

SCOTTSDALE AIRPORT

PART 150 NOISE COMPATIBILITY STUDY UPDATE

Executive Summary





Introduction

Scottsdale Airport has been a fixture in the physical and economic landscape of the City of Scottsdale and the greater Phoenix area since 1942, and is considered a forerunner in general aviation airports. In 2005, Scottsdale Airport completed its third 14 CFR Part 150 (Part 150 Study) Noise Compatibility Program (NCP); which builds on the foundation established by the two previously approved NCP studies conducted in 1985 and 1997. Its commitment to the surrounding community is evidenced by Scottsdale Airport's continued exploration and implementation of new and innovative noise abatement techniques.

The Scottsdale community, airport users, and Scottsdale Airport can all be credited with reducing the number of sensitive land uses exposed to the Federal Aviation Administration's (FAA) noise compatibility threshold of 65 DNL. There are currently no residences located within the 65 DNL noise contour for Scottsdale Airport.

The Part 150 Study process uses a three-pronged approach to address noise impacts with a wide array of techniques. These include airport operations, land use management, and program management. Scottsdale Airport's NCP update in 2005 used this full range of techniques to evaluate the most effective and efficient means of reducing noise at Scottsdale Airport. The result is a noise abatement program that retains the most successful noise abatement measures from previous programs, and adds several new measures to further address forecasted noise conditions.

Community involvement is a key component of Scottsdale Airport noise abatement measures. Every effort has been made during this Study to involve the public and incorporate concerns and suggestions provided by interested participants. Four public workshops and one public hearing, as well as internet applications, were used to share information and collect public comments. This summary is intended to provide an overview of the Part 150 Study process, and outline the updated Noise Compatibility Program.



What Is A Noise Compatibility Program?

A Noise Compatibility Program (NCP) is intended to promote aircraft noise control and land use compatibility. Three components make this Study unique: (1) it is the only comprehensive approach to reduce airport and community land use conflicts; (2) it identifies items eligible for FAA Airport Improvement Program (AIP) funding; and (3) it is the only federally funded airport Study that balances community land use desires with aviation requirements.

The principal objectives of any NCP are to:

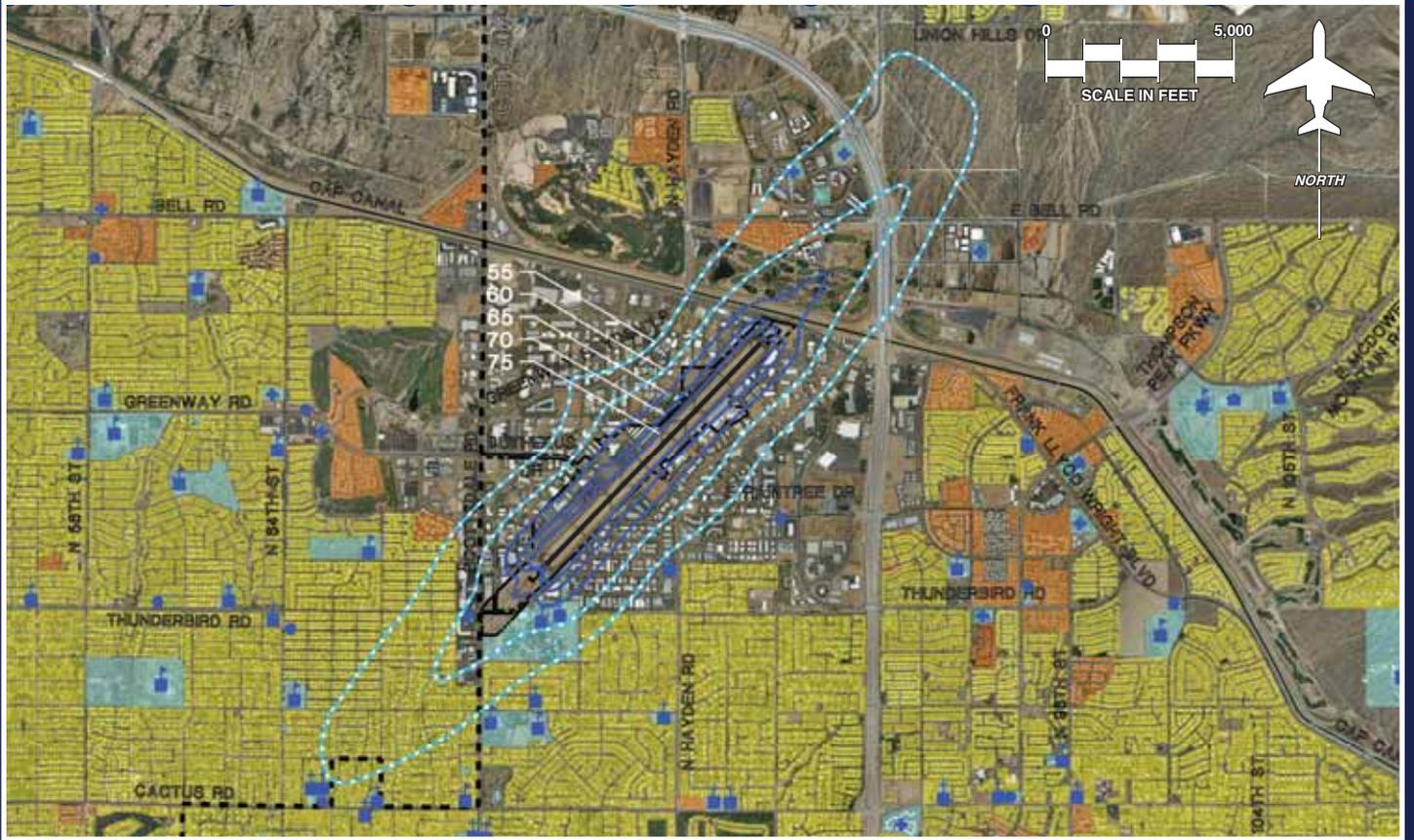
- Identify the current and projected aircraft noise levels and their impact in the airport area.
- Propose measures to reduce the impact of aircraft noise through changes in aircraft operations or airport facilities.
- In undeveloped areas where aircraft noise is projected to remain, encourage future land uses that are compatible with aircraft noise. Some examples of compatible land uses include agricultural, commercial, or industrial uses.
- In existing residential areas that are expected to remain impacted by aircraft noise, determine potential ways of reducing any adverse impacts.
- Establish procedures for implementing, reviewing, and updating the program.

The Part 150 Study provides for the preparation of two documents: the Noise Exposure Maps (NEM) and the Noise Compatibility Program (NCP).

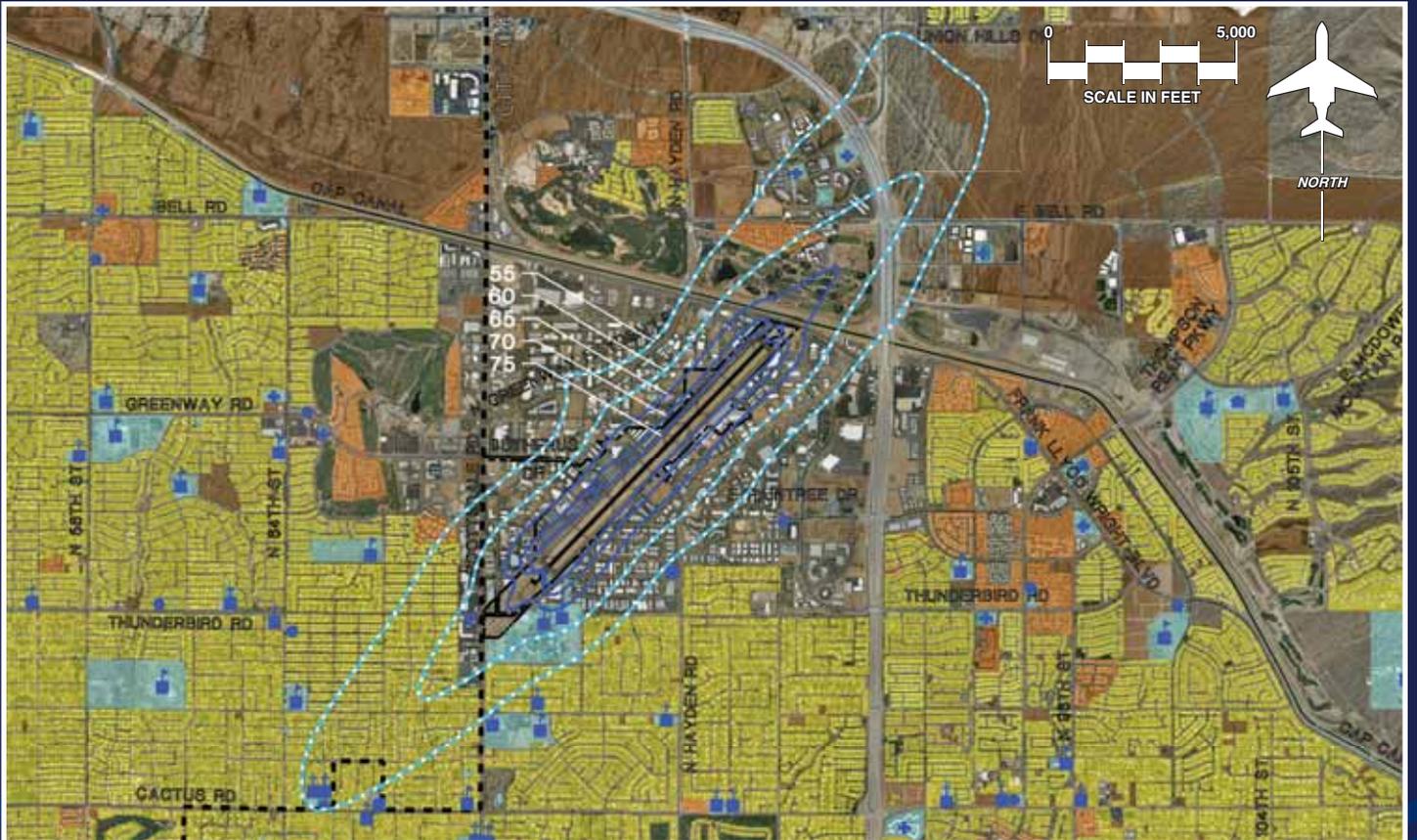
The NEM document describes the existing noise conditions in the airport area and projected future conditions if no additional noise abatement actions are taken. They represent an analysis of baseline conditions. Baseline noise exposure maps were prepared for actual 2004 conditions and forecasted conditions for the years 2009 and 2025. The FAA formally accepted the NEM on January 21, 2005. The 2004, 2009, and 2025 NEM projections and associated noise impacts are depicted by the exhibits on the following pages.

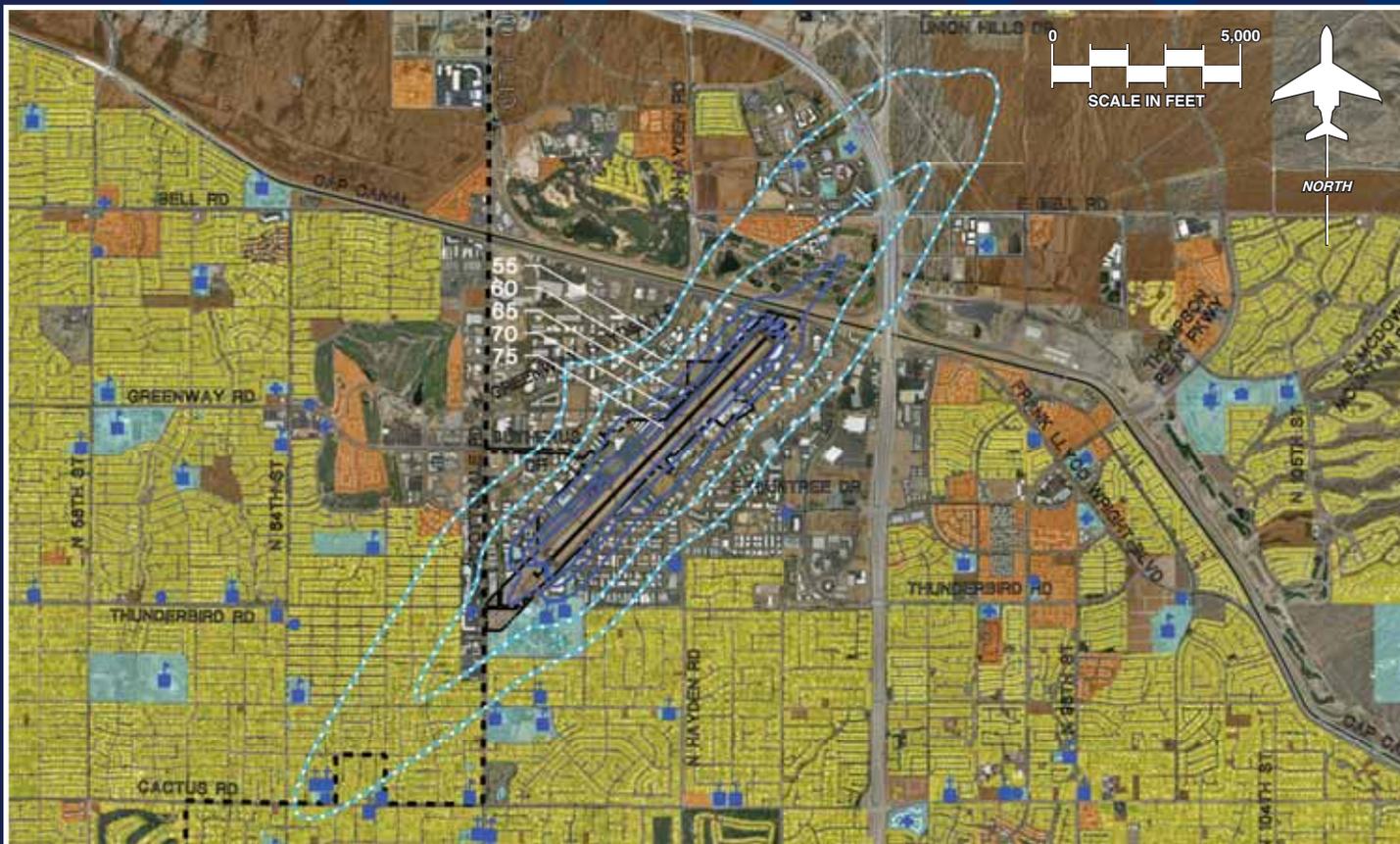
LEGEND	
■ ■ ■ ■ ■	Municipal Boundary
— · — · — ·	Airport Property
■ ■ ■ ■ ■	Single-Family Residential
■ ■ ■ ■ ■	Multi-Family Residential
■ ■ ■ ■ ■	Noise-Sensitive
●	Daycare Facility
■	Library
+	Medical/Dental/Nursing
▲	Museum
+	Place of Worship
■	School
■ ■ ■ ■ ■	Undeveloped Areas Planned for Residential Development
— · — · — ·	Noise Exposure Contour, Marginal Effect
— · — · — ·	Noise Exposure Contour, Significant Effect

2004 NOISE EXPOSURE CONTOURS WITH LAND USE



2009 NOISE EXPOSURE CONTOURS WITH LAND USE





Program Preparation

The updated NCP for Scottsdale Airport was developed through a consultative process and included extensive technical analysis. The City of Scottsdale selected Coffman Associates, Inc., an airport consulting firm, to provide technical expertise for the Study. Additional support was provided by Harris Miller Miller & Hanson, Inc., an airport noise consulting firm, specifically to analyze the feasibility of noise and access restrictions.

A Technical Advisory Team (TAT) was established to act as an informal technical advisory group to review and comment on the consultant's findings and recommendations. The TAT was comprised of industry experts and representatives from the FAA, local government, airport users, and airport staff.

Local residents were invited to four public information workshops and one public hearing during the preparation of the Study. Additional public outreach occurred through a project-specific website hosted by the consultant. The website allowed interested persons to download Study materials and post comments regarding the Part 150 Study. Over 400 documents were downloaded, and several hundred people participated in the on-line forum. The City of Scottsdale formally accepted the NCP on April 19, 2005 (Resolution No. 6662) and submitted the Study to FAA for review and approval. The FAA's Record of Approval, dated

June 9, 2006, fully or conditionally approves 28 of the 30 City-recommended measures, and disapproves noise abatement measures 11 and 13. Additionally, the relocation of the run-up area to a centrally-located site in measure 14 was approved; while construction of a run-up enclosure was disapproved. Disapproval of the run-up enclosure only indicates that this project is not eligible for federal funding. The City of Scottsdale and Scottsdale Airport are free to pursue this measure without federal funding. A description of each City-recommended measure is described in later sections of this summary.

The Updated Noise Compatibility Program

The objective of the updated NCP has been to make recommendations to improve the compatibility between aircraft operations and noise-sensitive land uses in the area, while allowing the airport to continue to serve its roles in the community, state, and national airspace system. The measures included in the NCP are aimed at satisfying this objective and have been separated into three categories: Noise Abatement, Land Use Management, and Program Management.

Some restrictions that were evaluated as part of the NCP process were determined infeasible. For example, airport noise and access restrictions for Stage 2 aircraft require the submittal and approval of a 14 CFR Part 161 Study, which would include an extensive analysis of the costs and benefits of the proposed restrictions. The analysis, if

completed, would then be published in the Federal Register with an opportunity for public comment. Because there are no residential impacts within the 65 DNL noise contour, federal funding is not available for such a Study and FAA approval of restrictions would be unlikely. A detailed discussion of all measures determined to be infeasible can be referenced in the full NCP document. The following section briefly explains each recommended measure that is carried forward by the City of Scottsdale.

Noise Abatement Measures Retained From 1997 NCP

- 1. Continue informal preferential use of Runway 3.** The Airport operates in a northeast flow 55 percent of the time. As a result, a majority of the louder operations occur northeast of the Airport. Although growth has occurred northeast of the Airport, an analysis of the noise-sensitive development surrounding the Airport reveals that there continues to be large parcels of undeveloped land northeast and northwest of the Airport. Routing aircraft over these undeveloped areas is preferred.
- 2. Continue to encourage Stage 2 aircraft to use Runway 21 for landings and Runway 3 for takeoffs.** This measure routes louder aircraft away from the more densely populated areas south and west of the Airport.
- 3. Continue to discourage right downwind and right base pattern entry, long straight-in approaches, and right turn-outs prior to reaching the airport boundary for aircraft using Runway 3.** This advisory procedure was developed to prevent low overflights of the residential areas east and southwest of the Airport and continues to be applicable.
- 4. Continue to encourage right turns as soon as practical and discourage straight-out and left turns on departure from Runway 21.** The intent of this recommendation is to avoid overflight of noise-sensitive areas south and southeast of the Airport.
- 5. On Runway 21: Continue to prohibit stop-and-go operations, intersection takeoffs, formations, and simulated single-engine takeoffs and training go-arounds by multi-engine aircraft.** The City of Scottsdale adopted Ordinance 1341 to prohibit these operations because they can result in greater aircraft noise in noise-sensitive areas. The nature of these types of operations equates to increased noise levels on the ground.
- 6. Continue to discourage descents below 2,500 feet mean sea level (MSL) for practice instrument approaches.** This procedure would keep aircraft from descending below 1,000 feet above airfield elevation during practice instrument approaches. The purpose of this measure is to reduce noise impacts during this type of operation.
- 7. Continue to encourage National Business Aviation Association (NBAA) standard or manufacturers' comparable noise abatement procedures.** The NBAA has developed departure procedures for jets that are intended to reduce the amount of noise generated from aircraft. These procedures should be flown at the pilot's discretion and consistent with safety procedures.

- 8. Continue to prohibit touch-and-go operations between 9:30 p.m. and 6:00 a.m.** The City of Scottsdale adopted Ordinance 1341, which restricts the time of day during which touch-and-go operations can occur. This policy was enacted to limit nighttime noise impacts associated with touch-and-go operations. The increase in noise-sensitive development near the Airport maintains the need for this policy.
- 9. Continue to prohibit maintenance run-up operations between 10:00 p.m. and 7:00 a.m.** Maintenance run-ups can cause a considerable amount of noise; therefore, performance of these operations is limited to the stated times.
- 10. Continue to encourage use of AOPA Noise Awareness Steps by light single-engine aircraft.** The Aircraft Owners and Pilots Association (AOPA) encourages quiet and neighborly flying by distributing generalized noise abatement procedures for use by pilots of propeller aircraft. These "Noise Awareness Steps" include recommendations on how to fly the aircraft, as well as where and when to fly.

New Measures

- 11. Encourage the use of published approach patterns to Runway 21.** This recommendation is intended to reduce the impacts of low-altitude overflights of noise-sensitive areas east and north of the Airport. While this measure was disapproved in the FAA's Record of Approval, the City will continue to promote use of published patterns for aircraft operating at Scottsdale Airport.
- 12. When ASR-11 radar installation is complete, request Air Traffic Control to coordinate on any new approach, departure or routing procedures.** To ensure that the City of Scottsdale and all appropriate agencies are consulted, the Airport and Air Traffic Control should work together on the development of any new approach, departure, or routing procedure.
- 13. The City will encourage FAA to chart visual flight procedures to provide pilots with minimum safe flying altitudes and paths on approach.** Charted visual flight procedures identify visual landmarks, flight paths, and minimum safe flying altitudes for aircraft approaching the Airport. The benefit of charted approaches will be reduced noise impacts resulting from low overflights by pilots unfamiliar within the concentrated noise-sensitive land uses surrounding the Airport. While this measure was disapproved in the FAA's Record of Approval, the City will continue to promote this measure and use of published patterns for aircraft operating at Scottsdale Airport.
- 14. Relocate existing run-up area and construct a run-up enclosure if deemed necessary.** Construction of a ground run-up enclosure was disapproved in the FAA's Record of Approval making this recommended structure ineligible for federal funding. However, the City will further consider if this structure is needed, and financially feasible, in order to accommodate the largest size aircraft that use Scottsdale Airport.

15. **Inform transient helicopter pilots of the noise abatement flight paths.** The Airport's helicopter pilot guide will be distributed to all transient helicopter pilots operating at Scottsdale Airport. This guide is intended to familiarize pilots with the area and to recommend flight paths. It will also provide a reference guide on how to avoid overflight of noise-sensitive land uses in the area.
16. **Change Phoenix Sectional Aeronautical Chart to depict additional populated places.** The Airport should work with the FAA to identify the northern portions of Scottsdale and the Towns of Carefree and Cave Creek as populated places on aeronautical charts used by pilots. Amending the charts would limit noise exposure in these areas by establishing a minimum flyover altitude of 1,000 feet above the highest obstacle within a horizontal radius of 2,000 feet of the aircraft.

Efforts should be made to retain the current commercial and industrial zoning designations within the Study area. Additionally, both cities should strongly discourage rezoning for residential or other noise-sensitive land uses that are not consistent with the respective general plans. This will ensure compatible development within the airport area.

3. **The City of Scottsdale should consider rezoning the parcel located directly north of the airport, within the 65 DNL noise contour, to a compatible land use.** The parcel is currently utilized as a golf course. The golf course located north of the airport is currently zoned for residential development. Portions of this parcel are located within the 65 DNL noise contour. Although this area is currently developed as a golf course, consideration should be given to rezoning the property to ensure compatible development in the future.
4. **The cities of Scottsdale and Phoenix should enact Project Review Guidelines for those areas impacted by airport operations.** Informal project review guidelines are presently used to implement fair disclosure policies and to obtain avigation easements for properties near the Airport. To ensure the continued success of the development review guidelines, these policies should become formal components of the various regulatory tools used by the respective cities.
5. **The cities of Scottsdale and Phoenix should adopt the overlay zones contained within the proposed project review guidelines.** Consideration should be given to incorporating the overlay zones proposed as part of the project review guidelines. This would provide regulatory support for the review process and would help ensure compatible development within the airport environs.

Land Use Measures Retained From 1997 NCP

1. **Within their respective General Plans, the cities of Scottsdale and Phoenix should maintain the compatibly planned areas within the 55 DNL noise contour.** Within its planning documents, the City of Scottsdale has planned for the development of compatible land uses in the area surrounding the airport, including those areas within the 55 DNL noise contour. Additionally, the City of Phoenix has designated areas within the 55 DNL noise contour to be developed with compatible uses. These compatible land use designations should be maintained to ensure compatible development in the future.
2. **The cities of Scottsdale and Phoenix should maintain the compatibly zoned areas within the project Study area.**

Recommended Zoning Revisions

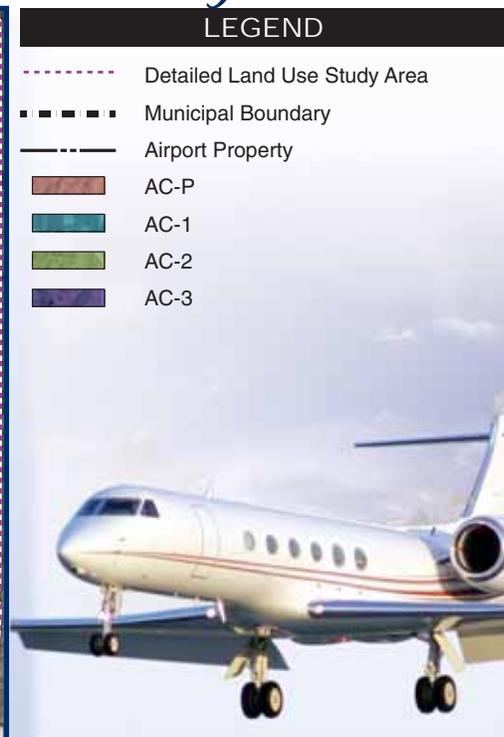
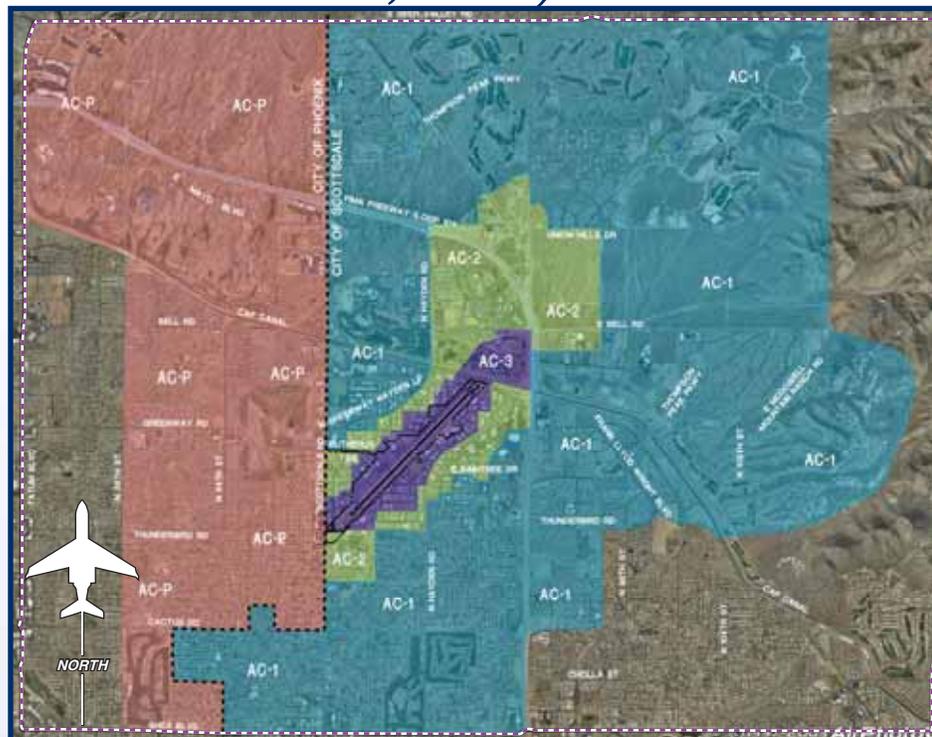


6. **If the Project Review Guidelines and Overlay Zoning Alternatives are not implemented, the City of Scottsdale should consider amending the subdivision regulations to require the issuance of avigation easements and fair disclosure notices for the areas contained within AC-1, AC-2, and AC-3 of the overlay zoning.** The revised regulations would require avigation easements within the revised AC-1, AC-2, and AC-3 overlay zones.

LEGEND

- Detailed Land Use Study Area
- Municipal Boundary
- Airport Property
- Low Density Residential Zoning
- Areas Planned for Compatible Land Use and Zoned for Residential Land Use

Recommended Airport Influence Area & Noise Overlay Zones



7. The City of Scottsdale should consider amending its current building codes to incorporate prescriptive noise standards. Implementation of this alternative would not only protect future noise-sensitive development within the 60 DNL noise contour, but would also protect structures which undergo extensive remodeling or reconstruction, as these types of projects typically require a building permit.

New Measures

8. Should the Project Review Guidelines alternative not be implemented, the City of Scottsdale should consider incorporating the 2009 noise contours into its general plan to allow for an additional level of fair disclosure. The City's general plan is a common reference for individuals considering purchasing property; therefore, incorporating an exhibit that depicts areas impacted by aircraft noise into the general plan would allow for further fair disclosure.

9. The City of Phoenix should consider rezoning the areas located north of the Central Arizona Project (CAP) canal which are currently zoned for residential land uses and planned for industrial or commercial land uses. Within the City of Phoenix, a number of parcels north of the CAP canal are zoned in a manner that does not mirror the planned land uses from the City of Phoenix general plan. Consideration should be given to rezoning these parcels in a manner which would be consistent with the City's general plan. This would ensure the properties are developed in a manner consistent with the Airport.

Program Management Measures Retained From 1997 NCP

1. **Update NEM and NCP.** The Airport management should review the NCP and consider revisions and refinements as necessary. A complete plan update will be needed periodically to respond to changing conditions in the local area and in the aviation industry. This can be anticipated every seven to ten years.
2. **Monitor implementation of the Part 150 Noise Compatibility Program.** Airport management must monitor compliance with the Noise Abatement Element of the NCP. This will involve checking periodically with airport users and the local tower manager regarding compliance with procedures.
3. **Continue noise complaint tracking program.** Scottsdale Airport presently tracks noise complaints from both a 24-hour noise complaint hotline and also through the airport's website. This system allows Airport staff to track changes in noise concerns and operations over time and conduct comparative analyses as necessary.

New Measures

4. **Continue and expand airport signage program.** The airport has taken an active role in helping to ensure that individuals are aware of the location of the Scottsdale Airport. Directional signage is being used throughout the Airport area. Signs have been placed along major thoroughfares and highway intersections.

Additional signage requires coordination with and approval of the City of Scottsdale Transportation Department.

- 5. Airport Pilot and Community Outreach Program.** To address current aeronautical and noise abatement issues, Scottsdale Airport has developed the "Fly Neighborly" program. This program has several components, some of which are directed at reducing noise through pilot education and others that are intended to raise the awareness of current and potential residents about the existence and operation of the Airport.

Reduction of Noise Impacts

Noise contours developed as part of this Study impact a smaller area than those from previous noise studies at Scottsdale Airport. This can be attributed in part to the implementation of noise abatement guidelines and procedures, as well as the change in the operational fleet mix. The long-term fleet mix indicates that a gradual phase-out of Stage 2 aircraft will continue to occur over time, thereby reducing the number and frequency of these louder types of aircraft operating in and out of Scottsdale Airport. The current and long-range noise contours also reflect the number of people living within the 65 DNL noise contour has been reduced to zero. The recommended noise abatement and land use management programs are intended to reduce the cumulative aircraft noise exposure impact now and in the future. The following table illustrates the reduction of population exposed to noise with the implementation of the NCP.

Population Exposed to Noise With Noise Compatibility Plan Versus Baseline Conditions					
	Baseline Noise (Without Plan)			With Noise Compatibility Plan	
	2004	2009	2025	2009	2025
55-60 DNL	2,726	4,232	4,200	2,911	3,302
60-65 DNL	82	292	162	285	162
65+ DNL	0	0	0	0	0
Total Above 55	2,808	4,524	4,362	3,196	3,464
Total Above 60	82	292	162	285	162



Costs and Funding

The estimated cost of implementing the NCP is \$1,337,000. A majority of the costs are expected to be covered by the FAA and Arizona Department of Transportation (ADOT), Aeronautics Division. The following table outlines the costs associated with implementing the program.

Total Cost and Funding Sources for Scottsdale Noise	
FAA	\$1,235,000
ADOT Aeronautics Division	\$32,500
Scottsdale Capital Budget	\$32,500
Scottsdale Operating Budget	\$37,000
Total	\$1,337,000

An Ongoing Commitment

The City of Scottsdale and Scottsdale Airport are committed to long-term noise abatement solutions for the area surrounding the airport, while continuing to promote the airport as an integral component of the nation's air transportation system. Airport management will continue to ensure that the NCP is fully implemented and to review and revise it accordingly.

Questions, comments, and suggestions are welcomed regarding the status of noise compatibility efforts at Scottsdale Airport. Airport management is available for meetings with groups or individuals to discuss concerns or interests. Additional information on the City Council actions and FAA record of approval can be found on the Airport's website (www.scottsdaleairport.com). If you have any questions about this program or the Airport, please call (480) 312-2321.

Glossary

DNL – Day-night noise level. The FAA standard metric for determining cumulative noise exposure within a given location. Mathematically, it is the 24-hour average sound level, in A-weighted decibels, obtained after the addition of ten decibels to sound events occurring between 10 p.m. and 7 a.m. as averaged over one year.

Decibel – The physical unit commonly used to describe noise levels. The decibel represents a relative measure or ratio to a reference power. This measure of sound pressure (energy) is logarithmic. For example, a 10 decibel increase in sound is equal to a ten-fold increase in sound energy.

14 CFR Part 150 – This refers to Part 150 of Title 14 of the Code of Federal Regulations. Part 150 describes the rules and guidelines for the preparation of airport noise compatibility studies with federal funding assistance.

Noise Contour – A continuous line connecting all points of the same noise exposure, usually depicted on a map of the airport.

For further information, please contact:

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