Worth, Tx 76137	(O) 214-792-4136 (Fax) 214-792-3770 Jim.Caudle@wnco.com	10/11/08
AIR TRANSPORTATION COMMITTEE	Edward Benson 12822 Country Crest San Antonio, TX 78216-2340	(O) 491-9910 (Fax) 491-0685 Email: edbenson@prodgey.net	10/11/07
AIR TRANSPORTATION COMMITTEE	Richard Kelley 3859 Morgans Creek San Antonio, TX 78230	(H) 408-0270 (O) 408-0469 (Fax) 408-0469	
AIR TRANSPORTATION COMMITTEE	Mark Tafolla 919 Cheyenne Creek San Antonio, TX 78258	(H) 497-3968 (O) 882-1440 (Fax) 832-0867 Email: mark.tafolla@erac.com	10/11/08
CHAMBER OF COMMERCE	Neil Stone 645 Lockhill-Selma San Antonio, TX 78216	(O) 349-0511 (Fax) 349-2760 nstone@gendrysprague.com	
ALAMO AREA COUNCIL OF GOVERNMENTS	Gloria Arriaga Alamo Area Council of Governments 8700 Tesoro Dr. Suite 700 San Antonio, TX 78217	(O) 362-5200 garroaga@aacog.com	12/15/08
CITY COUNCIL District 9	Councilman Louis E. Rowe P.O. Box 839966 San Antonio, TX 78283	(O) 207-7325	
CITY COUNCIL District 10	Councilman John Clamp P.O. Box 839966 San Antonio, TX 78283	(O) 207-7276	
CITY COUNCIL District 3	Councilwoman Jennifer Ramos P.O. Box 839969 San Antonio, TX 78283	(0) 207-7064	
CITY COUNCIL District 1	Councilwoman Mary Alice Cisneros P.O. Box 839966 San Antonio, TX 78283	(O) 207-7279	
FEDERAL AVIATION ADMINISTRATION	* Tom Bowman FAA ATC Tower, Room 15 9434 Airport Boulevard San Antonio, TX 78216	(O) 805-5507	N/A

* NON-VOTING MEMBER

Airport's Miscellaneous Mailing List

Eugene Reed
2618 Country Hollow
San Antonio, Tx 78209

Gilberi & Beatrice Salinas
2823 Old Ranch Road
San Antonio, Tx 78217

Amy Rowland
5 Myrtlewood
San Antonio, Tx 78218

Allyson Foster
614 Cave Lane
San Antonio, Tx 78209

Brian & Laura Devaney
164 Hillview Dr.
San Antonio, Tx 78209

James & Donna Shafer
442 Laramie
San Antonio, Tx 78209

Scott S. Barnacle
410 Laramie
San Antonio, Tx 78209

John & Elizabeth Dunlap
103 Five Oaks Dr.
San Antonio, Tx 78209

Christopher & Cheryl Robson
235 Five Oaks Dr.
San Antonio, Tx 78209

Jose & Rosemary Carronza
12827 Vidorra Circle Dr.
San Antonio, Tx 78216

Gary & Norma Paglia
12827 Vidorra Vista
San Antonio, Tx 78216

Elaine Knoggs Property Mgmt Trust
205 Live Oak St.
Ingram, Tx 78205

Frederick Costa
8726 Oak Ledge
San Antonio, Tx 78217

George Wrook'off
2534 Blossom Dr
San Antonio, Tx 78217

Fredericke & Dianne Vinson
203 Five Oaks Dr.
San Antonio, Tx 78209

Thomas C. Cimino Trust Trustee
P. O. Box 99
Lomita, Ca 90717

Heath & Kate Simpson
8306 Country Side Dr.
San Antonio, Tx 78209

Clark & Camille Mandiego
142 El Rancho Way
San Antonio, Tx 78209

Melinda Mixon
117 Lardmann Dr.
San Antonio, Tx 78209

James Glasaock
339 Sheopshire Dr.
San Antonio, Tx 78217

Welford & Sandra Fey
14018 Shire Oak St.
San Antonio, Tx 78247

Brenda Criswell
631 Chauncey Dr # 69
San Antonio, Tx 78216

Susan McKinley
12903 Vidorra Circle
San Antonio, Tx 78216

Stephen & Janet Perpey
74 Granberg Circle
San Antonio, Tx 78218

David & Margaret Johnson
9 Inwood Terrace
San Antonio, Tx 78248

Brian & Patricia Herzig
3310 Stoney Cluster
San Antonio, Tx 78247

Derek Edward & Veronical Hornzy
10223 Buescher Lane
San Antonio, Tx 78223

Catherine Ward
12638 Summer Glen
San Antonio, Tx 78247

US Province Sisters of Charity of
the Incarnate Word
PO Box 15378
San Antonio, Tx 78212

Kathleen Martin
603 Rockhill
San Antonio, Tx 78209

Michaela Harris
227 Treasure Way
San Antonio, Tx 78209

Peter Boedeker
3522 Byron
San Antonio, Tx 78247

M'Riea & Adam Peterson
3403 Stoney Country
San Antonio, Tx 78247

Clarice Ford
3654 Stoney Branch
San Antonio, Tx 78247

Thomas Miller
12011 Stoney Park
San Antonio, Tx 78247

Rick Wadsworth
14315 Rowe
San Antonio, Tx 78247

Lachesa Pollock
166 Cave Lane
San Antonio, Tx 78209

Meng Lin
3418 Stoney Square
San Antonio, Tx 78247

Robert Wertz
3426 Stoney Dawn
San Antonio, Tx 78247

Lydia Tey
12015 Stoney Park
San Antonio, Tx 78247

James Suarez
12111 Stoney Ash
San Antonio, Tx 78247

Virgina Connolly
12230 Stoney Spur
San Antonio, Tx 78247

Nancy Roof
430 Rockhill Dr.
San Antonio, Tx 78209

James Rice
3506 Forest Glade
San Antonio, Tx 78247

Registration

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NAME (*Please Print*)	ADDRESS (*Street, City, State, Zip*)
Chris Catania	3682 Ridge Closter SA TX 78247
Thelma Celestino	12406 Stoney Ash S.A TX 78247
TONI WENDT	3558 LEBLANC SA, TX 78247
RON CHAMNESS	8610 BROADWAY — T+C. INC
Iris Farias	13307 Vista Bonita SA TX 78216
STEVE PENLEY	74 GRANBURG CIRCLE 78218
STEVE ROSSMAN	12131 RIDGE SUMMIT 78247
mike & Sandra Terrazas	12083 Stoney Smt 78247
THOMAS & SHIRLEY BUGOSH	14493 Cadillac Dr 78248
JOHN T DAVENPORT	3698 STONEY BRANCH 78247
WILLIAM N NORVELL JR	11714 PERSUASION 78216
Janet Samaniego	12117 Stoney Spur 78247
Jennifer Olvera	12211 Ridge Corner St. 78247
Salvador Olvera	12211 Ridge Corner St 78247
Adrianna Olvera	12211 Ridge Corner St 78247
LINDA DRAPER	2727 Chisholm Tr. 78217
HARRIETTE FURINO	16114 ROBINWOOD LN. SA 78248
DAVID WELLS	13318 VISTA BONITA, SA 78216

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NAME (*Please Print*)	ADDRESS (*Street, City, State, Zip*)
Raymond DeLaO	318 Eastley S.A. TX 78217
Sharon Provines	13242 Vista Del Mundo TX SA 78216
Robert W. Provines	" " SA 78216
GRADY CARLSON	1307 VISTA DEL RIO 78216
Linda Mills + LARRY MILLS	534 Country Lane SAT, Tx 78209
Darrell Schaper	502 Cave Lane, SATX. 78209
Paul SLAttery	507 CAVE LANE, SATX 78209
JOSEPHINE SANTILLANO	147 FANTASIA. SATX 78216
MIKE LEFLER	1315 Vista Del Rio SATX 78216
DIANE TOSCANO	134 STARDREAM 78216
Connie DeLaCruz	1214 Vista Del Juez 78216
William Morris	11827 Persuasion 78216
GEORGE DAVIS	1235 VISTA DEL JUEZ, SA, TX 78216
JONATHON SIMON	1239 VISTA DEL JUEZ, SA, TX 78216
Deline Ischirhart	314 Eastley SA TX 78217
Martin Koeppe	" " " "
TAIS Robson	235 Five Oaks SA, TX 78209
Margaret Pruett	13431 Vista Bonita 78216

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NAME (*Please Print*)	ADDRESS (*Street, City, State, Zip*)
Michael Landis	13915 Grove Patch San Antonio, TX 78247
HARVEY GUTIERREZ	12023 STONEY DR SAT 78247
DOUG THOMAS	2722 OLD RANCH RD SAT 78217
Mae Ashton	12003 Cave Ridge 78247
Herta Price	12011 Cave Ridge 78247
GIL FRANKLIN	616 STRINGS DR. SAN ANTONIO 78216
JAMES HOGATE	622 STRINGS DR " "
Kathy Bratcher	1313 Vista Del Rio San Antonio, TX 78216
Jack Bratcher	1313 Vista Del Rio San Antonio, TX 78216
DENNIS NISI	3538 LEBLANC DR. SA TX. 78247
GEORGIA NISI	" " " 78247
Tony Luetkenhaus	622 Rockhill San Antonio, TX 78209
Charles Roswell	614 Bluff SATX 78216
[illegible]	
MARCIA Schneider	1231 Vista Del Juez San Antonio Tx 78216
Kathy Young	12160 Stoney Bridge SAT 78247
Richard Young	12160 Stoney Bridge SAT 78247
MYRON HAYES	613 STRINGS 78216

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NAME (*Please Print*)	ADDRESS (*Street, City, State, Zip*)
BILL SHERMAN	24307 BEAR CLAW, SA, TX. 78258
BENNETT & CAROLYN LARSON	223 S. GUILFORD DR SAT 78217
Kim Guerrero	331 Trafalgar SAT 78216
Dudley Hays	404 Canterbury Hill SAT 78209
Rose & Burnie Miller	111 Middlebury 78217-5721
Adam Buentello	126 middlebury SA 78217
Gene Regina Buentello	106 middlebury SA TX 78217
Pat Whitehill	327 Eastley SATX 78217
Kent Whitehill	327 Eastley SATX 78217
Mary Ann Kinnison	11904 Persuasion SATX 78216
Mike & Melody Bailey Sr.	222 Eastley SATX 78217
Sue + Richard Dullnig	530 Country LN SATX 78209
Mary Dyer	2626 BROOKHURST DRIVE 78209
Joseph & Kelley Sadowski	402 Cave SA TX 78209
David + Peggy Rochelle	13310 Vista Bonita TX 78216
Larry S. Smith	13312 Vista Arroyo, TX 78216
June L Boldt	2614 Juan Tech 78205
Bob & Carol Clom	13303 La VISTA TX 16

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NAME (*Please Print*)	ADDRESS (*Street, City, State, Zip*)
LINDA DOLASH	12042 Stoney Bridge, SA TX 78247
Joy Potts	12014 Stoney Bridge SA. TX 78247
Ronald BECKIUS	2907 Chisholm Trail SA TX 78217
Richard Todry	641 Strings 78216
TRINI GONZALEZ	303 Shropshire Dr SA TX 78217
Libradio Rodriguez	303 Shropshire SA Tex 78217
KATHY NICKEL	~~[illegible]~~ 8610 Broadway Ste. 440 78217
Adam Martinez	335 Haverford San Antonio TX 78217
Casandra Morrison (Joe)	13018 Vistahaven SA Tex 78216
KERRY FREDLUND	3610 RIDGE COUNTRY 78247
Rosewell, Lois	614 Bluff Jr SA TX 78216
Denise & Mike ONeal	627 Chauncey Dr SA TX 78216
Dorris S. Finesilver	218 Laburnum SA TX 78209
DUDLEY HAYS	118 LABURNUM DR. SA, TX 78209
James Glover	130 Laburnum Dr S.A TX 78209
Donna Leigh	12120 Stoney Spur 78247
Allan C. Tucker	2618 Fritz Tuck 78209
Jeanette Garcia	1103 Vidorra ct 78216

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NAME (*Please Print*)	ADDRESS (*Street, City, State, Zip*)
Elizabeth Jackson	322 Haverford SAT 78217
Mike Kutchera	13426 Vista del Rey 78216
mike Bailey	222 Eastley 78216
Anne Bailey	222 Eastley 78217
Mary Jane Bellor	415 Rockhill 78209
Jack Bellor	415 Rockhill 78209
FRANK J Guerra	12015 STONEY DR 78247
JAMES A MARTIN	7422 DOVE MTN. ST SA, TX 78209
MARY MEIS	13131 VISTA HAVEN 78216
JOHN DUNLAP	103 Five Oaks Dr 78209
Eduardo Alvarez	1247 Vista del Rio 78216
Jim Calhoun	14711 Swale, S.A 78248
Matthew Holly	12007 Stoney Dr 78247
Tony Wood	12903 Vidorra Vista 78216
WILLIAM R. WALDEN	1250 VISTA DEL RIO SA TX 78216
AUELINA WALDEN	1250 VISTA DEL RIO SA TX 78216
ANTHONY CLAYTON	13226 VISTA DEL MUNDO S.A. 78216
Theresa García	1222 Vista Del Juez SA TX 78216

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NAME (Please Print)	ADDRESS (Street, City, State, Zip)
MARJORIE CARTWRIGHT	8610 BROADWAY, STE 440, SAN ANTONIO, TX 78217
MARY LOU KUBENA	8610 BROADWAY " " " " " "
BILL + BARBARA CROCKETT	12114 STONEY CROWN, SAN ANTONIO, TX 78247
DON DAVIE	16406 Ledge Park SAN ANTONIO TX 78232
Phillip DAVIE	12039 STONEY SUMMIT SAN ANTONIO TX 78247
ISABELLA CHASE	3614 RIDGE COUNTRY SAN ANTONIO TX 78247
DENNIS & JANET MERGELE	3423 STONEY COUNTRY, SAN ANTONIO, TX 78247
STUART SAUNDERS	1638 VISTA DEL MONTE, SAN ANTONIO TX 78216
WM. SCHILLER	406 E. NOTTINGHAM, SAT 78209
TOM + Linda Rae TUCKER	13222 Vista del ~~Mort~~ Mundo
FREDDIE J SATCHER	12114 STONEY SPUR 78247
ANN ALWOOD	12106 RIDGE SPUR 78247
Jack Marrow	130 Eastley Dr. 78217
Allison DuBose	130 Eastley Dr. 78217
Anne Kaalund	1306 Vista Del Rio 78216
VIRGINIA STAKES	11905 PERSUASION - 78216
Don Peterson (Husband Elk-Kay Kalendar)	13138 Vista Del Mundo SATX 78216
Ron Ross	11722 Raindrop S.A. Tx 78216

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NAME (*Please Print*)	ADDRESS (*Street, City, State, Zip*)
Carol Ross	11722 Raindrop S.A. tx 78216
Linda Gibson	13323 Vista Arroyo SA TX 78216
Jeff Witten	12903 Laguna Vista 78216
Beth Mueller	~~1267~~ 12067 Stoney Bridge SA TX 78247
Elsa Estorga	12071 Stoney Bridge SA TX 78247
Yvette Cardiel	3322 Stoney Country SA, TX 78247
Jorge Torres	13027 Vista Haven, SA, TX 78216
LEONEL LEAL	12103 Ridge Summit SA, TX 78247
HOLLY & MARK EDWARDS	13110 Vista Haven 78216
Elizabeth Sirianni	13111 Vista Del Laguna 78216
DAVID RODRIGUEZ	1230 Vista del Juez 78216
Clint Poulter	3203 Albin Drive 78209
James Ashinhurst	12123 Stoney circle 78247
ANTONIO VASQUEZ JR.	3331 CADBURY DRIVE 78247
Roberta G Rangel	12002 Stoney Crossing SA, TX 78247
marla Castellanos	12027 Stoney crossing 78247
Merrill E. Swanson	126 Oakhurst Pl 78209
~~CLARK~~ CLARK TILLEY	13315 VISTA ARROYO 78216

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NAME (Please Print)	ADDRESS (Street, City, State, Zip)
SAM GREEN	231 FIVE OAKS DR. S.A.T. 78209
Mary Lou Vielock	507 Country Lane SAT 78209
Brad Smilgin	1901 S. Alamo SA TX 78204
John and Amy Brand	7519 Quail Run SA TX 78209
M. Moore	Box 4567 78209
Lisa Cuellar	13311 Vista Bonita 78216
John & Margaret Fourquette	319 Country Wood 78216
FRANK BLIZZARD + Diane	8406 LAURELREST 78209
HENRIETTE. mccallister	219 Eastley. DR. SA TX. 78217
Georgia Grounds	12123 Stoney Circle SA TX 78247
JANET ALYN	2606 Friar Tuck S.A. TX 78209
Ben & CECILIA GONZALES	13315 VISTA BONITA, S.A. TX 78216
Will & SANDY Howorth	8722 OAKLEDGE SA TX 78217
Joe & Ruth MARLOWS	331 LARAMIE DR SA TX 78209
Pam Palmer	402 ROCKHILL SATX 78209
Sonia Rodnite	422 Cave Lane SATX 78209
MaryAnne Blalck	" " " " "
Donna Schneider	13102 Vista Del La Laguna SAT 78216

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NAME (Please Print)	ADDRESS (Street, City, State, Zip)
Richard + Rose Slighton	8502 Sagebrush SATX 78217
Patrick McShane	12031 Stoney Summit SATX 78247
Patty & Tim Wilson	11607 Raindrop SA Tx 78216.
Kathy Middleton	13322 Vista Arroyo SA Tx 78216
C. Le Moyne Hall & Dolores	503 Cave Lane SA Tx 78209
Tisha + Chuck Cortines	13318 La Vista SA Tx 78216
Emma Thomas	310 Rockhill SAT 78209
Laura Weems	2450 Toftrees SAT 78209
E.D. Yoes, Jr.	1707 Agile St. SAT 78248
Meredith Wright	326 Haverford SAT 78217
Peggy & David Rymer	137 Laburnum SAT 78209
Loretta Casillas	637 Strings St SAT 78216 (EVTCA)
Jason + Mandy Williamson	3323 Tauren Oaks San Antonio 78247
Dana + Gina Licata Adams	8810 Pineridge Rd. SATX 78217
Pam Embrey	2626 Friar Tuck S.A 78209
Michele Deverter	126 Kinross 78209
Isaias Martin Valera	3322 Stoney Cluster SA Tx 78247
Albert Garcia	1222 Vista Del Juez SATX 78216

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NAME (Please Print)	ADDRESS (Street, City, State, Zip)
KENNETH BINZ	SOUTHWEST EXTERIORS 2430 FREEDOM SA TX 78217
DON SUELTENFUSS	447 FORREST HILL S.A. 78209
CHRISTINE NELSON	207 WYNDALE ST. 78209
Kenneth Weaver	3558 LE BLANC 78247
Mary Pat Bolner	203 Laburnum 78209
Helene Rubblin	122 Laburnum 78209
Brian & Mary Krasiewski	111 Jeanette Dr. 78216
Kevin + Julie Davis	13423 Vista Bonita 78216
THOMAS FOSTER	135 MIDDLEBURY DR SA, TX 78217
Henry Reindl	13507 Vista Bonita 78216

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NAME (Please Print)	ADDRESS (Street, City, State, Zip)
Keith & Jeannette Kite	13306 Vista Bonita, San Antonio, Tx 78216
Bill Alyn	411 LARAMIE " " 78209
Gregory Salyers + Patricia Nova	13251 VISTA DEL MUNDO 78216
Leticia + Jonathan Sanders-Worley	526 Larkwood " " 78209
Jesse M. Dela Cruz	1214 Vista Del Vnez San Antonio, TX 78216
Brenda Davis	13135 Vista Haven SA TX 78216
Ed Dylla	13310 LA Vista SA Tx 78216
CHARLES PEREIRA	1010 MELISSA DRIVE SA. TX. 78213
Louis Gonzales Jr	334 Hartford Dr. SA. Tx 78217
OANO, ROSALINDA	8314 REPUBLIC DR. SA. TX 78216
MARK Ledford	14122 CHURCHILL ESTATES BLVD #601 SA Tex 78248
Arthur Rikin	12[illegible] Laburnum SA 78209

SPEAKER REGISTRATION 1

PLEASE SIGN THIS CARD IF YOU WOULD LIKE TO COMMENT AT TONIGHT'S MEETING

NAME (PLEASE PRINT): Richard Jodry

REPRESENTING (Optional): President, Enchanted Village Townhomes

ADDRESS: 641 Strings, 78216

SPEAKER REGISTRATION 2

PLEASE SIGN THIS CARD IF YOU WOULD LIKE TO COMMENT AT TONIGHT'S MEETING

NAME (PLEASE PRINT): Mae Ashton

REPRESENTING (Optional): self

ADDRESS: 12003 Cave Ridge

SPEAKER REGISTRATION 3

PLEASE SIGN THIS CARD IF YOU WOULD LIKE TO COMMENT AT TONIGHT'S MEETING

NAME (PLEASE PRINT): Carol Ross

REPRESENTING (Optional):

ADDRESS: 11722 Raindrop
S.A. Tex 78216

SPEAKER REGISTRATION 5

PLEASE SIGN THIS CARD IF YOU WOULD LIKE TO COMMENT AT TONIGHT'S MEETING

NAME (PLEASE PRINT): Joseph Sadowski

REPRESENTING (Optional): Sadowski Family

ADDRESS: 402 Cave
SA, TX 78209

SPEAKER REGISTRATION 7

PLEASE SIGN THIS CARD IF YOU WOULD LIKE TO COMMENT AT TONIGHT'S MEETING

NAME (PLEASE PRINT): Wm. SCHILLER

TITLE, BUSINESS OR ORGANIZATION: RES.

ADDRESS: 406 E. Northampton Pl.
SAT 78209

SPEAKER REGISTRATION 8

PLEASE SIGN THIS CARD IF YOU WOULD LIKE TO COMMENT AT TONIGHT'S MEETING

NAME (PLEASE PRINT): MICHAEL O'NEAL

TITLE, BUSINESS OR ORGANIZATION: RETIRED

ADDRESS: 627 CHAUNCEY
78216

SPEAKER REGISTRATION 4

Withdrew

PLEASE SIGN THIS CARD IF YOU WOULD LIKE TO COMMENT AT TONIGHT'S MEETING

NAME (PLEASE PRINT): Jeff Witten

REPRESENTING (Optional):

ADDRESS: 12903 Laguna Vista

SPEAKER REGISTRATION 6

Withdrew

PLEASE SIGN THIS CARD IF YOU WOULD LIKE TO COMMENT AT TONIGHT'S MEETING

NAME (PLEASE PRINT): Brian Krasiewski

TITLE, BUSINESS OR ORGANIZATION:

ADDRESS: 111 Jeanette Dr. 78216

Public Comments

1 AIRPORT NOISE COMPATIBILITY STUDY MEETING
2 JANUARY 27, 2009
3 VERBAL COMMENTS:
4 MARK MOORE: My name is Mark Moore,
5 telephone number 685-8800. I need to find out if
6 there's going to be any provisions put in this plan for
7 handicapped people, since I am handicapped. I require
8 eight hours of sleep per night and, if I lose sleep, it
9 can be detrimental to my health. It can even cause me
10 death. What I need to find out is, if they need to put
11 monitors in my backyard, then I will give them all the
12 permission they need to monitor sound levels so I can
13 help this program be complete. But my main goal is to
14 find out about this disabled provision -- provisions for
15 people who are disabled. I need that answer, because I
16 am a disabled person.
17 And when the military flies their
18 helicopters from San Antonio International Airport to
19 Fort Sam Houston, they go directly over my house.
20 There's been no talk about them being responsible for
21 part of the noise pollution. I think that that needs to
22 be addressed, in order to be fair. And if they're going
23 to use line of sight from one airport to the military
24 base, they need to be part of the -- include them as
25 part of the problem.

1 I also want to say that, in 1994, my
2 street was on the list of homes to be soundproof and,
3 according to spokespeople at the airport, it was taken
4 off as a result of quieter planes, and planes being
5 fitted for noise reduction. If it was on the list to
6 begin with, it seems like it would still be on the list.
7 ROSE SLIGHTOM: My name is Rose Slightom,
8 S-L-I-G-H-T-O-M. I live at 8502 Sage Brush, a corner
9 house with Chisholm Trail. I was outside watering my
10 lawn yesterday, and I had two airplanes come directly
11 over my house, and that is a lot of noise. And
12 sometimes the air traffic starts at 6:30 in the morning,
13 wakes me up. And thank goodness I don't have to work.
14 And then, also, there is noise starting at 10:30,
15 11:00 at night that we hear. Photos in my hallway
16 change position. If we're outside, we have to stop
17 talking to each other because of the noise. We have
18 lived here for 44 years.
19 JANET ALYN: I'm Janet Alyn. I live at
20 2606 Friarton. The north side of Friarton received
21 windows, the south side of Friarton did not. In other
22 words, my neighbors across the street got the new
23 windows, but I am outside of the boundaries, and I would
24 certainly hope that the rest of our area would be
25 included so that at least the whole street gets the

1 windows. And we definitely are in the path of the
2 airplanes and get rattled windows quite a bit when the
3 planes go over.
4 JASON WILLIAMSON: The main thing that
5 we're concerned about is, what we're seeing with the
6 airplane flight path is -- and what we're talking about
7 is the noise levels. We live on just the other side of
8 Thousand Oaks, about 100 feet from where the cut-off is,
9 so we are in the direct line of it. It goes so loud
10 when they take off that our house shakes, and we can't
11 even talk inside the house, when the planes fly over
12 now. They say they're at a higher level at that rate,
13 but I'd be happy to take a noise calculator out there
14 and actually test it when they take off, because they're
15 not powered up and getting high -- we get a few of
16 those, but the majority of them are so low, that the
17 houses shake.
18 I guess, really, what we're trying to say
19 is, I think if you're in the direct flight path, they
20 need to extend that out a little bit. I mean, my
21 parents live in a house right down the road and to the
22 side, and it's not that low over there but, literally,
23 they're flying right over our home. It's just too
24 short.
25 WILL HOWARTH: Where we live, we hear

1 planes coming over all hours, throughout 5:30 to 6:00,
2 till 12:00 at night. We're so close to the airport, we
3 even hear them blaring up the motors in the morning.
4 And us and our neighbors -- I represent about four
5 neighbors today -- we're nearly out of the boundary, and
6 we would like to be reconsidered. And maybe somebody
7 would come into our homes and do an actual test and see
8 what we're talking about.
9 KEITH KITE: I think it's -- some of it
10 is fairly tolerable. I live on the edge of the 26
11 decibel contour line. My biggest complaint is
12 Federal Express and UPS that come in at, like, 4:30 and
13 5:00 in the morning, every morning. The rest of it is
14 somewhat tolerable.
15 CHRISTINE NELSON: Over the past several
16 months -- I have dogs in my backyard, and they have
17 begun to howl every time a single airplane comes over my
18 house, and very, very constantly. And that's the only
19 time they're howling. It hadn't happened before.
20 LETICIA SANDERS-WORLEY: We live at 526
21 Larkwood, which is probably four blocks from the current
22 bubble. And we know that there's definitely too close
23 of plane coverage, because our cell phone reception cuts
24 out when the planes cross over. Whether you're inside
25 or outside of the house, we drop signal. That's got to

1 mean something. It happens on a regular basis. All of
2 my neighbors have very poor cell phone coverage when the
3 planes are coming over.
4 (End of Oral Comments)
5
6 * * * * * * * * *
7
8 Clint Monrow: Good evening. As
9 introduced, my name is Clint. I'm with Wyle. We are
10 the noise consultants who are performing this study. I
11 apologize for the lighting situation. We're going to
12 get the lights straightened out in a minute or two, get
13 it a little bit darker so you can see my slides here.
14 While we're getting the lights turned
15 down, just to let you know, that tonight we're here to
16 give a presentation. In addition to the posterboards
17 that you've been looking at, the questions you've been
18 asking to us, I'm going to go through about a 30-minute
19 presentation, and I'm going to give you some more
20 detailed information as to -- more detailed information
21 as to what we've done with this study, the steps we've
22 taken, the data we've analyzed in order to, hopefully,
23 provide you some more information as to what we're
24 doing.
25 I'll repeat this but, to follow this

presentation, once it's over, we're going to take a little break for 15 minutes, give you guys a chance to have another look at the boards, ask us any more questions that you may want to come up after this presentation.

Additionally, anyone who has not signed in to give a comment at the sign-in table may at that time go back there and sign a card in order to come up and give a comment. So, again, once the presentation is over, give about a 15-minute break, and then we'll come back and start receiving the comments. We'll call off the cards as they've been filled out.

So what I'd like to do, again, is to -- sorry. We've been a little taxed today. Okay. Here we go on the first side. To give you an introduction, first I'm going to take you through the whole project, give you an overview, talk to you about the study, as well as the airport, give you an overview about how the airport operates and the basics of the noise, anything you may have missed when you went through and looked at the boards. After that, we'll talk about our noise modeling analysis and the results of that analysis which are, of course, the two maps that everyone has been taking the look at, showing the noise contours. And then, finally, we'll talk about the airport noise

1 compatibility program and the way it's affected by these
2 results.
3 So, to give you a little idea of the
4 process we're following with the study, today's public
5 meeting begins a public review process. The documents
6 are located in local libraries and other locations, also
7 available on the Internet. And what we're doing is,
8 we're collecting you guys' comments, whether it be
9 tonight via an oral comment, whether you fill out a
10 form, whether you contact the airport, however you want
11 to submit those within the next 30 days.
12 We'll be having another meeting and
13 hearing just like this one at the end of the 30 days, so
14 that puts us into late February or, possibly, early
15 March. We will continue to advertise that meeting once
16 the date has been set. We will send out flyers again,
17 we'll send out advertisements again so everyone knows
18 that it's coming. After that hearing, we will follow
19 through and respond to all the comments.
20 And, once that's complete, we'll go to the
21 city council, we will present to them the results of the
22 study and then, finally, this whole study gets submitted
23 to the FAA for their review and approval. And that's a
24 several-month process, which will begin when we submit
25 the documents to them. That will happen in about --

1 sometime in April, and it will be reviewed, and that
2 will be finished sometime this summer.
3 So, to let you know what the study goals
4 are, the first goal is to complete and update the noise
5 exposure maps. Those are these noise contour maps
6 showing your current noise contours, as well as those
7 projected for five years in the future. These are based
8 on finding out the numbers of operations, the flight
9 tracks, the runway use. All the information I'm going
10 to cover in this presentation go into determining what
11 those contours are.
12 Furthermore, I'm looking at a five-year
13 forecast of future conditions. We take a look at what
14 changes five years from now, and we talk about how much
15 noise is projected for the future.
16 Additional study goals are to take a look
17 at the airport's existing noise compatibility program,
18 and that is a part of the same program that supports the
19 noise maps. This is all part of the FAA's noise
20 compatibility program. And so what we're going to look
21 at is these specific contours and, as most of you are
22 aware, the goal here is to see how that affects the
23 acoustical residential treatment program.
24 So, to take a little step back, we'll talk
25 a few minutes about the airport, how it operates, and

1 information about the airport because, of course, the
2 information about the airport and its operation and what
3 we use to model the noise to come up with the noise
4 contour shown on these maps, so the airport is commonly
5 abbreviated SAT -- that's how I'll be referring to it --
6 both SAT and Stinson Municipal Airport, are operated by
7 the same body, which is the city aviation department.
8 And there are two U.S. Air Force bases within the same
9 air space that you may realize is the not only civilian,
10 but also military airplanes flying around this general
11 area.
12 The table shows historical aircraft
13 operations at San Antonio starting in 1990, all the way
14 up until 2007. And you can see that it's fluctuated
15 between about 210,000, at the low in 1991, and the
16 highest, 270,000 in 1996. And, besides a little bump in
17 2003, we've really been on sort of a flat trend in the
18 last couple of years, and that will be reflected as I
19 talk about the projection for the future. Again, we're
20 not seeing much growth over the last couple of years,
21 and that trend will continue.
22 This is a map of the airport layout. And
23 the way this works is it just shows the terminals down
24 here. North is up, which makes it easy. We have three
25 runways at the airport. 32L goes in this direction.

1 30L/12R runs in this direction. And those two runways
2 are, really, the main runways at the airport, that are
3 the longest runways of the airport. This runway, 12
4 right/30 left, is actually -- handles more operations
5 than any other runway at the airport.
6 In addition, we have this parallel,
7 smaller runway, much shorter in length, so it's only
8 used by the smaller aircraft, such as the small props
9 and the small jets.
10 I want to give you guys a picture of some
11 of the different -- all right. I want to give you guys
12 a picture of the different types of aircraft that are
13 used at this airport, and so there's really two major
14 categories of aircraft at the airport: The air
15 carriers, which are your various airlines and cargo
16 operators and, across the bottom, we're showing you
17 general aviation, which are either private aircraft or
18 chartered aircraft. So the different categories that we
19 talk about in the study at this airport include heavy
20 jets, also known as -- some people may call them jumbo
21 jets or widebody jets. These are really -- there are
22 not that many operating at the airport but, of course,
23 being large in size, they are quite loud. This is a
24 picture of a FedEx jumbo jet that operates at the
25 airport.

1 In addition, there's a large percentage of
2 what are called large jets at the airport. And these
3 are typified -- this is a Boeing 737, flown by
4 Southwest, so picture this as sort of a size of an
5 aircraft.
6 There are also many regional jets operated
7 at the airport. These are smaller than the large jets.
8 I'm sorry. Can everybody hear me okay if I just speak
9 without the microphone?
10 UNIDENTIFIED SPEAKERS: No.
11 MR. MONROW: Okay. It keeps cutting out,
12 so I'll do my best. So we've talked about heavy jets,
13 large jets. These are the regional jets. These are
14 smaller than a large jet. They're operated by some of
15 the affiliate airlines. This is Continental Express.
16 That's smaller jets that fly the shorter routes, the
17 commuter routes, the - you know, the short hops between
18 different local airports.
19 Down in the general aviation category,
20 business jets are actually even smaller than regional
21 jets. These are small, very few passengers, and they're
22 usually operated by, you know, private citizens or
23 private companies that charter them.
24 The other two aircraft left are
25 propeller-driven aircraft. We have turboprops, which

1 are the larger of the propeller aircraft, two-engine
2 aircraft, again, flown by some of the same carriers as
3 the regional jets, so they're sort of a smaller, shorter
4 trip length commercial jets, props.
5 In addition are the really small
6 piston-driven engine props. Most of them have just one
7 engine on the front. These are used by a lot of the
8 flight training operations in schools that are located
9 here and in the area.
10 Okay. So now we're going to shift a
11 little bit and talk about the airport and how it
12 operates, introduction. Now, we can talk about the
13 basics of noise, just to give you guys the right frame
14 of mind. Noise, a simple definition is unwanted sound.
15 It's anything that you can hear that a person may feel
16 is annoying or objectionable. And, of course, that's a
17 subjective thing. Everybody has different opinions.
18 Decibels are the units that we use to measure noise.
19 And, if anyone was good in math, they might remember
20 logarithms. Basically, decibels are a logarithmic
21 scale, so the way they add is a little different than
22 your basic arithmetic. For one example, if you add 70
23 and 70 you get, not 140, you get 73. And so one example
24 is that a conversation level is about 60 to 65 dB.
25 And on the next slide we show a graph of

1 the common noise sources, so it's showing here -- this a
2 better picture of this, on the third display board in
3 the back. What we've got is just a scale showing
4 different noise sources and how loud they are. So, like
5 I said, a conversation between two people, standing
6 nearby is around 60 or so. A quiet -- that might be a
7 library, may be 35. You know, a very quiet rural area
8 may be about 20.
9 And then going up the scale, conversation
10 can be quite loud. Standing near a passing bus is about
11 75. Standing on a train platform when the train goes
12 blasting by is up at 100. Air raid sirens, if you're
13 standing close to them, can be 120. So that gives you
14 an idea of from the lowest sound levels that you hear to
15 maybe 20, if you're in the country, all the way up to
16 very loud rock concert sort of levels, which are up over
17 100.
18 Two last things to talk about as an
19 introduction to noise would be DNL -- DNL is a noise
20 metric, and it's what we use to quantify the amount of
21 noise that there is in the areas surrounding an airport.
22 And the way it works is that -- this is the noise metric
23 that, for much study in the past, the FAA and now the
24 federal agencies have determined that DNL is the most
25 appropriate metric used to correlate the environmental

1 noise to people's reaction to it. In other words,
2 people's annoyance or noticing of noise.
3 So they use this metric to quantify noise
4 in the environment, and the way it works is that it's
5 the sound level average taken for a 24-hour period at
6 any location. And, in addition to just taking the
7 average of all the noise at a location, we also add
8 what's called a penalty to noises that happen during the
9 nighttime, and that's defined from 10:00 p.m. to
10 7:00 a.m. And so we add 10 decibels to all noise levels
11 that happen during that nighttime period. And this is
12 the equivalent of counting aircraft operations that
13 happen at night, instead of counting it as one
14 operation, it's the equivalent of counting it as 10
15 operations, because it's considered to be 10 times more
16 annoying to have an aircraft fly over during the middle
17 of the night, as opposed to during the day.
18 In order to compute DNL, what we use is
19 the FAA's integrated noise model. That's what we use to
20 develop the contours that are on the display boards and
21 that I'm going to present in a few minutes. It's
22 required for us to use. And what we do is, we select
23 operations data for the airport for an entire year. In
24 this case, we looked at the past 12 months, being --
25 when the study started, we started with October 1st,

1 2007, through the end of September 2008, so that's a
2 12-month period we looked at and said -- counted all
3 those operations, as fully detailed in the presentation
4 here, and you divvy that up into -- once you've taken
5 the whole year average, you divide it up to find out
6 what's the impact in one day.
7 So we call that the annual average day.
8 It's taking all the operations you collected, divided by
9 365 days in a year to say what's the DNL, which is a
10 24-hour average. So, it's for one day, but we look at
11 it for the annual average day. And that's why you'll
12 see the contour extends in different directions around
13 the airport. And, yes, some days all the flights go to
14 one runway and off a different runway, and some days
15 they switch directions and, you know, it's a different
16 picture. But when you average all that out over the
17 year, what you get is the annual average day, which
18 accounts for how the runways that are used in different
19 seasons and different conditions.
20 Okay. Given that introduction, now we'll
21 get into the noise model inputs for the existing
22 conditions. And so the first thing we do is we say,
23 okay, well, obviously, we have a whole year of data.
24 How many operations happened, and what types of aircraft
25 are those? So we collected that information from the

1 FAA, and they report the number of operations in
2 different categories. This includes air carrier in
3 cargo, which includes the heavy jets and the large jets
4 that I mentioned before. The next category is called
5 air taxi/commuters. Those are the regional jets and
6 some of the turboprops that I mentioned before.
7 In addition, there's general aviation.
8 That's the category of the little business jets, the
9 little single-engine props. There's also some
10 turboprops included in that count.
11 In addition, there are some military
12 operations at the airport, by a couple different
13 aircraft landing and taking off from San Antonio
14 International. And so we total all that up for the
15 whole year. What's shown in these numbers here are
16 called itinerate. What that means is just arrivals and
17 departures from the runways at San Antonio
18 International.
19 These numbers down here are what are
20 called local operations. These are operations that take
21 off from the airport, circle around, and land again.
22 They're usually part of flight training or practice
23 flights. And there are very few of those. Out of an
24 entire year there's, you know, about 220 of those,
25 versus 223,000 arrivals and departures at the airport

1 so, by far, most of your operations are arrivals and
2 departures.
3 So next what we do with those, the numbers
4 of operations in each of those categories is, we further
5 break it down into different types of aircraft. The INM
6 model includes preloaded data on many different types of
7 aircraft that exist, and it's our job to figure out
8 which ones fly at San Antonio International and how
9 often, and so what we did is we looked at three
10 different sources of data, from the airport, as well as
11 from the Department of Transportation, and we came up
12 with a list of over 60 different individual types of
13 aircraft, different types of jets and props and
14 turboprops. And, you know, I'm not going to list them
15 all here, it's too many to look at. What we have here
16 is just a summary of the categories I showed before to
17 show you how everything breaks downs at this airport.
18 The large jets are 43 percent, regional jets 14, heavy
19 jets being the largest aircraft operating here are a
20 very small percentage, only two percent.
21 Those three legends of the pie, as you can
22 see, add up to a little more than 50 percent so, out of
23 all the operations, a little more than 50 percent are by
24 air carriers, cargo operators, and the commuter and air
25 taxi operators.

1 In the remainder, in the orange and yellow
2 colors, that's all general aviation traffic. That
3 includes the business jets, the small jets, the
4 single-engine propellors, the turboprops and, finally,
5 military is a very small piece, it's only two percent,
6 and it's shown in black. So that gives you a real
7 general picture of, by category, how many aircraft.
8 And, of course, in the model, each of these categories
9 consists of several dozen different types of aircraft
10 that are listed as being flown at the airport.
11 An additional thing we have to look at,
12 because, remember what I said about the DNL metric, we
13 had a penalty for flights that happen at night, between
14 10:00 p.m. and 7:00 a.m., so what we have to do is to
15 assess what percentage of operations happen during the
16 daytime and what percentage of the operations happen at
17 nighttime.
18 We have broken this down into different
19 categories of aircraft. The overall number shown at the
20 bottom, you can see that about 87 percent of your
21 arrivals happen during the daytime and 13 percent happen
22 at night. The split for departures is very similar.
23 Again, that's overall.
24 And one thing to point out is that most of
25 the types of aircraft fall within that same pattern,

1 except for the heavy jets. The heavy jets are flown by
2 cargo operators, and they really -- as many of you are
3 aware, the cargo operators fly often during the
4 nighttime hours, so we've accounted for that in the
5 noise model. That has not been washed out in these
6 percentages, rather, it has been accounted for in the
7 split. You can see 55 percent of arrivals are at night,
8 41 percent of those departures are at night out of that
9 category, so we have accounted for that reality in the
10 model.
11 In addition to that, we also had to look
12 at the utilization of the three runways at the airport
13 to see how often each of them was used. We have to look
14 at arrivals separately from departures and determine,
15 for each runway, how many operations fly on each
16 different runway. And what's to note is that out of the
17 arrivals, really, the majority of them land on 12 right.
18 And you'll see this in the noise contours. According to
19 the noise contours, they're quite large in this
20 direction.
21 We studied the runway use for the other
22 runways, as well. These all add up to 100 percent.
23 Then we did the same, we looked at departures, we said,
24 okay, well, how many departures are done with different
25 runways. The one with the most departures is the same

1 flying a huge, heavy jet, you have to fly out straight
2 after takeoff before you can turn. So you'll see a
3 variety of different turns in these tracks but,
4 depending on the size of the aircraft depends on which
5 track it may use.
6 In the runways with the highest percentage
7 we have more model tracks, because we looked at more
8 detail at the runways that have the most usage, and we
9 drew in some additional tracks to really capture the
10 operations on those runways.
11 So the arrival flight tracks look like
12 this. It's the same information show in one of our
13 display boards. We're showing a lot of tracks arriving
14 in this direction, from 12 right. And the reason for
15 that is, that is the runway with the most arrivals, so
16 we really spent a lot of time concentrating on modeling
17 those tracks and all different flight paths that can be
18 used.
19 Again, each line on here shows a track,
20 but each track is used different numbers of times by
21 different types of aircraft. This is just sort of a
22 general picture so that you know where the tracks lie.
23 And they're shown for all runways at the airport,
24 arriving from all different directions to the runways,
25 some turning in, some coming straight in, and eventually

1 all them, you know coming in line and landing onto the
2 runways at the airport.
3 The departure flight tracks -- here's a
4 similar picture. Again, we concentrated more of the
5 model tracks on the runways that have many operations,
6 so it's a better model of those flights. We're showing
7 departures in all different directions, and we're
8 showing ways that once -- once you get off the end of
9 the runway, you start turning, depending on where the
10 aircraft is flying, what airport it's headed to. It may
11 fly straight out, may turn in various directions once
12 getting off the end of the runway, from the end of each
13 runway. And so those are the departure flight tracks
14 that we modeled in the model.
15 So what I just spoke about was everything
16 that's going on, currently, at the airport. Now, we're
17 going to talk about the future conditions, because the
18 FAA requires us to go through this process and to do a
19 five-year projection of future operations, to look at
20 expected changes at the airport, to model those
21 appropriately and see what the noise impact is in the
22 future. And then, based on what we see in the future,
23 we'll start looking into the options for noise
24 mitigation.
25 Some of the major projected changes that

1 will happen in 2014, which will have an impact on the
2 noise levels, include, first of all, a projected
3 increase in total operations, and so the FAA is
4 projecting approximately 229,000 annual operations in
5 that year, which is a three percent increase from
6 current levels. It's a small increase, but it is an
7 increase in the total number of operations.
8 Furthermore, we've done some -- looked at
9 historical trends at the airport of the different
10 categories of aircraft to see how they've changed over
11 time, to try to project out how they will change in the
12 future.
13 We've found that there's an increase
14 happening in the regional jet traffic, and a slight
15 increase happening in the large jet traffic. I've got a
16 slide coming up that will kind of detail the numbers for
17 that.
18 In addition, the runway 3/21 will be
19 extended by 1,000 feet to extend its total length,
20 actually, equal to 12 right 30 left, so the two major
21 runways of the airport will have the same length. That
22 extension will happen on the northeast end of the
23 runway, making it longer in that direction, and so
24 that's been included in our model, to account for the
25 changes in noise due to that.

1 Some things, in 2014, are projected to be
2 relatively consistent to the current conditions at the
3 airport. The overall runway utilization of all the
4 runways at the airport will be consistent in the future.
5 The different flight tracks of the airport will continue
6 to be used, and with the same rates of utilization. And
7 also, in the future, the number of night operations
8 versus day operations will be about the same as it is
9 currently.
10 Just to give you some more data to backup
11 the forecast, you know, first of all, just like we
12 started out, we look at the total annual operations in
13 different categories, how will that change in the
14 future.
15 We're showing, you know, the breakdown in
16 different categories. And most of them increase, you
17 know, between two-and-a half percent, up to a little
18 more than three percent. You know, on average that
19 comes out to 2.8 percent, so all of these arrivals and
20 departures shown in the top here are increasing, with
21 the exception of military, projected to stay just about
22 the same as it is currently.
23 The local operations, which are, again,
24 the touch and go's, the ones that take off from the
25 airport, make a loop and land again, those are not

1 projected to increase at all, and so your total grand
2 increase is, again, just about three percent.
3 In order to further breakdown that
4 projection and say, okay, well, what kind of aircraft do
5 we expect to see in the future and how many, we took a
6 look at historical data from the Department of
7 Transportation, starting in 2002, looking at each year
8 through 2007.
9 We took a look at three sets of three
10 categories within the air carriers, because we had this
11 data available and historical progression. We have
12 regional jets shown in yellow at the top, large jets
13 shown in the central -- the largest bars, and heavy jets
14 at the bottom, a very small contribution. So the trend
15 we're seeing is that the regional number of jet
16 operations, with the exception of 2005, it's gone up
17 every year and, accordingly, the number of large jets
18 has decreased each year, the remainder being heavy jets,
19 which is, basically, consistent from year-to-year. And,
20 of course, these bars add up to 100 percent. We're
21 looking at percentages within the air carrier category,
22 how they break down.
23 So this is a similar picture to what I
24 showed you before, summarizing the fleet mix. Again, we
25 have over 60 different types of aircraft in the model,

1 but we wanted to make it palatable. We summarized it
2 here. Again, with our projection, we've looked at all
3 the different types of aircraft in the fleet, their past
4 operational levels, how they're expected to change in
5 the future, are they increasing, decreasing, staying
6 relatively the same.
7 Again, in the blue color we're showing the
8 air carriers, and the difference here being there's more
9 regional jets and fewer large jets projected for the
10 future. The number of heavy jets has stayed constant
11 with 2009 and, again, the GA being the other side of the
12 pie chart really showing the same distribution between
13 the three different types of aircraft within the GA
14 fleet and, again, the military also projected to be the
15 same percentage of the fleet.
16 So now we're going to move on to the noise
17 model results. Again, we're using the INM model to run
18 DNM contours for the two years we modeled. The contours
19 reflect operating conditions on the annual average day.
20 We looked at 2009 to 2014. We've also
21 overlaid all the data. As you've seen on the
22 presentation boards, we've done an overlay of land use
23 data and road data from the local area in order to
24 determine which areas are residential in nature, and
25 also to locate noise sensitive facilities, such as

1 churches and hospitals. These are shown on the noise
2 exposure maps. And then, based on that data, as well as
3 census data, we can compute how many people and how many
4 residences fall within the contours.
5 As we've mentioned already, the FAA sets
6 out the DNL level of 65 as being a significant noise
7 exposure for residents, so if the noise exposure is 65
8 dB or higher, which is anything inside the 65 dB contour
9 line that we've shown, those are considered by the
10 federal government to be significantly impacted by noise
11 and, therefore, eligible for certain types of
12 noise-reducing programs.
13 And so this is the map of 2009, again,
14 showing contours, showing all the different land uses
15 and the neighborhoods around the airport that are
16 affected. And, Jerry, go ahead.
17 This is the 2014 noise exposure map that
18 reflects the slight increase in overall operations. It
19 reflects the runway extension, it reflects the
20 differences in the fleet mix that I presented to you.
21 From what you see, is that you get another noise contour
22 set that is relatively similar to what we showed for
23 2009. The ops aren't a whole lot greater, the noise is
24 not a whole lot greater or less in the future,
25 currently. And this is a result, again, that the INM

1 model gives us.
2 So, based on 65 contours shown here,
3 what's shown in red on these maps, you can see the red
4 outline, such as down here around these neighborhoods,
5 around here in these neighborhoods to the north, and
6 additional areas outlined over here, what the FAA allows
7 for, for sound insulation or acoustical treatment of
8 homes is that once you've determined where the 65
9 contour lies, you're then able to look at the
10 neighborhood that it affects, and continue the program
11 out to the boundaries of the neighborhood within reason.
12 So in some cases we had some sort of
13 natural boundary, such as park land or major roads that
14 separate one neighborhood from the next, and that's
15 where we could draw the boundary line. Other cases were
16 more complicated, where you have a large contiguous
17 neighborhood and, you know, the FAA requires, okay, well
18 you can extend the program beyond the 65 noise contours,
19 but within reason. You can only go so far. So we did
20 have to draw the line in a certain point. What we did
21 is, we did our best to follow neighborhood boundaries,
22 natural boundaries, as well as just completing full
23 blocks of streets and full neighborhoods whenever
24 possible. And that's how we determined these
25 boundaries.

1 Now, of course this map -- these
2 boundaries are still subject to FAA review and approval,
3 so I must say that they are subject to change, it is
4 possible but, again, this is where we stand now. This
5 is a draft of our results, and this shows our proposal
6 to FAA, where we would like to put the boundaries of the
7 program. And once the FAA comes back and reviews our
8 work, we will finalize these boundaries, and that will
9 set the new boundaries for the program.
10 So, based on where those boundaries lie,
11 we did a land use analysis. This table just shows a
12 picture of -- you know, to summarize what we've done.
13 We've computed the number of acres of different types of
14 land use, whether it be residential, industrial, the
15 airport property itself, other such categories. And, of
16 course, what we're interested in here is residential
17 areas, so we've counted the number of residences in each
18 contour level, we've also estimated the population
19 living in those residences, using U.S. census data, and
20 then we've also done a tally of different types of
21 noise-sensitive facilities that lie within the contours,
22 because those are also, potentially, eligible for sound
23 insulation.
24 This is part of the process. This is part
25 of what we give to FAA when we submit this document to

1 FAA, to document where noise impacts these
2 neighborhoods, and how many.
3 Okay. So we'll wrap it up by talking
4 about the noise compatibility program. This program has
5 been ongoing at the airport since 1990. It was most
6 recently updated in 2002. The FAA requires, every
7 several years, for any airport to go back to their noise
8 contours and do an update, based on the current
9 conditions, the current operating levels, how much noise
10 is there. That has to be updated periodically, and
11 that's what we're doing right now, we're updating the
12 previous studies in order to determine how much noise is
13 there projected as of right now. What we'll do with
14 this, of course, is look at the results and see what the
15 implications are for the acoustical treatment program.
16 So far, the airport has treated 317 homes and 216
17 apartment units.
18 We've also acquired what are called
19 avigation easements for each of these properties. And
20 then, again, just to stress, these boundaries I've shown
21 you on previous maps are proposed to the FAA. They are
22 subject to their approval. And what's included in this
23 is over 2,100 total residences. That number includes
24 ones that have already been finished.
25 And, finally, just to stress the point

1 that things shown within the approved boundary are
2 eligible for treatment. There are some other
3 requirements in addition. It is not a guarantee that a
4 certain house will be treated, it determines their
5 eligibility to participate in the airport's program.
6 So, to let you know what the next steps
7 are after today's meeting, after this meeting we will --
8 as I mentioned, there's a 30-day comment period where
9 you may send in comments, e-mail comments, you may call
10 the airport. You also may participate in another
11 meeting similar to this meeting, which is the upcoming.
12 It's not been scheduled yet. It will happen late
13 February or early March, after the 30 days is up. This
14 is yet another opportunity to come out, get more
15 information, ask more questions, submit any more
16 comments you may have, as you think through everything
17 you've gone and -- everything you've hopefully learned
18 tonight, and so this will be another meeting similar to
19 this one. You'll have a chance to ask questions, a
20 chance to give comments as well.
21 After all these comments have been given,
22 the airport will collect them up and go through and we
23 will respond to each and every comment, and the final
24 document that we submit to the FAA will include all
25 comments received, and a response to each comment,

1 addressing the question or the concern of that comment.
2 Once that process is done, we will also
3 present these results to the San Antonio City Council,
4 which is a required step in the process, and then,
5 finally, we'll submit the document to the FAA, once
6 these other steps have been completed. So that is,
7 obviously, looking like at some point mid to late March.
8 After that, the FAA requires a several month long review
9 period, so we expect to hear their final review of the
10 documentation by either spring or summer of this year.
11 To conclude, many of you already know
12 Jerry Rankin, my assistant here tonight, and this is his
13 address, this is his phone number. For anyone that did
14 not get it yet, we'll leave this up so you -- he can
15 answer your questions or he can direct you towards me or
16 anyone else that needs to be involved in a particular
17 question.
18 The study report is sitting on the front,
19 on the left here, on this table. It can also be
20 reviewed at public locations. Those are listed on one
21 of our boards. There's some local libraries and other
22 spots that you can go review the document. And it's
23 also available on the city's website, at this link
24 address. It will download you a PDF file of our full
25 report, with all these maps, results, and documentation

1 within it.

2 Okay. So, at this point, what we're going

3 to do is have a 15-minute break. You're invited to get

4 up, circulate, ask more questions at the boards. At

5 that point, we'll start reading off names, calling them

6 up to come up and give comments.

7 *(Recess from 7:41 p.m. to 8:00 p.m.)*

8 MR. MONROW: At this time, we're going to

9 begin the reception of the comments for those people --

10 there are seven people who have registered that they

11 would like to give their comments, so we will start that

12 process at this moment.

13 First, I'd like to thank Holy Spirit

14 Church for hosting us today. We appreciate you, and we

15 appreciate your help with setting up and providing the

16 facility.

17 So, at this time, I'm going to go through

18 and call off each name, and you may approach this

19 microphone right at the front of the table here. The

20 court reporter is ready to receive your comments. And

21 the way we will address the comments is that we'll

22 collect them today, then we will go back, we will review

23 them, we will provide written responses. After we've

24 done the 30-day comment period and gotten all comments,

25 we will provide those responses to you. So you will not

1 receive an answer from me live tonight, you will instead
2 get a written response in the future, based on the
3 comments you give tonight.
4 So, with that said, the first commenter --
5 I'm sorry. Yes. I've been reminded to -- each comment
6 is limited to a five-minute time limit. I will keep
7 that time myself, and what I'll do is, when you have one
8 minute left, I will raise one hand, make sure you see
9 it, and when you have -- your time is up, I'll raise
10 both hands so that you know your time is up. The first
11 commenter is Richard Jodry.
12 MR. JODRY: Long O, Jodry.
13 MR. MONROW: Jodry, long O.
14 MR. JODRY: I'm the president of Enchanted
15 Village, which is extreme north end of Harmony Hills.
16 We're approximately at the corner of West Avenue and
17 Rhapsody. Because of the big bend in Rhapsody, we're
18 one quarter mile closer than any other homes to 300
19 northwest. I was surprised tonight to find that the
20 data point used to give the measurements in our area is
21 four-fifths of a mile to the south of us.
22 Now, this kind of boggles the mind, but
23 the topographic maps over there showing average sound
24 are rather meaningless when it comes to individuals.
25 Now, one of the biggest problems we have is the freight

1 planes going over very early in the morning, which wakes
2 up a considerable portion of our residents.
3 The biggest problem we have is not what
4 happens on the average, or what happens in a bright
5 sunny day. Our biggest problem comes when there are
6 strong west or northwest winds or blue northerns, as you
7 might want to call them, with rain and very low clouds.
8 We have measured, on several houses, sound levels
9 outside the bedrooms of 126 decibels, which is as high
10 as our meter would go.
11 Now, after the 1990 map came out, which --
12 we attended those meetings. After that map came out,
13 Mr. Hopgood, who was the noise supervisor or whatever
14 then, came out, and he and I sat beside our swimming
15 pool and, on landings, on a clear, bright, sunny day, no
16 wind, we got a minimum noise of 65 decibels. The
17 average noise was about 75, and we had noise levels as
18 high as 95 decibels.
19 Now, this is during the day, so -- and
20 this was at the high traffic area at night, which means
21 people that lived in that area, Enchanted Village, at
22 that time of night, when they're on a phone call and a
23 plane comes over, you put the phone down a few minutes.
24 If you're having a conversation, you forget it.
25 These sort of things don't even begin to

1 show up on those topographic maps over there, so what we
2 need to do -- the best thing we could do is make the
3 planes fly in a flight pattern, because when we get
4 those northwest winds, they blow the planes south, and
5 the flight path is directly over Enchanted Village.
6 These sort of things don't show up on
7 those maps. Those are the things that need to be
8 considered when you determine what effect all of this
9 noise has on specific areas. I think we very, very
10 badly need to have some additional work done to show the
11 noise we have that is disturbing, not the noise that is
12 the average on the bright, sunny day.
13 MR. MONROW: Okay. Thank you. Next up is
14 Mae Ashton.
15 MS. ASHTON: I live in the northeast
16 section, near McAllister Park. We have 1,000 homes off
17 of Wetmore Road, and then there's 220 homes in the Ridge
18 Stone Subdivision. This is the first meeting that I
19 have attended. Our 220 homeowners did not receive a
20 flyer for this meeting, and if it wasn't for our good
21 neighbors at Ridge Stone, and their marquee, or marquee,
22 we would not have known about tonight's meeting.
23 And let me just say thank you, because
24 y'all have given us so much good information, and I
25 really appreciated it.

I understand that flyers were circulated in Eden Subdivision and, again, our subdivision was not notified. If there's any way I can, as a citizen, have some contact with the city or your office, I would be happy, at the next public meeting, to deliver those flyers to our homeowners myself.

The website information, will that have the next public meeting date, will it have the date when it goes before the city council, and will it have the date that the FAA will approve your recommendations?

Do you have, on the website, or any other information on the street names of the homes, the 324 homes that have already been retrofitted with this noise building material? And I guess my last comment is, I did not hear, when do you sign up to put your name on the list for a pending approval for the noise abatement? Thank you.

MR. MONROW: Thank you. Next is Carol Ross.

MS. ROSS: Well, my biggest comment is that it looks like, from your map and from where the line is drawn, we live directly under -- or the planes go directly over us from the runway that has the most airplanes. Okay? And we are Harmony Hills, and I don't propose that all of Harmony Hills get an abatement, but

1 Raindrop is the longest street in Harmony Hills, and my
2 house is at the very end of Raindrop. Where your line
3 is seems to be right along Rhapsody.
4 I can throw a rock and have it land in the
5 middle of Rhapsody from my backyard. My backyard backs
6 up to the industrial park that is right on Rhapsody,
7 therefore, I feel like that you have eliminated a
8 section of residences between Silver Sands and Rhapsody
9 that are definitely being affected by the air traffic.
10 Okay? And, of course, I live on Raindrop, and that's
11 the one I'm concerned about, because I'm right on the
12 end of it. The planes that go over are extremely loud.
13 And when you talk about a 65 decibel, I'll be on the
14 telephone talking to someone, and I'll have to halt the
15 conversation to let the planes go over before I can
16 finish the conversation. I'll be in the backyard having
17 coffee with someone, and we have to stop and wait until
18 the planes are gone before we can finish our
19 conversations.
20 When they take off in the morning, I hear
21 the UPS planes leaving at 4:00 in the morning. And I
22 know, because I wake up and look at the clock and it's
23 4:00 in the morning. So, consequently, this little
24 section of residences really needs to be considered. So
25 I thank you for having us here, and I thank you for your

1 consideration.
2 MR. MONROW: Thank you. Next is Joseph
3 Sadowski.
4 MR. SADOWSKI: First of all, I want to say
5 thanks for not only having an opportunity to speak, but
6 the hard job that you are undertaking. I know it's
7 quite involved and a lot of work, as you're well
8 familiar with every day when you go to the office.
9 My concern is, I live on Cave Lane, which
10 is southeast of the airport. Across the street from our
11 home, all the houses have been retrofitted and updated.
12 The boundary was randomly put down Cave Lane. I'm right
13 on the boundary, but yet our house, up until today, you
14 know, was ineligible. My concern is that you say, okay,
15 the boundary is expanding, your home may be eligible,
16 depending on what the FAA considers, but I'm just asking
17 for more equity in something like that, to draw a
18 boundary arbitrarily. I've talked to other neighbors on
19 the street, and they say they've contacted the agency,
20 and they've said, oh, you'll never be -- your house will
21 never be remodeled or updated.
22 I just find the process somewhat random,
23 or possibly the information that's presented to the
24 community, presented to my neighbors all around the
25 airport, so I would ask that is, you know, you have

1 everyone's name, address, if you can just update us as
2 the process goes, especially when the FAA comes back and
3 decides how they'll expand the program. Contact the
4 homeowners and at least let us know, because it is
5 tough. I've got very young children, and when the
6 planes go off at 4:00 in the morning, it's a challenge
7 to wake up every day and, you know, calm your kids down
8 or whatever.
9 So there could just be more information.
10 Like I say, everybody's address was provided tonight.
11 Just help us out as homeowners, please. Thank you.
12 MR. MONROW: Thank you. Next is Brian
13 Krasiewski. Brian Krasiewski, with a K? All right.
14 We'll skip Brian and go up to William Schiller.
15 MR. SCHILLER: Yes, sir. I'm glad to see
16 that it looks like that you have expanded the area,
17 because it has been quite contiguous in our
18 neighborhood, in our neighborhood association. Some
19 people across the street got windows, and how come I
20 don't get my windows, so it looks like you've expanded
21 it quite a bit, and I'm glad to see that, but I was
22 talking to one of your gentleman, Ben, and he said
23 helicopter flyovers, especially when -- I believe
24 it's -- 12R is in operation, Fort Sam Houston and
25 Martindale Air Field, and I guess they go out to Camp

1 Bullis all the time, Blackhawk helicopters shake the
2 chandelier in my house, it seems to be that they fly --
3 they have to fly right over the runway during -- when
4 12R is -- when all the planes are landing and taking
5 off.
6 And Ben said that the helicopter and
7 military flyovers are not included in any of your data
8 or anything like that. Because, again, my house, it's
9 pretty -- whenever the military is doing stuff,
10 especially at Camp Bullis. We have quite a few -- I
11 don't mean it's just like one -- you'll have six or
12 eight, and then they'll go back up north, and then
13 they'll come back at 10:00 at night, 11:00 at night.
14 Let's see. Also, I'm out of the red area,
15 but I don't need an alarm clock when they're using 12R,
16 flying into the north. The sound reverberates and my
17 windows shake, so there was a Delta, I was told, by
18 Mr. Rankin, where -- did he leave already?
19 MR. RANKIN: I'm right here.
20 MR. SCHILLER: You said it was the Delta?
21 MR. RANKIN: No.
22 MR. SCHILLER: It's 612. What's the 612,
23 Delta?
24 MR. RANKIN: We have a Delta flight.
25 MR. SCHILLER: There you go. See. What

1 did I tell you, 6:00 a.m., or 6:12 a.m.? I don't need
2 an alarm clock when the air is cold and dense.
3 I'll, you know, be 105 by the time I get
4 on there. The third one or fourth one, I can't
5 remember, is there an estimated timeline for all the
6 homes inside the new 2014 noise areas? Because it looks
7 like you only had about 314 houses, and I think you
8 said, what, 3,000 houses or something that are up --
9 that are located in the new boundaries? So is there
10 going to be a timeline for estimated completion of the
11 2014 red line area? Thank you.
12 MR. MONROW: Thank you. I'll check one
13 more time for Brian Krasiewski. Okay. Well, those are
14 all of the cards we've received for comment.
15 MR. O'NEAL: Can I take Brian's place?
16 MR. MONROW: Yes, you may. You have five
17 minutes.
18 MR. O'NEAL: My name is Michael O'Neal,
19 and I'm in Enchanted Village. Is there any way that
20 instead of completely redoing my house -- I only need
21 windows, say. Is there any way that the program can be
22 modified so that if you're on the fringe -- if you're
23 right in the middle you get a free -- you get a complete
24 house done, if you're a little ways off, like in one of
25 the new red bordered areas, that you can have, say,

1 20 percent of your house done with new windows, say, if
2 that's what you want?
3 Is there any way to go -- it's all or
4 nothing right now, and you have to wait a long time for
5 the all. Is there any way to get a partial payment
6 soon?
7 MR. MONROW: Okay. Thank you. I'd like
8 to draw this to a conclusion, again, thanking our host,
9 the church. I'd also like to make one last
10 announcement, just to remind everyone that in the end of
11 this 30-day time period we will hold another hearing,
12 and that is the formal hearing required in the FAA
13 process which, again, closes out the comment period. We
14 will hold a workshop similar to today, we'll receive
15 comments similar to today, all of which will be
16 incorporated and documented in the final document.
17 We'll be sending out flyers and other
18 information to advertise that meeting once it has set,
19 the location. And it will be sometime, again, early in
20 March. It's not been set yet, but it will be another
21 opportunity for you guys to gain additional information
22 and, again, to give any other comments you may think of
23 tonight, tomorrow, next week. Please do come out.
24 Thank you.
25 (Meeting concluded at 8:17 p.m.)

1 I, Becky Pettyjohn, court-approved transcriber,
2 certify that the foregoing is a correct transcription
3 from the meeting of the proceedings in the above-entitled
4 matter.
5 I further certify that I am neither counsel
6 for, related to, nor employed by any of the parties to
7 the action in which this hearing was taken, and further
8 that I am not financially or otherwise interested in the
9 outcome of the action.
10 I further certify that the transcription fee of
11 $_____ was paid/will be paid in full by
12 _____.
13 Certified by me this 3rd day of Feb,
14 2009.
15 BECKY PETTYJOHN, Texas CSR #3521
16 Expiration Date: 12/31/10
San Antonio Court Reporting
17 555 E. Basse Road, Suite 205
San Antonio, Texas 78209
18 (210) 227-1525 Firm Reg. #175
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20 * * * * * *
21
22
23
24
25

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC MEETING

January 27, 2009 – Holy Spirit Catholic Church

COMMENT FORM

This form is provided to receive your comments on the Noise Exposure Maps and their effect on the existing Noise Compatibility Program for the San Antonio International Airport. Please use the space provided below attaching additional pages if necessary. Either deposit the form in the comment box, or mail it to the address provided.

Comments: It is illogical to assume that the elongated runway will not receive more traffic. For example there exists a strong and reasonable probability that the arrivals currently arriving into one runway will be split with the extended runway. This would obviously create more noise for those neighborhoods North & Northeast of the airport.

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name MARTIN VALERA

Address 3322 STONEY CHESTER
SA TX 78247

SAN ANTONIO AIRPORT SYSTEM

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PUBLIC MEETING

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Comments: When planes are coming in to land, they fly over my backyard. My wife & I are unable to carry on a conversation when planes go over, even though we are sitting next to each other, or face to face, playing cards.

Furthermore, a cell phone conversation may not occur during fly overs. Must constantly stop conversations as planes go by. (Fed Ex-UPS Heavy Jets)

We get 5 AM flights daily that often wake us. We have many flights from 10 PM to 12 PM that often keep me from sleeping. A TV must turn up TV sound 3 to 5 times to hear during this period. This sound problem does not exist with all doors & windows closed & sealed!

You are welcome to come and observe. A lawn mower is less noisy than a landing plane!

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name: Don W. Peterson with Ellen Knightsbridge Kay

Address: 1338 Vista Del Monte

SATX 78216

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Comments: I have been living in Vista Del Norte for over 20 yrs. and the airplanes have always been a big noise factor on most afternoon & starting about 4AM They come directly over my house landing. Please let us Know if we will be in this project

Thanks.

Mrs. David Rochelle

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name Peggy Rochelle

Address 13310 Vista Bonita

492-5458

SAN ANTONIO AIRPORT SYSTEM

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Comments: We were one of the families to sign up in the early 90's, after the article first came out in the newspaper. At that time our street was in the area to get the improvements for noise. Has that been changed since then and are the ones who signed up early still on the list?

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print: Burnie Miller

Your Name Rosalie Miller

Address 111 Middlebury
San Antonio TX 78217
826-2880

NORTHEAST PARK

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC MEETING

January 27, 2009 – Holy Spirit Catholic Church

COMMENT FORM

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Comments: My NAME is Rosalinda CANO at 8314 Republic Dr. & Rector & 281 + 410. area. We live there for 13 years. When we first move in, I really didn't know how close we were to the airport area and the Fire house station too. At first it did mind the noise to much because its was our first home. But now its really does. Especially the airplane that goes over the house especially the bedroom. Windows. I spoke to Jerry Rankin from Aviation Dept. last year. And he said that my house was in that area for one program to help us out. But airplanes especially the Jet-X really set real noisy. All I want to see if someone can help out to keep some of the noise not to loud. I would like to talk to someone if there one program that is out there. That why I'm here attending the meeting after work. Tired and hungry but I'm here to hear or to get any help for my windows. Thank

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name CANO, Rosalinda

Address 8314 Republic Dr.
S.A. TX 78216

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC MEETING

January 27, 2009 – Holy Spirit Catholic Church

COMMENT FORM

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Comments: I LIVE BETWEEN NACOGDOCHES AND BROADWAY, IN A NEIGHBORHOOD JUST NORTH OF THE DEPARTURE TRACKS OF HALF THE FLIGHTS LEAVING THE AIRPORT. I PURCHASED THE HOME TWO YEARS AGO, WHILE LIVING IN SEATTLE, WASHINGTON. FOR THE PAST TWO YEARS I HAVE BEEN RENTING THE HOUSE OUT WITH THE INTENTION OF MOVING BACK TO SAN ANTONIO. DURING THE PERIOD IN WHICH I WAS SHOPPING FOR MY HOME AND OVER THE LAST TWO YEARS, I HAVE BEEN UNFORTUNATE ENOUGH TO BE PRESENT AT MY HOME DURING PERIODS WHEN FLIGHTS WERE NOT DEPARTING OVER MY NEIGHBORHOOD, SO I HAVE BEEN UNAWARE OF THE NOISE. NOW THAT I HAVE RETURNED TO LIVE IN SAN ANTONIO, I AM DEALING WITH 70+ dB NOISE THAT RATTLES THE HOUSE. THE DEPARTING FLIGHTS SEEM TO BE THE MAJOR ISSUE, AS I HAVE NOTED WHEN PLANES ARE USING THE SAME PATH FOR LANDING THEN THE NOISE LEVELS ARE DRASTICALLY LOWERED. I BECAME AWARE AFTER MOVING BACK TO SAN ANTONIO OF THE NOISE MITIGATION PROGRAM AND THE POTENTIAL HELP IT CAN OFFER HOMEOWNERS. MY QUESTION IS REALLY BASIC, THOUGH IN MULTIPLE PARTS; WHY IS MY ENTIRE NEIGHBORHOOD NOT COVERED IN THE MAP? WHY ARE HOMES THAT ARE FURTHER NORTH OF THE FLIGHT PATH ELIGIBLE? WHY ARE THERE NOT MORE NOISE/SOUND "SENSORS" SPREAD OUT AROUND MY NEIGHBORHOOD?

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name THOMAS FOSTER

Address 135 MIDDLEBURY DR.
SAN ANTONIO, TX 78217

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC MEETING

January 27, 2009 – Holy Spirit Catholic Church

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Comments:

The contour maps are very symmetrical based upon the runway lines. Shouldn't they be slightly skewed to the north since the majority of the commercial flights coming into SAT are coming from the north of San Antonio? Especially towards the contour area far ends?

What kind of noise mitigation measures are planned for residential structures?

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name Charles M. Cortines

Address 13318 La Vista Dr.
San Antonio, TX 78216

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC MEETING

January 27, 2009 – Holy Spirit Catholic Church

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Comments: The project growth by 2014 does not show airport traffic growing in proportion to the San Antonio/Bexar County population.

The study should have included multiple projections based upon potential higher levels of traffic. The study should include at least a 260K level because this is within historical levels.

While the data is available the 260K projection should be accomplished and new maps be documented. If accomplished, the study would be available if the traffic increases above the projection.

The study should have addressed the increased ground noise based upon the new terminals and the related truck traffic

Next presentation should provide more details on actions after plan is approved. How are people notified? What is accomplished to upgrade the home.

Thank you for the information, punch + coffee

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name Don Davis

Address 16406 Ledge Park

SAN ANTONIO TX 78232

own property at 12039 Stoney Summit

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC MEETING

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Comments:

Thank you for providing a forum to view our opinion!

In my previous comment I neglected to mention a few items

when plane go overhead, conversations on the phone are halted. Sometimes inside I can carry on a conversation but outside it is impossible.

I am fearful the noise quality could effect the Resale of my home ~~lowering~~ lowering it's value. Especially if expansion is planned

- although you flight patterns indicate most departures happen in my area, we seem to see what looks like a lot of arrivals. Maybe the aircraft are circling?

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name JOHN DUNLAP

Address 103 FIVEOAK DR

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC MEETING

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COMMENT FORM

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Comments: I live in the Stoneridge Subdivision off of Wetmore Road. I was disappointed when the noise exposure map changed and only a few houses in our subdivision are now covered by the program

I hope the 2009 and the 2014 maps are approved and the rest of the subdivision is again included in the Noise Compatibility Program.

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name LINDA DOLASH

Address 12042 Stoney Bridge
S.A. TX 78247

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC MEETING

January 27, 2009 – Holy Spirit Catholic Church

COMMENT FORM

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Comments: Thank you for providing this forum. Our chief comments include:

1. The windows rattle in our home at each overhead flight.
2. Telephone conversations are frequently interrupted on a regular basis.
3. Verbal face to face conversations are frequently interrupted by aircraft noise.
4. Aircraft noise and disturbance may make home resale difficult to certain buyers and restrict achievable sale price.
5. Aircraft noise is very audible early in the morning.
6. Private jet aircraft noise is very loud at our address.
7. Heavy noise from runway 12R in a SE direction

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name Merrill E. Swanson

Address 126 Oakhurst Place
78209
210.824.4085

C-93

Salvador, Jennifer, + Adrianna Olvera

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC MEETING

January 27, 2009 – Holy Spirit Catholic Church

COMMENT FORM

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Comments: We have tried to put up with the noise for a very long time now and we can no longer deal with this! We wake up all the time because of the airplanes passing over our heads, our dogs wake up and bark at them also. We just recently had a precious baby and she wakes up EVERY time an airplane passes! Not only can she not get the needed + required sleep for a developing newborn, but we can't sleep either! Please! Do something about this, at least please provide windows that are sound proof. Thank you!

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name Jennifer + Salvador + Adrianna Olvera

Address 12211 Ridge Corner St.
SA, Tx 78247

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC MEETING

January 27, 2009 – Holy Spirit Catholic Church

COMMENT FORM

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Comments: My house is under the flight pattern. The noise is sometimes deafening. ~~and~~ The flights go by all day and even into the late night. Had I known about this ahead of time, I never would've bought this house (4-5 yrs ago).

Please contact me at iafarias@sbcglobal.net. or 210-723-1962. I want to make sure I am in the program.

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name Iris Farias

Address 13307 Vista Bonita
San Antonio, TX 78216

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC MEETING

January 27, 2009 – Holy Spirit Catholic Church

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Comments: I understand that everyone is concerned about noise and its impact on their homes. I'm no different.
My husband and I are in favor of approval of the new 2014 Noise Exposure Maps & its Noise contours.
We are delighted that our home is now eligible for noise abatement program.

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name LINDA C. DRAPER

Address 2727 Chisholm Trail
SA TX 78217

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC MEETING

January 27, 2009 – Holy Spirit Catholic Church

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Comments: ENCHANTED VILLAGE TOWNHOUSES (161 UNITS) IS 2 SHORT BLOCKS FROM NAKOMA – WHICH IS THE EXACT FLIGHT PATH OF THE MAJOR RUNWAY.

WE REALLY COULD USE HELP.

ALSO, IS THERE INFORMATION AVAILABLE ABOUT THE VARIOUS MODELS AND TYPES OF AIRCRAFT, PLUS THEIR AGES – SOME ARE SO MUCH LOUDER THAN OTHERS! THIS SHOULD BE A PART OF THE STUDY...

JAMES HOGATE
622 STRINGS DR 210-595-7039
SAN ANTONIO, TX 78216

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name GIL FRANKLIN

Address 616 STRINGS DR.
SATX 78216

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC MEETING

January 27, 2009 – Holy Spirit Catholic Church

COMMENT FORM

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Comments: I live on Stoney Dr. on Stone Ridge Sub. You are already replacing doors & windows in front of my street when are you going to do my side. Also I already replaced my windows & front door. Are you going to work something out as far as the expenses I incurred. I work for the Railroad & I needed to do this, as I work day & night & need to sleep during the day with as little noise possible. I hope we can resolve something soon. Also why has my neighbor 2 houses down from me received a letter on your project & I have not.

I hope to hear from you soon

Sincerely

Frank Guerra

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name Frank Guerra

Address 12015 Stoney Dr

S.A., TX 78247

210-296-6490

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC MEETING

January 27, 2009 – Holy Spirit Catholic Church

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Comments: Why is it that the last study conducted shows my street as part of the boundary? I've lived in my home since November, 2001. Never have I received a letter stating that my windows, vents, doors, etc... would be replaced due to the noise. Please send me a letter as I'm due for this.

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name Elsa Estorga

Address 12071 Storey Bridge
SA, TX 78247

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC MEETING

January 27, 2009 – Holy Spirit Catholic Church

COMMENT FORM

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Comments: My name is Jorge Torres and I live at 13027 Vista Haven. Incoming flights come directly over our home, How do we know if and when we qualify for noise reduction? Do we contact someone to get our home evaluated or does someone contact us, when our home is going to be done.

Thanks

cell 210-273-5373

home 210 492-9066

Adress is 13027 Vista Haven
San Antonio, TX 78216

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name_____

Address_____

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC MEETING

January 27, 2009 – Holy Spirit Catholic Church

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Comments: The new contour maps include Storey Bridge in the Stone Ridge Subdivision. This should be approved as I myself and my neighbors have been documenting the disturbance by aircraft for some time now. Air Traffic is increasing. The hours of operation are NOT 7-10 but rather 5:30 am to midnight. Planes fly low and directly in line with our street. Windows rattle, noise levels are unbearable - so much so that phone conversations are drown out, TV/Radio cannot be heard, and morning air traffic is so bad it often awakes us from sleep. *We are @ 90dB (3 miles from take-off - & directly in flight path) - Planes do not "sometimes" fly off course, but consistently and daily fly directly up Storey Bridge over our homes. The "peaceful enjoyment" of our residences is impossible. We wish to be allotted the same corrections to this problem as are being offered to other homeowners - windows, doors, roof insulation

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Thank you

Please Print:

Your Name Elizabeth A. Mueller

Address 12067 Storey Bridge
San Antonio, TX 78247

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC MEETING

January 27, 2009 – Holy Spirit Catholic Church

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Comments: I live in an area where we have planes flying directly overhead at different times during the day. We have significant plane noises at different times throughout the day. I want to make sure our house is within the abatement zones.

Thanks. JOHN DUNLAP

I can't tell from the map if we are within the black lines on the map or not.

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name JOHN DUNLAP

Address 103 FIVE OAK DR
78209

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC MEETING

January 27, 2009 – Holy Spirit Catholic Church

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Comments: We live at 8810 Pineridge Road. A friend of mine that has already received all new doors + windows in her home from the earlier noise abatement project used to work out of 8810 Pineridge Road and stated that the airport news is much much worse at 8810 Pineridge Rd. than at her home.

When planes ~~go~~ depart or arrive over or near our home at 8810 Pineridge Road, the windows rattle. Friends who have spent the night wake up frightened when planes went over or near - especially when there is low cloud cover.

We question whether the noise abatement project takes into account (as it should) the extensive damage to homes due to prior years' flight patterns.

We would like to be informed of how to appeal a homes noninclusion in the prior noise abatement boundaries + those in the future.

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name GINA LICATA ADAMS

Address 8810 Pineridge Rd.
San Antonio, TX 78217

Also, we should have been able to come to this meeting, give our address and be told whether we are or will be included within the boundaries.

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC MEETING

January 27, 2009 – Holy Spirit Catholic Church

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Comments: MY LOCATION (HOME) IS THE EDEN SUBDIVISION. CROSS STREETS ARE THOUSAND OAKS/BULVERDE. BEFORE I INSTALLED NEW QUALITY WINDOWS AND MORE CEILING INSULATION, I COULD HEAR AIRCRAFT INSIDE. MY OPINION IS THE NOISE LEVEL WAS LOUD. AND THE WINDOWS ~~RATTLED~~ AND PICTURE FRAMES ON THE WALLS RATTLED. AFTER MY NEW WINDOWS AND TWO EXTERIOR DOOR UNITS WERE INSTALLED THE NOISE WENT DOWN CONSIDERABLY. THE PICTURE FRAMES STILL RATTLE. THE CEILING INSULATION ALSO SEEM TO MAKE THE DIFFERENCE. JUST TODAY AS I SPOKE TO MY NEIGHBOR OUTSIDE, OUR CONSERVATION HAD TO WAIT FOR THE PASSING AIRCRAFT TO MOVE AWAY. OF COURSE, NIGHTTIME ALLOWS FOR THE AIRCRAFT NOISE TO BE MORE DOMINANT. I HOPE YOU CONSIDER THIS IN YOUR STUDY. FOR THE EDEN SUBDIVISION.

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name ANTONIO VASQUEZ JR

Address 3331 CADBURY DR
S.A. TX 78247

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC MEETING

January 27, 2009 – Holy Spirit Catholic Church

COMMENT FORM

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Comments: Larger aircraft arrivals and departures on Runway 12R, extending into late night hours (as late as 2300 hrs) cause disturbance of sleep patterns in my residence (located at 11827 Persuasion, 78216).

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name William B. Morris

Address 11827 Persuasion
San Antonio, TX 78216

Regarding the airport noise –

The noise from airplanes is disturbing to those of us who live on Chisolm Trail. It seems like it has been getting louder and more frequent.

Anything that can be done to keep our area from being constantly under the flight pattern will be appreciated, or other remedy.

Sincerely,

Joan Seifert
2807 Chisolm Trail
San Antonio, TX 78217
826-7764

January 27, 2009

January 27,2009

To whom it may concern,

I have resided at 2719 Chisolm Trail for the last ten years and have experienced the air traffic noise over my home, since we have been here. Depending on which way planes are landing or taking off is a factor. If you can help us live a more peaceful life, then it would be appreciated. I would like more information on future plans to make our homes more soundproof. Feel free to contact me either by mail or phone as I will not be able to attend tonight's meeting.

Sincerely,

Joe Ruiz
2719 Chislom Trail
San Antonio, TX 78217
210-669-8005
ruizfinancial@yahoo.com

ENCHANTED VILLAGE TOWNHOUSE CONDOMINIUM ASSOCATION
631 Strings Drive
San Antonio, Texas 78216-2612
January 20, 2009

Mr. Jerry Rankin
Noise Mitigation Officer
City of San Antonio Airport

Dear Mr. Rankin,

Enchanter Village is an enclave of 161 Townhouses located at the extreme north side of Harmony Hills. It is enclosed in a large bend of Rhapsody Drive, immediately east of West Avenue. This places it just over 1/4 mile SW of the flight path extension of Northwest Runway 300 of the San Antonio Airport, as shown on your maps. It is closer to this runway, or it's extension, than any other affected housing, by about an additional 1/4 mile.

We participated in the 1999 Technical Advisory Committee on Noise, and submitted two detailed letters concerning our problems. Rather than type all of this again I am enclosing copies of these letters since the same problems, described in detail, still exist, and actually have become more critical. Nothing was done about our problems at that time, nor since, as far as we can see.

Some time before the closing of this October 1999 study the Airport Noise Abatement officer, at our invitation, had come to Enchanted Village and he and I spent several hours measuring noise during the late afternoon busy period, on a calm sunny day. . A large number of readings were recorded, giving us a solid average, under those particular weather conditions. I subsequently purchased the same noise meter the city used, and began taking readings, which are described in the enclosed letter copies. You will note that at that time we had recorded aircraft noise of 126 decibels, the maximum possible with that meter. After 1999 for the past 10 years I have on many occasions measured sound levels. Readings as high as 126 db. have been measured again. This can be a horrible interruption to sleepers in the dead of night. In general, sound levels have slowly increased over this period. Incidentally, as to the accuracy of the meter, results obtained using it were accepted in a court of law, concerning the City Noise Code.

The entire noise problem is multiplied by planes drifting south, closer to, and even over, Enchanted Village during periods of north and northwest winds. During a "Blue Northers" with rain and low clouds the noise level is unacceptable.

In summary, clearly Enchanted Village is in the worst position of any properties on the West side of US 281. During periods of low clouds or rain the noise levels are way above an acceptable level. When these conditions are accompanied by strong west or northwest winds, causing planes to fly directly overhead, or even to the south of us, the noise levels are actually dangerous.

Sincerely,

Richard L. Jodry
President, Enchanted Village.

ADDENDA, JANUARY 23, 2009

Today I had the opportunity to visit the Heimer Library and study the latest reports on noise problems on file there. The maps left me confused. First of all, there is neither data as to how the information on these maps was collected, nor what it specifically represents. Thus, they are hardly understandable without explanation. They do not show locations where data was gathered, nor the values. They do not show weather conditions, or how these were averaged into the data. They do not show overall times the noise level was measured. They do not show whether there were enough data points to make meaningful noise isopleth maps. I do not understand how Enchanted Village can be outside the 65 db. isopleth line when both your former Noise Officer and I, sitting beside our pool, took measurements as high as 75 decibels or a bright, calm day. However, he real problem is bursts of exceedingly loud noise, especially at night. This has caused many of our home owners to attempt noise relief measures at their own expense.

I was, however, pleased to note that your 2014 map does include Enchanted Village within the Noise Mitigation Boundary, belatedly. It should be within this boundary at this time. However, I still would challenge the location of your isopleth lines. I would request that you meet with me here to check present sound levels. It would be great to have you here during a "Blue Norther". During periods of high North winds your map of runway 300 should be rotated some 15 degrees to the south to reflect the changing conditions due to inclement weather.

Sincerely,

Richard L. Jodry
Senior Research Scientist, Retired.
Board on Mineral Resources, National Academy of Sciences, Retired

Copy

7 October 1999

Ms. Amanda O'Krongley
San Antonio International Airport
9700 Airport Boulevard
San Antonio, Texas 78216

Dear Ms. O'Krongley

I would like to have the following comments, concerning airport noise in relation to Enchanted Village, included in the record of the October 6th meeting of the Technical Advisory Committee on noise.

ENCHANTED VILLAGE

LOCATION: Enchanted Village is that part of Harmony Hills located nearest to the Northwest flight path of the San Antonio airport. One hundred and sixty ~~two~~ one homes are located within the confines of this Association. It is bounded by Rhapsody on the north, Sandman on the east, Persuasion on the west, and Chauncey and Song on the south. The city map shows that Rhapsody parallels the flight path at a distance away of approximately 3/16 of a mile, then as it approaches Sandman takes a turn to the north so that enchanted village is only about 400 feet from the flight path. It lies 1 mile from the end of the runway. Forty six percent of all traffic into and out of the airport passes this area. (FAR Part 150 update, page 5). This contrasts to a distance of one and one-quarter miles to the nearest homes along the Southeast flight path, which receives only 36.5% of the traffic. To the northeast it is almost one and one-half miles to the nearest homes, with only 14% of the traffic. Traffic to the southwest is negligible. From these figures it seems likely that Enchanted Village is impacted by airport noise more than any other part of the city.

PROBLEMS: We realize that wind direction largely dictates runway direction use. We would like to see less traffic, but understand that there is probably no practical way to reduce this significantly at present. Elimination of late night and very early morning heavily laden freight traffic would be helpful. These planes don't seem to gain altitude quickly and are loud enough to awaken even sound sleepers. The biggest problem by far which we have is when there is a strong north wind. Especially when there is a "Blue Norther" with a low dense cloud cover. The clouds reflect the sound downward and the north wind drifts the planes southward as they take off so that the planes pass directly over Enchanted Village at a low altitude. We have observed planes as far south of Silver Sands, one-quarter mile southwest of the normal flight path and actually south of Enchanted Village. These flights are so loud that they actually are painful to the ears, even inside homes. This could be eliminated without cost to anyone by simply requiring flights taking off to strictly follow a flight path which is a straight extension of the northwest runway until they have gained enough altitude to eliminate this type of noise problem. There is really no reason to permit this southerly drift.

Another problem, which deals with safety as well as noise, is the approach path of smaller planes, particularly twin engine turbo-props. These planes when landing frequently approach the northwest runway on a path that lies halfway between Enchanted Village and San Pedro Avenue, at a very low altitude, then make a sharp right turn onto the runway. While it is not an extreme problem for Enchanted Village, it is for the larger part of Harmony Hills. Allowing these flights over a densely populated area at a low altitude certainly cannot be considered safe. These planes should be required to enter the landing approach pattern further out, and follow the same flight path as the commercial jets. This would improve safety and greatly reduce noise. Some of these planes are as noisy as commercial jets.

Soundproofing, particularly double glazed windows and increased insulation, has helped many of our members to at least reduce "normal" noise, so that inside noise can be tolerated. However, in extreme cases noise inside homes is still intolerable. If any soundproofing programs are instigated, then Enchanted Village certainly should be included, since we appear to the most heavily impacted area when it comes to airport noise.

Very truly yours,

Richard Jodry

COPY

641 Strings Drive
San Antonio, TX 78216
27 October, 1999

Ms. Amanda O'Krongley
San Antonio International Airport
9700 Airport Boulevard
San Antonio, TX 78216

Dear Ms. O'Krongley

Since attending the meeting of the Noise Compatibility Committee workshop I have spent some time measuring the noise levels from planes over Enchanted Village. Measurements were taken at the pool area on the northeast edge of the property. All measurements are A-weighted, using a slow response to help average out short peaks. Except where noted, more than 20 planes in each group were measured. For your information here are some of the results:

LANDINGS, LIGHT WIND, NO CLOUDS, RUNWAY 120

Light single engine planes to twin engine turboprops		75-85 db.
Two and three engine jets		85-95 db.
Four engine jets	None measured	

Note: Southwest planes at lowest range

TAKE-OFF, LIGHT WIND, NO CLOUDS, RUNWAY 300

These planes all stayed in straight flight path off runway.

Light single engine planes to twin engine turboprops		85-95 db.
Two and three engine jets		90-105 db.

Note: Southwest planes at lowest range. Possibly as little as 5 db. of noise between Southwest take-off and landing.

Four engine jets	One measured	More than 125 db.

This plane appeared heavily loaded, flying slowly and gaining altitude very slowly. Passed over very low and exceeded range of meter.

More than one half of all of the light planes and turboprop planes made a left turn at a distance of approximately one half mile from the end of the runway, passing directly over the center of Harmony Hills. This placed them about one-half mile southeast of me. Because of the low altitude they had reached the were very noisy. One turboprop measured 85 db. at my location and certainly must have been very much noisier at those homes under his flight path. These low altitude turns near the end of the runway should not be permitted both because of the noise but also because of the safety concern as they pass over homes at a low altitude. Following a flight path extending straight from the end of the runway would place them over a restricted area where no homes are permitted.

TAKE-0FF, LIGHT WINDS, HEAVY OVERCAST AND RAIN, RUNWAY 300

This condition existed in early morning on only one day. Planes stayed on flight path extending from runway. I did not get outside to take measurements. However, inside our bedroom, which is protected by double glazed doors and windows, a large tree, and a patio cover, noise levels reached as high as 85 db.

TAKE-OFF, HIGH WINDS FROM NORTH, HEAVY OVERCAST AND RAIN

This condition has not yet been encountered this year. When it occurs planes invariably drift south, over the center of enchanted village, and seem to fly at a lower altitude that usual. This is the time of greatest noise, and in past years noise levels frequently exceed 126 db., the upper limit of the meter.

I hope that these measurements may be of some use to you.

Sincerely,

Richard Jodry

Jan 27, 89

TO whom it may concern,

Air traffic noise has increased over my area Sagebrush + Chisolm Trail air noise may begin at 6 30 Am on most mornings wakes up sleepers in our home. Also noise at 11 00 PM

Photos in Hallway change position.

If outside we have to stop talking to each other

We have lived here for (over) 44 yrs.

© HMK. CDS.

Richard + Rose Slightom
8502 Sagebrush LN
S.A. TX-78217
(210) 8241624

Jan 27, '09

To whom it may concern,

Air Traffic noise has increased since purchase of home in 1999

Noise causes sleepers to wake up at 6:30A most mornings & at 11:00pm.

Do not set home security alarm because noise will set it off.

Theresa Ralston
2715 Chizalm Trail
S.A. Tx 78217
(210) 9307387

© HMK. CDS.

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC MEETING

January 27, 2009 – Holy Spirit Catholic Church

COMMENT FORM

This form is provided to receive your comments on the Noise Exposure Maps and their effect on the existing Noise Compatibility Program for the San Antonio International Airport. Please use the space provided below attaching additional pages if necessary. Either deposit the form in the comment box, or mail it to the address provided.

Comments:

My understanding of the area included in the noise abatement for the runway over 281 is only the commercial area between Rhapsody & Nakoma and does not include any of the residential properties. I live in the cul-de-sac at the end of Raindrop, just behind a commercial building included.

I have planes landing, flying low just beyond my property line. Planes that take off from this runway fly directly over my house ~~and~~ at times and ~~often~~ even beyond over my house ~~[illegible]~~ over houses up the cul-de-sac (south of my house)

I have to cease telephone conversations at times because of the noise. We have to cease conversations in my home and in the backyard at times because of noise I should be included in the noise abatement area. I request your evaluation of my situation

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name Carol Ross

Address 11722 Raindrop
S.A. Tex 78216

Phone: 344-9747

Map of Ross, Ron D - Ross Ron D (210) 344-9498 YAHOO! LOCAL

When using any driving directions or map, it's a good idea to do a reality check and make sure the road still exists, watch out for construction, and follow all traffic safety precautions. This is only to be used as an aid in planning.

From Kitchen Window

11722 Raindrop

From Kitchen Window

11722 Raindrop

Backyard at 11722 Raindrop

Backyard of 11722 Raindrop

From backyard of 11722 Raindrop

Backyard at 11722 Raindrop

From backyard of 11722 Raindrop

From backyard at 11722 Raindrop

Looking up in backyard of 11722
Raindrop

Looking up in backyard of 11722
Raindrop

Up the street of Raindrop looking
at my home at 11722 Raindrop

Looking North down raindrop from corner of Silver Sands and Raindrop

My house 11722 Raindrop is at end of street below airplane.

Enchanted Village Townhouse
Condominium Association, Inc.
631 Strings
San Antonio, Texas 78216
210-592-9520

February 5, 2009

Dear Mr. Rankin,

At the recent Airport Noise Workshop, when you and I were standing before the large noise isopleth map, it was impossible to see the exact unique location Enchanted Village has to the airport .flight path. I have enclosed a map showing this relationship. Because of a rather large off-set of Rhapsody Avenue to the Northeast, Enchanted Village Townhouses are at least 1/4 mile closer to the airport flight path than are any other dwellings west of US 281.

Of course, there really is no exact path the planes take arriving at or leaving the airport. The path indicated is the location of the path of arriving planes on a sunny day with generally calm weather with occasional gusts of southerly winds. I sat in my car on Brecsport while plane flew almost directly overhead. During periods of strong south winds the path would undoubtedly move north. With over 10 years of watching, I can tell you with certainty that with north or northeast winds this flight path moves south. With strong winds it frequently lies almost directly over Enchanted Village. With very strong winds from the north it occasionally lies to the south of Enchanted Village. On a very few occasions we have recorded it as far south as Silver Sands. During the periods of serious southerly movement the noise at Enchanted Village is intolerable. Even with no movement of the path, the noise here often reaches 95. db.

Another important factor determining the noise here is that there are no building of more than 1 story between us and the airport. The area on Rhapsody and to the north is restricted as to height of buildings. However, all of the houses in the northern part of Enchanted Village are of two stories, with bedrooms on the second floor and with double glass doors facing the airport. Thus, there is nothing to impede sound between us and the airport flight path.

If you recall, you pointed out to me that the point at which noise levels were measured for our area is located at the recreational area of Harmony Hills. Using the scale on your map, this appears to be something like 4/5 of a mile from the northern most street in Enchanted Village. As someone who has spent a lifetime making isopleth and contour maps, I find it extremely hard to accept this as a valid method for determining noise levels here.

At your convenience I would ask you to visit me here and observe for yourself the noise problems we have.

Sincerely yours,

Richard L. Jodry, President

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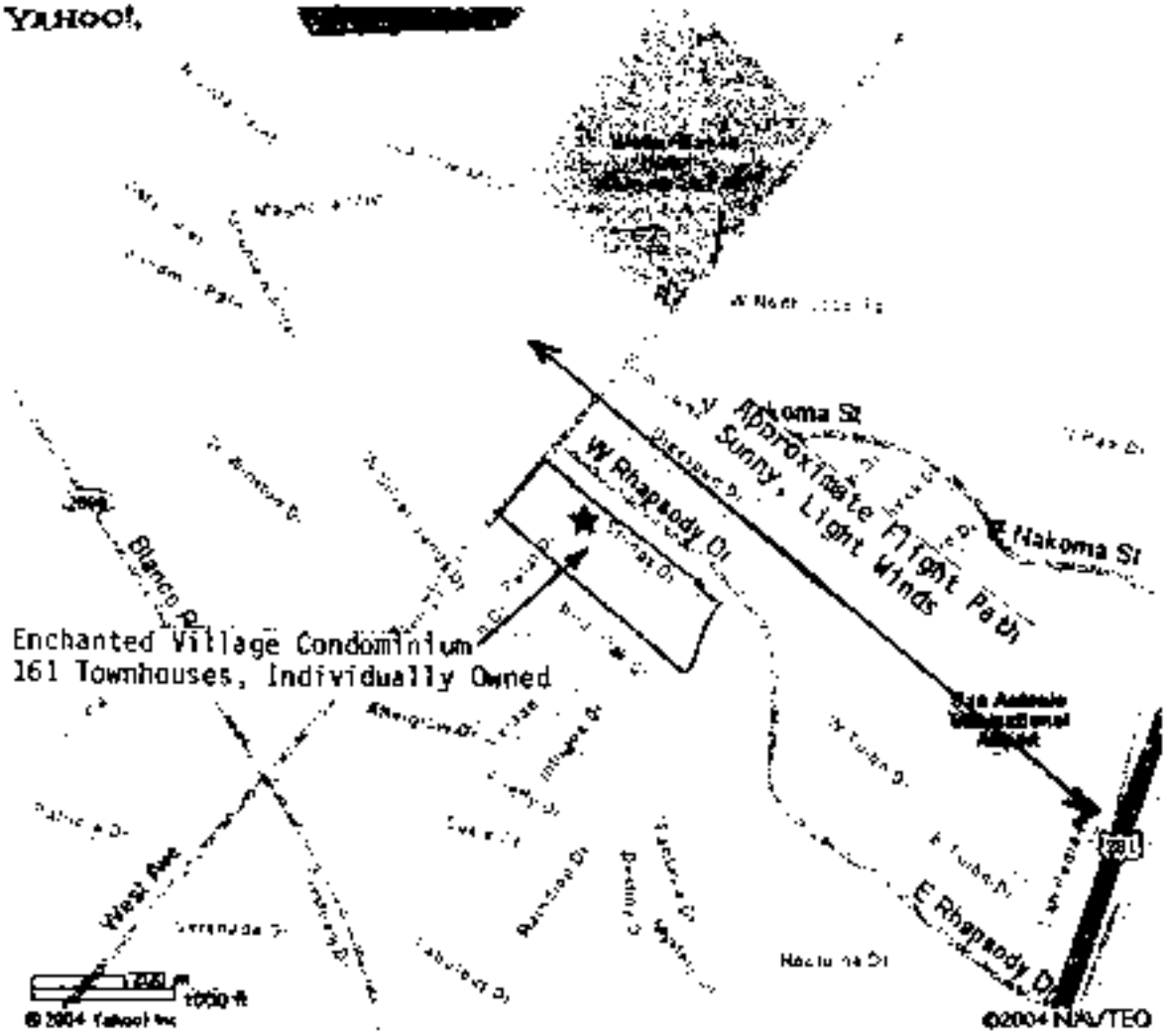
641 Strings Dr San Antonio, TX 78216-2612



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Jerry Rankin

From: LeMoyne Hall [clemoyne@world-net.net]
Sent: Thursday, February 05, 2009 1:44 PM
To: Jerry Rankin
Subject: Aircraft Noise Study

After attending the meeting at the Church I have some suggestions, questions and information to share.

1 Suggestion: One of the consultants said that the noise contour lines were accurate to within 100 feet(Vandiver is 42 feet wide and other side streets are narrower). In order for those affected to have a greater belief that they were being treated fairly, rather than implementing by block as was done in the past, it should be done as follows:

a) Using the old noise contour line move out from that line one house, after those houses are treated move out by one house until the process is complete.

b) Rather than including entire neighborhoods, use the new noise contour lines and move out two or three houses from those lines as a way to show fairness. Work on the houses within the lines first and then do the ones outside the line after completing all those within the line.(Based on what was shared it could be 10 years before the next phase is completed because of lack of funding and the current work level of 14 houses/month. This way those most affected would be treated first)

2 Suggestion: At the next meeting there should be a question and answer period after the presentation so that those in attendance could get clarification on any issues in question. Example: The presenter commented that a 10 db increase from 65 dnl was 10 times that noise level. It may have been a slip of the tongue and there would be a chance for correction. Questions asked at the last meeting should be answered during the presentation at the next meeting and questions and answers should be allowed during that presentation.

3 Questions:

a) Who will determine the order of implementation (which houses are treated first-will Apartments be treated before or after single family residences)?

b) When will the work start?

c) How long will it take?

d) What can we do as a neighborhood group to help the process?

4 Information: Aircraft landings affect the new HD TV reception for those with outside antennas and also affects cell phones. This fact came from the engineer at WOAI TV. I personally ran some tests using a new TV with LCD. When watching channel 4 in analog there was no problem, watching channel for in HD(4.1) the picture would get zapped and the screen would go blank 3 times per landing. I then tested it for the remaining channels using analog and then HD and in all cases the analog caused no problem, but the HD did. The engineer at WOAI said I was the first call he had received regarding this issue, but that he had read that this is happening at many cities across the country. There is some thought that when it all goes digital they will increase power and that may help, but no one knows for sure. It would seem wise to bring this to the attention of FAA and those pushing the change so that this issue can be addressed before June 12th when it is now scheduled to switch to digital. There are not many in our neighborhood using antennas, but I would suspect that a larger number living around Kelly AFB would have antennas and be affected.

LeMoyne Hall
503 Cave Lane
San Antonio, Texas
Ph# 210--826 0724

C-130

C-131

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC MEETING

January 27, 2009 – Holy Spirit Catholic Church

COMMENT FORM

This form is provided to receive your comments on the Noise Exposure Maps and their effect on the existing Noise Compatibility Program for the San Antonio International Airport. Please use the space provided below attaching additional pages if necessary. Either deposit the form in the comment box, or mail it to the address provided.

Comments: As I sit in my home office at 13222 Vista Del Mundo I can assure you the SWA airplane that just flew over went exactly over my home. I have noticed this for the 2 yrs 9 mos I have lived here. I submit your boundary is flawed and that the boundary orientation is too far east. I urge your consultants to redesign the boundary to reflect a true arrival flight plan. Never have I seen a plane fly over the eastern boundary which reflects the road Vista Real. Again, your boundary orientation is skewed too far east. See the attached map.

P.S. The American Airlines plane just flew directly over my house on the same arrival flight plan just as the other hundreds of arriving planes.

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name Thomas Tucker

Address 13222 Vista Del Mundo
San Antonio, Tx 78216-2217
1-31-09

No planes fly over Vista Rea:

true arrival flight plan

Figure 02 NW1

San Antonio International Airport
Noise Mitigation Boundaries

: 322 : Vista del Mundo
S.A. 78216

2012 Noise Contour
Proposed Expanded Mitigation Boundary

ZONING

- Commercial
- Industrial
- Business Park
- Office
- Neighborhood Preservation
- Residential Multi-Family
- Manufactured Housing
- Residential Single-Family
- Residential Estate
- Residential Mixed
- Planned Unit Development

City of San Antonio Planning
Mestre Greene & Associates, Inc

SAN ANTONIO AIRPORT SYSTEM

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PUBLIC MEETING

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Comments: Dear Mr. Rankin:

You and your staff were certainly some of the most popular people in San Antonio on Tuesday, January 27th at Holy Spirit Catholic Church!

I'd like to know if there might be any kind of "help" for my neighborhood: Enchanted Village Townhomes - Condominiums abutting Harmony Hills. The streets of Persuasion, Strings and Sandway are on the path of jets. When the south, northwest winds blow, the jets take off over our area — and on a "normal" day, I can almost wave at the passengers as they are landing! Is there any relief for us in the future? Thank you for your consideration in this matter.

Virginia Stakes

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name Virginia Stakes

Address 11905 Persuasion

San Antonio - 78216

Jerry Rankin

From: lowra [lowra@wireweb.net]
Sent: Monday, February 02, 2009 4:31 PM
To: Jerry Rankin
Subject: airport noise abatement

Dear Mr. Rankin, Our home address is 3219 Bent Bow Dr, SAT 78209. Could you please tell me where we are on the old and proposed new maps for airport noise abatement, and if we are eligible for any work to be done on our home [like replacement of windows with insulated ones, etc.]? Thanks. Anna Lowry

---- Msg sent via Internet America Webmail - www.internetamerica.com

out side

Jerry Rankin

From: Lori Tips [loritips@gmail.com]
Sent: Sunday, February 01, 2009 3:19 PM
To: Jerry Rankin
Cc: Fred Tips
Subject: 209 el rancho way

Please confirm if our home located at 209 El Rancho Way is included in the new noise abatement area or not.
I am not able to tell by looking at the report map attached via email.
The map looks like it cuts out our house and includes the houses behind us on Oak Park.
Since I can't talk on the phone or to anyone while outside when a plan flies over I'm a little surprised.

Lori Tips

outside

Jerry Rankin

From: Erin Strimple [ermcniece@sbcglobal.net]
Sent: Monday, Febtuary 02, 2009 11:05 AM
To: Jerry Rankin
Subject: Homes that already have received noise reduction services

Dear Jerry: I live at 402 Oakleaf Drive, and have lived there almost 12 years. How do I find out if my home had any of these prior noise abatement services rendered to it before I owned it? Or were there any services rendered before 1997?

Thanks! Erin McNiece
213-3522

Outside

Jerry Rankin

From: Carrie&Will Steele [cssteele@satx.rr.com]

Sent: Monday, February 02, 2009 10:43 PM

To: Jerry Rankin

Subject: airport noise status

We live in the Northwood neighborhood south east of the San Antonio airport and were unable to attend the January 27 meeting regarding the airport noise compatibility program. Since we frequently have to stop our conversations due to airplane noise and feel the house shake & windows rattle from loud engines—often at 11pm and 6am, we are very interested in what is happening. I want to confirm that our address is within the proposed noise mitigation boundaries and find out how noise is measured in our area. We are at 7506 Bridgewater Drive. (Bridgewater is a short 2-block street running N-S parallel to and between Vandiver and Pike. My block is north of where Larkwood crosses Bridgewater Dr. It appears to us on the Future Conditions 2014 Noise Exposure map that we are within the boundaries, so we are curious what that will mean. I appreciate any information or clarity you can provide!

Thank you,
Will & Carrie Steele
524-3242

Jerry Rankin

From: cindy willis [bear3303@yahoo.com]
Sent: Thursday, January 29, 2009 9:55 AM
To: Jerry Rankin
Subject: airport noise

I am wirting to say that at my house, 3303 stoney mist 78247, the airport noise is just terrible, and I would like the airport or city to look into this problem.
Thank you very much
Cindy

Jerry Rankin

From: gingerbx@aol.com
Sent: Wednesday, January 28, 2009 2:05 PM
To: Jerry Rankin
Subject: Noise Combatability Program

Dear Mr. Rankin,

Though I was not at the NCP meeting, it is my understanding that we are to write to you to express our concerns or comments. I wanted to voice my concern as to need to expand the program in my area. I live at 214 Oak Park Dr, 78209, which is just inside 410 off of Nacogdoches. Though I am not at home all day everyday, I am home quite a bit throughout the day. At various times during the day the noise from the jets, vibrates the windows in my home and the noise is loud enough that we stop conversation (particularly on the phone) to wait until the plane passes to continue conversation.As a matter of fact, I don't have to set my alarm to wake in the mornings because the planes wake me on time every day of the week.

I recently became aware of this program just a few months ago when a neighbor had asked if my windows had been replaced. They also informed me that I would have gotten notice if my house was in the area for window replacements. After viewing the current map I see the line was stopped two streets south and not sure why it stopped there. The noise is so bad at our home I am fearful that my windows are going to break.I am certain the decimal level is well above the accepted range.

Currently another study or plan is being assessed for the anticipated increase of airline traffic at the airport. I am sending this letter in hopes that my street will be included in the study and hopefully the NCP will replace my windows this next go around and noise will be decreased in our home. I have lived here for 8 years and the last couple of years it seems the noise has gotten worse.

I thank you for your time.

Sincerely,
Virginia Ross

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SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC MEETING

January 27, 2009 – Holy Spirit Catholic Church

COMMENT FORM

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Comments:

[illegible]

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name Paul Nixon

Address 11901 Pendergrass
SA, Tx 78217

23 Feb 2000
11901 Persuasion
San Antonio, TX 78216

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd
San Antonio, Tx. 78216

Hi There,
I recently was advised by on of the board members from the concominium association where I live that there was a new, or different, or continuing effort in the airport noise mitagtion effort. If you recall, I talked with you, and you visited with me at my home. We discussed several things you were involved with, and I later attended a meeting of your group at the airport. At the time, and near to that time, you said the DNL or whatever levels were contracting, and that my home was just barely in the 65 area, and probably would be outside that in the next sampling. I spoke to you of the lack of public data, or public participation in placement of meters. (few are near my home) You said that you had portable meters that you could place wherever. I said "Great, put one near my house." So far as I know, that never happened. Also, after the meeting, I figured that nothing would ever be done (by your program, anyway) about the noise from SAX.

In fact, several of my neighbors and myself have done all or partial replacement of windows, slider doors, and so on to decrease the noise in our homes. In between the traffic on West Ave. commercial operations on Rhapsody street, restaurants/clubs, and the airport, the noise altogether
can be maddening. As I stay outside in good weather, and talk with friends (in person or on by tele) as far back as the 1970's, everyone figured out that you simply stopped talking until the plane went by. You would not hear each other otherwise. Everyone who lives nearby can talk of the despair of constant, unending noise. Studies constantly tell of increased rates of suicide, murder,
and other types of violence that occur near areas of extreme noise - like airports. As I mentioned before,
in high school one of my friends was murdered by her own mother. The airports' fault?? No. Contributory,
quite possibly. We all know of situations where heat waves, etc. precede "waves" of violent acts. But the real problem(s) probably is/are the hard to define costs, lost productivity depression, despair,
people who hole up in their homes rather than go outside to enjoy some "peace and quiet." However,
going inside only does so much. In the 1970's the ungodly noise and vibrations from the heavies of the
day caused the windows on my mothers house to literally fall apart. I myself suffered anxiety attacks
(for whatever reason) that were surely triggered by the noise waves and darn near blast waves generated
by those planes. But speaking of today, and of the home/area I live in now, I understand that the past is
the past and your program is concerned with today.

So to speak of today, I still live with constant noise from airport flights. Very noticeable, even inside my home.
Outside, worse. I also understand that there are benefits to the city from the airport, and to myself an my
neighbors. I rarely fly, but when I do, obviously I do so from SAX. And the same for anyone who visits me or
my family from out of town. And if there are mitigation efforts to be done, I would like to participate. Wherever
the $$ are coming from, they originate from taxes. Fed, right? Well, I am a taxpayer, and I live in

an impacted
or affected area, if you prefer. That only seems fair. Please advise. I would like for you to bring me up to speed
on what is new in the program. And to see what is being done now, and how much closer, if at all, my area is to
being included in the program.

Thanks so much.

Sincerely,

Paul H Nixon

SAN ANTONIO
AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC MEETING

January 27, 2009 – Holy Spirit Catholic Church

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Comments: I WOULD LIKE TO SEE ALL OF CAPISTRANO CONDOS (LOCATED AT THE CORNER OF BLANCO AND CHURCHILL ESTATES BLVD.) INCLUDED IN THE NOISE COMPATIBILITY PROGRAM. THE REASON IS THE NOISE FROM THE PLANES THAT FLY OVER AT NIGHT. THE NOISE PROBLEM WASN'T THAT BAD WHEN I FIRST MOVED HERE. BUT NOW IT IS REALLY BAD. IT'S NOT UNCOMMON TO HEAR SEVERAL PLANES FLY OVER AT NIGHT IN THE COURSE OF AN HOUR. ALSO AT ABOUT 4:30 AM EACH MORNING YOU CAN HEAR THE BIG ONES FLY OVER.

I WOULD ALSO LIKE TO KNOW WHY MORE OF THE PLANE TRAFFIC CAN'T BE MOVED OVER TO THE RUNWAY THAT RUNS ALONG WETMORE ROAD WHEN THAT RUNWAY IS EXPANDED? IT WOULD BE NICE IF THE DAY AND NIGHT PLANE TRAFFIC WAS EVENED OUT TO BOTH RUNWAYS.

THANK YOU
MARK Ledford

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name MARK Ledford

Address 14122 CHURCHILL ESTS. BLVD #601

SAN ANTONIO TEXAS 78248

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC MEETING

January 27, 2009 – Holy Spirit Catholic Church

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Comments:

I would like to know if we would have to apply for approval or how the selection process is being made. Is the funding already approved for this work and when does the construction on the replacing of the window start. My house is on Vista Bonita and the planes fly directly over my house, as the planes approach the airport and flooding from the west and coming over Blanco Rd., my house is the first house they go over as it passes The Seville Apartments. I would like to receive more information on the process & how to apply.

Thanks,

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name BEN GONZALES

Address 13315 VISTA BONITA
SAN ANTONIO, TX 78216

Phone # 210-479-9610
[illegible] 225 9159

SAN ANTONIO
AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC MEETING

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Comments: I live near the airport & enjoy the convenience to the airport and many businesses in San Antonio. I moved to this area for the location and large beautiful trees. The only dissatisfaction is that I work 3-11 shift & cannot sleep due to planes taking off and landing – not only the noise level, windows rattle & I can't hear the TV or talk on cell or phone. But – when I moved here, I was aware of my surroundings & the noise – so I suppose if I was bothered with noise, I should have moved to another part of town. I don't know if there is a solution, other than more or fewer airplanes!

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name Candace Jimay

Address 630 Strings Dr.
San Antonio, TX 78216

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC MEETING

January 27, 2009 – Holy Spirit Catholic Church

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Comments: Your noise abatement plan is very much appreciated. I sincerely hope Enchanted Villages Townhome Condominium Association is part of the next phase. Owners and residents in our association are definitely sleep-deprived due to the 4:00 Am-ish noise from the transporters. If I try to go to bed early to get at least 6 hours of uninterupted sleep, then the final ~~day's~~ landings of the day between 11 pm and midnight disturb me shortly after I fall asleep. So there is no 6 hour timeframe without the airplane disturbance in our neighborhood. Should 6 hours of rest be a luxury - ie too much to expect? My preference is 8 hours for optimal health! The overhead noise + window vibrations are so bad at times that one of our sliding door locks vibrates from locked to unlocked!

I plead with you to put a noise abatement program in place in Enchanted Villages Condominiums as promptly as possible! Thank you for your efforts.

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name Denise O'Neal

Address 627 Chauncey Dr.
San Antonio TX 78216

830-832-8270

denise.oneal@att.net

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC MEETING

January 27, 2009 – Holy Spirit Catholic Church

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Comments: I am a resident of Stone Ridge. I have lived, there since December 1982. I feel comfortable in this subdivision, but the airport traffic can be very loud. I live on Ridge Spur which is only 2 homes away from the home that have had windows replaced for the sound installation. At one of our homeowner meetings the statement was made that the airplanes didn't fly above Ridge Spur unless they were because of extreme high winds. I can stand outside on calm days or evenings and see them flying directly over my home.

I would appreciate consideration of the window replacement for my home to help control the airplane noise level. There rarely any time when I can leave my patio doors open or open any windows. I would not be able to hear the TV or have a conversation on my phone.

Thank you.
Ann Alwood

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name ANN ALWOOD

Address 12126 RIDGE SPUR
SAN ANTONIO, TX 78247

207-3471

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC MEETING

January 27, 2009 – Holy Spirit Catholic Church

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Comments: I live directly under the flight pattern of the SA International Airport. The airplane's landing/taking off is constant, loud & disturbing. Everyday from 5 Am – 10 Pm, there are literally 100s of planes, flying very low over my home. Sometimes so low, I feel they are going to land on my house.

If windows are open, I can't even have a conversation on the phone without interruption. At times, my house will shake from the vibration.

I have made a commitment to live here but if I could, I would move based on this noise pollution. Thank you for sending me this form. I hope something can be done about this.

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name Cynthia Gallivan

Address 11808 Sandman

SAT 78216

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC MEETING

January 27, 2009 – Holy Spirit Catholic Church

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Comments: On take offs on 320° the noise is very very loud. I have no idea as to the decibal figure but it would be high.
Take offs on 120° runway do not pose that much of a problem.

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name DEAN W. ELSON

Address 11219 SANDMAN
SAN ANTONIO, TX 78216

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
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Comments: My house would Greatly Benefit from some sort of Noise abatement technology or product. Ambient Aircraft Noise over powers any television or Radio program. I must wait for aircraft to pass to hear Normal Audible levels

Thanks

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print: R

Your Name Robert G. Royal

Address 203 Spring Dr.
SA TX 78216

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
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Comments: We don't have any problems with airplane noise - except late afternoon (supper time) and early evening when we like to swim + visit with friends & we can't talk over or hear anything when a plane goes over! And that's life. Plane have to take off & land over something!

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name: LAURA LUCKS

Address: 1182-5 Persimmon
San Ant 78216

SAN ANTONIO
AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC MEETING

January 27, 2009 – Holy Spirit Catholic Church

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Comments: My home is located 2 blocks from landing planes, However when planes take off in the north direction they go directly over my home. This generally occurs when their is a northerly wind, but it can happen on many other occasions. When planes fly directly over my home, my windows shake + you can feel the house rattle. I'd like to say that you get used to it, but I would truly enjoy more peaceful + quiet as well.

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name: Brigitte Conway

Address: 11827 Petal Dr.

San Antonio Tx 78216

SAN ANTONIO
AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC MEETING

January 27, 2009 – Holy Spirit Catholic Church

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Comments: When the planes take off over San Pedro Ave, it sounds like they are in my bedroom and they in my house rattle. If I am outside, I cannot carry on a conversation. It also makes it difficult the hear on the phone.

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio Internationa Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name Ruby Ballard

Address 11716 Persuasion

SAN ANTONIO
AIRPORT SYSTEM

PUBLIC
PUBLIC MEETING

January 27, 2009 – Holy Spirit Catholic Church

COMMENT FORM

This form is provided to receive your comments on the Noise Exposure Maps and their effect on the existing Noise Compatibility Program for the San Antonio International Airport. Please use the space provided below attaching additional pages if necessary. Either deposit the form in the comment box, or mail it to the address provided.

Comments: we are not bothered by the airplanes. We are not in their flight pattern and we notice the noise when the wind shifts to the North + the planes Take off. we already have double pane windows.

Mail your comments by February 25, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name MR + MRS CHARLES A DE LA GARZA

Address 11812 SONG DR.

S.A. TX 78216

SAN ANTONIO
AIRPORT SYSTEM

PUBLIC WORKSH
PUBLIC MEET

January 27, 2009 – Holy Spirit Catho

COMMENT FORM

This form is provided to receive your comments on the Noise Exposure Maps and existing Noise Compatibility Program for the San Antonio International Airport. provided below attaching additional pages if necessary. Either deposit the for or mail it to the address provided.

Comments: I did not attend the work out of ~~time~~ town. I wish I ARE there MINS from the

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd
San Antonio, Texas 78216

Pie.

You

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SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC MEETING

January 27, 2009 – Holy Spirit Catholic Church

COMMENT FORM

This form is provided to receive your comments on the Noise Exposure Maps and their effect on the existing Noise Compatibility Program for the San Antonio International Airport. Please use the space provided below attaching additional pages if necessary. Either deposit the form in the comment box, or mail it to the address provided.

Comments:

Several years ago I got a map (Noise Exposure Map) from the Airport. My house is in Vista Del Norte and the planes come directly over my house. My house was in the area called "Down the Pike." I hope they are still planing to do something for me since the planes fly directly over my house.

Thank you.

I would also like to know if the Noise ever affects the foundation (from vibrations?)

Please contact #. below to address this issue.

Thank you

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print: 210-479-3040

Your Name: Marcia Schneider

Address: 1231 Vista Del Norte
San Antonio, TX
78216

P

SAN ANTONIO
AIRPORT SYSTEM

January 27, 200

COMMENT FORM

This form is provided to receive your comments on the Noise Exposur
existing Noise Compatibility Program for the San Antonio International A
provided below attaching additional pages if necessary. Either deposit th
or mail it to the address provided.

Comments: We are having several p
The noise. Our windows rattle
times during the day and night.
it is worse because we are trying t
and the noise is so loud it wakes
my grandchildren wake up crying at
times of the night with the noise. We
not have peaceful nights. The loud noise
that the helicopters make & some of t
airplanes is also disturbing to us. t
lessened but there is still alot o
The walls in my house are cracked
had them replaced or repaired sev
but the cracks keep coming b
very unsightly. My driveway is
it is all cracked - makes me
my foundation. I have had
leaks repaired in the past.

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name

Address

S. A

SAN ANTONIO
AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC MEETING

January 27, 2009 – Holy Spirit Catholic Church

COMMENT FORM

This form is provided to receive your comments on the Noise Exposure Maps and their effect on the existing Noise Compatibility Program for the San Antonio International Airport. Please use the space provided below attaching additional pages if necessary. Either deposit the form in the comment box, or mail it to the address provided.

Comments: "When the wind is from the north and planes take off into the wind, the pictures on my walls vibrate. The noise at that time is extreme. If you are outside when planes are landing you can not hear anyone speaking. I have replaced my windows and sliding door with double pane glass. This has helped except in the times planes are taking off into the north."

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd
San Antonio, Texas 78216

Please Print:

Your Name Elizabeth Hope

Address 625 Chauncey

Councilman Louis E Rowe
Council District 9
P.O. Box 839966
San Antonio, Texas 78283

Dear Councilman Rowe,

I am enclosing a copy of the correspondence I provided the San Antonio Airport System's Noise Mitigation Office concerning the public workshop on the noise exposure maps and their effect on the existing Noise Compatibility Program for the San Antonio International Airport. I understand the Airport will be presenting their recommendations to the City Council this spring or summer.

I ask that you question the Airport's findings concerning the Day-Night Average Sound Level (DNL) Contour. As my enclosed map shows the majority of flights utilizing runway 12R/30L pass directly over my house. I believe the DNL Contour map that the Airport has drawn up shows a more easterly flight pattern which probably uses runway 12L/30R. However that runway due to the shorter length and construction is not often used according to their own report.

All I can confirm is that morning and night I hear and see those commercial jets, private jets and multi-engine propeller planes pass directly over my home. It is evident to anyone who comes to my house that my home is directly in the flight path for runway 12R/30L. However, according to the Airport my home is not even in the DNL Contour.

I would invite you and any member of the San Antonio Airport System to come to my home for drinks and hors d'oeuvres at 5:00 P.M. any day of the week and watch the planes fly over my house one after the other. All I ask is fairness and an honest and reliable assessment of the noise exposure for my residence.

Sincerely,

Thomas G Tucker

Thomas G Tucker
13222 Vista Del Mundo
San Antonio, Texas 78216

Enclosure

CF:
Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd
San Antonio, Texas 78216

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC MEETING

January 27, 2009 – Holy Spirit Catholic Church

COMMENT FORM

This form is provided to receive your comments on the Noise Exposure Maps and their effect on the existing Noise Compatibility Program for the San Antonio International Airport. Please use the space provided below attaching additional pages if necessary. Either deposit the form in the comment box, or mail it to the address provided.

Comments: As I sit in my home office at 13222 Vista Del Mundo I can assure you the SWA airplane that just flew over west mostly over my home, I have noticed this for the 2 yrs I have lived here. I submit your boundary is flawed and that the boundary orientation is too far east. I urge your consultants to redesign the boundary to reflect a true arrival flight plan. Never have I seen a plane fly over the western boundary which adjoins the road Vista Del Mundo. Again, your boundary orientation is skewed too far east.

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name Thomas Tucker

Address 13222 Vista Del Mundo
San Antonio, Tx 78216-2217

1-31-09

No planes fly over Vista Rea:

true arrival flight plan

Figure 02 NW1

San Antonio International Airport
Noise Mitigation Boundaries

: 322 : Vista del Mundo
S.A. 78216

2012 Noise Contour
Proposed Expanded Mitigation Boundary

ZONING

- Commercial
- Industrial
- Business Park
- Office
- Neighborhood Preservation
- Residential Multi-Family
- Manufactured Housing
- Residential Single-Family
- Residential Estate
- Residential Mixed
- Planned Unit Development

City of San Antonio Planning
Mestre Greve Associates, Inc

SAN ANTONIO
AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC MEETING

January 27, 2009 – Holy Spirit Catholic Church

COMMENT FORM

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Comments:

See attached

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name

Address

February 20, 2009

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

To Whom It May Concern:

I am a resident in the Stone Ridge subdivision, specifically Stoney Circle Street. I support the newly proposed noise mitigation boundary for my subdivision. The new boundary would allow for my home to be acoustically treated.

My argument is as follows. Based on the current boundaries, the homes being acoustically treated include homes on Stoney Meadow Street. Stoney Meadow Street is at the end of my cul-de-sac street and is approximately 300 feet away from my home. I feel the noise level in my home is just as intrusive and annoying as it is to the homes a mere 300 feet away. Aircraft fly over my home just as much as their homes and cause interference and annoyance in my day to day activities. Thus, my home should be acoustically treated like the homes on Stoney Meadow Street.

To further support my argument, runway 3/21 is planned to be extended about 1,000 feet and be fully operational by 2014. The completion of this extension will allow for increased usage of the runway during high temperature situations and allow it to be used more by larger aircraft as well. This means that the residents of the Stone Ridge subdivision and myself will be subjected to increased noise levels by 2014 if not sooner. We simply cannot wait another 5 years for another noise study and the lengthy process that follows. We need our homes to be acoustically treated now.

I respectfully request and urge you to consider and approve the newly proposed 2014 noise mitigation boundary for the Stone Ridge subdivision. Immediate action must be taken!

Sincerely,
Georgia Grounds
12123 Stoney Circle Street
San Antonio, Texas 78247

SAN ANTONIO
AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC MEETING

January 27, 2009 – Holy Spirit Catholic Church

COMMENT FORM

This form is provided to receive your comments on the Noise Exposure Maps and their effect on the existing Noise Compatibility Program for the San Antonio International Airport. Please use the space provided below attaching additional pages if necessary. Either deposit the form in the comment box, or mail it to the address provided.

Comments:

We have lived at 11827 Sandman St since 2004 and got used to the present air flight pattern. If continues the same pattern we don't need a change especially if extremely costly.
By getting used to is meant:
① It (noise) does not wake us up
② Occasional disturbance or TV doesn't cause concern either

Irene Rose Warfield

We were not to Jan 27 2009 - HS Church meeting

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name Irene Rose Warfield

Address 11827 Sandman St

SA TX 78216

The noise level at my house make my windows shake and rattle that they will eventually shatter. I am the four houses off Hwy 281 and the noise seems louder due to the low confinement of the freeway. It seems that the noise stays longer in between the freeway and it even echoes. The UPS and FedEx planes are the loudest, and they seem to take longer with the noise as they try to gain altitude. The smaller planes also fly over my house at a very low altitude since they have few hundred feet to land and they too make my windows rattle. With all the planes whether they are ascending or descending produce extremely loud noises being that they are a few feet off the ground.

I invite you to my house so you can witness the noise at 4:00 am daily and listen to my windows shake and rattle and understand why I do not need an alarm to wake me up.

Diane Toscano
134 Stardream
San Antonio, TX 78216

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC MEETING

January 27, 2009 – Holy Spirit Catholic Church

COMMENT FORM

This form is provided to receive your comments on the Noise Exposure Maps and their effect on the existing Noise Compatibility Program for the San Antonio International Airport. Please use the space provided below attaching additional pages if necessary. Either deposit the form in the comment box, or mail it to the address provided.

Comments: I live at 1140 Petal Dr. in San Antonio. It is the Enchanted Village Condos.

The noise from the planes @ the airport is very disturbing.

When you watch TV or talking to someone, you have to stop for a few seconds till the plane passes.

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name Rose Quiroga

Address 1140 Petal Dr.
San Antonio TX 78216

February 29, 2009

Jerry Rankin
San Antonio Airport Hyatt
9800 Airport Blvd.
San Antonio, TX 78216

Dear Sir,

I recently received information from you regarding the Home Compatibility Program. Did the envelope my name and street name was printed incorrectly. Please make these corrections as noted below.

Also, although I still own the property, my mailing address has changed as noted below.

Property address: 3663 Ridge Crosser St.

Property owners name & mailing address:
Evelyn R. Porter
1415 Hamilton St
San Antonio, TX 78227

Thank you,
Evelyn R. Porter

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC MEETING

January 27, 2009 – Holy Spirit Catholic Church

COMMENT FORM

This form is provided to receive your comments on the Noise Exposure Maps and their effect on the existing Noise Compatibility Program for the San Antonio International Airport. Please use the space provided below attaching additional pages if necessary. Either deposit the form in the comment box, or mail it to the address provided.

2/24/09

Comments:

(1) Noises from airplanes starting as early as 4:30 am to around 11:00 pm at night
- Loud enough to awaken me at 4:30 - 5:00 AM
- Loud enough during day & night you not be able to hear TV or enjoy an a conversation! Too Loud !!

(2) when outside - the noise is deafing !! at least 4-5 planes per hour - every hour.

I realize we are very near the airport but I also realize there are things technology to quiten the airplane noise significantly!! different flight patterns, etc.

If the city has a program that can assist I would like for Enchanted Village to be included!

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name Gary Rey

Address 1190 3 Swanne
San Antonio

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC MEETING

January 27, 2009 – Holy Spirit Catholic Church

COMMENT FORM

This form is provided to receive your comments on the Noise Exposure Maps and their effect on the existing Noise Compatibility Program for the San Antonio International Airport. Please use the space provided below attaching additional pages if necessary. Either deposit the form in the comment box, or mail it to the address provided.

Comments: My husband & I moved here in 1970 and watched our new Condo being built to the #2 specification with many changes. He was an Air Force Pilot so loved living close to airport, which meant progress, to him and he didn't mind the fumes. But as time passed we talked to neighboring people who were during windows. My husband was so impressed. fumes didn't bother him but the noise did. We contacted Ken Franco/Energy efficient maintenance for Window Systems. They came out and measured windows and David Bitman installed the new up down & down for sliding doors. This happened in December 2007. Its Lifetime window warranty for as long as you live in your home, plus it is transferable of course it came with wonderful service! Fabulous!!

However I still have a dining room glass door & would love to replace since it is the original plus max insulation please

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd
San Antonio, Texas 78216

Please Print:

Your Name Hortense A. Patterson

Address 11901 Sandman

San Antonio, Texas

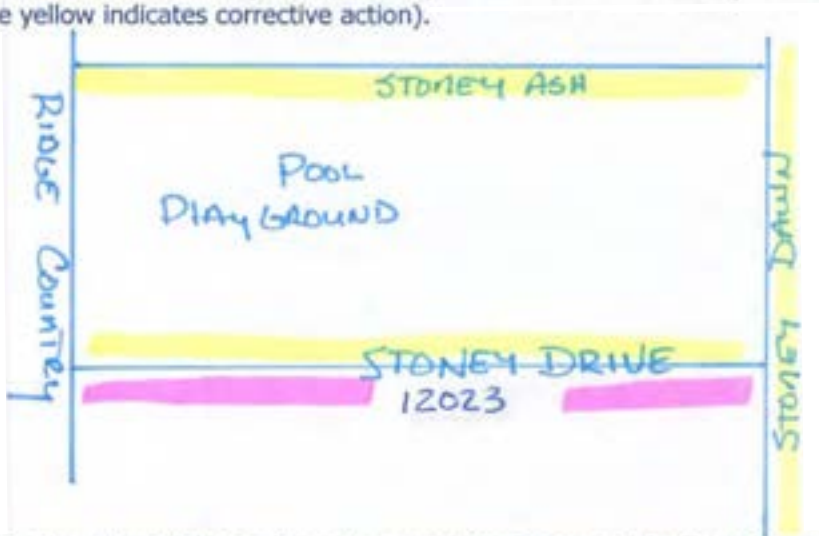
Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Dear Mr. Rankin:

I have lived at my home in the Stone Ridge subdivision for twenty-five (25) years. I contacted your office several years ago to get my name on the list regarding the 'noise abatement'. I followed up with periodic phone calls to validate the status and progress of this project. With that being said – I find the following to being inconsistent and somewhat lacking the judgement of the engineers and or teams who did the noise abatement study as well as the initial corrective action that has been recently overseen.

My address is 12023 Stoney Drive.

My neighbors on the other side of my street have received corrective action for their windows and doors. The streets of Stoney Ash and Stoney Dawn have received corrective action **and yet you deem it not necessary to do the other half of Stoney Drive** because you stated that the others had more noise. The person and/or persons who did this study need to go back to school. (The yellow indicates corrective action).



Yesterday, Sunday, March 8th the planes flew over the lineage of Stoney Drive. So how can you say that both sides of the residents on Stoney Drive do not share the noise? It can almost be construed as discriminatory.

A response is requested. I have attended the 'public workshops' – I (as my neighbors along my side of the street) want to know when we will be taken care of.

Respectfully,

Harvey Gutierrez
12023 Stoney Drive
San Antonio, Texas 78247
210.413.9063

SAN ANTONIO
AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC MEETING

January 27, 2009 – Holy Spirit Catholic Church

COMMENT FORM

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Comments:

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name HARVEY GUTIERREZ

Address 12023 STONEY DRIVE

SAN ANTONIO, TEXAS 78247

CITY OF SAN ANTONIO

DEPARTMENT OF AVIATION
9800 AIRPORT BLVD., MO63
SAN ANTONIO, TEXAS 78216-4997
(210) 207-4889 (4TTY)
(210) 207-3450 FAX: (210) 207-3500

Mr. Harvey Gutierrez
12023 Stoney Drive
San Antonio, Texas 78247

March 12, 2009

Enclosure: Public Workshop and Meeting notice.

Dear Mr. Gutierrez,

I am in receipt of your certified letter mailed March 9, 2009 and received in this office on March 12, 2009 expressing concerns related to the Residential Acoustical Program and which also addressed a specific noise complaint for March 8, 2009. The letter was addressed to Mr. Jerry Rankin who has retired. I have been appointed to fill his position as Noise Mitigation/Air Quality Officer for the Environmental Stewardship Division of the San Antonio Aviation Department.

The cut off date for written comments concerning the proposed Noise Contour Maps and the Noise Compatibility Program was February 23, 2009 as noted on the bottom of the comment form. However, I will forward your comments to the appropriate parties in order that they may be aware of your concerns

I would encourage you to attend the public workshop to be held on March 19, 2009 at Coker United Methodist Church located at 231 E. North Loop Rd. The public workshop will begin at 6:00 pm followed by a public hearing at 7:00 pm. At the meeting members of the public may be allotted 5 minutes to make a public comment addressing their noise concerns.

Again thank you for your interest and concerns. I hope to see you at the meeting on March 19, 2009

Sincerely,

William L. Telford, AICP
Noise Mitigation/Air Quality Officer
Environmental Stewardship Division
San Antonio Aviation Department
(210) 207-3471

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC MEETING

January 27, 2009 – Holy Spirit Catholic Church

COMMENT FORM

This form is provided to receive your comments on the Noise Exposure Maps and their effect on the existing Noise Compatibility Program for the San Antonio International Airport. Please use the space provided below attaching additional pages if necessary. Either deposit the form in the comment box, or mail it to the address provided.

Comments: I Have Live in my house for 32 years
the Noise is very Bad When THE planes go over. It is
Very Noisy the airplanes go over my house So the
windows are very old I have not Been able to Replace
them.

Mail your comments by February 23, 2009 to:

Mr. Jerry Rankin
Noise Miligation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name Renthel B Williams

Address 604 STKings

San Antonio Tex 78216

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San Antonio International Airport
Public Workshop & Public Hearing, March 19, 2009

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- Acoustical Treatment Program and Noise Compatibility Study Contact Mailing List
- Miscellaneous Mailing List

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- Sign-In Sheets
- Speaker Registration Cards

PUBLIC COMMENTS

- Public Hearing Transcript
- Public Hearing Comments

Meeting Notification

SAN ANTONIO EXPRESS NEWS
AFFIDAVIT OF PUBLICATION

STATE OF TEXAS:

COUNTY OF BEXAR:

Before me, the undersigned authority, a Notary Public in and for the State of Texas, on this day personally appeared Norma Castaneda, who after being duly sworn, says that she is the BOOKKEEPER of THE HEARST CORPORATION -SAN ANTONIO EXPRESS-NEWS DIVISION, a daily newspaper published in Bexar County, Texas and that the publication, of which the annexed is a true copy, was published to wit:

Dates and publication:

02-19-09 02-19-09

appr: 22

ad number: 1190613

customer: CITY OF SAN ANTONIO

account: 056052366

Norma Castaneda
Bookkeeper

Sworn and subscribed to before me, this the 20th day of February A.D. 2009

Notary

NOTICE OF PUBLIC WORKSHOP AND PUBLIC HEARING

San Antonio International Airport Noise Compatibility Planning Study

The City of San Antonio Aviation Department will hold a Public Workshop and Public Hearing on Thursday, March 19, 2009, in the Cellar United Methodist Church Gym, 211 E North Loop Road, San Antonio, Texas, 78213. The Public Workshop will be held from 6:00 pm to 7:00 pm and the Public Hearing will begin at 7:00 pm.

The purpose of the public workshop and public hearing is to receive comments on the Noise Exposure Maps (NEMs) and the draft of the existing Noise Compatibility Program (NCP) for the San Antonio International Airport. The Limited Airport Noise Compatibility Planning Study will consider many factors, including the effects of operational changes at the Airport to noise exposure. The Code of Federal Regulations (CFR) Title 14 Part 150 establishes the requirements for Airports to periodically update their Noise Exposure Maps. The NEMs are the basis for determining homeowners' eligibility for the Airport's residential soundproof treatment program. Public participation is a required element of the Part 150 regulations.

The Public Workshop will be conducted in an open-house format providing attendees the opportunity to view exhibits, ask questions and consult the project with representatives of the City of San Antonio and their consultants.

The Public Hearing will begin with a formal presentation followed by an open public comment session. A court reporter will be present. Oral comments will be limited to five (5) minutes to ensure everyone the opportunity to be heard.

Written comments will be accepted at the workshop, hearing or may be submitted to the Aviation by Mail to Kim Ramirez, Noise Mitigation Officer, San Antonio International Airport, 9800 Airport Blvd., San Antonio, TX 78216 or Fax to 210-366-4611, ASW-650, Regional Airports Improvement Office, 2601 Meacham Blvd., Fort Worth, TX 76137-0060.

Copies of the Draft Noise Exposure Maps (NEM) Report will be available for public review at the workshop, hearing and are currently available at the following locations:

- Hemisfair Plaza Library, Aviation Division, 701 Navarro
- Central Library, 600 Soledad
- Texas Library at Carver, 2306 Harry Wurzbach Road
- Bright Horizons Library, 530 Heimer Road
- Edward Cody Library, 1243 Wurzbach
- Thousand Oaks Sendero Library, 4618 Thousand Oaks
- Trinity University Elizabeth Coates Library, 715 Trinity Place
- Department of Planning and Development Services, 1901 South Alamo
- Office of the City Clerk, City Hall Building, 100 Military Plaza
- Station Gate, Noise Mitigation Office, 9800 Airport Blvd., Terminal 2, 2nd Floor

For further information contact Martin Southern, San Antonio Airport Department, at (210) 207-3402.

Judith M. Nieto
City Clerk

STATE OF TEXAS

COUNTY OF BEXAR

Before me, a Notary Public in and for Bexar County, this day personally appeared Tino Duran (Title) Publisher of La Prensa De San Antonio who being duly sworn by oath, stated that City of San Antonio is requesting a Publication for Notice of Public Workshop and Public Hearing San Antonio International Airport Limited Airport Noise Compatibility Planning Study and that it ran in La Prensa Spanish Language Newspaper on the following edition, February 15, 2009.

Tino Duran

Signature

SWORN TO AND SUBSCRIBED BEFORE ME THE 18TH DAY OF FEBRUARY, 2009

Notary Public

My Commission expires:

ALEJANDRA G. GOMEZ
Notary Public, State of Texas
My Commission Expires
August 31, 2015

LA PRENSA 210-242-7900

CLASIFICA

Office: 230 N. Medina, San Antonio, Texas 7820
Tel: 210-242-7900 Fax 210-242-7901
Horas de operación: De lunes a viernes de 8:00 a.m. A

LEGAL/PUBLIC NOTICES

Notice of Public Workshop and Public Hearing
San Antonio International Airport
Limited Airport Noise Compatibility Planning Study

The City of San Antonio Aviation Department will hold a Public Workshop and Public Hearing on Thursday, March 19, 2009, in the Coker United Methodist Church Gym, 231 E. North Loop Road, San Antonio, Texas, 78216. The Public Workshop will be held from 6:00 pm to 7:00 pm and the Public Hearing will begin at 7:00 pm.

The purpose of the public workshop and public hearing is to receive comments on the Noise Exposure Maps (NEMs) and their effect on the existing Noise Compatibility Program (NCP) for the San Antonio International Airport. The Limited Airport Noise Compatibility Planning Study will consider many factors, including the effects of operational changes at the Airport on noise exposure. The Code of Federal Regulations (CFR) Title 14 Part 150 establishes the requirements for Airports to periodically update their Noise Exposure Maps. The NEMs are the basis for determining homeowners' eligibility for the airport's residential acoustical treatment program. Public participation is a required element of the Part 150 regulations.

The Public Workshop will be conducted in an open-house format providing attendees the opportunity to view exhibits, ask questions, and discuss the project with representatives of the City of San Antonio and their consultants.

The Public Hearing will begin with a formal presentation followed by an oral public comment session. A court reporter will be present. Oral comments will be limited to five (5) minutes to allow everyone an opportunity to be heard.

Written comments will be accepted at the workshop/hearing or may be submitted to the sponsor or FAA by April 2, to: Jerry Rankin, Noise Mitigation Officer, San Antonio International Airport, 9800 Airport Blvd., San Antonio, TX, 78216 or Paul Blackford-FAA, ASW-650, Texas Airport Development Office, 2601 Meacham Blvd., Fort Worth, TX 76193-0650.

Copies of the Draft Noise Exposure Map (NEM) Report will be available for public review at the workshop/hearing and are currently available at the following locations:

- Internet: http://www.sanantonio.gov/aviation/info_noise.asp
- Central Library - 600 Soledad
- Tobin Library at Oakwell - 4134 Harry Wurzbach Road
- Brook Hollow Library - 530 Heimer Road
- Edmund Cody Library - 11441 Vance Jackson
- Thousand Oaks-El Sendero Library - 4518 Thousand Oaks
- Trinity University, Elizabeth Huth Coates Library - One Trinity Place
- Department of Planning and Development Services - 1901 South Alamo
- Office of the City Clerk, City Hall Building - 100 Military Plaza
- Aviation Dept., Noise Mitigation Office - 9700 Airport Blvd., Terminal 2, 2nd Floor

For further information, contact Steven Southers, San Antonio Aviation Department, at (210) 207-3402.

Leticia M. Vacek, TRMC, CMC, City Clerk

WE'RE MOVING (NOS ESTAMOS MOVIENDO)

PUBLIC WORKSHOP AND PUBLIC HEARING

SAN ANTONIO INTERNATIONAL AIRPORT

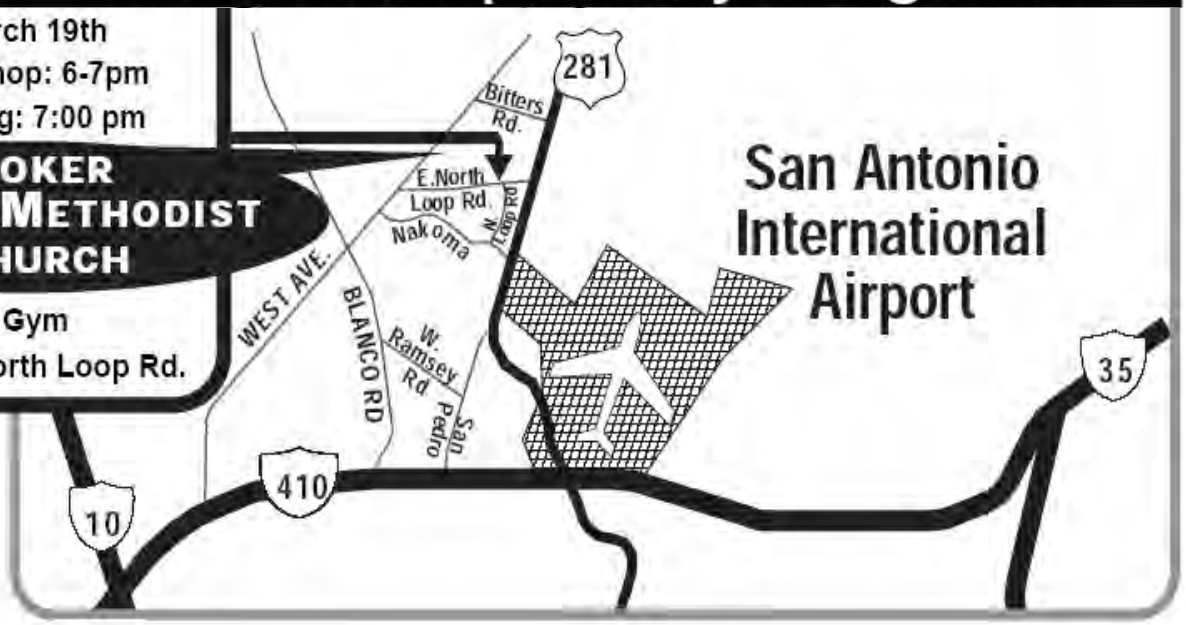
Noise Compatibility Program

SAN ANTONIO AIRPORT SYSTEM

March 19th
Workshop: 6-7pm
Hearing: 7:00 pm

COKER UNITED METHODIST CHURCH

Gym
231 E. North Loop Rd.



The City of San Antonio Aviation Department will hold a Public Workshop and Public Hearing on Thursday, March 19, 2009, in the Coker United Methodist Church Gym, 231 E. North Loop Road, San Antonio, Texas, 78216, to receive comments on the Noise Exposure Maps (NEMs) and their effect on the existing Noise Compatibility Program (NCP) for the San Antonio International Airport.

The Public Workshop will be conducted from 6:00 pm to 7:00 pm in an open-house format providing attendees the opportunity to view exhibits, ask questions, and discuss the project with representatives of the City of San Antonio and their consultants. The Public Hearing will begin at 7:00 pm with a formal presentation followed by an oral public comment session. A court reporter will be present. Oral comments will be limited to five (5) minutes to allow everyone an opportunity to be heard.

Written comments will be accepted at the workshop/hearing or may be submitted to the sponsor or FAA by April 2, 2009 to: Steven Southers, Environmental Stewardship Manager, San Antonio International Airport, 9800 Airport Blvd., San Antonio, TX, 78216 or Paul Blackford, ASW-650, Texas Airport Development Office, 2601 Meacham Blvd., Fort Worth, TX 76193-0650.

Copies of the Draft Noise Exposure Map (NEM) Report will be available for public review at the workshop/hearing and are currently available at the following locations:

- Internet: http://www.sanantonio.gov/aviation/info_noise.asp
- Central Library - 600 Soledad
- Tobin Library at Oakwell - 4134 Harry Wurzbach Road
- Brook Hollow Library - 530 Heimer Road
- Edmund Cody Library - 11441 Vance Jackson
- Thousand Oaks-El Sendero Library - 4618 Thousand Oaks
- Trinity University, Elizabeth Huth Coates Library - One Trinity Place
- Department of Planning and Development Services - 1901 South Alamo
- Office of the City Clerk, City Hall Building - 100 Military Plaza
- Aviation Dept., Noise Mitigation Office - 9700 Airport Blvd., Terminal 2, 2nd Floor

For further information, contact Steven Southers, San Antonio Aviation Department, at (210) 207-3402.

Officials, Neighborhood Associations, and Noise Abatement Advisory Committee for SAT Noise Compatability Planning Study Public Hearing Flyers Sent 2/19/09

Type	Title	First	Last	Position	Organization Name	Dept	Address	City	State	Zip	Email
Fed	The Hon.	Charles	Gonzalez	Representative	U.S. House of Representatives	Dist. 20	727 E. Durango, B-124 Federal Bldg	San Antonio	TX	78206	
Fed	The Hon.	Lamar	Smith	Representative	U.S. House of Representatives	Dist. 21	1100 NE Loop 410, Ste. 640	San Antonio	TX	78209	
Fed	The Hon.	Ciro	Rodriguez	Representative	U.S. House of Representatives	Dist. 23	1950 S.W. Military Dr	San Antonio	TX	78221	
Fed	The Hon.	John	Cornyn	Senator	U.S. Senate		600 Navarro, Ste. 210	San Antonio	TX	78205	
Fed	The Hon.	Kay Bailey	Hutchison	Senator	U.S. Senate		145 Duncan Dr, Ste. 120	San Antonio	TX	78226	
State	The Hon.	Trey	Martinez Fisher	Representative	TX House of Representatives	Dist. 116	1910 Fredericksburg Rd	San Antonio	TX	78201	
State	The Hon.	Joe	Straus	Representative	TX House of Representatives	Dist. 121	7373 Broadway 202-A	San Antonio	TX	78209	
State	The Hon.	Frank	Corte, Jr.	Representative	TX House of Representatives	Dist. 122	2040 Babcock Rd, Ste. 402	San Antonio	TX	78229	
State	The Hon.	Michael	Villarreal	Representative	TX House of Representatives	Dist. 123	1114 S. St. Marys, Ste. 110	San Antonio	TX	78210	
State	The Hon.	Joaquin	Castro	Representative	TX House of Representatives	Dist. 125	6502 Bandera, Ste. 106	San Antonio	TX	78238	
State	The Hon.	Judith	Zaffirini	Senator	Texas Senate	Dist. 21	12702 Toepperwein Rd., #214	San Antonio	TX	78233	
State	The Hon.	Jeff	Wentworth	Senator	Texas Senate	Dist. 25	1250 NE Loop 410, Ste. 925	San Antonio	TX	78209	
State	The Hon.	Leticia	Van de Putte	Senator	Texas Senate	Dist. 26	700 N. St. Mary's St, Ste. 1725	San Antonio	TX	78205	
County	The Hon.	Sergio "Chico"	Rodriguez	Commissioner	Bexar County	Precinct 1	100 Dolorosa	San Antonio	TX	78205	
County	The Hon.	Paul	Elizondo	Commissioner	Bexar County	Precinct 2	100 Dolorosa	San Antonio	TX	78205	
County	The Hon.	Kevin	Nelson	Commissioner	Bexar County	Precinct 3	100 Dolorosa	San Antonio	TX	78205	
County	The Hon.	Tommy	Adkisson	Commissioner	Bexar County	Precinct 4	100 Dolorosa	San Antonio	TX	78205	
County	The Hon.	Neslon W.	Wolff	Judge	Bexar County		100 Dolorosa	San Antonio	TX	78205	
City	The Hon.	Louis	Cooper	Mayor	City of Alamo Heights		6116 Broadway	San Antonio	TX	78209	
City	The Hon.	Jill	Souter	Mayor Pro-Tem	City of Alamo Heights	Councilmember, Place 3	6116 Broadway	San Antonio	TX	78209	
City	The Hon.	Bobby	Rosenthal	Councilmember	City of Alamo Heights	Place 2	6116 Broadway	San Antonio	TX	78209	
City	The Hon.	Bill	Kiel	Councilmember	City of Alamo Heights	Place 4	6116 Broadway	San Antonio	TX	78209	
City	The Hon.	Susan	Harwell	Councilmember	City of Alamo Heights	Place 5	6116 Broadway	San Antonio	TX	78209	
City	The Hon.	Stan	McCormick	Councilmember	City of Alamo Heights	Place 1	6116 Broadway	San Antonio	TX	78209	
City	The Hon.	Marcy	Harper	Mayor	City of Castle Hills		209 Lemonwood Dr.	San Antonio	TX	78213	
City	The Hon.	Marcella	Huff	Councilmember	City of Castle Hills	Place 1	209 Lemonwood Dr.	San Antonio	TX	78213	
City	The Hon.	Douglas	Gregory	Councilmember	City of Castle Hills	Place 2	209 Lemonwood Dr.	San Antonio	TX	78213	
City	The Hon.	Tim	Howell	Councilmember	City of Castle Hills	Place 3	209 Lemonwood Dr.	San Antonio	TX	78213	
City	The Hon.	Bruce	Smiley	Councilmember	City of Castle Hills	Place 4	209 Lemonwood Dr.	San Antonio	TX	78213	
City	The Hon.	Tom	Davis	Councilmember	City of Castle Hills	Place 5	209 Lemonwood Dr.	San Antonio	TX	78213	
City	The Hon.	Dan	Kasprowicz	Mayor	City of Fair Oaks Ranch		7286 Dietz Elkhorn	Fair Oaks Ranch	TX	78015	
City	The Hon.	Fred	Jones	Alderman	City of Fair Oaks Ranch	Place 1	7286 Dietz Elkhorn	Fair Oaks Ranch	TX	78015	
City	The Hon.	Cheryl	Landman	Alderman	City of Fair Oaks Ranch	Place 2	7286 Dietz Elkhorn	Fair Oaks Ranch	TX	78015	
City	The Hon.	Mark	Anderson	Alderman	City of Fair Oaks Ranch	Place 3	7286 Dietz Elkhorn	Fair Oaks Ranch	TX	78015	
City	The Hon.	Frank	Pickart	Alderman	City of Fair Oaks Ranch	Place 4	7286 Dietz Elkhorn	Fair Oaks Ranch	TX	78015	
City	The Hon.	Conrad	Fothergill	Alderman	City of Fair Oaks Ranch	Place 5	7286 Dietz Elkhorn	Fair Oaks Ranch	TX	78015	
City	The Hon.	Kirk W.	Francis	Mayor	City of Hill Country Village		116 Aspen Lane	San Antonio	TX	78232	
City	The Hon.	Carl A.	Register	Mayor Pro-Tem	City of Hill Country Village	Councilmember, Place 1	116 Aspen Lane	San Antonio	TX	78232	
City	The Hon.	Gabriel	Durand-Hollis	Councilmember	City of Hill Country Village	Place 2	116 Aspen Lane	San Antonio	TX	78232	
City	The Hon.	Elizabeth	Worley	Councilmember	City of Hill Country Village	Place 3	116 Aspen Lane	San Antonio	TX	78232	
City	The Hon.	George R. "Rick"	Evans	Councilmember	City of Hill Country Village	Place 4	116 Aspen Lane	San Antonio	TX	78232	
City	The Hon.	Margaret	Mayberry	Councilmember	City of Hill Country Village	Place 5	116 Aspen Lane	San Antonio	TX	78232	
City	The Hon.	Richard	McIlveen	Mayor	City of Hollywood Park		No. 2 Mecca Dr.	Hollywood Park	TX	78232	
City	The Hon.	Bruce	Graham	Councilmember	City of Hollywood Park	Place 1	No. 2 Mecca Dr.	Hollywood Park	TX	78232	
City	The Hon.	Ellen	Alkire	Councilmember	City of Hollywood Park	Place 2	No. 2 Mecca Dr.	Hollywood Park	TX	78232	
City	The Hon.	Ken	Ballard	Councilmember	City of Hollywood Park	Place 3	No. 2 Mecca Dr.	Hollywood Park	TX	78232	
City	The Hon.	Steve	Treu	Councilmember	City of Hollywood Park	Place 4	No. 2 Mecca Dr.	Hollywood Park	TX	78232	
City	The Hon.	Bob	Moore	Councilmember	City of Hollywood Park	Place 5	No. 2 Mecca Dr.	Hollywood Park	TX	78232	
City	The Hon.	Ronald G.	Tefteller	Mayor	City of Olmos Park		119 W. El Prado Dr.	San Antonio	TX	78212	
City	The Hon.	Susan O.	Gragg	Councilmember	City of Olmos Park		119 W. El Prado Dr.	San Antonio	TX	78212	
City	The Hon.	Joseph	Izbrand	Councilmember	City of Olmos Park		119 W. El Prado Dr.	San Antonio	TX	78212	
City	The Hon.	Jeffrey	Judson	Councilmember	City of Olmos Park		119 W. El Prado Dr.	San Antonio	TX	78212	
City	The Hon.	Sean	McNelis	Councilmember	City of Olmos Park		119 W. El Prado Dr.	San Antonio	TX	78212	
City	The Hon.	Harriet S.	Oppenheimer	Councilmember	City of Olmos Park		119 W. El Prado Dr.	San Antonio	TX	78212	
City	The Hon.	Phil	Hardberger	Mayor	City of San Antonio		P.O. Box 839966	San Antonio	TX	78283-3966	
City	The Hon.	Mary Alice P.	Cisneros	Councilmember	City of San Antonio	District 1	P.O. Box 839966	San Antonio	TX	78283-3966	
City	The Hon.	Sheila D.	McNeil	Councilmember	City of San Antonio	District 2	P.O. Box 839966	San Antonio	TX	78283-3966	
City	The Hon.	Jennifer V.	Ramos	Councilmember	City of San Antonio	District 3	P.O. Box 839966	San Antonio	TX	78283-3966	

Officials, Neighborhood Associations, and Noise Abatement Advisory Committee for SAT Noise Compatability Planning Study Public Hearing Flyers Sent 2/19/09

City	The Hon.	Philip A.	Cortez	Councilmember	City of San Antonio	District 4	P.O. Box 839966	San Antonio	TX	78283-3966	
City	The Hon.	Lourdes	Galvan	Councilmember	City of San Antonio	District 5	P.O. Box 839966	San Antonio	TX	78283-3966	
City	The Hon.	Delicia	Herrera	Councilmember	City of San Antonio	District 6	P.O. Box 839966	San Antonio	TX	78283-3966	
City	The Hon.	Justin	Rodriguez	Councilmember	City of San Antonio	District 7	P.O. Box 839966	San Antonio	TX	78283-3966	
City	The Hon.	Diane G.	Cibrian	Councilmember	City of San Antonio	District 8	P.O. Box 839966	San Antonio	TX	78283-3966	
City	The Hon.	Louis E.	Rowe	Councilmember	City of San Antonio	District 9	P.O. Box 839966	San Antonio	TX	78283-3966	
City	The Hon.	John G.	Clamp	Councilmember	City of San Antonio	District 10	P.O. Box 839966	San Antonio	TX	78283-3966	
City	The Hon.	A. David	Marne	Mayor	City of Shavano Park		900 Saddletree Ct	San Antonio	TX	78231	
City	The Hon.	Mary	Werner	Mayor Pro-Tem	City of Shavano Park		900 Saddletree Ct	San Antonio	TX	78231	
City	The Hon.	Bruce	Baumann	Alderman	City of Shavano Park		900 Saddletree Ct	San Antonio	TX	78231	
City	The Hon.	Dave	Burns	Alderman	City of Shavano Park		900 Saddletree Ct	San Antonio	TX	78231	
City	The Hon.	Ken	McClure	Alderman	City of Shavano Park		900 Saddletree Ct	San Antonio	TX	78231	
City	The Hon.	Al	Walea	Alderman	City of Shavano Park		900 Saddletree Ct	San Antonio	TX	78231	
City	The Hon.	J. Bradford	Camp	Mayor	City of Terrell Hills		5100 N. New Braunfels	San Antonio	TX	78209	
City	The Hon.	Michelle	Brady	Mayor Pro-Tem	City of Terrell Hills		5100 N. New Braunfels	San Antonio	TX	78209	
City	The Hon.	Anne M.	Ballantyne	Councilmember	City of Terrell Hills		5100 N. New Braunfels	San Antonio	TX	78209	
City	The Hon.	William W.	Ochse III	Councilmember	City of Terrell Hills		5100 N. New Braunfels	San Antonio	TX	78209	
City	The Hon.	Charles W.	Parish, Jr.	Councilmember	City of Terrell Hills		5100 N. New Braunfels	San Antonio	TX	78209	
City	The Hon.	Jack	Leonhardt	Mayor	City of Windcrest		8601 Midcrown	Windcrest	TX	78239	
City	The Hon.	James	Tremblay	Mayor Pro-Tem	City of Windcrest	Council Member, Place	8601 Midcrown	Windcrest	TX	78239	
City	The Hon.	Mary	Hatch	Councilmember	City of Windcrest	Place 2	8601 Midcrown	Windcrest	TX	78239	
City	The Hon.	Joe	Regan	Councilmember	City of Windcrest	Place 3	8601 Midcrown	Windcrest	TX	78239	
City	The Hon.	Rick	Bruns	Councilmember	City of Windcrest	Place 4	8601 Midcrown	Windcrest	TX	78239	
City	The Hon.	Garlene	Bach	Councilmember	City of Windcrest	Place 5	8601 Midcrown	Windcrest	TX	78239	
Military		Scott	Shepherd		Randolph Air Force Base	12th CES/CEC	1651 5th St West	Randolph AFB	TX	78150-4313	scott.shepherd@randolph.af.mil
HOA		CHERYL	SMITH		ARBORETUM NA		13511 CASSIA WAY	San Antonio	TX	78232	ARBORETUM963@ATT.NET
HOA		WILLIAM	CHAMPINE		BITTERS ENCLAVE HOA INC		4 STIRMAN WAY	San Antonio	TX	78216	WCHAMPINE@SATX.RR.COM
HOA		SHERRY	HOUWERZYL		BLANCO WOODS HOA		13432 BLANCO ROAD, #313	San Antonio	TX	78216	BWHOA@ATT.NET
HOA		SHERRY	SHAW		BLOSSOM PARK NA (INACTIVE)		P.O. BOX 160746	San Antonio	TX	78280-2946	SSHAW@SATX.RR.COM
HOA		PROCOMM			BLUFF CREEK HOA (INACTIVE)		300 EAST SONTERRA BLVD., SUITE #350	San Antonio	TX	78258	
HOA		DONNA	THOMPSON		BLUFFVIEW AT CAMINO REAL HOA		13815 BLUFF LANE	San Antonio	TX	78216	DRDDT@HOTMAIL.COM
HOA		RONNIE	SWANNER		CADILLAC DRIVE HOA (INACTIVE)		15202 CADILLAC DRIVE	San Antonio	TX	78248-1010	RSWANNER@TRINITY.EDU
HOA		LILLIE	HORKY		CAMELOT I NA (INACTIVE)		7415 CASTLE CROWN	San Antonio	TX	78218	AKPOLANSKY@WORLDNET.ATT.NET
HOA		ROD	ENLOW		CANYON CREEK BLUFFS POA		17418 SHADY CANYON	San Antonio	TX	78248	RENLOWCONSULT@WORLD-NET.NET
HOA		DENNIS	MEANS		CANYON CREEK ESTATES HOA		107 LARIAT DR.	San Antonio	TX	78232	DMEANS@SATX.RR.COM
HOA		PATTI	PADGETT		CANYON CREEK VILLAGE HOA		1305 GOLDEN BEAR	San Antonio	TX	78248	MANAGER@CANYONCREEKVILLAGE.NET
HOA		RAY	HAMILTON		CASTLE HILLS FOREST HOA		2523 WILDERNESS HILL	San Antonio	TX	78231-1829	HAMCPC@AOL.COM
HOA		ALICE	AIKEN		CASTLE WOOD FOREST HOA		12823 CASTLE GEORGE ST.	San Antonio	TX	78230	ALICEAIKEN@AOL.COM
HOA		LORA	REYNOLDS		CHURCHILL ESTATES HOMES ASSOCIATION, INC.		13423 BLANCO RD. #288	San Antonio	TX	78216	REYNOLDSWRITE@SBCGLOBAL.NET
HOA		DENNIS	STEWART		COUNTRYSIDE SAN PEDRO PROPERTY OWNERS ASSN.		P.O. BOX 160413	San Antonio	TX	78280-2340	DENNISSTEWART02@HOTMAIL.COM
HOA		GEORGE	MCDILL		CROWNHILL PARK NEIGHBORHOOD ASSOCIATION		215 TRAFALGAR RD.	San Antonio	TX	78216	SAT4GBM@SBCGLOBAL.NET
HOA		JUDY	JORDAN		CROWNRIDGE OF TEXAS OWNERS ASSOCIATION		6926 WASHITA WAY	San Antonio	TX	78256	JWTJSJ@EARTHLINK.NET
HOA		JAN	RUSSELL		DEER HOLLOW HOA		7613 TEZEL RD.	San Antonio	TX	78250	MPOTEX@SWBELL.NET
HOA		RIKKO	OLLERVIDA		DEERFIELD HOA (INACTIVE)		15715 THRUSH GALE LANE	San Antonio	TX	78248	RIKKOOLLEAVIDEZ@YAHOO.COM
HOA		JEAN	LESLEY		DEVONSHIRE HOA		11843 BRAESVIEW, SUITE B	San Antonio	TX	78213	
HOA		ROSE MARY	GREENE		EAST TERRELL HILLS NA		P.O. BOX 18131	San Antonio	TX	78218-0131	GTFCONSULTANTS@YAHOO.COM
HOA		PROCOMM	MANAGEMENT		EDEN ROC MAINTENANCE ASSOCIATION		300 EAST SONTERRA BLVD., SUITE #350	San Antonio	TX	78258	RBIERING@PROCOMM-MGMT.COM
HOA		ALLIE	HOSTETLER		EL CHAPARRAL / FERTILE VALLEY NA		13909 NACOGDOCHES #105 BOX 1132	San Antonio	TX	78217	ELCHAPARRALSUBDIVISION@YAHOO.COM
HOA		RICHARD	JODRY		ENCHANTED VILLAGE TOWNHOUSE ASSOC.		641 STRINGS DR.	San Antonio	TX	78216	DICKJODRY@JUNO.COM
HOA		LARRY	STULL		FOREST OAK NA		PO BOX 171384	San Antonio	TX	78217	STULLLARRY@SBCGLOBAL.NET
HOA		BRENDA	ARMSTRONG		FORESTS AT INWOOD HOA (INACTIVE)		1600 NE LOOP 410, SUITE #202	San Antonio	TX	78209	AMS9@AMS-SA.COM
HOA		SHIRLEY	ESCOBEDO		GENERAL KRUEGER NA		P O BOX 18946	San Antonio	TX	78218	
HOA		CHRISTINE	DE LA ROSA		GREATER HARMONY HILLS NA		630 BRIAR OAK	San Antonio	TX	78216	FATS78216@YAHOO.COM
HOA		BECKY	BOWHOLTZ		HIDDEN FOREST HOA		831 SHERMAN OAK	San Antonio	TX	78232	
HOA		KEN	LAWRENCE		HUNTERS CREEK NA		13307 HUNTERS HOLLOW	San Antonio	TX	78230	KLAWRENCE1@SATX.RR.COM

Officials, Neighborhood Associations, and Noise Abatement Advisory Committee for SAT Noise Compatability Planning Study Public Hearing Flyers Sent 2/19/09

HOA		SPECTRUM	MANAGEMENT		HUNTERS MILL ASSOCIATION, INC.		1000 CENTRAL PARKWAY NORTH, SUITE 270	San Antonio	TX	78232	CONTACT@SPECTRUMAM.COM
HOA		LISA	DORY		INWOOD VILLAGE HOA		1600 NE LOOP 410, SUITE #202	San Antonio	TX	78209	LISA@AMS-SA.COM
HOA		BOB	CRAWFORD		KNOLLCREEK HOA		1000 CENTRAL PARKWAY NORTH, SUITE #270	San Antonio	TX	78232	BCRAWFORD@SPECTRUMAM.COM
HOA		JOHN	RIVENBURGH		LOCKHILL ESTATES HOME AND PROPERTY ASSN.		11002 LINK	San Antonio	TX	78213	JRIVEN@SBCGLOBAL.NET
HOA		CAROL	PORTER		LONGS CREEK HOMEOWNERS ASSOCIATION		16000 HICKORY WELL DR.	San Antonio	TX	78247	LONGSCREEK@SBCGLOBAL.NET
HOA		ALBERT	FULTON		MACARTHUR PARK NEIGHBORHOOD ASSOCIATION		8708 NORWICH	San Antonio	TX	78217	MACPARKNA@LIVE.COM
HOA		DOUG	PANTHER		MISSION RIDGE HOA (INACTIVE)		ASSET PROP. MGNT., 8318 JONES MALTSBERGER SUITE 12	San Antonio	TX	78216	
HOA		WAYNE W.	WRIGHT		NORTH CASTLE HILLS HOMEOWNERS' ASSOCIATION		12006 BAMMEL LANE	San Antonio	TX	78231	WWRIGHT5@SATX.RR.COM
HOA		LISA	TALLEY		NORTH CENTRAL NEIGHBORHOOD ASSOCIATION		1710 LAMPOST	San Antonio	TX	78213	LISA0KAPI@GRANDECOM.NET
HOA		LYAL	GORDON		NORTH CENTRAL THOUSAND OAKS NA		P.O. BOX 701321	San Antonio	TX	78270-1321	LYALGORDON@SBCGLOBAL.NET
HOA		MARY ALICE	RAMSAY		NORTH SHEARER HILLS NA		125 AVE MARIA	San Antonio	TX	78216	MARAMSAY@SATX.RR.COM
HOA		GERHARD J.	ROKICKI		NORTHERN HILLS COUNTRY VILLAGE OWNERS ASSN.		99 SUNCREST LN	San Antonio	TX	78217-2133	NHCVOA@SBCGLOBAL.NET
HOA		WALTER	THORMAN		OAK PARK/NORTHWOOD NA		P.O. BOX 17093	San Antonio	TX	78217	
HOA		C.R.	NOWELL		PARK VILLAGE NA		P.O. BOX 18871	San Antonio	TX	78218	PARKVILLAGENA@EARTHLINK.NET
HOA		PROCOMM			PRESTON HOLLOW HOMEOWNERS ASSOCIATION (INACTIVE)		300 EAST SONTERRA BLVD., SUITE #350	San Antonio	TX	78258	
HOA		MICHAEL	ZAHN		RIDGE AT DEERFIELD HOA (INACTIVE)		1703 ASPEN RIDGE	San Antonio	TX	78248	
HOA		MANAGEMENT	PROFESSIONALS		RIDGESTONE NO. 9 HOA (INACTIVE)		7613 TEZEL RD.	San Antonio	TX	78250	MPOTEX@SWBELL.NET
HOA		MP OF TEXAS			S.A. ST. JAMES PLACE HOA, INC.		7613 TEZEL RD.	San Antonio	TX	78250	MPOTEX@SWBELL.NET
HOA		MADLYN	BOWEN		SAN ANTONIO CAMBRIDGE VILLAGE HOA		6292 QUEENS CASTLE #201	San Antonio	TX	78218	MBOWEN@SATX.RR.COM
HOA		ELISEA	FLOYD		SCATTERED OAKS HOA		2915 SCATTERED OAKS	San Antonio	TX	78232	GFLOYD@SATX.RR.COM
HOA		RODNEY E.	GILLESPIE		SHADY OAKS HOA (INACTIVE)		106 PALO PINTO	San Antonio	TX	78232	RGILLESPIE@SATX.RR.COM
HOA		ART	VELIZ, JR.		SHEARER HILLS/RIDGEVIEW NA		130 SHANNON LEE	San Antonio	TX	78216	AVELIZ2@SATX.RR.COM
HOA		K.T.	WHITEHEAD		TERRELL HEIGHTS NA		3004 NACOGDOCHES	San Antonio	TX	78217	KATHLEENW@WHITEHEAD-ELDERLAW.COM
HOA		DOUG	PANTHER		THE BLUFFS OF HENDERSON PASS (INACTIVE)		ASSET PROPERTY MGMT, 8318 JONES MALTSBERGER, SUITE	San Antonio	TX	78216	HOA@A-PM.COM
HOA		PROCOMM			THE FOUNTAINS AT DEERFIELD (INACTIVE)		300 EAST SONTERRA BLVD., SUITE #350	San Antonio	TX	78258	
HOA		NOLAN	MARTIN		THE PARK AT DEERFIELD - (INACTIVE)		17122 EAGLE HOLLOW	San Antonio	TX	78248	
HOA		L. DARLEEN	STARKEY		THE PARK/WATERS RECREATION ASSOCIATION, INC.-(INACTIVE)		P.O. BOX 690114	San Antonio	TX	78269	
HOA		MICHAEL	BROKER		THE WATERS AT DEERFIELD		7 REGENCY ROW DRIVE	San Antonio	TX	78248	ABROKER@SATX.RR.COM
HOA		LUANA	JOHNSON		THOUSAND OAKS HOA		2611 N. MAIN	San Antonio	TX	78212	
HOA		STEPHEN & DONNA	SCHNEIDER		VISTA DEL NORTE SUBDIVISION HOA		13102 VISTA DEL LAGUNA	San Antonio	TX	78216	SCHNEIDER@SATX.RR.COM
HOA		PROCOMM			WALKER RANCH HOMEOWNERS ASSOCIATION (INACTIVE)		300 EAST SONTERRA BLVD., SUITE #350	San Antonio	TX	78258	
HOA		JAMES	DYMOND		WOODLANDS OF CAMINO REAL HOA		P.O. BOX 792522	San Antonio	TX	78279-2522	WOODLANDS.HOA@SBCGLOBAL.NET
NAC	Ms.	Orline K.	Kolm				231 Sharon Dr	San Antonio	TX	78216	
NAC	Ms.	Leslie	Hobgood				4414 Putting Green	San Antonio	TX	78217	1960corvette@att.net
NAC	Mr.	Ray	Kincaid				2 Waters Edge Way	San Antonio	TX	78248	kincaid@kincaidgroup.com
NAC	Mr.	Verner	Eglit				7310 Hovingham	San Antonio	TX	78257	ve744@satx.rr.com
NAC	Mr.	John	McConnell				106 Woodcrest	San Antonio	TX	78209	
NAC	Mr.	Rand	Goldstein				837 Emerald Bay Ridge	San Antonio	TX	78258	
NAC	Mr.	James	Caudle				4208 Fairway Crossing Dr	Fort Worth	TX	76137	Jim.Caudle@wnco.com
NAC	Mr.	Edward	Benson				12822 Country Crest	San Antonio	TX	78216-2340	edbenson@prodgey.net
NAC	Mr.	Richard	Kelley				3859 Morgans Creek	San Antonio	TX	78230	
NAC	Mr.	Mark	Tafolla				919 Cheyenne Creek	San Antonio	TX	78258	mark.tafolla@erac.com
NAC	Mr.	Neil	Stone				645 Lockhill-Selma	San Antonio	TX	78216	nstone@gendrysprague.com
NAC	Ms.	Gloria	Arriaga		Alamo Area Council of Governments		8700 Tesoro Dr, Ste. 700	San Antonio	TX	78217	garriaga@aacog.com
NAC	Mr.	Tom	Bowman		Federal Aviation Adminstration	ATC Tower, Room 15	9434 Airport Blvd	San Antonio	TX	78216	

Acoustical Treatment Program and Noise Compatibility Study Contacts
Public Hearing Flyers Sent 2/19/09

Name	Address	City	State	Zip Code	Phone #
Adam Buentello	126 Middlebury	San Antonio	TX	78217	
Adam Martinez	335 Haverford	San Antonio	TX	78217	
Adolph Andrade	3302 Cadbury	San Antonio	TX	78247	491-3443
Albert & Theresa Garcia	1222 Vista Del Juez	San Antonio	TX	78216	
Alfredo Garcia	3407 Star Bend	San Antonio	TX	78247	653-4322
Allan C. Tucker	2618 Friar Tuck	San Antonio	TX	78209	
Allen Goldsmith	439 Laramie Drive	San Antonio	TX	78209	826-1786
Allen Hodapp	12243 Victory Palm	San Antonio	TX	78247	495-3200
Allison Partridge	3502 Stoney Dawn	San Antonio	TX	78247	496-3889
Allyson Foster	614 Cave Lane	San Antonio	TX	78209	829-8527
Amanda Presely	14131 Shire Oak	San Antonio	TX	78247	771-7726
Amy Black	159 Oakhurst	San Antonio	TX	78209	826-2056
Amy Rowland	5 Myrtlewood	San Antonio	TX	78218	602-1800
Ann Alwood	12106 Ridge Spur	San Antonio	TX	78247	
Ann Nydegger	14307 Citation	San Antonio	TX	78248	408-1268
Ann Philips	11719 Sandman	San Antonio	TX	78216	341-0076
Ann Vinson	2610 Country Square	San Antonio	TX	78209	826-4876
Anne Kaalund	1306 Vista Del Rio	San Antonio	TX	78216	
Annette Henson	230 Five Oaks	San Antonio	TX	78209	828-6461
Annette Olivares	3122 Stoney Grove	San Antonio	TX	78247	490-9578
Annice Guenther	2406 Danbury	San Antonio	TX	78217	826-5515
Anthony Clayton	13226 Vista Del Mundo	San Antonio	TX	78216	
Anthony Pierulla	13430 Vista Del Ray	San Antonio	TX	78216	408-0475
Antonio Vasquez, Jr.	3331 Cadbury Dr	San Antonio	TX	78247	
Arne Klendshoj	3338 Morning Brook	San Antonio	TX	78247	830-981-5512
Arnulfo C. Gomez	526 Sprucewood Lane	San Antonio	TX	78216	497-5383
Aronld Ackermann	3434 Butterleigh	San Antonio	TX	78247	490-2607
Art Hodas	2314 Blossom Dr	San Antonio	TX	78217	824-6064
Arthur & Helene Riklin	122 Laburnum	San Antonio	TX	78209	
Ashley Roberts	115 Oak Glen	San Antonio	TX	78209	824-5386
Audrie Ethridge	3426 Stoney Dawn	San Antonio	TX	78247	497-1920
Audrie Laubauch	11110 Gordon Road	San Antonio	TX	78216	494-2268
Audrie Laubauch	2407 Danbury	San Antonio	TX	78217	494-2268
Barbara Crocket	12114 Stoney Crown	San Antonio	TX	78247	404-2904
Barbara Martin	13635 Bridgeview	San Antonio	TX	78247	491-9374
Barbara Pettit	9619 Salbury	San Antonio	TX	78217	824-8627
Baron Clark	7910 Robin Rest	San Antonio	TX	78209	822-4688
Ben & Cecilia Gonzales	13315 Vista Bonita	San Antonio	TX	78216	
Bennett & Carolyn Larson	223 S. Guilford Dr	San Antonio	TX	78217	
Bernice Lekawa	3317 Stoney Square	San Antonio	TX	78247	545-4457
Beth Buchan	12000 Stoney Pass	San Antonio	TX	78247	270-7235
Beth Mueller	12067 Stoney Bridge	San Antonio	TX	78247	
Betty Mascorro	315 Laramie	San Antonio	TX	78209	822-9404
Beverly Adkins	331 Rockhill	San Antonio	TX	78209	828-4183
Beverly Adkins	102 Middle Berry	San Antonio	TX	78217	828-4183
Beverly Dent	7430 Quail Run	San Antonio	TX	78209	822-3251
Beverly Wright	3662 Stoney Branch	San Antonio	TX	78247	494-4550
Bill & Barbara Crockett	12114 Stoney Crown	San Antonio	TX	78247	
Bill Alyn	411 Laramie	San Antonio	TX	78209	
Bill Bassuk	1246 Vista Del Rio	San Antonio	TX	78216	823-8180
Bill Bodzek	14410 Triple Crown Lane	San Antonio	TX	78248	493-5603
Bill Sherman	24307 Bear Claw	San Antonio	TX	78258	

Acoustical Treatment Program and Noise Compatibility Study Contacts
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Adam Buentello	126 Middlebury	San Antonio	TX	78217	
Bob Orr	1803 East Byron	San Antonio	TX	78223	534-7511
Bob Suori	14519 Majestic Prince	San Antonio	TX	78248	492-2278
Bob Weidman	2643 Friar Tuk	San Antonio	TX	78209	829-5790
Brad Hutton	15030 Preston Hollow Dr.	San Antonio	TX	78247	403-2733
Brad Smilgin	1901 S. Alamo	San Antonio	TX	78204	
Brandon Elley	3518 Bunyan	San Antonio	TX	78247	347-1333
Brandy Cloud	131 Eastly	San Antonio	TX	78217	820-0896
Brenda Criswell	631 Chauncey Dr #69	San Antonio	TX	78216	
Brenda Davis	13135 Vista Haven	San Antonio	TX	78216	
Brent & Anna Holland	14311 Hill Prince	San Antonio	TX	78248	408-1980
Brent Washam	466 Pike Road	San Antonio	TX	78209	829-8488
Brett Calvert	519 Rockhill	San Antonio	TX	78209	930-1034
Brian & Laura Devaney	164 Hillview	San Antonio	TX	78209	828-1522
Brian & Marcy Krasiewski	111 Jeanette Dr	San Antonio	TX	78216	
Brian & Patricia Herzig	3310 Stoney Cluster	San Antonio	TX	78217	404-4788
Bridgett Bar	12050 Stoney Bridge	San Antonio	TX	78247	938-8002
Bruce Yates	1102 Vidorra Court	San Antonio	TX	78216	313-4543
Bryan Sharp	618 Wyndeale	San Antonio	TX	78209	680-5243
Burnie & Rose Miller	111 Middlebury	San Antonio	TX	78217	826-2880
C. Lemoyne & Delores Hall	503 Cave Lane	San Antonio	TX	78209	
Carey McCadas	2702 Burning Trail	San Antonio	TX	78247	494-9928
Carol Suriel	13627 Summer Glen	San Antonio	TX	78247	494-2142
Carolyn Petro	12814 Lungo Vista	San Antonio	TX	78216	492-2266
Carolyn Wheat	507 Rockhill	San Antonio	TX	78209	829-8852
Carrie Steele	7506 Bridgewater	San Antonio	TX	78209	824-3242
Catherine Ward	13638 Summer Glen	San Antonio	TX	78247	490-6474
Cecil Smith	3304 Cadbury	San Antonio	TX	78247	490-3539
Cecylia Butler	13407 Vista Bonita	San Antonio	TX	78216	492-2188
Charleen Burleson	14710 Churchil Estates	San Antonio	TX	78248	492-9770
Charles & Lois Roswell	614 Bluff Trail	San Antonio	TX	78216	
Charles & Nancy Roof	430 Rockhill	San Antonio	TX	78209	805-9625
Charles Nowlin	410 Country Lane	San Antonio	TX	78209	828-7164
Charles Pereira	1010 Melissa Dr	San Antonio	TX	78213	
Chris Catania	3682 Eidge Cluster	San Antonio	TX	78247	
Chris Wong	14023 Shire Oak	San Antonio	TX	78247	545-0820
Christine Nelson	207 Wyndale St	San Antonio	TX	78209	
Christine Yates	3618 Ridge Dawn	San Antonio	TX	78247	495-6204
Christy Esquivel	14215 Bold Ruler	San Antonio	TX	78248	479-1081
Chuck & Trish Cortines	13318 La Vista	San Antonio	TX	78216	
Cindy Cunningham	314 Royal Oaks	San Antonio	TX	78209	269-5424
Clarence McGowan	102 Wyndale	San Antonio	TX	78209	822-5956
Clarence Nail	2511 Blossom Dr.	San Antonio	TX	78217	828-4205
Clarice Ford	3654 Stoney Branch	San Antonio	TX	78247	403-3161
Clark & Camille Mandiego	142 El Rancho Way	San Antonio	TX	78209	826-5572
Clark Tilley	13315 Vista Arroyo	San Antonio	TX	78216	
Clint Poulter	3203 Albin Dr	San Antonio	TX	78209	
Connie Boyle	153 Rilla Vista	San Antonio	TX	78216	805-0492
Connie Haiduk	214 Oak Glen	San Antonio	TX	78209	822-6952
Consuelo Donohue	433 Patrica	San Antonio	TX	78216	348-9178
Dagmar Begley	3351 Rosetti Dr	San Antonio	TX	78247	402-3171
Daisey Gidley	2618 Country Hollow	San Antonio	TX	78209	805-9929
Damen Olsen	3126 Samar	San Antonio	TX	78217	967-5599

Acoustical Treatment Program and Noise Compatibility Study Contacts
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Adam Buentello	126 Middlebury	San Antonio	TX	78217	
Dan and Sue Holt	8827 Pine Ridge	San Antonio	TX	78217	824-7245
Dan Worcster	2903 Hedgewyck	San Antonio	TX	78217	410-9436
Dana & Gina Licata Adams	8810 Pineridge	San Antonio	TX	78217	822-3391
Daniel & Sally Blecher	8306 Country Side	San Antonio	TX	78209	930-3082
Daniel Burns	510 Cave Lane	San Antonio	TX	78209	930-1050
Daniel Denham	3330 Coral Grove	San Antonio	TX	78247	218-1314
Darlene Long	202 Shropshire	San Antonio	TX	78217	8241668
Darrell Schaper	502 Cave Lane	San Antonio	TX	78209	
David & Margaret Johnson	9 Inwood Terrace	San Antonio	TX	78248	492-0039
David & Peggy Rochelle	13310 Vista Bonita	San Antonio	TX	78216	
David & Peggy Rymer	137 Laburnum	San Antonio	TX	78209	
David Caldron	3674 Stoney Branch	San Antonio	TX	78247	225-6130
David Moreno	339 Eastley	San Antonio	TX	78217	279-9392
David Parker	12015 Stoney Summit	San Antonio	TX	78247	496-0162
David Rodriguez	1230 Vista Del Juez	San Antonio	TX	78216	764-7610
David Wells	13318 Vista Bonita	San Antonio	TX	78216	
David Youngquest	117 Landuram	San Antonio	TX	78209	366-3222
Dean Parker	13226 Vista Del Mundo	San Antonio	TX	78216	789-7030
Debbie Villers	3307 Flson Grove	San Antonio	TX	78247	490-6769
Debra J. Oswald	14035 Quarles Dr.	San Antonio	TX	78247	494-7988
Denis Lunquist	14342 Hill Prince	San Antonio	TX	78248	492-7498
Dennis & Georgia Nisi	3538 LeBlanc Dr	San Antonio	TX	78247	
Dennis & Janet Mergele	3423 Stoney Country	San Antonio	TX	78247	494-9563
Dennis Kirsch	11712 Persuasion	San Antonio	TX	78209	377-1705
Dennis Scecina	2518 Blossom Drive	San Antonio	TX	78217	822-2116
Deone Saenz	13706 Pebble point	San Antonio	TX	78231	764-8310
Derek & Veronica Horanzy	10223 Buescher Ln	San Antonio	TX	78223	930-7207
Dian Palmiotti	7414 Robin Rest	San Antonio	TX	78209	826-9818
Diana R. Welker	12110 Stoney Ash	San Antonio	TX	78247	495-8922
Diane Toscano	134 Stardream	San Antonio	TX	78216	442-0404
Dinna & Dale Brown	14914 Enchanted Castle	San Antonio	TX	78247	496-6875
Don Davie	16406 Ledge Park	San Antonio	TX	78232	
Don Peterson	13138 Vista Del Mundo	San Antonio	TX	78216	
Don Sueltenfuss	447 Forrest Hill	San Antonio	TX	78209	822-7785
Donald Howard	126 Laramie Dr.	San Antonio	TX	78209	826-3691
Donald Pope	12103 Stoney Crown	San Antonio	TX	78247	260-6577
Donica Torres	4234 Moana	San Antonio	TX	78218	590-4345
Donna Leigh	12120 Stoney Spur	San Antonio	TX	78247	
Donnie Allbritton	3311 Falcon Grove	San Antonio	TX	78247	545-0751
Dorine Garth	3307 Stoney Star	San Antonio	TX	78247	404-2853
Dorothy Chesser	14714 Churchill Estates	San Antonio	TX	78248	492-2120
Dorris S. Finesilver	218 Laburnum	San Antonio	TX	78209	
Dorthy Minor	13626 Summer Glen	San Antonio	TX	78247	495-0917
Doug Atwell	3507 Oakhorn	San Antonio	TX	78247	490-5081
Doug Thomas	2722 Old Ranch Rd	San Antonio	TX	78217	
Drake Saylak	14114 Shire Oak	San Antonio	TX	78247	365-5281
Drew Nicholas	154 Treasway Way	San Antonio	TX	78209	663-1927 Cell
Dudley Hays	404 Canterbury Hill	San Antonio	TX	78209	
Dudley Hays	118 Laburnum Dr	San Antonio	TX	78209	822-9777
Dyane Shirley	13118 Vista Del Mondo	San Antonio	TX	78216	493-7159
Ed Abel	14815 Forward Pass	San Antonio	TX	78248	493-1550
Ed Dylla	13310 La Vista	San Antonio	TX	78216	

Acoustical Treatment Program and Noise Compatibility Study Contacts
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Adam Buentello	126 Middlebury	San Antonio	TX	78217	
Eduardo Alvarez	1247 Vista Del Rio	San Antonio	TX	78216	
Edward Delagarza	111 Haverford Dr.	San Antonio	TX	78217	484-2056 wk
Edward Lavin	2502 Danbury	San Antonio	TX	78217	829-1938
Elaine Knaggs Property Mgmt Trust	205 Live Oak St	Ingram	TX	78205	
Elizabeth Robillard	3307 Le Blanca	San Antonio	TX	78247	494-0588
Elizabeth Sirianni	13111 Vista Del Laguna	San Antonio	TX	78216	
Elizabeth Thornburg	2443 Blossom Drive	San Antonio	TX	78217	223-2299
Ella Smolka	103 North Guilford	San Antonio	TX	78217	828-7647
Eloit Maas	13814 Chevy Oak	San Antonio	TX	78247	495-4024
Elsa Estorga	12071 Stoney Bridge	San Antonio	TX	78247	
Ely Porter	3663 Ridgecluster	San Antonio	TX	78247	496-5985
Emma Thomae	310 Rockhill	San Antonio	TX	78209	
Emmett V. Matthews	227 Wyndale	San Antonio	TX	78209	698-2541
Erenest Giron	12135 Stoney Summit	San Antonio	TX	78247	710-1098
Erica Bochantin	15031 Preston Hollow Drive	San Antonio	TX	78247	495-2800
Ernest Ramon	1306 Vista Del Avion	San Antonio	TX	78216	479-2321
Eugene Reed	2618 Country Hollow	San Antonio	TX	78209	826-1314
Eva Day	434 Larimie Drive	San Antonio	TX	78209	841-0144
Evan Black	7427 Quail Run	San Antonio	TX	78209	828-6527
Evie Regina Buentello	106 Middlebury	San Antonio	TX	78217	
Favien Castillo	506 Shropshire Drive	San Antonio	TX	78209	822-3060
Felipe Reyes	13715 Wondering Oak	San Antonio	TX	78247	495-4948
Felix Rodriguez	130 Eastly	San Antonio	TX	78217	826-5597
Florinda Tovar	12118 Soney Circle	San Antonio	TX	78247	403-2422
Fran Levinson	226 Pinoak Knoll	San Antonio	TX	78248	479-1225
Frank & Diana Blizzard	8406 Laurel Rest	San Antonio	TX	78209	
Frank & Katerine Sepulveda	13126 Vista Haven	San Antonio	TX	78216	492-6352
Frank Barrera	12087 Stoney Bridge	San Antonio	TX	78247	496-0327
Frank Dickson	119 Oak Glen	San Antonio	TX	78209	826-5790
Frank Haegelin	2930 Burnside	San Antonio	TX	78209	822-7907
Frank J. Guerra	12015 Stoney Dr	San Antonio	TX	78247	
Frank Janicek	106 Sleepy Elm	San Antonio	TX	78209	308-4325
Fred Bonavita	334 Royal Oak	San Antonio	TX	78209	828-1368
Fred Sechter	430 Larmier	San Antonio	TX	78247	824-7049
Fred Wernli	511 Country Lane	San Antonio	TX	78209	414-0460
Freddie J. Sanchez	12116 Stoney Spur	San Antonio	TX	78247	
Frederick Costa	8726 Oak Ledge Drive	San Antonio	TX	78217	824-8772
Fredericke & Diane Vinson	202 Five Oaks	San Antonio	TX	78209	824-6059
Gail Kabrich	3651 Ridge Cluster	San Antonio	TX	78247	725-4274
Garry Gray	218 South Guiford	San Antonio	TX	78217	820-3161
Gary & Norma Paglia	12827 Vidorra Vista	San Antonio	TX	78216	885-5656
Gary Allen	3501 Stoney Meadow	San Antonio	TX	78247	490-4196
Gary Metcalf	3421-23 Ridge Country	San Antonio	TX	78247	545-5286
Gene Millard	11819 Persuasion	San Antonio	TX	78216	366-9488
George Davis	1235 Vista Del Juez	San Antonio	TX	78216	
George Hurt	222 Haverford	San Antonio	TX	78217	824-3606
George Wrookloff	2534 Blossom Dr	San Antonio	TX	78217	
Georgie Dinn	8619 Oak Leadge	San Antonio	TX	78217	826-7294
Geraldean Pena	12018 Stoney Bridge	San Antonio	TX	78247	579-3815
Geri Bannaster	311 Oakleaf Drive	San Antonio	TX	78209	822-6855
Gil Franklin	616 Strings Dr	San Antonio	TX	78216	

Acoustical Treatment Program and Noise Compatibility Study Contacts
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Adam Buentello	126 Middlebury	San Antonio	TX	78217	
Gilbert & Beatrice Salinas	2823 Old Ranch Road	San Antonio	TX	78217	824-1211
Gilder McCarroll	3374 Butterleigh	San Antonio	TX	78247	545-1538
Gordan Chace	3402 Ridge Smoke	San Antonio	TX	78247	494-1527
Gordon Keogh	4114 Chiselhurst	San Antonio	TX	78247	722-1282
Grady Carlson	1307 Vista Del Rio	San Antonio	TX	78216	
Greg Babcock	13823 Wondering Oak	San Antonio	TX	78247	860-1605
Gregory Salyers & Patricia Nova	13251 Vista Del Mundo	San Antonio	TX	78216	
Gwen Todaro	3538 Byron	San Antonio	TX	78247	494-9748
Hallie Nikotich	2931 Oak Leaf Drive	San Antonio	TX	78209	821-6221
Harold Duncan	110 Laburnum Dr.	San Antonio	TX	78209	822-1453
Harold Moore	311 Royal Oaks	San Antonio	TX	78209	829-5138
Harriette Furino	16114 Robinwood Ln	San Antonio	TX	78248	
Harvey Gutierrez	12023 Stoney Drive	San Antonio	TX	78247	494-8573
Heidi Weidner	3409 Ridge Ranch	San Antonio	TX	78247	930-8463
Heith Wenrich	122 Oak Glenn	San Antonio	TX	78209	826-5985
Henriette McCallister	219 Eastley Dr	San Antonio	TX	78217	
Henry Reindl	13507 Vista Bonita	San Antonio	TX	78216	
Hipolito & Felicitas Alba	507 Patricia	San Antonio	TX	78216	385-8021
Howard Cooper	218 Wyndale	San Antonio	TX	78209	822-7628
Hubbard Parks	206 Royal Oaks	San Antonio	TX	78209	828-7258
Ingrid Tenwolde	202 Larame	San Antonio	TX	78209	946-2752
Iris Farias	13307 Vista Bonita	San Antonio	TX	78216	
Irving Njus	3538 Bunyan	San Antonio	TX	78247	496-2821
Isais Martin Valera	3322 Stoney Cluster	San Antonio	TX	78247	
Jack & Kathy Bratcher	1313 Vista Del Rio	San Antonio	TX	78216	
Jack & Mary Jane Belloe	415 Rockhill	San Antonio	TX	78209	824-1193
Jack Marrow & Allison Dubose	130 Eastley Dr	San Antonio	TX	78217	
Jack Yoes & E.D. Yoes, Jr.	1707 Agile	San Antonio	TX	78248	492-2504
Jackie Rouse	631 Chauncey	San Antonio	TX	78216	348-6677
Jaclyn Shepherd	223 Five Oaks	San Antonio	TX	78209	805-8792
James & Donna Shafer	442 Laramie Dr.	San Antonio	TX	78209	822-2092
James Ashinhurst & Georgia Grounds	12123 Stoney Circle	San Antonio	TX	78247	
James Dickson	3410 Le Blanc	San Antonio	TX	78247	545-0602
James Glover	130 Laburnum	San Antonio	TX	78209	
James Hogate	622 Strings Dr	San Antonio	TX	78216	
James Joffe	3202 Urban Crest	San Antonio	TX	78209	822-2727
James Joffe	3204 Urban Crest	San Antonio	TX	78209	822-2727
James Kirk	211 Five Oaks	San Antonio	TX	78209	822-5778
James Martin Jr.	7422 Dove Mountain	San Antonio	TX	78209	826-3421
James Mitchell	14722 Churchill Estates	San Antonio	TX	78247	884-7713
James Rice	3506 Forest Glade	San Antonio	TX	78247	495-3179
James Stokes	2315 Kenilworth	San Antonio	TX	78209	379-8890
James Suarez	12111 Stoney Ash	San Antonio	TX	78247	402-0715
Jan Curtright	11908 Persuasion	San Antonio	TX	78216	616-5816
Jane Key	2627 Country Square	San Antonio	TX	78209	736-2244 ext 317
Janet Alyn	2606 Friar Tuck Rd	San Antonio	TX	78209	
Janet Samaniego	12117 Stoney Spur	San Antonio	TX	78247	
Janice Donald Moeller	3531 Forest Glade	San Antonio	TX	78247	494-1048
Janie Sanchez	2325 Blossen Drive	San Antonio	TX	78217	828-4786

Acoustical Treatment Program and Noise Compatibility Study Contacts
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Adam Buentello	126 Middlebury	San Antonio	TX	78217	
Jason & Mandy Williamson	3323 Tavern Oaks	San Antonio	TX	78247	
Jason Jablecki	203 Laramie	San Antonio	TX	78209	829-5419
Jay Aguilar	13202 Vusta del Mundo	San Antonio	TX	78216	
Jay Dabbs	13859 Griffen Ridge	San Antonio	TX	78247	494-3686
Jay Norwood	8818 Oak Ledge Dr	San Antonio	TX	78217	832-9885
Jeanette Garcia	1103 Vidorra Court	San Antonio	TX	78216	764-1044
Jeff Witten	12903 Laguna Vista	San Antonio	TX	78216	
Jeffrey Regan	206 Oak Glen	San Antonio	TX	78209	832-0723
Jesse M. & Connie DelaCruz	1214 Vista Del Juez	San Antonio	TX	78216	
Jim Alexander	210 cave lane	San Antonio	TX	78209	828-2794
Jim Calhoun	14711 Swale	San Antonio	TX	78248	
Jim Craig	14719 Churchill Estates	San Antonio	TX	78248	492-0149
Jim Joffe	3204 Urban Crest	San Antonio	TX	78209	832-0705
Jim Nowacek	414 Cave Lane	San Antonio	TX	78209	832-0855
Jim Vasquez	614 Cave Lane	San Antonio	TX	78209	826-4855
Joe & Cassandra Morrison	13018 Vista Haven	San Antonio	TX	78216	
Joe & Ruth McFarland	331 Laramie Dr	San Antonio	TX	78209	
Joe Swatez	12007 Stoney Crossing	San Antonio	TX	78247	289-3467
John & Amy Brand	7519 Quail Run	San Antonio	TX	78209	
John & Margaret Rorquitte	319 Country Wood	San Antonio	TX	78216	
John Armstrong	3322 Butterleigh	San Antonio	TX	78247	494-4912
John Bula	158 Waxwood	San Antonio	TX	78216	826-8777
John Dunlap	103 Five Oaks Dr	San Antonio	TX	78209	
John Kornhurs	14023 Quarles	San Antonio	TX	78247	846-4405
John Liddy	606 Cave Lane	San Antonio	TX	78209	872-3883
John Liles	3730 Van Dyke	San Antonio	TX	78218	804-0429
John Lombardino	311 Pinewood	San Antonio	TX	78216	824-2289
John McDonald	2518 Danbury	San Antonio	TX	78217	826-2973
John Stenger	13330 Partridge Hill	San Antonio	TX	78247	499-1011
John T. Davenport	3698 Stoney Branch	San Antonio	TX	78247	
John Wood	126 Westchester Dr.	San Antonio	TX	78217	826-4232
Joie Laney	2911 Sir Phillip	San Antonio	TX	78209	826-2345
Joleen Lammons	13651 Bridgeview	San Antonio	TX	78247	495-0217
Jonathan & Leticia Sanders-Worley	526 Larkwood	San Antonio	TX	78209	
Jonathon Simon	1239 Vista Del Juez	San Antonio	TX	78216	
Jorge Torres	13027 Vista Haven	San Antonio	TX	78216	
Jose & Rosemary Carronza	12827 Vidorra Circle Dr	San Antonio	TX	78216	
Joseph & Kelley Sadowski	402 Cave	San Antonio	TX	78209	
Josphine Santillano	147 Fantasia	San Antonio	TX	78216	366-9389
Joy Potts	12014 Stoney Bridge	San Antonio	TX	78247	
Joyce Codd	7702 Mertz	San Antonio	TX	78216	824-5782
Joyce Schmitt	12010 Stoney Pass	San Antonio	TX	78247	491-0638
Judith Hyndman	438 Laramie Dr.	San Antonio	TX	78209	826-4869
Julia Gomez	3334 Cadbury	San Antonio	TX	78247	491-1362
Julian Carven	419 Rockhill Dr.	San Antonio	TX	78209	824-5073
Julie Vincent	3425 Ridge Ranch	San Antonio	TX	78247	690-6592
Julie Waehlling	3210 Oakleaf	San Antonio	TX	78209	821-6460
June L. Boldt	2614 Friar Tuck	San Antonio	TX	78209	
Karen Gillespie	12203 Sone Crossing	San Antonio	TX	78247	494-9481
Karen Meeks	13610 Ridgeview	San Antonio	TX	78247	290-9571

Acoustical Treatment Program and Noise Compatibility Study Contacts
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Adam Buentello	126 Middlebury	San Antonio	TX	78217	
Katherine Goodloe	12034 Stoney Bridge	San Antonio	TX	78247	495-9958
Kathleen Hensley	12050 Stoney Drive	San Antonio	TX	78247	495-0900
Kathleen Martin	603 Rockhill	San Antonio	TX	78209	930-3841
Kathy Ashcraft	114 Shroshire	San Antonio	TX	78217	530-7639
Kathy Garison	3214 Tophill	San Antonio	TX	78209	220-5513
Kathy LeBoues	3502 Stoney Bluff	San Antonio	TX	78247	494-9935
Kathy Leinnenber	14806-2 Churchill Estates	San Antonio	TX	78248	492-5042
Kathy Middleton	13322 Vista Arroyo	San Antonio	TX	78216	
Kathy Nickel	8610 Broadway, Ste. 440	San Antonio	TX	78217	
Keith & Jeanette Kite	13306 Vista Bonita	San Antonio	TX	78216	
Keith Garterkk	12122 Stoney Crown	San Antonio	TX	78247	494-8760
Ken Davis	506 Burn Side Dr.	San Antonio	TX	78209	804-1919
Ken Thomas	8302 Counrty Side	San Antonio	TX	78209	641-9999
Kenneth & Toni Wendt	3558 Le Blanc	San Antonio	TX	78247	545-3143
Kenneth Binz, Southwest Exteriors	2430 Freedom	San Antonio	TX	78217	
Kennth Staglik	2435 Blossom Drive	San Antonio	TX	78217	930-8100
Kent & Pat Whitehill	327 Eastley	San Antonio	TX	78217	804-0690
Kerry Copeland	3610 Stoney Meadow	San Antonio	TX	78247	494-9343
Kerry Fredlund	3610 Ridge Country	San Antonio	TX	78247	
Kevin & Julie Davis	13423 Vista Bonita	San Antonio	TX	78216	
Kevin O'Reilly	12144 Stoney Ridge	San Antonio	TX	78247	490-7121
Kevin Spivey	13615 Bentwood Oaks	San Antonio	TX	78247	326-7526
Kim Guerrero	331 Trafalgar	San Antonio	TX	78216	
Kim Register	14011 Irish Pass	San Antonio	TX	78247	545-3049
Kristin Newkirk	13202 Vista Del Punte	San Antonio	TX	78216	479-8078
Kyle Sherrington	2200 Nacogdoches	San Antonio	TX	78209	826-2874
Lara Matinez	2442 Blossom Drive	San Antonio	TX	78247	824-7571
Larhesa Pollock	166 Cave Lane	San Antonio	TX	78209	822-9174
Larry & Linda Mills	534 Country Lane	San Antonio	TX	78209	
Larry J. Smith	13312 Vista Arroyo	San Antonio	TX	78216	
Larry Shephard	2618 Danbury	San Antonio	TX	78217	826-4504
Laura Weems	2450 Toftrees	San Antonio	TX	78209	
Lauren Haby	406 Laramie	San Antonio	TX	78209	824-2010
Lee Lisa Fairall	318 Cave Road	San Antonio	TX	78209	820-3136
Leon Kattengell	135 Mason Crest	San Antonio	TX	78247	295-8945
Leonel Leal	12103 Ridge Summit	San Antonio	TX	78247	
Lesley Robertson	12059 Stoney Bridge	San Antonio	TX	78247	490-8975
Leslie Beasley	219 Laramie	San Antonio	TX	78209	829-8196
Librado Rodriguez & Trini Gonzalez	303 Shopshire	San Antonio	TX	78217	223-1046
Linda Batot	12131 Stoney Ash	San Antonio	TX	78247	535-8816
Linda Dolash	12042 Stoney Bridge	San Antonio	TX	78247	
Linda Draper	2727 Chisolm Trail	San Antonio	TX	78217	
Linda Gibson	13323 Vista Arroyo	San Antonio	TX	78216	
Linda Jeffords	8002 Robin Rest	San Antonio	TX	78209	826-5241
Linda Shafer	13318 Stairock	San Antonio	TX	78248	492-3507
Linna Prystash	307 Oak Glen	San Antonio	TX	78209	826-5069
Lisa Aguirre	3309 Stoney Square	San Antonio	TX	78247	846-2828
Lisa Cruz	3314 Stoney Square	San Antonio	TX	78247	724-1691
Lisa Cuellar	13311 Vista Bonita	San Antonio	TX	78216	
Lisa Dubois	115 Tyrol	San Antonio	TX	78209	822-2714

Acoustical Treatment Program and Noise Compatibility Study Contacts
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Adam Buentello	126 Middlebury	San Antonio	TX	78217	
Lois C. Grefe	8521 Sagebrush	San Antonio	TX	78217	824-9904
Loney Power	13615 Bridgeview	San Antonio	TX	78247	831-4738
Lopuis Labell	606 Northridge Drive	San Antonio	TX	78209	828-7056
Loretta Casillas	637 Strings	San Antonio	TX	78216	366-3213
Loretta Vega	3506 Stoney Dawn	San Antonio	TX	78247	494-8366
Louis Gonzales, Jr.	334 Haverford	San Antonio	TX	78217	930-3155
Lydia Tey	12015 Stoney Park	San Antonio	TX	78247	490-7967
M. Moore	PO Box 6567	San Antonio	TX	78209	
Mae Ashton	12003 Cane Ridge	San Antonio	TX	78247	
Manny Castillo	2641 Nacogdoches	San Antonio	TX	78247	822-0445
Marcia Schneider	1231 Vista Del Juez	San Antonio	TX	78216	
Marcus Romero	3683 Ridge Cluster	San Antonio	TX	78247	499-4892
Marcy Perry	12223 Ridge Court St	San Antonio	TX	78247	494-2698
Margaret Drdla	12102 Stoney Crown	San Antonio	TX	78247	491-4472
Margaret Obryan	651 Cave lane	San Antonio	TX	78209	822-7392
Margaret Olivares	3686 Stoney Branch	San Antonio	TX	78247	704-7080
Margaret Pruett	13431 Vista Bonita	San Antonio	TX	78216	
Marie Jacobson	3151 Knight Robin	San Antonio	TX	78209	822-0513
Marilyn O'Sullivan	13431 Coram Peak	San Antonio	TX	78248	492-9786
Marilyn Ward	3222 Bent Bow	San Antonio	TX	78209	828 0169
Marin Miller	3527 McCormick	San Antonio	TX	78247	494-1758
Marjorie Cartwright	8610 Broadway, Ste. 440	San Antonio	TX	78217	
Marjorie Swinney	14147 Daystar	San Antonio	TX	78248	492-1073
Mark & Holly Edwards	13110 Vista Haven	San Antonio	TX	78216	
Mark Adams	239 Eastly	San Antonio	TX	78217	843-4461
Mark Giltener	13211 Vista Del Puente	San Antonio	TX	78216	493-7931
Mark Ledford	14122 Churchhill Estates # 601	San Antonio	TX	78248	492-9113
Mark Parrish	810 Nuffy Ridge	San Antonio	TX	78209	822-0622
Mark Rogers	14126 Kint Cir	San Antonio	TX	78247	545-0906
Mark Swanson	12102 Ridge Summit	San Antonio	TX	78247	494-7177
Mark Swanson	13334 Partridge Hill	San Antonio	TX	78247	494-7177
Marla Castellanos	12027 Stoney Crossing	San Antonio	TX	78247	
Marlene McKay	14142 Day Star	San Antonio	TX	78248	377-8607
Martin Koepre & Delina Tschirhart	314 Eastley	San Antonio	TX	78217	
Martin Vandermey	13403 Vista Bonita	San Antonio	TX	78216	408-0564
Mary Ann Kinnison	11904 Persuasion	San Antonio	TX	78216	
Mary Dyer	2626 Brookhurst Dr	San Antonio	TX	78209	
Mary Jane Kral	14118 Daystar	San Antonio	TX	78248	408-1696
Mary Kay Tennant	3035 Sir Phillip	San Antonio	TX	78209	822-0390
Mary Lou Kubena	8610 Broadway, Ste. 440	San Antonio	TX	78217	
Mary Loux	12035 Stoneycrossing	San Antonio	TX	78247	495-6425
Mary Meis	13131 Vista Haven	San Antonio	TX	78216	
Mary Pat Bolner	203 Laburnum	San Antonio	TX	78209	
Mary Wendzel	630 Wyndel	San Antonio	TX	78209	826-3823
Marybeth Coffer	8401 N. New Braunsfel #308	San Antonio	TX	78209	930-6161
Matthew Holly	12007 Stoney Dr	San Antonio	TX	78247	
Mazola Collins	106 Wyndale	San Antonio	TX	78209	826-5919
Melanie Llamas	3114 Stoney Grove	San Antonio	TX	78247	495-1893
Melinda Mixon	117 Laburnum Dr	San Antonio	TX	78209	
Melvin Joffe	3206 Urban Crest	San Antonio	TX	78209	822-1987
Meredith Wright	326 Haverford	San Antonio	TX	78217	

Acoustical Treatment Program and Noise Compatibility Study Contacts
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Adam Buentello	126 Middlebury	San Antonio	TX	78217	
Merrill E. Swanson	126 Oakhurst Place	San Antonio	TX	78209	
Michael Barrett	3319 Falcon Grove	San Antonio	TX	78247	218-2971
Michael Doyle	403 Country Lane	San Antonio	TX	78209	320-4136
Michael Harea	227 Treasure Way	San Antonio	TX	78209	829-5984
Michael Landis	13915 Grove Patch	San Antonio	TX	78247	
Michael Wilkes	2627 Friar Tuck	San Antonio	TX	78209	828-2231
Michel Hendrix	1915 Kennelworth	San Antonio	TX	78209	820-8203
Michelle Chank	3334 Coral Grove	San Antonio	TX	78247	496-1044
Michelle Deverter	126 Kinross	San Antonio	TX	78209	
Michelle Duryea	12130 Ridge Summit	San Antonio	TX	78247	496-9470
Michelle Frisenhahn	7415 Dove Mountain	San Antonio	TX	78209	930-0203
Mieng Lim	3418 Stoney Square	San Antonio	TX	78247	545-6895
Mike & Ann Bailey	222 Eastley	San Antonio	TX	78217	
Mike & Denise O'Neal	627 Chauncey Dr	San Antonio	TX	78216	
Mike & Melody Bailey, Sr.	226 Eastley	San Antonio	TX	78217	
Mike & Sandra Terrazas	12083 Stoney Summit	San Antonio	TX	78247	
Mike Janet Daily	13106 Vista Del Mundo	San Antonio	TX	78216	764-1489
Mike Kutchins	13426 Vista Del Rey	San Antonio	TX	78216	
Mike Lefler	1315 Vista Del Rio	San Antonio	TX	78216	
Mike Moore	12127 Ridge Spur	San Antonio	TX	78247	499-0990
Mildred Hall	514 Woodcrest	San Antonio	TX	78209	822-9805
Mildred M. Beasley	114 Wyndale	San Antonio	TX	78209	826-5534
Milred Wilfong	3427 Ridge Ranch	San Antonio	TX	78247	494-3532
Miriam McCaskey	8826 Sadge Brush	San Antonio	TX	78217	661-2512
Miryam Bujanda	414 Lamarie Drive	San Antonio	TX	78209	949-1834
Morris & Isabella Chase	3614 Ridge Country	San Antonio	TX	78247	490-9145
M'Rhea & Adam Peterson	3403 Stoney Country	San Antonio	TX	78247	351-4612
Mrs. Campbell	14802 Bold Venture	San Antonio	TX	78248	493-4543
Mrs. Garza	419 Shropshire	San Antonio	TX	78209	473-3011
Mrs. Herta Price	12011 Cane Ridge	San Antonio	TX	78247	491-0942
Mrs. Wrockloffg	2531 Blossom	San Antonio	TX	78217	822-0224
Ms. Henderson	2331 Blossom Drive	San Antonio	TX	78217	601-8003
Ms. Hilton	14122 Churchill Estates	San Antonio	TX	78248	493-1210
Ms. Lax	12106 Stoney Falls	San Antonio	TX	78247	498-2386
Ms. Pleasant	3214 Stoney Fork	San Antonio	TX	78247	490-5996
Myron Hayes	613 Strings	San Antonio	TX	78216	
Nancy Richter	2706 Burning Trail	San Antonio	TX	78247	
Neelie Mueller	9406 Wahada	San Antonio	TX	78217	930-5131
Nellie Marsh	13507 Mason Crest Drive	San Antonio	TX	78247	643-1604
Ng Tempio	2927 Larkwood	San Antonio	TX	78209	826-7894
Nicole Escobedo	13315 Vista Del Avion	San Antonio	TX	78216	493-6406
Oliver Kuykendall	11647 Persuasion	San Antonio	TX	78216	340-4962
Owen Kilday	13322 Partridge Hill	San Antonio	TX	78247	545-2369
Pam Embrey	2626 Friar Tuck	San Antonio	TX	78209	
Pam Harrell	12027 Stoney Park	San Antonio	TX	78247	402-3668
Pam Malley	235 Five Oaks	San Antonio	TX	78209	821-6772
Pam Palmer	402 Rockhill	San Antonio	TX	78209	
Pam Patterson	103 Five Oaks	San Antonio	TX	78209	822-1460
Pam Seruta	3209 Thrush Bend	San Antonio	TX	78209	822-5450
Patric Berria	14918 Eminence	San Antonio	TX	78248	764-0927
Patrica F. McManus	67 Oakwell Farms Parkway	San Antonio	TX	78218	822-0655
Patrica Gonzales	2535 Danbury	San Antonio	TX	78217	820-3275

Acoustical Treatment Program and Noise Compatibility Study Contacts
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Adam Buentello	126 Middlebury	San Antonio	TX	78217	
Patrica Nicholl	11723 Raindrop	San Antonio	TX	78216	344-4073
Patricia Rodrgiuez	639 Rockhill Drive	San Antonio	TX	78209	824-3137
Patrick McShane	12031 Stoney Summit	San Antonio	TX	78247	
Patsy Switzer	13110 Vista Loma	San Antonio	TX	78216	764-7019
Patty & Tim Wilson	11607 Raindrop	San Antonio	TX	78216	
Paul Andrews	12076 Stoney Bridge	San Antonio	TX	78247	496-2218
Paul Manriquez	415 Larmine	San Antonio	TX	78209	828-4956
Paul Miller	1103 Vendo Vista	San Antonio	TX	78216	213-8910
Paul Slattery	507 Cave Lane	San Antonio	TX	78209	829-5313
Peggy & John Tenison	7814 Woodrige Drive	San Antonio	TX	78209	822-8158
Peggy Erdely	12818 Vidorra Cir	San Antonio	TX	78216	493-0154
Perry Wornat	14122 Chruchhill Estate #904	San Antonio	TX	78248	559-5084
Pete Gonzalez	1546 Haskins	San Antonio	TX	78209	822-4714
Pete Ramirez	1511 Haskins Drive	San Antonio	TX	78209	824-8593
Peter Boedeker	3522 Byron	San Antonio	TX	78247	4882815
Phad Lawson	435 Rockhill	San Antonio	TX	78209	822-6695
Phil Fernandez	12114 Stoney Cove	San Antonio	TX	78247	491-0885
Phillip Davie	12039 Stoney Summit	San Antonio	TX	78247	
Philp Palomo	3226 Coral Grove	San Antonio	TX	78247	491-4128
Preston Barragan	12026 Stoney Crown	San Antonio	TX	78247	490-0564
Pritica Simmons	303 Haverford	San Antonio	TX	78217	804-0690
Ralph Riojas	2423 Danbury	San Antonio	TX	78217	824-0471
Ralph W. Evans	446 Pike Rd	San Antonio	TX	78209	826-0482
Ramiro Gomez	110 Oak Park	San Antonio	TX	78209	826-0288
Ramiro Tanguma	14119 Annbelle	San Antonio	TX	78247	967-1060
Ray Forsbach	1251 Vista Del Juez	San Antonio	TX	78216	479-0879
Raymond & Elizabeth Jackson	322 Haverford	San Antonio	TX	78217	826-6646
Raymond DeLao	318 Eastley	San Antonio	TX	78217	
Raymond Ellis	3526 Bunyan	San Antonio	TX	78247	490-6584
Raymond Whitehead	3667 Ridge cluster	San Antonio	TX	78247	494-2650
Reinhart Frenzel	403 E Rampart Drive	San Antonio	TX	78216	344-7170
Rex Preis	330 Laramie	San Antonio	TX	78209	822-8508
Richard & Kathy Young	12160 Stoney Bridge	San Antonio	TX	78247	496-0692
Richard & Rose Slightom	8502 Sagebrush	San Antonio	TX	78217	824-1624
Richard Boerckel	3334 Le Blanc	San Antonio	TX	78247	490-6527
Richard Dore	3442 Stoney Dawn	San Antonio	TX	78247	545-3014
Richard Jodry	641 Strings	San Antonio	TX	78216	341-3489
Richard Miller	402 Larkwood	San Antonio	TX	78209	829-5564
Rick Wadsworth	14315 Rowe	San Antonio	TX	78247	496-0597
Rita Worthy	2006 Kenilworth Blvd	San Antonio	TX	78209	822-1673
RJ Salazar	130 Westchester	San Antonio	TX	78217	828-0038
Rob Brockwell, Jr.	418 Country Lane	San Antonio	TX	78209	822-3898
Robert & Carol Clark	13303 La Vista	San Antonio	TX	78216	492-4274
Robert Baribeau	3318 Stone Cave	San Antonio	TX	78247	491-0889
Robert Baxter	3347 Rosedati Drive	San Antonio	TX	78247	491-0774
Robert Burke	107 Shropshire	San Antonio	TX	78217	828-8980
Robert C. & Mary Lou Vielock	507 Country Lane	San Antonio	TX	78209	826-7693
Robert Fruth	13602 Bridgeview	San Antonio	TX	78216	490-9540
Robert Jones	3338 Stoney Biar	San Antonio	TX	78247	925-1363
Robert Long	13607 Ashley Oaks	San Antonio	TX	78247	495-0401

Acoustical Treatment Program and Noise Compatibility Study Contacts
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Adam Buentello	126 Middlebury	San Antonio	TX	78217	
Robert Lucas	11840 Petal	San Antonio	TX	78216	340-2136
Robert Rhinehold	3216 Urban Crest	San Antonio	TX	78209	830-885-2233
Robert Rojas	307 Shopshire	San Antonio	TX	78217	494-7088
Robert Rojas	311 Shopshire	San Antonio	TX	78217	494-7088
Robert Singer	2310 Blossom Dr.	San Antonio	TX	78217	822-8771
Robert W. & Sharon Provines	13242 Vista Del Mundo	San Antonio	TX	78216	479-0273
Roberta G. Rangel	12002 Stoney Crossing	San Antonio	TX	78247	
Robin McGarr	214 Wyndale	San Antonio	TX	78209	220-4724
Roland Garcia	12023 Stoney Park	San Antonio	TX	78247	602-1853
Rolinda Camo	8314 Republic	San Antonio	TX	78216	473-4440
Ron & Carol Ross	11722 Raindrop	San Antonio	TX	78216	
Ron Chamness, THC Inc.	8610 Broadway	San Antonio	TX	78217	
Ron McIntyre	74 Granburg	San Antonio	TX	78218	930-0105
Ronald & Miriam Beckius	2907 Chisolm Trail	San Antonio	TX	78217	824-7420
Ronald Cornwell	3337 Coral Grove (eden)	San Antonio	TX	78247	545-7935
Ronny Santos	15010 Enchanted Castle	San Antonio	TX	78247	402-6293
Rosalinda Cano	8314 Republic Dr	San Antonio	TX	78216	
Rose Portillo	3410 Butterleigh	San Antonio	TX	78247	581-8853
Roy & Margaret Thompson	12046 Stoney Bridge	San Antonio	TX	78247	495-4174
Ruby Ballard	11716 Persuasion	San Antonio	TX	78216	342-1147
Salvador, Jennifer & Adrianna Olvera	12211 Ridge Corner St	San Antonio	TX	78247	
Sam Green	231 Five Oaks Drive	San Antonio	TX	78209	824-5030
Sandra Cranford	2602 Burning Wood St	San Antonio	TX	78247	
Scott Barenblat	610 Cave Lane	San Antonio	TX	78209	824-4878
Scott Cline	1215 Vista Del Rio	San Antonio	TX	78216	493-9071
Scott Nelson	339 Royal Oaks	San Antonio	TX	78209	541-3484
Scott Sawtelle	106 Five Oaks	San Antonio	TX	78209	822-5252
Scott Senter	7510 Bridgewater	San Antonio	TX	78209	220-5778
Shanda Rendon	12051 Stoney Bridge	San Antonio	TX	78247	402-6641
Shani Hopkins	3326 Stoney Square	San Antonio	TX	78247	288-1242
Shannon Lerette	3650 Ridgecluster	San Antonio	TX	78247	490-4144
Sharon Harrison	111 Oakhurst Place	San Antonio	TX	78209	822-4383
Shawn Johnson	13103 Vista Loma	San Antonio	TX	78216	764-0131
Shirley Hoover	12123 Stoney Circle	San Antonio	TX	78247	495-5458
Sonia Rodnite & Mary Anne Blalck	422 Cave Lane	San Antonio	TX	78209	
Spencer Rafert	7502 Quail Run	San Antonio	TX	78209	805-0373
Steve & Janet Penley	74 Granburg Cir	San Antonio	TX	78218	
Steve Rendon	2519 Blossom Drive	San Antonio	TX	78217	828-1667
Steve Rossman	12131 Ridge Summit	San Antonio	TX	78247	
Steven Rios	12103 Stoney Ash	San Antonio	TX	78247	491-4183
Steven Whitworth	13014 Vista Heaven	San Antonio	TX	78216	764-2072
Stewart Hendy	8107 Countryside	San Antonio	TX	78209	601-5588
Stuart Saunders	1638 Vista Del Monte	San Antonio	TX	78216	
Sue & Richard Dullnig	530 Country Lane	San Antonio	TX	78209	822-2257
Sue McMullan	211 Country Lane	San Antonio	TX	78209	213-8910
Susan McKinley	12903 Vidorra Circle Dr.	San Antonio	TX	78216	364-1447
Sylvia Juarez	3514 Byron St.	San Antonio	TX	78247	496-1465
Tammy Crawley	13606 Bridgeview	San Antonio	TX	78247	495-6246
Teresa Hernedez	134 Eastly Drive	San Antonio	TX	78217	490-4788

Acoustical Treatment Program and Noise Compatibility Study Contacts
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Adam Buentello	126 Middlebury	San Antonio	TX	78217	
Terie Homrighaus	13927 Bolder Oaks	San Antonio	TX	78247	403-0424
Terry Lindemann	1310 Vista De Mundo	San Antonio	TX	78216	493-2288
Terry Taylor	3215 Burnside	San Antonio	TX	78209	403-1811
Thelma Celestino	12106 Stoney Ash	San Antonio	TX	78247	
Thomas & Shirley Bugosh	14493 Cadlic Drive	San Antonio	TX	78248	288-9464
Thomas C. Cimino Trust Trustee	P.O. Box 99	Lomita	CA	90717	
Thomas Foster	135 Middlebury Dr	San Antonio	TX	78217	
Thomas Manning	3535 Forest Glade	San Antonio	TX	78247	496-2351
Thomas Miller	12011 Stoney Park	San Antonio	TX	78247	496-2291
Thomas Quirk	202 Oak Glenn	San Antonio	TX	78209	382-8908
Tod Reus	3319 Stoney Country	San Antonio	TX	78247	496-7031
Todd Siebert	14101 Daystar	San Antonio	TX	78248	764-2629
Tom & Linda Rae Tucker	13222 Vista Del Mundo	San Antonio	TX	78216	
Tom Vitacco	13659 Bridgeview	San Antonio	TX	78247	495-7972
Tony Luetkenhaus	622 Rockhill	San Antonio	TX	78209	
Tony Wood	12903 Vidorra Vista	San Antonio	TX	78216	492-4684
Travis Hedman	523 Rockhill	San Antonio	TX	78209	462-9896
US Provinee Sisters of Charity of the Incarnate Word	P.O. Box 15378	San Antonio	TX	78212	
Vernaell Burch	2542 Blossom Dr.	San Antonio	TX	78217	508-8982
Virgina & James Laura	614 Northridge Drive	San Antonio	TX	78209	824-5438
Virgina Valdez	207 Eastly	San Antonio	TX	78217	828-4748
Virginia Reed	13102 Vista Del Mundo	San Antonio	TX	78216	492-3402
Virginia Stakes	11905 Persuasion	San Antonio	TX	78216	
Walter Lee Taylor	11719 Rain drop	San Antonio	TX	78216	3420430
Walter Martinez	2402 Blossen Lane	San Antonio	TX	78217	221-9257
Wayne Cobb	139 Shropshire	San Antonio	TX	78217	822-4449
Wilford & Sandra Fey	14018 Shire Oak	San Antonio	TX	78247	545-4422
Will & Sandy Howorth	8722 Oak Ledge	San Antonio	TX	78217	822-0281
Williadene Rampt	322 Oak Glen	San Antonio	TX	78209	828-0070
William & Avelina Walden	1250 Vista Del Rio	San Antonio	TX	78216	
William Dees	11810 Persuasion	San Antonio	TX	78216	348-9243
William H. Norvell, Jr.	11714 Persuasion	San Antonio	TX	78216	
William Morris	11827 Persuasion	San Antonio	TX	78216	
William Render	1706 Agile	San Antonio	TX	78248	493-2988
William Schiller	406 E. Nottingham	San Antonio	TX	78209	
Winston Thompson	3306 Rositta	San Antonio	TX	78247	490-3682
Yvette Cardiel	3322 Stoney Country	San Antonio	TX	78247	490-6884
Yvonne Benan	2622 Country Sq	San Antonio	TX	78209	824-4439

Miscellaneous Mailing List

Public Hearing Flyers Mailed 3-12-09 and Emailed to Media

Joseph & Kelley Sadowski
8401 N New Braunfels Ave, #308
San Antonio, TX 78209-1142

James Glascock
8811 Woodbury Dr.
San Antonio, TX 78217-5824

Jackie Rouse
3030 Urban Crest Dr.
San Antonio, TX 78209-3150

Cathy Garison
55 Oakwell Farms Pkwy
San Antonio, TX 78218-1781

Melanie Llamas
1917 Lost Trail
Pleasanton, TX 78064-1929

Ron Mcintyre
8820 Wild Wind Park
San Antonio, TX 78255-2154

Toni Deodati
18 Park Deville
San Antonio, TX 78248-2405

KMOL-TV

KENS-TV

KSAT-TV

KABB-TV

KWEX-TV (Spanish)

KVDA-TV (Spanish)

WOAI-Radio

KTSA-Radio

Express News (Newspaper)

La Prensa (Newspaper)

Registration

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NAME (Please Print)	ADDRESS (Street, City, State, Zip)
Ron Channess	8610 Broadway, San Antonio, TX 78217
Carol Barnes	2626 Crow Valley - SAT 78232
Alex Yanez & Mary	214 S Guilford - SAT 78217
Ron Ross	11722 Raindrop - SAT 78216
Tim + Kimberly Kelly	13918 Vista Haven SA, TX 78216
Arnulfo Gomez	526 Sprucewood SA, TX 78216
Chris Koval	13030 Vista Haven SATX 78216
James L. Hogate	622 Strings SATX 78216
Sam W. Green Jr.	231 Fire Oaks Dr SATX 78209
mike Bailey + Anne	222 Bastley SA. TX 78217
Lon & Suzanne Passafuma	13509 Vista Del Cedro SA TX 78216
Herta Price	12011 Oak Ridge - SA TX 78247
James Glascock	8811 Woodbury SATX 78217
Ray Acala	11311 Reverie Ln, SA TX 78216
Mary Robledo	11832 Petal SA - 78216

Public Workshop/ Public Hearing

March 19, 2009 » Coker United Methodist Church

NAME (Please Print)	ADDRESS (Street, City, State, Zip)
JOSE ALVARADO	222. S. GUILFORD 78217
JOANN GONZALEZ	SAME
BARBARA CHUCKETT	12111 STONEY CROWN 78247
NANCY RICHTER	2706 BURNING TRAIL 78247
Colleen Flynn	13302 Vista Del Arroyo San Antonio 78216
Patrick Kelly	231 Shropshire SA TX 78217
Dr ED BENTON	12822 COUNTRY CREST, SAT 78216
ELEANOR KAMATARIS	13114 VISTA DE LA LAGUNA SAT 78216
Reggie + Rose Marie Helton	13311 La Vista Dr. SAT 78216
John Hayler	625 Stringer Dr. 78216
Elizabeth Mueller	12067 Stoney Bridge, San Antonio, TX 78247
Spencer G. Rafert	7502 Quail Run, SA 78209
Sue DULLNIG	530 COUNTRY LANE SA 78209

Public Workshop/ Public Hearing

March 19, 2009 ▸▸ Coker United Methodist Church

NAME (Please Print)	ADDRESS (Street, City, State, Zip)
Cheryl Chamness	15565 River Way; Spring Branch, TX 78070
Allan Acker	2618 Friar Tucker S.A. 78209
MIKE KUTCHINS	13406 Vista del Rey 78216
GARY ROEY	11902 SANDAMAND DR 78216
PAULA WILLIAMS	604 STRINGS 78216
CHRISTINE NELSON	207 WYNDALE ST. 78209
TOM MANNING	3535 FOREST GLADE SANANTONIO, TX 78247
Ernest Ramon Castillo	13306 Vista Del Avion SA 78216
Diane E. Kane	618 Strings SA 78216
DAVID R. JOHNSON	9 Inwood Terrace SA 78248
PAUL SLATTERY	50 → CAVE LN CAT 78209

Public Workshop/ Public Hearing

March 19, 2009 ➤ Coker United Methodist Church

NAME (Please Print)	ADDRESS (Street, City, State, Zip)
Bennett E. Lanson	273 South Guilford San Antonio, Texas 78217
Jacobina Alley	13310 Vista del Avion SA TX 78216
Bill Alley	" " " "
Raymond DeLaO	318 Eastbay San Antonio, Texas 78217
Carolyn SantaCruz	231 S. Guilford 78217
Laverne Pitts	13206 Vista del Puente 78216
Patricia Kotian	2719 Nacogdoches Rd.
Barbara Manning	3535 Forest Glade S.A 78247
D.C. Ways	118 LABURNUM DR - 78209
Kathy Young	12160 Stoney Bridge SAT 78247
Elsa Estorga	12071 Stoney Bridge SA, TX 78247
Richard E. Dulling	530 Country Lane SAT 78209
Moore	Box 65467 78209

Public Workshop/ Public Hearing

March 19, 2009 ➤ Coker United Methodist Church

NAME (Please Print)	ADDRESS (Street, City, State, Zip)
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KERRY MACAITIS	2702 BURNING TRL S.A. TX 78247
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Brent Holland	14311 Hill Prince SA TX 78248
CZARNECZYK	WOAI-TV
Richard M Kelley	ATAC
ALFRED GOMEZ	13003 VISTA HAVEN S.A. TX 78216
WILLIAM CROCKETT	2046 CHITTIM Hollow DR SA TX 78232
JEFF Wilen	12903 Laguna Vista 78216
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Public Workshop/ Public Hearing

March 19, 2009 » **Coker United Methodist Church**

NAME (*Please Print*)	ADDRESS (*Street, City, State, Zip*)
Evie R Buentello	106 Middlebury San Antonio TX 78217
Adam Buentello	126 Middlebury SA TX 78217
Darris Fieseler	216 Laburnum Dr SA TX 78209
Richard Celestino	12106 Stoney Ash SA TX 78247

SPEAKER REGISTRATION

PLEASE SIGN THIS CARD IF YOU WOULD LIKE TO COMMENT AT TONIGHT'S HEARING

NAME (PLEASE PRINT): Mark Moore

REPRESENTING (Optional):

ADDRESS: Box 65167 78209

Public Comments

AIRPORT NOISE COMPATIBILITY STUDY MEETING

MARCH 19, 2009

VERBAL COMMENTS:

CAROLYN SANTACRUZ, 231 South Guilford: About two years ago, I had a meeting with Mr. Rankin, the one that was in charge of the airport, about them missing 231 South Guilford on their map. It's a little bitty street that runs behind Shropshire, Eastley, and Salisbury.

Okay. He, at the time, made a call to somebody, and I don't know who, and said, "Can it still be added to the map?" He was talking on the phone. And they told him, "Yes." Okay. He told me, "Call me back six months from now." So I called him back, and he says, "You'll hear from us."

Okay. I never heard from him, so the reason I'm here at this meeting, because I called back to the airport and this new gentleman that's in charge, Telford or -- the one who's in charge at the airport for the noise abatement, he told me about the meeting. And that's why I'm here, because somebody needs to look into this.

This little street is like an S or a U, I don't know. There's 23 houses that were built about 1952. And we're right off of Broadway, right as you

1 turn east. You take a quick right, and it's South
2 Guilford. So, if the other streets are included, you
3 know, why did they exclude us? And it's not on the map,
4 I just checked with them. So I'm supposed to check with
5 Mr. Morrow and see if it's on the map when he goes back
6 to the office. But I think it should be included on
7 there.
8 And when you cut off a street -- you know
9 how they cut off -- they need to cut it off at the end
10 of the street, like in the alley, not, say, that half of
11 the street is covered under this noise abatement and not
12 the other half, because all the neighbors are going to
13 be angry at each other. And common sense can tell you
14 that if a person across the street is bothered by the
15 noise, so are you, you know. So they need to do
16 something about that.
17 CAROL BARNES, 247 Eastley: I agree with
18 her, that if the -- if they're going to do these
19 streets, they should be cut off at an alleyway, not in
20 the middle of the street, because you're going to start
21 a Civil War in the neighborhood if you're going to do
22 that. It's going to be neighbor against neighbor in
23 that neighborhood. It's a very touchy situation, in my
24 opinion.
25 PATRICK KELLY, 231 Shropshire: Well,

1 my -- I'm just wondering about -- they've done the other
2 side of my street, the even numbers of the street. I'm
3 an odd number. They came up to my side, one block over
4 from Broadway. And they started from Broadway and, at
5 first, I was told that they weren't going to do mine
6 because they were out of funds, so they needed to go
7 back to Congress to get some more funding to finish the
8 street.
9 And it just seems to me that if they had
10 stuck with doors, windows and insulation, we all would
11 have gotten that, they'd have been done already. I
12 understand it's the FAA that, you know, is giving people
13 central air, when they only had window units. And good
14 for those people and all that, but I can't help but
15 think this is kind of a misappropriation of funds when,
16 if they would have stuck with windows, doors, and
17 insulation -- I mean, I've seen more A/C people and
18 people getting new hot water heaters and stuff, and I
19 can see why they would be out of money.
20 And then I was told it wasn't money, it's
21 a new study, that the sound parameters had changed.
22 But, you know, the only thing I can't help but think of
23 is if they would have stuck with doors, windows,
24 insulation, they'd have been finished, we'd all have it,
25 there wouldn't be all these villagers here with

1 pitchforks, all excited. Because I just don't see how,
2 like, the guy right across the street -- directly across
3 the street can get almost $40,000 worth of stuff, and
4 there I am across the street, and they're saying they
5 were out of money at one point.
6 But I think they should have stuck with
7 the noise abatement stuff. And why the FAA thinks
8 putting in a central air unit in somebody's house is
9 going to make that big of a difference, that just sounds
10 rather odd to me of how to use the funds.
11 PATRICIA KOTLAN, 2719 Nacogdoches Road:
12 My name is Patricia, and I live at 2719 Nacogdoches
13 Road. And I just would like to say that the noise at my
14 house, which is my family home, is so loud that I cannot
15 talk on the telephone when it's at its worst, when the
16 planes are coming over. And I don't know how many
17 decibels that is, but I -- it's not a very good
18 lifestyle.
19 ALFRED GOMEZ, 12003 Vista Haven: And the
20 comment that I wanted to make was in reference to a --
21 there's supposed to be a policy that's written in the
22 guidelines or whatever they have, that if your home is
23 built after October of '98, you won't receive any noise
24 assistance with the -- the comment that I want to make
25 is, why did they choose to select that October '98? How

1 did they -- what made them select 1998? Did they feel
2 like anybody after October '98 was not going to be
3 affected? Did they feel the homes were going to be
4 built under different building codes that would make
5 these homes equivalent to the others, if they're going
6 to be receiving assistance? And is there an appeal
7 process to this year of after being built in October of
8 '98?
9 And, you know, I -- we're in the landing
10 path. I'm here with four or five other neighbors, and
11 we're in the landing path. And, looking on the maps
12 there, the flight lines are the heaviest over our homes.
13 We're directly over -- it's over our homes.
14 TIM KELLY, 12918 Vista Haven: Our home
15 doesn't qualify in this 1998 rule, and we just think
16 that, for whatever reason, why aren't we grandfathered
17 in so that we can actually get these benefits too? Just
18 because the home was built in 2000, we can't participate
19 in any of the benefits that everybody else can,
20 including a street down from us.
21 We're actually -- not that this matters to
22 anybody, but we're on top of a hill. So I'm pretty
23 upset. In fact, I'm sure you're probably going to hear
24 from everybody in our neighborhood. And if they knew
25 that these homes were being built, why weren't they

warned, the builders, that it should be up to code, since it's not going to be covered under this 1998 ruling?

KYMBERLY KELLY, 12918 Vista Haven: My issue is the 1995 cut off. When I purchased my house in 2003, I believe it was built in 2000. We were not given a disclosure that it would not be covered. We weren't made aware of it at the time. And I just think that it's wrong. It should be a logistical thing.

If your house falls within that decibel level, you're covered, irregardless of when your home was built, because if you stand in my house with the door open and an airplane flies by, my ceiling fan shakes. You cannot even hear the TV.

So I invite anybody to come over to Vista Haven, at the top of the hill, and see that it's a logistical issue. We didn't buy our house with the disclosure that the windows would or would not be replaced, just, we know that there was the airplane noise and feel that the FAA, the city, everybody needs to get on board to help those of us that were not made aware or were not given the disclosure that we would be excluded. I just think that's wrong.

(End of Oral Comments)

1 MR. MORROW: Those of you who I haven't
2 spoke with yet tonight, my name is Clint Morrow. I am
3 with Wyle. We are the noise consultant for the
4 projects, who are leading the work, working with
5 community awareness and working with the airport to
6 adopt all the technical analysis to put together
7 tonight's presentation.
8 So what we're going to do is just go
9 through a presentation here on the screen, and we'll
10 lead you through and explain all the details, some of
11 the things you've already seen in the display boards,
12 give you some other additional details. After I've
13 finished the presentation, we're going to take a
14 15-minute break, you guys can get up and come back to
15 the display boards, ask any additional questions you may
16 have.
17 After that 15-minute break, we're going to
18 utilize this microphone in front and center here for
19 everyone who has signed up at the sign-in table to give
20 a comment for the record. So if you haven't done that
21 yet, you can see the sign-in table and fill out a little
22 card that they'll give you to give an oral comment for
23 the record. Again, we'll take those comments after the
24 15-minute break. So we'll do those comments, it will be
25 limited to five minutes apiece. And once those comments

1 are finished, we will conclude the hearing.
2 So what I'm going to do right now is go
3 through the presentation, again, with some more details
4 about the study and the analysis that we've done.
5 By way of introduction, this presentation
6 is going to give you an overview of the project, the
7 study itself and information about the airport and noise
8 metrics, then we'll talk about the noise analysis in
9 greater detail, tell you all the information we plug
10 into the noise model which, of course, generated these
11 results we're presenting tonight. That's number two.
12 And, finally, after that we will talk about the
13 inclusion, talk about the airport's noise compatibility
14 program.
15 So the study process is as follows: It
16 began by creating the noise exposure maps, which are
17 displayed in the room and we'll show in the
18 presentation. After that, we draft a report, put it out
19 for public comment. As many of you may be aware, or you
20 attended back on January 27th, we held a public workshop
21 at that time and presented these results and took your
22 comments. And we've received a lot of written comments
23 since then. We're continuing to collect written
24 comments tonight, and all the way up to April 2nd you
25 may still submit comments.

1 Once all those comments are collected,
2 including the ones from tonight's hearing, we will go to
3 the San Antonio City Council, present the results to
4 them to get their approval. Once they have signed off,
5 in April, we will submit the final report to the FAA.
6 That's the last step. We will be
7 submitting the report and the noise maps to the FAA, and
8 they have a period of time, over several months, in
9 which they'll review everything in detail and give their
10 final decision.
11 So what are the goals of the study that
12 we're in the middle of performing? The study updates
13 the airport's noise exposure maps, so we'll be asking
14 them to look at existing conditions in 2009. We're
15 doing this because it's been several years since a study
16 like this has been conducted, so it's time. The FAA
17 tells the airport, you know, it's time to go and update
18 your noise exposure contours, you have to study that at
19 this point.
20 So we look at existing conditions and then
21 look at a five-year forecast and look at types of
22 aircraft, what sort of changes may occur at the airport
23 in the future and, finally, of course, how much noise
24 will be generated by the airport in the future. So
25 these future conditions on the 2014 maps, that was used

1 for planning purposes to do the mitigation program and
2 other steps.
3 In addition to the noise exposure maps,
4 we're also updating what's called the noise
5 compatibility program. This is a series of different
6 measures that the airport employs to address the noise
7 in the community. I think most of you are aware that
8 the chief function of that program is to provide the
9 residential acoustical treatment program by which they
10 do such as insulation of homes and other facilities
11 around the airport. So this study we're doing now is an
12 update of noise exposure that will continue the NCP
13 progress and continue its funding from the Federal
14 Aviation Administration.
15 That was some background. Now, let me
16 give you some more information and, hopefully, maybe
17 answer some questions you may already have about airport
18 noise; how we study it; how the noise model works; how
19 the airport works.
20 First of all, an overview of the airport.
21 We refer to it as SAT, as an acronym, pretty frequently.
22 SAT stands for the San Antonio and Stinson Municipal
23 Airports. You see a trend line in operations at the
24 airport in 1991 was about 210,000 operations per year at
25 the airport. It steadily increased until 1998, with a

1 downslope after 1998, and then started to spike in 2003.
2 And it's been relatively even the last couple of years.
3 And, as you'll see later, the projected levels for the
4 future, for the next five years, kind of follow the same
5 trend line of a very slight increase in overall levels.
6 As far as the airport is concerned, I just
7 want to take you through a little bit of the layout of
8 the airfield, the facilities on the airport. There's
9 three runways at the airport. 12 right/30 left is most
10 often used at the airport. The second most often used
11 is 321. There's a short runway to the north here which
12 is used least -- least often. It's mainly being used by
13 smaller aircraft, such as props and small jets.
14 Just to orient yourself, north is upwards.
15 The terminal buildings are located down here. The air
16 cargo terminal is located on the east side of the
17 airfield, and that is the reason why you will often see
18 the nighttime cargo operations using this runway,
19 because the cargo terminals -- they will arrive and
20 depart on this runway.
21 Other features of the airfield include,
22 obviously, the taxiways. There's a -- what's called a
23 ground runoff enclosure. It's an area where they run
24 maintenance on aircraft engines, and it serves as a
25 large noise barrier to block noise during those

1 maintenance operations.
2 So, to conclude, we've got three runways,
3 most operations on this runway, that's why you'll see
4 the noise contours extend in those directions. This
5 runway is also used quite heavily in the north
6 direction, that's why you see noise contours extend in
7 that direction.
8 To describe what you may already be very
9 familiar with, the typical aircraft in San Antonio.
10 You'll hear me refer to some of these categories again
11 and again throughout the presentation, so it helps to
12 have a picture.
13 Heavy jets are -- at this airport, heavy
14 jets are -- would be the operating of cargo carriers,
15 show you a picture of that. A large jet you see a lot
16 of. Southwest is a good example, and a lot of other
17 airlines use the medium-sized capacity jets that you
18 see.
19 Regional jets are the smaller carriers.
20 This a picture of Continental Express. There's a lot of
21 the airlines that have affiliate airlines, and they
22 operate the small -- smaller jets, have fewer
23 passengers, and fly smaller distances. So those are all
24 categories of the air carriers that are used by
25 different airlines or cargo operators.

1 There's another category of operators at
2 the airport that most airports call general aviation, so
3 these are operated by -- it could be private businesses,
4 it could be flight schools, it could be charter
5 services. These are, typically, smaller aircraft. You
6 have business jets, which are small jets like Lear jets
7 and Gulfstreams that -- you may know what they are.
8 They're smaller than a regional jet. They're very tiny.
9 In addition, we have turbo-prop aircraft.
10 It, typically, has a power engine in each wing. They're
11 large enough to carry passengers. It's sort of between
12 the size of a business jet and a regional jet. Some of
13 the regional carriers actually operate some turbo-props
14 as well.
15 Finally, the piston-prop. That's the
16 little guys. They're used a lot of times with flight
17 training, those who are learning to fly. They're
18 little, single-engine aircraft. They are very small.
19 These are the six types of categories of aircraft that
20 you'll see at the airport. We'll refer to those later
21 in terms of how many of them operate at the airport.
22 I'll cover real quick just some basics
23 about noise. And we have some good display boards in
24 the back that give you more information about noise, and
25 how it's described and how it's measured, and research

1 into it. Noise is, basically, defined as someone's
2 sound. It's a very subjective thing. It's something
3 you can hear that you feel is objectionable. And, of
4 course, that will differ from person-to-person. And
5 there's been lots of research done over the years into
6 the connection between how much sound and how much noise
7 is a disturbance to people, and the results of this
8 research is a part of our study.
9 Decibels are units used to express sound
10 levels. And the math for these decibels is, kind of
11 using the standard math, for example, if you add two
12 decibel levels that are equal, it's equivalent to that
13 of a 3 dB increase in decibels. In other words, if you
14 have two sounds that have the same volume and you play
15 them at the same time, the sound level goes up three
16 decibels. It doesn't double, it doesn't add up to 140,
17 it simply adds three decibels.
18 So, as you can imagine, three decibels is
19 a very noticeable difference. If you turn up the radio
20 three decibels, obviously, you would hear that
21 difference. And another rule of thumb is that 10
22 decibels is twice as much noise. So if you have a
23 certain sound at any level and you crank it up
24 10 decibels, that's having it, essentially, twice as
25 loud as it was.

1 Just to give you an example of decibels,
2 we have some more charts here, a normal conversation
3 between two people is around 60, 65 decibels, as you're
4 speaking. This chart is also in the back of the room,
5 and what it shows is that -- a wide range of different
6 sound levels expressed in decibels. So all the way
7 down, the threshold here is zero. That's absolute
8 silence. In a very quiet environment would be 20
9 decibels. Sitting in a quiet library is close to 35 to
10 40 decibels.
11 If you keep going up the scale here, at
12 the office it's real loud, people talking. That's
13 around 60 decibels. If you're standing on a sidewalk
14 and a bus goes by, that's about 80 decibels. Really
15 high levels of, you know, 100 and above, those are like
16 rock concert levels or standing next to a highway type
17 of level of sound.
18 So decibels range all the way from zero,
19 all the way up to in excess of 130 decibels. Pretty
20 much, in the middle of that range are your typical daily
21 things, your conversation, being at the office, those
22 are the -- you know, in the 60s -- 50s and 60s levels.
23 Obviously, you know, there is a range of sounds that
24 you're going to hear whether outdoors or indoors.
25 We're going to define the noise metric,

1 the model that we're required to use in this FAA study.
2 The FAA stipulates to use day/night average sound level.
3 As explained, if you're looking at the maps at the back
4 of the room, what they show is the average of all sound
5 produced throughout the entire year by the airport, all
6 the operations and all the different runways, add all
7 that up and then say, what does the average day look
8 like? Take a one-day picture that typifies the entire
9 year; what's the average?
10 So you review the average noise of all the
11 aircraft over 24 hours. Again, this is only for
12 aircraft noise, it doesn't include highways or cars or
13 anything else, just outdoor noise of the aircraft,
14 24-hour average, and add a penalty of an additional
15 10 decibels to any aircraft noise event that happens
16 between 10:00 p.m. and 7:00 a.m. So that's how we
17 compute this DNL metric.
18 In addition, when we compute the DNL
19 metric, it's using the FAA noise model. This is the
20 FAA's noise model. It's called the INM. It's been in
21 use since the 1970s. It's been updated periodically.
22 What that does is, it inputs all the information up
23 here: How many operations; what types of aircraft; how
24 often is each runway used; how far are the planes
25 flying; weather; ground terrain.

1 All this information about the airport
2 goes into the noise model. The noise model's
3 computation is based on all the information on the
4 aircraft that's built into it, and it outputs these
5 noise contours we're presenting tonight.
6 So, now, the next thing we're going to
7 talk about is -- we introduced what the noise model
8 does. Let's talk about all the input data that goes
9 into it. The chief thing, of course, is operations; how
10 many operations occur at the airport on an annual basis.
11 This information is provided by the FAA, it's broken
12 down into different categories, the categories we
13 mentioned before, including air carriers, general
14 aviation, any military operations, and it also talks
15 about 223,000 arrivals and departures at this airport
16 since year 2009.
17 Now, what we do with that number of
18 operations, we break down, of course, all the different
19 individual types of aircraft that fly at the airport.
20 We look at a total of four sources of data; from the air
21 traffic control tower; from landing fee reports; from
22 the operations monitoring system, as well as Department
23 of Transportation data to compare and contrast, make
24 sure we have plugged in all the different types of
25 aircraft that fly at the airport, the heavy jets, all

1 the way down to little piston props, and everything in
2 between.
3 So what we have is a piechart that
4 summarizes, by category -- this category, as I mentioned
5 in an earlier slide with the pictures - you have big
6 cargo/heavy jets are a small number of operations, only
7 about two percent of the annual operations; the large
8 jets are the biggest chunk of the air carriers, 43
9 percent of the annual operations; regional jets at 14
10 percent.
11 And then on the right-hand side of the
12 graph in the orange colors are all general aviation-type
13 aircraft. So you can see that with all this down the
14 middle, a little more than 50 percent of your aircraft
15 operations are based on air carrier operations, and the
16 others are -- a less than 50 percent are general
17 aviation operations; business jets, piston-props,
18 turbo-props, and then there are some military arrivals
19 and departures, a small percentage, so this gives you an
20 overall picture by category.
21 Of course, in the model, we put in very
22 specifically how many operations, every different type
23 of aircraft -- there are along the lines of 60 different
24 individual types of aircraft, which are plugged into the
25 model to accurately capture what happens at the airport

1 during the year.
2 We also have to account for each category
3 of aircraft and when the aircraft fly. As we mentioned
4 in the DNL metric, the operations from 10:00 p.m. to
5 7:00 a.m. at night are weighted. You have a penalty
6 because they're more intrusive, so they have to be very
7 short. We have to account for the number of operations
8 occurring at night versus occurring during the day.
9 What you'll see in these tables is a
10 summary of the -- for example, heavy jets are about a
11 50/50 split on those between how many happen during the
12 day, how many happen during the night. Most of the
13 other category of distributions, generally, about 80 to
14 90 percent of operations happen during the day and about
15 20, down to 10 percent annual aircraft flights happen at
16 night. And, you know, the reason why is heavy jet cargo
17 operators move cargo often at night, whereas air
18 carriers, of course, who have passengers, they can fly
19 during the day most of the time, there aren't as many
20 night operations.
21 And then you see, for example, general
22 aviation flying, more typically, during the day, but
23 there are ones at night. We capture specifically, in
24 the model, how many nighttime and daytime operations
25 there are of each different type of aircraft. Of

1 course, this is just a summary of that information.
2 We also have the actual runway usage at
3 the airport, looking at arrivals and departures, saying
4 how many happen on each different runway at the airport
5 throughout the entire year. And that average percentage
6 is included in the model. So we look at the entire
7 year. Most arrivals, about three quarters of them,
8 arrive -- they come in from the west and land right
9 here, and then go to the terminal. Additionally, we
10 have about nine percent coming in from the south and
11 landing this way, 13 percent coming from the east and
12 landing this way.
13 This is really affected most predominantly
14 by wind direction. When you have aircraft flying most
15 safely, they're flying into the wind. So if the wind is
16 coming up from this direction, they want to arrive in
17 the opposite direction so that they're facing the wind.
18 And as winds shift, the aircraft -- air traffic
19 controllers modify which runways are used so that
20 everything -- the aircraft can fly the most safe way
21 possible.
22 The winds also affect departures in the
23 same way. About half of all departures fly out this
24 direction, towards the southeast, again, flying into the
25 wind. There's also about 32 percent of operations

1 departing on number three, off to the northeast. And so
2 that's the majority of departures at the airport, are
3 flying those two directions. And all this is reflected
4 in the noise contours. As you'll see, the largest
5 contours fall off the ends of these runways that are
6 used most often.
7 In addition to runways, we've drawn a
8 picture to look at flight tracks. We know where planes
9 fly once they have taken off, or coming in from runways,
10 where they fly, what areas they fly over, and how often
11 do they fly over each area. So we use light radar data
12 supplied by the airports, the same data that the
13 controllers use to track aircraft and move them around,
14 make sure they land and depart safely.
15 We use that data in a several-month
16 sample, we boil that down to input into the model, using
17 tracks that are put into the model and represent all the
18 different directions and flight paths aircraft take to
19 get into and depart out of the airport. So that's the
20 reason why, in the model, we track the way aircraft fly
21 in and out of each runway.
22 In the next two slides, I'm going to show
23 you the tracks that are put into the model. Keep in
24 mind when we look at these tracks, every track that's
25 shown is a different number of operations on a track, so

1 each track does not represent one individual flight,
2 it's a set of maybe 10 or 100 flights all taking the
3 same path.
4 Another thing to keep in mind is that
5 different tracks are used by different aircrafts. On
6 tracks that have turns, for example, off the runways,
7 you'll see those. Well, those are run by the smaller
8 aircraft and are able to make such a sharp turn. You
9 never see a heavy jet taking a sharp turn off a runway.
10 So you need to keep that in mind as well.
11 Finally, we spent the most time weighing
12 the runways with the most operations and drew more
13 tracks for those runways, just to capture the operations
14 more accurately of all the runways that are used most
15 often. So what we have here is a graph showing all the
16 flight tracks. Again, this is not a picture of every
17 flight track which occurred during the year, this is
18 a -- this is showing the information we input into the
19 model, different flight paths that are used by different
20 aircraft flights, different amounts of time, to track
21 the differing number of operations associated with it in
22 the model.
23 And so you can see these are arrivals, and
24 we have a lot of tracks coming in from this direction,
25 and then that's the predominant direction for arrivals

1 at the airport. But, of course, aircraft fly in all
2 directions to all runways in differing amounts. The
3 model tracks to show where each aircraft fly as they're
4 approaching the airport and coming in and then landing
5 at the airport.
6 This is a picture of departure flight
7 paths, and it's similar to the arrivals. We're showing
8 various flight paths going different ways once they
9 depart. Each runway goes a different direction and,
10 again, each runway is used by a different aircraft
11 different amounts of the time, so those are the flight
12 paths and trajectories that they most often follow when
13 they're operating at the airport. So, again, taking
14 months of radar data and pulling it down to represent
15 what are the places where aircraft fly most often at the
16 airport.
17 Now we're going to talk about what we had
18 to do as a part of the regulations to look at your
19 baseline year, 2009, and do a forecast five years into
20 the future; how many operations; is the fleet the same
21 or any different; the plan, construction models of the
22 airport that affect noise levels.
23 This is part of the standard process. We
24 take a projection outlook of the baseline here, look at
25 the FAA's projections for how many operations will occur

1 in the future. Based on their projections, we're
2 showing about a three percent increase in operations
3 five years from now.
4 We've also shown, by the historical
5 trends, the general picture of how things change over
6 time. You'll see an increase in regional jet traffic by
7 about 10 percent more in the future than it has now, and
8 that's offset by the large jet aircrafts starting to
9 decline, replaced by -- the airlines need to fly more
10 regional jets instead. I have a picture of that coming
11 up.
12 There's also one airport construction
13 project which is starting and included in the study, an
14 extension of runway 3/21 up to the northeast direction.
15 They're adding 8,000 feet of length to that runway. And
16 that's included in the future base model. So those are
17 projected changes.
18 Things that will not change in 2014 is the
19 overall picture of runway utilization, the flight tracks
20 that are used at the airport, and the breakdown of day
21 versus night operations. Those things are projected to
22 be about the same in the future as they are occurring
23 already.
24 This is a breakdown of forecast
25 operations. Again, we're showing about a three percent

1 increase, depending on the category of the aircraft.
2 It's just a slight modification, so it's about three
3 percent in each category, with the exception of military
4 operations. In fact, it is, basically, exactly the
5 same, up until they increase local traffic, an increase
6 in arrivals and departures at the airport. So the
7 overall picture is actually a 2.8 percent increase in
8 operations five years from now.
9 This is an analysis we did of historical
10 fleet mix, looking at the air carriers at the airport
11 going back to 2002, and look at each year from 2002 up
12 to 2007. And this is how we found the increasing
13 percentage of regional jet traffic at the airport being
14 offset by the large jets declining in numbers of
15 operations.
16 And down at the bottom, in blue, is the
17 amount of heavy jets pictured over the last six years.
18 We use this data as well to modify our future fleet mix,
19 to represent what's projected for the future in terms of
20 types of aircraft flying at the airport.
21 This a similar breakdown of what I showed
22 you before. Again, air carriers, in the blues, still
23 account for about a little more than half of the
24 operations at the airport, and the general aviation
25 traffic on the right-hand side of the piechart is a

1 little less than half of what happens at the airport.
2 So that overall picture is about the same. The
3 operations are going up three percent, and the
4 distribution in these categories is being changed a
5 little bit.
6 So the noise model results -- once we put
7 all that information into the model, as well as weather
8 information for the year, as well as ground elevation or
9 terrain data that we also put into the model, in
10 addition to all these operational statistics, we utilize
11 the model to generate noise exposure onto these maps.
12 And so we're showing the 2009, 2014 noise
13 exposure maps. They're posted in the back of the room.
14 This is, again, looking at annual operations, and we
15 talk about what we have in an annual average day --
16 which is a-one day picture of the average for the entire
17 year, and then we overlay that data on the map data,
18 which is supplied from the city, and that shows all the
19 roads, also shows the planning of these roads, whether
20 it's residential, commercial, parks, other types of land
21 use. It's important to find out what types of ground
22 land use is impacted by noise.
23 One thing that has occurred since the last
24 meeting, January 27th, for those of you who were here
25 back in January, since that time the FAA took a chance

1 to review our document and review our data, and they
2 came back to us with a few comments and asked us to make
3 a few changes to the analysis, so we have completed
4 that. And the results I'm showing you tonight are
5 actually updated from what you've seen in the past, on
6 January 27th. That revised information has also been
7 put out to the public libraries, it's also on the
8 website, and reflects the changes the FAA is asking us
9 to look at.
10 They made available some additional data
11 on the fleet mix. It's more precise numbers in some of
12 the categories. We added that into the noise model.
13 That raised our counts on GA, helicopter, and military
14 aircraft flights, and we also made some revisions to the
15 runway utilization and flight tracks, but mostly for the
16 shortest runway at the airport. This is to more
17 accurately define the operations on that short runway.
18 And, of course, having looked at and
19 adjusted what data was put into the model changed
20 slightly the output from the model. And what we have
21 tonight is some revised maps and tables that show --
22 it's a very general statement. They're slightly smaller
23 contours, slightly less noise than what we modeled
24 previously.
25 This is the 2009 noise exposure map.

1 it's, obviously, a little more clear to see from the
2 posters in the back of the room. What you can see, of
3 course, is where this is spread out in the direction
4 where those flights occur; arrivals coming in this
5 direction, departures flowing out that direction, as
6 well as a lot of departures flowing out that direction.
7 And, again, this has been updated and
8 revised since the last presentation; however, the
9 extents of this outermost 65 dB DNL contours are very
10 similar, only slightly smaller than what they were
11 previously.
12 So the FAA guidelines state the 65 dB DNL
13 contour levels significantly impact any levels inside
14 those contours. In other words, greater than 65 dB is
15 considered a significant noise impact by the FAA.
16 Outside of those contours are areas that
17 are not considered significant by the FAA. The location
18 of that is shown when I flip to the next chart, which is
19 the 2014 noise exposure map. As many of you have
20 already witnessed, we have noise contours and, based on
21 those, we have determined the location of boundaries in
22 the noise mitigation program for the residential
23 acoustical treatment program, as it is known, and so we
24 are proposing these new boundaries to the FAA, which
25 vary, as you can see from the sound insulation.

1 This is based on looking at, again, the 65
2 dB DNL contours the FAA requires us to look at from the
3 model, and then saying where does that contour lie,
4 where does it hit different residential neighborhoods.
5 And based on where that contour lies, we have to,
6 basically, extend out the boundaries of this program to
7 go out to the end of each street or each block or each
8 neighborhood as we can, in order to round out the
9 neighborhood.
10 And that's, you know, a policy that's
11 called neighborhood equity, saying that we're not going
12 to end the program in the middle of the block, but
13 extend it to the end of the block or the end of the
14 neighborhood in order to include people and work in a
15 more fair way.
16 The results of that analysis also gives us
17 some category information so we can count up the number
18 of population and number of residences and different
19 types of land use that are falling within the contour.
20 And that helps us determine, in a very precise way, how
21 many locations and how many people are affected by the
22 65 dB DNL contour, and also within the proposed
23 mitigation boundary.
24 Based on the results of the study that
25 we're doing now, we're going to update the airport's

1 noise compatibility program. So now that we looked at
2 the noise exposure maps and how they come out with the
3 study, those will be used to update the noise capacity
4 program.
5 This program really allows the airport to
6 continue to receive federal funding from the FAA in
7 order to continue with this program and other programs
8 that they offer. So a snapshot of the NCP established
9 this airport in 1990. It was most recently updated in
10 2002, that's why they've come and said, okay, well, it's
11 been, at this point, seven years since the last update.
12 It's time to take a new look at the noise at the
13 airport, and we have an obligation to do new noise
14 exposure maps.
15 So this study we have updated the NCP
16 program in order to update the acoustical treatment
17 program. Some information on that program: It's an
18 ongoing program, currently treating 317 homes and 216
19 apartment units. And they are continuing this process
20 as we speak.
21 And, of course, the new maps that we're
22 submitting to the FAA now will affect that program.
23 They will set new boundary lines to which that program
24 will extend. And so our new boundaries are shown on
25 2014 NEM. There's over 1,900 residences included in

1 that boundary. And keep in mind when we draw these
2 boundaries, if you look on the map, that defines what
3 the airport consultants have come up with as a proposal
4 to the FAA. It's subject to FAA approval. It also
5 defines residences and noise-sensitive facilities that
6 are eligible for treatment. It's not a guarantee of
7 treatment, but it's a guarantee that their programs are
8 eligible to receive treatment.
9 So going forward, what are the next steps
10 in this whole process? Tonight's meeting is the final
11 public meeting on this study. We will continue to
12 receive your comments tonight and all the way up to
13 April 2nd, 2009. After that date we will go through
14 and, in writing -- writing out responses to all the
15 comments we received. This includes all comments we've
16 gotten going all the way back to late January, when we
17 had the first workshop. We've been collecting comments
18 since then, continuously, through today and into
19 April 2nd. All those comments will be addressed in the
20 final document.
21 We will then present that final document
22 to the city council, get their approval and, after they
23 approve, we will submit the whole document to the FAA.
24 And, at that point, that will kick off the FAA's
25 official review period.

To conclude, we want to give you some points of contact. If you're talking about this specific study, please speak to Steve Southers at the airport. He's sitting in the front row, has the gray suit and glasses, raising his hand. A lot of you also have very specific questions about the acoustical treatment program; when is my house going to be done; they've done my neighbor's house; which block are they on; and where is -- what's the current status. Mike Rodriguez is the man to contact at the airport. He works most closely with the building contractors that are doing the program, so his phone number is given here. And all this information, the whole draft report and all the maps and everything are available at this link below, the San Antonio Airport website.

And so, again, at this time what we're going to do is give a break, let's say until 8:00 on the dot, get back up here, answer some more questions, then we'll take all oral comments for anybody who's signed up at the table in the back. Thank you.

(Recess from 7:39 p.m. to 8:00 p.m.)

MR. MORROW: At this time, we've not had anyone sign up at the registration table yet to give an oral comment. If there's anyone in the room, currently, who would like to give a five-minute or less oral

1 comment with the microphone, you may do so now, just
2 head back to Justin at the sign-in table, and sign a
3 card. If you want to do that, you'll have to sign up
4 with a card in the next five minutes or so. Otherwise,
5 we'll conclude.
6 (Recess from 8:01 p.m. to 8:11 p.m.)
7 MR. MORROW: We have a person that signed
8 the card, Mr. Mark Moore. Will you come up to the
9 microphone? You have five minutes. At the four-minute
10 mark I'll raise one hand, at the five minute mark I'll
11 raise both hands, and then your time will be up.
12 MARK MOORE: I have several questions, the
13 first being the helicopter traffic wasn't mentioned, and
14 why helicopter traffic is so important in and out of the
15 airport. From what I understand, is that all the
16 helicopters that are emergency helicopters, including
17 some police helicopters, go and get fuel from the
18 San Antonio Airport.
19 Now, they fly directly over my house if
20 they're going south, so when they're coming from the
21 south and leaving the airport, going back south, they're
22 flying directly over my house. They are a whole lot
23 more noisier than airplanes are, although the airplanes
24 are the biggest part of my problem, because they're
25 constant, they're day after day, every day of the week,

1 all the way up to midnight every night, and starting
2 again at 5:45 in the morning.
3 That doesn't leave a whole lot of time for
4 sleep. You can't get eight hours of sleep with
5 something like that happening. Why wasn't helicopter
6 traffic added in your report? Am I just making
7 comments, or are you answering?
8 MR. MORROW: Just comments.
9 MARK MOORE: Well, I just wanted that to
10 be part of my comment, was helicopter traffic.
11 Also, in the middle of the night it seems
12 that there's a lot of planes that are being worked on,
13 and they don't do it inside the zone that they're
14 supposed to be in, this designated 28-foot wall zone.
15 There's a whole lot of times that these mechanics are
16 not working in the zone. When they don't work in the
17 zone, they choose to, at 4:00 in the morning or in that
18 time period, rile their engines up and rattle everything
19 on the walls in the house.
20 I don't know why mechanics have to work in
21 the middle of the night and they can't work in the
22 daytime, when everyone is awake. But it's very
23 unnerving to have that happening and helicopter traffic,
24 and then the noise of the jets, and still not be within
25 the zone that keeps ever shrinking. Is there -- I just

1 need to know why the zone is shrinking all the time.
2 And my street was on the zone years ago,
3 and now it's off, and it doesn't have anything to do
4 with the mufflers that they've put on the engines. I
5 think it's political, but I haven't discovered what
6 political reasons, that it just keeps shrinking around
7 the airport.
8 I don't know what else to say other than I
9 need answers, because I have medical needs. I need
10 eight hours of sleep every night. I cannot commit it,
11 but I would -- I asked this question last meeting. I
12 never got an answer. I would like to try to get an
13 answer soon, before these reports go into the FAA,
14 because I think they need to at least discuss with me
15 some of these problems over my house so maybe they won't
16 be a problem in the future.
17 MR. MORROW: Thank you very much. That
18 was our public commenter. As there are no other people
19 who are registered to give comments, this will be the
20 conclusion of the hearing. Thank you.
21 (Meeting concluded at 8:14 p.m.)
22
23
24
25

1 I, Becky Pettyjohn, court-approved transcriber,
2 certify that the foregoing is a correct transcription
3 from the meeting of the proceedings in the above-entitled
4 matter.
5 I further certify that I am neither counsel
6 for, related to, nor employed by any of the parties to
7 the action in which this hearing was taken, and further
8 that I am not financially or otherwise interested in the
9 outcome of the action.
10 I further certify that the transcription fee of
11 $_____ was paid/will be paid in full by
12
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SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC HEARING

March 19, 2009 – Coker United Methodist Church

COMMENT FORM

This form is provided to receive your comments on the Noise Exposure Maps and their effect on the existing Noise Compatibility Program for the San Antonio International Airport. Please use the space provided below attaching additional pages if necessary. Either deposit the form in the comment box, or mail it to the address provided.

Comments: I have 2 rental properties located at 2416 Eastley and 2417 Eastley. Looking at some of the maps proposals, "they" are cutting Eastley down the middle that one of my homes will have windows possibly replaced where the other one won't. It makes more sense to do both sides of a street and not pit neighbors against neighbors and start a civil war!

I would like to have both houses done, but don't feel it's fair to do only one when they are across the street from each other.

Thank you for your time and concern.

Mail your comments by April 2, 2009 to:

Mr. Steven Southers
Environmental Stewardship Manager
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print

Your Name CAROL BARNES

Address 2626 CROW VALLEY
SAN ANTONIO, TX 78232
210-403-2111

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC HEARING

March 19, 2009 – Coker United Methodist Church

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Comments: I attended the meeting on 3-19-09.
I was told that some one could tell me if 231 S. Guilford would be included. No one could. It wasn't even on the map.
Please let me know as this street runs between Sheepshine & Eastly.
I have talked to Mr. Rankin, Mr. Morrow and the new person taking Mr. Rankin position.

Mail your comments by April 2, 2009 to:

Mr. Steven Southers
Environmental Stewardship Manager
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name Carolyn SantaCruz

Address 231 S. Guilford
San Antonio, TX 78217
264-5324
Tele.

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC HEARING

March 19, 2009 – Coker United Methodist Church

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Comments: If possible, please provide hardcopy, colored copies of the noise exposure contour maps for 2009 and 2014

Thank you!

Mail your comments by April 2, 2009 to:

Mr. Steven Southers
Environmental Stewardship Manager
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name William E Alley

Address 13310 Vista del Avion
SAT 78216

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC HEARING

March 19, 2009 – Coker United Methodist Church

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Comments: Prior to Jerry Perkins retiring he informed me by phone that the proposal for Eastby Dr was only going to have the acoustic work done on the south side only. My question is this: Is this proposal still in effect or are they going to cover both sides of Eastby Dr. Also if the proposal is approved how long will it be before work begins on these homes. Are they going to do work on the entire block between Broadway & Nacogdoches?

Mail your comments by April 2, 2009 to:

Mr. Steven Southers
Environmental Stewardship Manager
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name Raymond Delao

Address 318 Eastby Dr.
S.A. TX 78217

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC HEARING

March 19, 2009 – Coker United Methodist Church

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Comments: WHEN YOU DETERMINE THE NOISE EXPOSURE MAP FOR RUNWAY 3/21 AND OUTLINED THE NOISE MITIGATION AREA, WAS THAT DONE ON THE SHORTER RUNWAY OR WHEN IT WAS EXTENDED BY 8505 FEET

Mail your comments by April 2, 2009 to:

Mr. Steven Southers
Environmental Stewardship Manager
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name TOM MANNING

Address 3535 FOREST GLADE
S.A. TX 78247

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC HEARING

March 19, 2009 – Coker United Methodist Church

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Comments: We Live in Vista Del Norte Subdivision off Vista Del Rey on Vista Del Cedro. (OFF Blanco south of Bitters)

We experience plane flyovers on a regular basis in two directions. They seem to be getting worse.

We believe we should be included in the mitigation area as we expect the noise to get even louder over the next years. It wakes us early morning and nightime. Enjoying our back yard and ~~park~~ Subdivision Park is difficult in the Summertime.

We want to be included in the group to get the house retrofitted for sound.

Thankyou

Mail your comments by April 2, 2009 to:

Mr. Steven Southers
Environmental Stewardship Manager
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name Mr & Mrs Lionel A. Passafuma

Address 13509 Vista Del Cedro
San Antonio Tx 78216

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
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Comments: We are home owners @ Sagebrush & Chisolm Trail. Do get a lot of airplane noise. There is a 2:30AM flight that wakes me up at least 4 nights of the week. We feel like our area is not represented well on the map.

Mail your comments by April 2, 2009 to:

Mr. Steven Southers
Environmental Stewardship Manager
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name Richard Slighton

Address 8502 Sagebrush
San Antonio Tx 78221

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
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March 19, 2009 – Coker United Methodist Church

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Comments: 1. Oct 1, 1998 Rule on Building. Why? very arbitrary
A. No building Code change to reduce noise!!!!
B. Zoned Residential prior to 1998
Can home be considered?

2. Home in 65 Dbl noise cone. Should be available to all Homes in Noise cone!!

3. Proposed Noise Mitigation Boundry. Is it then possible to be included in Noise Acoustic Treatment Program if Home Built After 10/1/98?

Your help in setting these issues resolved would be appreciated by myself as well as by my neighbors.
Thank You
J Witten

Mail your comments by April 2, 2009 to:

Mr. Steven Southers
Environmental Stewardship Manager
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name Jeff Witten

Address 12903 Laguna Vista
SA TX 78216
210 416 0315
Back9PT@SBCGlobal.net

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC HEARING

March 19, 2009 – Coker United Methodist Church

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Comments: Good Evening, My Name is Ray Alcala
I recently bought a house on 11131 Reverie Ln.

It is Locate at the Corner of Reverie Lane & Fantasia across the Street From Cabana Club Swimming Pool.

The Noise Early In the morning is loud our Window Rattle Every morning & Evening. Please help us we love the Neighborhood but were unware of the Noise.

We are hoping & Praying that we could get some help with windows that would keep out the noise.

I hope & Pray that whoever reads my comment would help us out.

Thank You
Ray Alcala

Mail your comments by April 2, 2009 to:

Mr. Steven Southers
Environmental Stewardship Manager
San Antonio International Airport
9800 Airport Blvd
San Antonio, Texas 78216

Please Print:

Your Name Ray Alcala

Address 11131 Reverie Lane
San Antonio, Tx 78216
210-748-3420

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC HEARING

March 19, 2009 – Coker United Methodist Church

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Comments: Thank you for your attention to noise in our area. I would appreciate any help

Mail your comments by April 2, 2009 to:

Mr. Steven Southers
Environmental Stewardship Manager
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name Diane Kane

Address 618 Strings

78216

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC HEARING

March 19, 2009 – Coker United Methodist Church

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Comments: I am a homeowner in the Enchanted Village Four Home Condominium Assoc. located @ 625 Stringer Dr. in the heavy noise level track from the APP & the departure arrival route is a nuisance. We do need help! SAA.

Mail your comments by April 2, 2009 to:

Mr. Steven Southers
Environmental Stewardship Manager
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name Gary Hoyler

Address 625 Stringer Dr.
SAT 78214

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC HEARING

March 19, 2009 – Coker United Methodist Church

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Comments:

1. Will the economy stimulus make the project easier to fund and therefore easier to complete?

2. What is the probability that 12114 Stoney Crown (in the Stone Ridge subdivision north of the airport) will be included in the noise abatement program?

3. What type of work is done on homes as part of the noise abatement program?

4. Assuming FAA approval, when will work start? How long will it take to complete?

5. If work is done on some homes in a neighborhood but not on others (say across the street) how do home values and resale values in the unaffected homes react?

Mail your comments by April 2, 2009 to:

Mr. Steven Southers
Environmental Stewardship Manager
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name Bill Crockett

Address 2046 Chittim Hollow Dr
San Antonio, TX 78232

March 11, 2011

To: Steven Southern
Environmental Stewardship
Manager
San Antonio, Tx International
Airport
9800 Airport Blvd.,
San Antonio, Tx 78216

From: Mrs. Matthew S Scott
24619 Long Arrow
Sanantonio, Tx 78258

Dear Mr. Southern,

I saw the newscast March 19, 2009 and could not get to the meeting @ Coker Methodist in time to voice my opinion of the noise pollution in the Stone Oak area due to airplanes.

I live off Stone Oak and Knights Cross in Mount Arrow Head neighborhood. When I first bought my home I could not sleep at night because of the loud airplanes. I have since bought a sleep machine which makes nature sounds to help me not focus on the airplanes. I have noticed for the past 3 years that Airplanes must use Stone Oak as a flight pattern. →

When I heard that a meeting was taking place to discuss the noise made by airplanes disturbing the peace of San Antonio Neighborhoods -

I am not happy to inform you that Stone Oak is one of the neighborhoods.

Please could you let me know what could be done to make my home more sound ~~proof~~ proof from the noise these airplanes make in my home.

Sincerely, 24619 Long Arrow SATX 78258

Mrs Matthew J Brooks, Lisa

210-481-5442 home

12R RUNWAY

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC HEARING

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Comments: 1 April 2009

Dear Mr. Southers,

Since 1961 My family and I have lived at 3211 Burnside. Some of my 5 children and wife have lived here. That's 48 years of sound insulation noise. When the DC 9's were in service, I thought they would shake the house down. If you would project the SE Runway south it would come DIRECTLY over my house. Thanks for all you and the FAA have done.

Sincerely

Bobby S. Roth

NORTHWOOD DRIVE

3211 BURNSIDE

Burnside

Mail your comments by April 2, 2009 to:

Mr. Steven Southers
Environmental Stewardship Manager
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name BOBBY S. ROTH

Address 3211 BURNSIDE DR

78209

TEL 824-5554

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC HEARING

March 19, 2009 – Coker United Methodist Church

4/1/09

COMMENT FORM

his form is provided to receive your comments on the Noise Exposure Maps and their effect on the sting Noise Compatibility Program for the San Antonio International Airport. Please use the space oviced below attaching additional pages if necessary. Either deposit the form in the comment box, or mail it to the address provided.

Comments: We live in the Eden subdivision just north of Thousand Oaks and East of runway 3/21. We attended the public hearing on the airport noise issue on March 19th at Coker United Methodist Church. At the meeting we were briefed the results of their study of the noise issue. One of the key points of the study was that the majority areas in which where aircraft departing and taking off from the airport exceeded the allowable noise levels were all based on computer models, no on-the-ground noise monitors were used to determine noise levels as aircraft departed/landed.

In the case of runway 3/21 which is being extended to 8500 feet the noise contour extends just short of Thousand Oaks. The line then arbitrarily stops at Thousand Oaks because that is a major street, not because it was based on any precise noise monitoring system.

Runway 3/21 will be extended to 8500 feet and more heavy cargo planes will be taking off using that runway. Runway 3/21 is heavily used by heavy cargo planes and the noise level on the average will increase when the runway is extended.

We request that noise levels monitors be set up in the Eden subdivision so they can measure the existing noise levels.

Sincerely,

Mail your comments by April 2, 2009 to:

Mr. Steven Southers
Environmental Stewardship Manager
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name Jean-Louis Rabaste

Address 14003 Boulder Oaks
San Antonio, TX 78217

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC HEARING

March 19, 2009 – Coker United Methodist Church

COMMENT FORM

This form is provided to receive your comments on the Noise Exposure Maps and their effect on the existing Noise Compatibility Program for the San Antonio International Airport. Please use the space provided below attaching additional pages if necessary. Either deposit the form in the comment box, or mail it to the address provided.

Comments: This is with concern that runway 3/21 that is to be extended 500 feet. The map cuts off 1000 Oaks Street. We live in Eden right off 1000 Oaks Street. We need to be considered for help in sound proofing our homes. It is hard to carry on a conversation when planes fly over. Our windows rattle from the vibration. After reading Wyle's two-volume study a very important key issue is the maps indicating aircraft departing and taking off from the airport exceeded the allowable noise levels were based on computer models, not on-ground noise monitors. We request that noise level monitors be set up in the Eden Subdivision so they measure the existing noise levels. This should provide a baseline to determine the noise level now and the noise levels when Runway 3/21 is extended to 8,500 feet. This should be more accurate measure of the noise levels and allow a better mapping of where to extend the noise impact lines.

Sincerely,

Mail your comments by April 2, 2009 to:

Mr. Steven Southers
Environmental Stewardship Manager
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name Steve & Katie McKinney

Address 3518 Forest Glade
San Antonio, Texas 78247

Katie McKinney

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC MEETING

January 27, 2009 – Holy Spirit Catholic Church

COMMENT FORM

This form is provided to receive your comments on the Noise Exposure Maps and their effect on the existing Noise Compatibility Program for the San Antonio International Airport. Please use the space provided below attaching additional pages if necessary. Either deposit the form in the comment box, or mail it to the address provided.

Comments:

(1) Sometimes windows rattle, particularly when planes take off.

(2) Sometimes difficult to hear on the telephone when planes are passing.

Mail your comments by ~~February 23~~ April 2, 2009 to:

Mr. Jerry Rankin
Noise Mitigation Office
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name Yvette Lozano

Address 11834 Petal Dr.
San Antonio, TX 78216

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC HEARING

March 19, 2009 – Coker United Methodist Church

COMMENT FORM

This form is provided to receive your comments on the Noise Exposure Maps and their effect on the existing Noise Compatibility Program for the San Antonio International Airport. Please use the space provided below attaching additional pages if necessary. Either deposit the form in the comment box, or mail it to the address provided.

Comments: AFTER HEARING THE INFORMATION GIVEN OUT AT THE COKER METHODIST CHURCH MEETING WE ARE VERY CONCERNED SINCE RUNWAY 3/21 WILL BE EXTENDED 8,500 FT & MORE HEAVY CARGO PLANES WILL BE USING THAT RUNWAY

WE LIVE IN THE EDEN SUB-DIVISION JUST 2 BLOCKS NORTH OF THOUSANDS OAKS. ALTHOUGH COMPUTER MODELS WERE USED TO PREDICT THE NOISE CONTOUR LINES - THEY ARE NOT NECESSARILY VERY PRECISE. IT'S LIKE THE WEATHERMAN PREDICTING RAIN - AND THEN WE DON'T GET ANY RAIN BECAUSE THERE ARE TOO MANY VARIABLES NOTWITHSTANDING CORRECT INFORMATION USED AT THE BEGINNING.

WE WOULD LIKE TO SEE NOISE LEVEL MONITORS SET UP IN THE EDEN SUB-DIVISION SO THAT MORE PRECISE MEASUREMENTS BE USED IN MAPPING THE NOISE IMPACT LINES. AND THEN USE THE INFORMATION TO REFLECT A MORE PRECISE MAPPING WITH THE EXTENDED 8,500 FT RUNWAY 3/21 NOISE LEVELS.

Mail your comments by April 2, 2009 to:

Mr. Steven Southers
Environmental Stewardship Manager
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name MR & MRS ROBERT MANCILLAS

Address 3523 FOREST GLADE
SAN ANTONIO, TX 78247

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC HEARING

COMMENT FORM

This form is provided to receive your comments on the Noise Exposure Maps and their effect on the existing Noise Compatibility Program for the San Antonio International Airport. Please use the space provided below attaching additional pages if necessary. Either deposit the form in the comment box, or mail it to the address provided.

Comments: We are grateful to be included in the new Noise Exposure map (through 2014). We've noticed an increase in air traffic in the last year. We must increase the volume on our TV at times / go to a different room / close a window or door when on the telephone. I am hopeful that we can get some relief!

Mail your comments by April 2, 2009 to:

Mr. Steven Southers
Environmental Stewardship Manager
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name Ava Dorrest

Address 133 Laburnum Dr
San Antonio, TX 78209

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC HEARING

COMMENT FORM

This form is provided to receive your comments on the Noise Exposure Maps and their effect on the existing Noise Compatibility Program for the San Antonio International Airport. Please use the space provided below attaching additional pages if necessary. Either deposit the form in the comment box, or mail it to the address provided.

Comments: THE PROPERTY WAS CONSTRUCTED IN 1962 + SINCE THEN, THE ENGINE NOISE FROM THE JET ENGINES HAS INCREASED DRAMATICALLY AS WELL AS THE FREQUENCY OF THE FLIGHTS — THE 1962 CONSTRUCTION OF OUR HOME USED SINGLE-PANE WINDOWS # AND NOW WE ARE THROUGHOUT THE DAY FORCED TO CEASE ACTIVITIES SUCH AS CONVERSATIONS/TV/RELAXATION WHILE THE PLANES TAKE OFF OR LAND — OUR NEWBORN BABY BOY ALSO HAS INTERRUPTED SLEEP PATERNS + WE ARE ASKING FOR YOUR HELP — THANK YOU —

Mail your comments by April 2, 2009 to:

Mr. Steven Southers
Environmental Stewardship Manager
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name MICHAEL BERGER

Address 109 LAWRENCE

SAN ANTONIO TX 78209

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC HEARING

COMMENT FORM

This form is provided to receive your comments on the Noise Exposure Maps and their effect on the existing Noise Compatibility Program for the San Antonio International Airport. Please use the space provided below attaching additional pages if necessary. Either deposit the form in the comment box, or mail it to the address provided.

Comments: The noise of planes coming in late at night and early mornings is disruptive to us!!

Mail your comments by April 2, 2009 to:

Mr. Steven Southers
Environmental Stewardship Manager
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name Brent Washam

Address 466 Pike Rd
San Antonio, Tx
78209

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC HEARING

March 19, 2009 – Coker United Methodist Church

COMMENT FORM

This form is provided to receive your comments on the Noise Exposure Maps and their effect on the existing Noise Compatibility Program for the San Antonio International Airport. Please use the space provided below attaching additional pages if necessary. Either deposit the form in the comment box, or mail it to the address provided.

Comments: We bought lot at the corner of Sagebrush & Chisolm Trail in 1965 to build duplex. It was convenient to schools & park & grocery store. Air Traffic has increased over the years at night & during the day. I believe my area is on the map & I hope & pray that something will be done to our home to cut down on noise from airtraffic. We have learned to appreciate the direction of the winds! We do have less noise when the winds come from the North. As I was outside this am a plane came right over our home.

Hope to see you soon.

Rosemarie Slightom

Mail your comments by April 2, 2009 to:

Mr. Steven Southers
Environmental Stewardship Manager
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name Rose M Slightom

Address 8502 Sagebrush Ln.

SA TX 78217

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC HEARING

March 19, 2009 – Coker United Methodist Church

COMMENT FORM

This form is provided to receive your comments on the Noise Exposure Maps and their effect on the existing Noise Compatibility Program for the San Antonio International Airport. Please use the space provided below attaching additional pages if necessary. Either deposit the form in the comment box, or mail it to the address provided.

Comments: I live in the Edison subdivision on Thousand Oaks. It seems you plan to extend runway 30L to accommodate larger planes out west, coming over the Lackland Trail that belongs in the to extend only to Thousand Oaks.

I suggest you to place noise level monitors in that Edison subdivision to stop noise need for present noise levels. Additional noise levels can be made when runway 12/30 is extended over Tal.

Thank you for considering my request.

Regina Wesley
3556 First Glade
San Antonio TX 78247

Mail your comments by April 2, 2009 to:

Mr. Steven Southers
Environmental Stewardship Manager
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name Regina Wesley

Address 3556 First Glade
San Antonio TX 78247

SAN ANTONIO
AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC HEARING

March 19, 2009 – Coker United Methodist Church

COMMENT FORM

This form is provided to receive your comments on the Noise Exposure Maps and their effect on the existing Noise Compatibility Program for the San Antonio International Airport. Please use the space provided below attaching additional pages if necessary. Either deposit the form in the comment box, or mail it to the address provided.

Comments: I'd like to say that the airplanes from SAT are so loud they keep me awake at night. Also, the windows shutter & cause me to have an even harder time getting to sleep.

The other problem with the noise is that you can't carry on a conversation, either to your neighbors when your outside talking, you have to wait for the plane to fly over before you can continue you conversation. This also apply's when you are talking on the phone.

Mail your comments by April 2, 2009 to:

Mr. Steven Southers
Environmental Stewardship Manager
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name Jenice V Hogate

Address 620 Steing dr
San Antonio, TX 78216

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC HEARING

COMMENT FORM

This form is provided to receive your comments on the Noise Exposure Maps and their effect on the existing Noise Compatibility Program for the San Antonio International Airport. Please use the space provided below attaching additional pages if necessary. Either deposit the form in the comment box, or mail it to the address provided.

Comments: Mr Southers - Thanks for your informative presentation made to the Oak Park-Northwood Neighborhood Assn meeting last night.
I would like to propose an exception to the boundary shown on the map you distributed to include my home at 126 Cavil Lane. Evidently the lines presently drawn include the north side of Cavil Ln in the 100 block but not the south.
My home is a ranch style home with a low roof and extensive use of large glass panes throughout. All of the bedrooms have a majority of the outside walls in glass. Three have double glass doors and two have large double glass panes. The living room and family room have almost solid glass walls. As a result we have great exposure to the airport noise. When the planes take off over our neighborhood the windows rattle loud enough to wake us up in the morning. Conversation stops when the planes take off.
I know this has to be somewhat but I'm sure I receive the same noise or more as the home across the street. In addition, my location is on the lower part of the flight path. It appears some properties further from the flight line, where the planes are higher will be included in the abatement program.
I hope my home may be included in the noise compatability plan.
Thanks for your consideration.
(I enclose some photos to show extent of glass exposure)

Mail your comments by April 2, 2009 to:

Mr. Steven Southers
Environmental Stewardship Manager
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name LEIGHTON WIER

Address 126 CAVIL LANE
SAN ANTONIO TX 78209

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC HEARING

March 19, 2009 – Coker United Methodist Church

COMMENT FORM

This form is provided to receive your comments on the Noise Exposure Maps and their effect on the existing Noise Compatibility Program for the San Antonio International Airport. Please use the space provided below attaching additional pages if necessary. Either deposit the form in the comment box, or mail it to the address provided.

Comments:

1. My windows rattle when planes landing or taking off -- It's getting worse!!
2. When I am on the telephone I have to place people on hold (Because of the noise planes make) -- Small planes pass my house -- Situation is very annoying

Mail your comments by April 2, 2009 to:

Mr. Steven Southers
Environmental Stewardship Manager
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name Mary Robledo

Address 1832 Petal
S.A. 78216

From: Josh Baugh
To: Steven Southers; stevensouthers@sanantonio.gov ; Steven Southers
Sent: Tue Mar 31 22:30:00 2009
Subject: Noise Compatibility Program

Dear Steven:

I happened to attend the Northwood/Oak Park Neighborhood Association meeting tonight for a topic other than on which you spoke, but I'm glad I heard your presentation because it could affect me, though I'm on the other side of the airport.

I have reviewed the noise contour map and found that there is an area in the Harmony Hills neighborhood -- west of the airport -- that is being included in the new maps. I'm a soon-to-be homeowner in that neighborhood (we close on April 13th), and while we're not current residents, I know the area well as my parents are homeowners there.

If that addition is ratified, my property at 306 W. Silver Sands will nearly be boxed in my areas that the FAA has deemed appropriate for noise abatement. I would urge you to consider expanding the southeastern corner of the proposed addition to include the Harmony Hills neighborhood park. In the past several weeks, my wife and I have spent a lot of time at the house we're buying, and we've noticed the airplane traffic.

Obviously, it's not enough of a deterrent for us to not buy the house, and we will live there happily regardless of whether the FAA expands that boundary. That said, the additional area added on the map strikes me as quite odd when considering flight patterns from the airport. Why would that specific area that juts out from the existing lines qualify for noise abatement when the areas directly between it and the airport don't?

The southeasterly edge of that addition lines up directly with the existing lines on the map, and it seems logical that those existing lines would be extended to coincide with typical flight patterns. As it is, the proposed expansion in the Harmony Hills area looks like a gerrymandered political map. Could you shed any light on that?

Thank you very much for taking this under advisement, and I appreciate any help that we might get in having our first home included within the abatement program.

All the best,

Josh Baugh
210.705.1080

SAN ANTONIO AIRPORT SYSTEM

PUBLIC WORKSHOP
PUBLIC HEARING

COMMENT FORM

This form is provided to receive your comments on the Noise Exposure Maps and their effect on the existing Noise Compatibility Program for the San Antonio International Airport. Please use the space provided below attaching additional pages if necessary. Either deposit the form in the comment box, or mail it to the address provided.

Comments: We live on 105 Camellia Way corner of North New Braunfels and Camellia currently out of the Noise exposure zone.
We don't need alarm clocks at home, we are up every morning with the first flight out of the airport, this can be as early as 5:15 am.
Considering that our daily life is substantially affected by the noise generated by airplanes taking off, we kindly ask you to extend the noise exposure area and have the west boundary to include North New Braunfels up to and including Camellia Way.

Thank you for taking into account our situation and request.

Sincerely,

Luis Gerlein
210 557 2215

Mail your comments by April 2, 2009 to:

Mr. Steven Southers
Environmental Stewardship Manager
San Antonio International Airport
9800 Airport Blvd.
San Antonio, Texas 78216

Please Print:

Your Name Luis Gerlein

Address 105 Camellia Way
San Antonio TX 78207

-----Original Message-----
From: C LeMoyne Hall [mailto:charlietuna39@att.net]
Sent: Thursday, April 02, 2009 8:50 AM
To: Steven Southers
Subject: picture clarification

The pictures I sent before were taken from my front porch at 503 Cave Lane. The aircraft were landing from the southeast with the exception of one picture I was facing southeast. In one you can see the edge of my roof-the rest I took the picture farther out. There is one picture I took facing northeast as I massed it coming in-that one will show the tail closest to the camera.

Welcome to the Public Meeting for the San Antonio International Airport Limited Airport Noise Compatibility Planning Study

There are three components to tonight's meeting:

Interactive Workshop: An interactive workshop where specific questions about SAT, including noise generated from aircraft operations, can be answered. Consultants and airport staff will be on-hand to provide information about airport operations, noise exposure contours, and ongoing noise mitigation efforts.

Presentation: A presentation about the study process, input data, resulting noise contours, and impact on the airport's noise compatibility program efforts will take place at 7:00 p.m.

Public Hearing: Please provide your comments either by written submission, or to a court reporter who will record your comment. Comments on the study will be included in the Final report if received by February 23, 2009.

Thank you for attending tonight's public meeting.

SAN ANTONIO AIRPORT SYSTEM

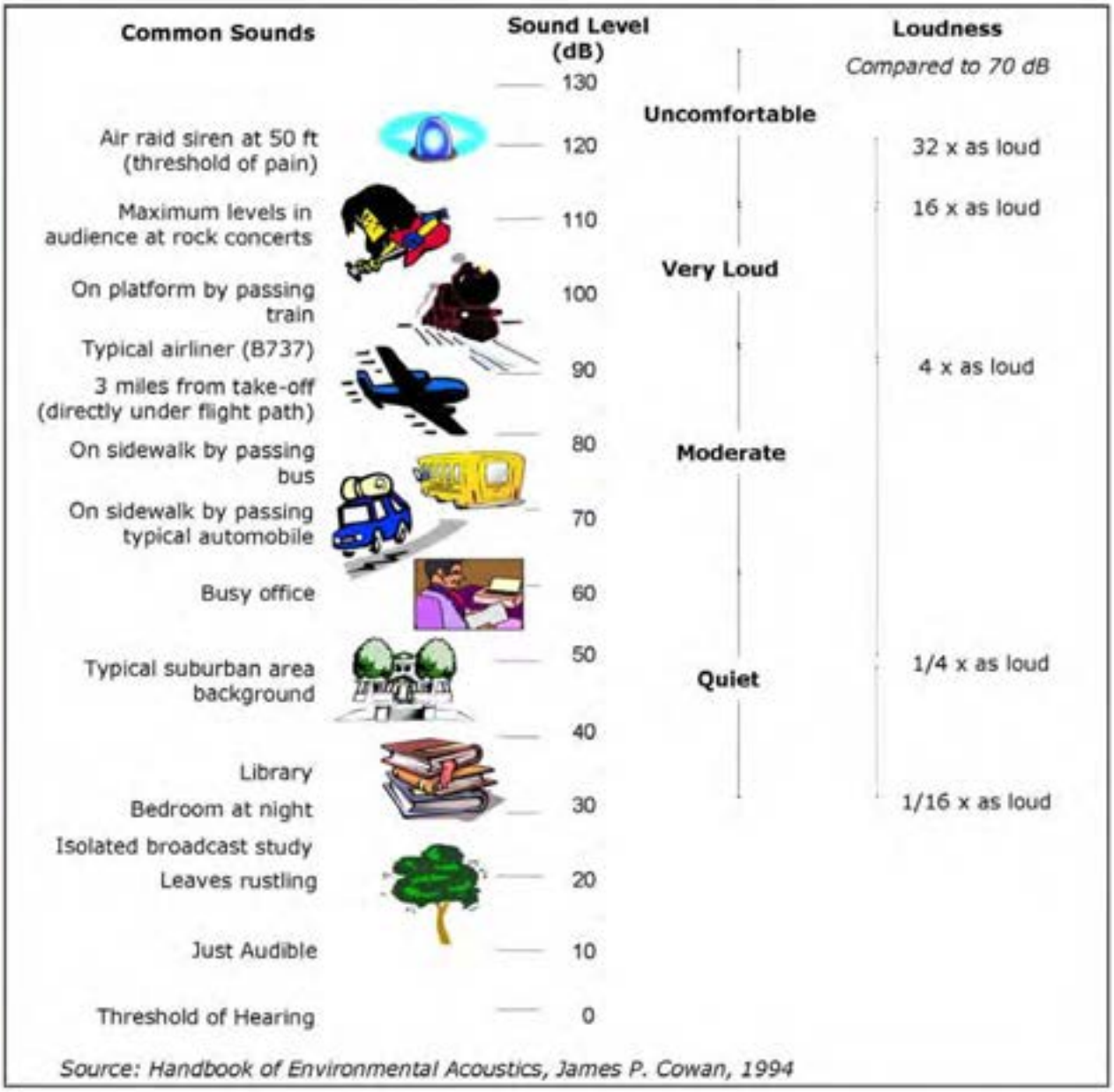
San Antonio International Airport
Limited Airport Noise Compatibility Planning Study

The goals of the Study include:

- Update the airport's official Noise Exposure Maps (NEMs)
  - Existing Conditions (2009)
    - How many operations occur at SAT on an average day?
    - How do Air Traffic Controllers and pilots determine which runway to use?
    - What types of aircraft operate at SAT?
    - How does this affect noise levels around SAT?
  - Future Conditions (2014)
    - How many and what types of aircraft will fly into and from SAT in 2014?
    - What changes at the airport will occur, that might affect where aircraft fly?
    - How much noise can I expect to hear in the future?
- Ensure that the airport's existing Noise Compatibility Plan (NCP) addresses current and future noise exposure at SAT.
  - How has the airport addressed noise?
  - How will the forecast noise exposure be mitigated?
  - What programs exist, and how will they change in the future?

wyle

Common Noise Sources



Source: Handbook of Environmental Acoustics, James P. Cowan, 1994

SAN ANTONIO AIRPORT SYSTEM

San Antonio International Airport
Limited Airport Noise Compatibility Planning Study

Land Use Noise Sensitivity Matrix

		55-65 DNL	65-75 DNL	75+ DNL
Residential	1-2 Family			
	Multi-Family			
	Mobile Homes			
	Dorms, etc.			
Institutional	Churches			
	Schools			
	Hospitals			
	Nursing Homes			
	Libraries			
Recreational	Sports/Play			
	Arts/Instructional			
	Camping			
Commercial	All Uses			
Industrial	All Uses			
Agricultural	All Uses			

PER FAR PART 150		
	COMPATIBLE	
	INCOMPATIBLE	

wyle

X:\FAA\LANDUSE TP\LAND USE MATRIX.CDR DATE: OCT. 1996

The Noise Modeling Process

Data Sources

- Radar Data
- Air Traffic Control
- NOMS
- DOT
- FAA TAF
- SAT Records

Analysis & Model Input

- Number of Operations
- Flight Tracks & Dispersion
- Fleet Mix (Aircraft Types)
- Temporal Use (Day vs. Night)
- Runway Use
- Flight Track Use
- Trip Distances
- Weather & Terrain

Model Output

- Existing Noise Exposure Map
- Future Noise Exposure Map

Day-Night Average Sound Level (DNL)

What is DNL? Why is it used?

Average of all sound levels over a 24-hour period with a 10-decibel penalty added to nighttime sound levels (10:00 PM to 7:00 AM)

The nighttime penalty accounts for the added intrusiveness of sounds that occur during normal sleeping hours

DNL does not represent the sound level heard at any particular time, but instead quantifies the total sound energy received

In terms of noise exposure modeling DNL describes aircraft noise only

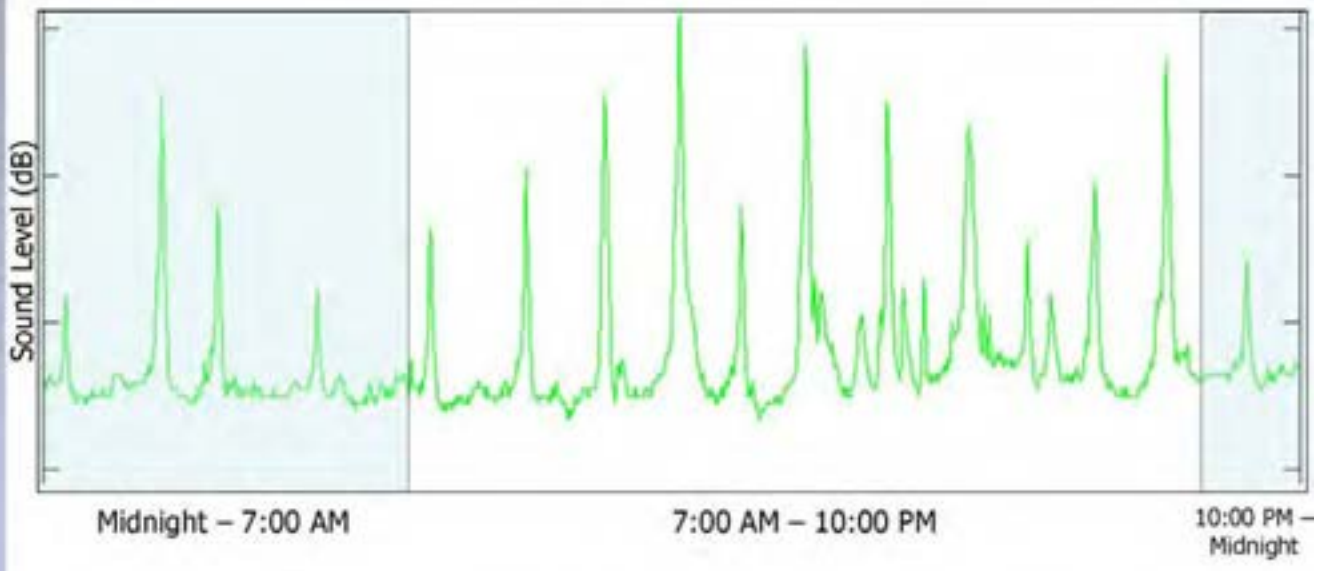
DNL is the noise metric adopted by FAA and DoD as the standard for long-term noise exposure resulting from aircraft operations at civilian and military airfields

Takes into account the noise levels and durations of all individual noise events that occur during a 24-hour period and the number of times those events occur

DNL is computed by noise models for the "annual average day" of operations

The same DNL value could result from relatively few noisy events in one location, or from more, yet quieter, events in another location.

Hypothetical noise events at one location



Each aircraft event occurring during the nighttime hours is counted 10 times in the noise model

Existing 2009 Conditions

- In 2008, over 223,000 aircraft arrived or departed from SAT, an average of 612 per day.

- 88% of operations at SAT occur during daytime (7:00 a.m. to 10:00 p.m.) hours. 12% occur during nighttime (10:00 p.m. to 7:00 a.m.) hours.

- Operations at the airport include those by Air Carriers, taxi and charter operations, general aviation, and military.
  - Over 58% of operations at SAT are flown by air carrier, cargo, and commuter operators.
  - 40% of operations are flown by general aviation operators.

- The most common aircraft at SAT are narrow body aircraft including Boeing 737-300, 500, and 700 series, McDonnell Douglas MD-82, Airbus A-319; and regional jets including Canadair CRJ-700 and Embraer 145 aircraft.

- Of the general aviation operations, about 21% are flown by business jets, 6% are turbo-props, and 73% are small propeller aircraft.

- Overall, Runways 12R and 3 account for 79% of all aircraft departures. Runway 12R also accounts for 73% of all aircraft arrivals.

Future 2014 Conditions

Changes expected to occur at the airport:

- Approximately 229,000 annual operations are projected by FAA for 2014, about a 3% increase from 2009.

- The percentage of regional jets is forecast to account for 39% of aircraft operations, an increase of nearly 10% from 2009. Accordingly, the percentage of larger aircraft is expected to decrease.

- Boeing 737-300, 500, and 700 series, McDonnell Douglas MD-82, Airbus A-319, and regional jets including Canadair CRJ-700 and Embraer 145 aircraft are projected to remain the most common aircraft.

- By 2014, Runway 3/21 will be extended to a total length of 8,505 feet.

- Overall runway utilization is expected to remain relatively consistent with today's runway use.

The Airport's Existing Noise Compatibility Program (NCP)

Measure	Summary	FAA Determination	Status	Next Steps
Abatement Measure 1	Noise Measurement tests of departure profiles	Disapproved	Flight testing in 2001	Not included for continuation
Abatement Measure 2	Develop additional noise abatement procedures	Disapproved for departures, approved for arrivals	No Action	Not included for continuation
Abatement Measure 3	Preferential Runway Use Program	Disapproved	Runway 3/21 to be extended	Not included for continuation
Abatement Measure 4	Runway 3 Departure Corridor	Disapproved	No Action	Not included for continuation
Abatement Measure 5	Runway 21 Departure Corridor	Disapproved	No Action	Not included for continuation
Abatement Measure 6	Update NCP with GRE study information	Approved	GRE constructed and in use	Not included for continuation
Abatement Measure 7	Acquire aircraft noise and operations monitoring system	Approved	Acquired and in use	Not included for continuation
Abatement Measure 8	Pilot Awareness Program	Approved	On-going	Ongoing Measure; Not affected by this NCP update
Abatement Measure 9	Noise Barrier Study	Disapproved	No Action	Not included for continuation
Abatement Measure 10	Encourage Congress to develop a phase-out schedule for Hushkitted Stage 3 aircraft	Disapproved	No Action	Not included for continuation
Abatement Measure 11	Encourage FAA to develop a phase-out schedule for Stage 2 aircraft less than 75,000 lbs	Disapproved	No Action	Not included for continuation
Mitigation Measure 1	Continue Residential Acoustical Treatment Program	Approved	317 Homes and 216 Apartment Units treated to-date; Avigation easements acquired for each	Continue based on 2014 NEM
Mitigation Measure 2	Continue acoustical treatment for remaining noise-sensitive facilities	Approved	On-going	Continue based on 2014 NEM
Mitigation Measure 3	Study of Real Estate Disclosure	Approved	No Action	Not affected by this NCP update
Mitigation Measure 4	Study of additional land use development controls	Approved	City currently performing study	Not affected by this NCP update

Project Conclusion / Next Steps

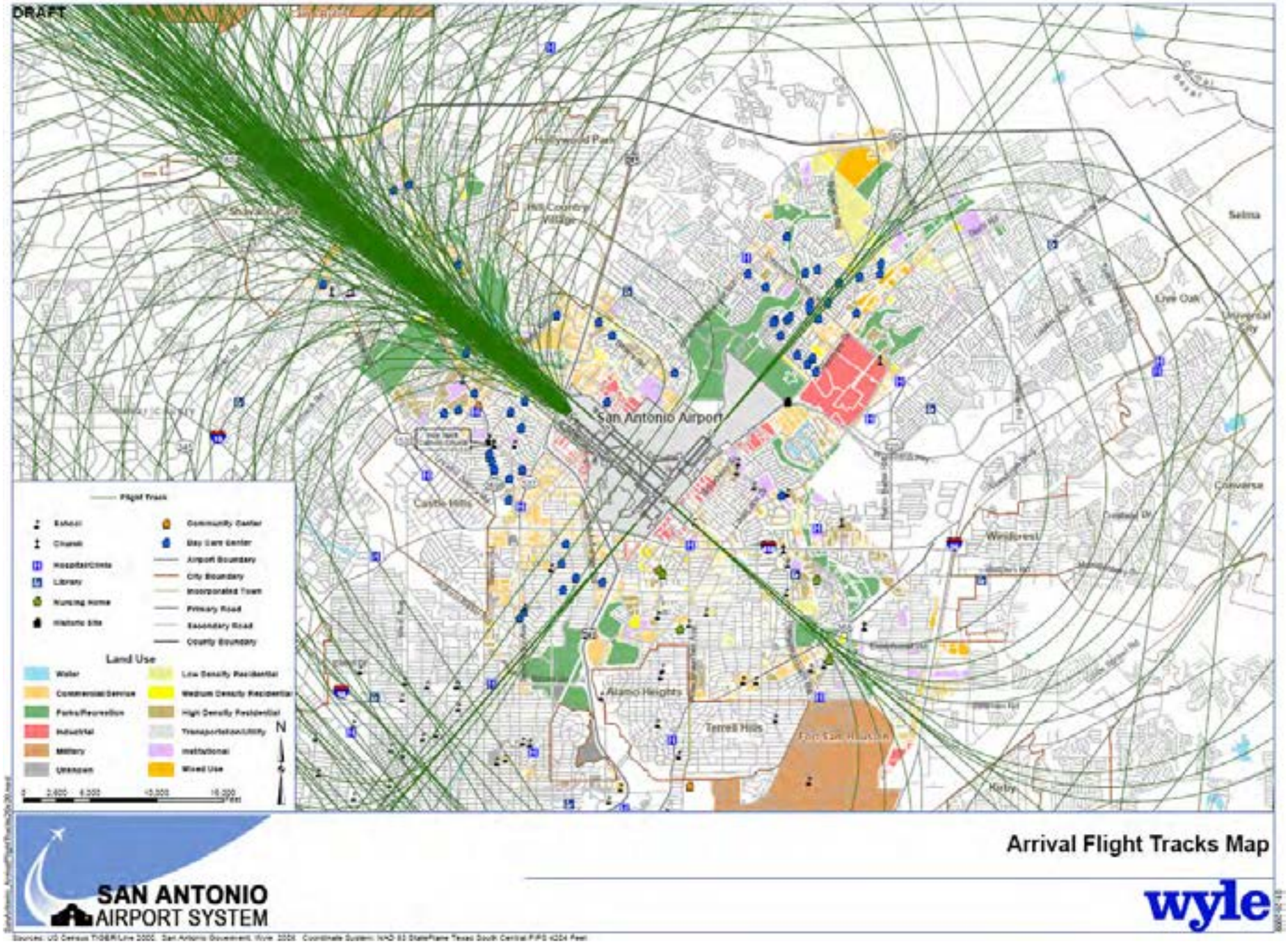
- Written comments will be accepted tonight, or may be submitted by February 23, 2009 to: Jerry Rankin, San Antonio International Airport, 9800 Airport Blvd., San Antonio, TX, 78216. (210) 207-3471.

- Copies of the Draft Noise Exposure Map (NEM) Report are available for review tonight and at the following locations:
  - Central Library - 600 Soledad
  - Tobin Library at Oakwell - 4134 Harry Wurzbach Road
  - Brook Hollow Library - 530 Heimer Road
  - Edmund Cody Library - 11441 Vance Jackson
  - Thousand Oaks-El Sendero Library - 4618 Thousand Oaks
  - Trinity University, Elizabeth Huth Coates Library - One Trinity Place
  - Department of Planning and Development Services - 1901 South Alamo
  - Office of the City Clerk, City Hall Building - 100 Military Plaza
  - Aviation Dept., Noise Mitigation Office - 9700 Airport Blvd., Terminal 2, 2nd Floor

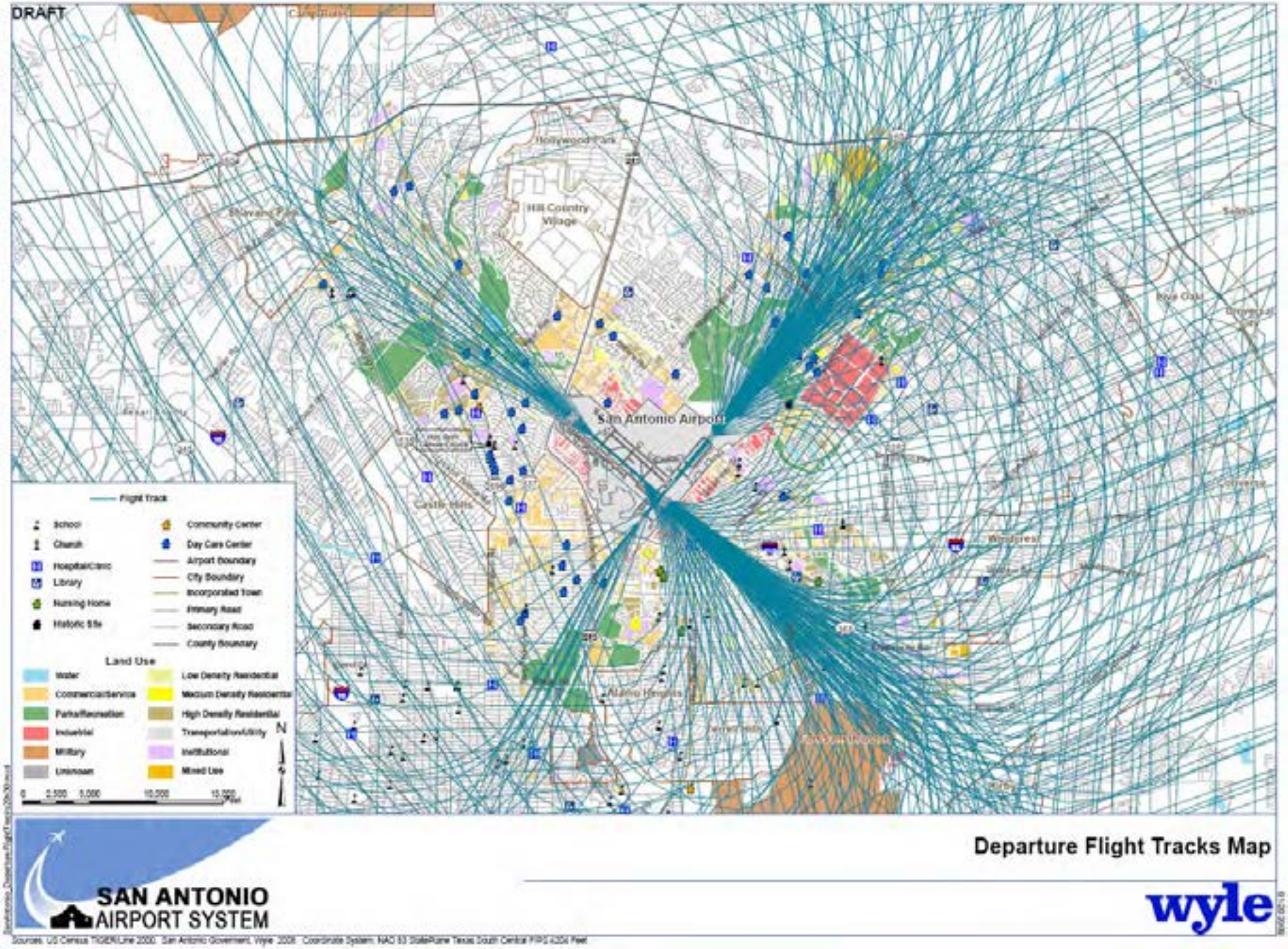
- A follow-up public hearing will be held in late February or early March. Afterwards, the Airport will respond to all public comments.

- Study results will be presented to City Council in early March.

- The Final document will then be submitted to the FAA.



Sources: US Census TIGER/Line 2000, San Antonio Government, Wyle 2006. Coordinate System: NAD 83 StatePlane Texas South Central FIPS 4204 Feet


DRAFT
Hill Country Village
San Antonio Airport
Castle Hills
Flight Track
School
Church
Hospital/Clinic
Library
Nursing Home
Historic Site
Community Center
Day Care Center
Airport Boundary
City Boundary
Incorporated Town
Primary Road
Secondary Road
County Boundary
Land Use
Water
Commercial/Service
Parks/Recreation
Industrial
Military
Unknown
Low Density Residential
Medium Density Residential
High Density Residential
Transportation/Utility
Institutional
Mixed Use
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SAN ANTONIO
AIRPORT SYSTEM
Departure Flight Tracks Map
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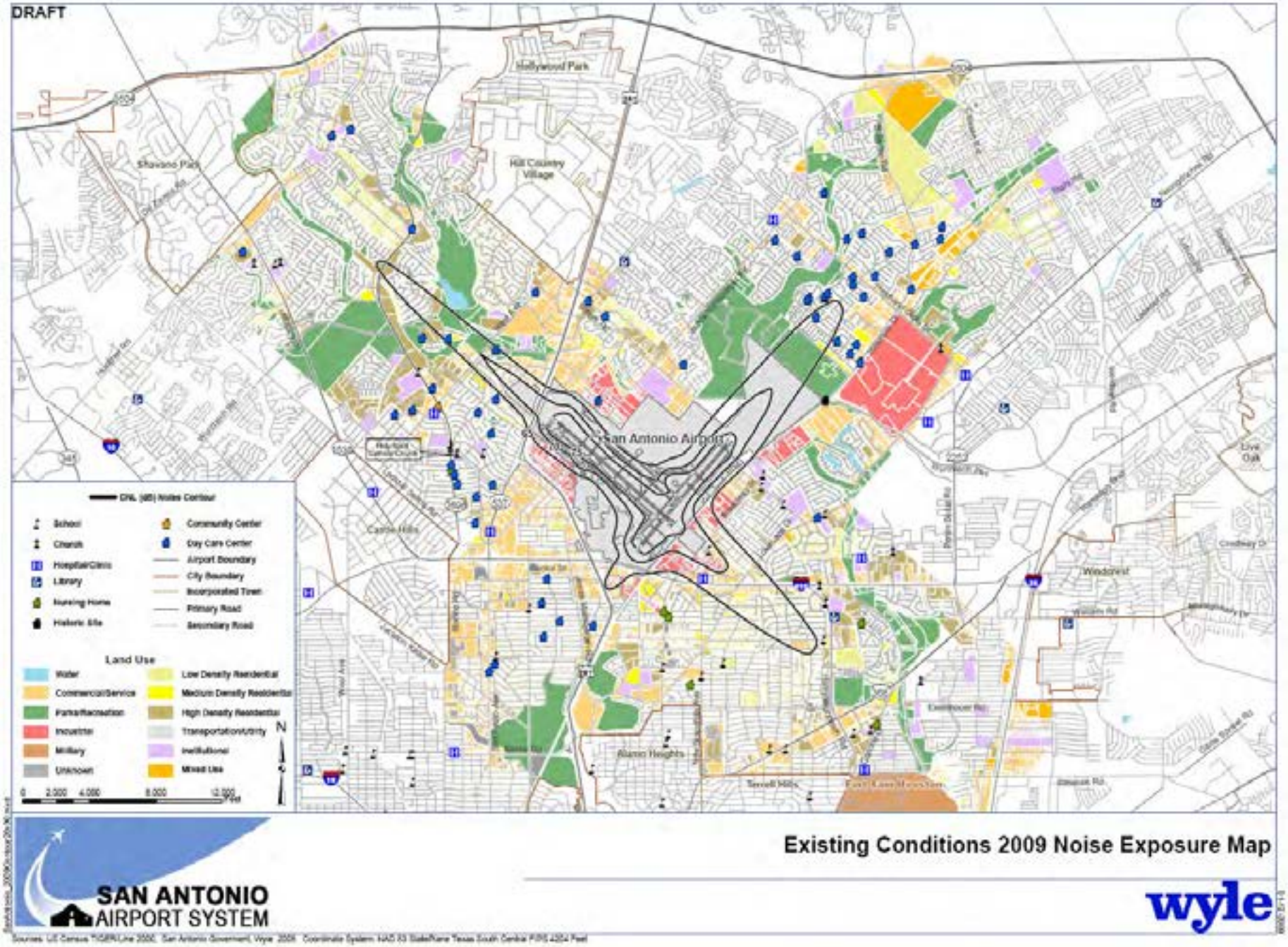
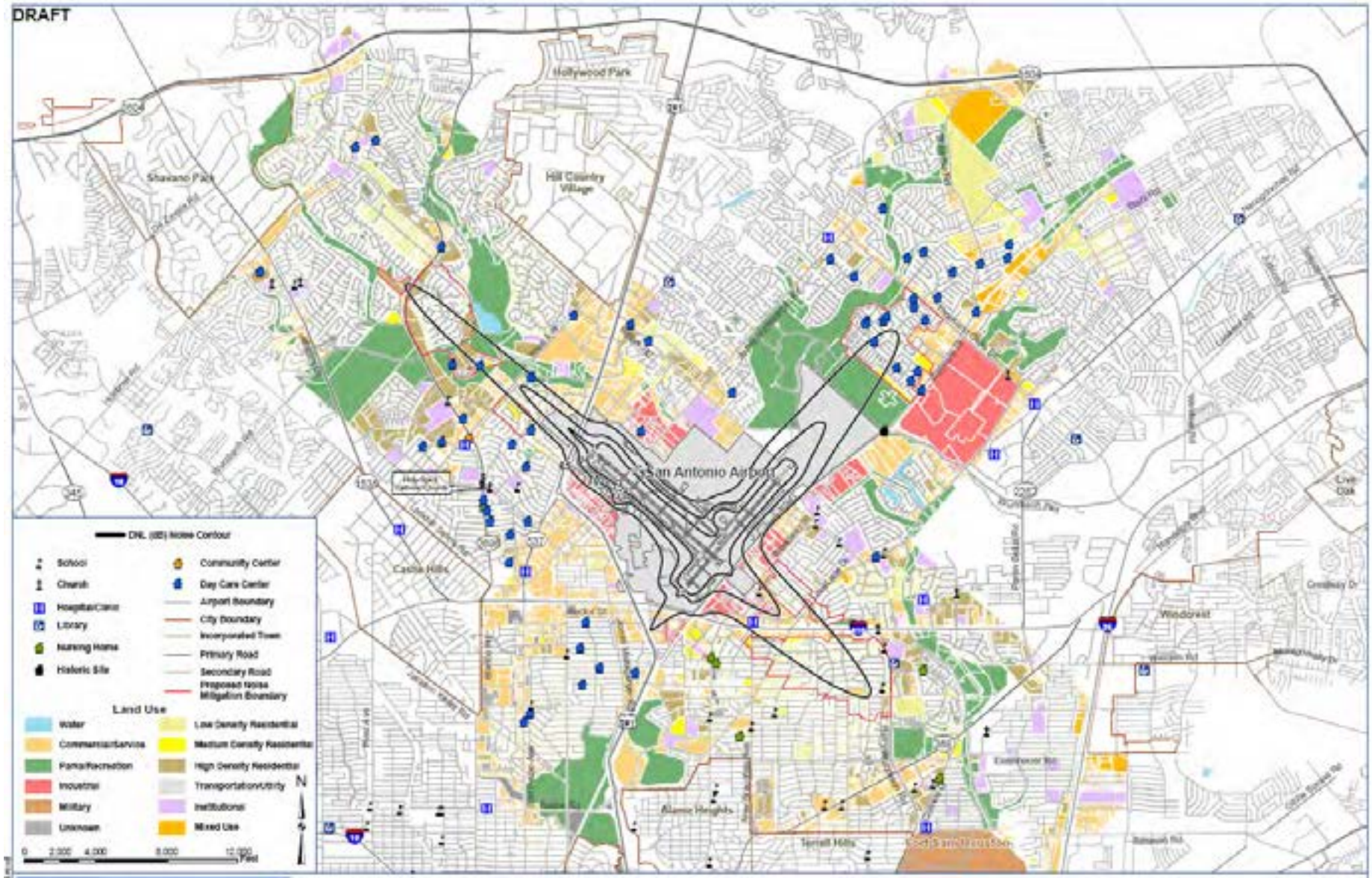

DRAFT
Hollywood Park
Shavano Park
Hill Country Village
San Antonio Airport
Castle Hills
Windcrest
Alamo Heights
Live Oak
CNL (dB) Noise Contour
School
Church
Hospital/Clinic
Library
Nursing Home
Historic Site
Community Center
Day Care Center
Airport Boundary
City Boundary
Incorporated Town
Primary Road
Secondary Road
Land Use
Water
Commercial/Service
Parks/Recreation
Industrial
Military
Unknown
Low Density Residential
Medium Density Residential
High Density Residential
Transportation/Utility
Institutional
Mixed Use
N
0 2,000 4,000 8,000 12,000 Feet
SAN ANTONIO
AIRPORT SYSTEM
Existing Conditions 2009 Noise Exposure Map
wyle



SAN ANTONIO AIRPORT SYSTEM

Future Conditions 2014 Noise Exposure Map

wyle

Welcome to the Public Hearing for the San Antonio International Airport Limited Airport Noise Compatibility Planning Study

There are three components to tonight's hearing:

Interactive Workshop: An interactive workshop where specific questions about SAT, including noise generated from aircraft operations, can be answered. Consultants and airport staff will be on-hand to provide information about airport operations, noise exposure contours, and ongoing noise mitigation efforts.

Presentation: A presentation about the study process, input data, resulting noise contours, and impact on the airport's noise compatibility program efforts will take place at 7:00 p.m.

Public Hearing: Please provide your comments either by written submission, or to a court reporter who will record your comment. Comments on the study will be included in the Final report if received by April 2, 2009.

Thank you for attending tonight's public hearing.

Project Conclusion / Next Steps

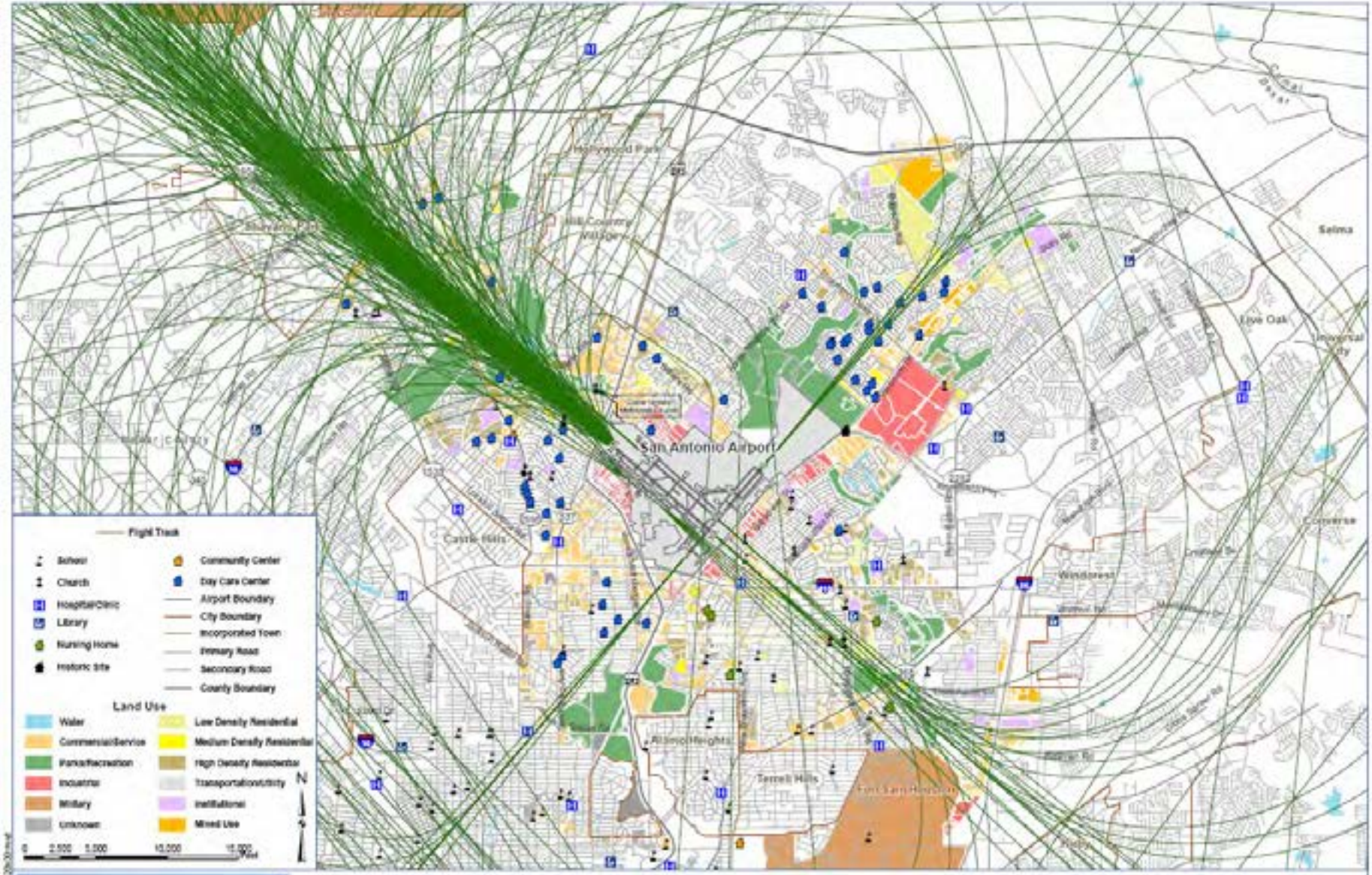
- Written comments will be accepted tonight, or may be submitted by April 2, 2009 to:
  - Steven Southers, San Antonio International Airport, 9800 Airport Blvd., San Antonio, TX, 78216. (210) 207-3402
  - Paul Blackford, Federal Aviation Administration, ASW-650, Texas Airport Development Office, 2601 Meacham Blvd., Fort Worth, TX 76193-0650

- Copies of the Draft Noise Exposure Map (NEM) Report are available for review tonight and at the following locations:
  - Central Library - 600 Soledad
  - Tobin Library at Oakwell - 4134 Harry Wurzbach Road
  - Brook Hollow Library - 530 Heimer Road
  - Edmund Cody Library - 11441 Vance Jackson
  - Thousand Oaks-El Sendero Library - 4618 Thousand Oaks
  - Trinity University, Elizabeth Huth Coates Library - One Trinity Place
  - Department of Planning and Development Services - 1901 South Alamo
  - Office of the City Clerk, City Hall Building - 100 Military Plaza
  - Aviation Dept., Noise Mitigation Office - 9700 Airport Blvd., Terminal 2, 2nd Floor

- In the Final NEM Report, the Airport will respond to all public comments.

- Study results will be presented to City Council in April.

- The Final Report will then be submitted to the FAA.

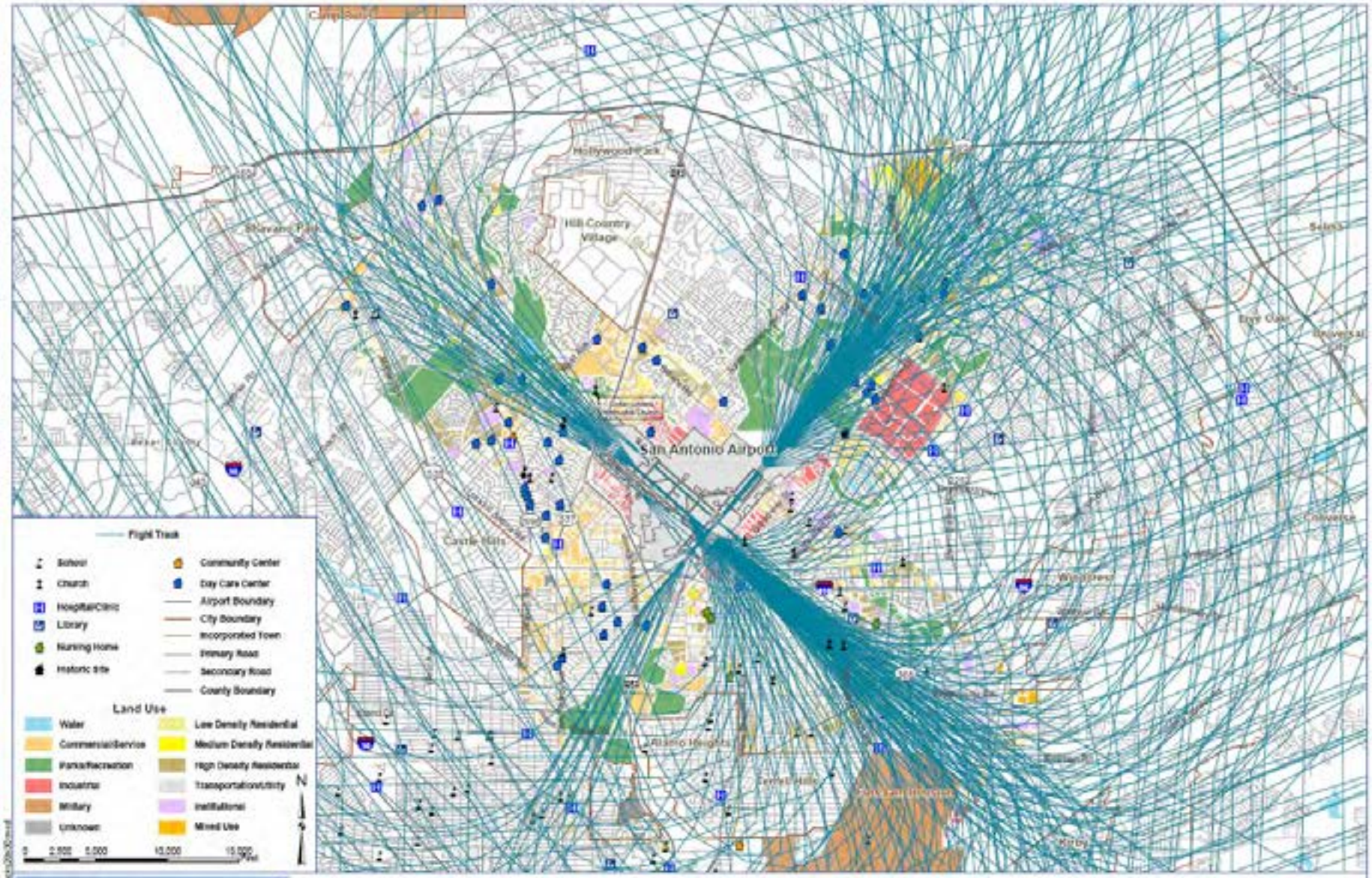


Arrival Flight Tracks Map

SAN ANTONIO AIRPORT SYSTEM

wyle

Sources: US Census TIGER/Line 2006; San Antonio Government, Wyle 2006; Coordinate System: NAD 83 State/Plane Texas South Central FIPS 4204 Feet



Departure Flight Tracks Map

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wyle

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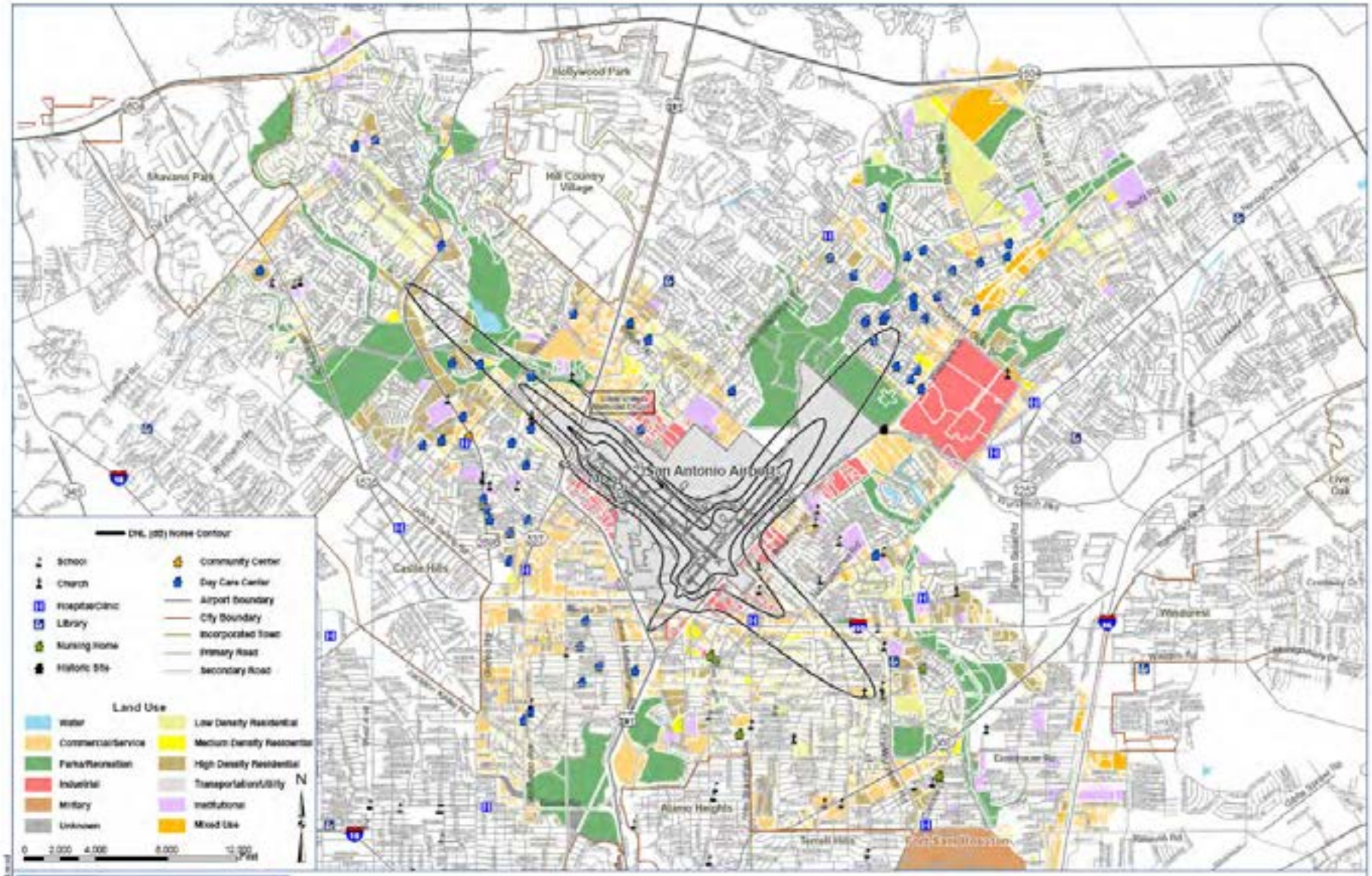

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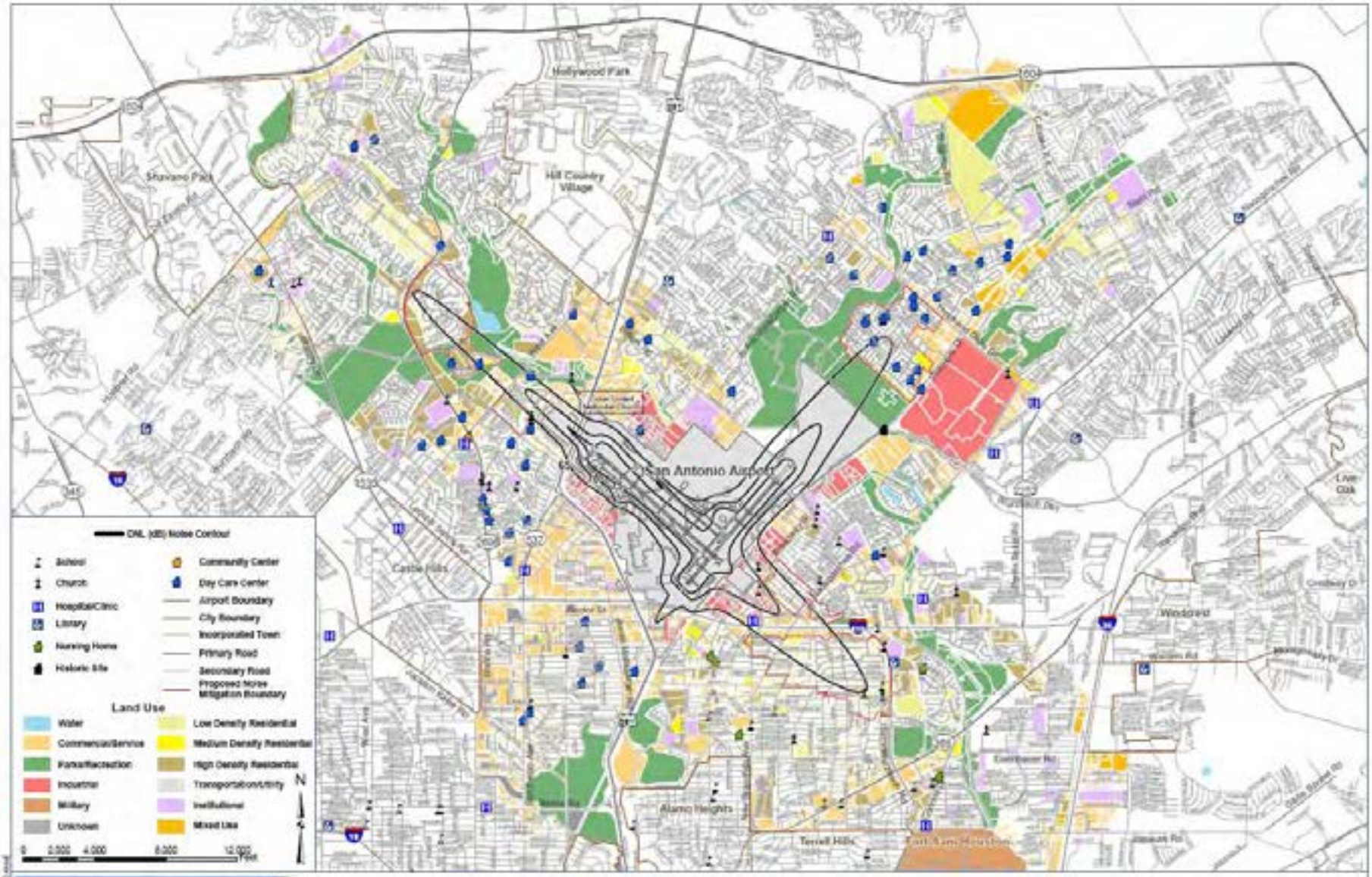

SAN ANTONIO AIRPORT SYSTEM

Future Conditions 2014 Noise Exposure Map

wyle

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Airport Noise Compatibility Study: Overview and Results

Public Workshop / Public Meeting
January 27, 2009
Holy Spirit Catholic Church

Clint Morrow, Wyle Aviation Services

Introduction

1. Project Overview
   - Study Goals
   - Public Process
   - Airport Overview
   - Noise Basics
2. Noise Analysis and Results
   - Existing Conditions 2009
   - Future Conditions - Forecast for 2014
3. Noise Compatibility Program
   - Status & Next Steps

Study Goals

- Update the airport's official **Noise Exposure Maps (NEMs)**
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    - How many operations occur at SAT on an average day?
    - How do Air Traffic Controllers and pilots determine which runway to use?
    - What types of aircraft operate at SAT?
    - How does this affect noise levels around SAT?
  - Future Conditions (2014)
    - How many and what types of aircraft will fly into and from SAT in 2014?
    - What changes at the airport will occur, that might affect where aircraft fly?
    - How much noise can I expect to hear in the future?
- Ensure that the airport's existing **Noise Compatibility Plan (NCP)** addresses current and future noise exposure at SAT
  - How has the airport addressed noise?
  - How will the forecast noise exposure be mitigated?
  - What programs exist, and how will they change in the future?

Public Process

- Today's public meeting begins the process of public review and input required by the FAA
- A follow-up public hearing will be held in late February or early March
- Afterwards, the Airport will respond to all comments received
- Study results will be presented to City Council in early March
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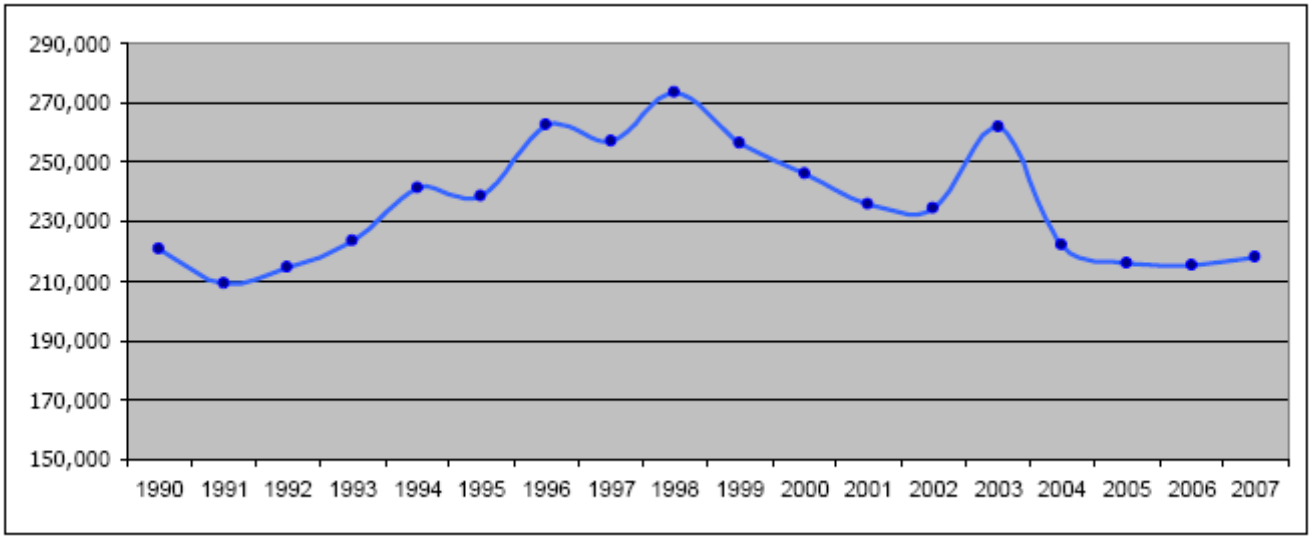
Airport Overview

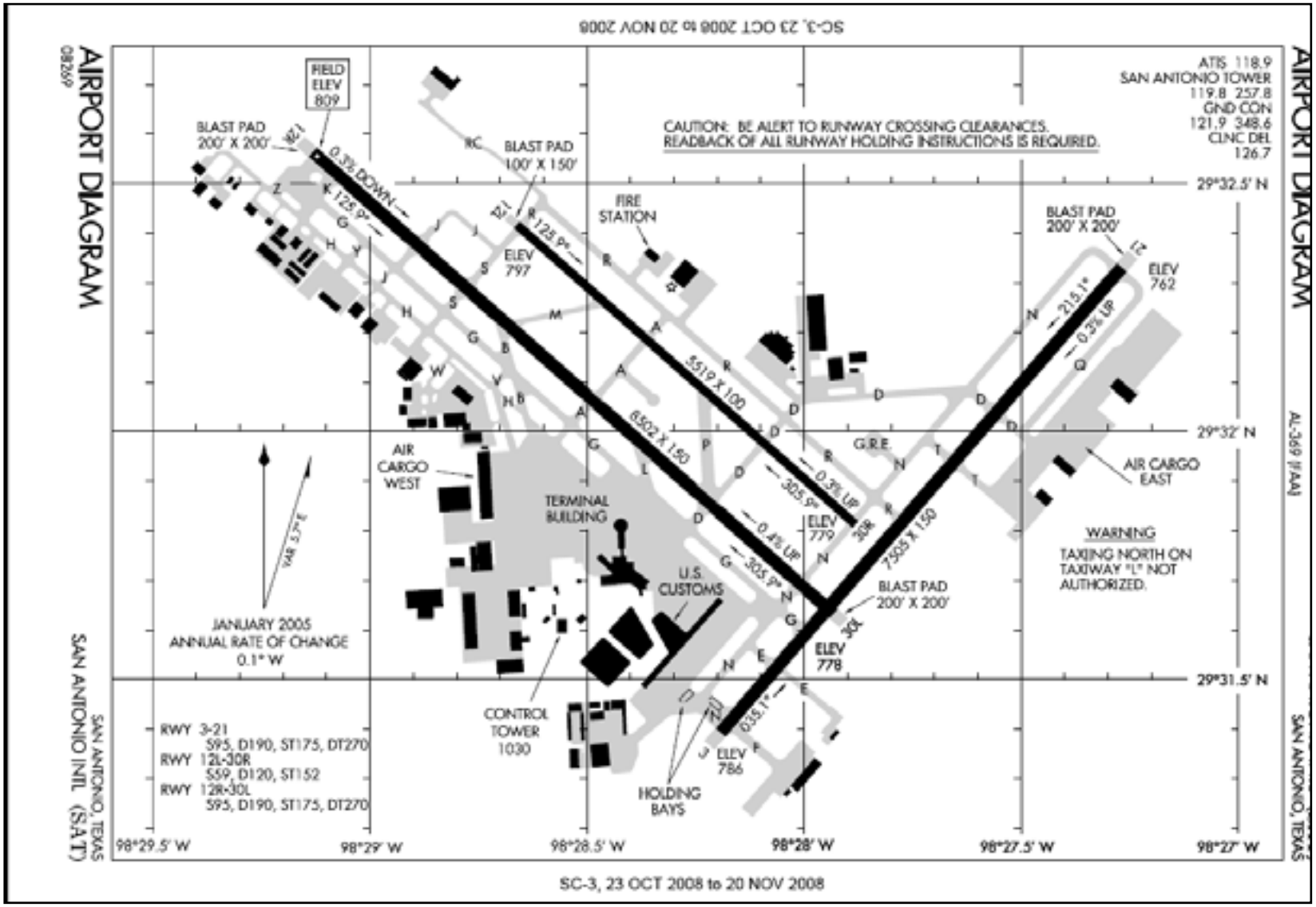
- San Antonio International Airport (SAT)
- SAT & Stinson Municipal Airport are operated by the City of San Antonio Aviation Department
- Two U.S. Air Force bases are located within 11 miles of SAT

Table 2-1. Annual Aircraft Operations, 1990 – 2007



Source: FAA ATADS 2009

Airport Layout



SOURCE: FAA

Typical Aircraft at SAT

AIR CARRIER

Heavy Jet

Large Jet

Regional Jet

GENERAL AVIATION

Business Jet

Turbo-Prop

Piston-Prop

SOURCE: WIKIPEDIA.ORG

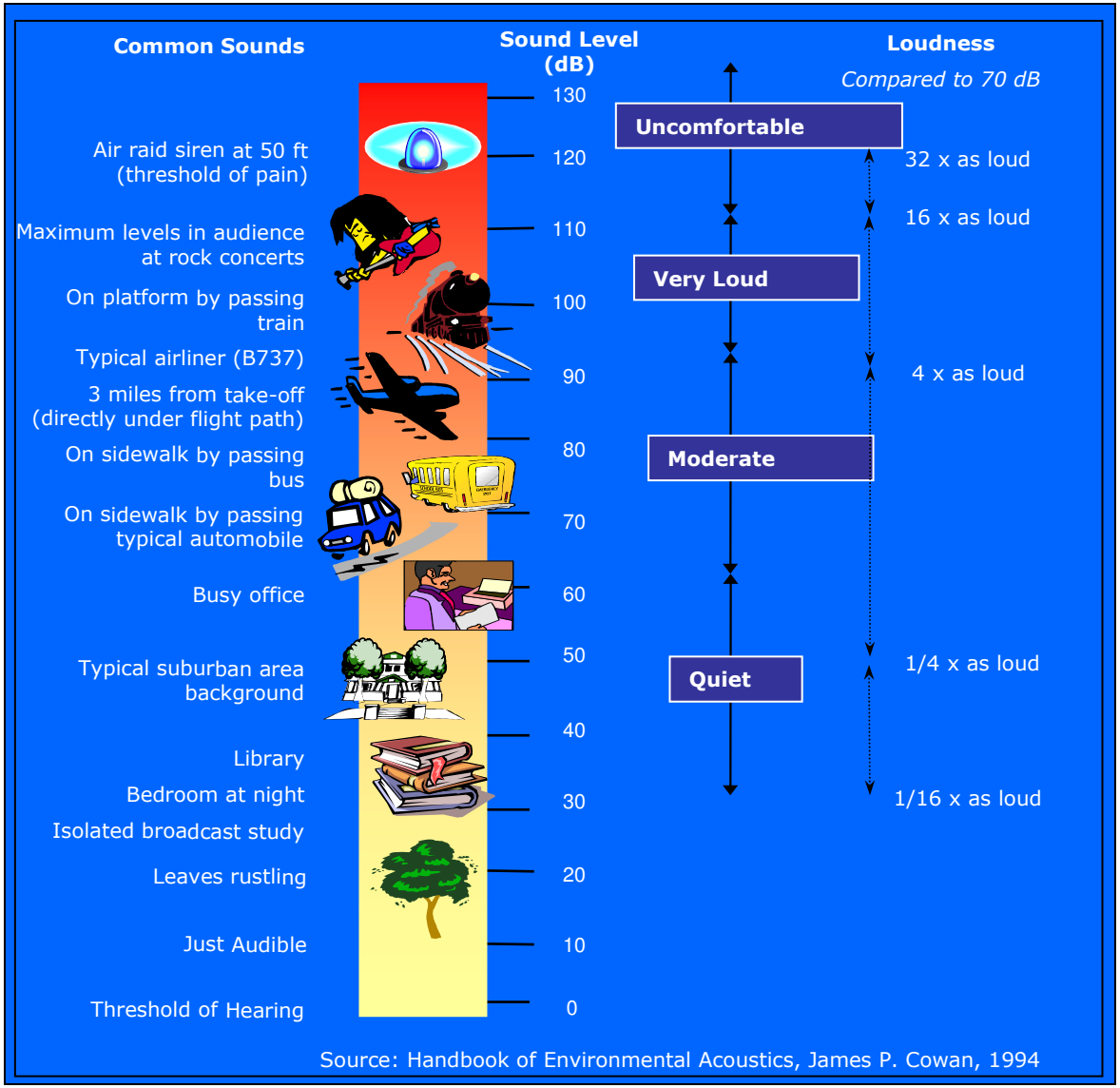
Noise Basics

- Noise is “unwanted sound”
- Decibels (dB) are the logarithmic units used to express sound levels
- Adding noise levels:

  70 dB + 70 dB = 73 dB

- Example: Normal conversation has a sound level of 60 to 65 dB

Common Noise Sources



Source: Handbook of Environmental Acoustics, James P. Cowan, 1994

Noise Metric and Model

- Day-Night Average Sound Level (DNL)
  - The FAA-standard **noise metric** for long-term noise exposure resulting from aircraft operations at civilian airfields
  - Adds a 10-decibel “penalty” to nighttime noise levels (from 10:00 PM to 7:00 AM)
- Integrated Noise Model (INM)
  - Aircraft noise prediction model developed by the FAA
  - Required tool for federally-funded modeling of noise exposure around civilian airports
  - Operations are modeled for the **Annual Average Day (AAD)**
  - Noise measurements are not required to run the model

Noise Model Inputs: Existing Conditions

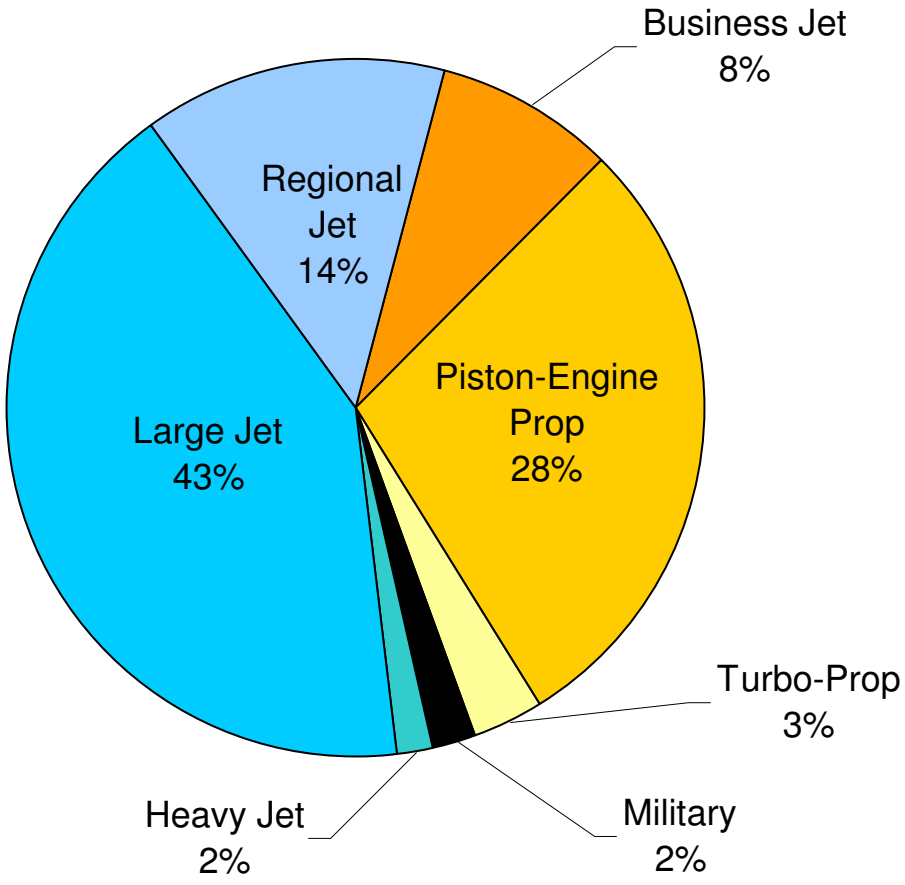
Operations

- Number of total annual arrivals and departures at SAT
- Reported by operator category
- Data comes from FAA reports and Air Traffic Control Tower
- Local operations are fewer than 1 per day

Category	Annual Operations
Itinerant	
Air Carrier and Cargo	109,797
Air Taxi/Commuter	21,356
General Aviation	88,010
Military	4,115
Total	223,278
Local	
Civil (General Aviation)	183
Military	40
Total	223
Grand Total	
All	223,501
Source: ATADS 2008; SAT ATCT	

Fleet Mix

- The collection of all types of aircraft at SAT
  - Over 60 different aircraft were modeled in INM
- Three data sources were utilized
  - SAT Landing Fee Reports
  - SAT Noise and Operations Monitoring System (NOMS)
  - Dept. of Transportation



Temporal Operations

- Percentage of day vs. night operations
  - Effects DNL
- Determined from SAT Noise and Operations Monitoring System (NOMS)
- Heavy Jet (cargo) operations have a different distribution

Category	Time of Day	Operation Type	
		Arrival	Departure
Heavy Jet	Day	45%	59%
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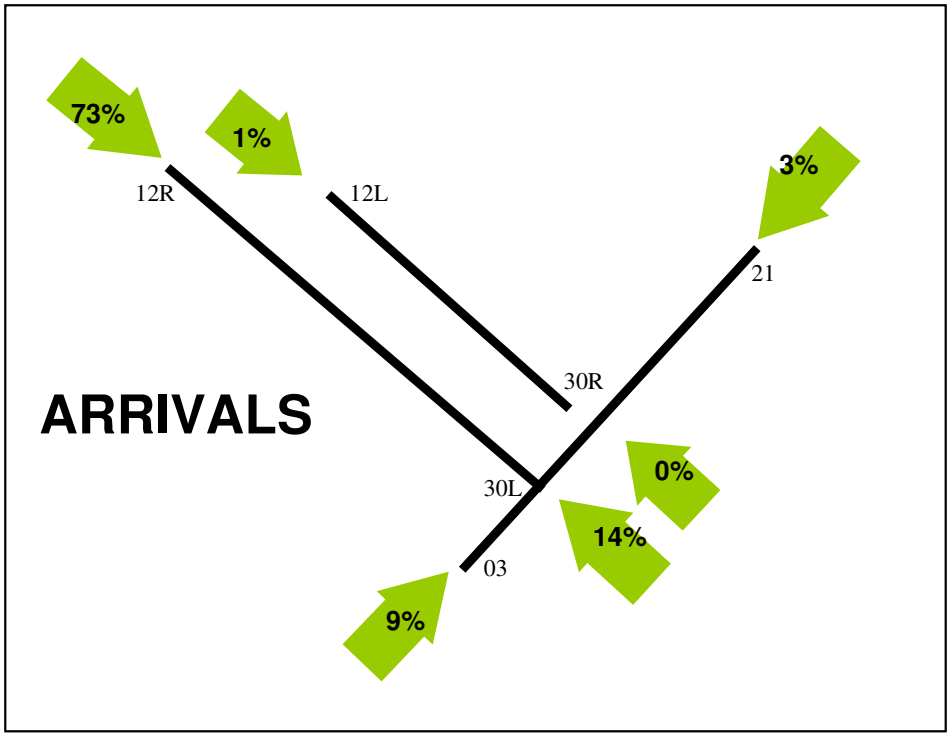
Large Jet	Day	82%	86%
	Night	18%	14%
Military	Day	90%	94%
	Night	10%	6%
Propeller	Day	89%	82%
	Night	11%	18%
Small Jet	Day	94%	92%
	Night	6%	8%
Overall	Day	87%	89%
	Night	13%	11%

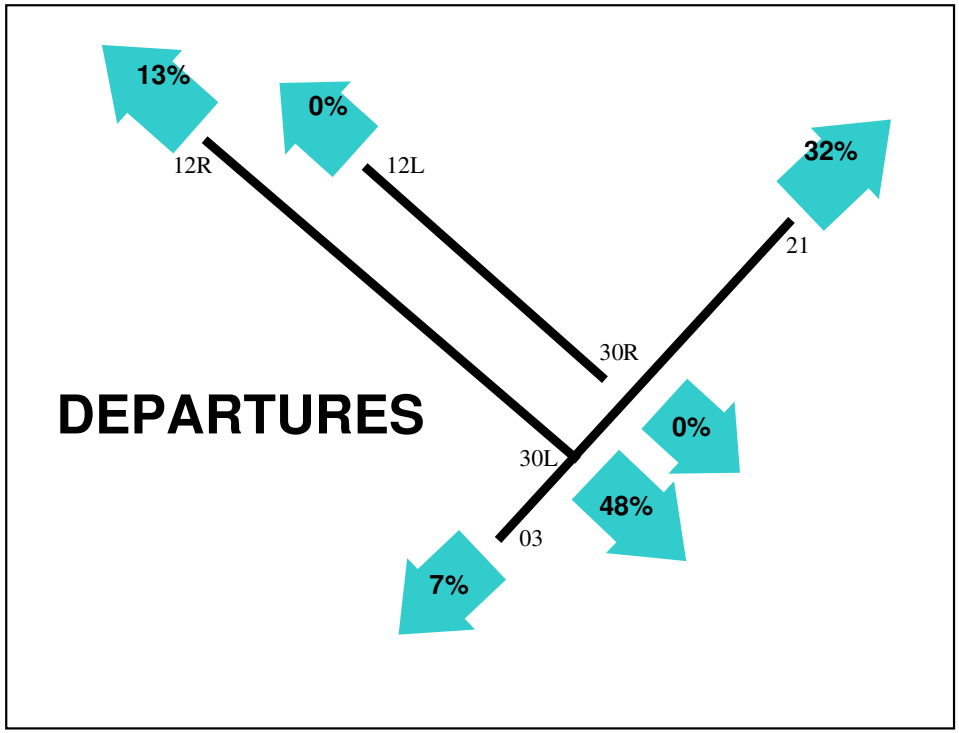
Note: Values are rounded to the nearest percent. Totals are subject to rounding errors.

Source: SAT NOMS

Runway Usage

- Percentage utilization of each runway
- Determined from SAT Noise and Operations Monitoring System (NOMS)





Flight Tracks

- Radar data from the NOMS system is used to develop two-dimensional flight trajectories modeled in INM
- For each runway the number of operations on each modeled track is determined
- The following two slides show INM arrival and departure tracks for each runway
  - Each track has a different number of operations
  - Some tracks are only used by certain aircraft
  - Runways with highest percentage of operations have more modeled tracks

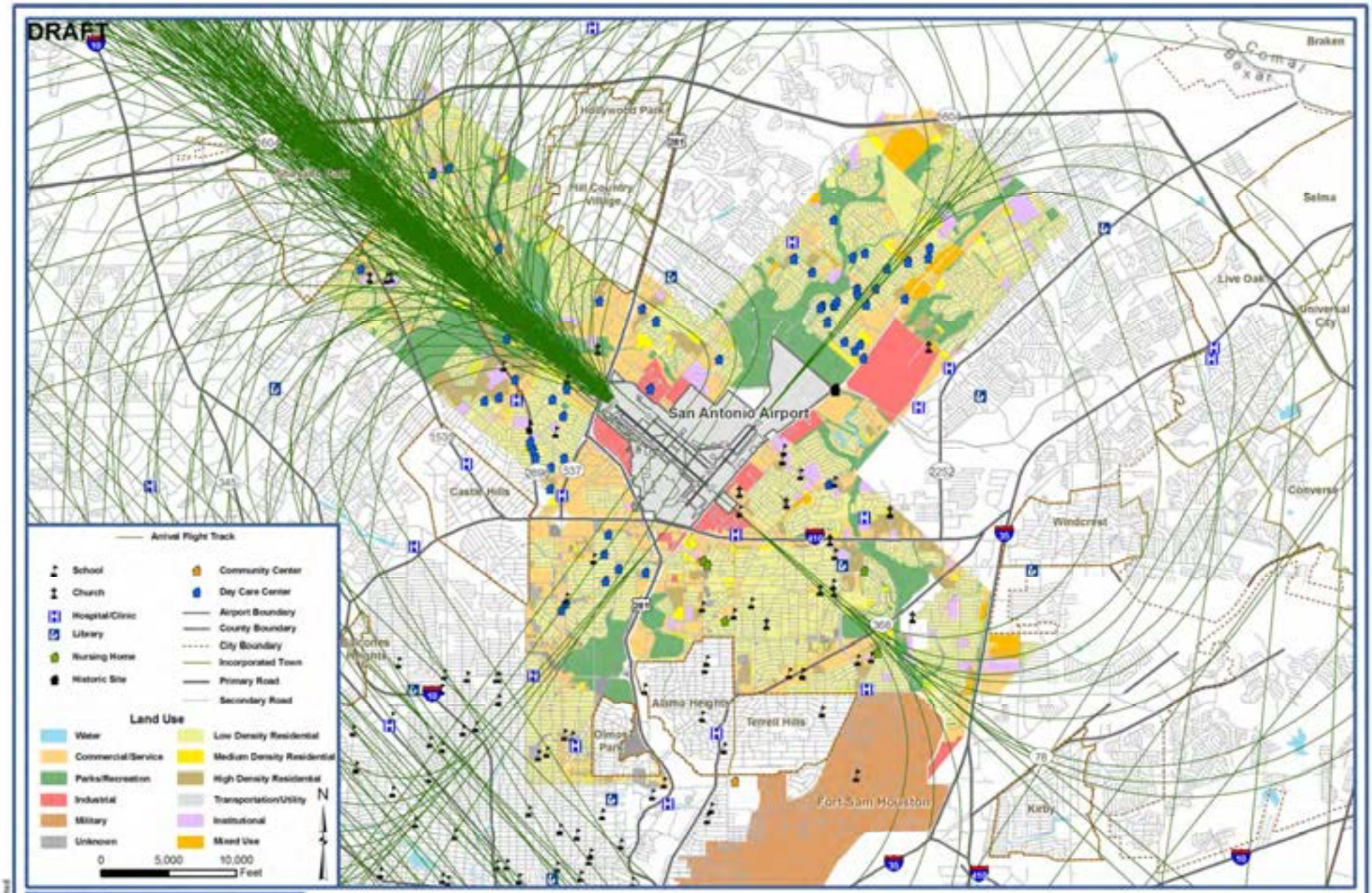


Figure 3-2. Arrival Flight Tracks

SAN ANTONIO AIRPORT SYSTEM

wyle

Sources: US Census TIGER/Line 2000, San Antonio Government, Wyle 2008 Coordinate System: NAD 83 StatePlane Texas South Central FIPS 4204 Feet

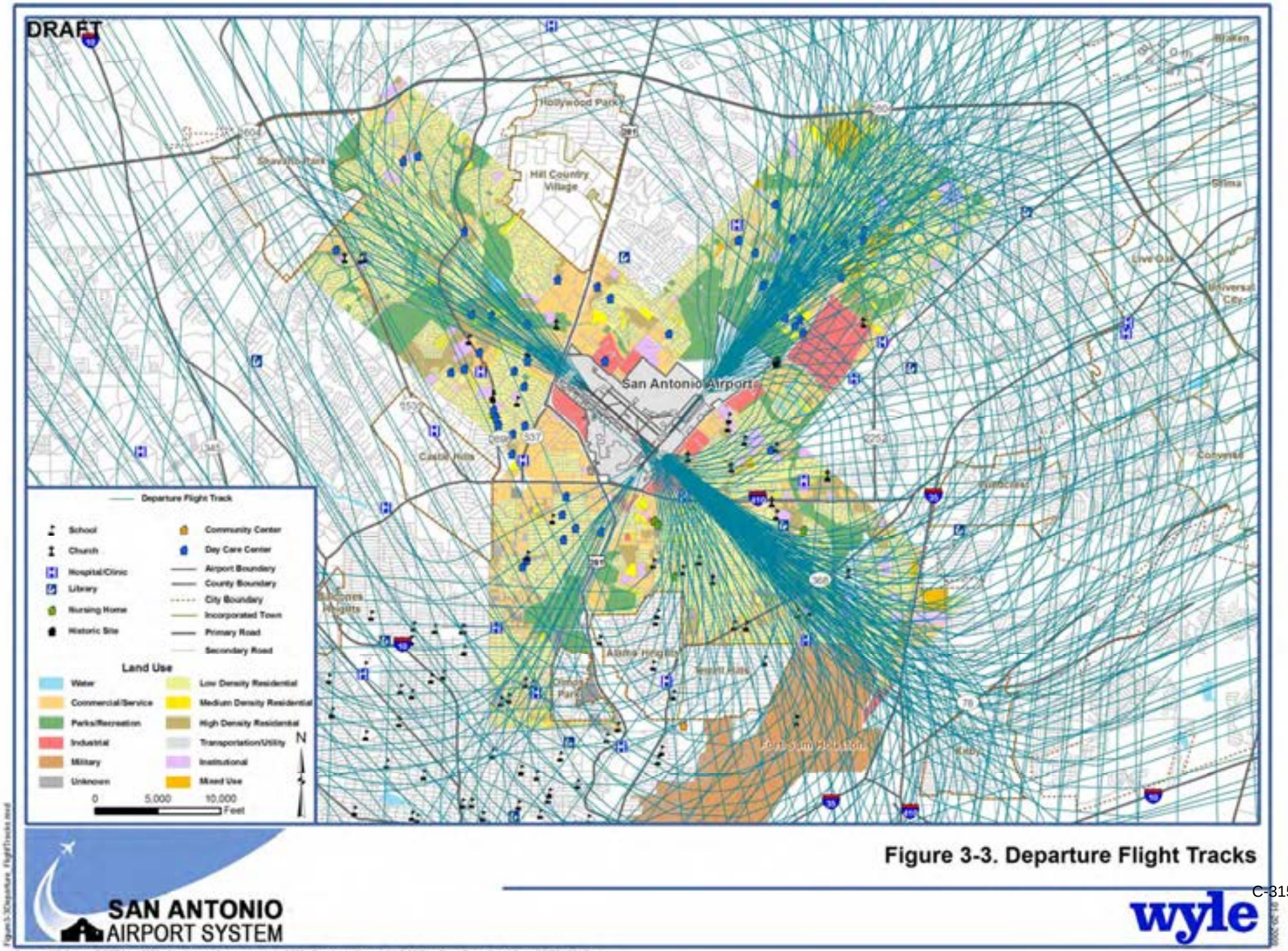


Figure 3-3. Departure Flight Tracks

SAN ANTONIO AIRPORT SYSTEM

wyle

Sources: US Census TIGER/Line 2000, San Antonio Government, Wyle 2008 Coordinate System: NAD 83 StatePlane Texas South Central FIPS 4204 Feet

Future Conditions: 2014 Forecast

Future Conditions 2014

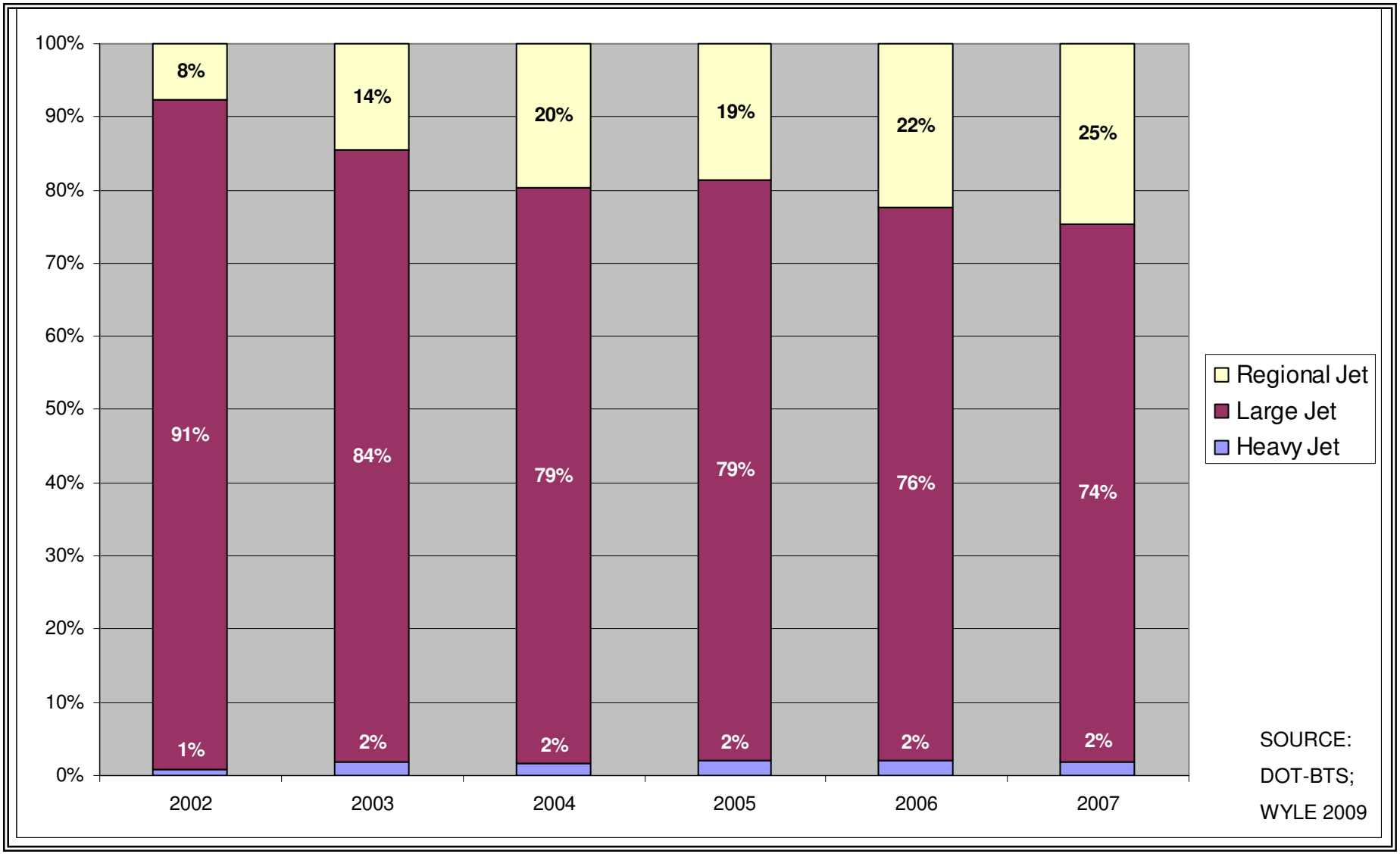
- Projected changes from 2009
  - Approximately 229,000 annual operations are projected by FAA, about a **3% increase** from 2009
  - The percentage of regional jets is forecast to increase by nearly 10% and the percentage of larger aircraft is expected to decrease by the same amount
  - Runway 3/21 will be extended to a total length of 8,505 feet
- Consistent with 2009
  - Overall runway utilization
  - Flight tracks
  - Day/Night operations percentages

Forecast Operations

- Numbers of annual operations projected for each aircraft operator category
- Terminal Area Forecast, published by FAA

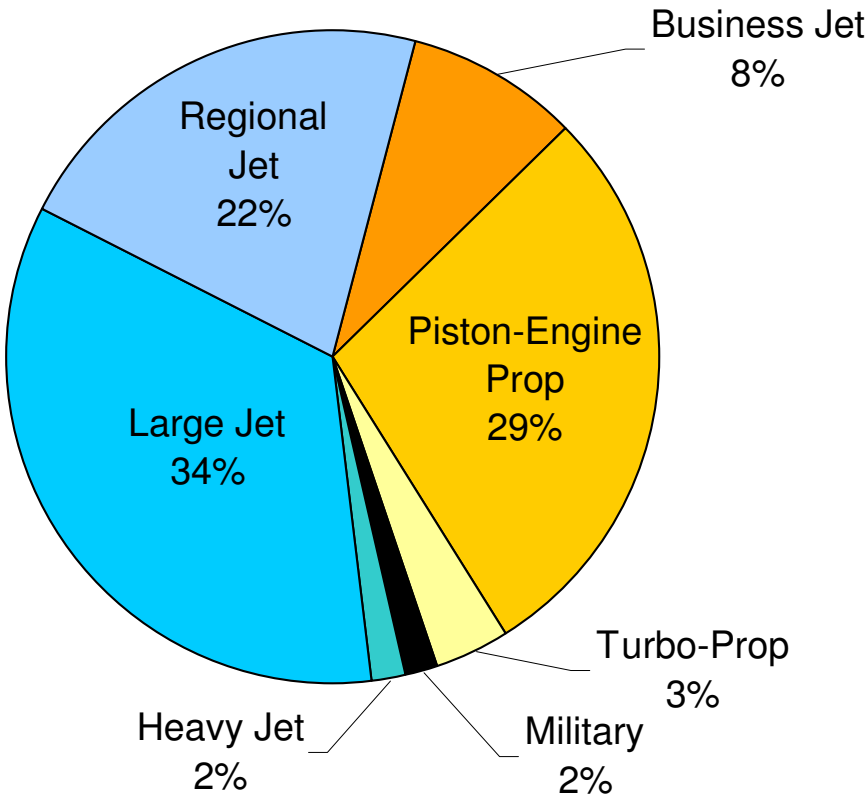
Category	Annual Operations 2014	Percent Change from 2009*
Itinerant		
Air Carrier and Cargo	129,762	2.5%
Air Taxi/Commuter	4,633	
General Aviation	90,926	3.3%
Military	4,107	-0.2%
Total	229,428	2.8%
Local		
Civil (General Aviation)	183	0%
Military	40	0%
Total	223	0%
Grand Total		
All	229,651	2.8%

Historical Air Carrier Fleet Mix



Forecast Fleet Mix

- Projected based on historical analysis
  - Dept. of Transportation database
- Projected fleet mix at SAT
  - Percentage of Regional Jets increased from 2009
  - Over 60 different aircraft were modeled in INM
  - Older aircraft types decrease in 2014



Noise Model Results

Noise Model Results

- INM used to compute DNL for 2009 and 2014 Noise Exposure Maps
  - Annual Average Day
  - 2009 used to set a baseline
  - 2014 used for noise mitigation and planning
- Local land use data collected from City
  - Shown on NEMs
  - Impacts computed and shown in tables

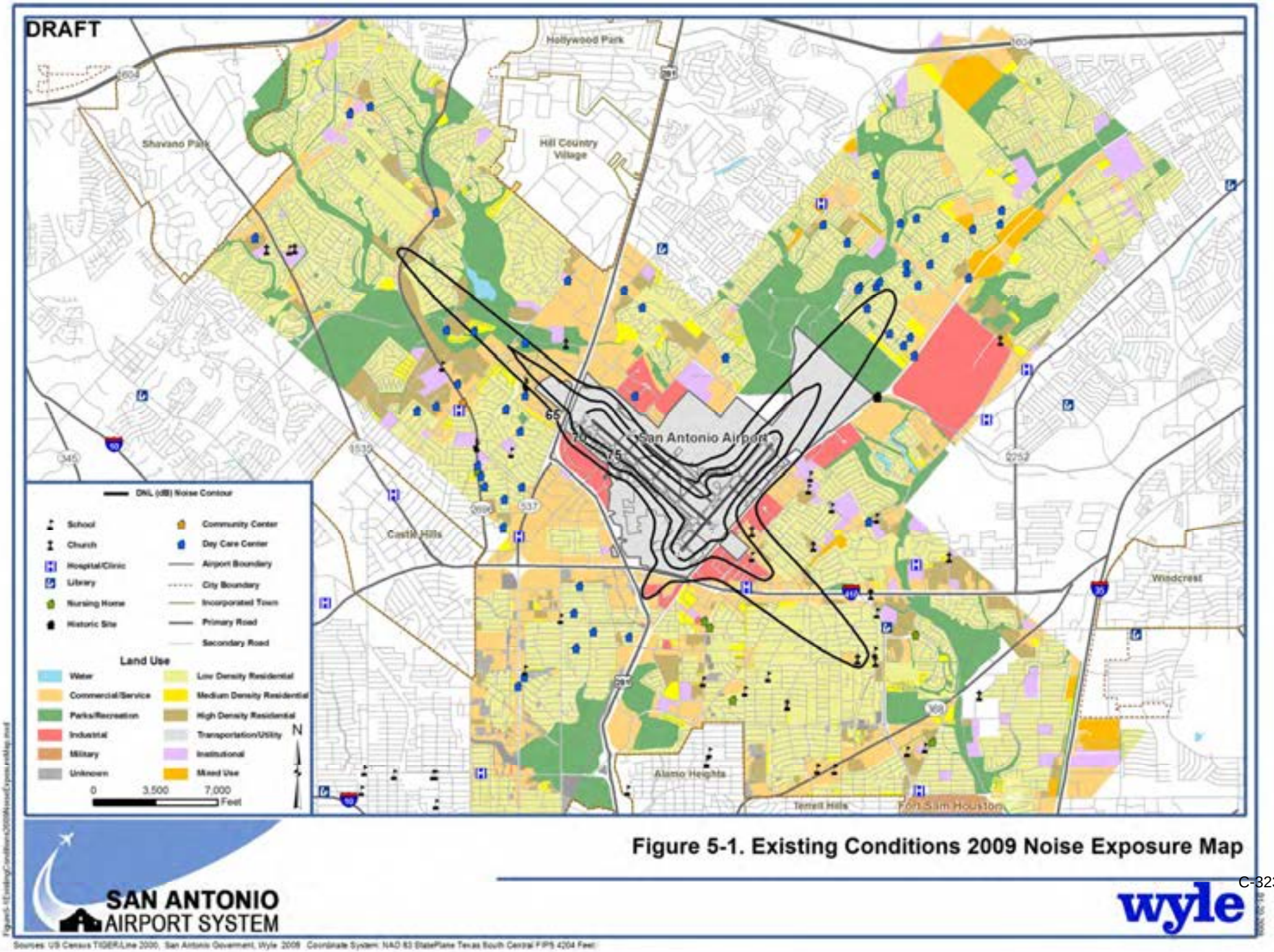


Figure 5-1. Existing Conditions 2009 Noise Exposure Map

Sources: US Census TIGER/Line 2000, San Antonio Government, Wyle 2009 Coordinate System: NAD 83 StatePlane Texas South Central FIPS 4204 Feet

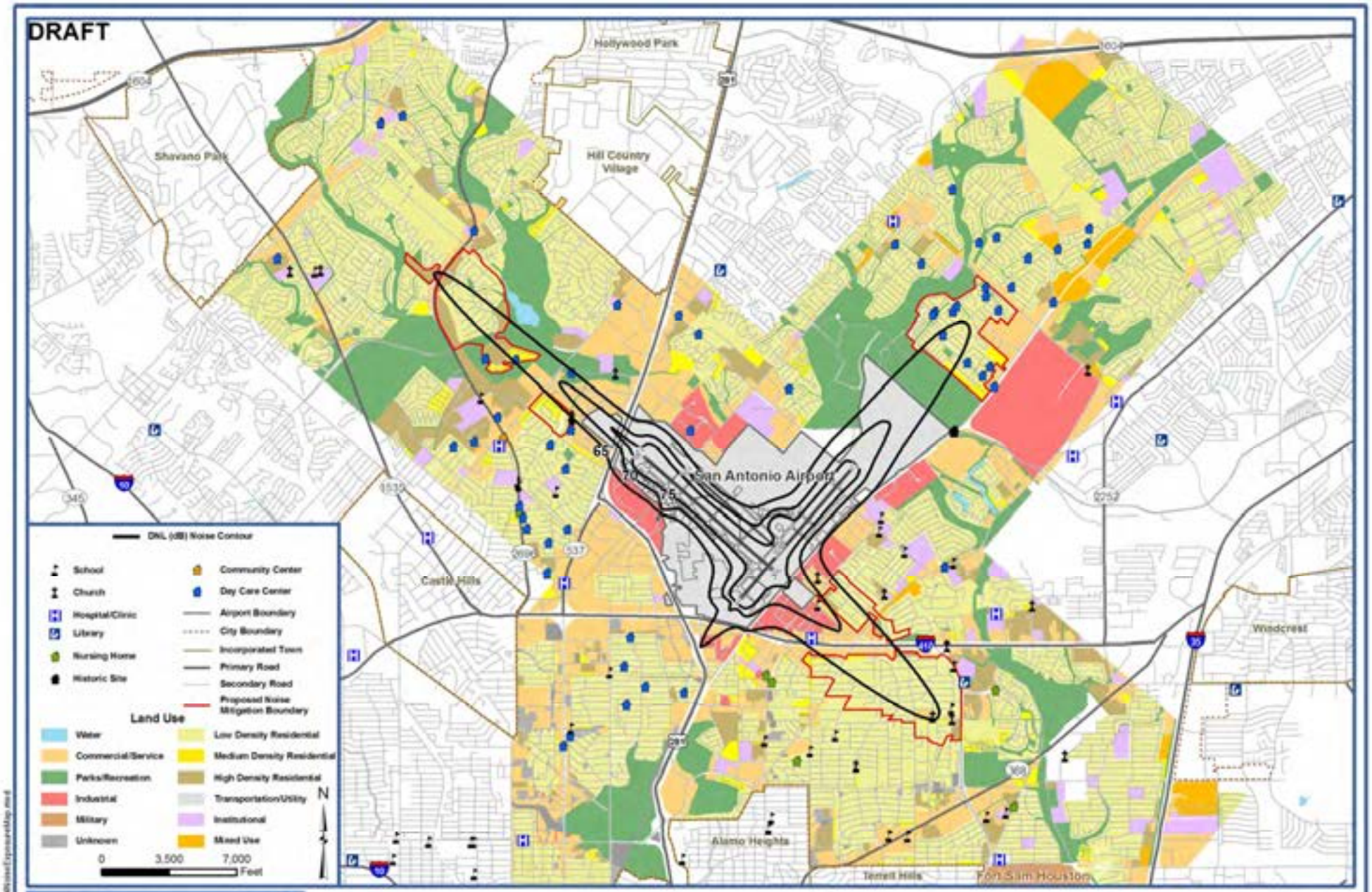


Figure 5-2. Future Conditions 2014 Noise Exposure Map

SAN ANTONIO AIRPORT SYSTEM

wyle

Sources: US Census TIGER/Line 2000, San Antonio Government, Wyle 2008 Coordinate System: NAD 83 StatePlane Texas South Central FIPS 4204 Feet

Land Use Analysis

- 2014 Noise Exposure Map used to determine noise impacts at SAT
- U.S. Census used to determine population impacted

Category	DNL Contour Level			
	65 - 70 dB	70 - 75 dB	75 + dB	65+ dB
Land Use Impacts (Acres)				
Airport Property	621	497	500	1,618
Low Density Residential	335	-	-	335
Commercial Services	225	41	-	266
Parks/Recreation	220	1.4	-	222
Industrial	105	43	-	148
High Density Residential	49	2.1	-	52
Medium Density Residential	27	-	-	27
Institutional	-	-	-	-
Unknown	0.01	-	-	0.01
Total	1,583	584	500	2,667
Population				
Residences	2,079	66	0	2,145
Estimated Population	4,293	149	0	4,442
Noise-Sensitive Facilities				
Church	2	-	-	2
Community Service	-	-	-	-
Day Care Center	3	-	-	3
Hospital	1	-	-	1
Library	-	-	-	-
Nursing Home	-	-	-	-
School	1	1	-	2

Note: Population figures are derived from determining the percentage of each census block contained within each contour band. Some values and totals subject to rounding error.

Source: U.S. Census, 2000; Wyle, 2008

Noise Compatibility Program

Noise Compatibility Program

- First established at SAT in 1990
- Most recent update approved in 2002
- This current study will update the NEMs and NCP Mitigation Measures 1 and 2
- Residential Acoustical Treatment Program (ATP)
  - To date the Airport has treated 317 homes and 216 apartment units
    - Airport has acquired Avigation Easements for each of these properties
  - Proposed noise mitigation boundaries shown in 2014 NEM are subject to FAA approval
    - Over 2,100 residences included in the Proposed Boundary
  - Residences and noise-sensitive facilities within the approved boundary will be **eligible** for treatment

Public Process: Next Steps

- A follow-up public hearing will be held in late February or early March
  - Comments may be given before or during that hearing
- Afterwards, the Airport will respond to all public comments
- Study results will be presented to City Council in early March
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Conclusion

- For more information contact **Jerry Rankin**, San Antonio International Airport, 9800 Airport Blvd., San Antonio, TX, 78216
  - Noise office: (210) 207-3471
- The Draft Study report is available at public locations and on the internet:
  - http://www.sanantonio.gov/aviation/info_noise.asp

Thank You

At this time you may complete a comment form or give oral comments to the court reporter.

All comments will be addressed in the Final Report submitted to FAA.

Airport Noise Compatibility Study: Overview and Results

Public Hearing
March 19, 2009
Coker United Methodist Church

Clint Morrow, Wyle Aviation Services

Introduction

1. Project Overview
   - Study Process
   - Study Goals
   - Airport Overview
   - Noise Basics
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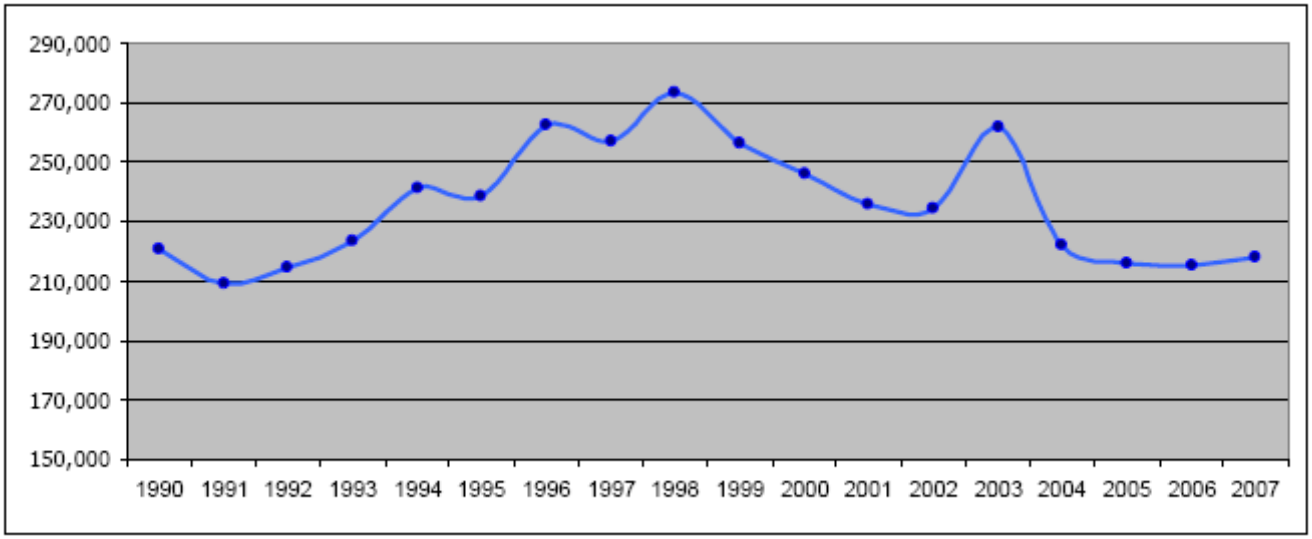

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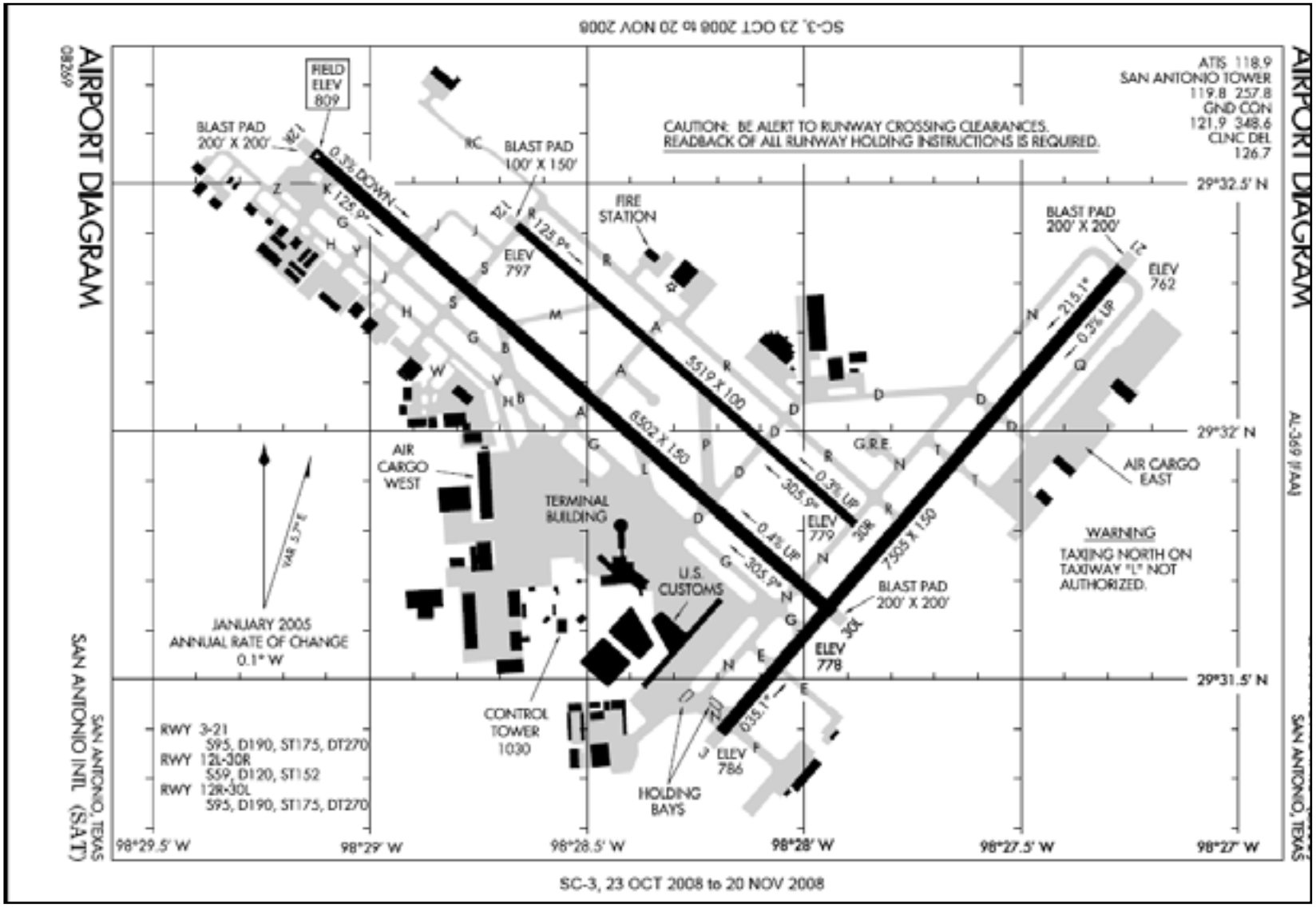

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Large Jet

Regional Jet

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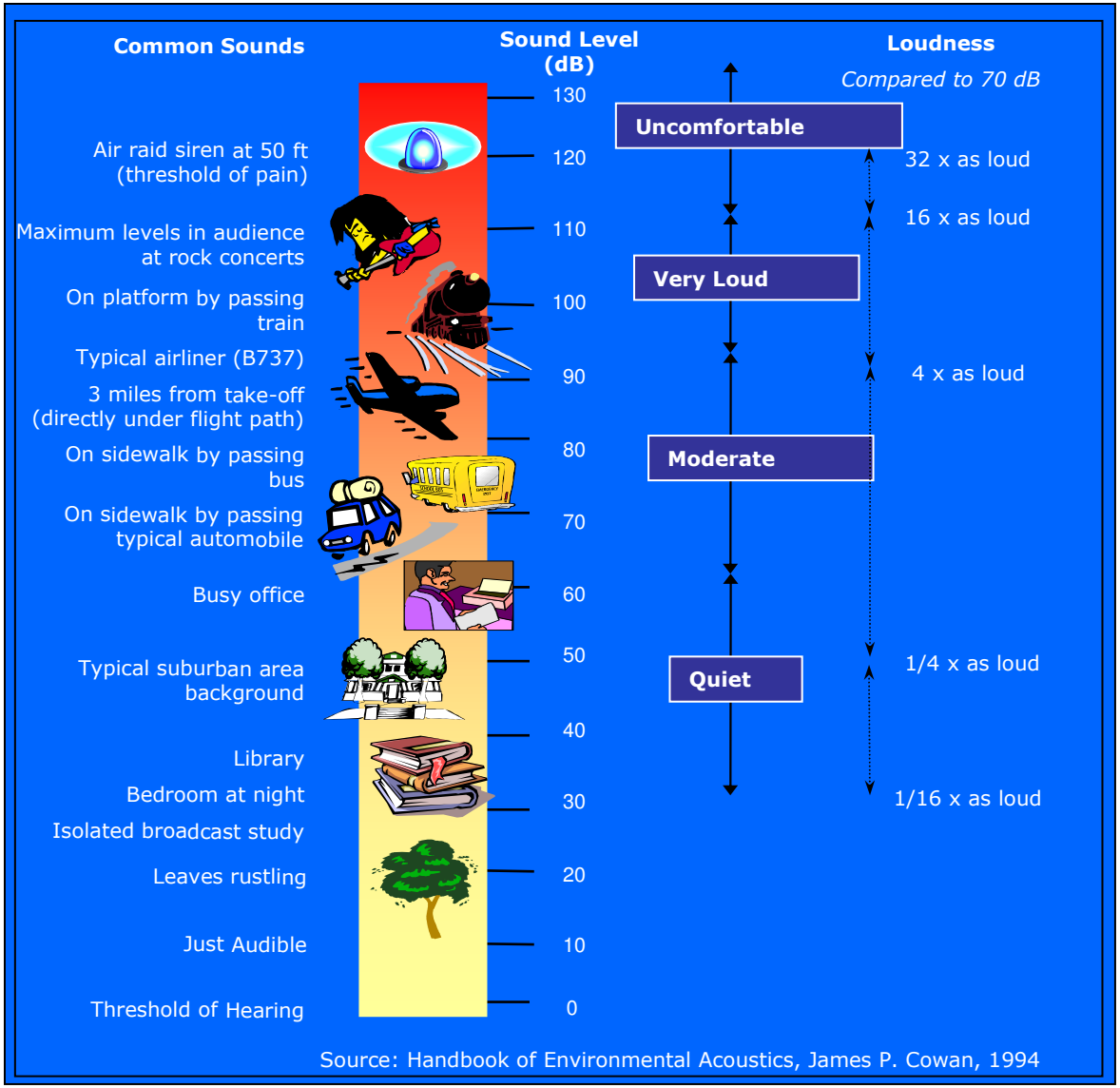

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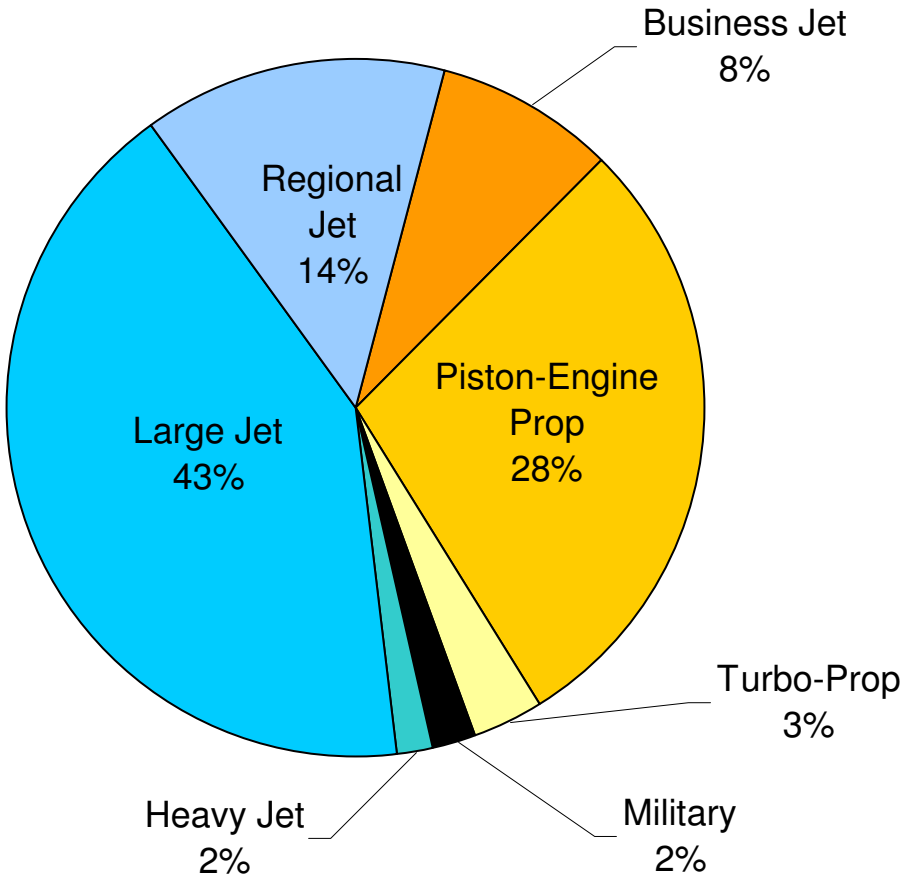

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- Percentage of day vs. night operations
  - Effects DNL
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- Heavy Jet (cargo) operations have a different distribution

Category	Time of Day	Operation Type	
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	Night	18%	14%
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	Night	10%	6%
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	Night	11%	18%
Small Jet	Day	94%	92%
	Night	6%	8%
Overall	Day	87%	89%
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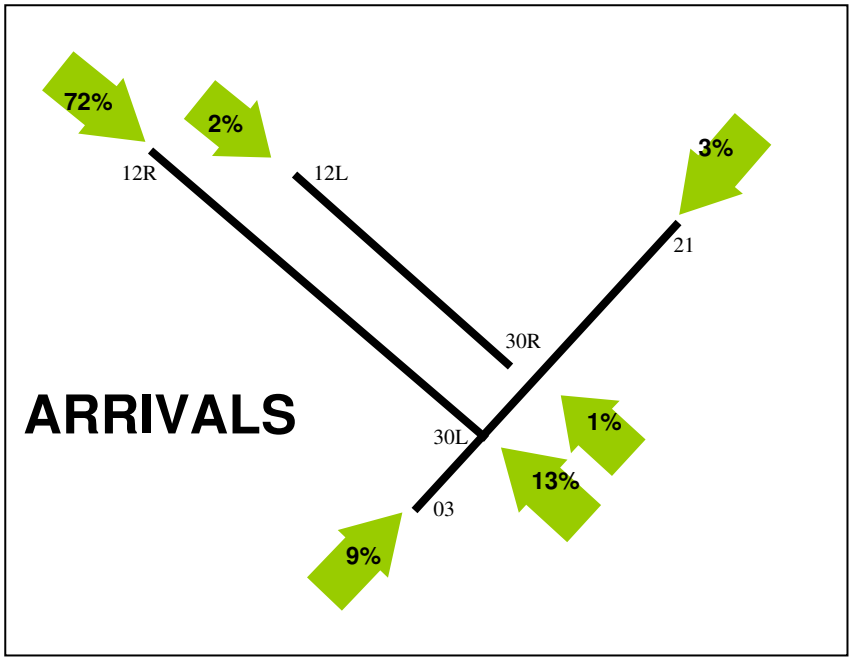
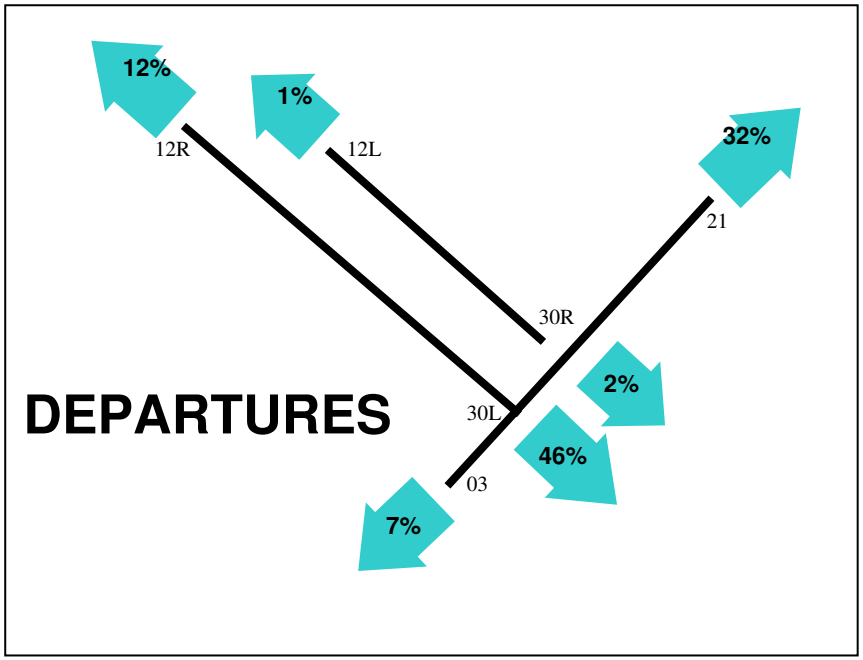
Note: Values are rounded to the nearest percent. Totals are subject to rounding errors.

Source: SAT NOMS

Runway Usage

- Percentage utilization of each runway
- Determined from SAT Noise and Operations Monitoring System (NOMS)





Flight Tracks

- Radar data from the NOMS system is used to develop two-dimensional flight trajectories modeled in INM
- For each runway the number of operations on each modeled track is determined
- The following two slides show INM arrival and departure tracks for each runway
  - Each track has a different number of operations
  - Some tracks are only used by certain aircraft
  - Runways with highest percentage of operations have more modeled tracks

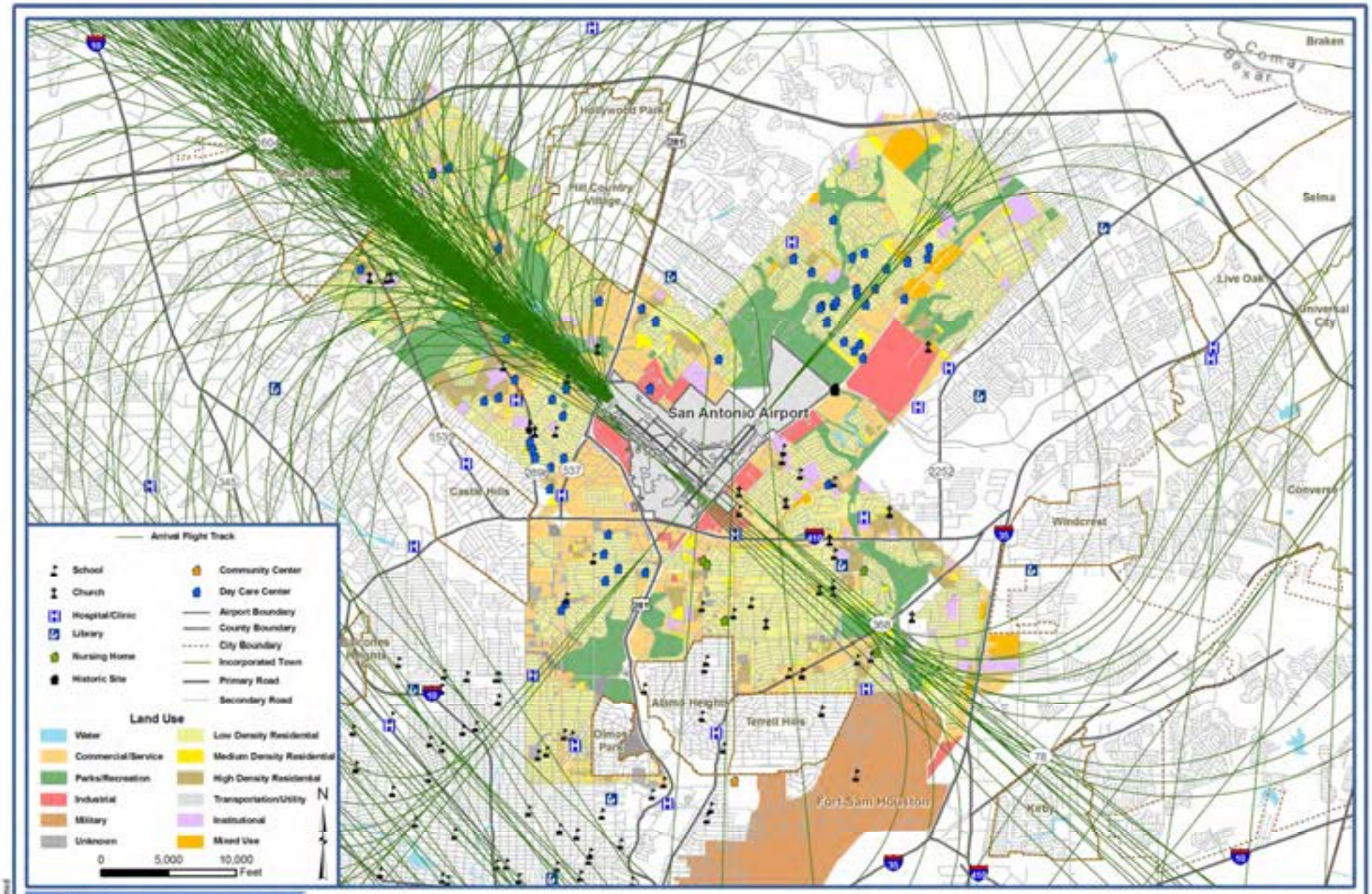


Figure 3-2. Arrival Flight Tracks

SAN ANTONIO AIRPORT SYSTEM

wyle

Sources: US Census TIGER/Line 2000, San Antonio Government, Wyle 2008 Coordinate System: NAD 83 StatePlane Texas South Central FIPS 4204 Feet

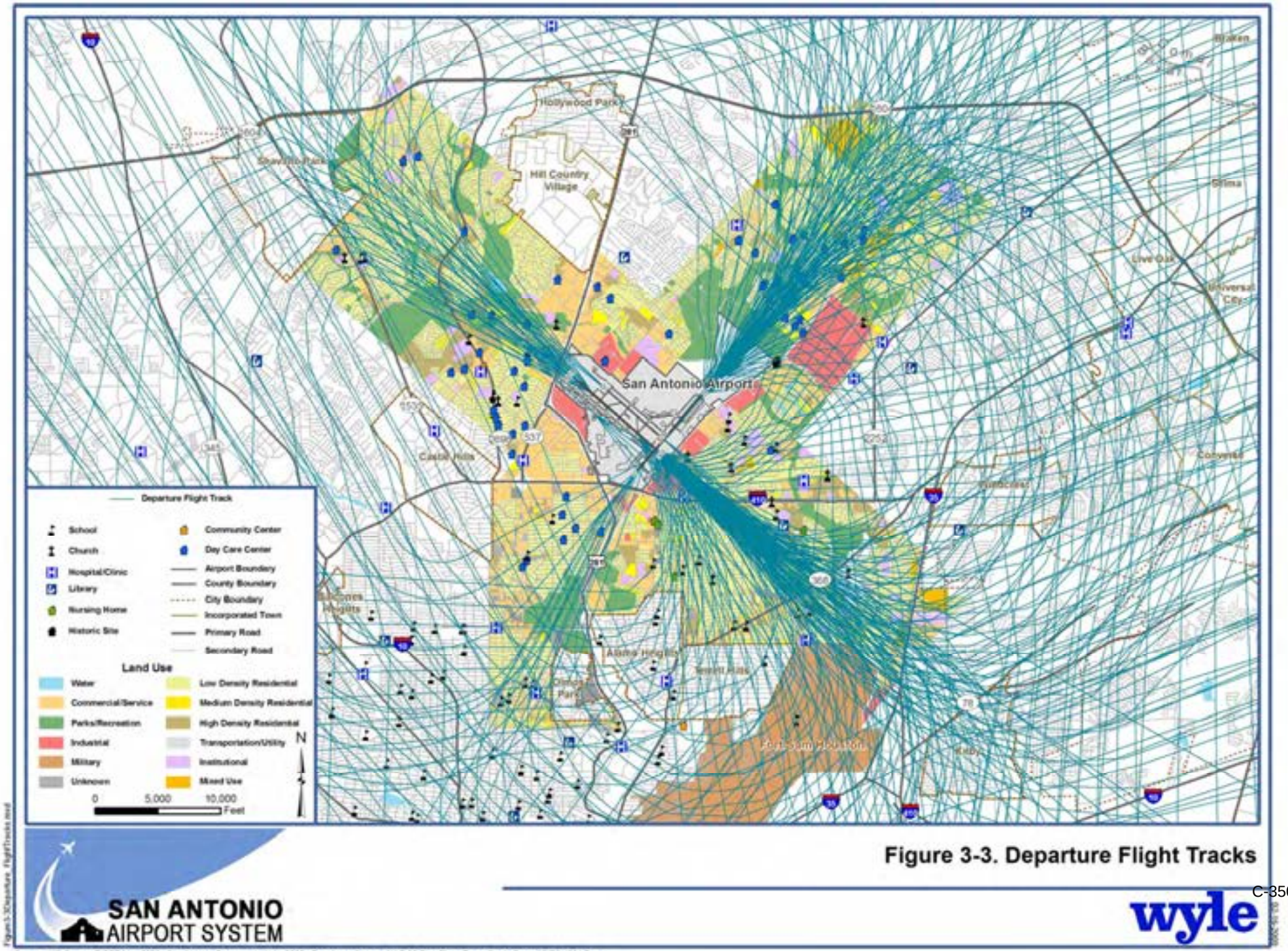


Figure 3-3. Departure Flight Tracks

SAN ANTONIO AIRPORT SYSTEM

wyle

Sources: US Census TIGER/Line 2000, San Antonio Government, Wyle 2008 Coordinate System: NAD 83 StatePlane Texas South Central FIPS 4204 Feet

Future Conditions: 2014 Forecast

Future Conditions 2014

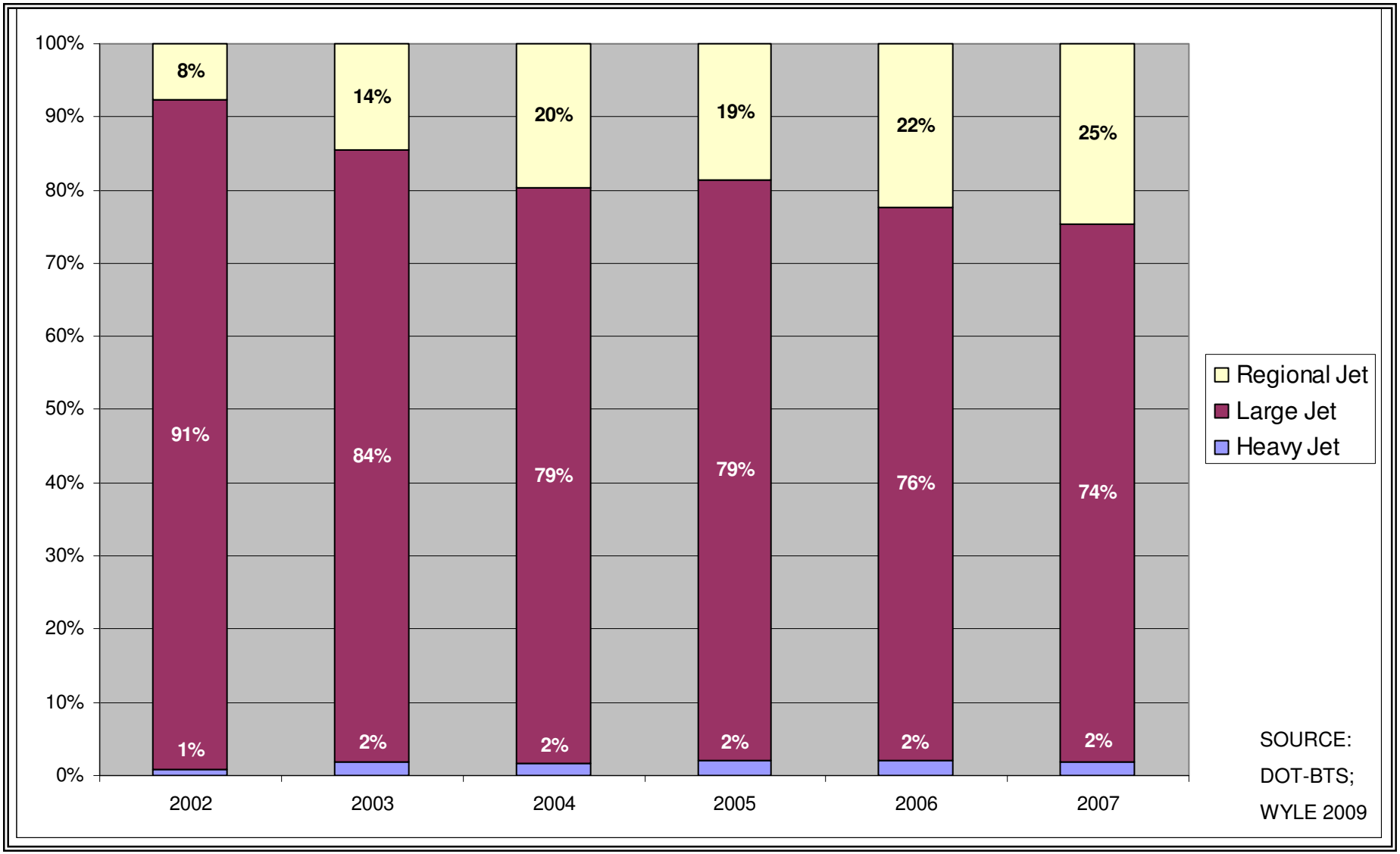
- Projected changes from 2009
  - Approximately 229,000 annual operations are projected by FAA, about a **3% increase** from 2009
  - The percentage of regional jets is forecast to increase by nearly 10% and the percentage of larger aircraft is expected to decrease by the same amount
  - Runway 3/21 will be extended to a total length of 8,505 feet
- Consistent with 2009
  - Overall runway utilization
  - Flight tracks
  - Day/Night operations percentages

Forecast Operations

- Numbers of annual operations projected for each aircraft operator category
- Terminal Area Forecast, published by FAA

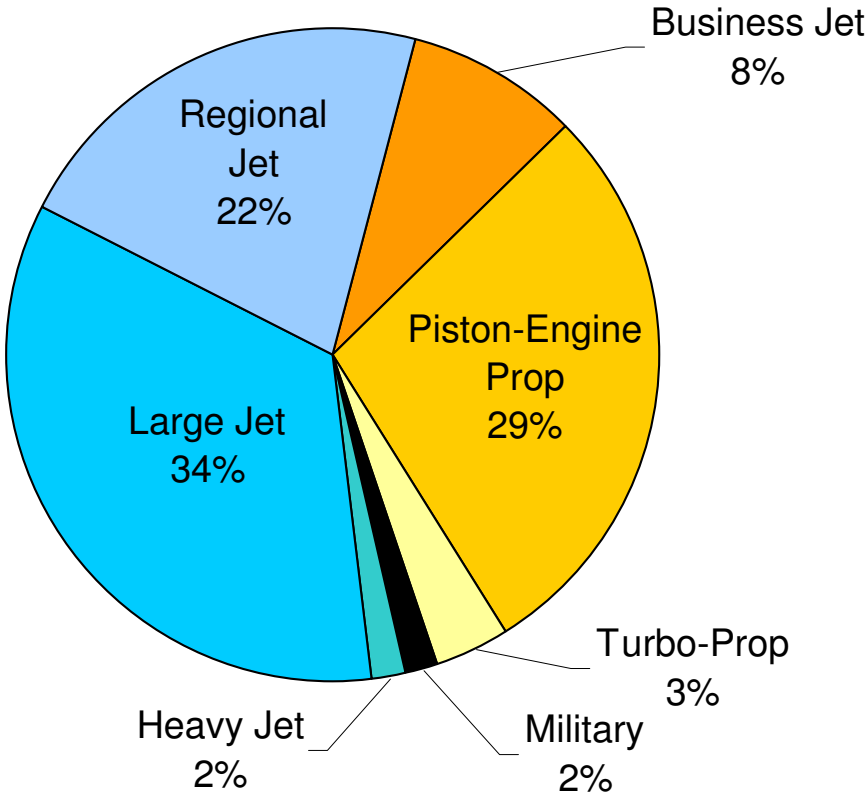
Category	Annual Operations 2014	Percent Change from 2009*
Itinerant		
Air Carrier and Cargo	129,762	2.5%
Air Taxi/Commuter	4,633	
General Aviation	90,926	3.3%
Military	4,107	-0.2%
Total	229,428	2.8%
Local		
Civil (General Aviation)	183	0%
Military	40	0%
Total	223	0%
Grand Total		
All	229,651	2.8%

Historical Air Carrier Fleet Mix



Forecast Fleet Mix

- Projected based on historical analysis
  - Dept. of Transportation database
- Projected fleet mix at SAT
  - Percentage of Regional Jets increased from 2009
  - Over 60 different aircraft were modeled in INM
  - Older aircraft types decrease in 2014



Noise Model Results

Noise Model Results

- INM used to compute DNL for 2009 and 2014 Noise Exposure Maps
  - Annual Average Day
  - 2009 used to set a baseline
  - 2014 used for noise mitigation and planning
- Local land use data collected from City
  - Shown on NEMs
  - Impacts computed and shown in tables

Report Addendum

- Addendum was published on February 18th
- Updated noise model input data
  - Following FAA review of Draft Report
  - Additional fleet mix data was made available by the Air Traffic Control staff
    - More detailed information on GA, helicopter, and Military fleets
  - Revised runway utilization and flight tracks
    - Most revisions were for shortest runway, 12L/30R
- Revisions to results (maps, tables)
  - Slightly smaller noise contours

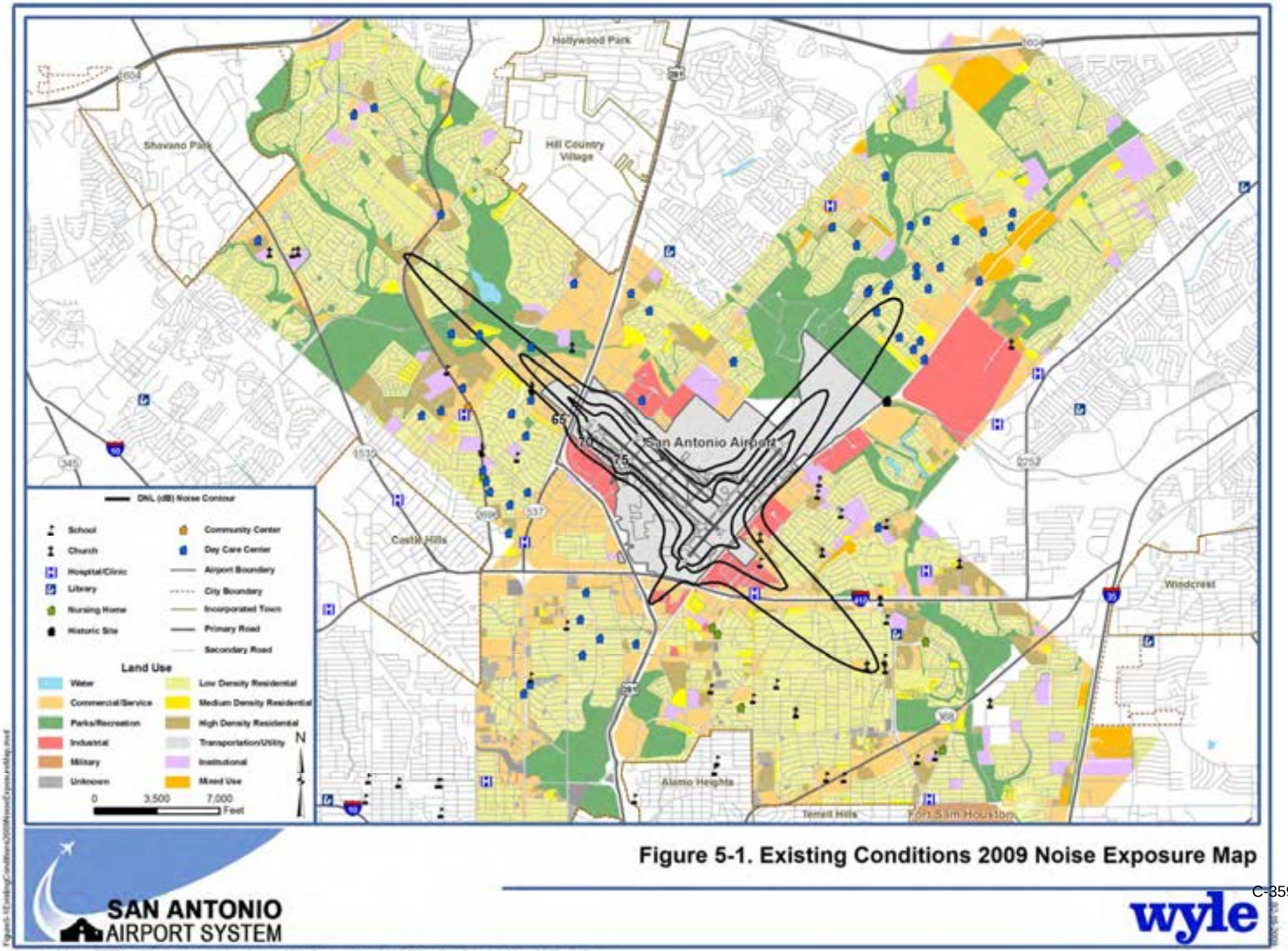


Figure 5-1. Existing Conditions 2009 Noise Exposure Map

Sources: US Census TIGER/Line 2000, San Antonio Government, Wyle 2009 Coordinate System: NAD 83 StatePlane Texas South Central FIPS 4204 Feet

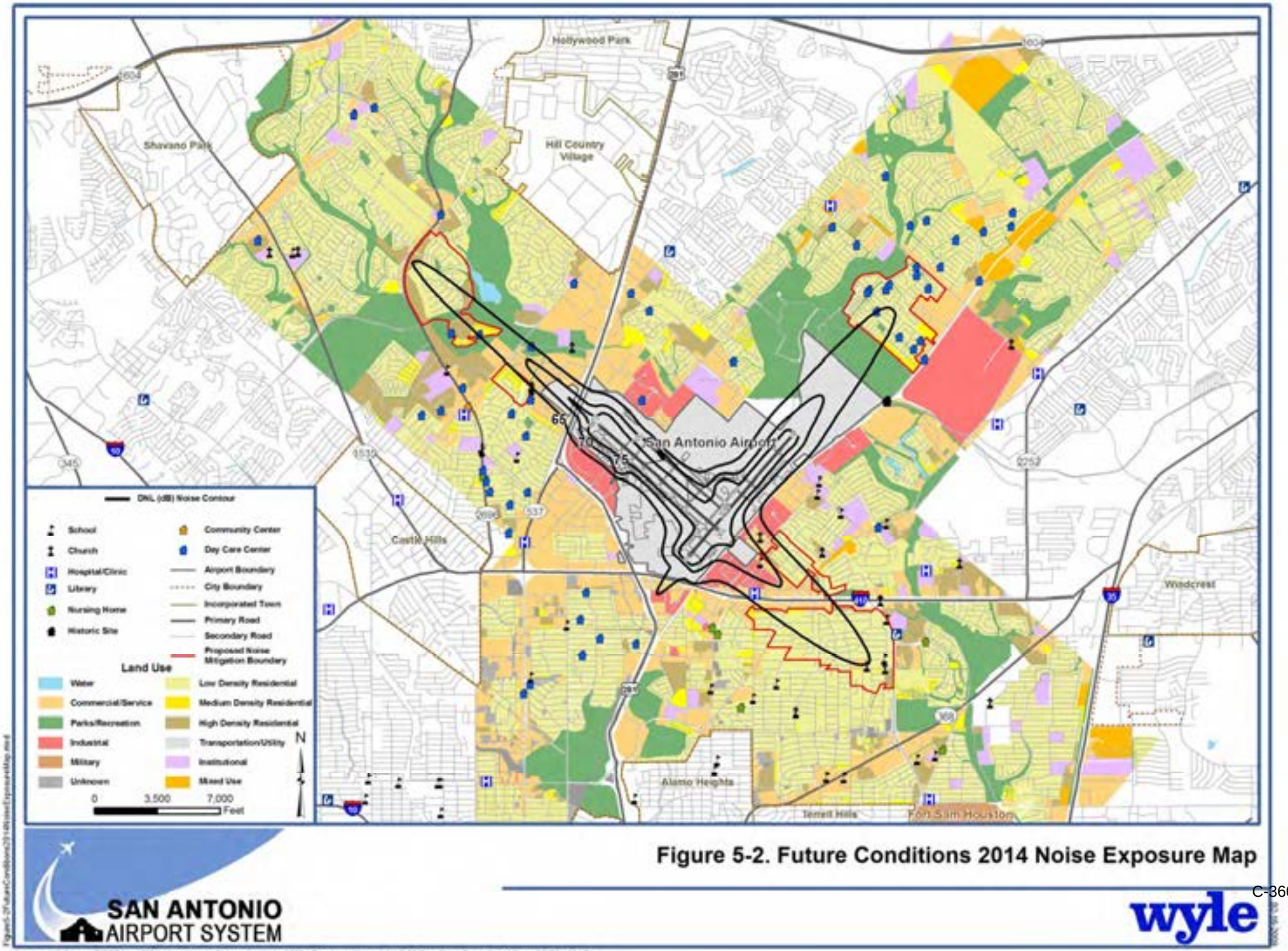


Figure 5-2. Future Conditions 2014 Noise Exposure Map

SAN ANTONIO AIRPORT SYSTEM

wyle

Sources: US Census TIGER/Line 2000, San Antonio Government, Wyle 2008 Coordinate System: NAD 83 StatePlane Texas South Central FIPS 4204 Feet

Land Use Analysis

- 2014 Noise Exposure Map used to determine noise impacts at SAT
- U.S. Census used to determine population impacted

Table 5-2. Future Conditions 2014 Noise Exposure Contour Impacts

Category	DNL Contour Level			
	65 - 70 dB	70 - 75 dB	75 + dB	65+ dB
Land Use Impacts (Acres)				
Airport Property	592.4	497.4	490.5	1,580.3
Low Density Residential	296.7	-	-	296.7
Commercial Services	215.4	37.4	-	252.8
Parks/Recreation	199.3	1.0	-	200.3
Industrial	89.6	42.5	-	132.1
High Density Residential	40.5	2.4	-	42.9
Medium Density Residential	24.9	-	-	24.9
Institutional	-	-	-	-
Unknown	0.0	-	-	0.0
Total	1,458.8	580.7	490.5	2,530.0
Population				
Residences	1,856	68	0	1,924
Estimated Population	3,821	155	0	3,975
Noise-Sensitive Facilities				
Church	1	-	-	1
Community Service	-	-	-	-
Day Care Center	3	-	-	3
Hospital	1	-	-	1
Library	-	-	-	-
Nursing Home	-	-	-	-
School	2	1	-	3

Note: Population figures are derived from determining the percentage of each census block contained within each contour band. Some values and totals subject to rounding error.

Source: U.S. Census, 2000; Wyle, 2009

Noise Compatibility Program

Noise Compatibility Program

- An NCP was first established at SAT in 1990
- Most recent NCP update approved in 2002
- This current study will update the NEMs and NCP Mitigation Measures 1 and 2
- Residential Acoustical Treatment Program (RATP)
  - To date the Airport has treated 317 homes and 216 apartment units
    - Airport has acquired Avigation Easements for each of these properties
  - Proposed noise mitigation boundaries shown in 2014 NEM are subject to FAA approval
    - Over 1,900 residences included in the Proposed Boundary
  - Residences and noise-sensitive facilities within the approved boundary will be **eligible** for treatment

Public Process: Next Steps

- Comments will be accepted tonight or may be submitted by April 2, 2009
- Afterwards, the Airport will respond to all public comments
- Study results will be presented to City Council April
- The Final document will then be submitted to the FAA

Conclusion

- For more information on this study contact **Steven Southers**, San Antonio International Airport, (210) 207-3402
- For information on the Residential Acoustical Treatment Program (RATP) contact **Mike Rodriguez,** San Antonio International Airport, (210) 207-3851
- The Draft Study report and Addendum are available at public locations and on the internet:
  - http://www.sanantonio.gov/aviation/info_noise.asp

Thank You

At this time you may complete a comment form or give oral comments to the court reporter.

All comments will be addressed in the Final Report submitted to FAA.

APPENDIX D

Comments Received and Response to Comments

During the public meeting on January 27, 2009 and the hearing on March 19, 2009 members of the public in attendance were encouraged to submit written comments and questions for inclusion in the Study. The comment period began on January 23 and closed on April 2. A total of 118 comments were received during the comment period, both at the meeting and hearing, and via mail and email throughout the comment period. Each of the comments received was categorized and responses have been prepared. This appendix includes a summary of all comments received and detailed responses to the concerns and questions submitted. The full text of all comments is shown in Appendix C.

Category	Comment	Commentor	Response to Comment
Engine Run-up and Maintenance	Commentors are concerned about airplane engine noise due to run-ups and maintenance at night and in the morning.	Will Howarth; Mark Moore	Run-up and maintenance daily operations logs were obtained from the airport for 2007 and 2008. The DNL contour includes the noise due to run-up and maintenance operations for all such operations occurring in the existing conditions year. All run-ups are performed in the airport's Ground Run-up Enclosure (GRE) which is a U-shaped noise barrier. The GRE greatly reduces the noise exposure due to maintenance operations. In addition, the airport has a policy to restrict GRE operations to day and evening hours.
Meeting Publicity	Commentor did not feel that the public meeting was sufficiently advertised.	Mae Ashton	The Airport made many efforts to publicize the public meeting, and regrets that some interested parties were not aware of its occurrence. A press release was issued by the Airport. Newspaper legal notices detailing the study as well as the upcoming meeting were published. Additionally, the Airport mailed over 600 flyers to property owners and residents within the communities surrounding the airport.
Heavy Airplane Operations	Commentors are concerned about the early morning noise coming from cargo aircraft.	Carol Ross; Richard Jodry; Diane Toscano; Mark Ledford; Merrill Swanson; Richard Slightom; Dan Peterson; Peggy Rochelle; William Morris; Brent Washam	Heavy cargo aircraft used by freight companies generally operate in the early morning hours. Early morning flights are necessary for these freight carriers to conduct their business effectively and make deliveries on time. The airport cannot disallow aircraft arrivals and departures during nighttime hours. Because these aircraft operations are between the hours of 10 pm and 7am when the noise is most obtrusive to people sleeping, they are subjected to an additional 10 dB penalty when calculating the DNL metric. Thus, the impact of these operations is accounted for in the noise model and Study results.
Noise Monitors	Commentors request that noise level monitors be set up within their neighborhood / community to get a more accurate DNL contour.	Steve & Katie McKinney; Robert Mancillas; Jean-Louis Rabaste; Regina Wesley; Thomas Foster	There are two means of evaluating the effects of aircraft noise: noise modeling and noise measurements. Per FAA regulations, noise measurements are not required to conduct a Part 150 study. Furthermore, noise measurements are not necessary to accurately run the INM model. Noise measurements only determine current noise levels; they do not allow for the ability to evaluate future growth and "what-if" scenarios at an airport. Use of the INM is necessary for future planning efforts, such as the year 2014 noise contours presented in this study. The airport maintains a system of permanent noise monitors which measure noise continuously at locations near the airport. This data is a useful representation of aircraft noise at specific locations, during specific times. However, in order to create the Noise Exposure Maps it is necessary to model a full year of operational data to determine the annual average day condition, which is not necessarily the noise experienced during any given day of the year.

Category	Comment	Commentor	Response to Comment
Health considerations in mitigation program	Commentor wanted to know if there are any disability provisions within the study.	Mark Moore	There are no health or disability provisions within the FAR Part 150 program. The program provides funding for noise mitigation and abatement to eligible residential and noise-sensitive areas based on aircraft noise levels (DNL) regardless of individual resident's health concerns. An additional discussion of health concerns is shown under the "Health Effects" topic below.
Noise Model	Numerous comments were made pertaining to the use of the noise model. The comments included statements that the noise study was only done in specific areas, that aircraft noise levels often exceed 65 decibels, that aircraft do not fly according to the flight tracks depicted on study mapping, and that the noise model did not take into account all variables and flight operations.	Thomas Tucker; Gil Franklin; C LeMoyne Hall; Joan Seifert; Richard Slightom; Jason Williamson; Will Howarth; Mark Moore; Richard Jodry; Charles M. Cartrines; Josh Baugh	The FAA requires the use of their own computer model – which is based on actual aircraft noise data -- for the modeling of noise exposure around airports. Airports are required to utilize the methodologies set forth in FAR Part 150, which include the use of the computer model and the Day Night Level (DNL) metric for determining significant impacts. The DNL metric is a logarithmic average of a 24-hour period that takes into account both the number and frequency of aircraft overflights, and adds a 10-decibel penalty to nighttime (10 p.m. - 7 a.m.) flights. DNL values are often confused with simple decibel levels - noise events by individual aircraft can exceed 65 dB. A value of DNL 65 dB is a 24-hour average noise level of 65 dB, which includes periods of time with no aircraft overflights. The analysis used in this Part 150 Study takes into account airport facilities, the aircraft fleet mix, time of day of operations, flight tracks, and other factors. The data for this study was collected from the Airport and from interviewing Air Traffic Control Tower (ATCT) personnel. In addition, one year of radar data was analyzed to determine the flight tracks and profiles that were then used in the study. Aircraft do periodically deviate from normal flight tracks and procedures, as a result of wind, air traffic control instructions, or specific training procedures. The radar data showed these deviations and they were included in the analysis. Specific input data into the noise model is available in Sections 3 and 4 of this document.

Category	Comment	Commentor	Response to Comment
Vibration	Commentors are concerned about structural vibration associated with aircraft activity, including damage perceived to be caused by aircraft overflights.	Marcia Schneider; Paul Nixon; Mary Bobledo; Janice Hoeste; Yvette Lozano; Bobby Roth; Antonio Vasquez Jr; Bridgitte Conway; Elizabeth Hope; Ruby Ballard; Gina Adams; Denise O'Neal	The impact (in terms of both noise and vibration) of an aircraft overflight on a home can vary based on a number of factors, including the age and construction of the home. The amount of vibration induced by aircraft overflights is typically not of the levels that cause structural damage to buildings. However, noise-induced vibration may be noticeable to residents due to induced secondary vibrations, or rattling of objects in the home such as hanging pictures, dishes, and plaques. Window panes may also vibrate noticeably when exposed to high levels of noise. In general, such noise-induced vibrations occur at peak sound levels of 110 dB or greater. Unfortunately, beyond the mitigation programs already recommended in the NCP, there are no additional programs which the Airport can take advantage of to provide abatement for vibration.
Noise level increases due to runway extension	Many commentors were concerned about the increase in noise levels associated with the extension of runway 03/21 at SAT. Additionally, residents are concerned that during aircraft overflights, the noise can be startling, and interferes with daily activities, such as television, conversation, and enjoyment of outdoor activities.	Martin Valera; Robert Mancillas; Jean-Louis Rabaste; Mark Ledford; Georgia Grounds; Tom Manning	The airport predicts that there will not be a change of runway utilization when runway 03/21 is extended. The purpose of the runway extension is to allow heavy planes that are already using runway 03/21 to roll further down the runway before taking off under hot-weather conditions. This was determined by the FAA in a separate study of the effects of the runway extension, the Final Environmental Assessment dated September 2007. The runway extension does change noise levels, as the extended end of the runway will move the beginning of the takeoff roll and also changes the lift-off point of aircraft, as well as the landing point on the runway. All of these locations are tied to a distance from the end of the runway, which will change. However, the differences in noise contours are mainly contained within airport property. The airport understands that aircraft noise levels can often be disruptive to normal activities. The first proactive measure that the airport can offer is to undertake and update this Part 150 Noise Study, in order to qualify for mitigation funding for homes which have been identified as being significantly impacted by noise according to FAA regulations. The Airport believes that the mitigation offered as a result of the findings of this study will reduce interruptions in daily activity caused by aircraft overflights. The mitigation offered through this study can only be provided to those areas which meet the guidelines for FAA-determined significant impacts.

Category	Comment	Commentor	Response to Comment
Health Effects	Commentors are concerned about the potential health affects associated with aircraft noise. Specifically, questions arose regarding those with existing health problems, young children, and specific effects on annoyance, speech interference, and intelligibility.	Mark Moore; Cynthia Gallivan; Paul Nixon; Denise O'Neal	In the United States, Federal workplace standards identified a time-averaged sound level of 90 dB during an 8-hour period or a sound level of 85 dB over a 16-hour period as the threshold for the prevention of hearing loss. Further, according to the EPA "there is insufficient scientific evidence that non-auditory diseases are caused by noise levels lower than those that cause noise-induced hearing loss." This study, using FAA guidelines, has identified specific land areas with a time-averaged noise level (DNL) of 65 dB as being incompatible with airport operations, without some form of mitigation. Speech interference associated with aircraft noise is a primary cause of annoyance to individuals on the ground. The disruption of routine activities such as radio or television listening, telephone use, or family conversation gives rise to frustration and irritation. The quality of speech communication is also important in classrooms, offices, and industrial settings and can cause fatigue and vocal strain in those who attempt to communicate over the noise. In general, interference with speech communication occurs when intrusive noise exceeds about 60 dB.
Helicopter Noise	Commentors have expressed concern related to helicopter noise and whether helicopters were modeled in the study.	Mark Moore; William Schiller	Noise levels associated with helicopter activity were modeled using the INM. The low-altitude aspect of helicopter flight paths were modeled in the INM, as well as the standard procedures for landing and takeoff. The numbers of helicopter operations and types of helicopters in operation were determined from data provided by the FAA air traffic control tower, and are detailed in the fleet mix tables in Sections 3 and 4 of this report. The flight tracks utilized by helicopter operations were evaluated as part of the radar data analysis. Although helicopters do not always appear in the radar data, flight tracks for the INM were developed from field observations and interviews with airport personnel. These generalized helicopter flight tracks can be seen on the figures in this report. Takeoffs and landings are typically performed on the airfield along taxiways parallel to and south of runway 12R/30L, to the west of the terminal buildings, and arrive and depart to the northwest and southeast, much like the aircraft flight tracks for runways 12L/30R and 12R/30L.

Category	Comment	Commentor	Response to Comment
Property Values	Commentors have expressed concern related to the potential impact of aircraft operations on property values. Comments included concern regarding existing investments as well as property that has yet to be developed.	John Dunlap; Paul Nixon; Patrick Kelly	There are numerous factors which influence real estate values, and airports and their associated activity can provide both positive and negative perceived values. There are no formal indices which relate property value and airport proximity, as research regarding the correlation of real estate values and proximity to airports has not provided consistent conclusive results. Much of the research has indicated that differences in sale prices between homes with and without aircraft noise were frequently due to factors other than noise itself, such as the age and upkeep of the structure, proximity to jobs and amenities, and the type of dwelling. However, a positive factor that may influence real estate values is the proximity to an airport and the associated economic benefits (jobs, industry, improved infrastructure), which could potentially increase the value of a property. Sound insulation of homes increases their value compared to a similar home in the same noise exposure area that is not sound insulated. In an area where a majority of homes have received sound insulation, it is possible that a home which has declined participation in a program may be perceived as having a lower value. This is one reason why “neighborhood integrity” was used to include whole blocks and contiguous areas when feasible. See the next item for details on neighborhood integrity.
Mitigation Program; General	Commentors requested that participation in the mitigation programs be extended in areas beyond the DNL 65 dB noise exposure contour.	Joseph Sadowski; William Schiller; Georgia Grounds; Paul Nixon; Richard Jodry; Charles M. Cortines; Lois Gerlein; Frank Guerra; Jeff Witten; Lionel Passafuma; Virginia Ross; LeMoyne Hall; Lois Gerlein	The FAA has determined that noise-sensitive land uses (including residential) located outside the 65 dB DNL noise exposure contour are compatible with airport and aircraft operations. Noise-sensitive land uses located in areas with noise levels at or above 65 dB DNL are generally considered incompatible. As such, the FAA generally provides matching funding (with an approved Part 150 study) for sound insulation of qualified buildings within the 65 dB DNL noise contour Through the Part 150 process, the airport has provided inclusion for some homes near, but outside of, the 65 dB DNL noise contour. As shown in the 2014 Noise Exposure Map, some homes are in fact included in the proposed mitigation boundary which lie outside the 65 dB DNL contour. Thus, the program has been extended beyond the noise contours, to the extent allowable by the FAA (see previous item for more details). The FAA will make the final decision as to which areas are eligible for sound insulation.

Category	Comment	Commentor	Response to Comment
Mitigation Program; Sound Insulation	Regarding the recommended sound insulation program, a number of commentors requested information including details pertaining to avigation easements, the program timeline, and increased costs for utilities associated with mechanical improvements. Additionally, commentors feel that the process of selecting homes for sound insulation is unfair.	Joseph Sadowski; William Schiller; Michael O'Neal; Mae Ashton; Carol Ross; Janet Alyn; Marcia Schneider; Carolyn Santacruz; Carol Barnes; Patrick Kelly; Alfred Gomez; Tim Kelly; Kimberly Kelly; Joe Ruiz; Gina Adams; John Dunlap; Elizabeth Mueller; Elsa Estorga; Frank Guerra; Linda Draper; Iris Farias; Jennifer Olvera; Thomas Foster; Rosalinda Cano; Jorge Torres; Burnie Miller; Pam Hoyler; Ann Alwood; Leighton Wier; Michael Berger; Matthew Brooks; Bill Crockett; Ray Alcala; Jeff Witten; Raymond Deleo; Carol Barnes; Reathel Williams; Harvey Gutierrez; Hortense Patterson; Cay Roy; Robert Royal; Denise O'Neal; Candace Jina; Ben Gonzales; Virginia Ross; Cindy Willis; Carrie Steele; Erin McNiece; Lori Tips; Anna Lowry; Virginia Stakes; LeMoyne Hall	Following FAA approval of the Noise Compatibility Program, the Airport will continue the Residential Acoustical Treatment Program (RATP). Details pertaining to the timeline for participation in the program will be determined once the program has been approved by the FAA and funding has been made available. However, it is anticipated that the program will be carried out in phases proceeding from residential areas nearest to the airport and working out towards the boundaries of the program. Specific planning of the implementation of the RATP is not a part of the scope of this NEM/NCP study. In exchange for participation in the sound insulation program, the City of San Antonio will require homeowners to sign an avigation easement that would guarantee the right of aircraft flight over the property. The easement would be attached to the deed of the property and would remain in perpetuity. Typically, a realtor need not be involved in this process. Homeowners are responsible for any increases in electrical costs associated with the installation of air conditioning or fresh air units. It is possible that the increases in efficiency associated with the new improvements could result in lower utility bills. The study recommendation is to include residential homes whose property lines are intersected by the 65 dB DNL noise contour, and where feasible and practical, in areas of contiguous neighborhood development. A residence was considered impacted, and therefore potentially eligible for inclusion in the RATP, if the 65 dB DNL contour falls within the parcel boundary of the property. If the 65 dB DNL contour intersected a residential neighborhood, and at least one residence was within the contour, then at a minimum, all residences on the same block of the street were included within the boundary. When possible, the mitigation boundary was placed at the closest street to the 65 DNL contour for which none of the residences on that street were within the contour. However, in order to account for neighborhoods with small non-intersecting streets, in some areas the mitigation boundary was extended to the nearest geographic boundary, such as a continuous or major road, a recreational area, or other non-residential land use. This method increases the likelihood that all homes and noise-sensitive facilities throughout a contiguous neighborhood will be eligible for acoustical treatment. The FAA will make the final determination of the boundary of the RATP program.

APPENDIX E

NCP Record of Approval (2002)

Part 150: Records of Approval

San Antonio International Airport, San Antonio, Texas

Approved on 9/30/02

Statements within the program measures below summarize as closely as possible the airport operator's recommendations contained in the Noise Compatibility Plan (NCP). The statements within the summaries, which precede the indicated Federal Aviation Administration (FAA) approval, disapproval, or other determination, do not represent the opinions or decisions of the FAA. The page numbers in parentheses cross-reference the submitted document/addenda.

The approvals listed herein include approvals of actions that the city of San Antonio recommends be taken by the FAA. The approvals indicate only that the actions would, if implemented, be consistent with the purposes of Part 150. These approvals do not constitute decisions to implement the actions. Later decisions concerning possible implementation of these actions may be subject to applicable environmental or other procedures or requirements.

Abatement Measure No. 1: Conduct live tests of noise abatement departure profiles.

[Pages II-2 – II-5]

Modifications to thrust and wing flap management procedures for departures can reduce the noise levels generated by individual jet aircraft departures. The potential exists for reductions in noise levels in noise-sensitive areas near the departure ends of runways if specific noise abatement departure procedures are followed. The City of San Antonio Aviation Department is working with airlines to determine what procedures work best to reduce single-event departure noise.

FAA Action: Disapproved.

Airlines have already developed procedures to comply with AC 91-53A. The purpose of the Advisory Circular is to eliminate airport-specific noise abatement departure procedures to ensure safe aircraft management. Airlines may be contacted to determine the procedures they have published for their aircraft, and these procedures may be incorporated into the noise model to determine benefits of specific procedures. At San Antonio International Airport, the distant procedure may be more appropriate, since compatible commercial development is closest to the airport. With the phase-out of Stage 2 aircraft over 75,000 pounds, the benefits from Stage 3 aircraft performing close-in noise abatement departure procedures is expected to be minimal.

Abatement Measure No. 2: Pursue additional voluntary noise abatement departure procedures to further reduce noise levels of aircraft operations.

[Pages II-5 – II-6.]

This recommendation calls for the city of San Antonio to develop voluntary measures that would need to be coordinated with the airlines and the FAA, along with corporate flight departments, fixed based operators (FBOs), and other aircraft owners and operators. These measures would

be assessed to ensure that implementation does not create additional airspace interactions, reduce capacity of the SAT or in any way compromise safety. They include: (1) Departure profiles which would increase the altitude to which an aircraft would climb at departure thrust before reducing power settings and adjusting flaps, and (2) Modifications to arrival tracks which would prevent aircraft from turning onto a short final approach over noise-sensitive areas close to the Airport.

FAA Action: Approved in part, as voluntary; disapproved in part.

The proposal to work with airlines, affected aircraft operators, and the FAA to determine the effectiveness of modified approach procedures to reduce noise impacts is approved as voluntary. The NCP discusses the possibility of reducing single-event noise levels through the adoption of voluntary approach procedures that would modify arrival tracks to prevent aircraft from turning onto a short final approach over noise-sensitive areas that do not usually receive overflights. Pilots would be encouraged to line up aircraft with the final approach heading as far out as practicable. If additional voluntary approach procedures are identified, any subsequent noise abatement measures should be recommended for inclusion in the overall NCP and submitted to the FAA for review.

Noise Abatement Departure Procedures not in accordance with AC 91-53A are disapproved. To ensure safe aircraft management, modifications to the procedures defined in AC 91-53A are not permitted.

Abatement Measure No. 3: Establish a preferential runway use program and enhance its effectiveness by extending existing runways, more specifically:

[Pages II-6 and II-11]

(a) Establish a preferential runway use program that minimizes departures on Runways 12L and 12R and arrivals on Runways 30L and 30R.

Because the highest number of noise-sensitive facilities are likely to be exposed to the highest levels of aircraft noise associated with departures on Runways 12L and 12R and arrivals on Runways 30L and 30R, the Technical Advisory Committee (TAC) decided that it would be worthwhile to determine whether an even greater percentage of departures could occur on runways other than Runways 12L and 12R and a greater percentage of arrivals could occur on runways other than Runways 30L and 30R.

(b) Extend Runway 3-21 to the northeast to enhance the effectiveness of the preferential runway use program.

The Master Plan Update recommended that Runway 3-21 be extended 1,500 feet to the northeast to a total length of 9,005 feet to improve airfield capacity. This extension would also remove the length preference of Runway 12R for air carrier departures, and make wind direction the primary determinant of runway use, thus enhancing the ability to use the runways more equally under a preferential runway use program.

(c) In addition, extend Runway 12R-30L to the northwest, allowing for the removal of the intersection of Runways 12R?30L and Runway 3-21.

Extending Runway 12R?30L approximately 400 feet to the northwest and decommissioning approximately 450 feet of the runway at its southeastern end—effectively shifting the runway to

the northwest—would remove the physical intersection of the two runways, allowing arrivals on Runway 12R and departures on Runway 3 to occur more independently.

FAA Action on 3(a). Disapproved.

The FAA Air Traffic Division has determined that the proposed recommendation will impact efficiency and airport capacity. Runway 12R is currently used approximately 50% of the time with all other runways accounting for the remainder. Therefore traffic is already dispersed. Moving operations to other runways will shift noise to other residential areas while inhibiting air traffic operations.

FAA Action on 3(b). Disapproved for purposes of Part 150.

The extension of Runway 3 has been proposed to provide additional capacity in a previously developed master plan. Because the primary purpose of the project is capacity and not for reduction of noise impacts, the FAA cannot approve the recommendation under Part 150. Information provided in the NCP indicates that this element increases the total number of people located in the 65 DNL contour. While the project may be needed for capacity purposes, it is a recommendation inconsistent with Part 150 and is not approvable for the purpose of noise abatement.

FAA Action on 3(c). Disapproved for purposes of Part 150.

Although the runway extension for runway 12R/30L was not identified in a master plan, this runway extension would increase capacity. As with Abatement Measure 3(b), the FAA cannot approve this project under Part 150. This disapproval under Part 150 relates to the primary purpose of the project. The city of San Antonio is discussing with FAA possible projects to be included in an Environmental Impact Study (EIS) scheduled to begin in Fall 2002. The environmental impacts associated with the runway extensions identified in Measures 3(b) and 3(c) would be analyzed during this EIS.

Abatement Measure No. 4: For departures from Runway 3, establish a departure corridor that places aircraft over compatible land uses east of Wetmore Road to the extent possible.

[Pages II-11 – II-22]

Establishment of this departure corridor would avoid or reduce overflight of areas northeast of the airport but west of Wetmore Road.

FAA Action: Disapproved.

The FAA Air Traffic Division has determined this recommendation would restrict the flexibility of air traffic to expedite departures by varying headings after departure for other than turbojet aircraft. Turbojets proceed via runway heading until reaching altitude of 3,000' before turning. Spacing between subsequent departures would have to be increased, resulting in delays during peak periods. In addition, for certain aircraft, an immediate turn after departure on Runway 3 would conflict with operations in the Randolph Air Force Base Class D Airspace.

Abatement Measure No. 5: For those times that Runway 21 must be used for departure, establish a departure corridor that places aircraft over the Highway 281 corridor to the extent possible.

[Page II-22]

Establishment of this departure corridor would avoid or reduce overflight of areas south of the airport but west of Wetmore Road.

FAA Action: Disapproved pending submittal of additional information.

FAA must determine whether this measure will adversely impact the safe, efficient or feasible use of the national airspace system. The city of San Antonio is discussing with FAA possible projects to be included in an EIS scheduled to begin in Fall 2002. The establishment of this corridor will be studied under that EIS.

Abatement Measure No. 6: Incorporate the findings and recommendations of the engine run-up study into the FAR Part 150 Noise Compatibility Program (NCP).

[Pages II-22 – II-23]

The documentation, found in Appendix F, is included in this NCP to provide information on final site selection and design of the facility. As documented in the summary report, all of the homes currently or anticipated to be exposed to significant noise levels from ground run-ups would no longer be exposed to significant noise levels if a GRE were constructed at the Airport.

FAA Action: Approved.

Approval of this measure is consistent with prior NCPs and FAA approvals. FAA has issued a grant for construction of the ground-run-up enclosure and construction has begun.

Abatement Measure No. 7: Install an aircraft noise and operations monitoring system to track the use of departure corridors and departure profiles.

[Pages II-23 - II-24]

The city of San Antonio requests that the measure be approved as a continuation of the previous Noise Compatibility Program. Aircraft noise and operations monitoring systems can be used to measure:

- Individual aircraft noise levels
- The aircraft type of specific operations
- Runway use
- Flight track definition and use
- Aircraft altitude and speed profiles
- Daily and annual day night level (DNL) levels at various locations around the airport

On August 9, 2001 the city of San Antonio accepted an FAA grant for design and implementation of such a system, and has issued a request for professional services for the work.

FAA Action: Approved.

This item replaces Program Element Number 8 in the May 23, 1997, Record of Approval. Noise Exposure Maps must be developed with the Integrated Noise Model, in accordance with the Part 150 regulations. For purposes of aviation safety, this approval does not extend to the use of monitoring equipment for enforcement purposes by in-situ measurement of any pre-set noise

thresholds. Interface with FAA equipment and operations must comply with FAA Order 1200.22C, NAS Data and Interface Equipment Used by Outside Interests.

Abatement Measure No 8: Enhance pilot awareness of noise-sensitive areas and noise abatement procedures by providing information for Jeppesen charts, airline pilot manuals, and fixed based operator information.

[Page II-25]

The objective of this measure is to maximize the benefits of the noise abatement measures. Most pilots operating at SAT in multi-engine or jet aircraft and many of those operating in single engine aircraft subscribe to a service which provides regular updates to a reference manual on instrument procedures in use at airports. The Jeppesen-Sanderson, Inc produces this publication. These types of inserts have been a very successful means of educating pilots on the details of noise abatement procedures at other locations.

FAA Determination: Approved.

Proposed language should be submitted to the FAA for review prior to publication. Location of, and language contained in, any airport signage must be pre-approved by FAA.

Abatement Measure No. 9: Investigate the use of noise barriers along Airport boundaries at runway ends to reduce the effects of takeoff roll noise.

[Page II-25]

Noise barriers may provide noise relief in areas near an airport that are exposed to significant noise from departure back blast and in some cases arrival thrust reversal procedures. The specific benefits that could be gained through the development of noise barriers have not been assessed in this NCP Update.

FAA Action: Disapproved pending submission of additional information to make an informed analysis.

The NCP does not provide sufficient information to justify additional study regarding the location of noise barriers. With the installation of the GRE (Measure 6), and the indication in the NEMs that the airport is surrounded by compatible land uses, there is not sufficient information to demonstrate that there are incompatible land uses close enough to the airport that could benefit from a noise barrier. Additional information is required in order to determine if the proposal meets the approval requirements of Part 150.

Abatement Measure No. 10: Encourage Congress to seek stricter aircraft noise standards, particularly regarding a phase-out schedule for aircraft originally manufactured as Stage 2 that have been modified or are operated to meet Stage 3 noise standards.

[Page II-26]

Although modified Stage 2 aircraft meet the Stage 3 noise standards, their noise levels are significantly higher than those generated by most aircraft originally manufactured to meet Stage 3 standards, and are still the loudest aircraft to operate at U.S. airports. A phase-out of modified Stage 2 aircraft could further reduce noise exposure in the Airport environs.

FAA Action: Disapproved.

The U.S. participates in the environmental committee of the International Civil Aviation Organization (ICAO) and has, with other participating countries, reviewed the question of modified Stage 2 phase out. On a national and international level, data show that the noise benefit of a modified Stage 2 phase out would be small and that the cost would be very high. As a result of this finding, FAA does not support encouraging the U.S. Congress to mandate a modified Stage 2 phase out. With U.S. air carriers grounding many older Stage 3 and modified Stage 2 aircraft in the last year for economic reasons, the case for Congressional action is even weaker.

Abatement Measure 11: Encourage the FAA to develop a phase-out schedule for FAR Part 36 Stage 2 aircraft weighing less than 75,000 pounds.

[Pages II-26 – II-27]

As air carrier fleets have become quieter, the noise environments around airports are controlled more and more by corporate and general aviation jet aircraft because these aircraft generate noise levels as high as those generated by many Stage 2 air carrier jet aircraft.

FAA Action: Disapproved.

This recommendation appears to be based on a faulty premise that Congress has given direction and authority to FAA to mandate such a phase out. In the text of the NCP (page II-26), a statement is made that the Airport Noise and Capacity Act of 1990 (ANCA) clearly specified that the FAA should develop a phase-out schedule for Stage 2 aircraft weighing less than 75,000 pounds. This statement is incorrect. There is no Federal legislation directing a phase out of Stage 2 aircraft under 75,000 pounds, and previous FAA review found that technological feasibility and economic costs posed problems that discouraged a Federally-mandated phase out of such aircraft. At the present time, FAA encourages and supports voluntary efforts by aircraft owners and the aviation industry to reduce noise of Stage 2 aircraft under 75,000 pounds.

Mitigation Measure No. 1: Develop an expanded residential acoustical treatment program based on the positive results from the current Residential Acoustical Treatment Pilot Program.

[Pages III-1 – III-4]

The City of San Antonio intends as a first priority to provide acoustical treatment primarily for those homes exposed to aircraft noise of DNL 70 and higher, based on the 2004 noise exposure map presented in Exhibit I-5 of the NCP. The boundaries of the area designated as the initial phase are shown on Exhibit III-1. After acoustical treatment has been provided in those areas, the Aviation Department may decide to continue the residential acoustical treatment program into areas exposed to DNL 65 and higher. Priority would be given to those areas which are most highly affected by aircraft noise.

FAA Action: Approved.

The NCP indicates (III-2) that an apartment complex has also been identified within the 2004 65 DNL contour. Upon confirmation that the apartment complex owner wishes to participate in the program, the approved measure will be extended to those units.

Mitigation Measure No. 2: Provide acoustical treatment for schools and religious facilities that have not yet received such treatment and could be exposed to aircraft noise of DNL 65 and higher.

[Pages III-4 – III-5]

The city of San Antonio would like to include additional noise-sensitive facilities that have not been treated to date but are located in areas exposed to aircraft noise of DNL 65 and higher based on the 2004 noise exposure map. Two schools, one religious facility, and one group care home have not been treated and could be eligible for acoustical treatment.

FAA Action: Approved.

Mitigation Measure No. 3: Study the mechanism for and impact of incorporating noise exposure acknowledgements into real estate transactions.

[Pages III-5 – III-6]

The city of San Antonio would like to study the potential mechanisms for incorporating noise exposure acknowledgements into real estate transactions and study the potential effects of such acknowledgements.

FAA Action: Approved for study.

Mitigation Measure No. 4: Study mechanisms to maintain compatible land uses in current and proposed flight corridors and to prevent development of additional incompatible noise-sensitive land uses in areas exposed to DNL 65 and higher.

[Pages III-6 – III-7]

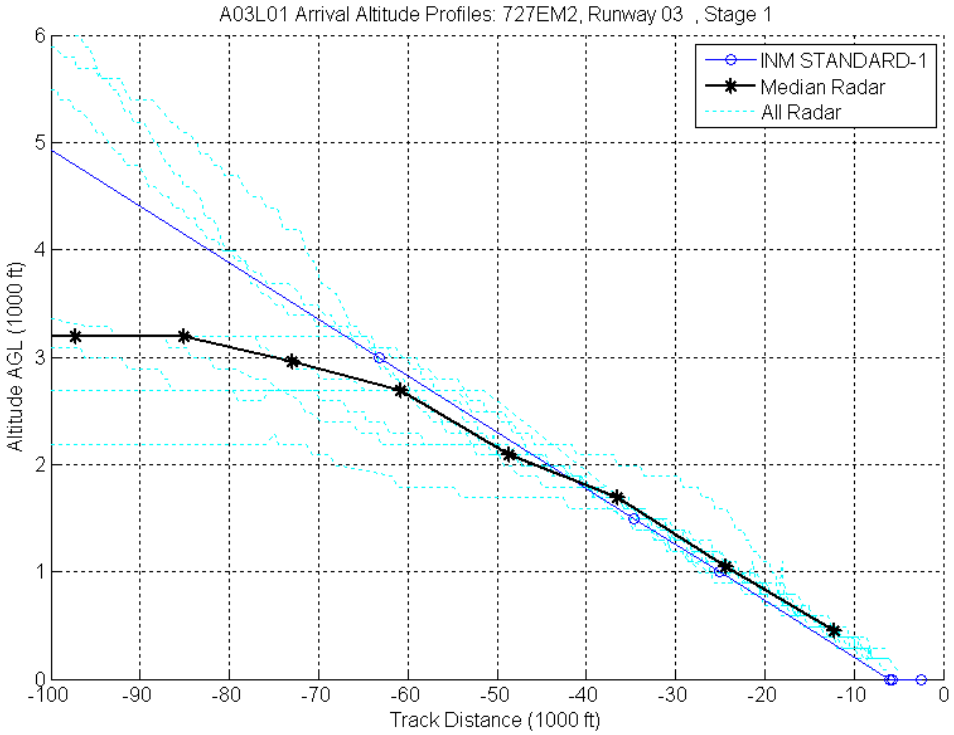
This recommendation involves development of a comprehensive study of a various land use controls, an analysis of existing zoning and land uses in the Airport environs, and the identification of land use management measures, as well as short-range (5-10 years) and long range (20 year) recommendations for enhancing and maintaining compatible land use.

FAA Action: Approved for study.

Since the City of San Antonio owns the airport and is responsible for land use planning within the DNL 65 dB noise contour, it is obligated under Federal grant Assurance 21 to take appropriate action, including the adoption of zoning laws, to restrict the use of land adjacent to or in the immediate vicinity of the airport to activities and purposes compatible with normal airport operations.

APPENDIX F

Flight Profiles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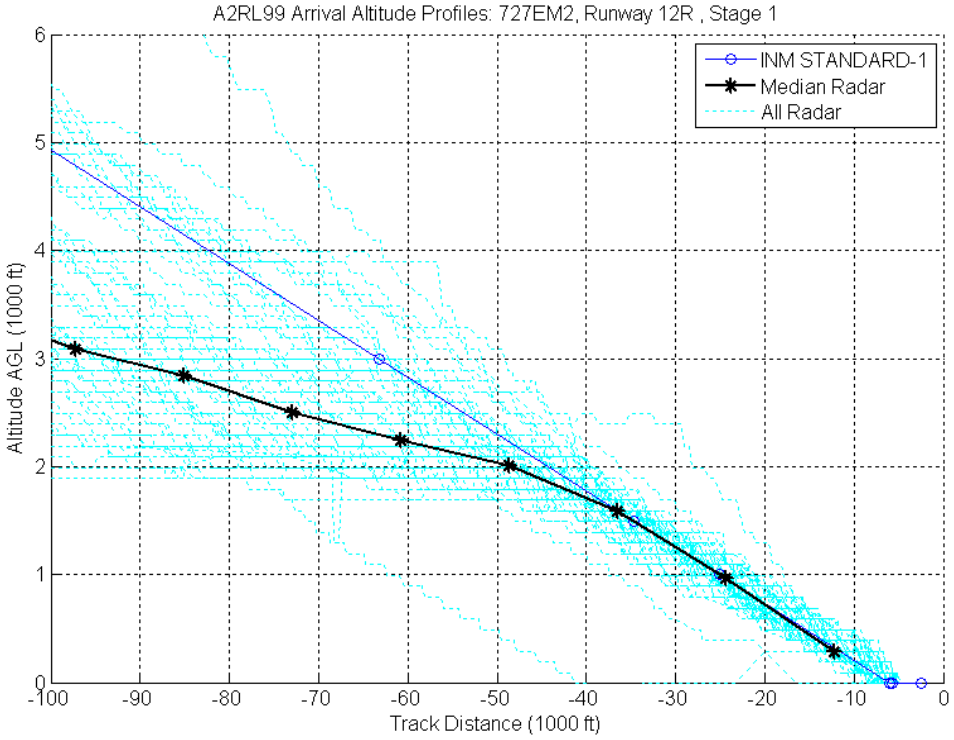
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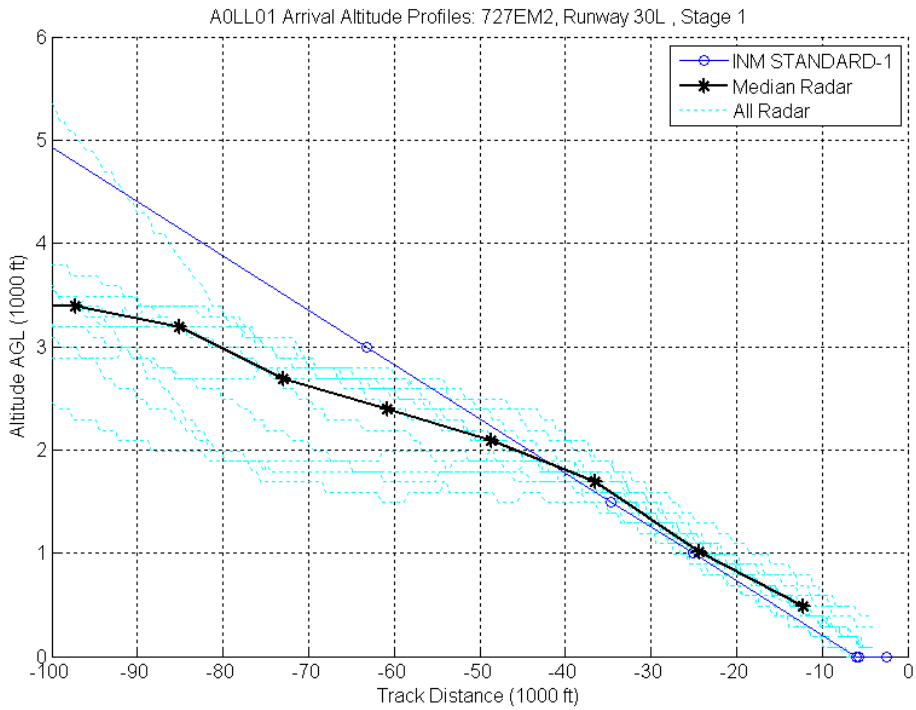
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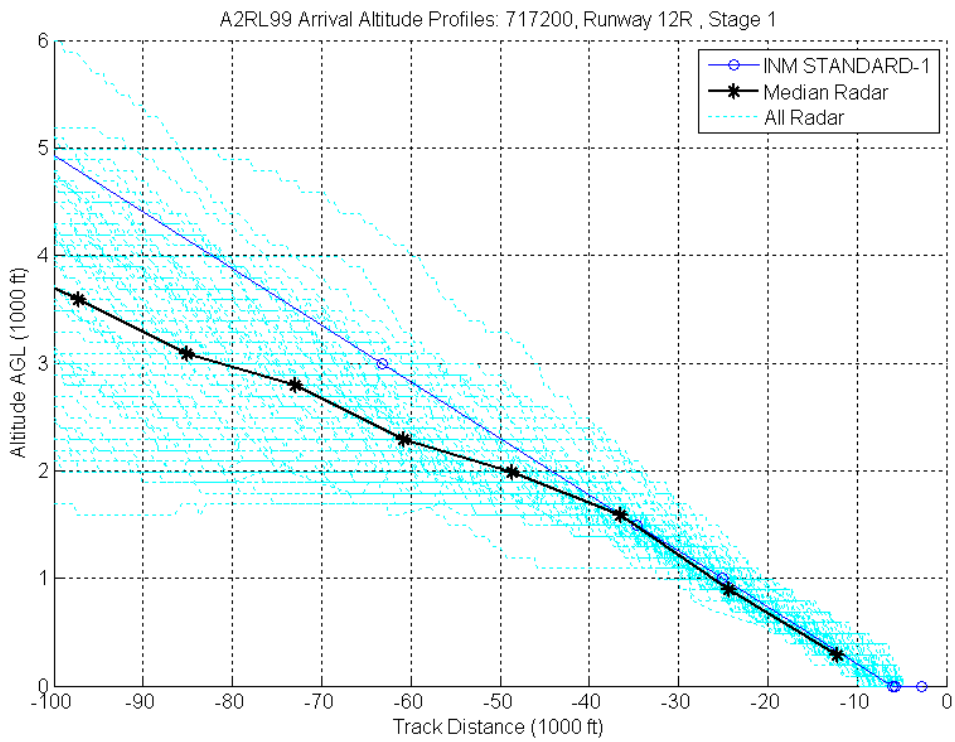
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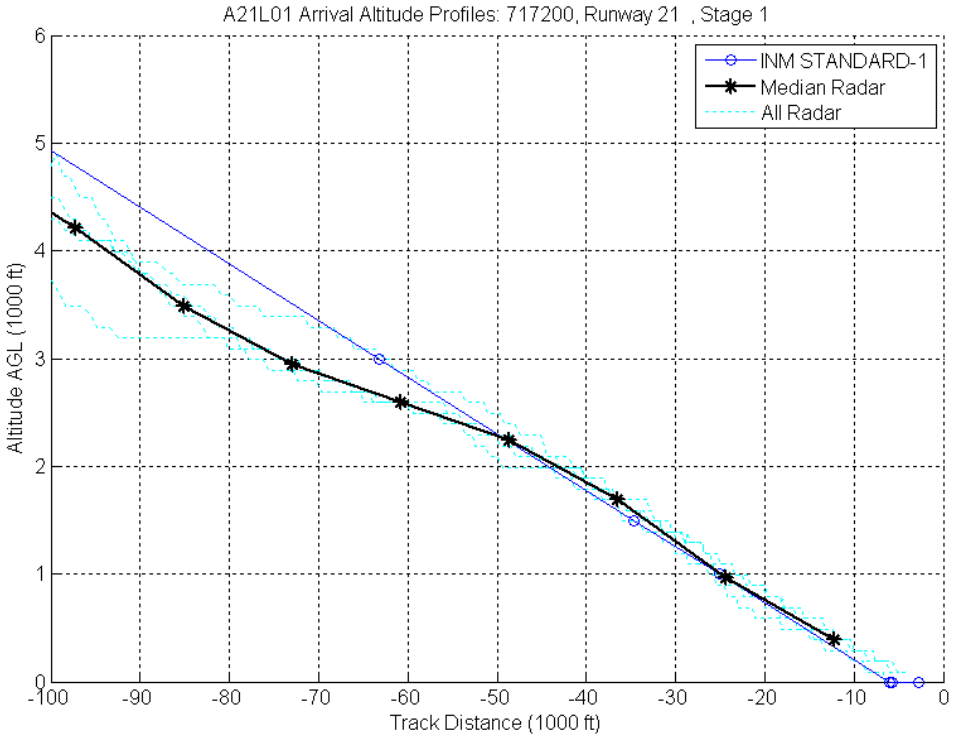
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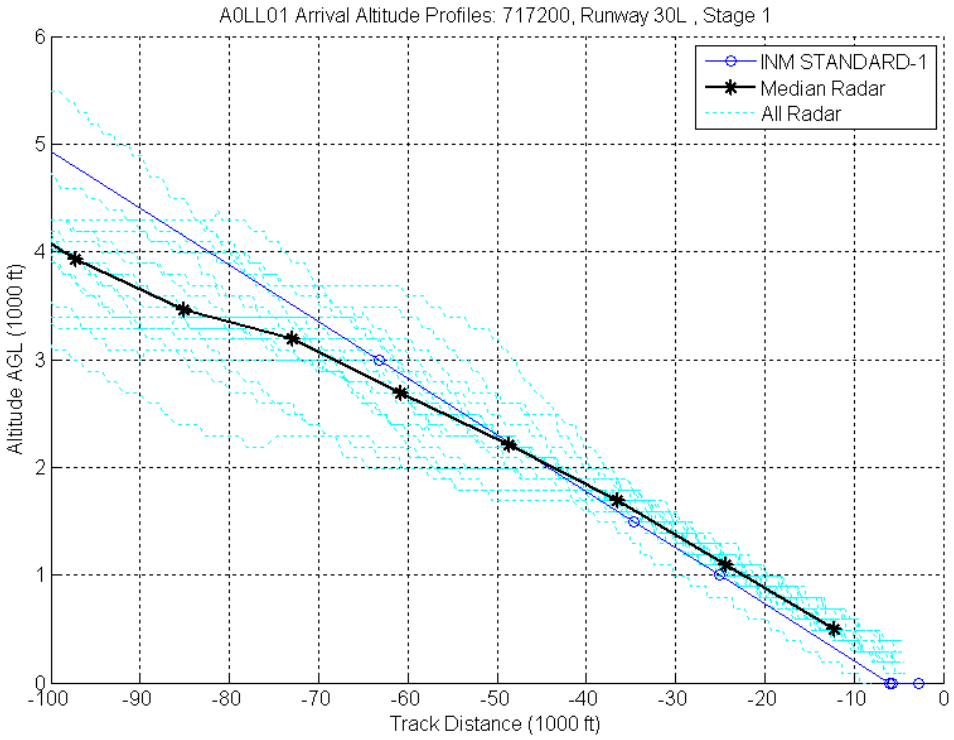
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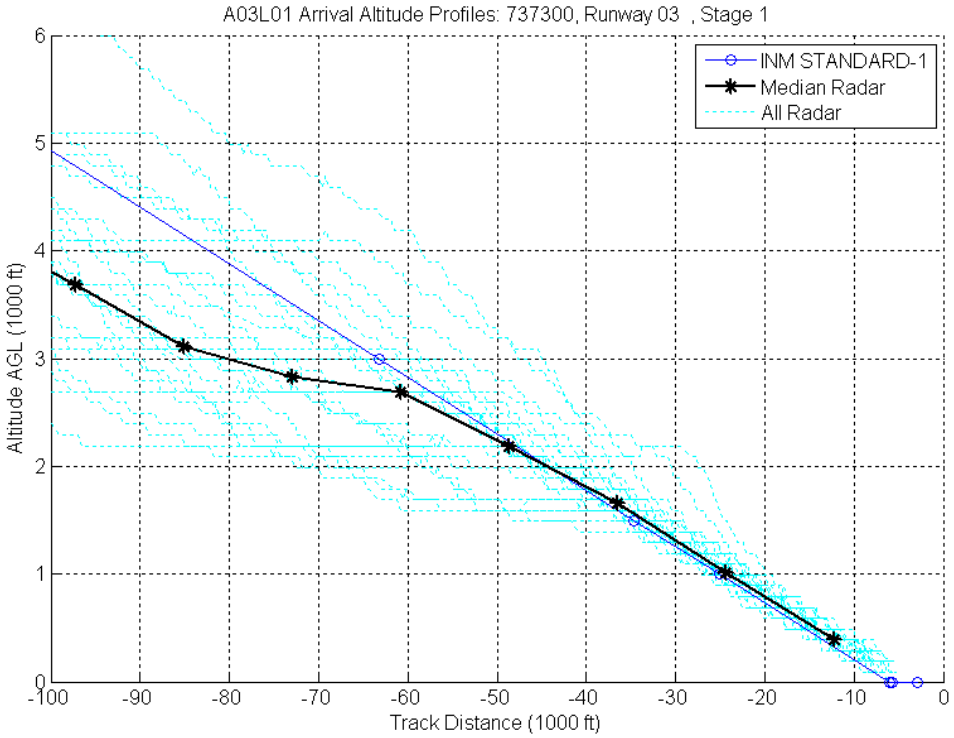
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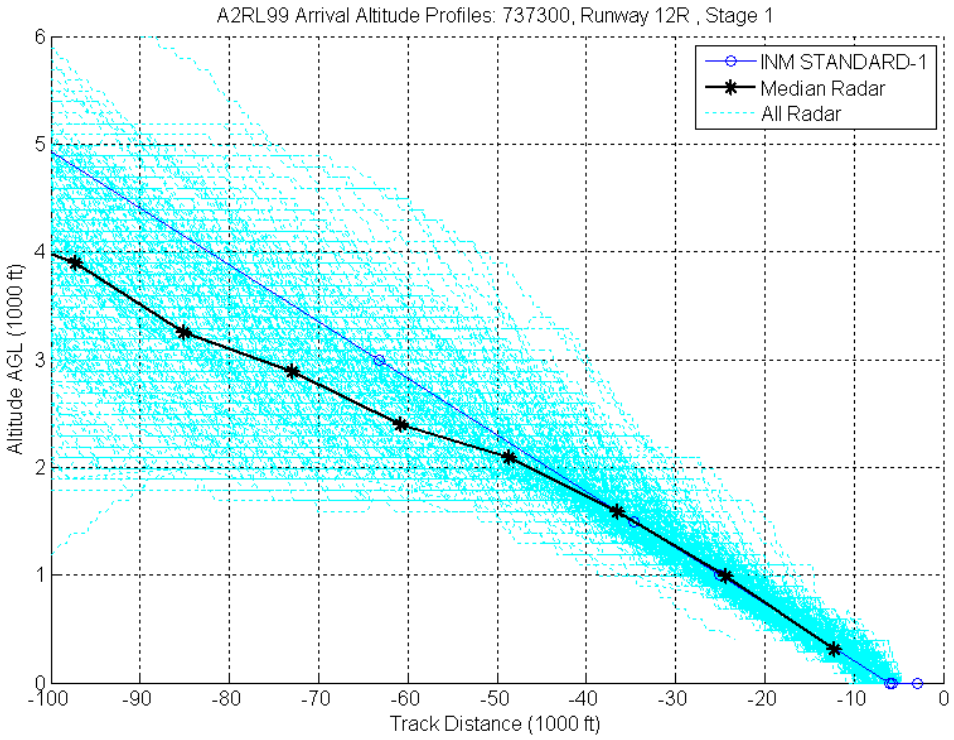
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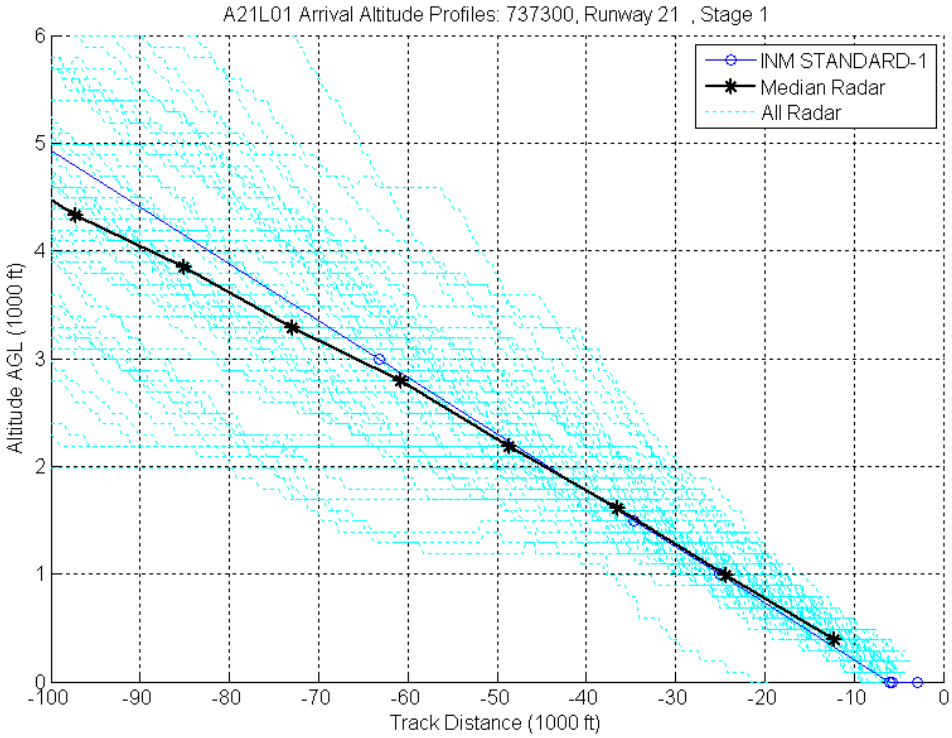
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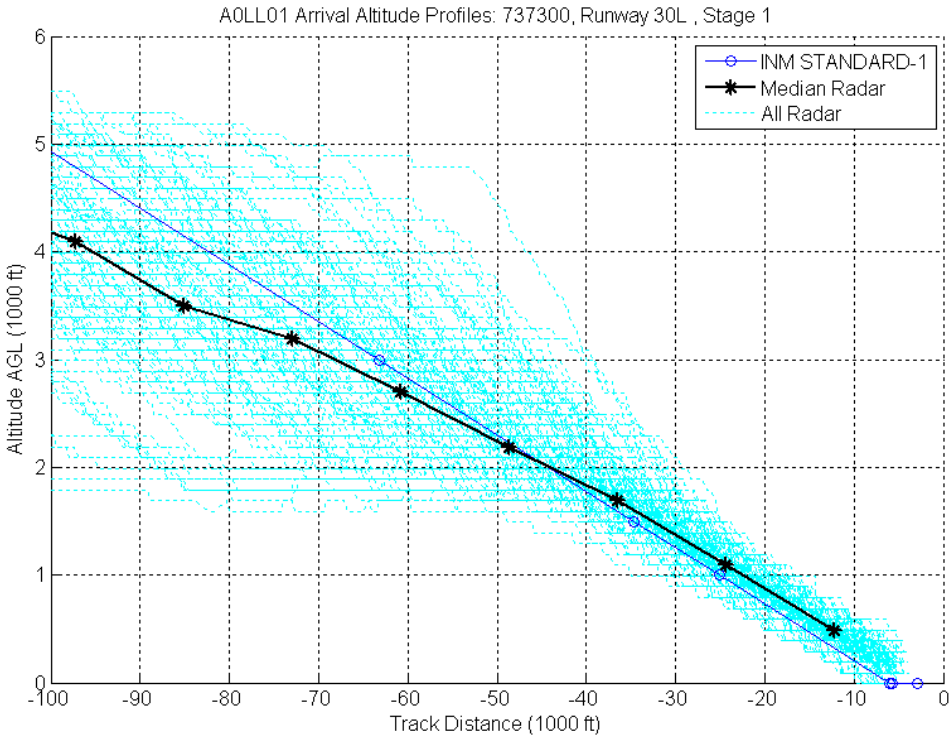
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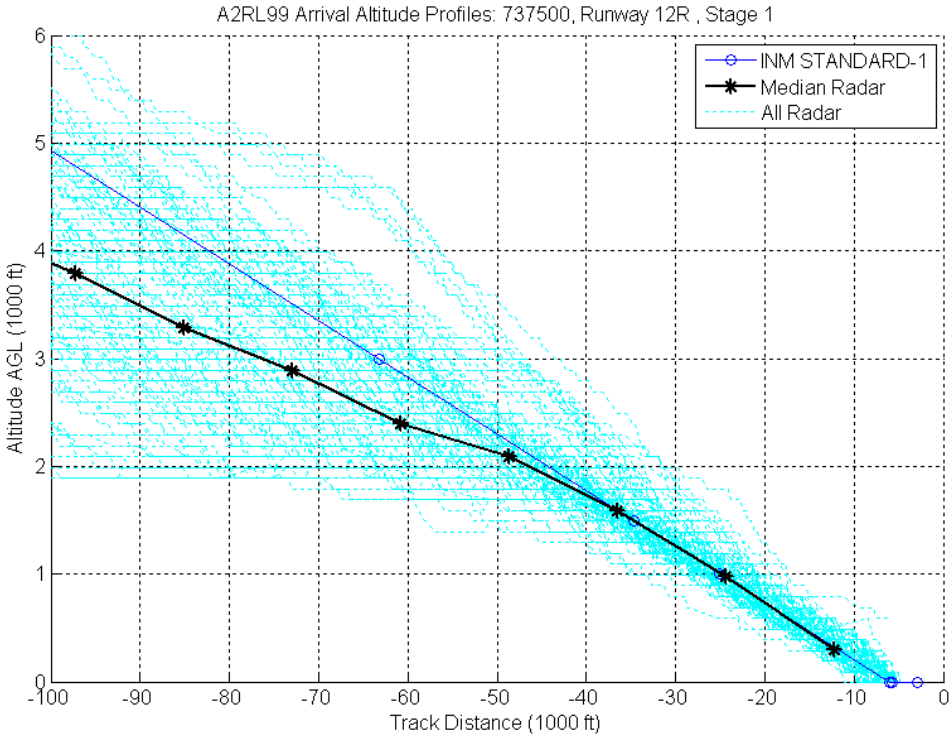
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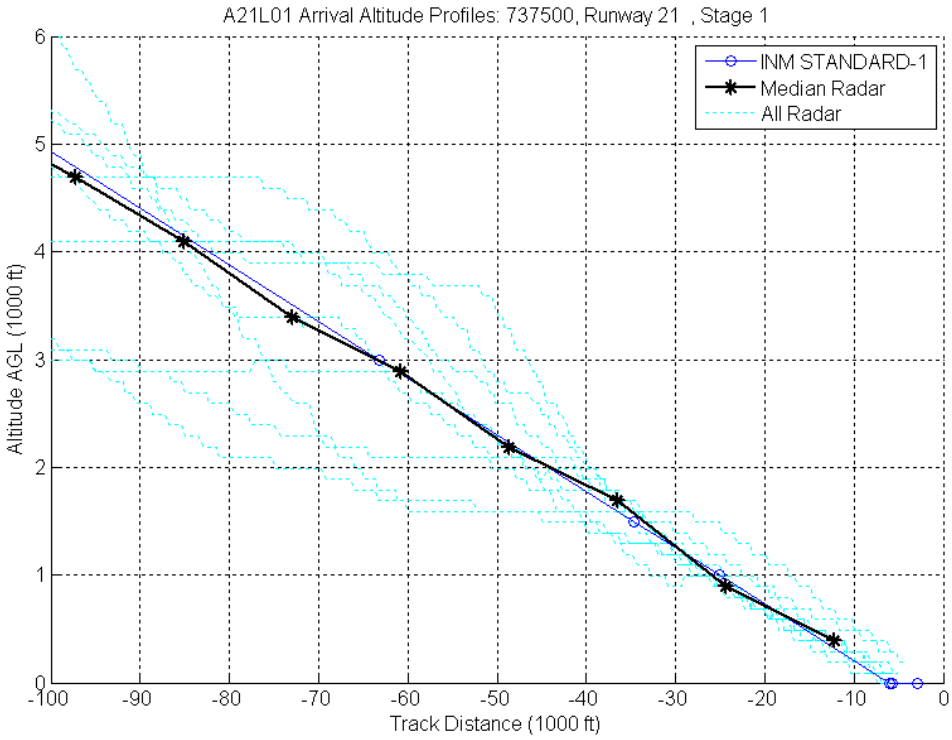
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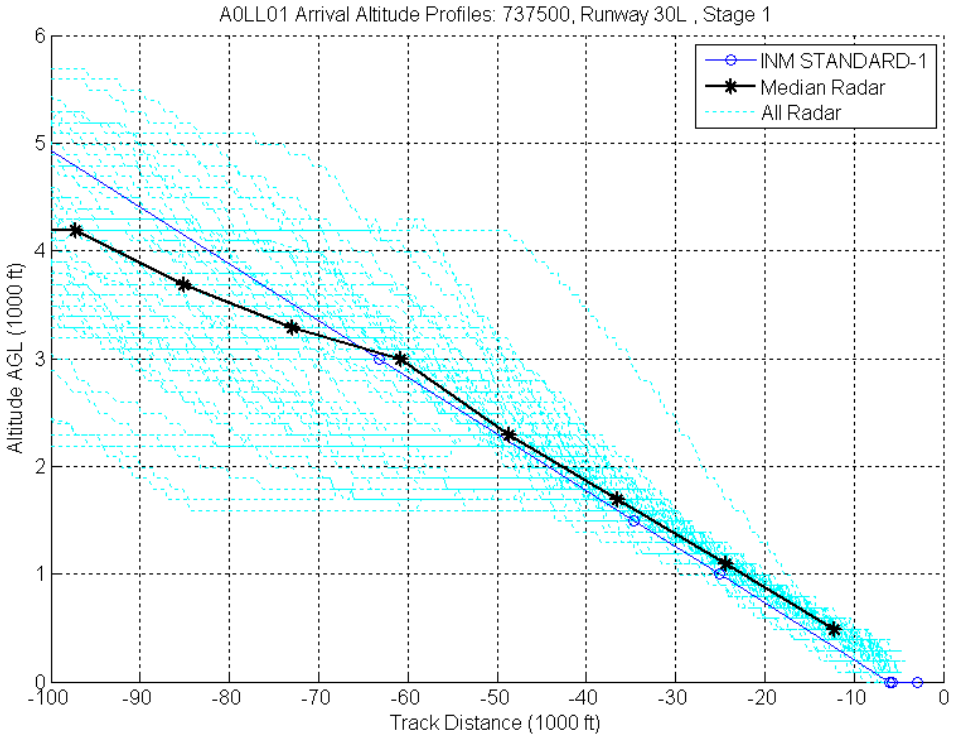
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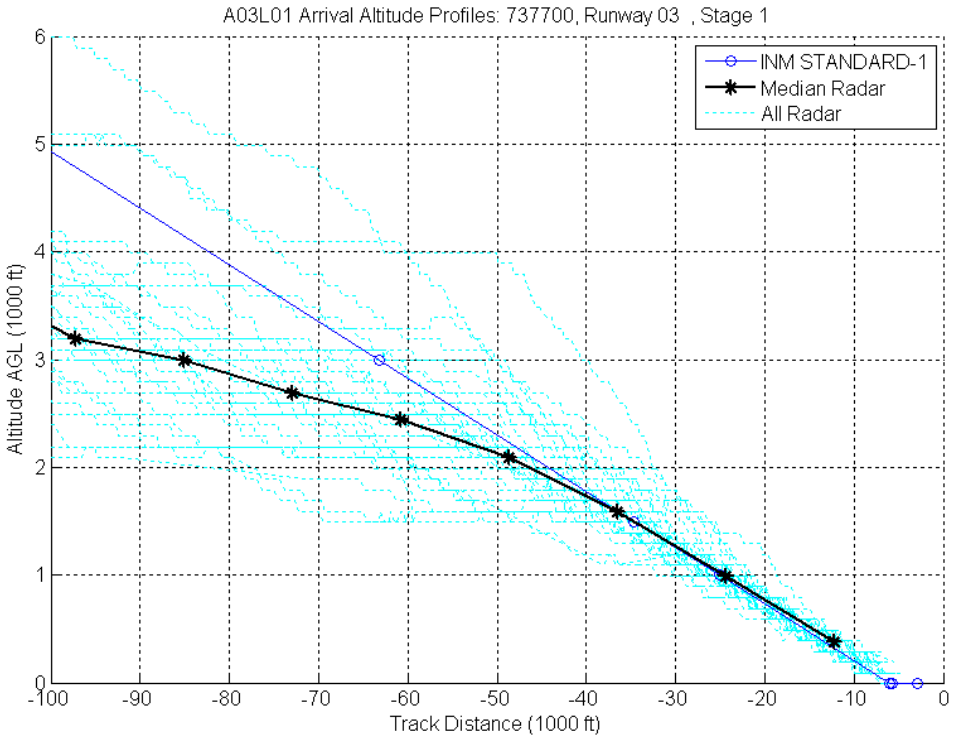
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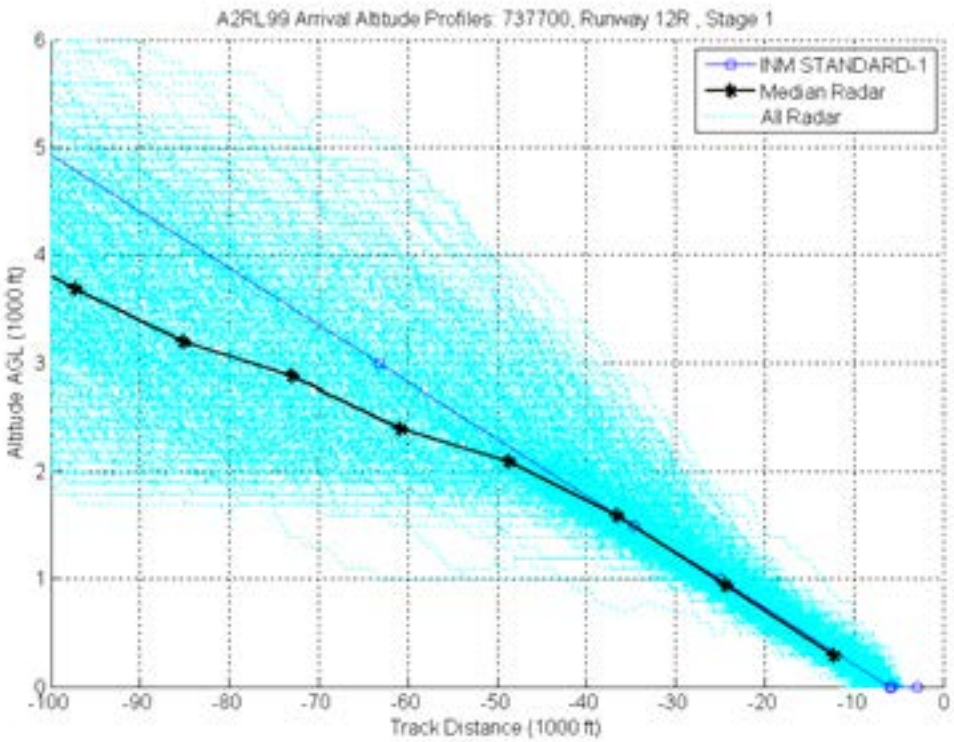
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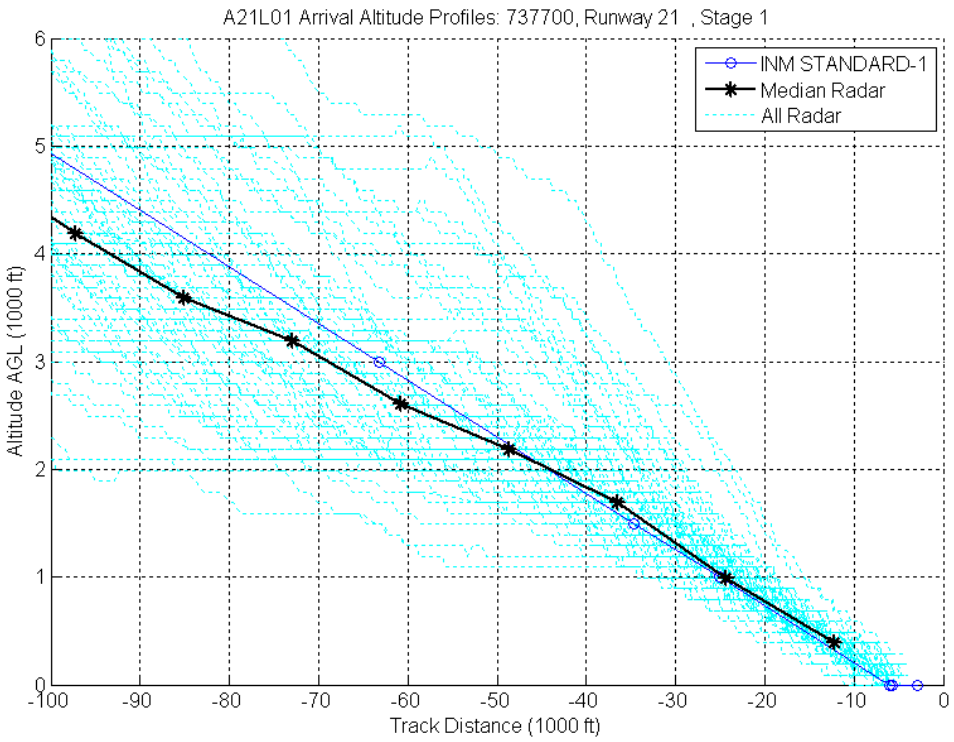
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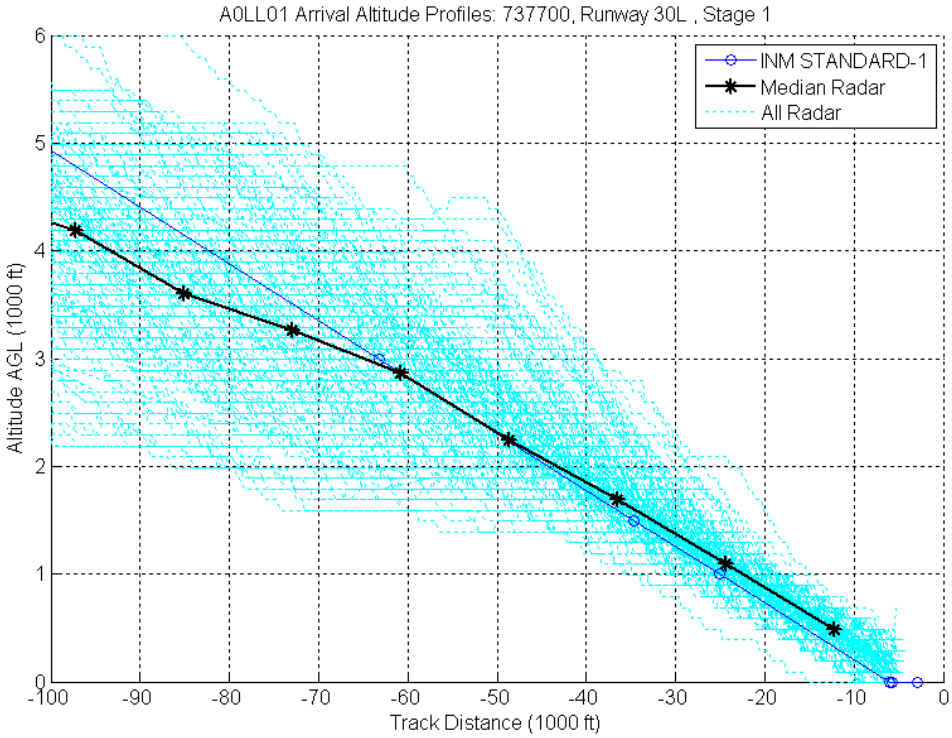
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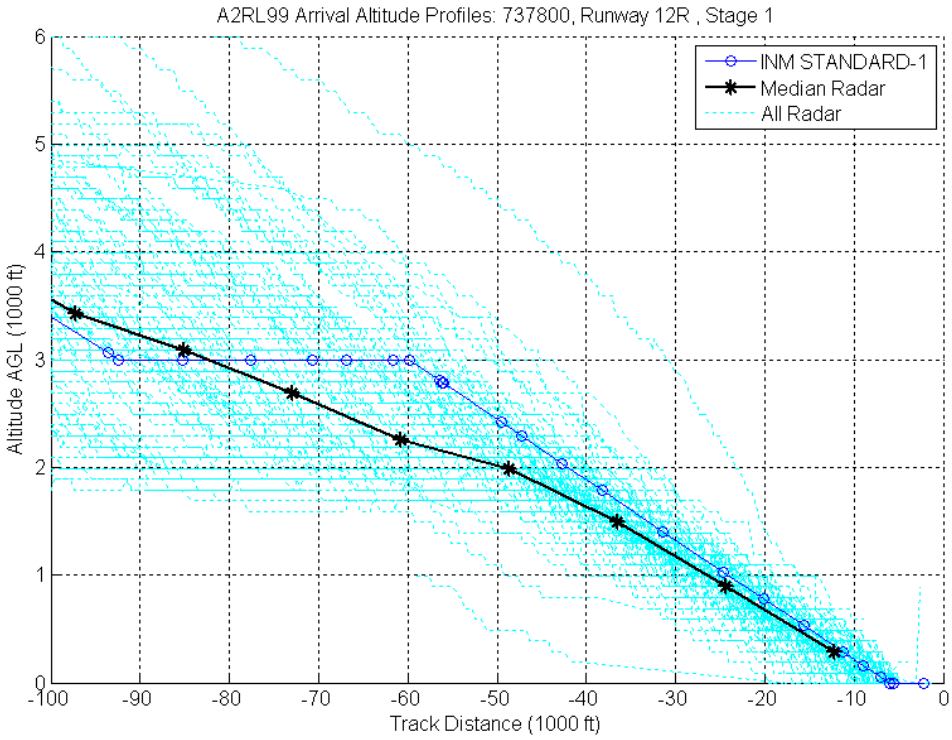
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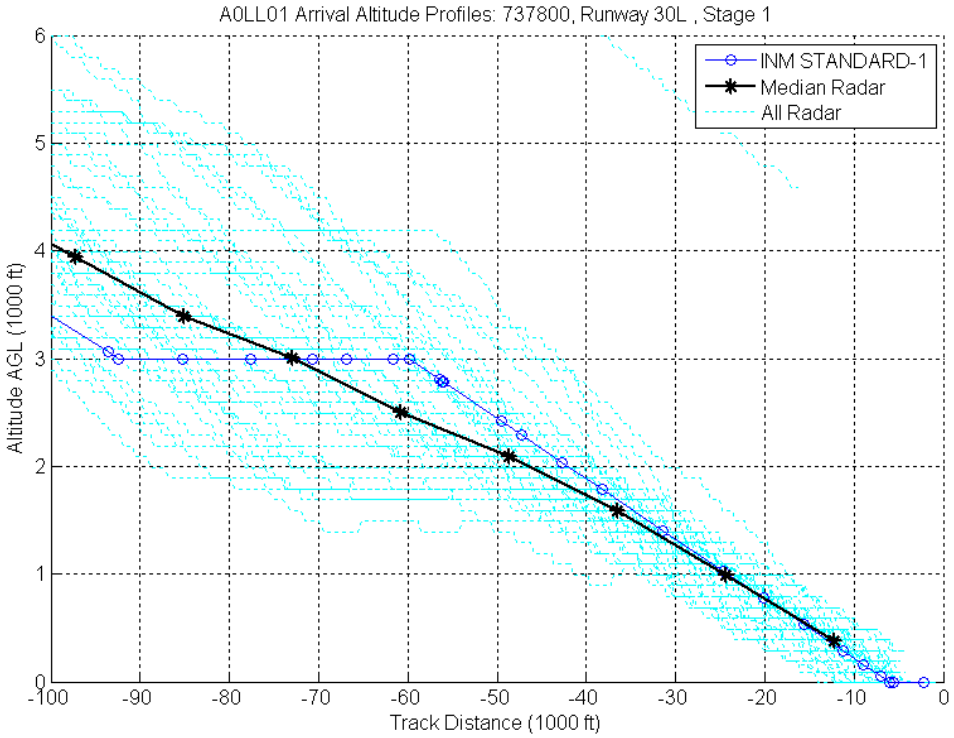
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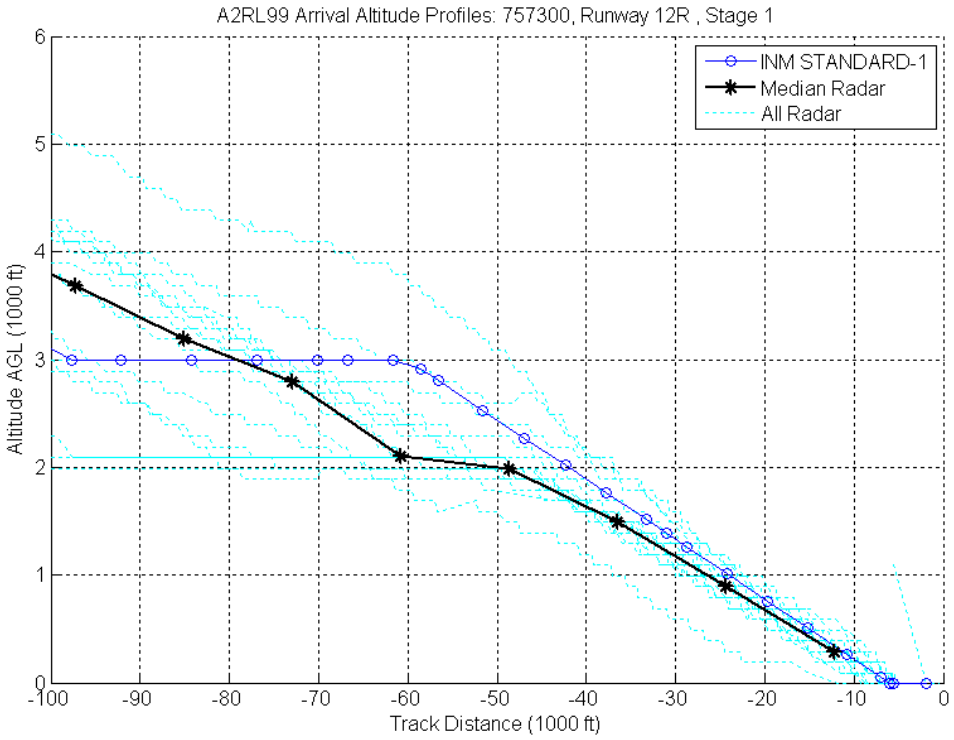
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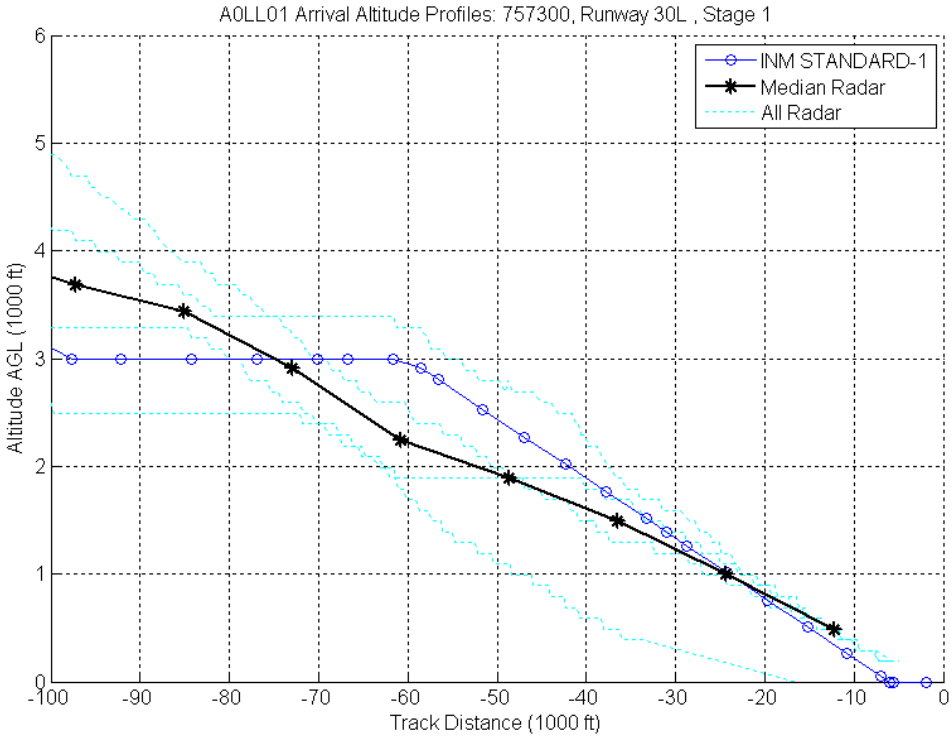
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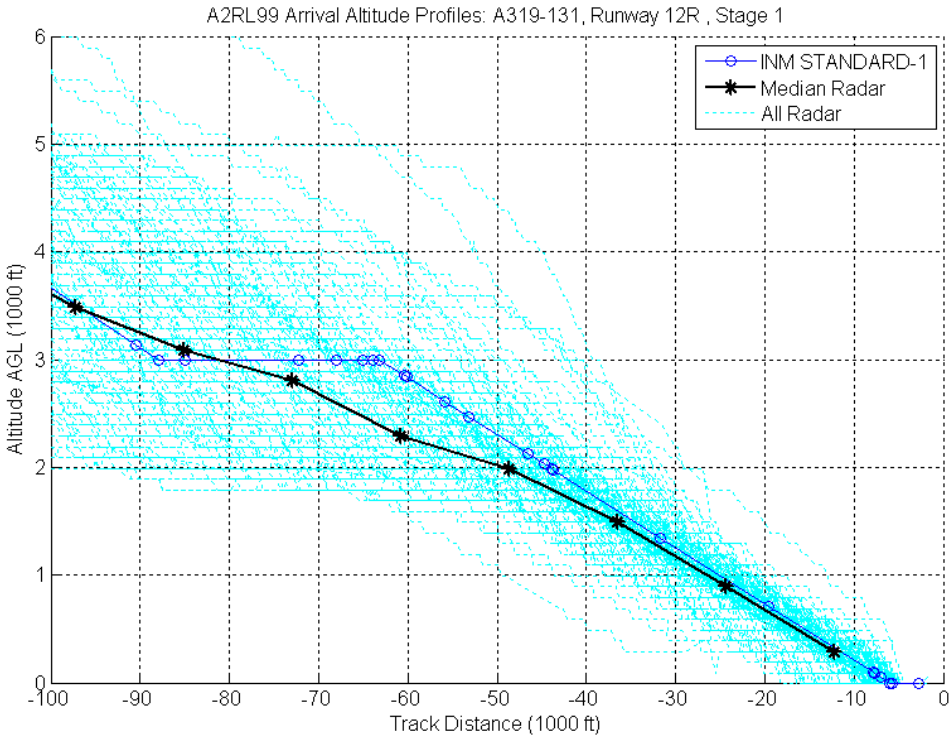
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Track Distance (1000 ft)
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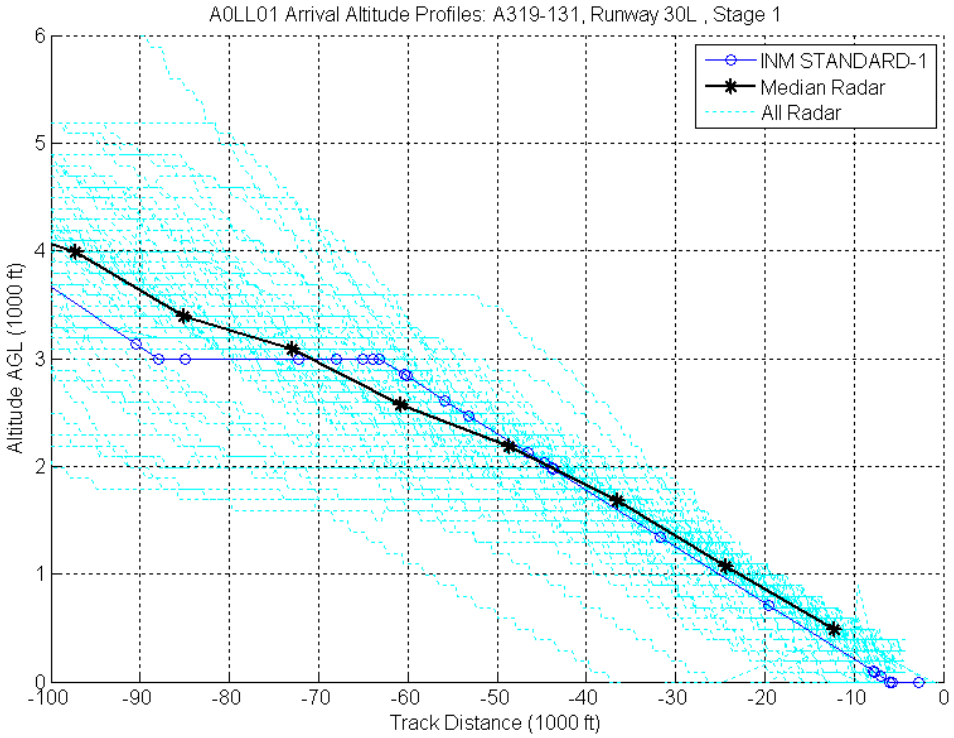
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Median Radar
All Radar
Altitude AGL (1000 ft)
Track Distance (1000 ft)
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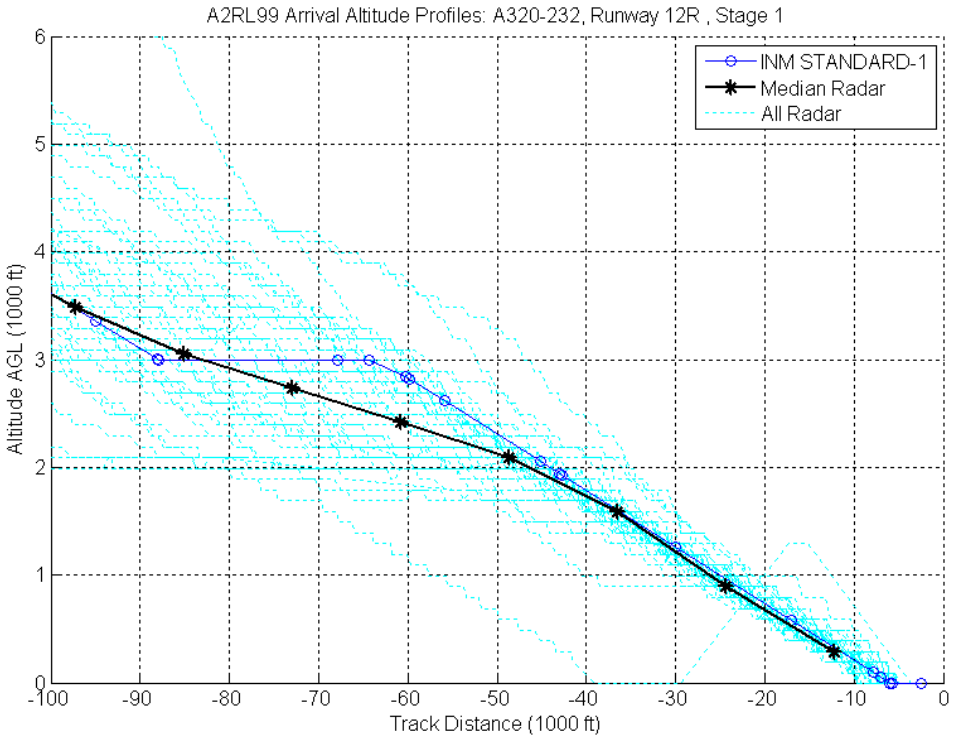
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All Radar
Altitude AGL (1000 ft)
Track Distance (1000 ft)
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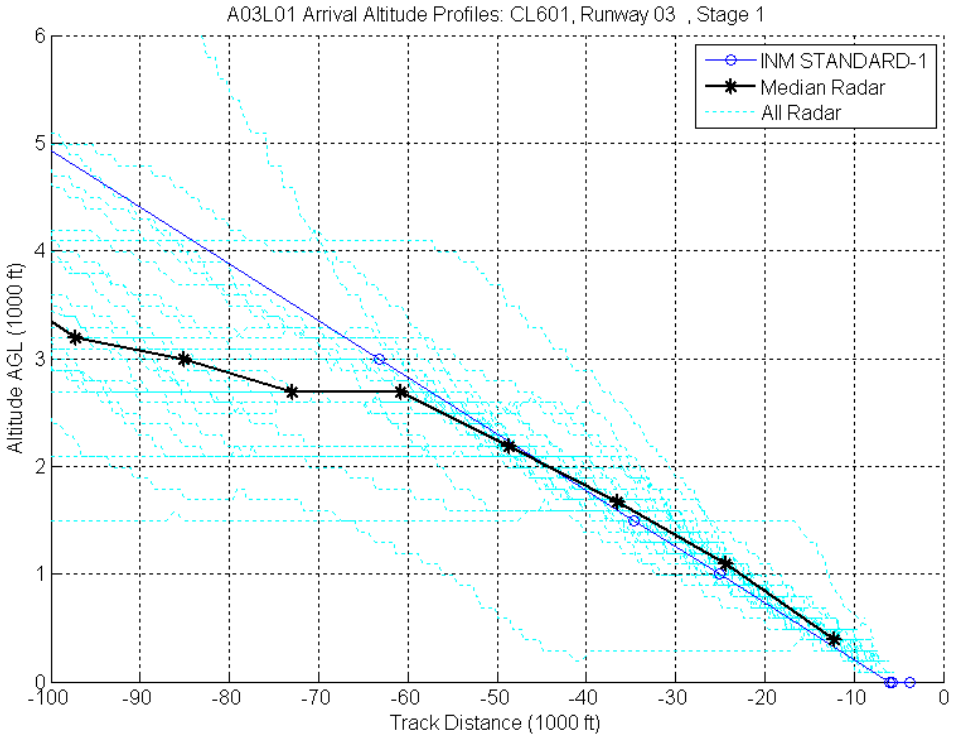
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All Radar
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Track Distance (1000 ft)
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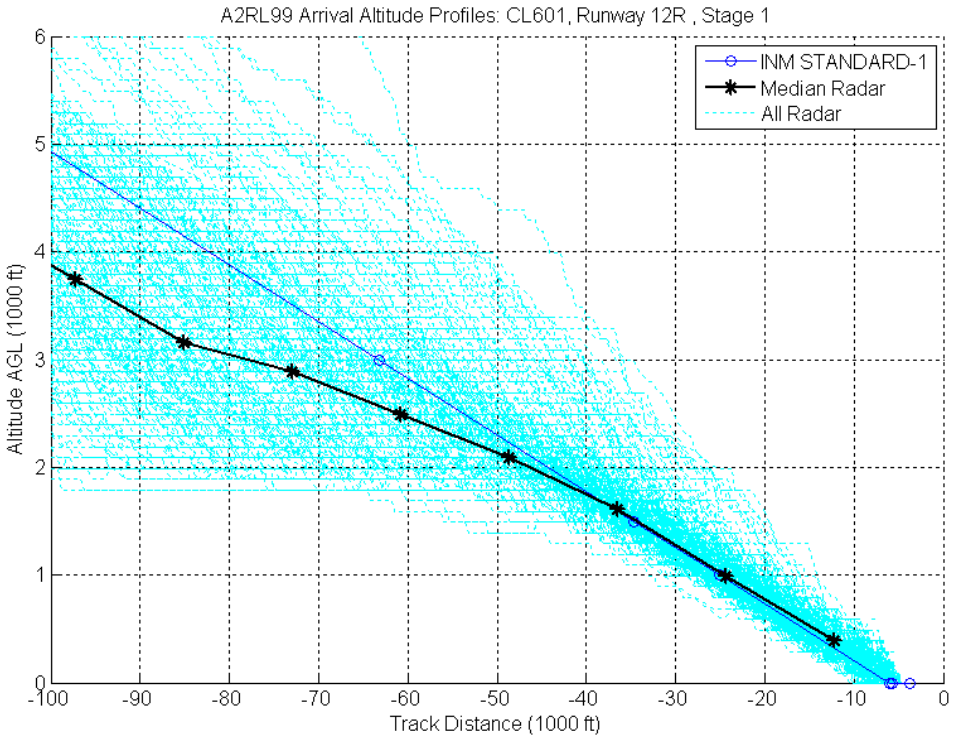
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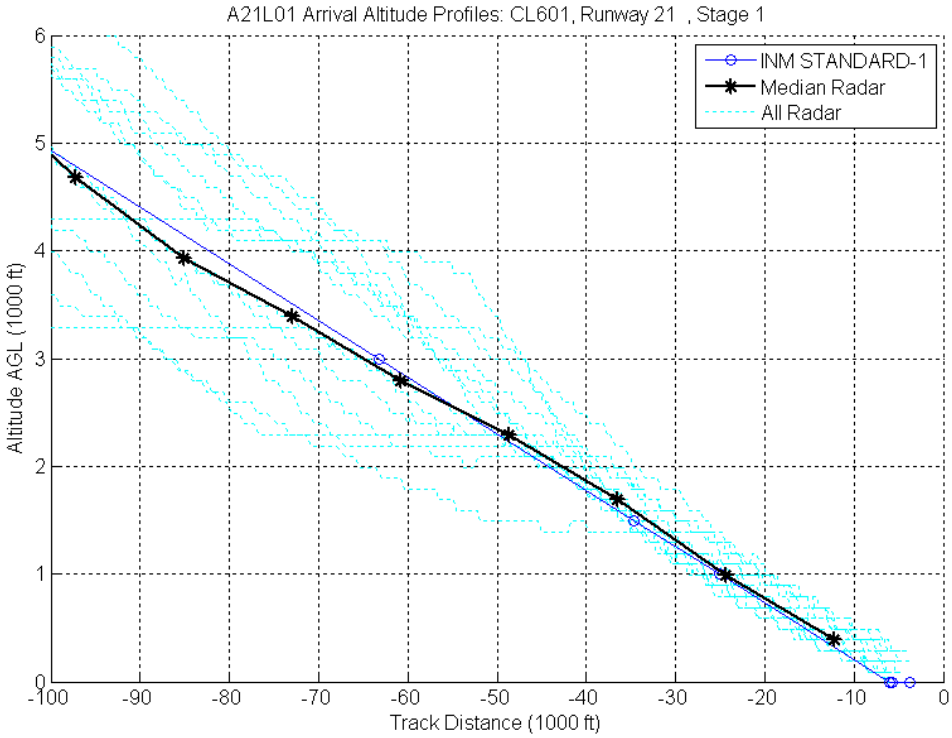
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All Radar
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Track Distance (1000 ft)
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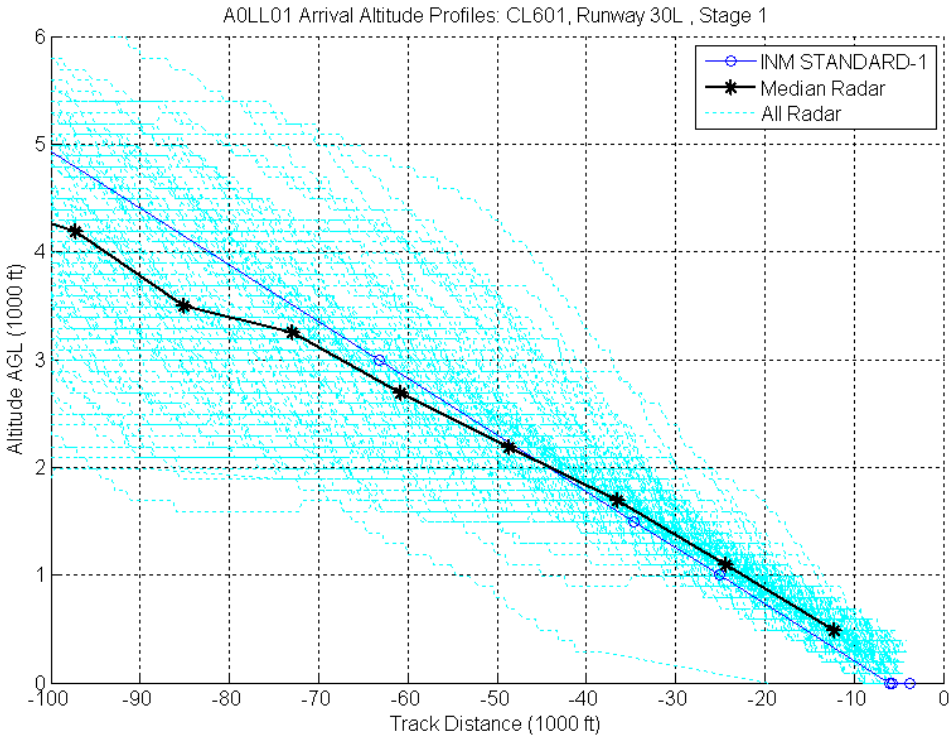
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All Radar
Altitude AGL (1000 ft)
Track Distance (1000 ft)
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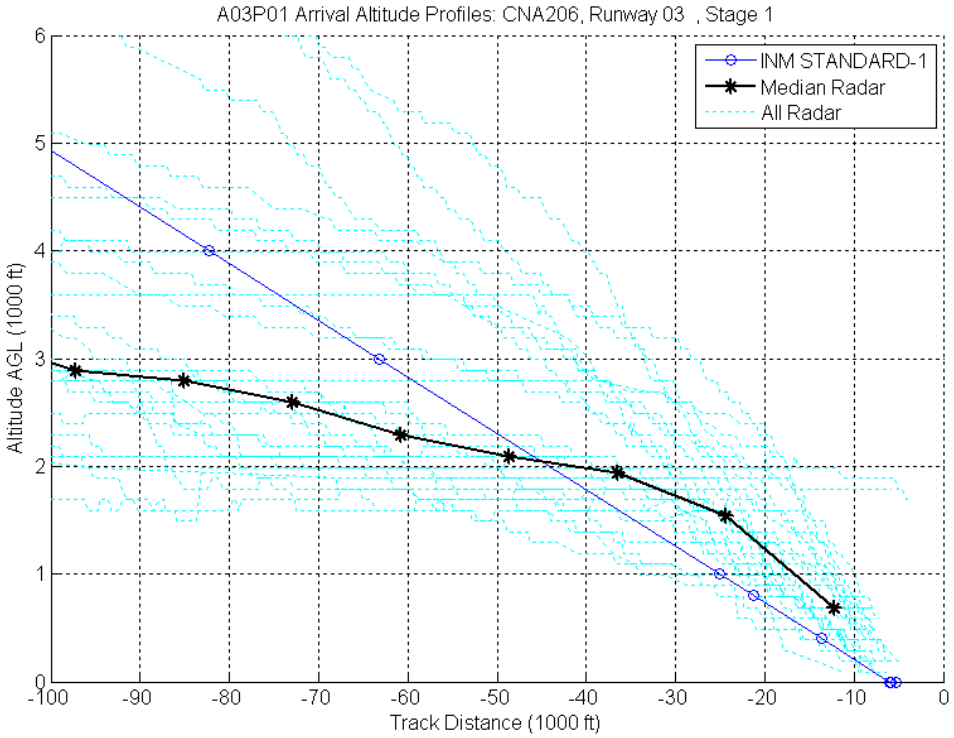
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All Radar
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Track Distance (1000 ft)
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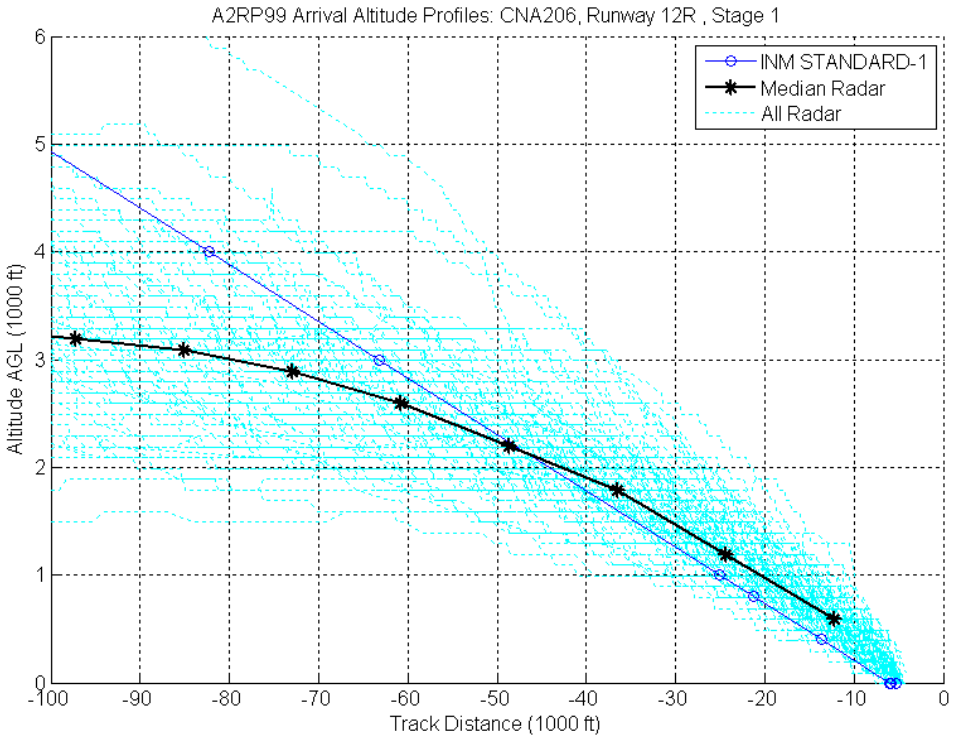
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All Radar
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Track Distance (1000 ft)
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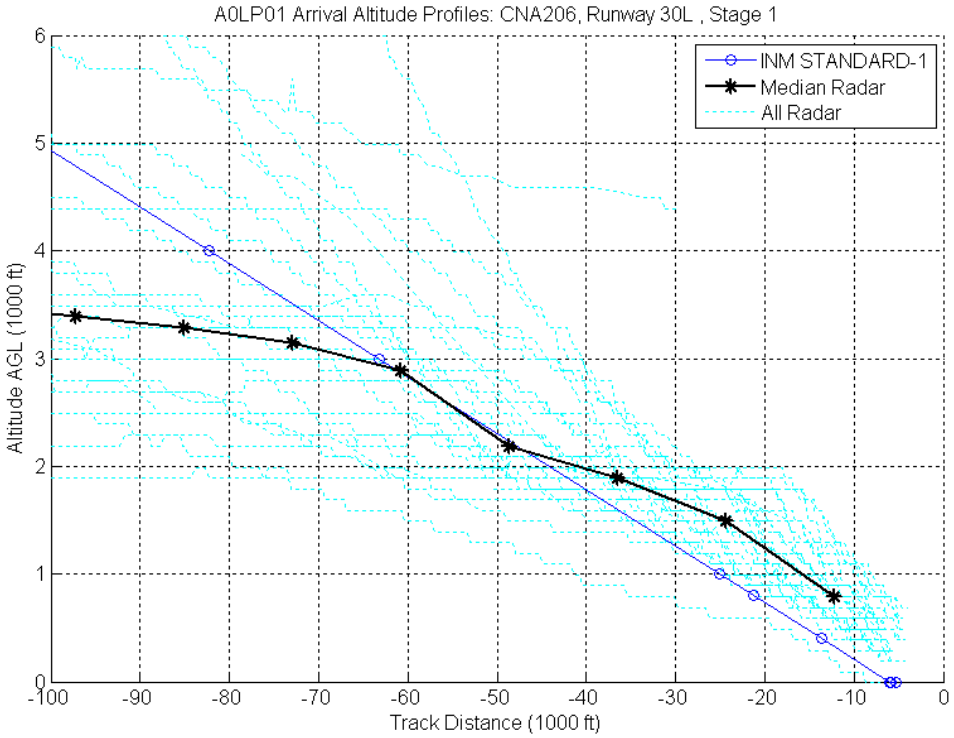
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All Radar
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Track Distance (1000 ft)
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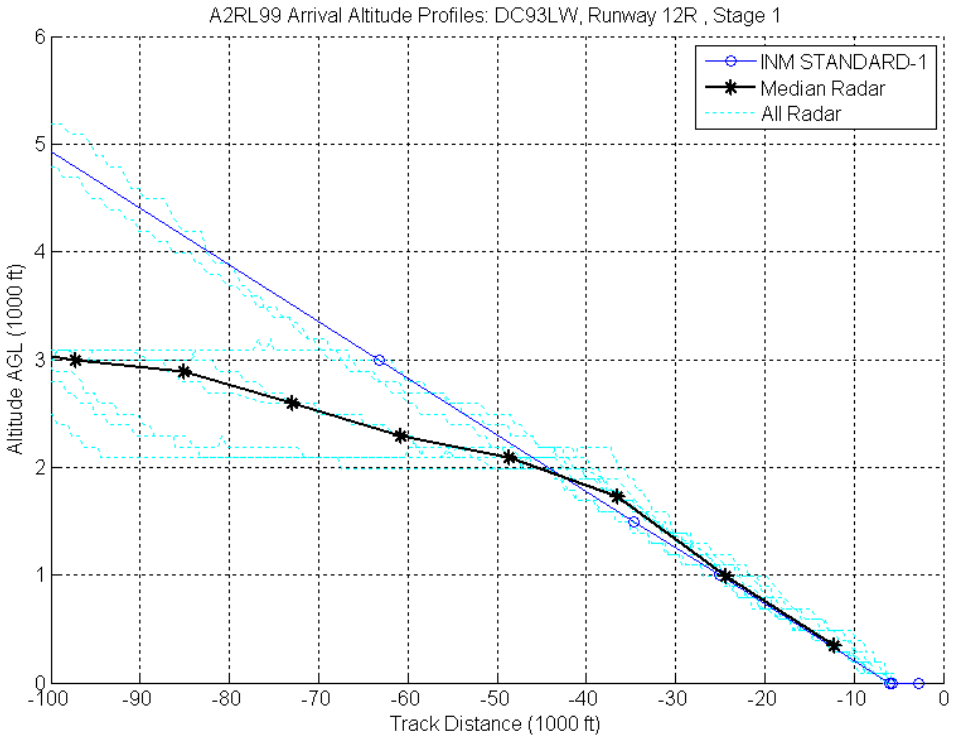
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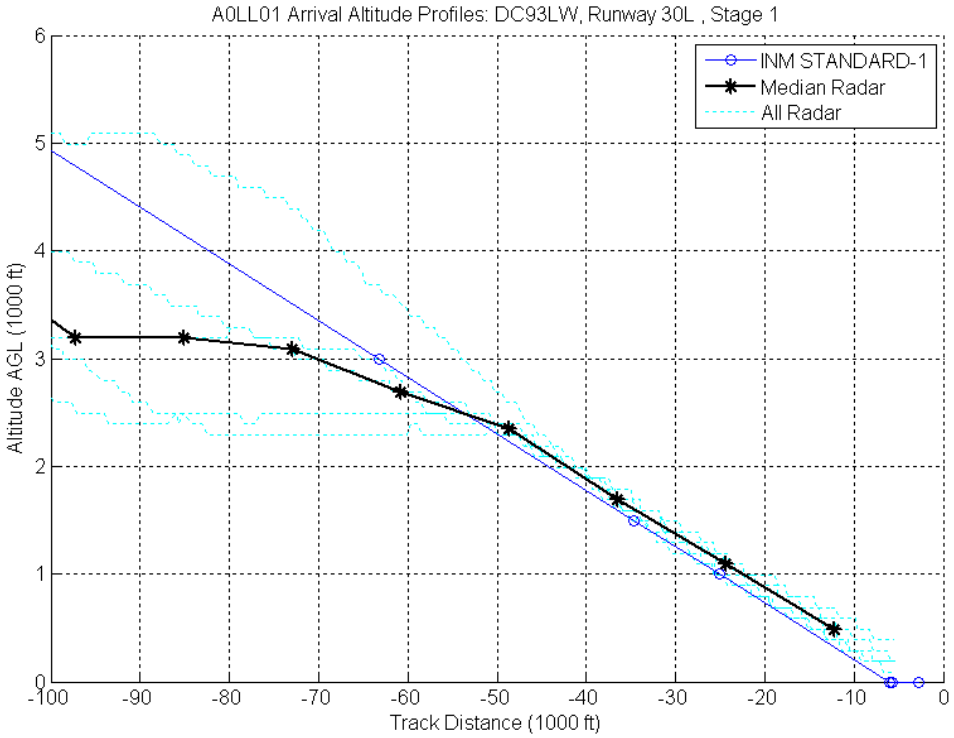
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Median Radar
All Radar
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Track Distance (1000 ft)
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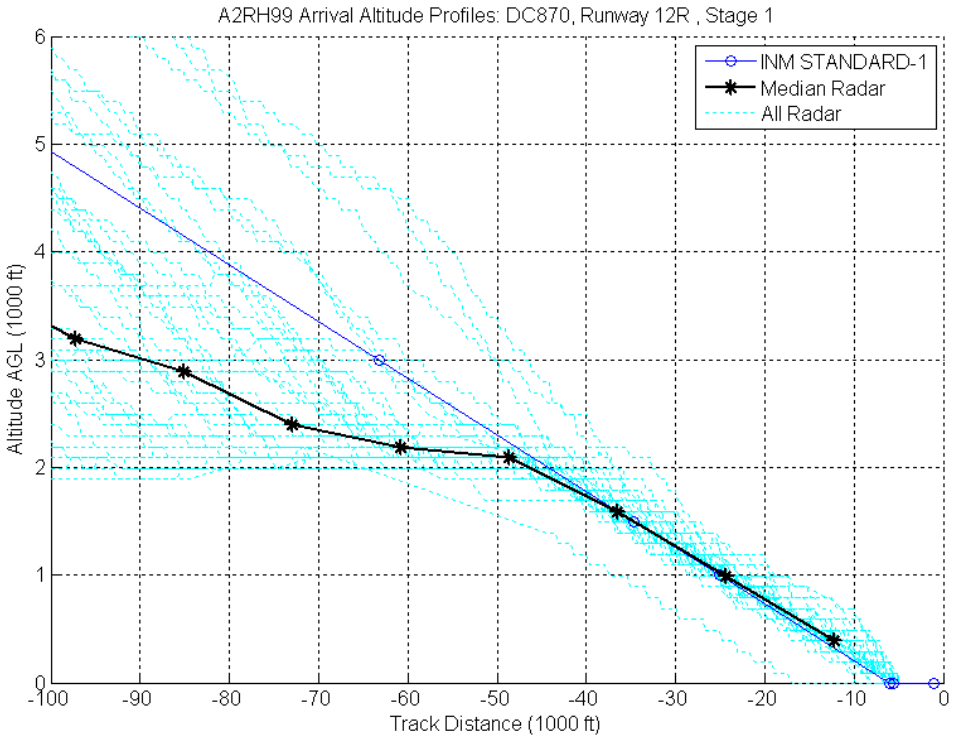
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All Radar
Altitude AGL (1000 ft)
Track Distance (1000 ft)
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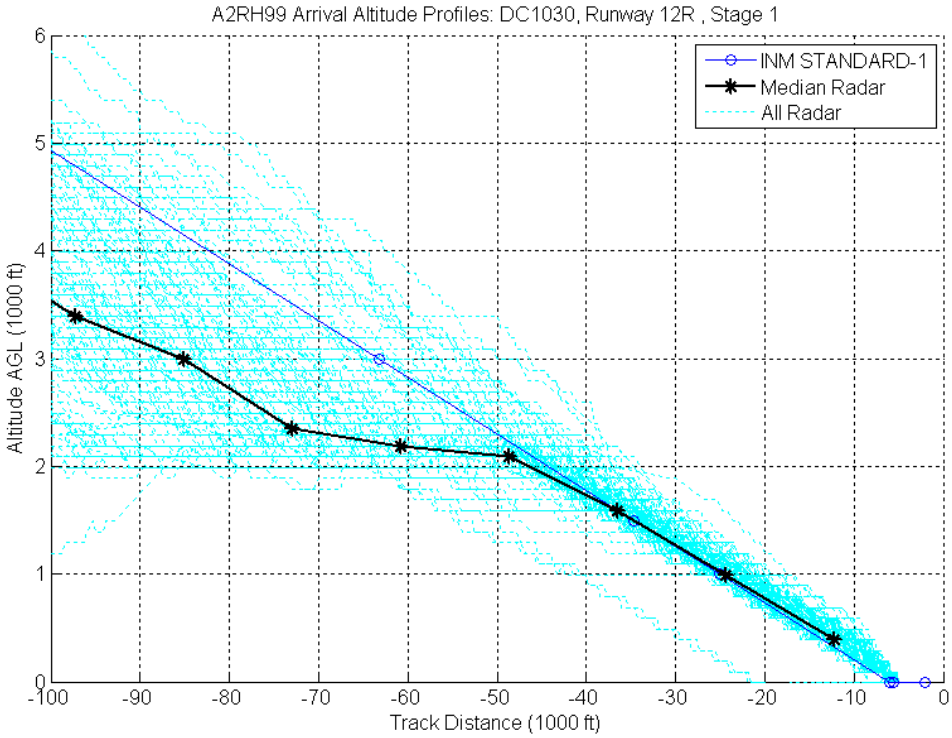
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All Radar
Altitude AGL (1000 ft)
Track Distance (1000 ft)
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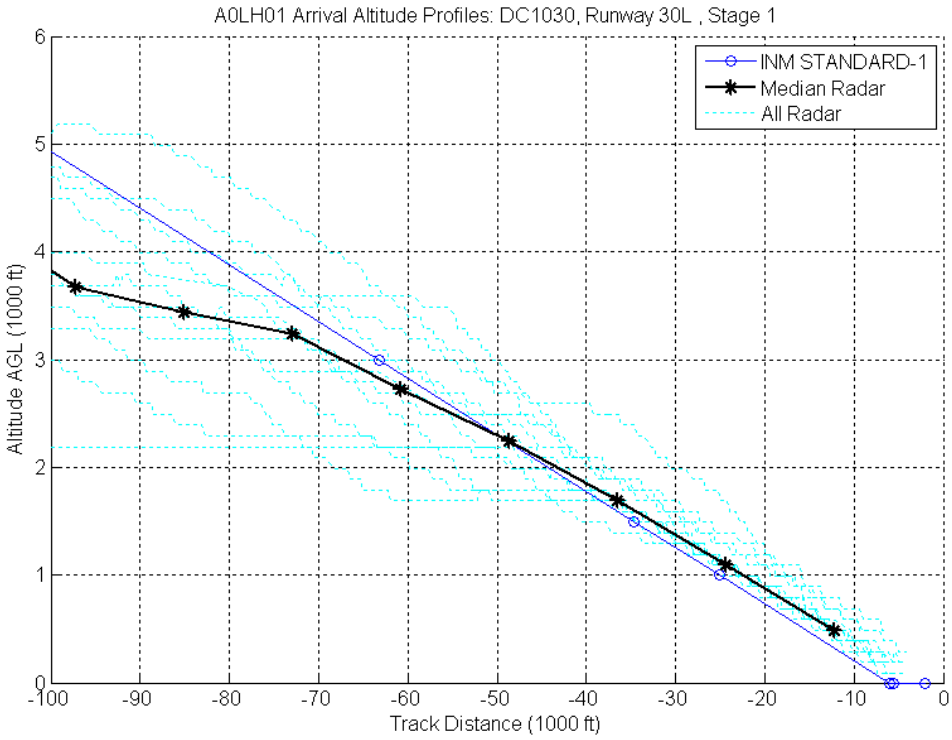
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Median Radar
All Radar
Altitude AGL (1000 ft)
Track Distance (1000 ft)
0
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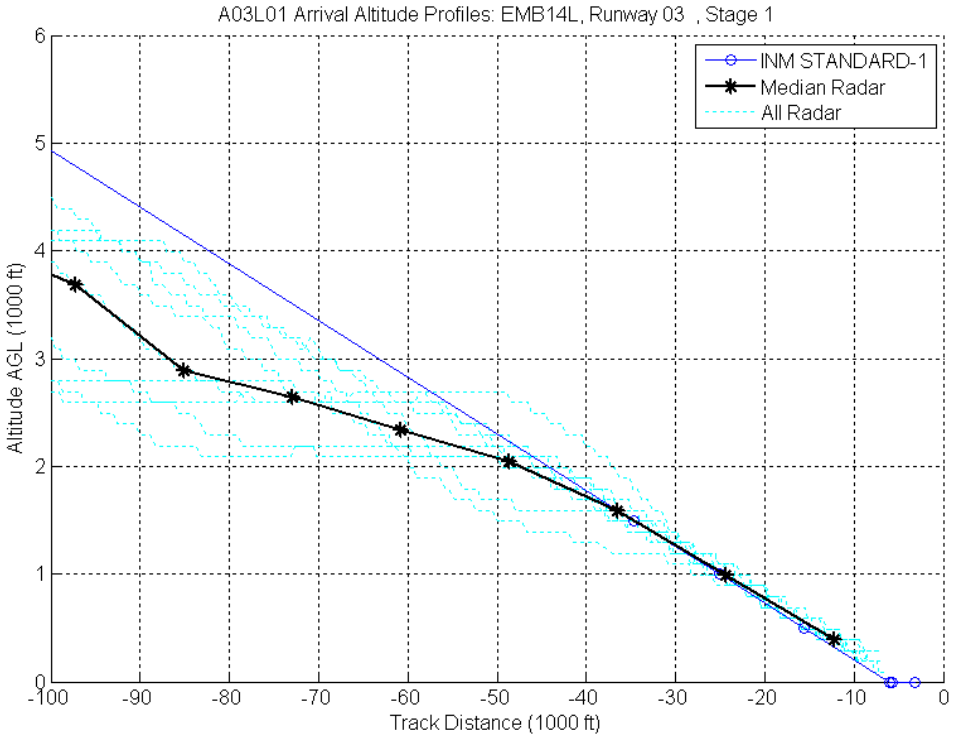
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Median Radar
All Radar
Altitude AGL (1000 ft)
Track Distance (1000 ft)
0
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-100
-90
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-50
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-20
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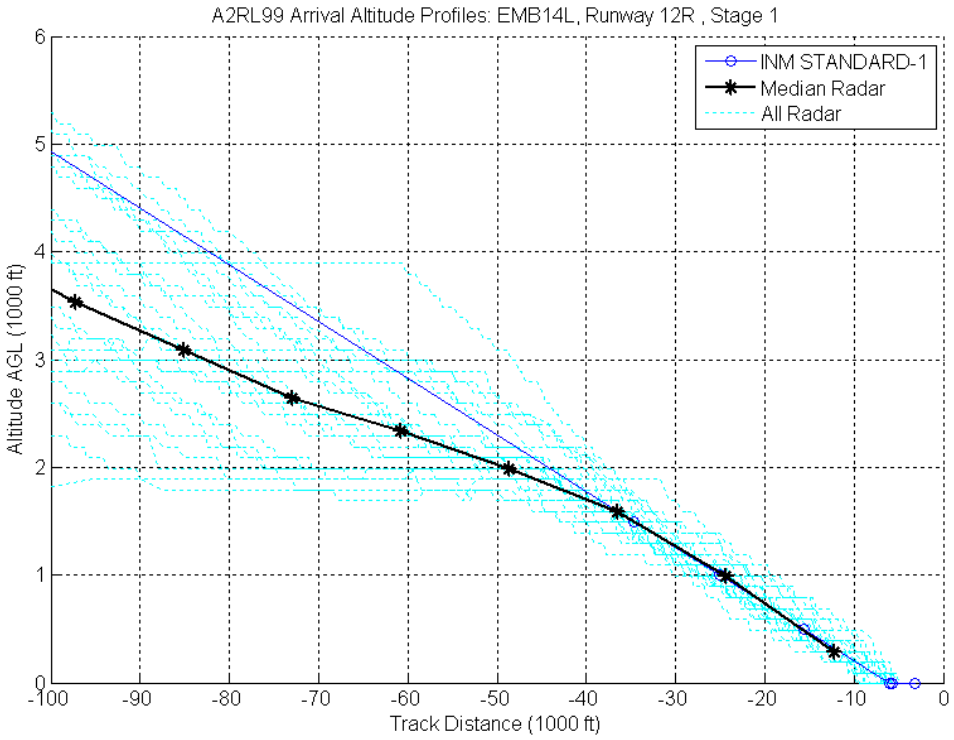
0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Median Radar
All Radar
Altitude AGL (1000 ft)
Track Distance (1000 ft)
0
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-100
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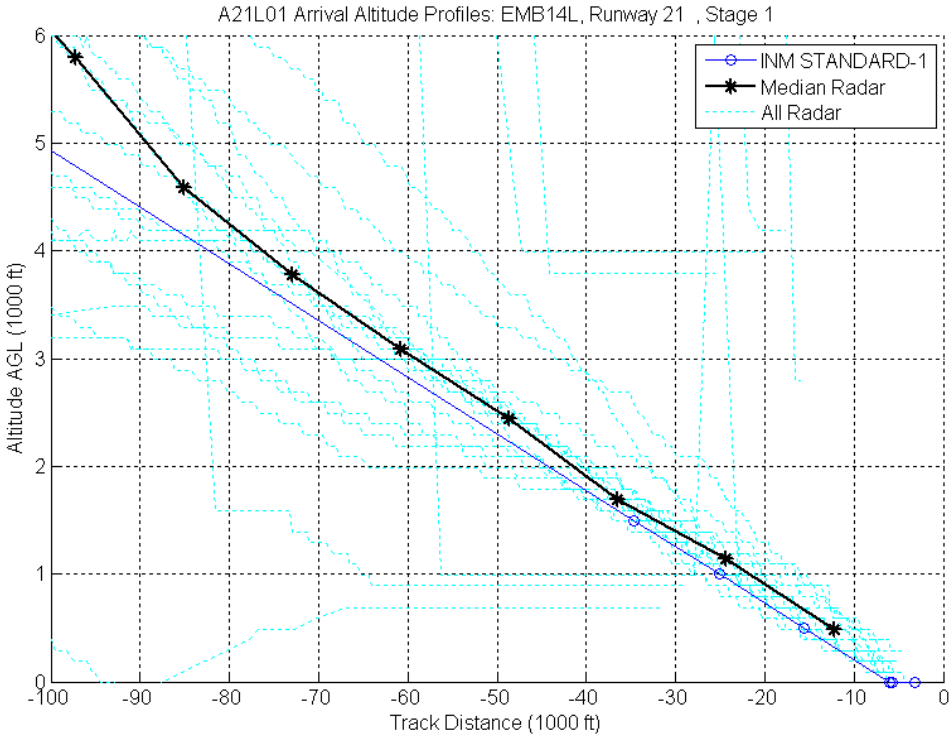
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Median Radar
All Radar
Altitude AGL (1000 ft)
Track Distance (1000 ft)
0
1
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-100
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-70
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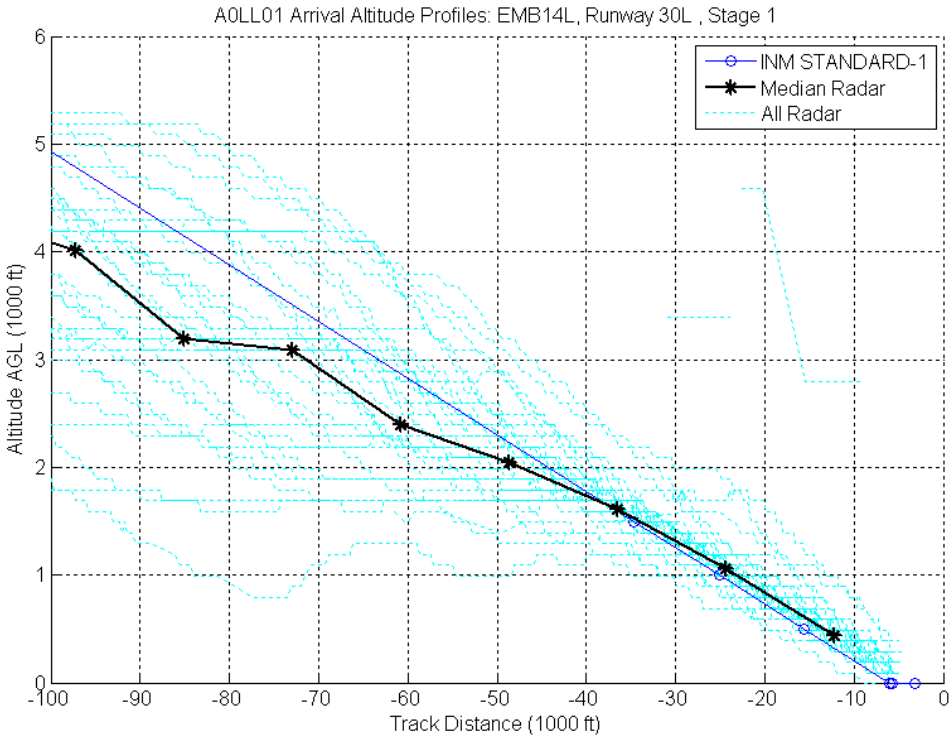
0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Median Radar
All Radar
Altitude AGL (1000 ft)
Track Distance (1000 ft)
0
1
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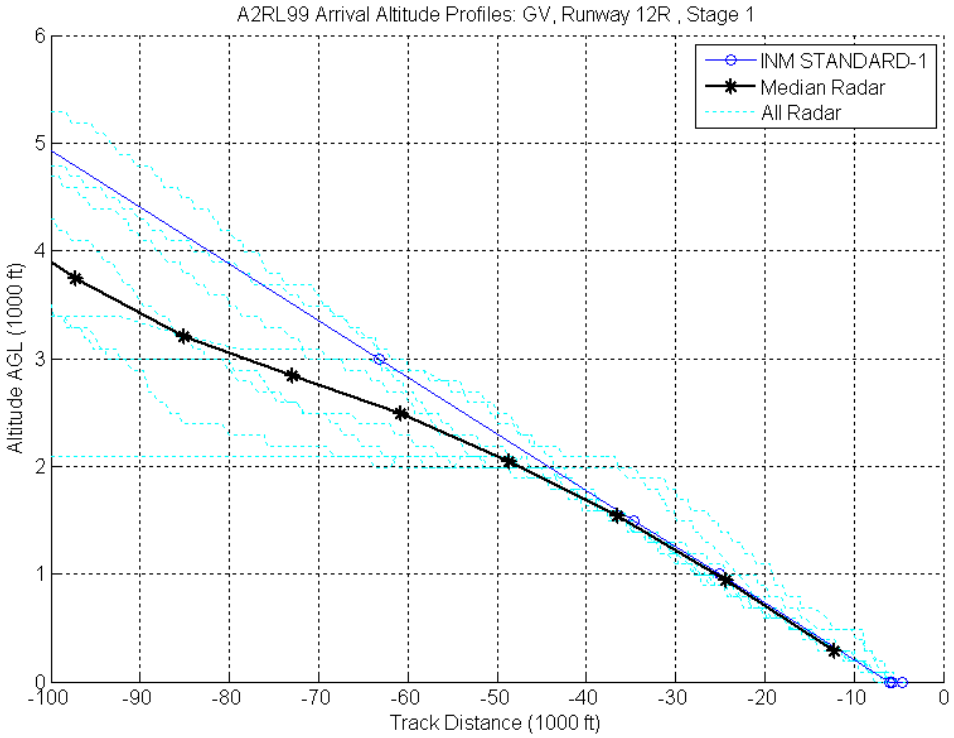
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All Radar
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Track Distance (1000 ft)
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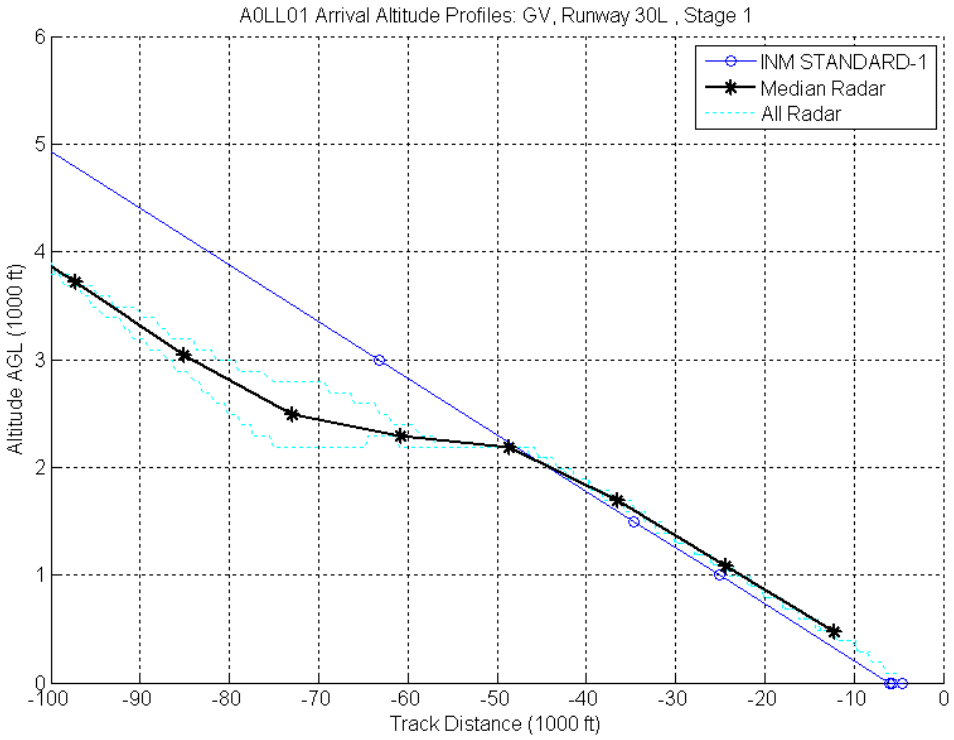
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Median Radar
All Radar
Altitude AGL (1000 ft)
Track Distance (1000 ft)
0
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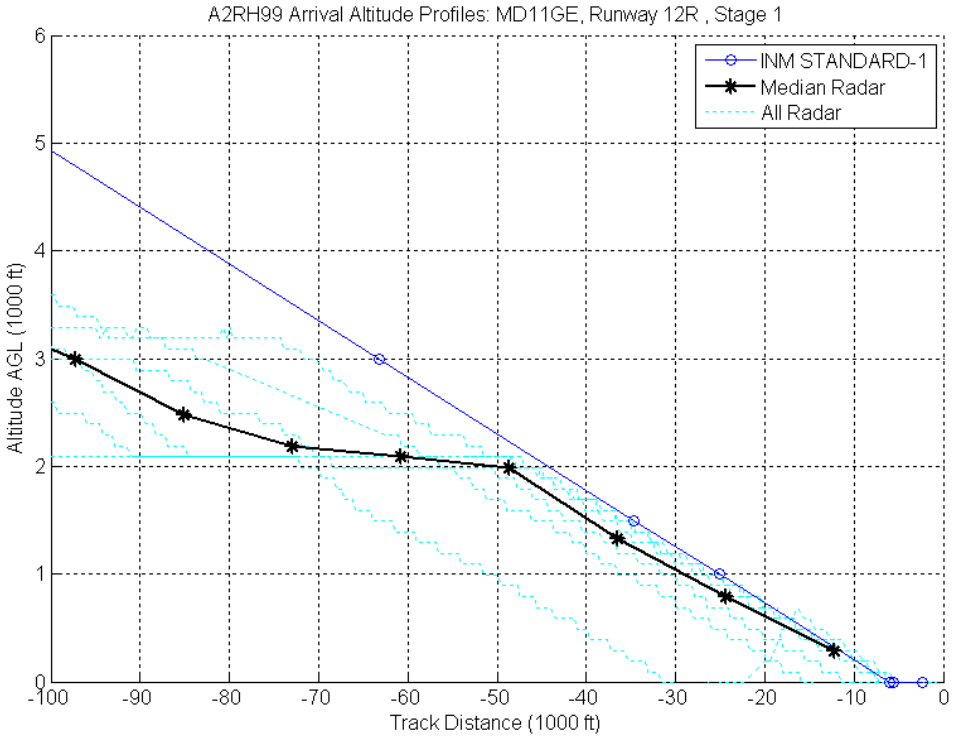
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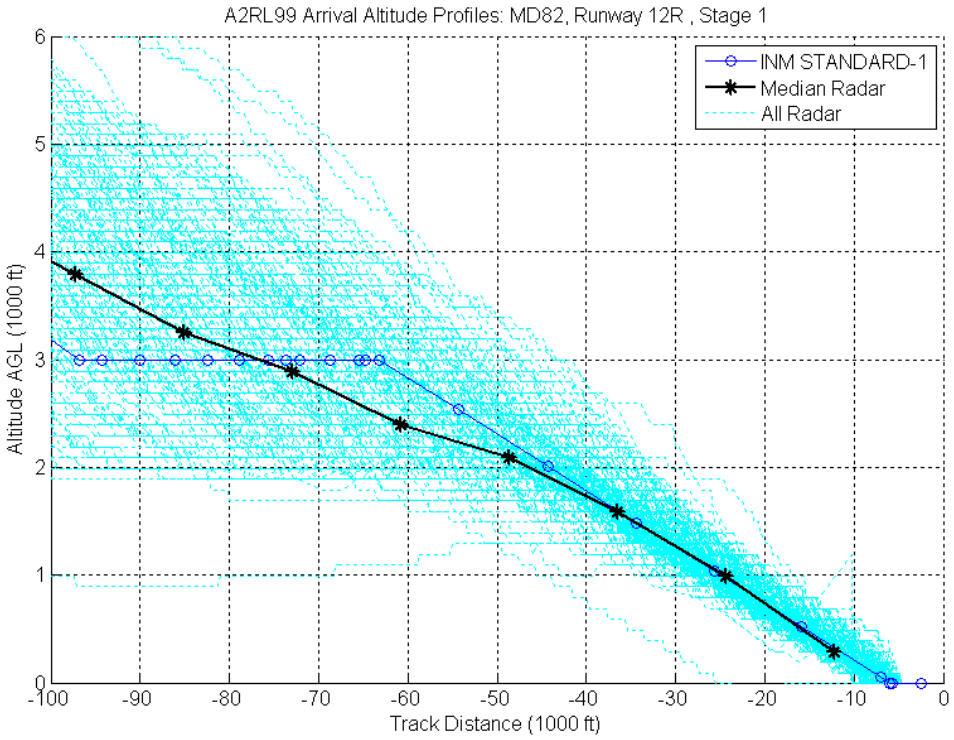
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All Radar
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Track Distance (1000 ft)
0
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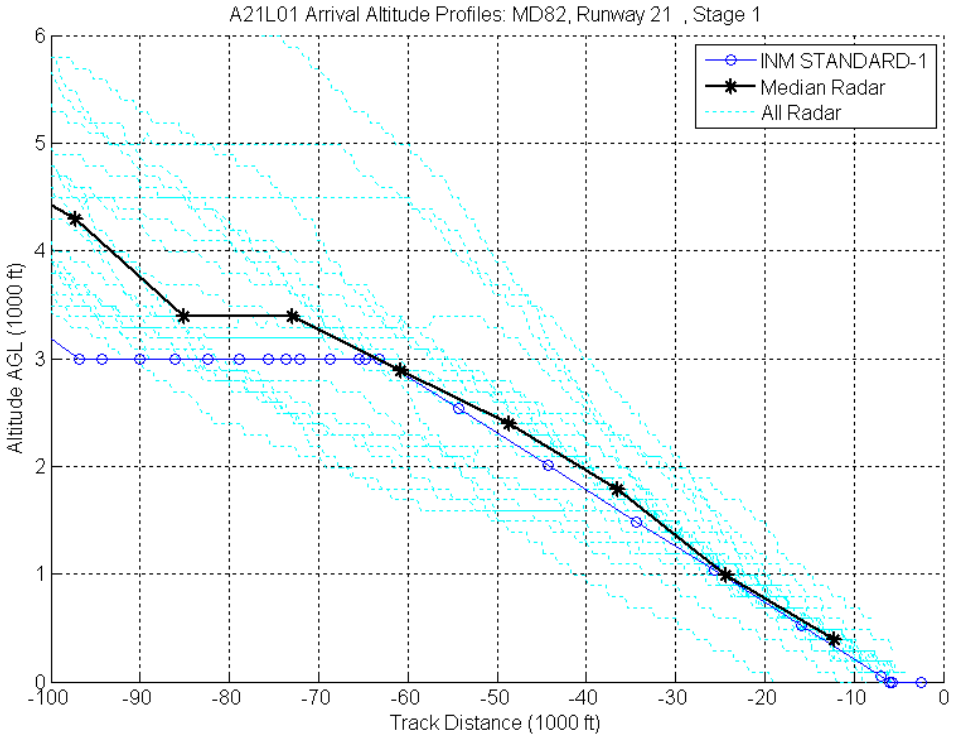
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All Radar
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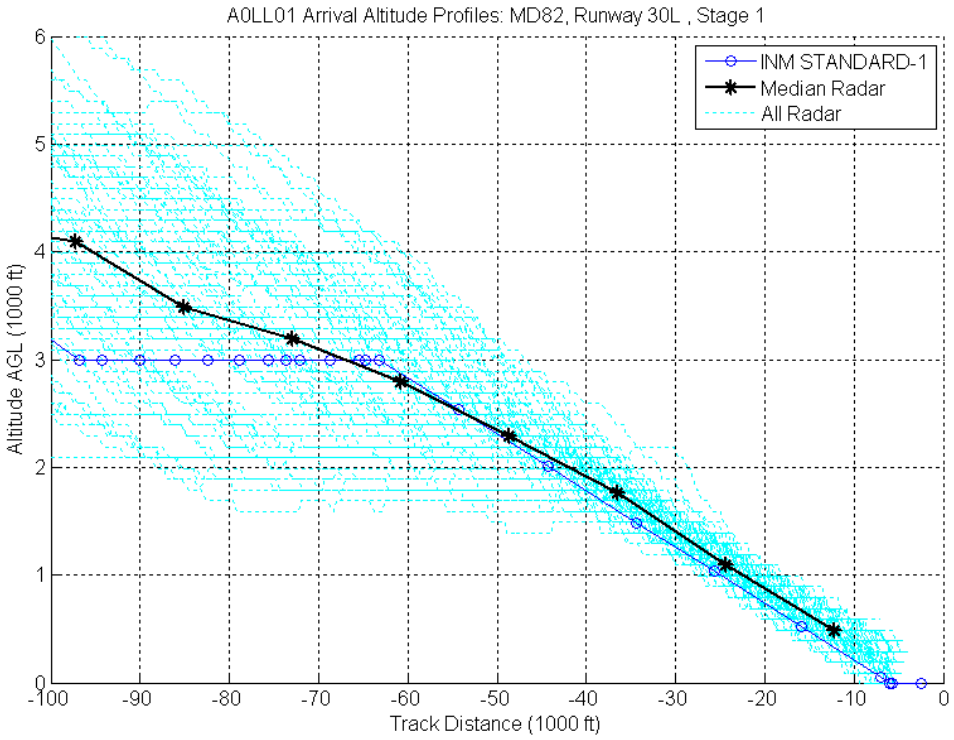
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All Radar
Altitude AGL (1000 ft)
Track Distance (1000 ft)
0
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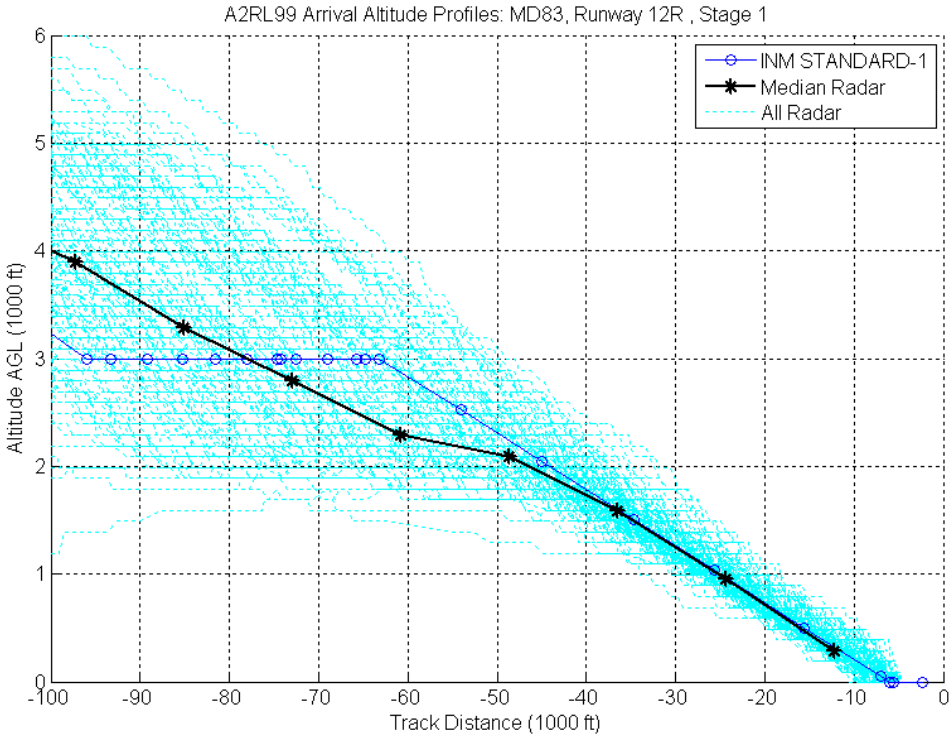
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All Radar
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Track Distance (1000 ft)
0
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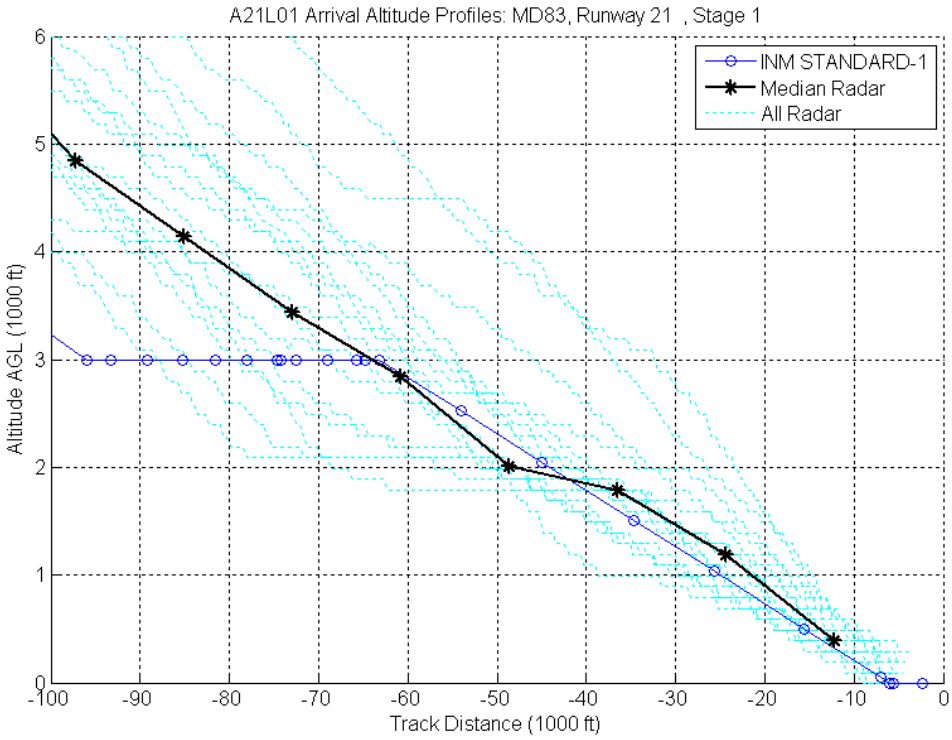
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All Radar
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Track Distance (1000 ft)
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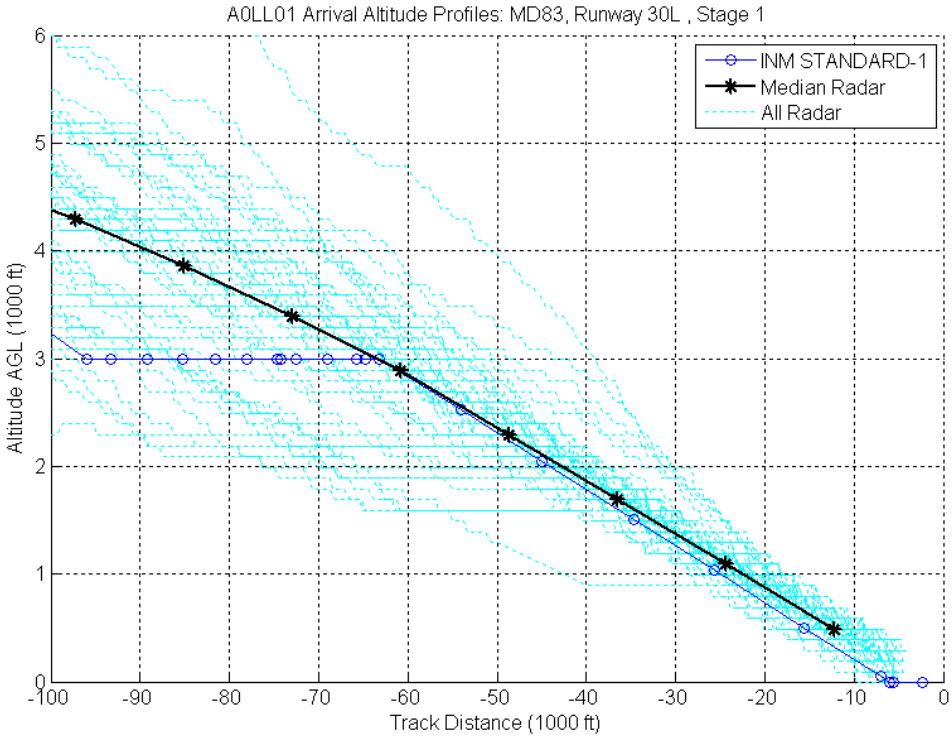
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Track Distance (1000 ft)
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APPENDIX G

ADDENDUM

Prepared for:

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Aviation Department
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San Antonio, TX 78216

`

ADDENDUM

Wyle Report

WR 09-01

Noise Exposure Map Report and Noise Compatibility Program Update for San Antonio International Airport

Job No. T56279

February 2009

Prepared by:

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1.0 Introduction

The purpose of this Addendum is to provide updated noise model data and noise exposure results based on additional analysis performed since the publication of the Draft report (Draft Noise Exposure Map Report and Noise Compatibility Program Update for San Antonio International Airport, January 2009). This additional analysis was completed at the request of the FAA and involved additional coordination with FAA and Air Traffic Control (ATC) personnel. The fleet mix, runway utilization, and flight tracks used in the noise model were reviewed and refined resulting in revisions to the Noise Exposure Maps (NEMs), as shown in this Addendum.

This Addendum is considered an integral part of the Draft report and provides specific updates to the following sections: Section 3.0 Existing Conditions 2009; Section 4.0 Future Conditions 2014; and Section 5.0 Noise Exposure Maps. All tables and figures included in this Addendum replace the corresponding tables and figures shown in the Draft report.

1.1 Update to Section 3.2

Section 3.2 of the Draft report details the data sources used in the Existing Conditions 2009 noise modeling. Following publication of the Draft report, the FAA ATC provided operational data obtained from the STARS system. The FAA STARS system records live radar data from the ATC system, and a database was provided which included aircraft type, aircraft category (air carrier, air taxi, general aviation, and military) operation type, flight number/call sign, time of operation, and date of operation, for each operation flown into and out of the Airport between December 3, 2007 and September 30, 2008. This set of data did not include runway utilization information.

1.2 Update to Section 3.3.1

The STARS data was used to verify the fleet mix for Existing Conditions 2009, including the number of arrivals and departures of each type of aircraft occurring during daytime and nighttime hours. The STARS fleet mix was used instead of the other data sources previously used (NOMS, DOT-BTS, and Landing Fee reports) to generate a new fleet mix. Since the STARS data did not include a full year, it was scaled by computing percentages of each aircraft type/operation type/time of day in each category (air carrier, air taxi, general aviation, and military) then applying the percentages to the annual numbers of operations shown in Table 3-1 (which remains unchanged). The resulting revised fleet mix is shown below in Table 3-2. For the air carrier/cargo/commuter category, the revised fleet mix was very consistent with the previous fleet mix. There were some differences in the GA fleet mix in the numbers of helicopters and business jets. Finally, the STARS data provided a more accurate depiction of military fleet mix.

Table 3-2. Existing Conditions Fleet Mix

Aircraft Category	INM Aircraft	Annual Operations
Air Carrier/Cargo/Commuter		
Heavy Jet	DC1030	1,284
	A300-622R	791
	DC870	433
	MD11GE	55
	A310-304	25
	767300	17
	74720B	5
	767CF6	5
	777200	5
	A300B4-203	5
	747400	2
	767400	2
Large Jet	737700	20,743
	CL601	18,016
	737300	17,311
	MD82	11,550
	A319-131	7,029
	737500	5,857
	MD83	5,417
	EMB14L	5,084
	EMB145	3,697
	737800	3,476
	757PW	2,645
	727EM2	2,023
	A320-232	1,858
	717200	957
	DC93LW	751
	EMB145	429
	757300	292
	GII	224
	DC95HW	212
	CL601	163
	GIV	130
	737400	121
	GV	39
	MD87	34
	MD81	33
	737N9	17
	GIIB	11
	GULF1	11
	GV	10
	727EM1	7
	737N17	7
	DC910	2
Turbo-prop/Prop	{Multiple}	11,846
Helicopter	B222	1,280
Business Jet	{Multiple}	7,244

Note: Operations are rounded to the nearest whole number.

Source: FAA STARS data from 12-3-07 to 9-30-08

Table 3-2. Existing Conditions Fleet Mix – *concluded*

Aircraft Category	INM Aircraft	Annual Operations
General Aviation		
Turbo-prop/Prop	{Multiple}	52,579
Business Jet	{Multiple}	27,523
Helicopter	B222; R22	4,648
Large Jet	{Multiple}	3,228
Other	{Multiple}	32
Military		
Heavy Jet	{Multiple}	1
Helicopter	S70	475
Large Jet	{Multiple}	153
Military	T34	621
	T1	240
	C130	87
	C17	83
	T-38A	50
	F16A	28
	T44	25
Turbo-prop/Prop	{Multiple}	1,443
Small Jet	T6	648
	LEAR35	136
	MU3001	88
	FAL20	20
	LEAR25	7
	CL600	4
	CNA500	4
	CNA750	1
	CNA152	1

Note: Operations are rounded to the nearest whole number.
Source: FAA STARS data from 12-3-07 to 9-30-08

Section 3.3.2 of the Draft report discusses time of day operations. Section 3.3.2 and Table 3-3 remain unchanged, as the overall time of day utilization in the Draft report was equivalent to the STARS data. However, the STARS data was used to compute the number of day and night operations for each aircraft type individually.

1.3 Update to Section 3.4

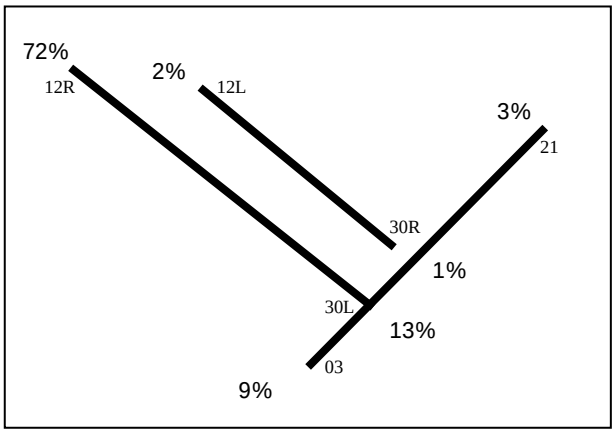
Section 3.4 of the Draft report discusses runway utilization. After consulting with ATC staff, the utilization of Runway 12L/30R, the Airport's shortest runway, was increased for propeller and business jet aircraft. This increase was based upon percentages derived from the NOMS data. Shown below are revised Table 3-4 and corresponding Figure 3-1.

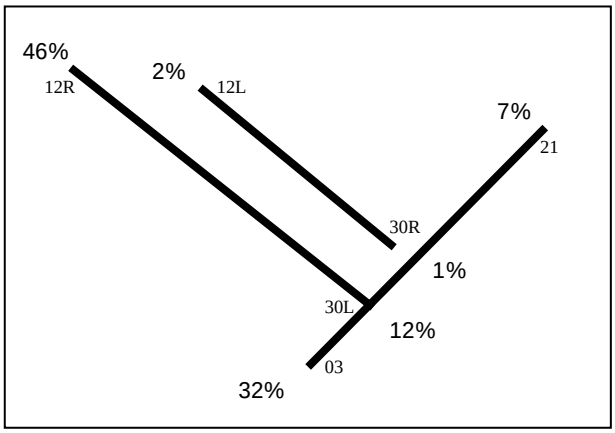
Table 3-4. Runway Utilization

Operation Type	Category	Time of Day	Runway						Total
			03	12L	12R	21	30L	30R	
Arrival	Heavy Jet	Day	9%	0%	74%	1%	16%	0%	100%
		Night	12%	0%	81%	0%	7%	0%	100%
	Large Jet	Day	6%	0%	79%	1%	14%	0%	100%
		Night	5%	0%	86%	2%	7%	0%	100%
	Military	Day	4%	0%	80%	3%	13%	0%	100%
		Night	3%	0%	90%	1%	6%	0%	100%
	Propeller	Day	8%	3%	73%	1%	14%	1%	100%
		Night	5%	3%	74%	4%	13%	1%	100%
	Small Jet	Day	6%	3%	75%	1%	14%	1%	100%
		Night	3%	3%	83%	4%	6%	1%	100%
Departure	Heavy Jet	Day	24%	0%	32%	23%	21%	0%	100%
		Night	29%	0%	30%	27%	13%	0%	100%
	Large Jet	Day	35%	0%	50%	1%	14%	0%	100%
		Night	39%	0%	43%	6%	13%	0%	100%
	Military	Day	19%	0%	68%	1%	11%	0%	100%
		Night	11%	0%	79%	3%	8%	0%	100%
	Propeller	Day	40%	1%	38%	7%	13%	1%	100%
		Night	41%	1%	27%	20%	10%	1%	100%
	Small Jet	Day	22%	1%	62%	1%	13%	1%	100%
		Night	25%	1%	64%	0%	9%	1%	100%
Total Arrival			9%	2%	72%	3%	13%	1%	100%
Total Departure			32%	2%	46%	7%	12%	1%	100%
Grand Total			22%	2%	58%	5%	12%	1%	100%

Note: Values are rounded to the nearest percent. Totals are subject to rounding errors.

Source: SAT NOMS





ARRIVALS **DEPARTURES**

Figure 3-1. Overall Runway Utilization

1.4 Update to Section 3.5

Section 3.5 of the Draft report discusses flight tracks. Flight tracks utilizing Runway 12L/30R were revised based on ATC interviews. Helicopter flight tracks were adjusted based on discussions with Airport personnel. Figures 3-2 and 3-3 show revised arrival and departure noise model flight tracks, respectively.

1.5 Update to Section 4.3

Section 4.3 of the Draft report discusses forecast operations and fleet mix. Table 4-1 remains unchanged except for the legend. The fleet mix shown in the forecast was revised based on the revisions to the Existing Conditions 2009 fleet mix. The methodology used to derive the detailed aircraft fleet mix remains unchanged and the same BTS data trends were applied, as shown in Figures 4-1 and 4-2, below. The number of operations were scaled up or down according to aircraft category and aircraft type.

Table 4-2 depicts the revised forecast fleet mix.

1.6 Update to Section 5.0

Following the revised analysis detailed in this Addendum, the INM was run and revised Noise Exposure Maps and land use impact tables were generated. These results reflect the changes to the fleet mix, runway utilization, and flight tracks presented in this Addendum. Shown below are revised versions of Figures 5-1, 5-2, and E-1; including Tables 5-1 and 5-2. In general, the DNL contours are slightly smaller than the previous NEMs due to the revisions in fleet mix and runway utilization.

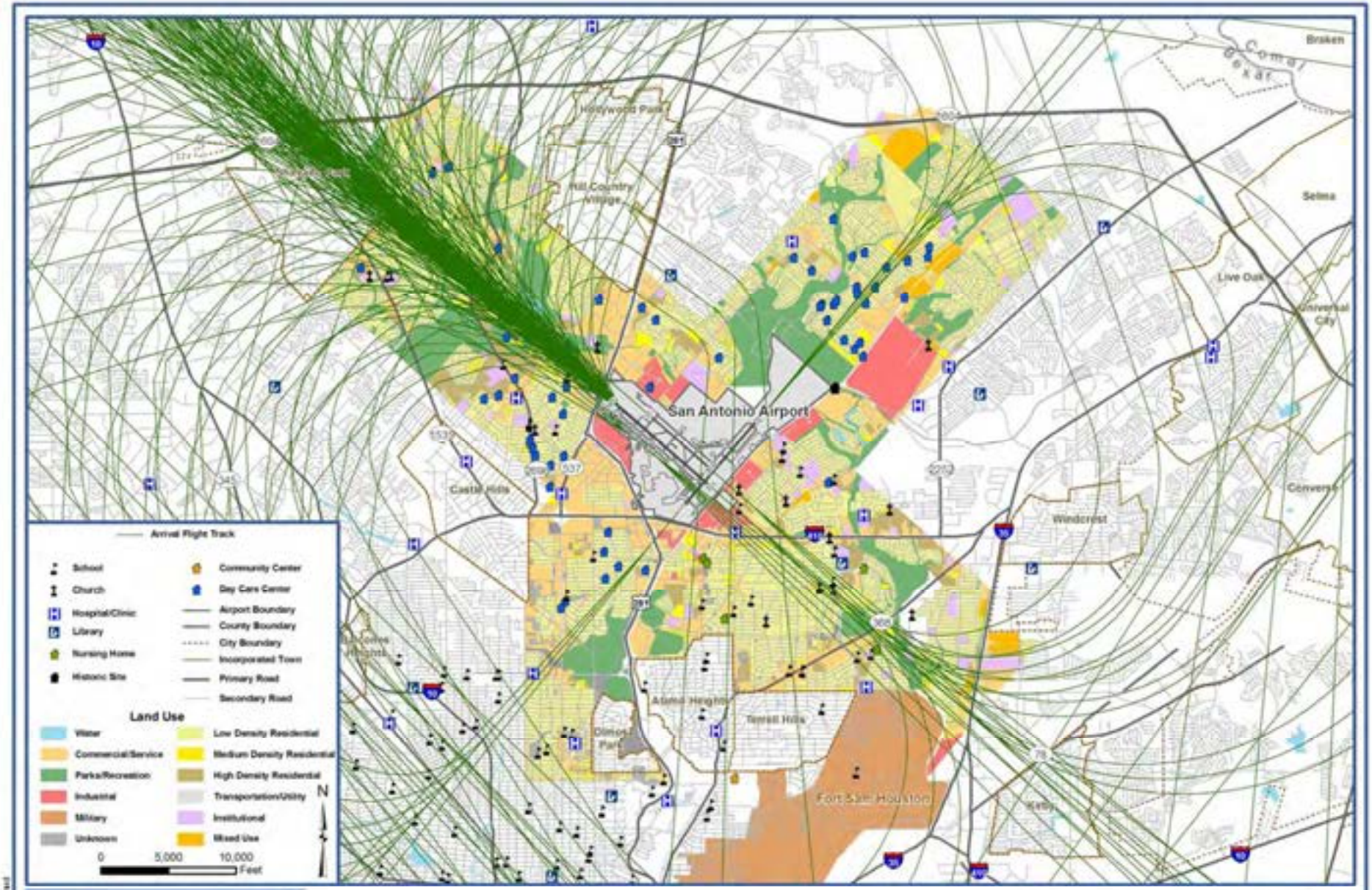


Figure 3-2. Arrival Flight Tracks

SAN ANTONIO AIRPORT SYSTEM

wyle

Sources: US Census TIGER/Line 2000; San Antonio Government; Wyle 2008. Coordinate System: NAD 83 StatePlane Texas South Central FIPS 4204 Feet

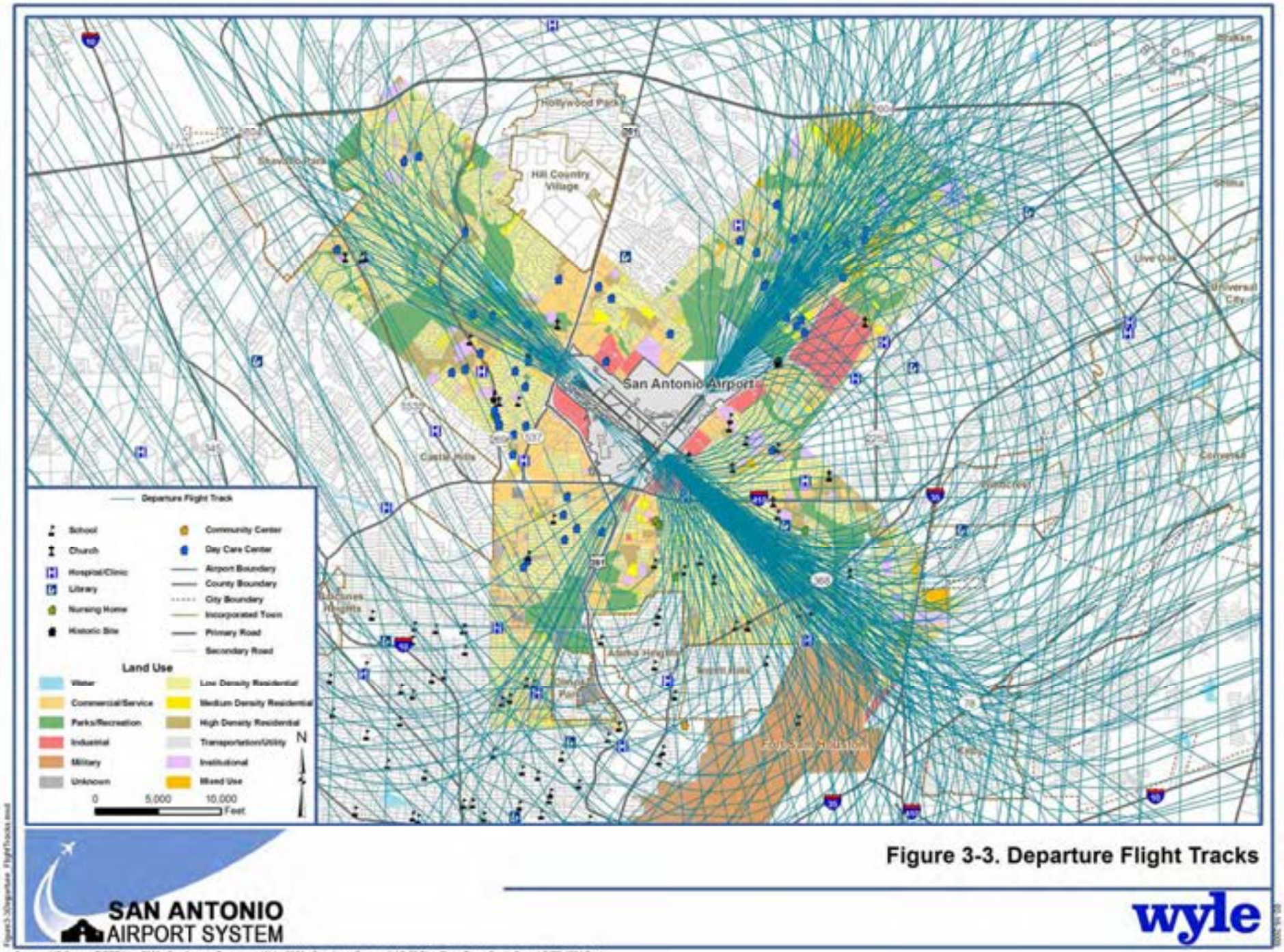


Figure 3-3. Departure Flight Tracks

SAN ANTONIO AIRPORT SYSTEM

wyle

Sources: US Census TIGER/Line 2000, San Antonio Government, Wyle 2006 Coordinate System: NAD 83 StatePlane Texas South Central FIPS 4204 Feet

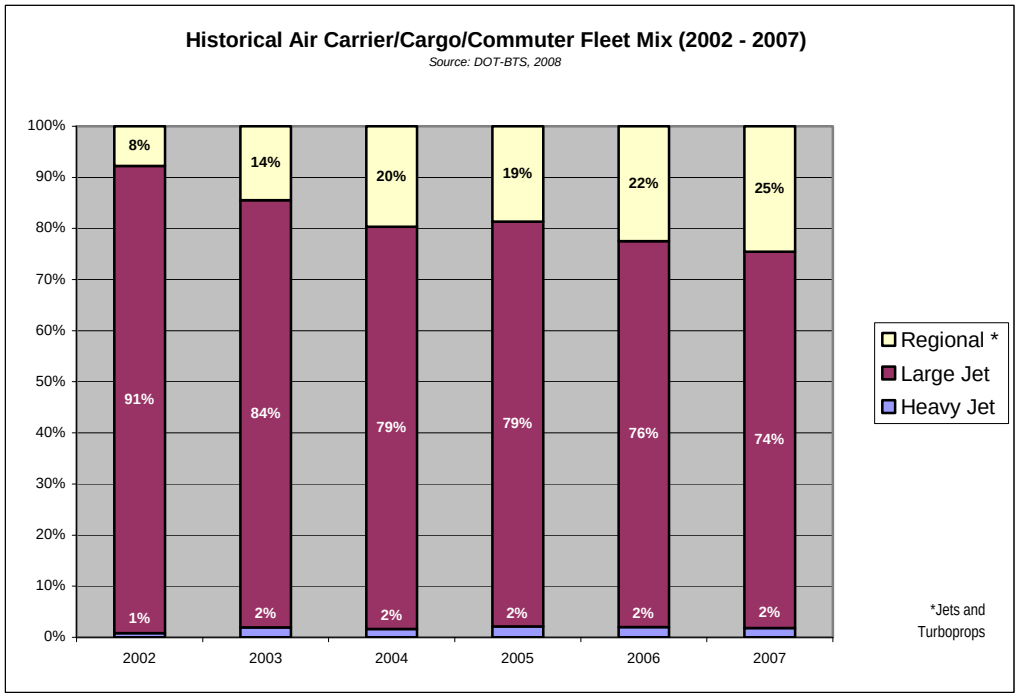


Figure 4-1. Historical Fleet

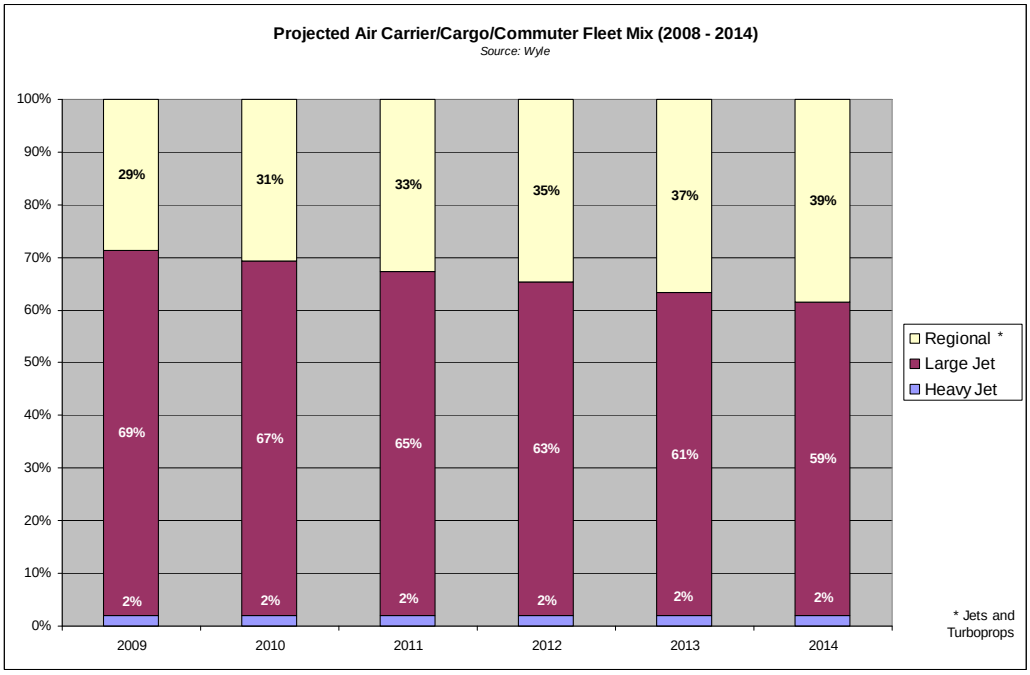


Figure 4-2. Forecast Fleet

Table 4-2. Future Fleet Mix

Aircraft Category	INM Aircraft	Annual Operations
Air Carrier/Cargo/Commuter		
Heavy Jet	DC1030	1,316
	A300-622R	810
	DC870	433
	MD11GE	55
	A310-304	25
	767300	17
	A300B4-203	5
	777200	5
	74720B	5
	767CF6	5
	767400	2
	747400	2
Large Jet	CL601	28,273
	737700	16,946
	737300	14,116
	MD82	9,418
	EMB14L	7,978
	EMB145	5,803
	A319-131	5,732
	737500	4,776
	MD83	4,417
	737800	2,834
	757PW	2,157
	727EM2	1,649
	A320-232	1,515
	717200	780
	EMB145	673
	DC93LW	612
	CL601	256
	757300	238
	GII	183
	DC95HW	173
	GIV	106
	737400	99
	GV	32
	MD87	27
	MD81	24
	GV	15
	GIIB	9
	GULF1	9
	737N9	-
	727EM1	-
	DC910	-
	737N17	-
Turbo-prop/Prop	{Multiple}	13,944
Helicopter	B222	1,311
Business Jet	{Multiple}	7,609

Note: Operations are rounded to the nearest whole number.

Source: FAA STARS data from 12-3-07 to 9-30-08

Table 4-2. Future Fleet Mix - *concluded*

Aircraft Category	INM Aircraft	Annual Operations
General Aviation		
Turbo-prop/Prop	{Multiple}	54,321
Business Jet	{Multiple}	28,435
Helicopter	B222; R22	4,802
Large Jet	{Multiple}	3,335
Other	{Multiple}	33
Military		
Heavy Jet	{Multiple}	1
Helicopter	S70	474
Large Jet	{Multiple}	153
Military	T34	620
	T1	240
	C130	87
	C17	83
	T-38A	50
	F16A	28
	T44	25
Turbo-prop/Prop	{Multiple}	1,440
Small Jet	T6	646
	LEAR35	136
	MU3001	88
	FAL20	20
	LEAR25	7
	CL600	4
	CNA500	4
	CNA750	1
	CNA152	1

Note: Operations are rounded to the nearest whole number.

Source: FAA STARS data from 12-3-07 to 9-30-08

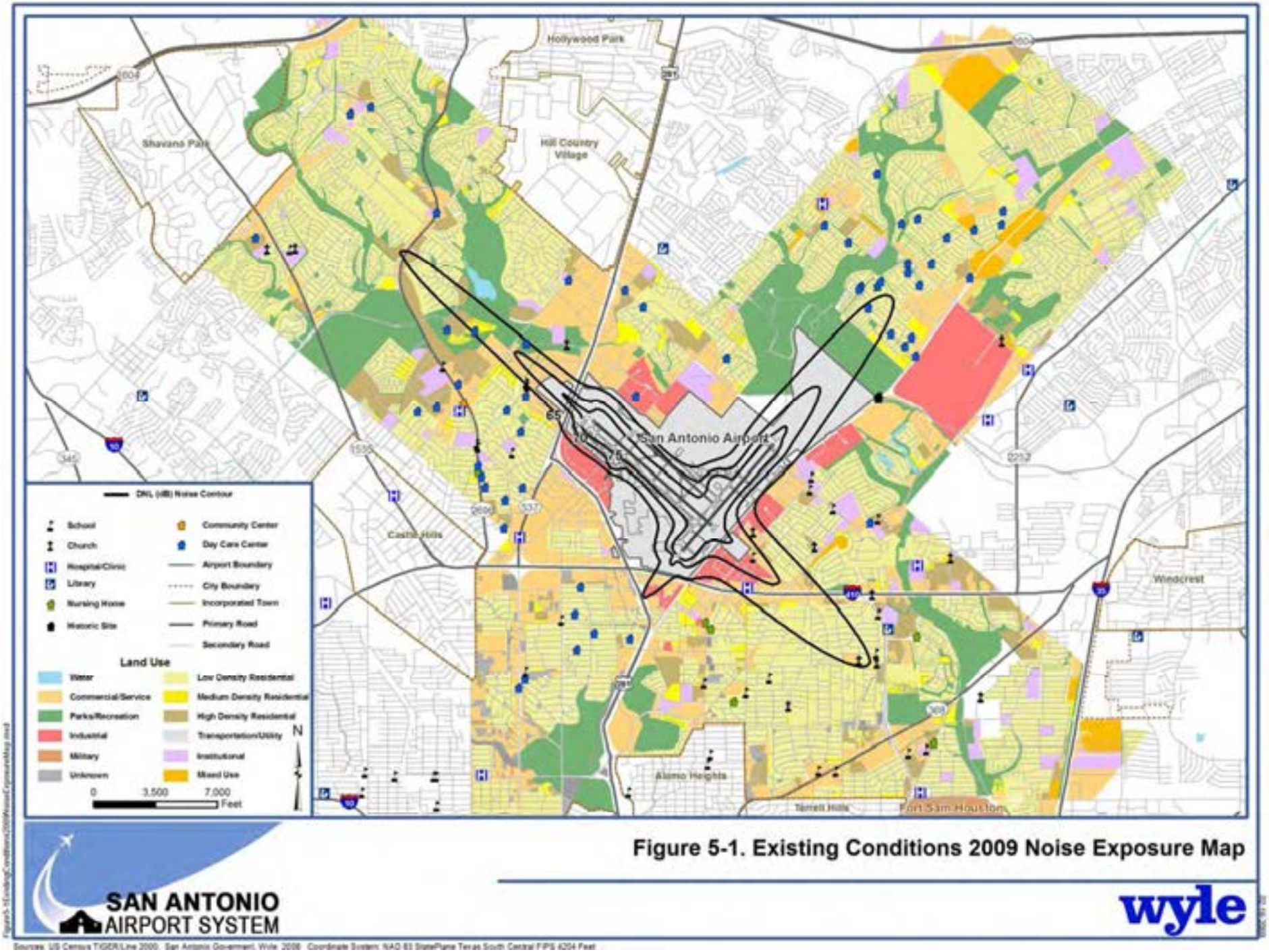


Figure 5-1. Existing Conditions 2009 Noise Exposure Map

SAN ANTONIO AIRPORT SYSTEM

wyle

Sources: US Census TIGER/Line 2000; San Antonio Government; Wyle 2008. Coordinate System: NAD 83 StatePlane Texas South Central FIPS 4204 Feet

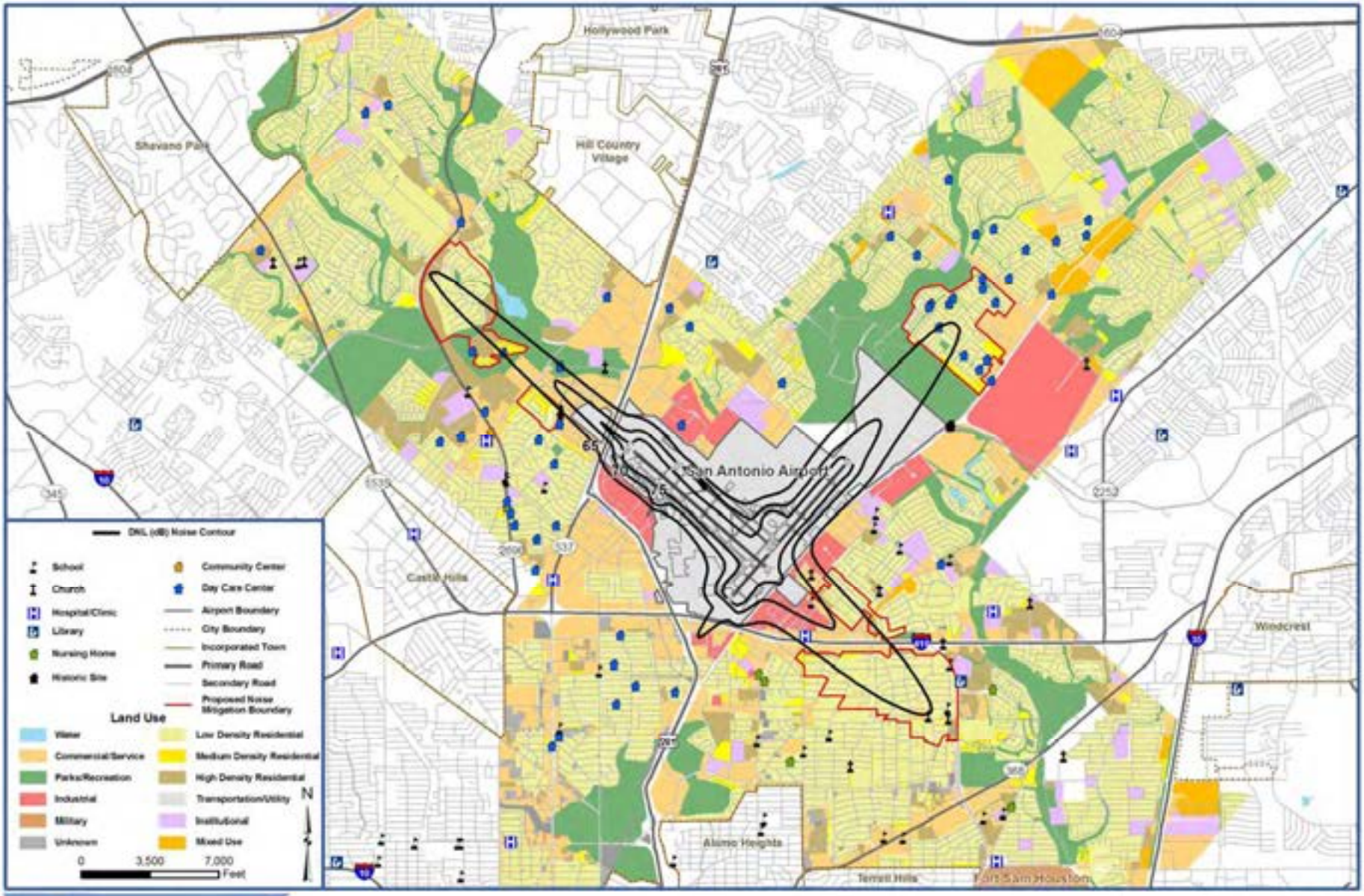


Figure 5-2. Future Conditions 2014 Noise Exposure Map

SAN ANTONIO AIRPORT SYSTEM

wyle

Sources: US Census TIGER/Line 2000, San Antonio Government, Wyle 2008. Coordinate System: NAD 83 StatePlane Texas South Central FIPS 4204 Feet

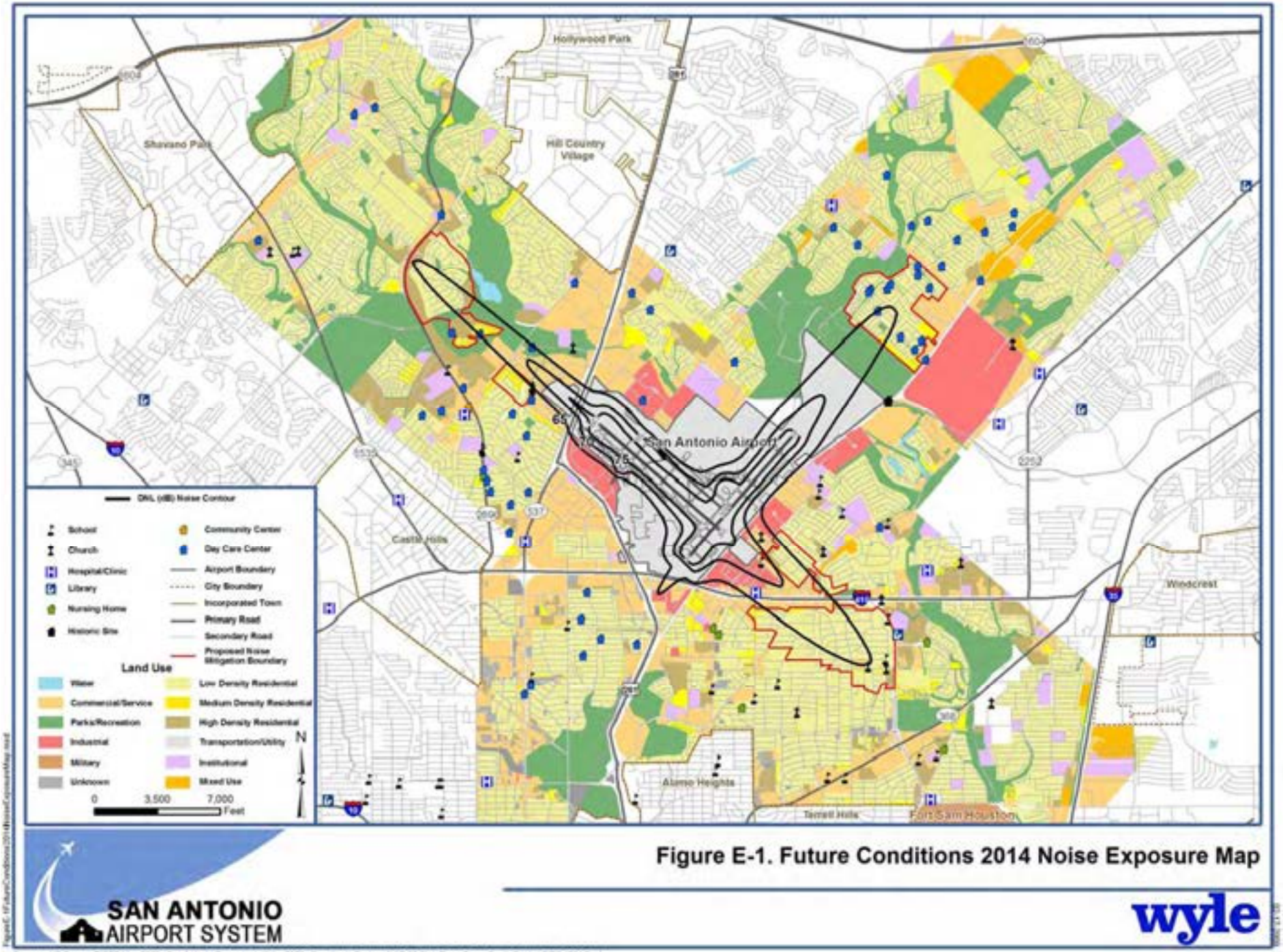


Figure E-1. Future Conditions 2014 Noise Exposure Map

Sources: US Census TIGER/Line 2000, San Antonio Government, Wyle 2006 Coordinate System: NAD 83 StatePlane Texas South Central FIPS 4204 Feet

Table 5-1. Existing Conditions 2009 Noise Exposure Contour Impacts

Category	DNL Contour Level			
	65 - 70 dB	70 - 75 dB	75 + dB	65+ dB
Land Use Impacts (Acres)				
Airport Property	590.8	520.2	508.1	1,619.1
Low Density Residential	364.5	0.0	-	364.5
Commercial Services	223.4	52.0	-	275.3
Parks/Recreation	223.0	1.5	-	224.5
Industrial	102.5	46.9	-	149.4
High Density Residential	50.3	4.2	-	54.4
Medium Density Residential	29.7	-	-	29.7
Institutional	-	-	-	-
Unknown	0.0	-	-	0.0
Total	1,584.1	624.8	508.1	2,717.0
Population				
Residences	2,170	97	0	2,266
Estimated Population	4,490	218	0	4,709
Noise-Sensitive Facilities				
Church	2	-	-	2
Community Service	-	-	-	-
Day Care Center	3	-	-	3
Hospital	1	-	-	1
Library	-	-	-	-
Nursing Home	-	-	-	-
School	2	1	-	3

Note: Population figures are derived from determining the percentage of each census block contained within each contour band. Some values and totals subject to rounding error.
Source: U.S. Census, 2000; Wyle, 2008

Table 5-2. Future Conditions 2014 Noise Exposure Contour Impacts

Category	DNL Contour Level			
	65 - 70 dB	70 - 75 dB	75 + dB	65+ dB
Land Use Impacts (Acres)				
Airport Property	592.4	497.4	490.5	1,580.3
Low Density Residential	296.7	-	-	296.7
Commercial Services	215.4	37.4	-	252.8
Parks/Recreation	199.3	1.0	-	200.3
Industrial	89.6	42.5	-	132.1
High Density Residential	40.5	2.4	-	42.9
Medium Density Residential	24.9	-	-	24.9
Institutional	-	-	-	-
Unknown	0.0	-	-	0.0
Total	1,458.8	580.7	490.5	2,530.0
Population				
Residences	1,856	68	0	1,924
Estimated Population	3,821	155	0	3,975
Noise-Sensitive Facilities				
Church	1	-	-	1
Community Service	-	-	-	-
Day Care Center	3	-	-	3
Hospital	1	-	-	1
Library	-	-	-	-
Nursing Home	-	-	-	-
School	2	1	-	3

Note: Population figures are derived from determining the percentage of each census block contained within each contour band. Some values and totals subject to rounding error.
Source: U.S. Census, 2000; Wyle, 2008