

# 7 AIRPORT ENVIRONS ELEMENT

Alameda is subject to noise nuisance, aircraft overflights, and safety concerns from operations at two (GPA 01-01) airports: Metropolitan Oakland International (MOIA (Text related to NAS Alameda deleted pursuant to (GPA 01-01)) and San Francisco International (SFO). The airports are increasingly sensitive to their impacts on nearby residents. However, the City has no direct ability to affect their operations. The Oakland Airport is owned by the Port of Oakland, the City and County of San Francisco owns SFO, and the Department of Defense controls NAS.

Inclusion of the Airport Environs Element in the General Plan is optional per Section 65303 of the Government Code. This Element contains policies that the City will implement, as well as requests for actions by the airport proprietors.

The purposes of the Airport Environs Element are to consolidate policies relating to airports at a single location in the General Plan document and to direct maximum attention to the impacts that aircraft operations have on Alameda. Consequently, the Health and Safety and the Transportation elements refer the reader to this Element, and do not repeat policies relating to airport noise and safety.

## 7.1 REGULATORY FRAMEWORK: NOISE AND SAFETY

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**Federal Aviation Administration (FAA):** Federal, State, City and County governments have interrelated responsibilities for airport noise and safety regulation. The Federal Aviation Act (1968 amendment) requires the FAA to consider noise as a criterion in its certification of aircraft and airports. Federal Aviation Regulations (FAR), Part 36, regulates aircraft noise emission levels, requiring all new aircraft to meet Stage 3 (least noisy) standards. In 1986 about 40 percent of the domestic, commercial aircraft fleet met Stage 3 standards; Stage 1 aircraft have been phased out of the domestic airline fleet. The time schedule for phase-out of Stage 2 aircraft will become known no later than July 1, 1991.

FAR Part 150, effective in 1985, provides funding to airport operators for preparation of noise exposure maps (NEM) and noise compatibility programs (NCP). Following FAA approval, the airport becomes eligible for funds to abate on-airport and off-airport noise. Cities adjacent to airports are also eligible to receive FAA funding for noise mitigation actions. The MOIA Part 150 program was submitted for FAA approval in 1988. Noise exposure maps

for 1986 and 1991 forecast conditions have been accepted by the FAA, but the FAR Part 150 noise compatibility program for MOIA was returned to the Port of Oakland for revision. As of July 1, 1990, the MOIA NCP has not been resubmitted to the FAA. Until it has been approved, no Federal funds will be available for noise abatement projects.

**California Airport Noise Standards.** Standards enacted in 1971 required that all land uses within the 65 dB Community Noise Equivalent Level (CNEL) contour in an airport vicinity be compatible with aircraft operations by 1986. The 65 dB CNEL contour was thus established as the maximum level of noise acceptable in a residential area near an airport. The area within the 65 dB CNEL noise contour is termed the "noise impact area."

In 1972, the Alameda County Board of Supervisors declared MOIA a "noise problem airport." This was an administrative determination which allows the State of California to require MOIA to apply for a variance from the State Airport Noise Standards. As of this date, MOIA has not made such application because the extent and nature of MOIA's noise impact area has yet to be adequately defined. MOIA has carried out a program of quarterly noise monitoring, using portable noise measurement equipment, for a period of several years. The results of this monitoring have been inconclusive, and MOIA is currently installing a permanent noise-monitoring system capable of defining the Airport's noise impact area in sufficient detail to finally determine whether a variance is required. Recent changes to the State Airport Noise Standards may work against such a determination in that residential uses subject to aviation easements or having an interior noise level of CNEL 45 dB (or less) as a result of architectural acoustic measures are now deemed compatible land uses and are not considered in determining whether a variance may be required. As a result of a 1976 agreement, new residential development in Harbor Bay Isle has been subject to required aviation easements. The City's 1976 noise element requires that interior noise levels in habitable rooms attributable to exterior aircraft noise events shall not exceed a measured average CNEL value of 40 dB.

The variance procedure is a legal process involving a hearing before an administrative law judge, who has the power to impose conditions on the airport to achieve compliance with the airport noise standards. The City of Alameda has the right to participate in the proceedings and to set forth its position for consideration as part of the conditions to the variance.

**Metropolitan Transportation Commission (MTC):** The Regional Airport Systems Plan (RASP), to be updated by MTC during 1990, is intended to optimize airport service for the Bay Area. As with other transportation facilities, MTC approval is necessary if federal construction funds are to be

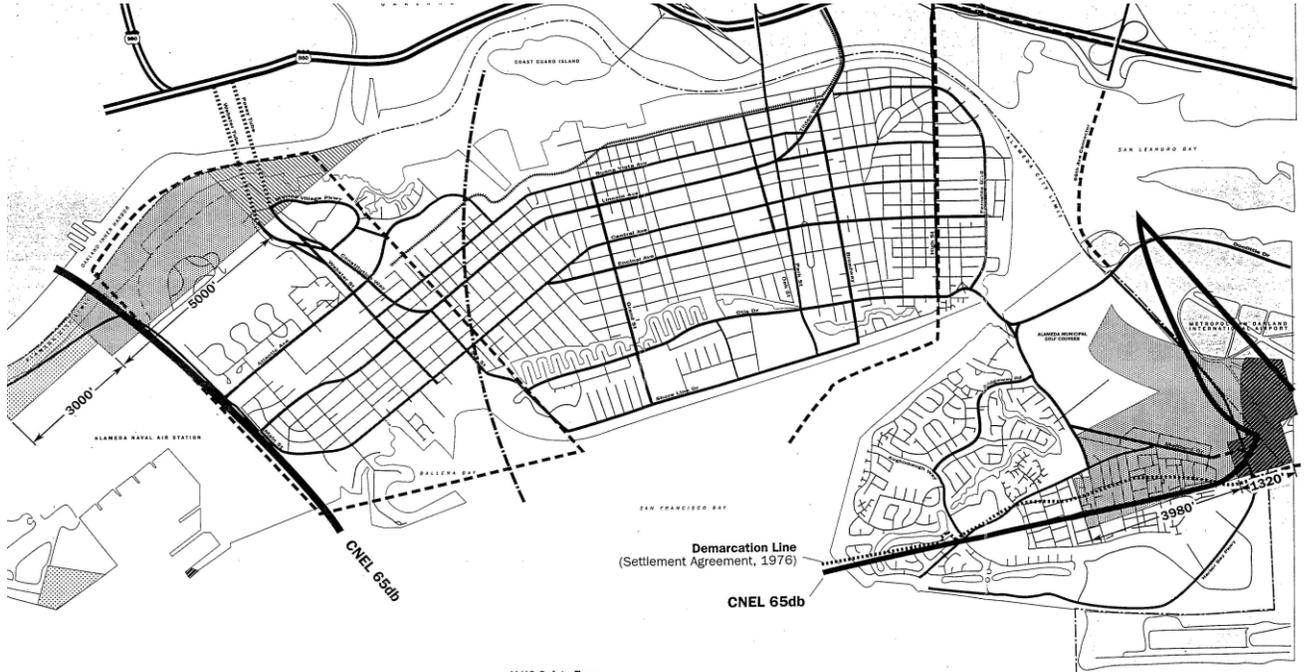
used. During revision of the RASP, Alameda will have opportunities to address MOIA expansion issues.

**Airport Land Use Commission of Alameda County (ALUC):** California requires that airport planning and off-airport land use measures affecting airports be implemented in each county by an appointed Airport Land Use Commission (ALUC). The Alameda General Plan must be consistent with the Alameda County Airport Land Use Policy Plan (1986) unless the City Council overrides the ALUC by two-thirds vote and makes findings that alternative policies are consistent with the purposes of the ALUC law which emphasizes promoting orderly expansion of airports and adoption of land use measures by local public agencies to minimize exposure to excessive noise and safety hazards near airports. The ALUC has no jurisdiction over airport operations, although the ALUC plan must include assumptions about future activities and be based on an airport master plan. The ALUC plan is required to reflect the anticipated growth of the airport during at least the next 20 years.

The Port of Oakland must submit its updated Airport Master Plan to the ALUC for review. If the ALUC finds the Port's plan inconsistent with its plan, the Port may revise its plan or may override the ALUC by a two-thirds vote if it makes specific findings that its action is consistent with the proposes of Public Utilities Code 21670 which establishes ALUCs.

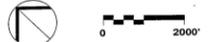
Safety (crash hazard) zones designated by the ALUC and APZs Text related to NAS Alameda deleted pursuant to (GPA 01-01). A majority of the outer portion of the safety zones under departure tracks from MOIA Runways 27R/L is a developed residential neighborhood. ALUC policies prohibit new housing in safety zones, although ALUC Policy 24 allows infill residential development if findings are made.

Text related to NAS Alameda deleted pursuant to (GPA 01-01). Uses are defined as incompatible if they would yield a density of more than 25 persons per net acre over an eight-hour period or a density of more than 50 persons per net acre for more than two hours per day. New shopping centers, restaurants, schools, hospitals and arenas are listed as examples of incompatible uses. The policies of the Airport Environs Element are consistent with those of the *ALUC Policy Plan*.



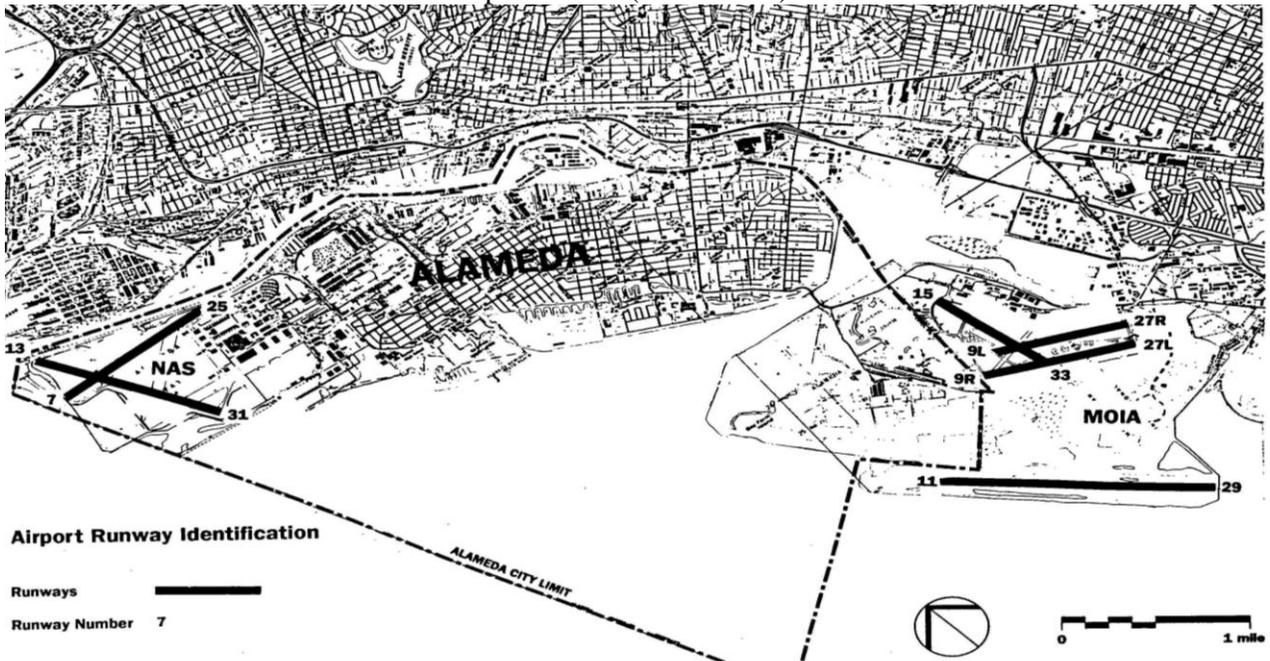
**Sources:**  
 Safety Areas - "Alameda County Airport Land Use Commission, Airport Land Use Policy Plan," Adopted July 16, 1986.  
 Airport Noise - Port of Oakland, "Final Report, FAR Part 150 Noise Exposure Maps and Noise Compatibility Program, Oakland International Airport," April, 1988. 1987 CNEL as provided to the City of Alameda by Port of Oakland Staff.  
 Naval Air Station Noise - Alameda Naval Air Station, "An Installation Compatibility Use Zones Study Update", December 1986.

- ALUC Safety Zones**
- Clear Zone
  - Inner Portion
  - Outer Portion
- Note:** APZ Zones outside of City boundary are not shown.
- Alameda NAS APZ II (Accident Potential Zone)
  - General Referral Area Boundary
  - Height Referral Area Boundary
  - Airport & Naval Air Station CNEL



**City of Alameda - Figure 7-1  
 Airport Impact Areas**

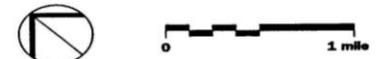
Text related to NAS Alameda deleted pursuant to (GPA 99-05).



**Airport Runway Identification**

- Runways
- Runway Number 7

**Source:**  
 "Alameda County Airport Land Use Commission, Airport Land Use Policy Plan," Adopted July 16, 1986.



**City of Alameda - Figure 7-2  
 Airport Runways**

## 7.2 AIRPORT IMPACT AREAS

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As shown on Figure 7-1, all of Alameda is subject to ALUC regulation due to the proximity of MOIA. About 1,600 existing and approved homes on Bay Farm Island are within the 65 dB contour that defines a "noise impact area." Overflights from SFO add to the decibel level in much of the City. Safety zones for MOIA's North Field limit development. The height of structures throughout the City is subject to ALUC policies, although General Plan policies establish lower maximums.

Text related to NAS Alameda deleted pursuant to (GPA 99-05)

### **Guiding Policies: Airport Impact Areas**

7.2.a Regulate development in Alameda to minimize hazards in safety zones designated by the Alameda County Airport Land Use Commission (GPA 99-05)

7.2.b Do not approve incompatible development in noise/safety sensitive areas.

*The ALUC Plan specifies allowable uses, densities, and heights of structures, and the Health and Safety Element incorporates Table 8-1, Land Use Compatibility Standards for Community Noise Environments.*

*MOIA safety zones on Bay Farm Island are identical to the safety zones in Alameda's 1976 Safety Element, Text related to NAS Alameda deleted pursuant to (GPA 99-05). Existing low-density residential development under the straight-out take-off tracks from MOIA North Field Runways 27R/L is a less-than-optimal situation, according to both ALUC and City policies. ALUC will consider exceptions to permit minor residential additions, replacement, and infill (where 80 percent of the parcels within 250 feet are developed) on a case-by-case basis.*

7.2.c Seek ways to ensure provision of effective sound mitigation for all housing units in noise impact areas.

*If grants to property owners for sound insulation become available, the number of units that will be protected still is uncertain. Mitigation could be required for projects subject to discretionary review, or when units are enlarged or transferred.*

7.2.d Encourage MOIA to limit night use of North Field to Stage 3 aircraft.

7.2.e Ensure that purchasers of property currently or potentially subject to normally unacceptable noise levels are aware of such conditions, of City policies regarding mitigation, and of limitations to the City's

ability to abate nuisances when such properties are subject to an aviation easement.

*This is consistent with Policy 20 of the 1986 ALUC Plan.*

### **Implementing Policies: Airport Impact Areas**

7.2.f Deleted. (GPA 01-01) Existing development that includes warehousing, nonintensive industry, and equipment storage is consistent with ALUC policy, but current (1990) zoning regulations allow any nonresidential use permitted in Alameda Under ALUC Safety Zone Policy 3.2 new shopping centers, restaurants, schools and hospitals are not compatible.

7.2.g Consider approval of infill or replacement housing within the outer ALUC Safety Zone for MOIA Runways 27 R/L on a case-by-case basis. Refer proposed in-fill or replacement projects to the ALUC for Determination of Plan Consistency.

*Under its Policy 24, ALUC may make findings that permit infill development. The 1976 Alameda Safety Element permitted residential development if (a) all aircraft weighing more than 12,500 pounds are prohibited from using a straight-out take-off from Runways 27 R/L, (b) there are no other feasible locations for residential development, and (c) population densities do not exceed 25 persons per acre. Straight-out departures continue, despite efforts to reduce the number of such flights, and cannot be directly curtailed by the Port of Oakland. The FAA air traffic control assigns departure paths in low-visibility conditions and has refused an Airport management request to establish a curfew on all instrument low-altitude departures from North Field between 10 p.m and 7 a.m. The risk to existing residents is reduced by the infrequency of heavy aircraft flights using the straight-out tracks.*

7.2.h Require acoustical analysis and noise-reduction measures as prescribed in Policies 8.7.e, .f, and .g for new or replacement dwellings, hotels, motels, schools, and health-related uses.

*Sound insulation is required to ensure a maximum interior 45 dB CNEL in new residential, education, and health-related uses in aircraft noise areas. (ALUC Policy 18, 1986.) Policy 8.7.f limits noise to 40 dB CNEL in habitable rooms of new dwellings subject to a noise easement.*

7.2.i For new or replacement residential development within 500 feet north of the 65 dB CNEL Settlement Agreement line on Bay Farm Island, insulation shall meet the standards established in the ALUC Plan for assumed exterior 65 dB CNEL.

*See Policies 8.7.f and .g.*

- 7.2.j New or replacement residential development shall be allowed between the 65 dB CNEL Settlement Agreement line and the 70 dB CNEL contour on Bay Farm Island if the property is subject to a noise easement.

*See Policies 8.7.f and .g.*

### 7.3 AIRPORT OPERATIONS AND DEVELOPMENT

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Future airport impacts will vary with passenger and cargo volume, which will be affected by decisions to build or not build new runways and terminals by types of aircraft used, and by opportunities to employ noise abatement traffic patterns.

**Metropolitan Oakland International Airport (MOIA):** Operations from both North Field (general aviation) and South Field (scheduled airlines and cargo) create noise annoyance and safety concerns in Alameda. A portion of the neighborhood near Maitland Drive on Bay Farm Island is exposed to 65-70 dB CNEL, and construction of approved units in Harbor Bay Isle Village 5 will expose several hundred residents to similar noise levels. New construction in these areas is subject to aviation easements and interior sound attenuation requirements, but high single-event noise levels cause discomfort.

MOIA is the nation's 18th busiest airport, serving 4 million passengers each year with projected increases to 5.6 million in 1992 and 10 million by 2007. Air cargo gains are projected to average 6.5 percent annually, increasing from 297,000 tons in 1988 to 1,055,000 tons in 2007. Federal Express currently operates a regional hub that is its second largest facility, processing 120,000 parcels a night.

North Field is primarily limited to takeoffs and landings of general aviation aircraft with a certified gross take-off weight below 12,500 pounds. These aircraft can be characterized as having one or two engines, and are both propeller-driven and turbo-jet. Under certain conditions prescribed by the 1976 Settlement Agreement between the City and the Port of Oakland, such as emergency landings or takeoffs, or whenever major repairs are being made to South Airport Runway, (29/11), the North Field is used by aircraft in excess of 12,500 pounds in weight.

The Port of Oakland is currently (December 1990) revising its Airport Master Plan and is studying seven alternatives for runway expansion, although there is significant unused capacity that makes construction unnecessary in the near term. Do-nothing and demand management alternatives were studied and rejected. The runway alternatives fall in three categories: inboard and outboard South Field expansions and North Field expansion. An extended controversy

would result from selection of either runway expansion at North Field, which would add noise in Alameda, or filling the Bay for a new runway outboard of existing Runway 11-29, which would be opposed by the Bay Conservation and Development Commission (BCDC) and environmentalists. A new runway inboard of 11-29 would be only slightly less controversial because it would also result in increased overflights and noise exposure levels for Alameda residents, and would affect 135 acres of wetland/wildlife habitat.

The Noise Compatibility Program (FAR Part 150) completed in April 1988 includes noise mitigation recommendations, but does not extend noise projections beyond 1991 and does not analyze the effects of runway additions or extensions. Moreover, none of the operational noise abatement measures recommended by the Program has been accepted by the FAA as of July 1990.

**Alameda Naval Air Station (NAS):** The most recent analysis of noise and accident potential was prepared in 1986 and reflects 1983 operations. Use of Runway 25, which has the greatest effect on Alameda, has been curtailed over the past several years. There are no announced plans for changes in NAS activity that would change noise or hazards exposures.

**San Francisco International Airport (SFO):** Flight tracks that affect Alameda and other East Bay communities are used by 35 percent of the 650 daily departures. It has been estimated that SFO operations add 1 to 1.5 dB to the MOIA noise contour. Most aircraft departing SFO attain an altitude of 5,000 feet before reaching the East Bay shoreline. Ground level noise from these departures ranges between 60 and 70 dB and is classified as single-event noise because it is intermittent. These overflights are expected to continue because of congested air space and aviation safety considerations, and noise problems on the San Francisco peninsula.

### **Guiding Policies: Airport Operations and Development**

- 7.3.a Seek adherence by airport operators to operational, development and management policies that will minimize noise nuisance and safety concern for Alameda.
- 7.3.b Urge MTC to address the limits of expansion of MOIA and SFO and the need for additional commercial airport(s) at less congested locations in the 1990 revision of the Regional Airport Systems Plan (RASP). Insist that the RASP evaluate the merits of expanding MOIA vs. adding capacity at alternative locations serving the Bay Area.

*The Oakland Airport Master Plan Update prepared for the Port of Oakland projects 10 million annual passengers (MAP) by 2007 vs. 4.2 million in 1989 and a maximum of 6 million under a 1976 Settlement Agreement between the City and the Port of Oakland. At 5-7.5 MAP the 1986 ALUC Plan projects a 400- to 500-foot northward shift of the*

*CNEL noise contour over Bay Farm Island. Projections of CNEL for 10 MAP have not been published (June 1990).*

*MOIA Master Plan Update studies eliminate a "demand management" alternative that would shift activity to other locations as inconsistent with FAA recommendations and ABAG/MTC policy. MTC should be apprised of the City's concerns in this regard and urged to consider alternatives to the unlimited expansion of MOIA.*

7.3.c Establish effective regular communication among the City of Alameda, Port of Oakland, and the Federal Aviation Administration regarding noise control at MOIA.

7.3.d If an additional runway is warranted at MOIA, a runway outboard of Runway 11-29 is acceptable in principle to Alameda. No commitment to capacity expansion should be made until the 1990 revision of the Regional Airport System Plan (RASP) is complete and is adopted by MTC/ABAG.

*Studies by the Airport's consultants (1989) show that North Field expansions would result in a sevenfold increase in noise impact to sensitive receptors. North Field expansion is unacceptable to the City. The 1980 RASP supports expansion of the Oakland Airport only if a parallel runway is constructed in the Bay. However, the 1980 Regional Airport Plan (RAP) Summary, which updated the 1972 RASP, does not propose any additional runways, and advises that the forecasted growth for Oakland Airport can be accommodated on a single runway with proper management.*

### **Implementing Policies: Airport Operations and Development**

7.3.e To the extent permitted by the 1976 Settlement Agreement, insist that the revised Regional Airport System Plan project maximum level of activity for the Metropolitan Oakland International Airport that will not create noise or oversight impacts in excess of those that would result from serving 6 MAP or from a specified future maximum level of activity to be determined. Obtain support in affected communities and among regulating agencies for measures that will prevent construction of airport facilities to accommodate traffic that would cause these levels and standards to be exceeded.

7.3.f Seek Port of Oakland's voluntary agreement to implement mitigation measures beyond those in the 1976 Settlement Agreement, including mitigation measures regarding operations off existing runways.

7.3.g Create and participate in a continuing working group (community forum) composed of individuals representing the City of Alameda, the Port of Oakland, the Federal Aviation Administration (FAA), and the

air transport industry to monitor the airport's noise control program and to make recommendations for response to any unforeseen conditions.

*Lack of a clear institutional structure under which aircraft noise issues may be addressed has forced Alameda's citizens, staff, and City Council to react to events without knowing or being able to discuss operating decisions that cause noise nuisance.*

- 7.3.h Obtain assurance that the future noise exposure for Alameda is known and that aircraft operations will be controlled to ensure that projected noise levels are not exceeded. Validation of the 65 dB CNEL contour is to be carried out by means of a permanent full-time noise monitoring system to ensure compliance with the California Airport Noise standards and the ALUC Plan.

*Decisions on location and noise insulation standards for sensitive uses must be made with confidence that acceptable noise levels will be maintained.*

- 7.3.i Mitigation for any expansion of MOIA should include the following operational measures:

- Use of Stage 3 (least noisy) aircraft only, on all runways directly overflying Alameda residential areas.
- Enforced flight path alterations for noise abatement, for all runways, with remote monitoring sites installed in locations mutually acceptable to the Port and the City.
- Prohibition of touch-and-go operations by jet aircraft.
- Prohibition of noisy engine ground run-ups at night.
- Prohibition of intersection departures on Runway 27.
- Enhanced transit access to the airport via a BART/light rail extension.

- 7.3.j Support the Port of Oakland in establishing a permanent full-time noise monitoring system that will (a) measure noise continuously, (b) separate MOIA noise events from other noise source events, particularly overflights from other airports, (c) measure and augment CNEL values, (d) provide information on excessively noisy aircraft operations, (e) monitor effectiveness of noise abatement programs, and (f) meet the performance specifications of the California Noise Standards.

- 7.3.k Define noise exposure to incorporate Alameda's concerns about the loudness of individual events and nighttime noise.

*Community Noise Equivalent Level (CNEL) is a 24-hour-energy equivalent level derived from a variety of single-noise events. Factors are applied to account for the greater disturbance caused by evening and night noise. However, CNEL may understate the stress for many people caused by noises such as infrequent single events at night.*

- 7.3.1 Initiate an acoustical treatment program for noise-sensitive uses based on the Part 150 Study, and financed by FAA funds and local matching dollars to be provided by the Port of Oakland, to mitigate existing and future noise exposure within residences and schools to 45 dB CNEL.
  
- 7.3.m Initiate meetings with San Francisco International Airport to seek reduction in overflights from San Francisco International Airport (SFO), especially nighttime departures.

*Currently, 35 percent of SFO departures fly over Alameda. Other patterns may be available.*