



## **Regional Airport Planning Committee**

TO: To: Regional Airport Planning Committee

DATE: April 19, 2004

FR: Doug Kimsey

W.I.: 1124

RE: Airport Land Use Compatibility Brochure

The attached preliminary draft brochure is being sent under a separate cover from the April 2004 RAPC agenda packet previously mailed to committee members.

You may recall that staff presented an outline for the brochure at your January 2004 meeting. The purpose of the brochure is to educate newcomers to the airport/land use planning arena. The brochure is supposed to describe agency relationships between the FAA, airport users, airport proprietors, State and county Airport Land Use Commissions (ALUCs) in making airport land use decisions; it would also summarize relevant regulations and guidelines for achieving noise and safety compatibility for new land uses. As noted in the RAPC workplan, it is our intent to complete the brochure by Summer 2004.

Committee members had several comments on the brochure outline presented at the January 2004 meeting; overall, members agreed that the brochure needed to be user friendly and raise the awareness of land use planning around the airports.

Staff has prepared the attached draft with these comments in mind and will review the brochure with committee members at your April 23, 2004 meeting.

DRAFT

# Airport Land Use Compatibility - the Continuing Challenge -



Prepared by the Regional Airport Planning Committee  
of the  
Association of Bay Area Governments  
Bay Conservation and Development Commission  
Metropolitan Transportation Commission

### **About this Brochure**

Land use planning and zoning decisions near airports will influence the long term viability of airports in the Bay Area. The Regional Airport Planning Committee—a joint Committee of the Association of Bay Area Governments, Bay Conservation and Development Commission and Metropolitan Transportation Commission—believes that the local planning process is key in protecting and preserving the capability of the region’s airport system. Proposals by developers and builders for using land around airports often trigger vigorous debates about noise and safety compatibility issues. While considerable guidance exists, it is simply that. Ultimately the decision is in the hands of the local planners and elected officials, and there are many grey areas.

This brochure is intended to provide local planning officials and key staff who are new to the airport land use compatibility discussions with a brief overview of the key lessons learned, some ways to avoid major confrontations, and to develop workable compromises.

While the primary focus of the existing governmental review process is on preventing new incompatible land uses, there also are significant amounts of existing land uses that are not compatible under current guidelines. There are methods to address these situations as well.

### **Airports in the Bay Area**

The Bay Area’s three major commercial airports and twenty three public use general aviation airports (see *Figure 1*) serve over 55 million air travelers and accommodate over 3 million flights each year. These airports:

- enable Bay Area resident to make trips for business, vacation and relaxation, family gatherings, school, and other purposes.
- bring tourists to the Bay Area whose dollars strengthen the economy
- support aviation used by police, fire, and medical emergency services
- create jobs-airlines, travel industry, airport workers, construction trades, etc.
- provide training opportunities for people entering the aviation industry- jobs ranging from pilots to mechanics, airport management/operations and air traffic controllers
- contribute to national defense and aerospace research (Travis AFB and Moffett Federal Airfield)
- contribute taxes to city general funds and local schools
- pay for their operations largely out of user fees, not subsidies
- land bank open space that would otherwise be developed with more intensive urban use

### **What types of airport land use compatibility issues have occurred in the past?**

Over the years, airports and local jurisdictions have faced numerous compatibility decisions centering around noise and safety issues. Typical issues include:

- **Creating new safety concerns on the ground:** locating residential land uses, shopping centers, major concentrations of people (theaters, arenas, concert halls), or public institutions (schools, hospitals, libraries, etc) beneath aircraft flight paths.
- **Adding people to areas exposed to higher levels of aircraft noise:** locating single family dwellings, apartments, townhouses, or other high density residential areas under airport traffic patterns and in defined noise impact areas (as determined by California's Airport Noise Standards). Also of concern are other noise sensitive activities such as performing arts venues, churches and schools.
- **Increasing presence of tall structures in airport traffic patterns:** constructing very tall buildings or other objects in the airspace around airports that present hazards to air navigation, alter aircraft flight patterns approaching or taking off from the runways, or interfering with electronic navigational signals used to guide aircraft.

### **Why is maintaining land use compatibility so difficult?**

Nearly all of the Bay Area airports have faced land use compatibility issues of one kind or another; much of the historic encroachment has been inevitable given the rapid growth in Bay Area population and jobs (*see historic photos in the Appendix A*). In many instances, the jurisdiction that owns and operates the airport is different from the jurisdiction that zones land around the airport. These conflicts are the result of the convergence of a number of diverse factors:

- Available land for new development is becoming scarcer, so undeveloped land around airports is relatively more attractive now than in the past
- A continuing regional housing shortage that is creating pressure for more housing production
- Revenue shortages at the local level-new development can help financially strapped governments
- Pressure from residents to seek more control over factors affecting their quality of life, such as traffic, air quality, and ambient noise
- Changes in the level or character of airport use, leading to new or different impacts than those originally considered in local land use plans
- Limitations on the authority for county Airport Land Use Commissions (the state has given authority for making recommendations to these bodies in Public Utilities Code Section 21670, et seq.)
- Pressure from developers/builders who contend that existing airport land use controls are too rigid, outdated, or applied differently in different jurisdictions.

### **What are some of the key compatibility factors that need to be considered in land use decisions around airports?**

As mentioned above, most airport/land use compatibility issues focus on one of the three major conflict areas above: safety for people on the ground, safety for pilots in the air, and noise exposure on the ground. While different airport land use compatibility plans employ somewhat different criteria, the general approach is the same—identify areas that would be subject to use restrictions and define the types of restrictions that should be put into effect. Recommendations for addressing such potential incompatibilities are normally contained in the Comprehensive Land Use Plans developed by the county Airport Land Use Commission. *Appendix B* provides several schematics that illustrate the areas affected and types of restrictions that would normally be employed in these areas (for more detailed information, see Caltrans *Airport Land Use Planning Handbook*).

For those new to the airport land use compatibility topic, other key points to know:

- County Airport Land Use Commissions make recommendations for land that is not currently devoted to incompatible uses. A local jurisdiction may override an ALUC recommendation with a 2/3 vote by making specific findings. The override action is subject to a Caltrans public hearing.
- In overruling an ALUC recommendation, state law provides that the airport operator shall be immune from future liability for property or personal injury resulting directly or indirectly from the local jurisdiction's decision to override.
- If an ALUC finds a local general plan, plan amendment, or specific plan to be consistent with the Comprehensive Land Use Plan prepared by the ALUC, it is generally not necessary for the ALUC to review specific land use proposals for vacant land. If the local plans are found inconsistent, the ALUC may require that all individual projects within a jurisdiction be submitted for ALUC review (or may continue to perform this function by agreement with a local jurisdiction).
- An ALUC is required to consider an existing Airport Master Plan or FAA-approved Airport Layout Plan in preparing its Comprehensive Airport Land Use Plan; ALUCs also review revisions to an Airport Master Plan or Airport Layout Plan for consistency with the Comprehensive Land Use Plan.
- Under the provisions of the California Environmental Quality Act (CEQA), the lead agency must use Caltrans' *Airport Land Use Planning Handbook* as a "technical resource" when evaluating airport noise and safety impacts associated with new plans or development proposals.
- The California Education Code requires a review and recommendation by Caltrans of any proposed school site acquisition within two miles of an airport runway. Similar provisions apply for Caltrans review of any state building within two miles of an airport.
- When receiving FAA grants, the airport sponsor must assure the FAA that it will take appropriate planning and zoning actions to maintain compatible land uses (FAA AC 150/5199-16A).
- The FAA can provide funding to remediate existing noise problems if a Federal Aviation Regulations Part 150 Noise Compatibility Study has been prepared. A

- Part 150 Noise Compatibility Plan and Noise Exposure Map provide information and eligibility for noise mitigation acquisition and sound insulation actions.
- Legislation passed in 2003 (AB 2776) requires that real estate transactions in the proximity of an airport inform potential buyers of the airport's presence.
  - Because many of the noise issues involve existing incompatible uses, several airports have established formal noise forums to consider ways to reduce noise in communities, the longest running forum being the San Francisco Airport Noise Roundtable, and more recently, the Oakland Airport Noise Management Forum.

**What are some creative ways to avoid a potential land use conflict or develop solutions when a conflict arises?**

- Early consultation between airports and communities. There is no better way to avoid future conflicts than to collaborate early in the process to revise or update airport master plans and community general plans. This early planning collaboration will identify future expectations about land uses and outline a process to resolve potential conflicts—before new development proposals are made.
- Make sure everybody has the same land use compatibility information. Extensive guidance material on airport land use compatibility topics already exists and is contained in *Caltrans Airport Land Use Compatibility Handbook*. Developers making initial contacts with local jurisdictions at Community Development departments need to be advised as to what these guidelines recommend.
- Is there a way to modify the development proposal? If the development can be altered to make it compatible, then this is a good course to pursue. Altering the development may mean changing its design (height, layout, density of use, etc.), altering its location, providing sound insulation or structural changes for safety purposes, providing a noise or aviation easement to the airport owner, or even swapping development rights with another location away from the airport.
- Is it possible to change airport operations? Under certain limited circumstances, the airport operator and the FAA may be able to agree to changes in the airport master plan or operational characteristic that may make the development more compatible.
- Continuing consultation. Because both airport and land use conditions change over time, it is important for both airports and local planners to communicate regularly on these topics and to keep their local elected officials informed so they can better respond to their constituents.

**The Final Decision.**

A well established principle of California planning law is that local jurisdictions are the policy and regulatory body for land use and have the final say in approving new land uses. Ultimately, local elected officials must weigh and measure the various health and safety risks factors, consider the Airport Land Use Commission's recommendations, and then decide whether to allow, disallow, or modify a new land use proposal near an airport. There are rarely many "black and white" decisions in this arena, and local bodies must decide what is best for the airport and their community.

The Regional Airport Planning Committee encourages local jurisdictions to carefully consider the impact of their land use decision on the airport, prior to making their final decision.

## Appendix

### A. Now and Then—a pictorial history of land use around Bay Area airports

- Reid Hillview (1957, 1966, 1971)
- Hayward (1947, 1952, 1973)
- San Jose International (1947, 1950, 1969, 1957, 1973)—pick three

### B. Schematics of Airport Land Use Compatibility Guidance

- Noise Exposure Zones
- Safety Zones on the Ground
- Airspace Protection Surfaces (based on FAR Part 77)

### C. Glossary of Basic Terms

# Appendix A

## Development Around Bay Area Airports

### Reid Hillview Airport



1971

### Hayward Airport



1947



1952

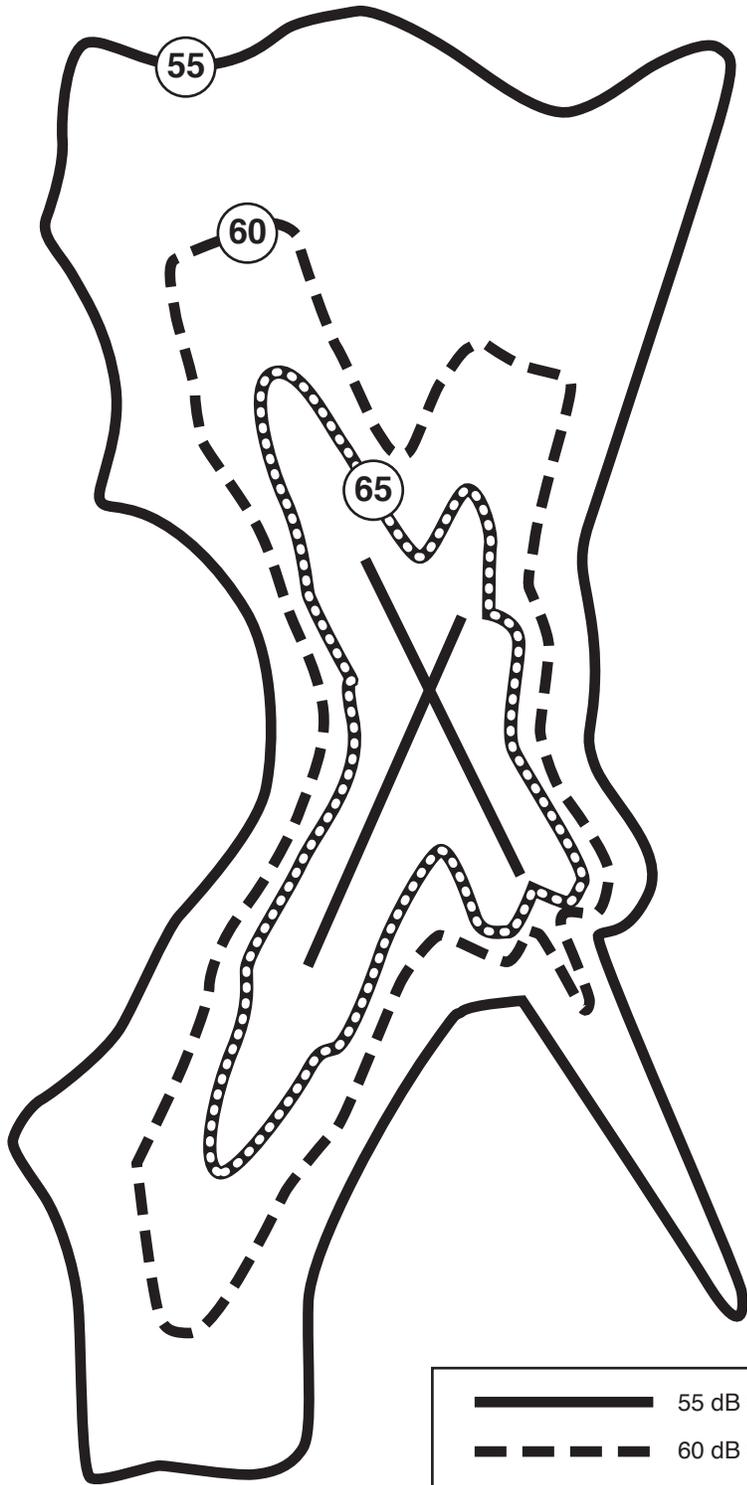


1973

### San Jose - Mineta International Airport



**Appendix B**  
**Figure B-1**  
**Airport Noise Compatibility Zones**  
**(based on existing or projected noise contours)**



	55 dB CNEL (least restrictive)
	60 dB CNEL
	65+ dB CNEL (most restrictive)

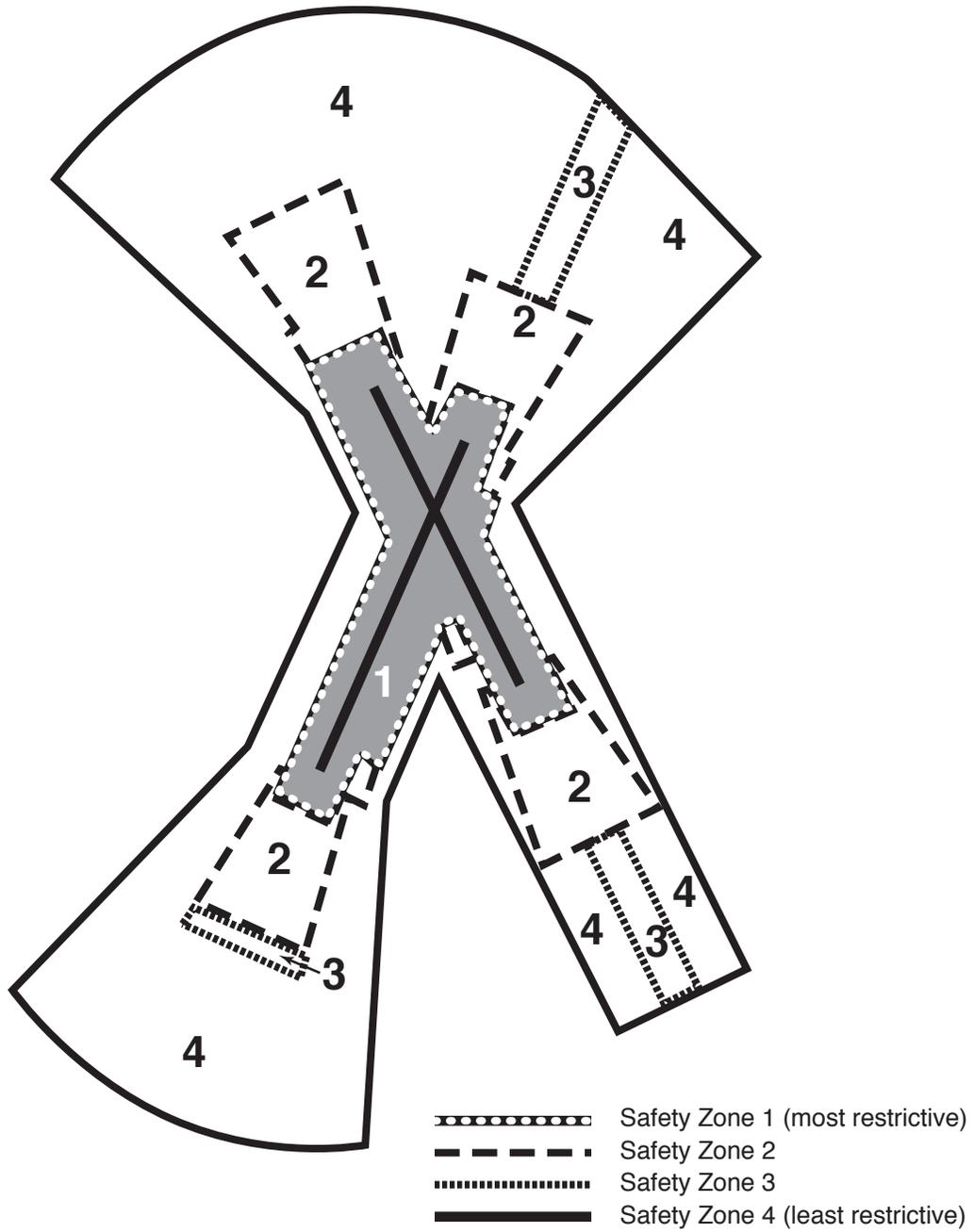
## **Figure B-1 Notes**

### **Noise Compatibility**

Purpose: To ensure people living, working, and conducting other activities around an airport are not unduly inconvenienced, annoyed or discomforted by airport noise

- Community noise exposure levels (CNEL) are calculated based on expected airport flight activity and are used to determine acceptable land uses (higher values indicate higher noise exposure)
- Acceptability varies based on types of land use (residential, commercial, etc.) and exterior and interior noise levels
- Noise sensitive land uses typically include: single and multi-family residential, mobile homes, hospitals and nursing homes, schools, churches, libraries and other places of public gathering
- Sound insulation may be required for new construction
- Existing land use may be eligible for sound insulation under an FAA funding program
- Avigation easements (the right to make noise over a property) or Deed Notices may be required for new development

**Appendix B**  
**Figure B-2**  
**Safety Zones on the Ground**



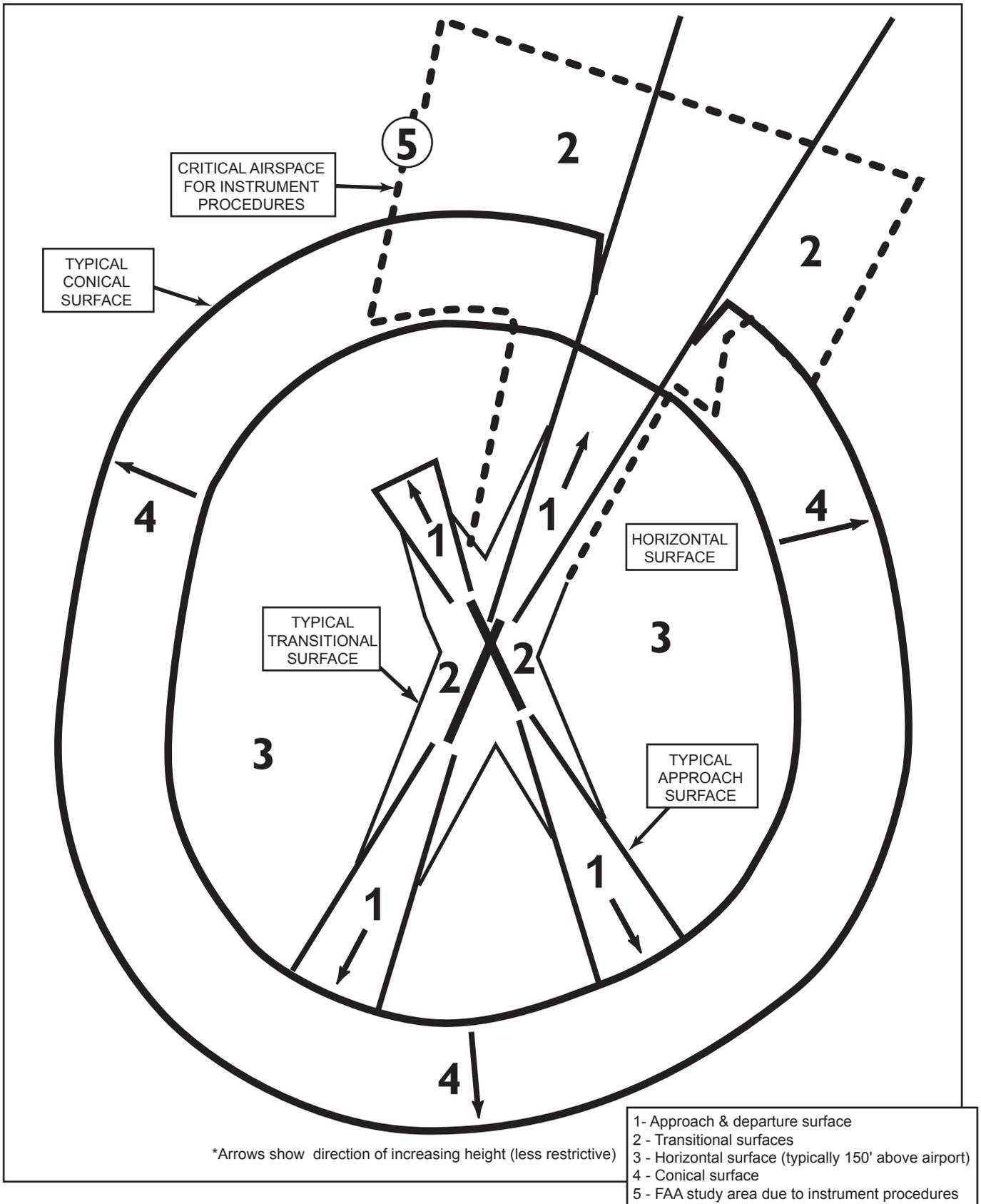
## **Figure B-2 Notes**

### **Safety Zones on the Ground**

Purpose: To protect people and property near the airport from aircraft accidents or emergency landings

- Airport safety zones establish limitations on structures and concentrations of people related to accident risk potential; in areas adjacent to the runway ends, structures are prohibited
- Schools, day care facilities, hospitals/nursing homes, and other buildings occupied by children, the elderly or handicapped are of particular concern due to the reduced ability of occupants to respond in emergencies
- Special building design standards may apply in some safety zones to protect occupants; alternatively, densities may be increased in some safety zones if buildings incorporate features to reduce injury from an accident

# Appendix B Figure B-3 Airspace Protection Imaginary Surfaces



- 1- Approach & departure surface
- 2 - Transitional surfaces
- 3 - Horizontal surface (typically 150' above airport)
- 4 - Conical surface
- 5 - FAA study area due to instrument procedures

## Figure B-3 Notes

### Safety in the Air

Purpose: To protect aircraft occupants by setting height limits for tall structures and trees that could pose hazards to aircraft on airport approaches, departures, and in the airport traffic pattern

- Height limits are typically portrayed as a series of imaginary contour lines in the airport's airspace based on FAA standards; no structures, objects, or vegetation should be allowed to penetrate these imaginary surfaces
- Some areas around an airport may be subject to a special airspace analysis by the FAA due to instrument flight procedures for aircraft approaches or departures to the runways
- In certain areas, new development may be required to grant aviation easements to an airport to allow free and unobstructed flight over a property at an altitude specified in the easement
- The outer edge of the airspace protection area is often used to define the "Airport Influence Area", and is used to review land uses that could pose visual, electronic or bird strike hazards for aircraft

## APPENDIX C

### Glossary of Basic Terms

**Airport Layout Plan:** A scaled drawing of existing and proposed airport facilities

**Airport Master Plan:** A long range plan for development of an airport.

**Avigation Easement:** A type of property control that creates certain rights for an airport, related to flight operations, allowable noise levels, or control of structures or vegetation that might interfere with the airport's airspace.

**Community Noise Equivalent Level:** The noise metric adopted by the State of California for evaluating noise and used by ALUC for determining land use compatibility.

**Comprehensive Land Use Plan (CLUP).** The official ALUC document that provides planning guidelines for compatibility of new land uses around airports.

**FAR Part 77 (*Objects Affecting Navigable Airspace*).** The Federal Aviation Regulation which governs the height of structures and other objects affecting the navigable airspace; specifies various imaginary surfaces which govern height limits of structures near runways.

**Noise Contours:** Lines of equal noise levels typically drawn around an airport and based on current or projected airport activity. The lines are typically drawn in 5 decibel increments and have the appearance of a topographic map.

**Runway Protection Zone.** A type of safety zone immediately off the ends of an airport runway with the most restrictive requirements on land use (formally called a Clear Zone).

**Safety Zone:** In the context of ALUC plans, an area of land near the airport runway with various use restrictions designed to protect the safety of the public from potential aircraft accidents or emergency landings.

**Terminal Instrument Procedures (TERPS).** Procedures defined by the FAA for instrument flying that can affect the height of structures near airports.