# Appendix C
# EVALUATION OF CURRENT NOISE COMPATIBILITY PROGRAM

The current Noise Compatibility Plan was approved in March 1997. The primary objective of the Plan was to improve the compatibility between Scottsdale Airport aircraft operations and noise-sensitive land uses within the airport environs, while allowing the airport to continue to serve its role as a general aviation reliever airport. This appendix will focus on the following:

- A comparison of the previous and current aircraft operations and noise exposure contours.
- A comparison of the previous and current noise-sensitive land uses and population exposed to aircraft noise.
- The current status of recommendations made in the previous Noise Compatibility Program.

## *AIRCRAFT OPERATIONS AND NOISE EXPOSURE CONTOUR COMPARISON*

Total aircraft operations for the base year (1995) of the previous F.A.R. Part 150 Airport Noise Compatibility Study for Scottsdale Airport were a great deal

less than what is currently being experienced at the airport. Operations at the airport reached a highpoint in 1999 with annual operations totaling 222,893. Since then the airport has experienced a steady slight decline in operations as discussed in Chapter Two. **Table C1** contains an operation comparison of the 1995, 2000 (forecast), and 2004.

**TABLE C1**
**1995 vs. 2004 Aircraft Operations**
**Scottsdale Airport**

| Aircraft Category | 1995 Operations[1] | 2004 Operations[2] |
|---|---|---|
| Itinerant | | |
| GA | 110,920 | 114,163 |
| Air Taxi/Commercial | 4,000 | 10,569 |
| Subtotal | 114,920 | 124,732 |
| Local | | |
| GA | 54,080 | 71,121 |
| Military | 0 | 428 |
| TOTAL | 169,000 | 196,281 |

Source: [1] F.A.R. Part 150 Airport Noise Compatibility Study, Noise Exposure Maps document, Coffman Associates, 1995.
[2] Year 2004 contours are based on Calendar Year 2003 operations.

A comparison of the overall size and shape of the 1995 baseline noise contours and the current 2004 noise contours is depicted in **Exhibit C1**. The 2004 55 and 60 DNL contours are much longer and more slender when compared to the 1995 contours. This is most likely due to the introduction of quieter aircraft to the airport in past years along with a decrease in operations by louder Stage 2 aircraft. The 2004 65, 70, and 75 DNL contours are similar in shape to the 1995 contours.

The overall areas encompassed within the noise contours are depicted in **Table C2** and provide an indication of the reduction of aircraft noise in the vicinity of the airport.

**TABLE C2**
**NOISE CONTOUR AREA COMPARISON**
**SCOTTSDALE AIRPORT**

| DNL Contour Value | Area (Square Miles) | | | |
|---|---|---|---|---|
| | 1995 | 2004 | 2009 | 2025 |
| 55 | 4.85 | 3.4 | 3.79 | 3.79 |
| 60 | 2.11 | 1.46 | 1.64 | 1.64 |
| 65 | 0.94 | 0.70 | 0.76 | 0.75 |
| 70 | 0.47 | 0.38 | 0.41 | 0.39 |
| 75 | 0.27 | 0.21 | 0.23 | 0.21 |

Source: Coffman Associates Analyses

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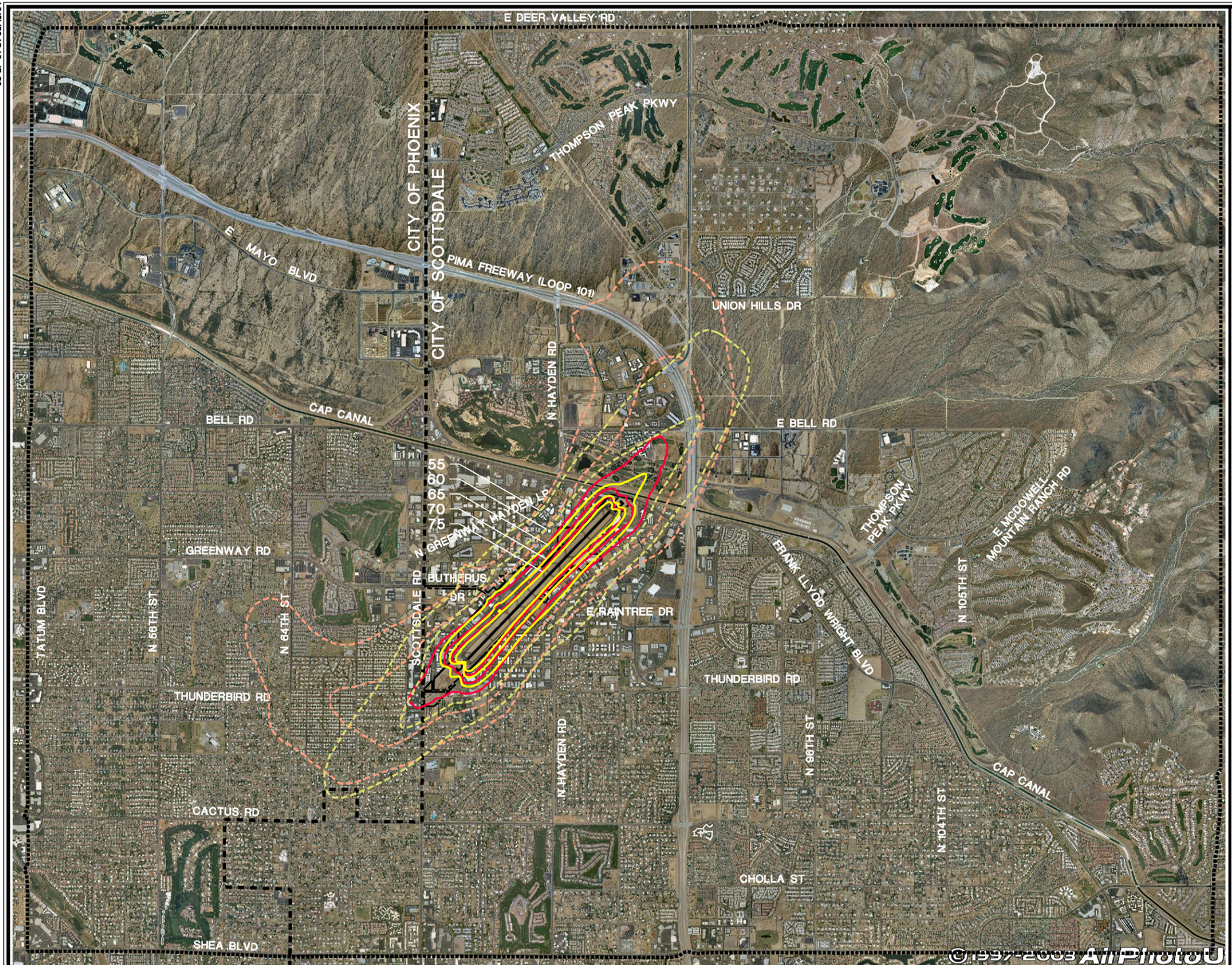


## LEGEND

- Detailed Land Use Study Area
- Municipal Boundary
- Airport Property
- 1995 Baseline Noise Exposure Contour, Marginal Effect
- 1995 Baseline Noise Exposure Contour, Significant Effect
- 2004 Baseline Noise Exposure Contour, Marginal Effect
- 2004 Baseline Noise Exposure Contour, Significant Effect

Source: Coffman Associates Analysis.
Photo: Todd Photographics Service.

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SCOTTSDALE AIRPORT

Exhibit C1
COMPARISON OF 1995 AND 2004
BASELINE NOISE EXPOSURE CONTOURS

## DWELLING UNIT AND POPULATION IMPACT COMPARISON

An evaluation of the dwelling unit and population impacts for both 1995 and 2004 are presented in **Table C3**. This table reveals a reduction in the number of dwelling units and persons impacted by noise from 1995 to 2004. The number of dwelling units impacted by noise in excess of 55 DNL decreases from 1,877 in 1995 to 1,060 in 2004. This corresponds to a reduction in the number of individuals from 5,256 in 1995 to 2,925 in 2004. These decreases are primarily due to an overall reduction in the size of the noise exposure contours in the vicinity of Scottsdale Airport. Additional variations in the number of noise impacts in the 1994 study versus the 2004 study may be due to the methods used to acquire noise impact counts. The number of dwelling units and population impacted by aircraft noise in the 1994 study was performed via manual counts using aerial photography and verified with on-site inspections. The 2004 study was performed with the use of technology such as geographic information systems and land use records databases in conjunction with cross-checks using aerial photography and visual inspections. These newer methods allow for increased accuracy of the impact counts.

**TABLE C3**
**1995 VS. 2004 DWELLINGS AND POPULATION IMPACTS ABOVE 55 DNL**
**SCOTTSDALE AIRPORT**

| | 1995 | 2004 |
|---|---|---|
| Total Dwellings | 1,877 | 1,060 |
| Population | 5,256 | 2,925 |

Source: Coffman Associates Analyses

### *PROGRAM RECOMMENDATION STATUS*

The 1994 Noise Compatibility Program contained a number of measures to reduce the impact of aircraft noise on the surrounding airport environment. To accomplish this objective, the Program recommends a number of noise abatement options that could be implemented to reduce noise impacts in the region. Within the Program, options were broken down three categories: Noise Abatement Alternatives, Land Use Management Alternatives, and Program Management Alternatives.

### Noise Abatement Alternatives

Noise abatement alternatives are defined as those alternatives that will reduce the overall amount of noise generated by aircraft or will move existing noise to areas that are either compatible land uses or land uses containing fewer sensitive uses. The 1997 Noise Compatibility Program Update contained 12 noise abatement alternatives. Ten of these alternatives were a continuation of the 1986 Noise Compatibility Program.

**NA Element 1: Continue to encourage aircraft not in compliance with Part 36, Stage 3 to use Runway 21 for landings and Runway 3 for takeoffs.**

This voluntary measure discourages takeoffs on Runway 21 and arrivals on Runway 3 by aircraft not complying with Stage 3 standards. Noise abatement is promoted by discouraging these aircraft from flying over the densely developed areas immediately south of the airport.

**Status:** This is a recommended procedure and is reflected in the *Scottsdale Airport Pilot Guide*.

**NA Element 2: Continue right turns as soon as practical when departing Runway 21.**

Aircraft departing on Runway 21 are directed to turn right as soon as possible after takeoff. Instrument flight rule (IFR) departures are directed to turn right to a 300-degree heading in accordance with a standard instrument departure (SID).

**Status:** This is a recommended procedure and is reflected in the *Scottsdale Airport Pilot Guide.*

**NA Element 3: Request use of NBAA standard departure procedures for jets departing Runway 3 or Runway 21.**

Jet operators are requested to use the National Business Aviation Association (NBAA) Standard Noise Abatement Departure Procedures or the manufacturer's quiet-flying procedures for their particular aircraft, at the pilot's discretion and consistent with safety.

**Status:** This is a recommended procedure and is reflected in the *Scottsdale Airport Pilot Guide.*

**NA Element 4: Continue requiring engine maintenance run-ups to be done at north end of Kilo ramp, and prohibit maintenance run-ups at night.**

This procedure puts aircraft as far away as possible from the largest concentrations of housing and restricts maintenance run-ups from 10:00 p.m. to 7:00 a.m. (except for emergencies). This is a continuation and enhancement of Noise Abatement Measure 5 from the City's original 1986 Noise Compatibility Program.

**Status:** This is a required procedure and is reflected in the *Scottsdale Airport Pilot Guide* as well as within the Airport's Rules and Regulations Section 3-11.

**<u>NA Element 5:</u> On Runway 21, continue to prohibit stop-and-go operations, intersection takeoffs, formation takeoffs, and simulated single engine takeoffs and go-arounds by multi-engine aircraft.**

*[This is a continuation of an existing noise abatement measure originally instituted by the Scottsdale City Council through Ordinance 1341 approved on December 16, 1980.] These operations were prohibited because they can all result in greater aircraft noise in residential areas south of the airport than conventional takeoffs.

**Status:** This is a required procedure and is reflected in the *Scottsdale Airport Pilot Guide* as well as within the Airport's Rules and Regulations Section 3-3.

**<u>NA Element 6:</u> On Runway 21, continue to discourage straight-out and left turns after departure.**

This noise abatement policy is provided as an advisory, rather than a rule or prohibition. Straight-out and left turns after departure should be discouraged because they would increase noise or the frequency of overflights in the residential areas south of the airport.

**Status:** This is a recommended procedure and is reflected in the *Scottsdale Airport Pilot Guide.*

**<u>NA Element 7:</u> On Runway 3, continue to discourage right downwind and right base pattern entry, long straight-in approaches, and right turn outs prior to the airport boundary.**

This procedure has been provided as an advisory, rather than a rule or prohibition. This policy is intended to reduce noise and low altitude overflights in residential areas east and immediately southwest of the airport.

**Status:** This is a recommended procedure and is reflected in the *Scottsdale Airport Pilot Guide.*

**NA Element 8: Continue to prohibit touch-and-go and stop-and-go operations between 9:30 p.m. and 6:00 a.m.**

*[This is a continuation of an existing noise abatement measure originally instituted by the Scottsdale City Council through Ordinance 1341 approved on December 16, 1980.] Multiple approaches and touch-and-go's can be annoying to residents near an airport because they are repetitive.

**Status:** This is a required procedure and is reflected in the *Scottsdale Airport Pilot Guide* as well as within the Airport's Rules and Regulations Section 3-3.

**NA Element 9: Continue preferential use of Runway 3.**

Runway 3 is the preferred runway not only when winds are from the south but also when winds are "calm." This is officially described as an informal runway use program and was recommended due to the fewer number of homes north of the airport.

**Status:** This is a recommended procedure and is reflected in the *Scottsdale Airport Pilot Guide.*

**NA Element 10: Continue to discourage descents below 2,500 feet MSL for practice instrument approaches.**

This procedure would keep aircraft from descending below 1,000 feet above airfield elevation. This policy promotes noise abatement by reducing repetitive, low overflights. While low approaches are not forbidden at the airport, they are highly discouraged.

**Status:** This is a recommended procedure and is reflected in the *Scottsdale Airport Pilot Guide.*

**NA Element 11: 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 propeller aircraft. These "Noise Awareness Steps" have recommendations on how to fly the aircraft, as well as when and where to fly. Most of the steps provide guidance on pilot technique when maneuvering near noise-sensitive areas. These steps also encourage cooperation with the airport staff on noise abatement issues.

**Status:** This is a recommended procedure and is reflected in the *Scottsdale Airport Pilot Guide.*

**<u>NA Element 12:</u> Request aircraft on approach to Runway 21 to avoid overflights of residential areas whenever possible.**

The area north of the airport has recently been developed from desert to residential housing. Low flying aircraft over this area have prompted noise complaints and concerns from local residents. One reason for concern is that the area is from 300 to 700 feet above airport elevation. Aircraft flying at pattern altitude in these areas are quite noisy and closer to the ground.

**Status:** This is a recommended procedure and is reflected in the *Scottsdale Airport Pilot Guide.*

## LAND USE MANAGEMENT ALTERNATIVES

The Land Use Management Alternatives included measures to mitigate or prevent noise impacts on existing noise-impacted land uses and future land use development in the airport environs. The following paragraphs summarize the recommended elements.

**<u>LU Element 1:</u> Establish Airport Influence Area (Scottsdale, Phoenix).**

Establish an airport influence area (AIA) around the airport based on a combination of criteria. The airport influence area includes areas contained within the 2005 forecasted noise contours (based on the 1997 update), areas subject to frequent low altitude overflights, and areas which receive the greatest numbers of aircraft noise complaints in the recent past. The boundaries of the airport influence area have been squared off to enable it to be readily identified on local maps.

**Status:** In 1997, the State of Arizona adopted legislation allowing airport sponsors to identify airport influence areas around public and commercial use airports. The establishment of an AIA was voluntary and required a public hearing. The boundary of the AIA must be recorded with the county in which the airport resides. The City of Scottsdale attempted to establish an AIA for Scottsdale Airport in the late 1990s. However, there was strong opposition to the establishment of such an area as current property owners felt they should not be required to disclose the existence of the airport to potential buyers since the existence of the airport was not disclosed to them when they purchased the property.

**LU Element 2: Preserve existing General Plan designations for compatible land uses (industrial, commercial, office, open space) in the Airport Influence Area (Scottsdale, Phoenix).**

The City of Scottsdale should preserve, and encourage the City of Phoenix to preserve, current commercial, industrial and open space designations in the AIA. The land in this area should be rezoned in the future only for those compatible land uses. Specifically, the jurisdiction should strongly discourage rezoning for residential and other noise-sensitive land uses that are not consistent with the General Plan.

**Status:** The general plans for both the cities of Scottsdale and Phoenix have been updated since the approval of the previous F.A.R. Part 150 Study at Scottsdale Airport. Both the updated plans preserved the planned development of commercial and industrial land uses within the airport environs. As discussed previously, the city was not successful in implementing an AIA for Scottsdale Airport; therefore, an AIA was not included in the respective cities' general plans.

**LU Element 3: Retain existing compatible use zoning within the Airport Influence Area (Scottsdale, Phoenix).**

This measure was closely related to the previous measure. The City of Scottsdale should retain, and encourage the City of Phoenix to retain, current commercial and industrial zoning designations in the airport influence area.

**Status:** The cities of Phoenix and Scottsdale have retained compatible zoning designations within the 65 DNL noise contour prepared during the previous noise study.

**LU Element 4: Amend the Scottsdale General Plan to provide for compatible land use on the northeast corner of Bell and Hayden Roads (Scottsdale).**

This area is currently designated in the General Plan for medium density residential development. The area is subject to frequent overflights, including jets departing from Runway 3 and making right turns in accordance with the standard instrument departures out of Scottsdale. It is expected that residential development of this area would lead to frequent noise complaints from residents.

**Status:** This element has been partially implemented as the City of Scottsdale's General Plan designates this area for mixed-use residential.

**LU Element 5: Rezone areas north and east of the airport for compatible use consistent with the Scottsdale General Plan.**

Areas north and east of the airport are recommended for compatible zoning consistent with the Scottsdale General Plan for open space or commercial uses. This area is subject to frequent overflights, including jets departing from Runway 3 and making right turns in accordance with the standard instrument departures out of Scottsdale. It is expected that residential development of this area would lead to frequent noise complaints from residents.

**Status:** This element has been partially implemented. Zoning immediately north of the airport is currently single-family residential. East of the airport, between airport property and the Pima Freeway, undeveloped properties are zoned for commercial and industrial land uses.

**LU Element 6: Adopt airport noise overlay zoning within the Airport Influence Area (Scottsdale).**

Three overlay zones should be established, with the boundaries based on the 65 and 55 DNL contours (based on the 2005 forecasts from the 1997 update) and the outer limits of the AIA. Within each overlay zone, different standards would apply, with standards becoming more stringent in relation to the airport.

AC-1 zone ranges from the outer edge of the AIA to the 55 DNL contour, new development would be required to record fair disclosure and covenants.

Within the AC-2 zone (55 DNL to 65 DNL), in addition to the above-mentioned standards, sound insulation would be required for noise-sensitive development. Outdoor music shells and vehicle recreation parks would be prohibited.

Within the AC-3 zone (65 DNL and over), noise-sensitive uses would be prohibited. Certain other commercial or recreational uses would have to be sound-insulated. All permitted uses would have to be required to record fair disclosure covenants and agreements, and to grant noise and avigation easements to the City.

**Status:** This element has not been implemented.

**LU Element 7: Through the rezoning process, prohibit new noise-sensitive uses in the 65 DNL, require sound insulation between 55 and 65 DNL, and require fair disclosure agreements and covenants in the airport influence area (Phoenix).**

The City of Scottsdale should encourage the City of Phoenix to use the rezoning process to attach land use compatibility stipulations to new development in the area. The proposed policies would be similar to those recommended for the Scotts-

dale noise overlay zoning. These policies would be imposed, however, only as conditions, or stipulations, of rezoning approval.

**Status:** This element has not been implemented. However, Scottsdale Airport's noise contours are contained within the City of Phoenix's updated general plan with the stipulation that residential development shall not be allowed within the 65 DNL noise contour.

**LU Element 8: Amend subdivision regulations to require dedication of avigation easements and recording of fair disclosure agreements for new subdivisions in Airport Influence Area (Scottsdale).**

The proposed noise overlay zoning ordinance would require the recording of fair disclosure agreements and covenants for new land uses permitted in the AIA. It would also require the dedication of noise and avigation easements for any use permitted within the AC-2 and AC-3 overlay zones. The noise disclosure agreement would require the seller to show the buyer the most recent noise exposure map before closing the sale. The avigation easement would grant the City the unabridged right to use the airspace above the property and the right to make noise inherent in the operation of aircraft.

**Status:** Avigation easements are being obtained by the City of Scottsdale for residential developments within the airport environs.

**LU Element 9: Adopt local building code amendments setting sound insulation standards for noise-sensitive buildings within noise overlay zones (Scottsdale).**

The proposed noise overlay zoning ordinance would require noise-sensitive uses permitted in the AC-2 and AC-3 overlay zones to be sound-insulated. Scottsdale should adopt sound insulation standards supplementing its building code to describe the improvements necessary to achieve the required noise reduction.

**Status:** This element has not been implemented.

**LU Element 10: Adopt project review guidelines for rezoning, special use, conditional use, planned development, and variance applications within the Airport Influence Area (Scottsdale, Phoenix).**

The adoption of special project review criteria, specifically addressing airport land use compatibility needs, would help to ensure that airport compatibility continues to be addressed in future land use deliberations.

**Status:** This element has not been implemented.

**<u>LU Element 11:</u> Encourage fair disclosure of airport impacts to potential future property owners (Scottsdale).**

Stipulations should be attached to any rezoning requiring the recording of fair disclosure agreements and covenants with the plats and deeds to the rezoned property. These agreements and covenants would require that property owners inform buyers of the presence of the airport and the potential for annoyances, including noise. The Scottsdale staff should periodically meet with real estate professionals, mortgage lenders, and title insurers to inform them about the airport and the need for fair disclosure of information about the airport. Scottsdale should expand the existing program of posting signs throughout the AIA noting the presence of the airport and the potential of low-flying aircraft. Scottsdale staff should ensure that the Scottsdale and Phoenix planning departments remain informed about the airport and any updated airport noise studies.

**Status:** The City is actively engaged in community dialog regarding aviation issues through homeowner association meetings and newsletters, presentations, and real estate seminars. Airport staff are also available to make presentations regarding the airport and aviation noise at the request of businesses, citizen groups, or schools.

The City has also worked with property owners around the airport to provide disclosure to prospective buyers via a "Noise Disclosure", as well as avigation easements, for new property development within the 55 DNL noise contour. Some residential communities in the vicinity of the airport have provided noise disclosure information to the original homebuyers, placed disclosure information in the Community Codes, Covenants, and Restrictions, or listed the airport under the "hazard or nuisance" section of the subdivision report on file with the County Recorder.

## PROGRAM MANAGEMENT ALTERNATIVES

The Program Management Element includes procedures and documents for use in bringing the recommended noise abatement and land use measures to reality, monitoring the progress of the program, and updating the Noise Compatibility Program.

**<u>PM Element 1:</u> Maintain and enhance system for receiving, analyzing and responding to noise complaints (Scottsdale).**

The City should incorporate the noise complaint records into the City's geographic information system (GIS), enabling the complaint database to be queried in a variety of ways to enhance the airport's ability to discern complaint trends.

**Status:** This element has not been implemented.

**PM Element 2: Monitor Noise Compatibility Plan implementation (Scottsdale).**

The airport management must check periodically with the airport traffic control tower (ATCT) manager regarding compliance with the noise abatement procedures. Informational and promotional materials should be developed by the airport explaining the noise abatement program to pilots. Airport management should coordinate with the local Air Traffic Manager and the air traffic controllers' union steward in preparing periodic briefings for controllers in order to remind the controllers of the importance airport management places on the noise abatement program. Noise monitoring, modeling, or analysis is necessary from time to time to study issues that may arise in the future. Airport staff should remain in contact with Scottsdale and Phoenix planning officials to follow their progress in implementing the relevant measures of the Land Use Management Elements.

**Status:** This element is implemented on a regular basis by Scottsdale Airport staff.

**PM Element 3: Update Noise Exposure Maps and Noise Compatibility Program (Scottsdale).**

The airport management should review the Noise Compatibility Plan (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. Even if the NCP does not need to be updated, it may become necessary to update the Noise Exposure Maps (NEMs).

**Status:** This element is currently being undertaken.

**PM Element 4: Broadcast noise abatement information on ATIS.**

The airport manager should coordinate with the FAA to investigate establishing a second Automatic Terminal Information System (ATIS) frequency for broadcasting noise abatement information. If a second frequency is not available, the airport should coordinate with the FAA to broadcast noise abatement information on the existing ATIS on special occasions.

**Status:** This element is currently being implemented.

**PM Element 5: Purchase portable noise monitors.**

The airport should purchase three portable noise monitors for use in conducting periodic noise measurements.

**Status:** This element has not been implemented.